

CALIFORNIA COASTAL COMMISSION

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Friday 6b

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COASTAL DEVELOPMENT PERMIT APPLICATION

Application number.....3-00-140, Scenic Road Armoring Repairs

Applicant.....City of Carmel-by-the-Sea

Project location.....Six bluff locations below Scenic Road and the Scenic Road Recreational Trail (between 10th Avenue & Martin Way) along the back-beach of Carmel Municipal Beach in the City of Carmel-by-the-Sea in Monterey County.

Project description.....Repair and augment the existing shoreline armoring in several locations below Scenic Road at Carmel Beach.

Local approval.....The City of Carmel-by-the-Sea City Council approved the project and certified the CEQA mitigated negative declaration on November 7, 2000.

File documents.....Carmel Beach Management Plan (CDPs P-980, P-79-320, 3-83-217-A1, 3-83-217-A2, 3-83-217-A3, and 3-83-217-A4); CDP 3-98-102 (Panattoni).

Staff recommendationApproval with Conditions

Summary of staff recommendation: The City proposes repair and augmentation of the existing system of shoreline armoring (both seawalls and revetments) located beneath Scenic Road on the southern portion of the Carmel Municipal Beach. Most all of the back-beach along this stretch of coastline is currently armored by both pre-Coastal Act structures and by a variety of structures permitted by the Coastal Commission since 1974. The armoring here is designed to protect the Scenic Road recreational trail system as well as Scenic Road itself. The proposed armoring repairs would continue the existing Carmel back beach aesthetic through the use of golden-granite facing on the seawall extensions overtopped with hardy cascading vegetation, and through the use of sand contouring and upper bluff vegetation designed to hide the revetment segments; the City of Carmel is well-known for their successful efforts in this regard to minimize the visual impacts of armoring. The proposed repairs would protect the informal meandering nature of the blufftop trail system and the existing back-beach aesthetic with the absolute minimum of beach area coverage. **Staff is recommending approval with conditions.**



California Coastal Commission
April 2001 Meeting in Santa Barbara

Staff: D. Carl Approved by:
3-00-140 (Scenic Road Armoring Repairs) stf rpt 3.26.2001.doc

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1. Staff Report Summary

The Applicant proposes several repairs and minor additions to the series of rock revetments and golden-granite faced seawalls that line much of the bluff below Scenic Road at Carmel Beach. The objective of the project is to continue to protect the Scenic Road public recreational trail system located atop the bluff as well as, ultimately, Scenic Road itself. Scenic Road and the meandering blufftop trail located along its



seaward edge are well-known and much-used public recreational features that help to define the Carmel shoreline experience as a complement to the white sands of Carmel Beach proper below. The Coastal Commission permitted the construction of the pathway system, several beach access stairways, the major reconstruction of Scenic Road itself, and much of the back-beach armoring in 1987.

The Scenic Road trail system is a unique public pathway experience that is defined in part by its natural symbiosis with the undulating bluffs and landscape canopy falling off to the beach below. The decomposed granite pathway meanders between tree-dotted, vegetated bluff outcrops and the rock curb that defines the edge of Scenic Road inland. Most all of the blufftop area is landscaped by the City and is complemented by nine stairways and a series of benches and overlooks, many of the improvements faced with decorative rockwork in keeping with the informal organic aesthetic for which the Carmel shoreline is known.

The proposed protective work would be designed to harmonize with the existing armoring present along almost all of the back-beach in Carmel below Scenic Road. To the extent one can make such assertions regarding such unnatural structures, the existing armoring in Carmel is widely recognized as some the most aesthetically pleasing in the State. The seawalls here undulate with the natural curves of the bluffs and are faced with indigenous Carmel golden granite overtopped with hardy cascading vegetation that help to soften the walls and provide a visual transition to the blufftop trail system above. The existing revetments are unique in that the City has an active management system in place to camouflage the piles of rock by covering the base of such revetments with sand and the upper portion with a soil and vegetation cap that is, again, integrated with the upper blufftop plantings. Although winter storm events and scour can remove such camouflage during peak events, the City regularly re-camouflages the revetments. During most active beach use periods, the revetments appear as natural back-beach bluff dune slopes. The effect of the City's efforts is that the armoring generally melds with, and in fact helps to define, the Carmel beach aesthetic and character.

Staff has worked closely with the City to help them design a project that is mindful of maintaining both the informal meandering nature of the blufftop and the existing back-beach aesthetic with the absolute minimum of beach area coverage. The armoring repairs and augmentations will help to ensure that the public access pathway and pathway experience will not be compromised by ongoing coastal erosion, and that this public access jewel remains in place and retains its charm for current and future generations to enjoy, at the same time as preserving the beach area for continuing beach recreational use. In order to ensure compliance with past Commission actions, and to ensure that the Carmel Beach shoreline is monitored and maintained consistent with the Carmel Beach aesthetic, Staff recommends that the Commission require an updated Carmel Shoreline Management Plan.

As so conditioned, the proposed project is consistent with the policies of the California Coastal Act and staff is recommending approval.



2. Staff Recommendation on Coastal Development Permit

The staff recommends that the Commission, after public hearing, **approve** the proposed project subject to the standard and special conditions below. Staff recommends a **YES** vote on the motion below. A yes vote results in approval of the project as modified by the conditions below. The motion passes only by affirmative vote of a majority of the Commissioners present.

***Motion:** I move that the Commission approve Coastal Development Permit Number 3-00-140 subject to the conditions below and that the Commission adopt the following resolution:*

***Approval with Conditions.** The Commission hereby grants a permit for the proposed development, as modified by the conditions below, on the grounds that the modified development is consistent with the requirements of Chapter 3 of the California Coastal Act of 1976 (Coastal Act), will not prejudice the ability of the City of Carmel to prepare a local coastal program conforming to Chapter 3 of the Coastal Act, is located between the sea and the first public road nearest the shoreline and is in conformance with the public access and recreation policies of the Coastal Act, and will not have any significant adverse effects on the environment within the meaning of the California Environmental Quality Act (CEQA).*

3. 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. **Approved Project.** The City of Carmel by-the-Sea (Permittee) shall undertake development in accordance with the approved final plans (titled *Carmel-by-the-Sea Beach Bluff & Beach Access Improvement Project Along Scenic Road from 10th Avenue to Martin Way* by Neill Engineers Corp. dated received in the Coastal Commission's Central Coast District Office March 7, 2001). Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary. The Permittee shall notify the Executive Director in writing within seven (7) days of completion of the approved project and shall identify the date of project completion.
2. **Carmel Shoreline Management Plan.** WITHIN SIX (6) MONTHS OF COMPLETION OF THE APPROVED PROJECT OR BY APRIL 13, 2002 (WHICHEVER IS EARLIER), the Permittee shall submit to the Coastal Commission for review and approval a Carmel Shoreline Management Plan (Plan). The Plan shall cover the area seaward of and including the first through public road inland of Carmel Beach (i.e., North San Antonio Avenue, Ocean Avenue, and Scenic Road) including: all of Carmel Beach, the bluffs and dunes backing Carmel Beach, Scenic Road, the Scenic Road recreational trail, the Ocean Avenue parking lot, and all accessways to Carmel Beach from the first through public road (i.e., from North San Antonio Avenue, Ocean Avenue, and Scenic Road). The Plan shall be prepared in consultation with: (1) a licensed geologist or civil or geotechnical engineer; and (2) a licensed landscape architect or equivalent resource specialist experienced with Carmel Beach beach and bluff vegetation. The Plan shall at a minimum include:
 - (a) **Goals and Objectives.** A discussion of the goals and objectives of the Plan, which shall include the long-term preservation and protection of: Carmel Beach; the Scenic Drive recreational trail; the beach access stairways and other beach access points; beach area parking (including parking along Scenic Road, on Ocean Avenue seaward of San Antonio Avenue, and the Ocean Avenue parking lot); beach access facilities (e.g., restrooms, benches, signs, etc.); blufftop landscaping; and continuous through public lateral access seaward of any privately-owned properties.
 - (b) **Policies.** A set of policies consistent with Chapter 3 of the Coastal Act designed to achieve Plan objectives.
 - (c) **Current Status.** A map clearly identifying: all public access features (e.g., Carmel Beach, Scenic Road recreational trail, stairways, beach access points, boardwalks, Ocean Avenue parking lot, restrooms, benches, etc.); all development along the back-beach area (including both private residential development and public facilities); landscaping and significant trees; all habitat areas (e.g., Pescadero Creek); and all shoreline armoring. The map shall be supplemented by a narrative describing the mapped resources.
 - (d) **Planned Public Access Projects.** A description of any contemplated public access projects in the Plan area (e.g., a boardwalk on the dunes located between Scenic Road and Ocean Avenue,



pathway improvements from 4th Avenue and North San Antonio to the beach, additional stairways, restrooms, etc.) with, as available, a timeline and workplan for same.

- (e) **Future Armoring.** All bluff areas in the Plan area not currently armored shall be evaluated in terms of whether future armoring is likely at these currently unarmored locations. Such an evaluation shall include, at a minimum, a description of options for addressing continued erosion at these locations without armoring.
- (f) **Shoreline Erosion Trends.** An evaluation of historic erosion trends of the beach and bluffs at Carmel Beach, and an analysis of expected future shoreline conditions based on, at a minimum, evaluation of: existing and/or contemplated armoring in the Plan area; normal and maximum tidal ranges and wave heights; storm surge and anticipated long-term changes in sea level; long-term erosion rates; type and frequency of storms which have caused shoreline retreat historically; conditions leading to subaerial erosion historically; offshore features affecting the site (island sheltering, canyons, etc.); key sand sources and sinks which dominant the Carmel beach littoral cell, and contribution of the back beach area to littoral sand supply; the volume of sand required to establish a square foot of beach on Carmel Beach; plot showing all historic shoreline surveys, with dates of surveys and references. To facilitate future long-term trend evaluation, a series of beach profile transects shall be established and identified in the Plan.
- (g) **Shoreline Erosion Response.** Identification of all measures to be taken to ensure preservation of the existing length and width of sandy beach at Carmel Beach. At a minimum, the cost and benefits of a formal beach nourishment program at Carmel Beach shall be evaluated, including an analysis of the effectiveness of similar programs applied to geologically similar shoreline littoral cells. All such measures identified shall include a detailed description of the method for implementing such measures, including identification of potential sources of funding and appropriate sand materials.
- (h) **Sand Supply Mitigation.** Identification of a mitigation mechanism, at a minimum based upon subsections (f) and (g) above, to be applied to mitigate for Carmel Beach shoreline sand supply impacts in the event future development that alters natural shoreline processes (e.g., revetments, seawalls, retaining walls, etc.) is proposed along the shoreline of the Plan area.
- (i) **Shoreline Armoring Monitoring and Maintenance.** Methods to be used to regularly monitor and maintain all Plan-area shoreline armoring. At a minimum, the Shoreline Armoring Monitoring and Maintenance component of the Plan shall provide for:
 - (1) A series of permanent surveyed benchmarks inland of the bluff edge running the length of Carmel Beach, and a complementary series of survey points on each armoring structure in the Plan area (i.e., at least one survey point at both the upcoast and downcoast end of each structure, and at appropriate locations between each end). The inland surveyed benchmarks and survey points on armoring shall be described in relation to National Geodetic Vertical Datum (NGVD) and identified through permanent markers, benchmarks, survey position, written description, reference numbers, et cetera to allow measurements to be taken at the same location in order to compare information between years.



- (2) General as-built plans showing the extent of all armoring in the Plan area in relation to the existing topography and other relevant features (including the top of bluff, base of bluff, sand-bluff interface, sandstone platforms, Scenic Road, Scenic Road pathway, and utilities in the Scenic Road right-of-way, etc). The as-built plans shall indicate vertical and horizontal reference distances from the surveyed benchmarks to the survey points on each structure for use in future monitoring efforts.
- (3) Provisions to retrieve any rock that migrates from revetments.
- (4) Evaluation in consultation with a licensed civil or geotechnical engineer of the condition and performance of all armoring in the Plan area on a yearly basis following the winter storm season (i.e., after April 1st) and on an as-needed basis following any major storm event during the winter storm season. Such evaluation shall at a minimum address whether any significant weathering or damage has occurred that would adversely impact future performance, and identify any structural damage requiring maintenance, repair, or changes or modifications to permitted armoring. At five-year intervals, the yearly post winter season evaluation shall include measurements of the distance between the inland surveyed benchmarks and survey points on the armoring structures. The results of the evaluation shall be submitted to the Executive Director of the Coastal Commission no later than June 1st of each year.
- (j) **Shoreline Armor Camouflage Monitoring and Maintenance.** Methods to be used to regularly monitor and maintain all Plan-area shoreline armor camouflage (i.e., the landscaping that extends from the upper bluff over the top of the armor, and the sand area that extends over the base of the armor). At a minimum, the Plan shall provide for the shoreline armor camouflage to be evaluated on a yearly basis following the winter storm season (i.e., after April 1st) to ensure that such landscaping and sand cover continues to camouflage the armoring in the project area.
- (k) **Other Monitoring and Maintenance.** Methods to be used to regularly monitor and maintain all Plan-area public access features (e.g., Carmel Beach, Scenic Road recreational trail, stairways, beach access points, boardwalks, Ocean Avenue parking lot, restrooms, benches, etc.) and landscaping.
- (l) **Temporary Events.** Methods for evaluating temporary events in the Plan area for, among other things, impacts on the general public use of public recreational areas (including, but not limited to, sandy beach, on-street and lot parking areas, and accessways to the beach). The Plan shall include provisions for the annual submittal of a schedule of such temporary events to the Executive Director of the Coastal Commission.
- (m) **Emergency Erosion Response.** Procedures and methodologies for responding to an emergency situation arising from shoreline erosion where emergency is defined as “a sudden unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services.”
- (n) **Coastal Permitting.** Procedures to obtain coastal development permits, emergency coastal



development permits, and/or permit amendments from the Coastal Commission and, when the City's Local Coastal Program is certified, from the City of Carmel, for all Plan-identified maintenance activities and other Plan development. All maintenance activities shall be identified as either: (1) regular routine activities (examples may include, but are not limited to: movement of sand on the beach with mechanized and other equipment; retrieval of rocks from revetments; recontouring of beach sand at the base of revetments; placement of soils on the blufftop and atop revetments and seawalls; removal of invasive exotic plants and replanting of bluff and back-beach vegetation; regrouting and minor repair of rockwork in existing seawalls, stairways, trash enclosures, etc.; clearing of vegetation from access trails to the beach; etc.), or as (2) non-routine activities (examples may include, but are not limited to: seawall or revetment repairs; stairway replacement, etc.).

The approved Plan shall be made part of the City's Local Coastal Program (LCP) as follows: (1) if the Plan is approved before the City has formally submitted a LCP for Coastal Commission review, then the approved Plan shall be included as a component of the first LCP application subsequently made to the Coastal Commission by the City; (2) if the Plan is approved after the City has formally submitted a LCP for Coastal Commission review, then the approved Plan shall be submitted as an LCP amendment as soon as possible following Plan approval.

3. **Carmel Shoreline Management Plan Implementation.** WITHIN THIRTY (30) DAYS OF COMMISSION APPROVAL OF THE CARMEL SHORELINE MANAGEMENT PLAN, the Permittee shall apply for a multi-year coastal development permit from the Coastal Commission, and from the City of Carmel if applicable, to undertake the regular routine maintenance activities identified by the approved Carmel Shoreline Management Plan. Those activities identified as non-routine maintenance activities and as other development by the approved Carmel Shoreline Management Plan shall require separate coastal development permit or permit amendment applications.
4. **Assumption of Risk, Waiver of Liability and Indemnity Agreement.** By acceptance of this permit, the Permittee acknowledges and agrees: (a) that the site is subject to hazards from episodic and long-term bluff retreat, waves, flooding, liquefaction and erosion; (b) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (c) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; (d) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; and (e) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the landowner.

Recommended Findings and Declarations

The Commission finds and declares as follows:



4. Project Description & Background

A. Project Location

The proposed project includes repair work at six separate bluff locations below Scenic Road and the Scenic Road public recreational trail between 10th Avenue and Martin Way along the back-beach of Carmel Municipal Beach in the City of Carmel-by-the-Sea in Monterey County. All of the property involved, including the beach itself, is owned by the City of Carmel. See Exhibit A for a map showing both the general project location, Exhibit C for individual site locations, and Exhibit D for photos of the six individual sites involved.

B. City of Carmel Shoreline Coastal Permitting History

This proposed repair and augmentation project would directly integrate with past shoreline work approved by the Commission along the Carmel Beach over the years. A general history of the Commission's permitting involvement follows.

In 1974, the Commission approved the original Carmel Beach Management Plan that described the judicious use of shoreline protection structures and landscaping to stabilize slopes along Scenic Road in order to protect both Scenic Road and the character of the Carmel Beach itself (P-980, approved November 4, 1974). This original plan acknowledged the need to protect the bluffs through a combination of retaining walls, landscaping, and sand contouring that would best approximate a natural look in harmony with natural beach and bluff appearance. The stated main goal of the plan was "to preserve the beauty of this unique and scenic area" by maintaining the bluff as a greenbelt between the white sand beach and Scenic Road.

The 1974 coastal permit authorized beach bluff seawalls at four different locations as well as multiple stairways to the beach. This 1974 shoreline work was augmented in 1979 by additional rip-rap revetments at the coves present at 12th and 13th Avenues (P-79-320, approved by the Commission June 25, 1979).

The severe 1982-83 El Niño winter storms caused extensive damage to not only the beach itself, but to the existing revetments, seawalls, bluff slopes, stairways, and utilities. These winter storms removed much of the beach and large portions of blufftop leaving the remaining bluffs, shoreline protective work, and stairways unprotected from wave attack. In addition, major damage was caused by storm water runoff and groundwater drainage, which weakened the natural bluff structure along the Carmel Beach bluffs.

In 1983, the Commission approved Phase 1 of the Carmel Beach Restoration Plan (3-83-217-A1, November 15, 1983) as an amendment to the original Beach Management Plan. Phase 1 consisted of the installation of emergency restoration measures in the form of major areas of rip-rap revetment (approximately 10,000 tons of rip-rap), reconstruction of lost stairways, repair of failed bluffs, and interim sand replenishment. The 1983 approval included the revetment currently proposed for repairs running south of 10th Avenue (Site 1 in the current application - see Exhibit C). An important part of these Phase 1 repairs was the construction of the City's shoreline storm drainage system designed to relieve pressure on the bluffs from water saturation and to redirect storm drainage away from stairs and bluff



slopes.

In 1987, the Commission approved another segment of seawall at the terminus of 12th Avenue (immaterial amendment approved April 6, 1987) and further amended the Beach Management Plan through Phase 2 of the Carmel Beach Restoration Plan (3-83-217-A2, approved June 9, 1987). Phase 2 was the culmination of 3 years of planning efforts and resulted in redirecting Scenic Road to one-way to make way for access improvements, the development of the blufftop scenic walkway, rebuilding of 5 stairways, creation of a sand ramp for handicapped access, revegetation of bluff slopes, construction of visitor amenities (i.e., benches, trash receptacles, drinking fountains, etc.), and guardrails to direct pedestrians away from fragile bluff slopes to developed accessways.

Most recently, in 1997, the Commission approved additional armoring in the form of a camouflaged revetment between 11th and 12th Avenues below Scenic Road (CDP 3-83-217-A4, approved November 6, 1997).

C. Carmel Beach Recreational System Today

The comprehensive work begun in 1983 and completed in 1988 through Phases 1 & 2 of the Carmel Beach Restoration Plan, as augmented by work undertaken both previously and since, has defined the Carmel Beach recreational experience and character. Together Carmel Beach, the bluffs, the blufftop trail, and Scenic Road itself combine to form a world-renowned, diverse, much-used, and visually striking system of public access.

The Scenic Road trail system is a unique public pathway experience that is defined in part by its natural symbiosis with the undulating bluffs and landscape canopy falling off to the beach below. The decomposed granite pathway meanders between tree-dotted, vegetated bluff outcrops and the rock curb that defines the edge of Scenic Road inland. Most of the blufftop area is landscaped by the City and is complemented by nine stairways and a series of benches and overlooks, many of the improvements faced with decorative rockwork in keeping with the informal organic aesthetic. The trail provides a panoramic view of Carmel Bay and the beach below (see photo 1 of Exhibit D).

In terms of the armoring, to the extent one can make such assertions regarding such unnatural structures, the existing armoring in Carmel is widely recognized as some of the most aesthetically pleasing in the State. The seawalls here undulate with the natural curves of the bluffs and are faced with indigenous Carmel golden granite overtopped with hardy cascading vegetation that help to soften the walls and provide a visual transition to the blufftop trail system above (see, for example, photos 3 and 4 of Exhibit D). The existing revetments are unique in that the City has an active management system in place to camouflage the piles of rock by covering the base of such revetments with sand and the upper portion with a soil and vegetation cap that is, again, integrated with the upper blufftop plantings. Although winter storm events and scour can remove such camouflage during peak events, the City regularly re-camouflages the revetments (see photo example in Exhibit E). During most active beach use periods, the revetments appear as natural back-beach bluff dune slopes. The effect of the City's efforts is that the armoring generally melds with, and in fact helps to define, the Carmel Beach aesthetic and character. Although not always readily apparent at first glance, almost the entire shoreline along the southern end of Carmel Beach (i.e., south of Ocean Avenue)



is currently armored (see Exhibit B).

It is within this context that the current proposal is before the Commission. See Exhibit F for the Applicant's most recent project submittal that describes the proposed project and the Carmel Beach recreational experience from the City's perspective.

D. Project Description

The Applicant proposes six separate individual project components as follows (see also proposed project plans in Exhibit C, and photos of the six individual sites in Exhibit D):

Site 1

Approximately 200 to 225 tons of golden granite rock would be placed in a roughly 20 foot gap located between the 10th Avenue stairway and seawall (to the north) and an existing revetment extending to the south. This gap was meant to be filled as part of the larger revetment approved in 1983 at this location (CDP 3-83-217-A1), but, for whatever reason, the revetment was not extended to the stairway. This repair would address problems from end-scour and swirling eddies during storm events in the 20 foot missing segment of rock, and would complete the structure authorized in 1983. The revetment would be keyed into the underlying bedrock for structural stability. As is done for the existing adjacent revetment, the new rock would be camouflaged (i.e., covered with sand at its base and landscaped at its top) consistent with the previously approved planting plan (CDP 3-83-217-A2).

Site 2

Approximately 120 to 180 tons of golden granite rock would be placed at the base of a currently undermined existing golden-granite faced seawall perched atop the sandstone just north of the 13th Avenue stairway. The rock would again be keyed into the underlying bedrock for structural stability and would extend roughly 60 linear feet between a natural notch in the sandstone below the existing wall. The rock would be placed below the summer sand level and is designed to address ongoing scour that has undermined the existing wall. The rip-rap repair would act as the footing for the existing wall where erosive scour has removed the sandstone previously supporting this wall segment. Rip-rap was chosen for this repair location because of the scoured configuration of the underlying sandstone (the existing notch) as well to help diffuse wave energy that would otherwise be focused into the walled cove at this location during times of heavy storm scour when the rock would be exposed.

Site 3

A roughly 25 linear foot extension would be added to the existing golden-granite faced seawall just south of the 13th Avenue stairway. The wall extension would match the existing wall, would be notched into the downcoast bluff, and is designed to repair and augment the failed end of the existing wall and to protect against additional end scour from storm events.

Site 4



A roughly 50 foot linear extension would be added to the existing golden-granite faced retaining wall at Frank Lloyd Point near Santa Lucia Avenue. Directly inland at this location is the only public restroom facility currently serving the southern portion of Carmel Beach (there is another public restroom at the base of Ocean Avenue to the north). The bluff recently eroded away part of the recreational path, taking with it the benches and guardrails previously present here. The existing retaining wall and the repair extension proposed here is located on a sandstone outcrop above the summer sand levels.

Sites 5 & 6

Two gaps in the existing golden-granite faced seawall, roughly 40 linear feet each, would be closed by adding additional like sections of wall. These sections will replace the existing non-engineered rock revetments at these locations, which will be removed.

Proposed project is fundamentally a repair project

In general, the project proposes a series of repairs and augmentations to the existing armoring present at these six locations below Scenic Road. In the case of Site 1, the revetment was meant to be extended originally into this area based on the Commission's 1983 coastal permit, and the existing request is arguably covered by this previous action. For Site 2, the existing seawall footing needs to be repaired or the wall will soon be completely undermined and fail altogether. At Site 3, the end of the existing wall has already failed and the repair extension would correct this failure consistent with the existing bluff topography. At Site 4, the proposed wall is an upper bluff retaining wall repair and extension designed more to stabilize the upper bluff than to withstand the impact of direct wave attack. Sites 5 and 6 propose the removal of the existing unengineered revetments at two locations with replacement by wall sections that fill two gaps in the existing wall where failure and end effects are taking place currently.

E. Standard of Review

The entire City of Carmel falls within the coastal zone, but the City does not have a certified Local Coastal Program (LCP).¹ The Commission long ago granted to the City a broad categorical exclusion (E-77-13) which, among other things, exempts most residential development from coastal permitting requirements. However, development along the Scenic Road shoreline and on the beach is not excluded by the order. As a result, the standard of review for the proposed development is the Coastal Act.

5. Coastal Development Permit Determination

A. Geologic Conditions and Hazards

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

Section 30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining

¹ See also the LCP Planning Process section of this report.



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 avoid additional, more substantial 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.*

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 shoreline processes. Accordingly, with the exception of new coastal-dependent uses, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

Under Coastal Act Section 30235, new shoreline structures may be approved if: (1) there is an existing structure in danger from erosion; (2) shoreline altering construction is required to protect the existing threatened structure; and (3) the required protection is designed to eliminate or mitigate the adverse impacts on shoreline sand supply. Repair of existing seawalls can be either exempt from permit requirements or required to obtain a permit depending on the nature of the repair (Title 14 CCR, Section 13252(a)).

1. Existing Structure to be Protected

As described earlier, the project is primarily a repair project designed protect the structural integrity of the previously permitted armoring structures originally designed to protect Scenic Road and the recreational trail system on the bluff above Carmel Beach. Almost all of the bluffs below Scenic Road are currently so armored (see Exhibit B). As such, the Commission has previously recognized the inland structures here as existing development for which shoreline armoring was appropriate under Section 30235. There are basically two types of structures for which armoring is being considered here: (1) the previously permitted armoring structures that are in need of maintenance and repair; and (2) the inland public access structures protected by these sections of armor. As described in the project description



section of this report, the public access facilities at this location are resources of tremendous local and statewide value.

2. Danger from Erosion

The City's consulting engineering geologist, Rogers Johnson, has been studying the oceanographic and geologic conditions at Carmel Beach for many years.² Evidence in the file shows that the bluffs at Carmel Beach have been actively eroding for as long as records have been kept. From historic records³ and thorough field investigation, Mr. Johnson concluded that, while highly variable, average long-term erosion rates along Carmel Beach (taking into account steady erosion as well as severe episodic events) range from 0.7 to 2.35 feet per year.⁴ Erosion has more recently been slowed as the bluffs have now made their way back to Scenic Road and the recreational trail in most cases and have been armored.⁵ In fact, until the 1982-83 El Niño storms, there was roughly 30 feet of additional bluff area present in the general vicinity of the proposed project; the winter storm episodes of 1982-83 removed this bluff area.

Bluff retreat rates can be notoriously difficult to accurately predict, although an increased understanding of coastal processes is improving the reliability of estimates. In this case, the City's consulting engineering geologist has provided a range of applicable rates based upon analysis of an array of source information pertaining to Carmel Beach.⁶ Because of the importance of public recreational resources at stake here (as described earlier) and the value of Scenic Road as a critical access road, the most cautious approach is warranted and the analysis of the threat from ongoing erosion needs to be based on the conservative end of the estimated erosion spectrum. To rely instead on the less conservative end (i.e., the lowest erosion estimate), does not make good public policy and planning sense in this case. As such, 2.35 feet per year is the long-term rate used to estimate erosion for purposes of establishing the threat to existing structures in this report.

To conclusively show that the structures in this case are in danger from erosion, there must be an imminent threat to these structures. While each case is evaluated based upon its own merits, the Commission has generally interpreted "imminent" to mean that a structure would be imperiled in the next two or three storm cycles (generally, the next few years).

At Site 1 (see Exhibits C and D), the pathway atop the bluff is located roughly 3 feet from the bluff edge; Scenic Road and the City sanitary sewer are roughly 20 feet from the top of the bluff. Several large cypress trees are present at this location. Site visits indicate active erosion is ongoing in this location.

² Mr. Johnson's comprehensive background work in 1984 formed the basis for the complete makeover of the Carmel beach and bluff access system (Phase 2 of the Carmel Beach Restoration Plan; CDP 3-83-217-A2, approved June 9, 1987); *Phase II Report, Carmel Beach* by Rogers E. Johnson and Associates, February 22, 1984.

³ Information used in this assessment included: U.S. Coast Guard and Geodetic Survey topographic and hydrographic maps from as far back as 1876; United States Geologic Survey maps from 1945; City Assessor Parcel Maps from 1908; nine sets of aerial photographs from as early as 1939; historic beach profiles from the 1940s; interviews with long-time City residents and Public Works personnel; and current field measurements.

⁴ Johnson (1984).

⁵ Almost all of the Carmel shoreline south of Ocean Avenue is so armored (see Exhibit B).

⁶ See also the City's summary of erosion along the Carmel shoreline attached as Exhibit F.



Because the revetment was not completed after being permitted in 1983, the 20 foot gap proposed for additional rock could lead to failure of not only the bluffs here, but also the 10th Avenue public access stairway and the existing revetment. Without the proposed repair, it appears likely that the existing structures at this location will be undermined within the next year or so, if not before.

At Site 2 (see Exhibits C and D), the public access stairway is directly connected to the existing seawall that is being undermined. Absent the proposed rip-rap buttress repair at the base of this seawall to fill the undercut section of sandstone below the wall, the previously approved seawall will be lost, and the stairway itself could be compromised, within the next year or so, if not before.

At Site 3 (see Exhibits C and D), the pathway atop the bluff is located roughly 10 feet from the bluff edge; Scenic Road is roughly 20 feet from the top of the bluff. Without the proposed repair, the existing permitted seawall can be expected to fail in segments during each successive storm event. In addition, without the proposed project, end scour effects can be expected to intensify at this location for the rock revetment located immediately adjacent to the south as well. In essence, the repair fills an existing gap between the existing golden granite seawall and the existing downcoast revetment. Without the proposed repair, it appears likely that the structures at this location will be undermined within the next few years, if not before.

At Site 4 (see Exhibits C and D), the pathway atop the bluff is located immediately adjacent to the bluff edge; the restroom and cypress hedge are located roughly 15 feet from the top of the bluff on the opposite side of the pathway. A portion of the pathway was recently lost to erosion at this location. Without the proposed upper bluff retaining wall extension repair, the pathway will be lost and the restroom nestled in the cypress hedge will be threatened within the next year or so, if not before.

At Sites 5 and 6 (see Exhibits C and D), the pathway atop the bluff is located from about 2 feet to about 10 feet from the bluff edge; Scenic Road is roughly 20 feet from the top of the bluff. There is already armoring present at these two sites (the proposal is to remove the stacks of rip-rap and replace with seawall to fill the gaps in the otherwise continuous seawall at this location). Some additional erosion might be expected from storm wave overtopping of the existing revetments, and from upper bluff erosion (surface runoff), but the extent to which this danger would threaten the pathway and the road is hard to calculate given the presence of the two existing revetments. The existing walls are experiencing some failure now because of erosion and scour at their ends (i.e., at the gaps). In any case, the existing revetments have been structurally compromised since their installation in the early eighties and will need to be reengineered without the proposed project to repair and support them. Without this repair, it appears likely that the structures at this location will be undermined within the next few years, if not before.

Overall, there appears to be clear evidence that repair of the existing armoring is needed and that significant near term risk exists to the blufftop recreational trail system, and Scenic Road should the project not occur. Without the proposed project, ongoing erosion can be expected to result in up to roughly 2 feet of bluff loss per year in the affected reach of Carmel Beach. Such continued erosion can be expected to result in the loss of sections of existing permitted seawalls and revetments, the pathway system to varying degrees, and ultimately Scenic Road itself. Substantial evidence has been provided to document the erosion danger at these locations and the Commission finds that the existing structures at these



locations are in danger from erosion for the purposes of Section 30235 and that repair is warranted.

3. Feasible Protection Alternatives to a Shoreline Structure

The second test of Section 30235 of the Coastal Act that must be met is that the proposal to alter the shoreline must be *required* to protect the existing structures. In other words, under the policies of the Coastal Act, the project must be the least environmentally damaging feasible alternative. Section 21080.5(d)(2)(A) of CEQA likewise prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse effect that the activity may have on the environment. The Commission notes that it already has, by previous permits, found that Scenic Road and the access trail are worthy of protection. Any action the Coastal Commission may be required to take to continue protecting the public amenities at this location must be consistent with this section of CEQA as well as the Coastal Act. Other alternatives typically considered include: the “no project” alternative; abandonment of threatened structures; relocation of the threatened structures; upper bluff retaining walls alone; sand replenishment program; and other drainage and maintenance programs on the blufftop itself.

In this case, the “no project” alternative is not viable because the existing structures here would be undermined in the next few years without this repair and augmentation project. The Carmel Beach and bluff recreational system is a tremendous public access jewel of statewide importance. The loss of which would not be consistent with the protection afforded such a resource in danger from erosion as provided for by the Act. Likewise, abandonment of the threatened structures would not protect this significant public access facility as directed by the Act.

Relocation of the threatened structures inland is another alternative typically considered. In this case, there is limited space within which to relocate the pathway system, Scenic Road, and/or City utilities. Because of long-term erosion, Scenic Road was already made one-way in the late 1980s. The roadway prism itself is barely wide enough in spots to allow through vehicular access and there is no additional right-of-way space to push the road further inland because this space is occupied by the first row of single-family residences. In some locations, the pathway system could be moved slightly inland to avoid additional armoring. However, such relocation would require either (1) removal of significant trees and vegetation buffering the path from the bluff edge and Scenic and/or narrowing of the pathway itself (thus diminishing the value of the pathway experience), and/or (2) removal of parking spaces that line portions of the road (thus leading to a loss of public access). Either option would involve competing Coastal Act priorities. In this case, since the armoring proposed is essentially a series of repairs designed to reaffirm the integrity of existing permitted armoring along a stretch of mostly armored coastline, relocating threatened structures to a more inland location, while technically feasible in a few discrete locations, does not best accomplish Coastal Act objectives.

In addition, a relocation option may be able to put off the need for additional armoring at these discrete points until later, but it will not eliminate the need for future armoring in the relatively immediate future. There is little space available within which to relocate endangered structures and the bluff here is eroding at a rate of up to roughly 2 feet per year. There have also been 25 to 30 foot episodic bluff failures documented in this portion of the Carmel beach bluffs. One such episode alone would remove the pathway



system and portions of Scenic Road. Unless Scenic Road and the public access are abandoned, armoring will be necessary at some near future time to protect through public access. In addition, as previously described, almost all of the bluffs below Scenic are already so-armored (see Exhibit B) and the project is best described as a repair and maintenance project to reaffirm the structural integrity of these previously permitted shoreline structures.

A third alternative to the proposed armoring would be to use upper blufftop remediation measures designed to forestall erosion (new drainage features, slope revegetation, etc.). However, such bluff remediation alone is not likely to sufficiently protect the pathway system. Typical winter storms would still result in end-scour and undermining of the existing deficient armoring, leading to the potential for continued failure of same and the loss of the pathway and ultimately the through road itself. The City already actively manages the upper blufftop slopes with a palette of hardy native bluff species designed to retain the upper blufftop area. Drainage and sheet flow over the bluff edge have been mostly contained, and while some trouble spots still remain, it is clear that new drainage controls would only have limited utility of themselves in terms of protecting the threatened structures.

The pathway system, and ultimately Scenic Road itself, are currently threatened by rapid erosion and potential bluff collapse. There are not any “soft” fixes that could be pursued alone to ensure long-term protection of these existing endangered structures. If the structures are to be so protected, some form of hard protective armoring repair and augmentation to maintain the integrity of the existing permitted armoring system is required.

The project, therefore, meets the second test of Section 30235 of the Coastal Act.

4. Sand Supply Impacts

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

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullyng, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an on-going mix and exchange of material between beaches and dunes. Many coastal bluffs are marine terraces – ancient beaches which formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach quality sand or cobble, and a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse, saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration. When the back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted



and, if the shoreline is eroding, there will be a measurable loss of material to the beach

Sand supply at Carmel Beach is somewhat atypical in that the sand supply system is essentially self-contained within Carmel Bay. Two watercourses empty into this system (Pescadero Creek and Carmel River). The west facing beach is bounded by granitic headlands that effectively prevent the migration of beach sand up and down the coast. For most sandy beaches, sand is supplied from the littoral drift of materials from upcoast and downcoast sources miles away. In contrast, most of the sand on Carmel Beach is probably derived locally from erosion of sandstone and granitic bedrock. Seasonal changes in beach sand are primarily thought to be a cyclical movement of sands from off to onshore and back again.⁷

Although the precise dynamics of the Carmel Beach sand supply system are uncertain, there would be a relatively small, but quantifiable loss of sand to the system due to the proposed project. This is due to the fact that parts of the repair project would armor small sections of coast not yet so armored. Although these are not vast stretches of unarmored coastline being covered anew (rather these are small augmentations to existing armoring in discrete locations), a sum total of additional armored shoreline would be the ultimate result. Some of the effects of such engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary or difficult to distinguish from all the other actions which modify the shoreline. Such armoring also has distinct qualitative impacts to the character of the shoreline and visual quality. However, some of the effects that a structure may have on natural shoreline processes can be quantified, including: 1) loss of the beach area on which the structure is located; 2) the long-term loss of beach which will result when the back-beach location is fixed on an eroding shoreline; and 3) the amount of material which would have been supplied to the beach if the back-beach or bluff were to erode naturally.

Fixing the back-beach

Experts generally agree that where the shoreline is eroding and armoring is installed, as is the case with Carmel Beach bluffs, shoreline armoring will eventually define the boundary between the sea and the upland. This is definitely the experience at Carmel Beach, particularly the southern end of the beach where the six proposed sites are located, where most of the shoreline south of Ocean Avenue is currently armored (see Exhibit B). On an eroding shoreline fronted by a beach, the beach will be present as long as some sand is supplied to the shoreline. As erosion proceeds, the profile of the beach also retreats. This process stops, however, when the retreating shoreline comes to a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, shoreline retreat in front of the armor stops. Eventually, the shoreline fronting the armor protrudes into the water, with the winter mean high tide line fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising slightly for many years. In the Carmel area, the trend for sea level for the past 25 years has been an increase resulting in a 100 year rate of nearly 1 foot per 100 years.⁸ Also, there is a growing body of evidence that there has been a slight increase in global temperature and that an

⁷ Johnson (1984)

⁸ NOAA, National Ocean Service.



acceleration in the rate of sea level can be expected to accompany this increase in temperature. Mean water level affects shoreline erosion several ways and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. On a relatively flat beach, with a slope of 40:1, every inch of sea level rise will result in a 40-inch landward movement of the ocean/beach interface. This, too, leads to loss of the beach as a direct result of the armor.

The Commission has established a methodology for calculating the long-term loss of public beach due to fixing the back beach, this impact being equal to the long-term erosion rate multiplied by the width of property which has been fixed by a resistant shoreline protective device:

The area of beach lost due to long-term erosion (A_w) is equal to the long-term average annual erosion rate (R) times the number of years that the back-beach or bluff will be fixed (L) times the width of the property that will be protected (W). This can be expressed by the following equation: $A_w = R \times L \times W$

In this case, as follows:

$$\begin{aligned} A_w &= 2.35 \text{ feet/year}^9 \times (\text{Width of Site 1}^{10} + \text{Site 2}^{11} + \text{Site 3} + \text{Site 4} + \text{Site 5} + \text{Site 6})^{12} \\ &= 2.35 \text{ feet/year} \times (0 \text{ feet} + 0 \text{ feet} + 25 \text{ feet} + 50 \text{ feet} + 40 \text{ feet} + 40 \text{ feet}) \\ &= 2.35 \text{ feet/year} \times (155 \text{ feet}) \\ &= 364 \text{ square feet/year} \end{aligned}$$

To convert the 364 square foot loss of beach per year into the volume of sand necessary to restore the beach commensurately in cubic yards, coastal engineers use a conversion value representing units of cubic yards per square foot of beach.¹³ In this case, the Commission has not been able to establish an actual conversion factor for the Carmel Beach vicinity. However, if a 1.0 conversion factor is used (i.e., the low end of the spectrum of values typically assumed by coastal engineers), a conservative estimate of the cubic yard equivalent of 364 square feet per year can be calculated. For the current proposal, this translates into a direct sand supply impact due to fixing the back-beach location of 364 cubic yards of sand per year.

⁹ The worst case (most erosive) scenario as described earlier.

¹⁰ Since the gap to be filled at Site 1 was already permitted by the Commission, and appropriate mitigation defined for such impact at that time, Site 1 is assumed to be zero for the purposes of the fixing the back-beach calculation.

¹¹ Since Site 2 involves a footing repair of an existing wall section, it does not "fix" an additional area of shoreline and thus this segment is zero for the purposes of this calculation.

¹² As a yearly estimate since the lifetime of the project has not been otherwise defined.

¹³ This conversion value is based on the regional beach and nearshore profiles, and overall characteristics. When there is not regional data to better quantify this value, it is often assumed to be between 1 and 1.5, the idea being that to build a beach seaward one foot, there must be enough sand to provide a one-foot wedge of sand through the entire region of onshore-offshore transport. If the range of reversible sediment movement is from -30 feet msl to +10 feet msl, then a one-foot beach addition must be added for the full range from -30 to +10 feet, or 40 feet total. This 40-foot by 1 foot square parallelogram could be built with 1.5 cubic yards of sand (40 cubic feet divided by 27 cubic feet per cubic yard). If the range of reversible sediment transport is less than 40 feet, it will take less than 1.5 cubic yards of sand to rebuild one square foot of beach; if the range of reversible sediment transport is larger than 40 feet, it will take more than 1.5 cubic yards of sand to rebuild one square foot of beach.



Encroachment on the Beach

Shoreline protective devices such as seawalls, revetments, gunnite facings, groins, et cetera are all physical structures which occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it spreads seaward over time. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

Each of the proposed armoring repairs would not be placed directly on sandy beach but rather would be keyed into the underlying sandstone at the subject sites (see Exhibit C). While there are access and recreational issues associated with the loss of any useable recreational sandy beach space, because the sand would be scraped away and the structures placed onto sandstone (and the displaced sand pushed back over the structures), the sand supply impact in this case concerns the potential loss of sandstone area.¹⁴ As discussed above, sandstone is one probable source of sand for the Carmel Beach shoreline supply. As a result, each of the structural fixes pursued by the City would eliminate a small section of sandstone that would otherwise contribute to the local sand supply during winter beach conditions. As discussed in the Commission's methodology, this impact may be quantified as follows:

The encroachment area (A_e) is equal to the width of the properties which are being protected (W) times the seaward encroachment of the protection (E). This can be expressed by the following equation: $A_e = W \times E$

In this case, as follows:

$$\begin{aligned} A_e &= (\text{Footprints of Site 1}^{15} + \text{Site 2} + \text{Site 3} + \text{Site 4} + \text{Site 5} + \text{Site 6}) - (\text{Footprints of existing} \\ &\quad \text{revetments at Sites 5 and 6 to be removed}) \\ &= 0 \text{ square feet} + 630 \text{ square feet} + 125 \text{ square feet} + 175 \text{ square feet} + 180 \text{ square feet} + 180 \text{ square} \\ &\quad \text{feet} - 225 \text{ square feet} - 600 \text{ square feet} \\ &= 1290 \text{ square feet} - 825 \text{ square feet} \\ &= 465 \text{ square feet} \end{aligned}$$

Using the sand conversion factor of 1.0 (as discussed earlier) the direct loss of beach due to this encroachment translates into a one-time impact of 465 cubic yards of sand.

Retention of Potential Beach Material

If natural erosion were allowed to continue (absent the proposed armoring), some amount of beach material would be added to the Carmel Beach sand supply system. The volume of total material which

¹⁴ See Access and Recreation section that follows for a discussion of the complementary access and recreational issues associated with such beach area encroachment.

¹⁵ Since the gap to be filled at Site 1 was already permitted by the Commission, and appropriate mitigation defined for such impact at that time, Site 1 is assumed to be zero for the purposes of the encroachment calculation.



would have gone into the sand supply system over the lifetime of the shoreline protective devices would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the likely future bluff location without shoreline protection.

Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand which would have been supplied to the littoral system for beach deposition if the proposed device were not installed. For conditions where the upper bluff retreat will closely follow the lower bluff, this volume will approach a volume of material equal to the height of the total bluff, the width of the armored area and a thickness equal to the total bluff retreat that would have occurred if the seawall had not been constructed. For conditions where the upper bluff has retreated significantly and would not be expected to retreat further during the time that the seawall is in place, this volume would approach the volume of material immediately behind the seawall, with a thickness equal to the total bluff retreat that would have occurred if the seawall had not been constructed.

The City's consulting engineering geologist calculated the sand content of the subject bluff materials at roughly 73% sand. Based upon the dimensions of the proposed new sections of armor, the volume of sand that would be retained on a yearly basis was estimated to be roughly 100 cubic yards.¹⁶

Sand Supply Impacts and Mitigation

As detailed above, the proposed project would have at least three quantifiable impacts on shoreline sand supply: (1) approximately 100 cubic yards of sand lost per year due to the retention of sandy bluff materials; (2) approximately 364 cubic yards of sand lost per year due to fixing the back beach; and (3) approximately 465 cubic yards of sand lost due to the structural footprint. This translates into a one-time sand supply impact of roughly 465 cubic yards, and an ongoing yearly sand supply impact of roughly 464 cubic yards. The City indicates that it annually replaces roughly 100 cubic yards of sand and sandy soils as part of its camouflaging efforts. Although it is not clear that the City's efforts mitigate such sand supply impacts on a direct 1 to 1 basis (because such sand/sandy soil deposition is different from a natural process), it does nevertheless reduce the sand supply impact by some degree. As a result, the net sand supply deficit to the beach due to the proposed project is still in the hundreds of cubic yards per year realm. Such an impact cannot be altogether eliminated by project design.

The project, thus, has not been designed to eliminate impacts on local shoreline sand supply as required by Coastal Act Section 30235. The project has, however, been designed to be located as far inland as possible, has been designed to minimize beach area encroachment, has been designed for the City to continue sand replenishment to a certain degree, and has been designed to remove existing beach area encroachment (i.e., the removal of the existing revetments at Sites 5 and 6). While mitigating factors, these design mitigations alone are not commensurate with the long-term impact on Carmel Beach. Because the project as designed does not meet the sand supply impact test of Section 30235 (i.e., the project design does not eliminate and does not completely mitigate such impacts), the Commission is not required to approve the protective structures proposed. As discussed above, however, the structures endangered in

¹⁶ Johnson (2001).



this case are of statewide public access importance and armoring has been shown to be the appropriate protective solution. Thus, in order to approve the project in conformance with Section 30235, additional mitigation for the sand supply impacts is necessary. Typical mitigations required by the Commission for such direct sand supply impacts have been in-lieu fees and/or beach nourishment.

With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system to mitigate the loss of sand that would be caused by a protective device. Obviously, such an introduction of sand, if properly planned, can feed into the Carmel Beach sand system to mitigate the impact of the project. However, although the City actively manages its beach (including moving sand around to camouflage revetments and depositing sandy soil materials atop the armor structures as necessary), the City does not have a formal beach nourishment program, nor is there any type of regional program to address sand loss. Absent a comprehensive program that provides a means to coordinate and maximize the benefits of mitigation efforts in the area now and in the future, the success of such piecemeal mitigation efforts is questionable. Without a program that evaluates the natural processes and existing conditions in order to establish the most appropriate sites and methods for introducing sand material so that it will mitigate this project's impacts and maximize benefits to the sandy beach, the Commission cannot specify a direct in-kind placement of sandy material as mitigation.

As an alternative mitigation mechanism, the in-lieu fee is oftentimes used by the Commission when in-kind mitigation of impacts is not presently available. In situations where ongoing sand replenishment programs are not yet in place, the in-lieu sand mitigation fee is deposited into an account until such time as an appropriate program is developed and the fees can then be used to offset the designated impacts. The Commission recently required such a fee from a private property owner on the northern portion of Carmel Beach at Pescadero Creek.¹⁷ In that action, the commission acknowledged that, although a formal program is not yet in place for such a fee to be applied, the City is currently working towards that goal. The City is required to update and implement the Carmel Beach Management Plan as a condition of approval of the City's most recently installed shoreline protective structure (CDP 3-83-217-A4 in 1997).¹⁸ Part of the requirement for this updated plan is that it identify appropriate mitigation for armoring at Carmel Beach in light of such armoring's long term shoreline sand supply impacts. The City has indicated that they are currently pursuing such an updated Carmel Beach Management Plan within the context of their current LCP planning efforts. Until such time as the plan is in place, however, appropriate mitigation ratios are unclear.

Such a fee option in this case makes little public policy sense as the fee would be from the City to the City. In addition, unlike many municipalities, the City of Carmel actively manages their beach and beachfront; the City currently budgets over \$100,000 per year to such efforts. Furthermore, the subject armoring is to protect significant public resources. In most requests for shoreline protection, the Commission is faced with reviewing protection that is designed to protect *private* bluff-top structures, but would be located on, and have impacts to, the *public* beach and bluffs. In this case, the impacts from the armoring would be to the public, but the benefits (i.e., preservation of the public recreational trail facility) would be to the public as well. Thus, the Commission finds that the sand supply impacts of this project are partially

¹⁷ CDP 3-98-102 (Panattoni).

¹⁸ See LCP Planning Process section of this report for the text of this updated plan requirement.



mitigated by the City's project design, that the impacts and benefits are both to the public, and that the best solution for addressing long-term sand supply impacts from armoring at Carmel Beach is through the required comprehensive beach management plan.

In any case, while the mechanism may not be fully understood, recent anecdotal evidence indicates that the cumulative sand supply impact from the almost complete armoring of the southern portion of the Carmel Beach bluffs over the years may be negligible. Even with substantial winter storm events, such as 1982-83 storms which removed the majority of the sand from the Carmel Beach, this self contained sand supply system has proven itself capable of maintaining a very large sandy beach area with a typical width of 100 yards (approximately 21.5 acres of sandy beach). Without a comprehensive analysis of these trends, however, it is difficult to assert with certainty that the beach will always maintain such an equilibrium. This is particularly the case in light of ongoing sea level rise and the almost completely fixed back-beach area at Carmel Beach.

The best solution for addressing long-term sand supply impacts from armoring at Carmel Beach is through the comprehensive plan. The subject plan is currently past due and the City is out of compliance with the previous CDP that required this plan. Such a plan that identifies long-term trends and establishes mechanisms to address long-term loss of beach here is much more protective of the Carmel Beach resource than would be an in-lieu fee or other form of mitigation. City resources are better directed to completing such a plan. The City's ongoing maintenance efforts should ensure short-term protection of the resource in the interim.

Therefore, this approval is conditioned for completion of the updated Carmel Beach Shoreline Management Plan (see Special Condition 2). Because the whole of the public recreational system is affected by, and dependent upon to a certain degree, the condition of the beach itself, such plan should address the relationship of the beach to beach accessways and inland public facilities (parking, restrooms, etc.) in order to ensure that their utility is not otherwise compromised over time. Such a plan will provide the context and methodology to ensure long-term protection of Carmel Beach and its related access facilities for future generations to enjoy.

Project impacts to shoreline sand supply are thus properly and commensurately mitigated by a combination of project design (i.e., located as far inland as possible, beach area encroachment minimized, placement of camouflaging sands and sandy soils, removal of existing beach area encroachment) and the updated plan. Such mitigation fulfills the third test of Section 30235 requirement.

5. Long Term Structural Stability

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. For the proposed project, the main Section 30253 concern is assuring long-term stability. This is particularly critical given the dynamic shoreline environment within which the proposed project would be placed.

Moreover, with global warming and sea level rise (as described above), increased wave heights and wave energy are likewise expected. Along much of the California coast, the bottom depth controls the



nearshore wave heights, with bigger waves occurring in deeper water. Since wave energy increases with the square of the wave height, a small increase in wave height can cause a significant increase in wave energy and wave damage. So, combined with the physical increase in water elevation, a small rise in sea level can expose previously protected back shore development to both inundation and wave attack, and those areas that are already exposed to wave attack will be exposed to more frequent wave attack with higher wave forces. Structures that are adequate for current storm conditions may not provide as much protection in the future.

A second concern with global warming and sea level rise is that the climatic changes could cause changes to the storm patterns and wave climate for the entire coast. As water elevations change, the transformation of waves from deep water will be altered and points of energy convergence and divergence could shift. The new locations of energy convergence would become the new erosion “hot spots” while the divergence points may experience accretion or stability. It is highly likely that portions of the coast will experience more frequent storms and the historic “100-year storm” may occur every 10 to 25 years. For most of California the 1982/83 El Niño event has been considered the “100-year storm.” Certain areas may be exposed to storms comparable to the 1982/83 El Niño storms every few decades.

In an attempt to ensure stability under such conditions, the Commission has required that all new shoreline structures be designed to withstand either a 100-year storm event, or a storm event comparable to the 1982/83 El Niño. Also, since it is possible that storm conditions may worsen in the future, the Commission has required that structures be inspected and maintained on a regular basis. The coast can be altered significantly during a major storm and coastal structures need to be inspected on a regular basis to make sure they continue to function as designed. If storm conditions worsen in future years, the structures may require changes or modifications to remain effective. In some rare situations, storm conditions may change so dramatically that existing protective structures may no longer be able to provide any significant protection, even with routine maintenance.

Critical to the task of ensuring long-term stability as required by Section 30253 is a formal long-term monitoring and maintenance program. The City indicates that it is currently preparing a comprehensive Shoreline Management Plan for this, and other, purposes (see pages 19 and 20 of Exhibit F). The intent is that such a plan would become a component of the LCP. However, such an adopted plan is not currently in place.

If the repaired armoring was damaged in the future (e.g. as a result of flooding, landsliding, wave action, storms, etc.) it could further threaten the stability of the pathway system and Scenic Road, which could lead to the need for more bluff alteration and/or more substantial armoring. In addition, such damages could adversely affect the beach by resulting in debris on the beach and/or creating a hazard to the public using the beach. Therefore, in order to find the proposed project consistent with Coastal Act Section 30253, the armoring must be maintained in its approved state. Further, in order to ensure that the City and the Commission know when repairs or maintenance are required, the City must regularly monitor the condition of the subject armoring, particularly after major storm events. Such monitoring will ensure that the Permittee and the Commission are aware of any damage to or weathering of the armoring and can determine whether repairs or other actions are necessary to maintain the structures in their approved state before such repairs or actions are undertaken. To assist in such an effort, monitoring plans should provide



vertical and horizontal reference distances from armoring structures to surveyed benchmarks for use in future monitoring efforts.

Again, the City was previously required to prepare such a comprehensive monitoring and maintenance plan as part of the Commission's 1997 approval.¹⁹ As previously described, this plan has not yet been completed. To ensure that the armoring repairs and augmentations proposed here are properly maintained to ensure their long-term structural stability as directed by the Act, the required updated monitoring and maintenance plan must be submitted; see Special Condition 2. Such a plan shall provide for evaluation of the condition and performance of the approved seawalls and revetments and overall bluff stability, and shall provide for submittal of regular reports with recommendations, if any, for necessary maintenance, repair, changes or modifications. Plan-identified maintenance activities will be the subject of a separate coastal development permit application (see Special Condition 3).

6. 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 and grants) 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.

The risks of the proposed project include that the armoring will not protect against damage to the recreational structures from bluff failure and erosion. In addition, the armoring structures themselves may cause damage by increasing erosion up and downcoast of the structures. Such damage may also result from wave action that damages the armor itself. Although the Commission has sought to minimize these risks, the risks cannot be eliminated entirely. Given that the Applicant has chosen to construct the proposed project despite these risks, the Applicant must assume these risks. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at these locations (see Special Condition 4). Specifically, Special Condition 4 requires the City to acknowledge the risks and indemnify the Commission against claims for damages that may be brought by third parties against the Commission as a result of its approval of this permit.

6. Conclusion

As discussed above, the facts of this particular case show that the proposed project would repair significant previously permitted armoring and protect inland public access structures currently in danger from ongoing erosion. The armoring repairs and augmentations proposed are required to maintain the

¹⁹ Special Condition 8 of CDP 3-83-217-A4; the text of this condition is shown in the LCP Planning Process section of this report.



integrity of the existing permitted armoring system that currently extends along most all of the City of Carmel shoreline. Project impacts to shoreline sand supply are commensurately mitigated by a combination of project design and the conditional requirement for an updated comprehensive Carmel Beach beach and bluff management plan. Long term monitoring and maintenance to ensure long-term structural stability is likewise encapsulated in the conditionally required plan. As so conditioned, the proposed project is consistent with Coastal Act Sections 30235 and 30253 as discussed in this finding.

B. Public Access and Recreation

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 (Scenic Road). Coastal Act Sections 30210 through 30214 and 30220 through 30224 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 30213: Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.

Section 30214(a): The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case...

Section 30221: Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

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

Coastal Act Section 30240(b) also protects parks and recreation areas. Section 30240(b) states:

Section 30240(b). Development in areas adjacent to environmentally sensitive habitat areas



and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Carmel Beach is owned and maintained by the City of Carmel and accounts for over 20 acres of fabulous white sand beach. The beach is used year round and represents a major recreational and economic resource to the community and the State. The beach attracts an estimated 1,000 persons per day, with larger crowds on holidays and during special events. One of the beach's outstanding features is the sand itself, with the texture and bright appearance of granulated sugar. Beaches composed of such white quartz-feldspar sand are very rare.

Scenic Road and the Scenic Road recreational trail system are also owned and maintained by the City of Carmel. This area is likewise heavily used, providing a complementary experience to the sandy beach for those interested in enjoying the shoreline in a different manner (i.e., for: different vistas, benches, a hard surface for jogging or pushing strollers, for those whose physical condition makes walking on the beach difficult or impossible, etc.). This use level for the pathway is also at least somewhat dictated by a climate (generally cool temperatures and fog prevalent in Carmel for much of the year) that is oftentimes more conducive to blufftop strolls than more active beach use. As previously described, this trail system is a unique public pathway experience that is defined in part by its natural symbiosis with the undulating bluffs and landscape canopy falling off to the beach below. The decomposed granite pathway meanders between tree-dotted, vegetated bluff outcrops and the rock curb that defines the edge of Scenic Road inland. Much of the blufftop area is landscaped by the City and is complemented by nine stairways and a series of benches and overlooks, many of the improvements faced with decorative rockwork in keeping with the informal organic aesthetic.

The proposed project would ensure the continuity of the trail system, and would preserve the existing trail aesthetic and experience. A limited amount of beach space would be given over to the footprints of the proposed armoring augmentations to accomplish this. As described earlier, the footprints were calculated for sand supply purposes at roughly 465 square feet of additional encroachment. Although this is accurate for sand supply purposes (i.e., because the sandstone being covered would no longer otherwise contribute to the system), this area of encroachment has a lesser impact on beach recreational use because the areas so occupied would be, for the most part, areas not otherwise used for recreational sandy beach pursuits. At Site 1, the gap to be filled provides negligible sandy beach recreational area. At Site 2, the proposed armorstone buttress repair is designed to fill an undermined section of sandstone below the existing wall and to address extreme winter storm events and the area of encroachment would be entirely below the summer beach profile. At Site 3, the footing for the wall extension repair would displace approximately 125 square feet of useable beach space, but primarily during the winter storm season as summer sand levels would be above the footing. At Site 4, the wall extension repair is designed to be perched atop the sandstone on the upper bluff and would not occupy otherwise useable sandy beach recreational area. At Sites 5 and 6, roughly 800 square feet of space currently occupied by revetment would be opened up for beach recreational uses (since the proposed wall footing would be perched atop sandstone and would be substantially smaller than the existing revetment footprints).

As described in the previous finding, however, continued armoring of the shoreline at Carmel Beach, such



as that proposed, could ultimately lead to a loss of the sandy beach itself over time. Such a loss would be inconsistent with the Act's protection of this vital and finite public access resource. Such a loss would commensurately degrade the other existing public recreational facilities here that depend in large measure on the presence and condition of the beach itself. Although recent anecdotal evidence is that the beach here is in a relative state of equilibrium, it is not clear that long term trends will eventually validate this hypothesis. Given the importance of the sandy beach resource, the most conservative tact is warranted. The best way to ensure that sandy beach is not lost in the long term is to better understand the long-term shoreline erosion trends at Carmel Beach, particularly as they relate to shoreline armoring, and to develop an appropriate long-term planning response. It may be that preservation of the beach will ultimately require some form of beach nourishment. In any case, the inland beach recreational system as a whole (pathways, parking, restrooms, landscaping, etc.) must be understood within the context of its relationship to the beach.

Therefore, this approval is conditioned for completion of the updated Carmel Beach Shoreline Management Plan (see Special Condition 2). Because the whole of the public recreational system is affected by, and dependent upon to a certain degree, the condition of the beach itself, such plan should address the relationship of the beach to beach accessways and inland public facilities (parking, restrooms, etc.) in order to ensure that their utility is not otherwise compromised over time. Such a plan will provide the context and methodology to ensure long-term protection of Carmel Beach and its related access facilities for future generations to enjoy. This approval is likewise conditioned for the City to submit a CDP application to implement ongoing routine shoreline public access system maintenance activities (as identified in the updated plan) to ensure that maximum public access is maintained as directed by the Act (see Special Condition 3).

As conditioned, long-term management and preservation of the precious public access resources of Carmel Beach are expected. Likewise, because the project includes the replacement of the two revetments with vertical wall segments, a net short-term gain of recreational beach space is expected. In addition, the City will camouflage the revetment extension consistent with their past practice, and will use golden-granite facing on the seawall extensions. Active monitoring and maintenance through the long-term plan will ensure that such camouflaging and aesthetic enhancements are maintained.

The proposed project is designed to maximize public access to the beach and bluffs, protect existing no cost access, and protect upland recreational lands for priority recreational uses, and is therefore consistent with the Coastal Act access and recreation policies cited in this finding.

C. Visual Resources

Coastal Act Section 30251 states:

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



New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Coastal Act Section 30240(b), previously cited, also protects the aesthetics of parks and recreation areas such as those involved in this application. Section 30240(b) states:

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

A potential impact from the project on the recreational beach area is the introduction of a decidedly unnatural structure in an area of tremendous scenic value. As previously discussed, a primary goal of the original 1974 Carmel Beach Management Plan with regards to shoreline protective work, as amended through 25 years of permitting history, is to maintain the natural beauty of back-beach bluffs. While rip-rap revetments are generally unsightly piles of rock, the City of Carmel has been extremely successful with landscaping of revetments along the beach. As previously described, the City's methodology for revetments has been to push sand up over the bottom of the revetment and cover the top with soil and landscaping. The effect of this sand and vegetation "cap" is that the revetment looks like a vegetated bluff face (see Exhibit E). Likewise, the seawalls along the back-beach undulate with the natural curves of the bluffs and are faced with indigenous Carmel golden granite overtopped with hardy cascading vegetation that help to soften the walls and provide a visual transition to the blufftop trail system above (see, for example, photos 2, 3, and 4 of Exhibit D).

The City has indicated that it will camouflage the revetment extension at Site 1 as it has done others in the past (i.e., sand recontouring and landscape cap), and that all seawall augmentations will be faced with golden granite to mimic the existing seawalls. Blufftop relandscaping will be undertaken at each of the project sites. In order to ensure that these efforts are maintained for the long-term, this approval is conditioned for the ongoing monitoring and maintenance of the camouflaging elements (see Special Condition 2), and is likewise conditioned for the City to submit a CDP application to implement ongoing routine camouflaging maintenance (see Special Condition 3). With the City's proven track record for the innovative camouflaging of revetments and for golden-granite seawalls topped with cascading vegetation, over time, these structures should blend into the natural back-beach bluff similar to previous efforts. Furthermore, Phase 2 of the Carmel Beach Restoration Plan (approved by the Commission June 9, 1987) provides for replacement planting and sand recontouring of the bluffs when storm action strips away these design features. The effect of the City's efforts is that the proposed armoring will generally meld with, and in fact help to define, the Carmel beach aesthetic and character. As such, the scenic and visual qualities of the Carmel Beach will be maintained over the long term.

As conditioned, the Commission finds that the proposed project has been designed in such a way as to minimize public view impacts and will be visually compatible with the character of surrounding area; and, as such, is consistent with Coastal Act Sections 30240(b) and 30251 as discussed in this finding.



D. LCP Planning Process

Coastal Act Section 30604(a) states:

Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the commission on appeal, finds that the proposed development is in conformity with Chapter 3 (commencing with Section 30200) and that the permitted development will not prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200). A denial of a coastal development permit on grounds it would prejudice the ability of the local government to prepare a local coastal program that is in conformity with Chapter 3 (commencing with Section 30200) shall be accompanied by a specific finding which sets forth the basis for that conclusion.

1. LCP History/Status

The entire City of Carmel falls within the coastal zone, but the City does not yet have a certified LCP. Approximately twenty years ago, the City submitted the Land Use Plan (LUP) portion of its LCP for review by the Coastal Commission. On April 1, 1981, the Commission certified part of the LUP as submitted and part of the LUP with suggested modifications regarding beach-fronting property. The City resubmitted an amended LUP that addressed the beach-fronting properties provisions, but that omitted the previously certified portion of the document protecting significant buildings within the City. On April 27, 1984, the Commission certified the amended LUP with suggested modifications to reinstate provisions for protecting significant structures. However, the City never accepted the Commission's suggested modifications and so the LUP remains uncertified.

The LCP zoning or Implementation Plan (IP) was certified by the Commission with suggested modifications on April 27, 1984. However, the City did not accept the suggested modifications and so the IP, too, remains uncertified.

Predating the City's LCP planning efforts, the Commission authorized a broad-ranging categorical exclusion within the City of Carmel in 1977 (Categorical Exclusion E-77-13). E-77-13 excludes from coastal permitting requirements most types of development not located along the beach and beach frontage of the City.

The City is currently working on a new LCP submittal (both LUP and IP), funded in part by an LCP completion grant awarded by the Commission. This current City effort is focused on protecting the significant coastal resources found in Carmel, including the spectacular public beach and recreational amenities along the City's shoreline, the urban forest that uniquely identifies Carmel as "the City within the trees," the substantial riparian and habitat areas (such as Mission Trails Nature Preserve and Pescadero Canyon), and the unique community and visual character of Carmel as exhibited by the style, scale, and rich history of its residential, commercial, and civic architecture. Taken as a whole, these resources combine to form the special character of Carmel; a character that comprises a significant coastal resource worthy of protection in its own right. The City indicates that the Land Use Plan is expected to be submitted for Commission review in April 2001, with the Implementation Plan submittal expected by



December 2001.

2. Shoreline Management Planning

As has been discussed in this staff report, the City's Beach Management Plan was originally adopted by the Commission in 1974. Since that time, the plan has been affected by the series of permitting actions taken by the Commission.²⁰ However, there has never been any type of formal resubmittal of an updated plan to help guide either the City and/or the Commission when armoring projects such as this one are proposed. The difficulties associated with such a lack of approved policy direction came to a head the last time the Commission reviewed a City shoreline armoring proposal in 1997 (CDP 3-83-217-A4).

In 1997, the Commission approved additional armoring in the form of a camouflaged revetment between 11th and 12th Avenues (CDP 3-83-217-A4, approved November 6, 1997). In 1997, it had been roughly a decade since the last time the Commission had reviewed an armoring proposal in Carmel and much had changed with regards to the general understanding of coastal processes and the effect of shoreline armoring on same in that decade's time. During the course of this 1997 application it became clear that a better methodology for addressing future shoreline erosion and potential armoring was necessary in Carmel. Although the City had implicitly developed a program through their long history of active management of the beach, the beach recreational trail, and the armoring central to both, lacking a Local Coastal Program and/or a plan designed to address future events, the Commission found itself in the position of addressing an individual project outside of what would preferably be part of a comprehensive planning solution for Carmel Beach and bluffs. To address this deficiency, the Commission required the City to prepare an updated beach management plan meant to provide the blueprint for future armoring proposals such as the current application; 3-83-217-A4 further required implementation of the updated plan. Special Condition 8 of 3-83-217-A4 states:

Beach Management Plan. WITHIN TWELVE (12) MONTHS OF COMPLETION OF THE REVETMENT, the permittee shall submit to the Executive Director for review and approval an update of the Carmel Beach Management Plan as amended by coastal permit (i.e., P-980, P-79-320, 3-83-217-A1, 3-83-217-A2, 3-83-217-A3, and 3-83-217-A4). This updated plan shall describe the extent of existing protective works and other beach development, and shall include a description of development both approved and contemplated in the future on Carmel Beach and bluffs. This plan shall include, but not be limited to, (1) a discussion of sand supply dynamics and sand supply impacts due to protective work, based upon existing studies, (2) erosion patterns, (3) maintenance and repair procedures for protective work, protective work landscaping, and public access facilities (i.e., stairways), and (4) appropriate mitigation measures for any identified resource and/or public access impacts associated with implementing the plan. In order to implement the updated Carmel Beach Management Plan, the City shall either:

a) submit an application for a coastal development permit to implement the plan at the same

²⁰ See Project Description section of this report for details on past Coastal Commission permitting actions regarding shoreline structures in Carmel.



time that the updated Carmel Beach Management Plan is submitted for review and approval of the Executive Director; or

- b) WITHIN THREE (3) MONTHS OF COMPLETION OF THE REVETMENT, submit to the Executive Director for review and approval a timeline for local coastal program (LCP) completion to consist of an updated land use plan (LUP) and an implementation plan (IP) incorporating the updated Carmel Beach Management Plan. If the LCP is not certified by the California Coastal Commission WITHIN TWELVE (12) MONTHS OF COMPLETION OF THE REVETMENT, the City shall submit an application for a coastal development permit to implement the updated Carmel Beach Management Plan.*

As has been detailed previously in this report, the plan was never submitted for review and approval. The City has redoubled its efforts in this regard and indicates that an update of the plan is currently in process. The updated plan would coordinate the many programs that the City currently implements along the shoreline into one comprehensive plan. It is anticipated that such a plan will form a major component of the City's LCP submittal. The Commission's current LCP completion grant to the City includes the updated plan requirement. To date, the current draft LUP (not yet adopted by the City and not yet formally submitted to the Commission) includes some broad beach maintenance and shoreline armoring policies that essentially commit to armoring of the Carmel shoreline. Background information on, and policies to mitigate for, long-term loss of beach due to armoring are thus far lacking. Although recent anecdotal evidence shows that Carmel Beach does not appear to be narrowing, the Commission's experience statewide has been that armored shorelines eventually lead to a loss of recreational beach area from fixing the back-beach position on an eroding shoreline.²¹ If Carmel Beach is to be protected for future generations to enjoy, the rebuttable presumption is that some form of nourishment may be necessary.

In any case, the LCP will need to include adequate policies to ensure such long term preservation of the beach resource and the related inland recreational access system (stairways, trails, pathways, parking, restrooms, landscaping, etc.). This approval is conditioned for the submittal of a shoreline management plan intended to provide the adequate level of specificity in LCP policies to make decisions on future projects (be it by the City and/or the Commission) and to ultimately preserve the very special public shoreline access system at Carmel Beach (see Special Condition 2). Because of the plan and policy nature of the updated plan, the plan would be submitted for Coastal Commission review and approval. Commission staff will prepare a staff report with a recommendation, including any necessary modifications, on the Plan submitted.²²

²¹ See also earlier discussion on shoreline sand supply impacts.

²² The staff report will include a recommendation to the Commission that the submitted Plan be either: (1) approved as submitted; (2) approved as modified as necessary to achieve Coastal Act Chapter 3 consistency (in such case, the staff report shall include recommended Plan modifications); or (3) denied (in such case, the staff report shall include recommended Plan modifications and recommended required measures (with associated deadlines for same) to be undertaken by the Permittee prior to resubmittal of the Plan for Commission review and approval).



It is expected that the City will be able to readily develop the required plan update as it is currently developing elements of such a plan as of the date of this staff report.²³ Moreover, the City indicates that many of the ongoing maintenance procedures and policies are already in place, having been implemented by the City for a number of years outside of a Commission-adopted plan process.²⁴ In addition, much shoreline erosion data has been developed to date by the City and it is expected that with some minimum of additional effort and analyses, adequate information to guide updated plan principals, policies, and methodologies (including mitigation methodologies) can be readily developed. Finally, the City has staff and expertise in the disciplines required to develop and implement the updated plan. Since the proposed project will not be completed inside of several months at the earliest, the additional six month time frame from project completion for plan submittal should be adequate within which to assemble the requisite plan pieces (see Special Condition 2). In the unlikely event that project completion itself is stymied, Special Condition 2 is alternatively timed for the submittal of the required plan within one-year of Commission action (i.e., by April 13, 2002) if applicable.

3. Potential for Prejudicing City LCP Efforts

In approving the subject project, the Commission continues to support the preservation of the Scenic Road recreational trail system and Carmel Beach itself. Such an action is consistent with past Commission actions,²⁵ is consistent with the goals and objectives of the City, and, as discussed in previous sections of this report, is consistent with Coastal Act Chapter 3 policies. However, whereas the Commission has been actively encouraging the City to investigate appropriate mitigation to ensure the continued availability of a public beach in Carmel, the City has not to date embraced this concept. Part of the rationale for this is that for reasons that are not completely understood, recent anecdotal evidence indicates that Carmel Beach itself does not appear to be narrowing. Such a discrepancy is not a fundamental Coastal Act policy rift between the City and Commission, but rather represents a lack of information with which to make informed decisions regarding protecting the beach in the long-term future. The Commission has acted, and will continue to act until an LCP is certified, based upon the best available data regarding Carmel Beach shoreline processes. However, it is clear that the system mechanics are not completely understood. Because of this, long term interpolation of trends is likewise difficult. This points out that additional information is necessary to support the City's current LCP planning efforts vis-à-vis shoreline management, but it does not prejudice preparation of an LCP in conformance with the Act. The City is currently required to develop such an updated Plan by two previous Commission actions (i.e., the 1997 CDP and the current LCP completion grant) and the current condition only reinforces this updated plan requirement in light of current information. Thus, this approval is conditioned for such additional planning and analyses of shoreline trends – and appropriate responses thereto – in Carmel (see Special Condition 2).

In any case, it is anticipated that a final post-certification boundary map defining coastal permitting

²³ Such an updated plan is a requirement of both the 1997 CDP and the current LCP completion grant to the City from the Commission.

²⁴ This approval is likewise conditioned for the City to submit a CDP application to implement ongoing routine shoreline public access system maintenance activities (as identified in the required updated plan) to ensure that all such development activities are covered by a coastal development permit.

²⁵ Past Coastal Commission permitting actions are described in detail in the Project Description section of this report.



jurisdiction in the City of Carmel will show that the Coastal Commission will retain coastal permitting authority over much, if not all, of the beach area as well as portions of the back-beach bluffs where armoring may be pursued in the future. Not to discount City LCP efforts in this regard (because any adopted LCP provisions will provide critical guidance), the Coastal Act will remain the standard of review for development proposed in these areas. As such, it is critical that the City complete their updated beach management plan efforts and that such a plan is pro-actively implemented for Carmel Beach to ensure maximum beach area is available in the future. In addition, because the whole of the public recreational system is affected by, and dependent upon to a certain degree, the condition of the beach itself, such plan must address the relationship of the beach to beach accessways and inland public facilities (parking, restrooms, etc.) in order to ensure that their utility is not otherwise compromised over time. Such a plan will provide the context and methodology to ensure long-term protection of Carmel Beach and its related access facilities for future generations to enjoy.

For the reasons discussed in this report, the Commission finds that, as conditioned: the proposed project would not prejudice Commission action on future coastal planning decisions regarding development in Carmel; and is consistent with Coastal Act requirements that development not prejudice LCP planning efforts that conform to the Coastal Act.

E. California Environmental Quality Act (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The City certified a mitigated negative declaration for the proposed project when they approved the project on November 7, 2000. The negative declaration includes several mitigation measures to address potential impacts to shoreline resources. Part of this package is a detailed construction erosion control plan to protect against runoff from the site disturbing the beach or bay waters.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The proposed project's coastal resource issues have been discussed in the Commission's findings incorporated herein, and appropriate mitigations have been developed to supplement the City's review of the proposed project. Accordingly, the project is being approved subject to conditions which implement the mitigating actions required of the Applicant by the Commission (see Special Conditions of Approval). 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.

