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# F12a

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Staff: M. Watson - SC  
Staff Report: 05/23/2013  
Hearing Date: 06/14/2013

## **STAFF REPORT: REGULAR CALENDAR CDP APPLICATION**

**Application Number:** 3-12-018

**Applicants:** Ron Gravelle

**Project Location:** Along the inner harbor shoreline fronting Gravelle's Boatyard in Moss Landing Harbor, 7501 Sandholdt Road, Moss Landing, Monterey County.

**Project Description:** Follow-up application for installation of an approximately 161-foot long rip-rap revetment (constructed under emergency coastal development permit (CDP) 3-01-010-G).

**Staff Recommendation:** Approval with Conditions

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## **SUMMARY OF STAFF RECOMMENDATION**

The Applicant, Ron Gravelle, proposes to retain a rip-rap revetment (installed under emergency authorization in 2001) to protect Gravelle's Boatyard, a coastal-dependent boat repair and maintenance facility that is vulnerable to shoreline erosion at this location. Gravelle's Boatyard facilities are essential to maintaining commercial, recreational, and scientific boating (coastal-dependent and Coastal Act priority uses) in the Moss Landing Harbor. The proposed revetment is located along the shoreline frontage of the boatyard at the north end of Sandholdt Road along Moss Landing Harbor in the small town of Moss Landing in northern Monterey County. The revetment extends approximately 161 feet in length and 10 feet in height, and consists of approximately 150 cubic yards of quarter-ton rock.

Staff believes that hard armoring at this location is necessary to protect the boatyard from danger and concurs that the rip-rap revetment is the most appropriate alternative available for this purpose at the current time. In the future, it is possible that the harbor shoreline will be redeveloped, including different shoreline protection at the water’s edge (e.g., sheet pile and/or other more vertical options), at which time alternative protection of this site could be considered. In fact, Monterey County is in the process of updating the Moss Landing Community Plan, a specific plan for the town of Moss Landing, including the harbor, which among other things is intended to address shoreline erosion and appropriate approaches to armoring within the harbor. Given its proximity to the harbor entrance and south entrance jetty, this site will continue to be subject to erosion, and the upcoming Plan may therefore inform how to address future armoring at this site.

To define the approved project, and to mitigate for project impacts, staff is recommending conditions for as-built plans, future monitoring and maintenance, other agency approvals, and a 20-year CDP authorization limit. Additionally, mitigation for the project’s impacts to public access and recreation through in-kind public recreational access improvements (i.e., such as benches, picnic tables, interpretive signing, and bike racks) are also required. Accordingly, staff recommends that the Commission approve a conditioned CDP for the project. The motion to act on this recommendation is found on page 3 below.

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### EXHIBITS

- Exhibit 1 – Location Maps
- Exhibit 2 –Site Photographs
- Exhibit 3 –Shoreline Photographs
- Exhibit 4 – Project Plans

## I. MOTION AND RESOLUTION

Staff recommends that the Commission, after public hearing, **approve** a coastal development permit for the proposed development. To implement this recommendation, staff recommends a **YES** vote on the following motion. Passage of this motion will result in approval of the CDP as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

***Motion:** I move that the Commission approve Coastal Development Permit Number 3-12-018 pursuant to the staff recommendation, and I recommend a yes vote.*

***Resolution to Approve CDP:** The Commission hereby approves Coastal Development Permit Number 3-12-018 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

## II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

- 1. Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittees 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 Permittees to bind all future owners and possessors of the subject property to the terms and conditions.

### III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

- 1. As-Built Plans.** WITHIN 90 DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT APPLICATION, or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of As-Built Plans for Executive Director review and approval showing all development authorized by this CDP, as well as all property lines and all existing structures and facilities located inland on the property (to the west) of the permitted revetment. The As-Built Plans shall be substantially consistent with the submitted project plans (dated June 12, 2005 and dated received in the Coastal Commission's Central Coast District Office on June 23, 2005). The As-Built Plans shall include a graphic scale and all elevation(s) shall be described in relation to National Geodetic Vertical Datum (NGVD). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from upcoast, seaward, and downcoast viewpoints, as seen from the edge of Highway 1 and as seen from a sufficient number of Harbor viewpoints as to provide complete photographic coverage of the permitted revetment at this location.
- 2. Future Monitoring and Maintenance.** This CDP requires ongoing monitoring of the permitted revetment at this location, and authorizes future maintenance as described in this special condition. The Permittee acknowledges and agrees on behalf of Gravelle's Boatyard and all successors and assigns that: (a) it is Permittee's responsibility to maintain the permitted revetment in a structurally sound manner and in its approved state; (b) it is Permittee's responsibility to retrieve loose rock that is displaced from the revetment; and (c) it is Permittee's responsibility to annually, or more often, if necessary, inspect the overall permitted revetment for signs of failure and/or displaced armor rock. Any such maintenance-oriented development associated with the permitted revetment shall be subject to the following:

  - A. Maintenance.** "Maintenance", as it is understood in this condition, means development that would otherwise require a CDP whose purpose is to repair and/or maintain the permitted revetment in its approved configuration, including retrieval of armor rock that may be displaced from the permitted revetment. Any proposed modifications to the approved as-built plans or required construction BMPs associated with any maintenance event shall be reported to planning staff of the Coastal Commission's Central Coast District Office with the maintenance notification (described below), and such changes shall require a CDP amendment unless the Executive Director determines that the proposed modifications will not result in additional coastal resource impacts, in which case an amendment would not be required.
  - B. Other Agency Approvals.** The Permittee acknowledges that this maintenance condition do not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.

- C. Maintenance Notification.** Prior to commencing any maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's Central Coast District Office of the proposed maintenance activities. Except for necessary emergency interventions, such notice shall be given by first-class mail at least 30 days in advance of commencement of work. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, proposed changes to the maintenance parameters, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's Central Coast District Office that the maintenance event complies with this CDP. If the Permittee has not received a response within 30 days of receipt of the notification by the Coastal Commission's Central Coast District Office, the maintenance event shall be authorized as if planning staff affirmatively indicated that the event complies with this CDP. The notification shall clearly indicate that the maintenance event is proposed pursuant to this CDP, and that the lack of a response to the notification within 30 days of its receipt constitutes approval of it as specified in the permit.
- D. Construction BMPs.** Maintenance activities shall be conducted in conformance with the following construction best management practices (BMPs):
- (1) Silt fences, straw wattles, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from discharging to the ocean.
  - (2) Equipment washing, refueling, and/or servicing shall take place at least 50 feet from the ocean. All construction equipment shall be inspected and maintained at an off-site location to prevent leaks and spills of hazardous materials at the project site.
  - (3) The construction site shall maintain good construction housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain (including covering exposed piles of soil and wastes); dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the site).
  - (4) All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each work day.
  - (5) All work shall take place during daylight hours and lighting of the beach area is prohibited.
  - (6) Construction (including but not limited to construction activities, and materials and/or equipment storage) is prohibited outside of the defined construction, staging, and storage areas.
- E. Non-compliance with CDP.** If the Permittee is not in compliance with the conditions of this permit at the time that a maintenance event is proposed, then the maintenance event

that might otherwise be allowed by the terms of this future maintenance condition may not be allowed by this condition, subject to determination by the Executive Director.

**F. Emergency.** Nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

**G. Duration and Scope of Covered Maintenance.** Future maintenance under this CDP is allowed subject to the above terms until February 9, 2021. The Permittee shall maintain the permitted revetment in its approved state. No expansion or enlargement of the permitted revetment is allowed.

- 3. Other Agency Review and Approval.** WITHIN 180 DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT APPLICATION, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, and/or authorizations for the approved project have been granted by the Moss Landing Harbor District, the U.S. Army Corps of Engineers, the Monterey Bay National Marine Sanctuary and the California Department of Fish and Wildlife. Any changes to the approved project required by these agencies shall be reported to the Executive Director. No changes to the approved project shall occur without a Commission amendment to this CDP unless the Executive Director determines that no amendment is legally necessary.
- 4. Term of Permit/Armoring Removal.** This CDP authorizes the permitted revetment at this location for twenty years from the date of the original emergency permit approval (i.e., until February 9, 2021) or until the time when the currently existing structure/facility warranting armoring is no longer present and/or no longer requires armoring for such protection, whichever occurs first. If the Permittee intends to keep the revetment in place after that time, the Permittee must apply for a new CDP authorization to allow the revetment (including, as applicable, any potential modifications to it desired by the Permittee). Provided such complete application is received before the twenty-year or earlier permit expiration, the expiration date shall be automatically extended until the time the Commission acts on the application. In addition, this CDP authorizes the revetment to protect currently existing boatyard facilities as they currently exist. Any future reuse of the site or redevelopment on the site shall be considered independent of the permitted revetment and shall not rely on the revetment to demonstrate Coastal Act and/or Monterey County LCP consistency.
- 5. Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the Permittee acknowledges and agrees, on behalf of himself and all successors and assigns: (i) that the site is subject to hazards from episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunamis, tidal scour, coastal flooding, and the interaction of same; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all

liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

- 6. Coastal Resource Impact Mitigation. WITHIN 30 DAYS OF COMMISSION ACTION ON THIS COASTAL DEVELOPMENT PERMIT APPLICATION,** or within such additional time as the Executive Director may grant for good cause, the Permittee shall submit two copies of a Coastal Resource Impact Mitigation Plan for Executive Director review and approval. The Mitigation Plan shall provide for the installation of the following public recreational access improvements in the publicly accessible area at the north end of the sand spit just past the north end of Sandholdt Road: (a) two benches that are oriented with one facing out towards the beach and ocean west of Sandholdt Road, and one facing towards the Harbor and Elkhorn Slough; (b) one bike parking rack for at least four bicycles; (c) one picnic table; (d) one interpretive sign that educates and informs the public of the sensitivity of the adjacent dunes and sloughs and the history of Moss Landing Harbor; and (e) pathways, as necessary, to provide easy access from the end of Sandholdt Road to the public recreational access improvements. The Permittee shall maintain all such improvements in their approved state, including replacing any improvements that are damaged or destroyed by natural or man-made causes.

Within 90 days of Executive Director approval of the Coastal Resource Impact Mitigation Plan, the Permittee shall submit evidence to the Executive Director for review and written approval that the public recreational access improvements have been installed and are available for public use. The Permittee shall provide and maintain the public recreational access improvements consistent with the approved Mitigation Plan. Any proposed changes to the approved Mitigation Plan shall be reported to the Executive Director. No changes to the approved Mitigation Plan shall occur without an amendment to this CDP unless the Executive Director determines that no amendment is required.

## **IV. COASTAL DEVELOPMENT PERMIT DETERMINATION**

### **A. Project Location**

The project site is located along the shoreline frontage of Gravelle's Boatyard at the north end of Sandholdt Road along Moss Landing Harbor in the small unincorporated town of Moss Landing in northern Monterey County. Moss Landing is located near the middle of Monterey Bay between the cities of Santa Cruz (approximately 26 miles north) and Monterey (approximately 18 miles south), and between two river systems, the Pajaro River (approximately 1.5 miles north) and the Salinas River (approximately 4 miles south) (see Exhibit 1 for regional location and site vicinity map, and an aerial photo of the harbor area.). The harbor lies just west of Highway 1 where Elkhorn Slough meets the Pacific Ocean. The Monterey Bay National Marine Sanctuary, which is generally located between Marin and San Luis Obispo Counties, extends some 35 miles offshore. The Monterey Bay National Marine Sanctuary is the nation's eleventh and largest marine sanctuary, protecting marine resources that include the nation's most expansive kelp forests, one of North America's largest underwater canyons (Monterey Canyon), and the closest

deep ocean environment to the continental United States.

Moss Landing Harbor was first created in 1947 when the United States Army Corps of Engineers first dredged the mouth of Elkhorn Slough near the northern extent of the Old Salinas River mouth for harbor purposes. The Harbor occupies a portion of the Old Salinas River channel<sup>1</sup> paralleling the coast and separated from the ocean by sand spits and dunes. Permanent jetties placed along the north and south sides of the entrance provide year-round access to the Pacific Ocean. Tide gates along the north and south ends of the Harbor allow for muted tidal activity within Bennett Slough to the north, as well as in the Moro Cojo Slough and the Old Salinas River channel to the south. The 4,000-acre Elkhorn Slough watershed lies east of Highway 1 and is hydrologically linked with the harbor through which daily tides flow.

The Harbor entrance and Elkhorn Slough channel basically divide the Moss Landing Harbor into two parts, referred to as the North and South Harbor areas, respectively (see Exhibits 1 and 2). The North Harbor area occupies a portion of the Old Salinas River near its confluence with Bennett Slough, and the South Harbor area occupies portions of both the Old Salinas River and the mouth of Moro Cojo Slough. Lands to the west of the Harbor are made up of sand flats and sand dunes that have built atop the sand spits of the Old Salinas River. Beach strand and dune fields located in the Moss Landing and Zmudowski State Beaches make up the coast north of the Harbor entrance, which extends to the mouth of the Pajaro River. Similarly, beach strand and developed beach dunes make up the coast shoreline south of the Harbor entrance.

East of the Harbor lie the mud flats and tidal marshes of the Elkhorn Slough watershed, which extends inland for nearly seven miles. Upland areas immediately surrounding the Harbor are made up of low rolling hills, which reach about 20 feet in elevation.

The North Harbor is currently home to approximately 155 recreational motor and sail boats, the Elkhorn Yacht Club, a commercial kayaking center, and the Sea Harvest restaurant. The South Harbor is home to approximately 455 commercial, research, and recreational boats, including most of the commercial fishing and oceanographic research vessels. The South Harbor area also includes multiple onshore commercial fishing, marine industrial, and oceanographic research facilities built along Sandholdt Road.

As a result of the harbor's proximity to both deep-water marine environments immediately offshore and estuarine environments and tidal sloughs inland, the harbor is highly valued for the commercial fishing, research and recreational boating and educational opportunities this location provides. Moss Landing Harbor is one of only six harbors located along the Central Coast area, and is the largest fishing port between San Francisco and Los Angeles with fish landings in excess of 27.5 million pounds per year.

## **B. Project Background and Description**

In general, because of its location at the bottom of two major watersheds, Moss Landing Harbor is a depositional sink for fine-grained sediments, especially following major storms that carry

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<sup>1</sup> The Old Salinas River channel refers to the area where the Salinas River historically entered the Pacific Ocean Today, the Salinas River flows into the Pacific Ocean several miles to the south.



large volumes of sediment from the Salinas Valley watershed via the Old Salinas River. Similarly, fine-grained sediments eroded from the Elkhorn Slough watershed ultimately end up in the harbor as well. Sand-sized material transported by longshore currents also gets trapped in the entrance channel forming shoals, and onshore winds transport beach and dune sands into the North Harbor, forming sand bars that sometimes extend east into the North Harbor navigation channel. Excessive sediment deposition in the harbor can impede navigation in berthing areas, navigation channels, turning basins, and boat ramp areas, which in turn restricts movement of commercial fishing, recreational, and marine research vessels and the activities they support. Maintenance dredging is periodically necessary to maintain navigable depths in these areas.

At the same time, and starting in the late 1990s, erosion of the sandbars adjacent to the harbor entrance channel and Gravelle's Boatyard began to accelerate. According to the Applicant, in one single storm event in January 2001, over 25 feet of shoreline erosion occurred undermining the boatyard work and storage areas. Armoring has for now forestalled any further erosion of the project site, but evidence of ongoing shoreline erosion can be easily seen on aerial photographs of the unarmored property immediately adjacent to the north (see Exhibit 3).

In response to the large erosion and scour events in January 2001, an emergency permit was issued (emergency CDP 3-01-010-G; issued February 9, 2001) that authorized the temporary placement of approximately 150 cubic yards of quarter-ton rock along the edge of the Boatyard and storage area that had been scoured out. The revetment structure is approximately 161 feet in length, 10-feet in height, with a 2,415 square-foot footprint, and extends north of the Travelift hoist, up to the Applicant's northern property line. Although the Applicant previously submitted two applications to regularly permit the revetment, those applications were never completed and as such the revetment is not currently permitted. Accordingly, this CDP application seeks after-the-fact approval for the rip-rap revetment in its current configuration. Although the development exists, it has not previously been authorized by a CDP, and therefore, for Coastal Act analytical purposes, the evaluation of the proposed development is as if it is not yet in place.

See Exhibit B for project plans and see Exhibit C for photographs of the project site.

### **C. Standard of Review**

The proposed project is located within the Commission's retained CDP jurisdiction and thus the standard of review is the Coastal Act. As relevant, the Monterey County certified LCP can provide non-binding guidance. However, the LCP and Coastal Act policies are very similar in regards to allowing shoreline armoring and eliminating or mitigating for its impacts. Thus, the LCP policies do not provide significantly different policy direction in this case.

### **D. Hazards**

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

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

*stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

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

*New development shall do all of the following:*

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

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

In general, shoreline armoring has a number of impacts on the coast, including but not limited to impacts from beach encroachment, fixing the back of the beach, and preventing the natural erosion of coastal bluffs that provides sandy material to the nearby beaches. As a result, the Coastal Act is premised on both hazard avoidance and shoreline armoring avoidance. However, when required to serve coastal-dependent uses, under Coastal Act Section 30235, shoreline protective structures may be approved if the required protection is designed to eliminate or mitigate the adverse impacts on shoreline sand supply.

### **Shoreline Protection Required to Serve Coastal-Dependent Use**

There is evidence that the existing boatyard facility at this location dates back to before 1972, and therefore the use predates the coastal permitting requirements of both 1972’s Proposition 20 (the Coastal Initiative) and the 1976 Coastal Act. Gravelle’s Boatyard provides a vital function as the sole boat haul-out and repair facility within Moss Landing Harbor. The boatyard is the only such facility equipped with a travelling hoist that can accommodate large commercial fishing and research vessels that moor in the harbor. The entire 2-acre site is used to haul-out, store, and repair large vessels, and is for the purposes of Coastal Act Section 30235 a coastal-dependent use.

The proposed shoreline protection is required to protect the boatyard because the site is in danger from erosion. The Applicant submitted a written description of the significant erosion event that occurred prior to the issuance of the emergency permit in 2001, as well as site photographs, and a summary of the site conditions (from a licensed Geotechnical Engineer) prepared in the aftermath of the erosion event to document that the boatyard is in danger from shoreline erosion,

and that the proposed armoring is required. The photographs show a significant amount of retreat and shoreline loss along the harbor-fronting eastern edge of the property. The written account of the event states that several boats were undermined when the shoreline eroded, causing at least one boat to topple onto its side and placing others in imminent danger. These reports also document the project need and purpose, the immediacy of the threat, and the reasons that the Applicant selected the current alternative as the most appropriate for the circumstances.

The proposed project site is located on the west side of the south harbor and almost immediately adjacent to the harbor entrance channel. Like the rest of the Harbor and other facilities located along Sandholdt Road here, the site is located atop what were historically sand dunes. Undeveloped sites here still display dune properties, but long developed sites, like the boatyard, don't generally have the outward appearance of dunes. Still, the underlying geologic substrate is generally sandy. These sandy soils are easily erodible and, when subject to scour and wave action from waves refracting around the south entrance channel jetty, can lead to significant shoreline loss. As reported by the Applicant, in January 2001, storm surge coincided with rainy conditions and extreme high tides to destabilize and rapidly erode the eastern edge of the property. Erosion of the boatyard shoreline continued over a 48-hour period causing the loss of more than 25 feet of boat storage and repair area. This type of event has repeated itself to varying degrees several times in the past 12 years. Evidence of its effects are clearly seen in aerial photographs of the neighboring property to the north which has experienced more than 40 feet of additional erosion (see Exhibit 3). Without the proposed shoreline armoring, this vital aspect of the commercial fishing, research and recreational boating operations in Moss Landing harbor will be lost.

Thus, for the purposes of Coastal Act Section 30235, the boatyard and related elements are coastal-dependent uses that require shoreline protection.

### **Least Environmentally Damaging Alternative**

To forestall ongoing erosion at the site, the Applicant placed 150 cubic yards of quarter-ton rock along the harbor edge of the boatyard and storage area immediately to the north of the Travelift hoist. The revetment extends across roughly half of the property (i.e., all areas north of the Travelift hoist). There are several potential alternatives to the proposed revetment, but none of these alternatives is feasible at this time.

First, vegetated berms and other "soft" fixes such as beach nourishment are not suitable at this location near the harbor entrance channel where wave action, scour, and tidal surges are strongest. The shoreline edge is made up of mainly sandy soils and unconsolidated earthen materials which are easily and quickly eroded, and under these circumstances any such soft alternatives would require constant maintenance to remain effective. Even then, it is not clear that they can be successfully used to protect the facilities.

Second, another potential alternative is a vertical seawall or bulkhead. Vertical walls can be as effective as revetments, or more so, at reducing the effects of erosion and scour, and can also minimize impacts on visual, biological and public access resources. Currently, few vertical walls exist within the harbor. One reason why there may be few vertical walls in this harbor is that they are significantly more expensive than rip rap revetments. In 2009, the cost of constructing a bulkhead at Gravelle's Boatyard was estimated at \$938,000 (not including "soft" costs such as

engineering, permitting, etc.), as opposed to the \$30,000 the Applicant spent to construct the rip-rap revetment in 2001. If the rest of the Harbor edge were maintained in a vertical manner, then a vertical option may make more sense here, as there could be economies of scale in constructing numerous vertical walls. As it is, with a nearly \$1 million price tag and a Coastal Act priority use to be protected and maintained, the rip-rap revetment is the most appropriate alternative available for this purpose at the current time.

In the future, however, a bulkhead or more vertical configuration may be a more feasible option. Monterey County is currently working on an update to the LCP's Moss Landing Community Plan (MLCP) that, among other things, is intended to identify appropriate responses to erosion along the inner harbor shoreline, including whether rip-rap revetments or some other form of Harbor edge (i.e., vertical walls, bulkheads, etc.) are most appropriate. After certification, the MLCP will provide a comprehensive planning framework to guide future development and re-development within the community of Moss Landing, including Moss Landing Harbor, and will be critical in determining the appropriate erosion response in the future. The issue areas relevant to Moss Landing Harbor and included within the context of the MLCP update include land use and development, biological resources, shoreline erosion, effects of sea level rise, harbor dredging, and specific area plans for shoreline fronting parcels. The current draft of the MLCP contains policies that give priority to commercial fishing, conservation of wetlands, dunes, and other natural resources, improving tidal circulation, and addressing shoreline erosion and sea level rise. With regard to these last two issues, the MLCP is taking a close look at shoreline armoring and the range of feasible alternatives available to address these issues including via rip-rap revetments, vertical walls, bulkheads, and in some locations, vegetated berms. It may be that a bulkhead could be a more feasible option for providing protection to the existing site if it is constructed as part of a comprehensive plan to address shoreline armoring, if such a plan is included in the MLCP.

In addition, the MLCP also contains a specific plan for the Gregg Marine property immediately south of Gravelle's Boatyard that involves redevelopment of the site with marine-related operations and structures, a new side-tie pier for vessels, and a concrete bulkhead along the shoreline that would extend north towards the Gravelle's Boatyard site. There is a possibility that the Gregg Marine project could extend onto the Gravelle's Boatyard site, including where redevelopment of the site might also include installation of some form of vertical seawall/bulkhead that would allow vessels to berth close to the shoreline. Although redevelopment of the site(s) is in the very early planning stages, the vertical bulkhead option is part of the discussion and will likely extend to Gravelle's Boatyard as well. The cost of constructing a vertical bulkhead in the future could be reduced for Gravelle's Boatyard if planning efforts are realized and there is a bulkhead across both properties. Such a scenario would make this alternative more economically feasible. Therefore, at this time, a vertical wall option is not feasible, but it may become feasible in the future, when policy guidance is clearer, and a more comprehensive response to erosion in the harbor is pursued.

Given that a rip-rap revetment is the least damaging feasible alternative at this site at this time, the final question is whether the revetment is designed to minimize impacts. Fortunately, the proposed revetment design is for the minimum amount of rip-rap rock necessary to adequately define the edge of the harbor and protect existing upland boatyard facilities. The size and design of the rock slope protection is similar to the rock revetment slope protection located at other sites

in Moss Landing Harbor, and the proposed project uses the minimum quantity of rock, thereby minimizing the amount of fill required to serve the coastal-dependent use. Thus, the project as proposed is the least environmentally damaging, feasible alternative.

### **Sand Supply Impacts**

The final test of section 30235 is that shoreline armoring must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

#### ***Shoreline Processes***

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, typically becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gulying, and other processes (collectively termed mass wasting by geomorphologists). Along the Central Coast, examples of each of these beach-forming processes can be seen.

The natural shoreline processes affecting the formation and retention of the beach and beach material can be significantly altered by the construction of shoreline armoring structures. When the back-beach or toe of slope is armored by a shoreline protective device, the natural contribution of loose material to the beach will be interrupted. To the extent that the slopes produce material, and to the extent that the shoreline is eroding, shoreline armoring will deprive the beach of a measurable amount of replacement material.

Some of the effects of armoring structures on the beach and shoreline (such as scour, end effects and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify these areas. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, however, including: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach 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.<sup>2</sup>

#### ***Encroachment on the beach***

Shoreline protective devices are all physical structures that occupy space. When a shoreline protective device is placed on a beach area, the underlying beach area cannot be used as beach. This typically results in a loss of public access as well as a loss of sand and/or areas from which sand-generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it spreads seaward over time. The beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint. In this case, the total footprint of the proposed armoring occupies roughly 2,415 square feet of beach space resulting in a 2,415 square-foot beach encroachment area.

#### ***Fixing the back beach***

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<sup>2</sup> The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately typically translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the proposed project would impact sand supply processes.

Experts generally agree that where the shoreline is eroding and armoring is installed, as is the case here, the armoring will eventually define the boundary between the sea and the upland. On an eroding shoreline, a beach will exist between the shoreline/waterline and the toe of the slope behind the beach, as long as sand and/or material is available to form a beach. As shoreline erosion proceeds, the profile of the beach also retreats and the beach area migrates inland with the bluff. This process stops, however, when the backshore is fronted by a hard protective structure such as a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, the shoreline in front of the armor eventually stops at the armoring. The beach area will narrow, being squeezed between the moving shoreline and the fixed backshore. Eventually, there will be no available dry beach area and the shoreline will be fixed at the base of the structure. This phenomenon is often referred to as passive erosion. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising slightly for many years. There is also a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature (some shoreline experts have indicated that sea level could rise 4.5 to 6 feet by the year 2100).<sup>3</sup> Mean sea level affects shoreline erosion several ways, and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. This, too, leads to loss of the beach as a direct result of the armor as the beach is squeezed between the landward migrating ocean and the fixed backshore.

Such passive erosion impacts can be calculated over the time the proposed armoring is expected to last. In this case, the Applicant has not indicated an expected lifetime for the proposed armoring. However, it has been the Commission's experience that the actual expected lifespan of shoreline armoring projects is limited due to the need for major maintenance or modifications, or entire redevelopment of an armoring structure within approximately twenty years. Therefore, as discussed further below, this permit is limited to a 20-year authorization, and the impacts of this project due to passive erosion are limited to the impacts caused during the 20-year period.

The Commission has established a methodology for calculating passive erosion, or the long-term loss of beach due to fixing the back beach. This impact is equivalent to the footprint of the bluff area that would have become beach due to erosion and is equal to the long-term average annual erosion rate multiplied by the width of property that has been fixed by a resistant shoreline protective device.<sup>4</sup> In this case, the proposed riprap revetment extends along the edge of the harbor, fixing a total of 161 linear feet of shoreline with a protective device. The armoring footprint also covers some area of beach (as described above) and for purposes of determining

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<sup>3</sup> The California Climate Action Team has evaluated possible sea level rise for the California coast and, based on several of the Intergovernmental Panel on Climate Change (IPCC) scenarios, projected sea level rise up to 1.4 meters (4.5 feet) by 2100. These projections are in line with 2007 projections by Stefan Rahmstorf ("A Semi-Empirical Approach to Projecting Future Sea-Level Rise", *Science*; Vol 315, 368 – 370. Research by Pfeffer et al. ("Kinematic Constraints on Glacier Contributions to 21<sup>st</sup>-Century Sea-Level Rise", *Science*, Vol, 321, 1340 – 1343) projects up to 2 meters of sea level rise by 2100.

<sup>4</sup> 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:  $A_w = R \times L \times W$ . The annual loss of beach area can be expressed as  $A_w' = R \times W$ .

the impacts from fixing the back beach, it is assumed that new beach area would result from landward retreat of the bluff.

The unaltered shoreline in the vicinity of the project has retreated between 40 and 65 feet since the late 1940's when the harbor was created, which is roughly between 7.5 – 12 inches per year. The dramatic change in conditions is evident in aerial time-series photographs of the vicinity. Given the generally sandy materials and location relative to the harbor entrance channel as well as future sea level rise, it is not unreasonable to presume an average rate of 1-foot annually for calculating passive erosion impacts. Therefore, the impacts from fixing the back beach, as calculated using the Commission's identified methodology, will be the annual loss of 161 square feet of beach. Over the 20-year permit horizon, this would result in a loss of 3,220 square feet of beach that would have been created if the back beach had not been fixed by the revetment.

### ***Retention of potential beach material***

Finally, if natural erosion were allowed to continue at the project site, some amount of beach material would be added to the beach at this location, as well as to the larger littoral cell sand supply system outside the harbor. The volume of total material that would have gone into the sand supply system over the lifetime of the revetment would be the volume of material between (a) the likely future bluff-face location with the revetment; and (b) the likely future bluff-face location without the revetment. 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 that is beach sand, giving the total amount of sand that would have been supplied to the littoral system for beach deposition if the proposed device were not installed. In this case, the underlying material is roughly 80% sand. The Commission has established a methodology for identifying this impact<sup>5</sup> that equates to 47.7 cubic yards of sand per year for the proposed project. Over the course of the identified 20-year horizon, this equates to a retention impact of 954 cubic yards of beach quality sand.

### ***Length of permit authorization***

As previously discussed, it has been the Commission's experience that the actual expected lifespan of shoreline armoring projects is limited due to the need for major maintenance or modifications, or entire redevelopment of an armoring structure, often within approximately twenty years. In this case, the proposed shoreline armoring structure is subject to wave action, daily tidal variation, and scour as evidenced by the eroding shoreline conditions here and at the unarmored property directly upcoast. As shown in March 2011, tsunamis are also a very real threat to shoreline devices and infrastructure within the harbor. The combination of wave action,

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<sup>5</sup> The equation is  $V_b = (S \times W \times L) \times [(R \times h_s) + (1/2h_u \times (R + (R_{cu} - R_{cs})))]/27$ . Where:  $V_b$  is the volume of beach material that would have been supplied to the beach if natural erosion continued (this is equivalent to the long-term reduction in the supply of bluff material to the beach resulting from the structure);  $S$  is the fraction of beach quality material in the bluff material;  $W$  is the width of property to be armored;  $L$  is the design life of structure, if assumed a value of 1, an annual amount is calculated;  $R$  is the long term average annual erosion rate;  $h_s$  is the height of the shoreline structure;  $h_u$  is the height of the unprotected upper bluff;  $R_{cu}$  is the predicted rate of retreat of the crest of the bluff during the period that the shoreline structure would be in place, assuming no seawall were installed (this value can be assumed to be the same as  $R$  unless the Applicant provides site-specific geotechnical information supporting a different value);  $R_{cs}$  is the predicted rate of retreat of the crest of the bluff, during the period that the revetment would be in place, assuming the revetment has been installed (this value will be assumed to be zero unless the Applicant provides site-specific geotechnical information supporting a different value); and divide by 27 (since the dimensions and retreat rates are given in feet and volume of sand is usually given in cubic yards, the total volume of sand must be divided by 27 to provide this volume in cubic yards, rather than cubic feet).

tides, tsunamis, and shoreline scour are expected to be exacerbated by sea level rise over time, with resultant impacts to the strength and integrity of the shoreline armoring. Pictures of the revetment at this site show that in the past 10 years it has suffered some damage, including through the seaward migration of some of the rocks that make up the revetment. Rising sea levels and attendant consequences will tend to increase such damage in the future, potentially dramatically, depending on how far sea level actually rises. The existing damage to the revetment, ten years after its installation, is consistent with the assumption that it is likely to need major repairs and/or redevelopment in approximately 10 more years.

The other factor that is appropriate to consider when identifying a particular time horizon for an armoring structure is the changing and somewhat uncertain nature of the context affecting coastal development decisions regarding armoring (including not only climate change and sea level rise, but also due to legislative change, judicial determinations, etc.). In this case, and as discussed above, Monterey County is working on an update to the Moss Landing Community Plan, which will be developed over the next several years. As described above, the MLCP will evaluate the range of feasible alternatives available to address shoreline erosion including via rip-rap revetments, vertical walls, bulkheads, and in some locations “soft” fixes (i.e., vegetated berms) in the harbor. The MLCP may include policy recommendations to pursue revetment alternatives in the near future.

Furthermore, there have been a variety of redevelopment scenarios discussed relative to the Gravelle’s Boatyard site in tandem with the adjacent Gregg Marine site, including the potential for using a vertical bulkhead of some type across the properties as the way of maintaining the harbor’s edge.

Given the typical economic life of revetments in shoreline environments, the evidence of damage to this revetment in the first ten years after its construction, as well as the near-term potential for less environmentally damaging alternatives, including soft armoring and/or a vertical bulkhead, the Commission imposes Special Condition 4, which limits this approval to a twenty-year period. This limitation allows the Applicant and Commission to respond to potential changes and uncertainties in the future, including allowing for a reassessment of continued armoring and its effects, in light of what may be differing circumstances than are present today, including the revetment’s physical condition after twenty years of hard service.

In addition, the understanding of climate change and sea level rise should improve in the future, given that we should have a better understanding of the atmospheric and oceanic linkages and more time to observe the oceanic and glacial responses to increased temperatures, including trends in sea level rise. Such improved understanding will almost certainly affect CDP armoring decisions, including at this location. Of course it is possible that physical circumstances as well as local and/or statewide policies and priorities regarding shoreline armoring are significantly unchanged from today, in which case the Applicant would have the same right to construct or retain his revetment as he does today.

For these reasons, the Commission limits the term of the coastal permit to 20 years from the date of the original emergency CDP approval (i.e., until February 9, 2021). In addition, Special Condition 4 also recognizes that the revetment is being approved under Section 30235 to protect the existing coastal-dependent use, which is in danger from erosion. Coastal Act consistency is



only maintained when such coastal-dependent use is present and in danger. If, for whatever reason, the now existing coastal-dependent use warranting armoring is no longer present and/or no longer requires armoring for such protection before the expiration of the twenty years approval, then the approval will no longer be valid. In other words, this approval is for a twenty-year period or the time when the existing use is no longer present and/or no longer requires armoring, whichever comes first. Further, the approval is specific to the commercial boatyard and use as it now exists, and not for a replacement or significantly redeveloped facility/operation. Any such future replacement or redevelopment must be considered independent of the armoring allowed here.

***Sand supply impacts conclusion***

The proposed project would result in quantifiable shoreline sand supply impacts. There would be loss of beach area due to: 1) placement of a rip-rap revetment onto approximately 2,415 square feet of beach that otherwise would be available for public use; 2) fixing of the back beach location, resulting in the loss of 3,220 square feet of beach that would have been created over the 20-years for which this revetment is approved; and; 3) retention of 954 cubic yards of beach quality sand over the 20-years for which this revetment is approved (47.7 cubic yards of sand material per year). Over twenty years, these impacts would equate to a total of 5,635 square feet of lost beach area and the loss of 954 cubic yards of beach quality sand.

As discussed above, the proposed rip-rap revetment would be located in an area of the south harbor that is dedicated primarily to commercial fishing and scientific/research uses including large vessel repair operations at Gravelle's Boatyard. The nearest public beach is located across Sandholdt Road on the beaches fronting the western edge of the spit. There are no public recreational beach areas *within* the south harbor, and although there is sand in the intertidal area fronting the edge of the harbor, it is only accessible during low tides. Further, at this location, even during low tide conditions public access at this beach is not appropriate because it is situated immediately seaward of a working commercial harbor operation, which makes the beach unsafe for public recreation. Although the proposed development covers sandy beach area, it is not beach area used for recreation, so the placement of the revetment here does not directly displace public access and recreation due to the footprint of the revetment.

However, sand trapped within the inner harbor sometimes can and does contribute to the sand supply system, including the Monterey Bay littoral cell and area beaches. The harbor district dredges sediment to keep navigation channels and berths open for safe passage of commercial fishermen, recreational fishermen, and research vessels. Uncontaminated dredged materials are disposed at two offshore unconfined discharge sites (SF-12 and SF-14) and at three beach nourishment sites located north and south of the harbor entrance (Moss Landing State Beach, North Jetty Beach, and South Jetty Beach). Finer-grained sediments (generally greater than 20% mud) are generally disposed at the offshore sites, and more sandy materials (generally 80% or more sand) are generally placed at the beach locations. Moss Landing Harbor has typically dredged approximately 50,000 cubic yards of sediment every three years or so, although a recent permit (CDP 3-01-049) has allowed upwards of 100,000 cubic yards per year to be removed. Thus, the 954 cubic yards of beach quality sand over the 20-years for which this revetment is approved can be considered a potential source of beach sand that will be lost due to the project.

It has proven difficult over the years to identify appropriate mitigation for such impacts. Partly this is due to the fact that creating an offsetting beach area is not an easy task, and finding appropriate properties that could be set aside to become beach area over time (through natural processes, including erosion) is difficult both due to a lack of such readily available properties and the cost of such coastal real estate more broadly. There are no readily available properties of this sort in the vicinity. In similar cases, the Commission has approved other types of mitigation for public recreational impacts, such as in-lieu fees and/or beach nourishment, and in some cases compensatory beach access and other similar access improvements. With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system over time to mitigate the loss of sand that would be caused by a protective device over its lifetime. Obviously, given the right circumstances such an introduction of sand, if properly planned, can feed into the Monterey Bay littoral cell sand system to mitigate the impact of the project. If this impact were to be mitigated through a beach nourishment effort, the impacts would be comparable to the deposition of about 47.7 cubic yards of beach quality sand (or roughly 5 large truck loads) of beach-quality sand yearly. Absent a larger comprehensive program that provides a means to coordinate and maximize the benefits of several mitigation efforts in the area now and in the future, the success of piecemeal mitigation efforts, such as an Applicant-only project to drop equivalent amounts of sand over time at this location, is questionable.

As an alternative mitigation mechanism, the Commission oftentimes uses a mitigation payment when in-kind mitigation of impacts is not available.<sup>6</sup> In situations where ongoing sand replenishment or other appropriate mitigation programs are not yet in place, the mitigation payment is deposited into an account until such time as an appropriate program is developed, and the funds can then be used to offset the designated impacts. When mitigation funds are pooled in this way for multiple projects in a certain area, the cumulative impacts can also be better addressed inasmuch as the pooled resources can sometimes provide for a greater mitigation impact than a series of smaller mitigations based on individual impacts and fees. Based on an estimated range of costs for beach quality sand in this vicinity ranging from \$25 to \$50 per cubic yard delivered (or possibly more), a mitigation payment in this case would range from about \$23,850 to \$47,700.<sup>7</sup>

Another alternative mitigation also often applied by the Commission is using public recreational access improvements to offset impacts from encroachment, passive erosion and loss of bluff materials. Such mitigation has been applied by the Commission to public agencies that manage public access when they have applied for armoring projects<sup>8</sup> as well as to private applicants.<sup>9</sup> In this case, public access to the south jetty beach, harbor, and harbor jetty exists nearby at the northern end of Sandholdt Road, approximately 300 feet north of Gravelle's Boatyard. Access at these locations is unmanaged and there are very few improvements. The policies of the LCP's

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<sup>6</sup> See, for example, CDP A-3-SCO-06-006 (Willmott), CDP A-3-SLO-01-040 (Brett), CDP 3-98-102 (Panattoni) and CDP 3-97-065 (Motroni-Bardwell).

<sup>7</sup> Based on 954 cubic yards of such sand purchased today for \$25 per cubic yard (\$23,850) or \$50 per cubic yard (\$47,700).

<sup>8</sup> For example, as recently required with respect to recreational access improvements along the Pleasure Point shoreline area of Santa Cruz County as part of the Commission's approval of a seawall fronting East Cliff Drive (CDPs A-3-SCO-07-015 and 3-07-019).

<sup>9</sup> See, for example, CDP 3-02-107, Podesto.

North County Land Use Plan and the Moss Landing Community Plan support the development of low and moderate cost access and recreational facilities consistent with the protection of sensitive natural resources. Installation of benches, bike racks, picnic tables, etc., together with interpretive signing that educates and informs the public of the sensitivity of the surrounding dune environment and the history of Elkhorn Slough and Moss Landing Harbor would be a significant addition to the access and recreational amenities in the area. Consistent with this guidance, Special Condition 6 is attached requiring the installation of interpretive signs, benches, tables, bike racks, and pathways if necessary to provide easy access from Sandholdt Road. Improvement of these public facilities in the manner described would represent a significant recreational benefit and appropriate mitigation measure to offset the project's sand supply impacts.

In this case, the Commission finds that in-kind recreational mitigation measures appear feasible, and are the preferable approach to mitigation of recreational resource impacts of the proposed project at Gravelle's Boatyard. Therefore, this permit is conditioned for in-kind recreational offsets, rather than beach replenishment or an in-lieu fee, as the most appropriate and reasonable mitigation method, given the above-described factors. Commission staff has collaborated with the Applicant and Harbor District to identify appropriate in-kind recreational resource mitigation measures. The resulting agreement is memorialized and is reinforced by Special Condition 6.

Accordingly, as conditioned, the proposed project mitigates impacts on sand supply through in-kind recreational resource benefits. Therefore, the project satisfies the Coastal Act Section 30235 requirements regarding mitigation for sand supply impacts.

#### **Long-Term Stability, Maintenance, and Risk**

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. Given the location near the harbor entrance that is susceptible to waves, tidal surges, and episodic tsunami events, the main Section 30253 concern is in ensuring that the proposed project is maintained in its approved state. In order to ensure that the Applicant and the Commission know when repairs or maintenance are required, the Applicant must regularly monitor the condition of the subject armoring, particularly after major storm events. Such monitoring will ensure that the Applicant and the Commission are aware of any damage to or weathering of the armoring and can determine whether repairs or other actions are necessary to maintain the seawall structure in its approved state before such repairs or actions are undertaken.

To ensure that the proposed project is properly maintained to ensure its long-term structural stability, Special Condition 2 requires regular monitoring of the revetment. Said monitoring shall provide for evaluation of the condition and performance of the proposed project and shoreline stability, and shall provide for necessary maintenance, repair, changes or modifications. Special Condition 2 further allows the Applicant to maintain the project in its approved state, subject to the terms and conditions identified by the special conditions. The Commission is only able to ensure the Applicant's compliance with Special Condition 2 if it has clear as-built plans showing the shape and condition of the approved revetment. Therefore, Special Condition 1 of this approval requires the submittal of as-built plans to define the footprint and profile of the permitted revetment in its approved state. As described above, there has already been some

damage to the revetment, so the as-built plans should reflect the approved footprint and profile of the revetment (i.e., as installed), not its current slightly degraded condition.

In terms of recognizing and assuming the hazard risks for shoreline development, the proposed project has been designed to maximize the safety and stability of the boatyard repair and haul-out facility including the Travelift boat hoist. However, given that the hoist, piers, repair and storage yard are located within and immediately adjacent to a harbor channel, the project still has the potential to be subject to hazards associated with episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunamis, tidal scour, coastal flooding, and the interaction of same. Therefore, Special Condition 5 has been included to require that the Applicant assume the risks of injury and damage associated with these potential hazards as they relate to the proposed project and indemnify and hold harmless the Commission against any claims, damages, or costs associate with damage caused by such hazards.

For the reasons discussed above and as conditioned herein, the Commission finds that the proposed project is consistent with Sections 30235 and 30253 of the Coastal Act.

#### **E. Marine Resources**

The relevant Coastal Act policies state:

*Section 30230: Marine resources shall be maintained, enhanced, and, where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

*Section 30231: The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The Moss Landing Harbor provides the vital link between the tidal waters of Monterey Bay and Elkhorn Slough. Marine mammals, fish and seabirds make use of both the aquatic and terrestrial environments provided within the harbor, the Slough and the Bay. Harbor seals and sea otters make their way through the harbor to established haul-outs in Elkhorn Slough, and they have been observed in the south harbor vicinity of the project site. Pelicans and other shorebirds have also been observed resting or foraging in the vicinity. The tidal marsh and mudflats that fringe the north harbor (across the entrance channel from the project site) area also serve as resting and foraging grounds for harbor seals, sea otters, and various shorebirds. Whereas environmentally sensitive habitats still exist in the north harbor (including tidal flats, eelgrass beds, sandy beaches and sandy dune areas), the south harbor area near the project site has been heavily used by

commercial and recreational boaters since the opening of the harbor in the mid 1940's, and has lost much of the fringing salt marsh and benthic environments that once existed. The north harbor has had relatively little development over the same time period, and so has retained at least some of the natural habitats that existed in the area prior to the opening of the harbor entrance channel, and the related introduction of increased tidal currents that now flow in and out of Elkhorn Slough.

Benthic fauna may be impacted (crushed and displaced) by rip-rap installation. However, since natural disturbance of the harbor bottom is high and benthic fauna are generally considered to be sparse and transitory in nature, these species are not expected to be significantly adversely affected by these activities at this location. Most benthic invertebrates are able to adapt to such changes due to their ability to migrate to suitable depths and bottom habitats. Additionally, based on notes from the biotic survey of the nearshore intertidal area, there appear to be very few organisms present in the sandy areas fronting the project site.

Regarding future revetment maintenance activities in its approved configuration, such construction would likely occur from the boatyard, avoiding the need for equipment in the water, and minimizing impacts on marine resources and water quality. However, construction activity at the water's edge always has the potential to cause adverse impacts. Therefore, Special Condition 2 requires maintenance activities to be conducted in accordance with the construction methods typically required by the Commission to protect water quality and marine resources during armoring construction, including maintaining good construction site housekeeping controls and procedures, the use of appropriate erosion and sediment controls, a prohibition on equipment washing, refueling, or servicing on the beach, etc. As conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitat.

#### **F. Public Access and Recreation**

Coastal Act Sections 30210 through 30224 specifically protect public access and recreational opportunities, including visitor-serving resources. In particular:

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

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

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

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

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

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

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

*Section 30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.*

As discussed in the finding above, shoreline structures can have a variety of negative impacts on coastal resources including adverse effects on beaches and sand supply, which ultimately result in the loss of the beach with associated impacts to public recreational access. In this case, covering 2,415 square feet of beach with the revetment and narrowing the beach space by approximately 3,220 square feet over the 20-year authorization period (due to passive erosion) does not impact public recreational access to such beach area because the beach here is accessible only at lower tides and is located immediately seaward of a working boatyard where beach access is thus limited, seldom used, and not even particularly safe (see also previous findings on these points). Given the unique circumstances of the area, the proposed project's impact to sand supply, and ultimately to public recreational access, is due to bluff retention of 954 cubic yards of sand over the 20-year authorization period. Such materials would contribute to beach formation and retention but for the revetment.

To offset these impacts to beaches, mitigation is necessary. Therefore, the approved project includes in-kind public recreational access improvements (e.g., benches, bike racks, picnic table, interpretive sign, etc.) to offset impacts from the loss of bluff materials (see Special Condition 6). Improvement of these public facilities in the manner described would represent a significant recreational benefit and appropriate mitigation measure to offset public recreational access impacts.

In conclusion, and because the approval is only for twenty years, which allows for an appropriate reassessment of continued armoring and its effects at that time in light of what may be differing circumstances than are present today (see Special Condition 4), these mitigations can appropriately offset the public recreational access impacts associated with the proposed project for the twenty year approval of the project. As conditioned, the project is consistent with the Coastal Act access and recreation policies sited above.

#### **G. Other Agency Approvals**

The Applicant owns the upland site, but any portion of the revetment that is seaward of the mean high tide line is located on state tidelands, which in this case have been granted to the Moss

Landing Harbor District. As such, the proposed revetment expansion project may need to be authorized by the Moss Landing Harbor District. In addition, portions of the project may be located within the jurisdiction of the Army Corps of Engineers, Monterey Bay National Marine Sanctuary, and the California Department of Fish and Wildlife. Accordingly, this approval is conditioned to ensure that the project (as conditioned and approved by this CDP) has received all necessary authorizations (or evidence that none are necessary) from other agencies (see Special Condition 3).

## **H. Unpermitted Development**

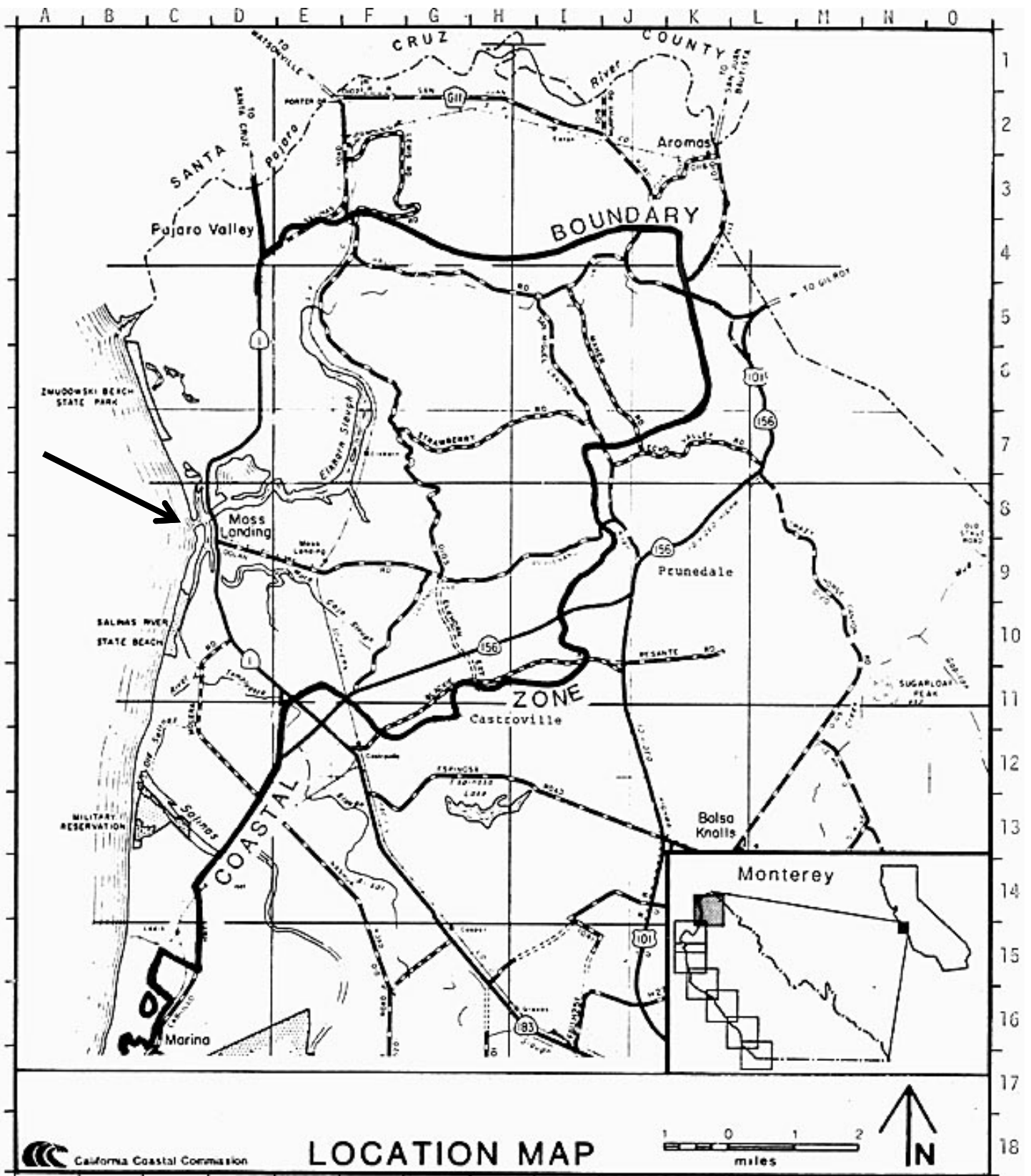
Because the 2001 emergency CDP only authorized the revetment on a temporary basis, development, including but not limited to the placement of an approximately 161-foot long revetment, has taken place without benefit of a regular CDP. Although development has taken place prior regular CDP approval, consideration of the application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Action by the Commission on the CDP does not constitute a waiver of any legal action with regard to the alleged violation nor does it constitute an admission as to the legality of any development undertaken on the subject site without a coastal development permit.

## **I. California Environmental Quality Act (CEQA)**

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with CDP 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.

Monterey County, acting as lead agency, found that the project was categorically exempt from CEQA requirements (per CEQA Section 15307). The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The Commission has reviewed the relevant coastal resource issues with the proposed project, and has identified appropriate and necessary modifications to address adverse impacts to such coastal resources. All public comments received to date have been addressed in the findings above. All above findings are incorporated herein in their entirety by reference.

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



California Coastal Commission

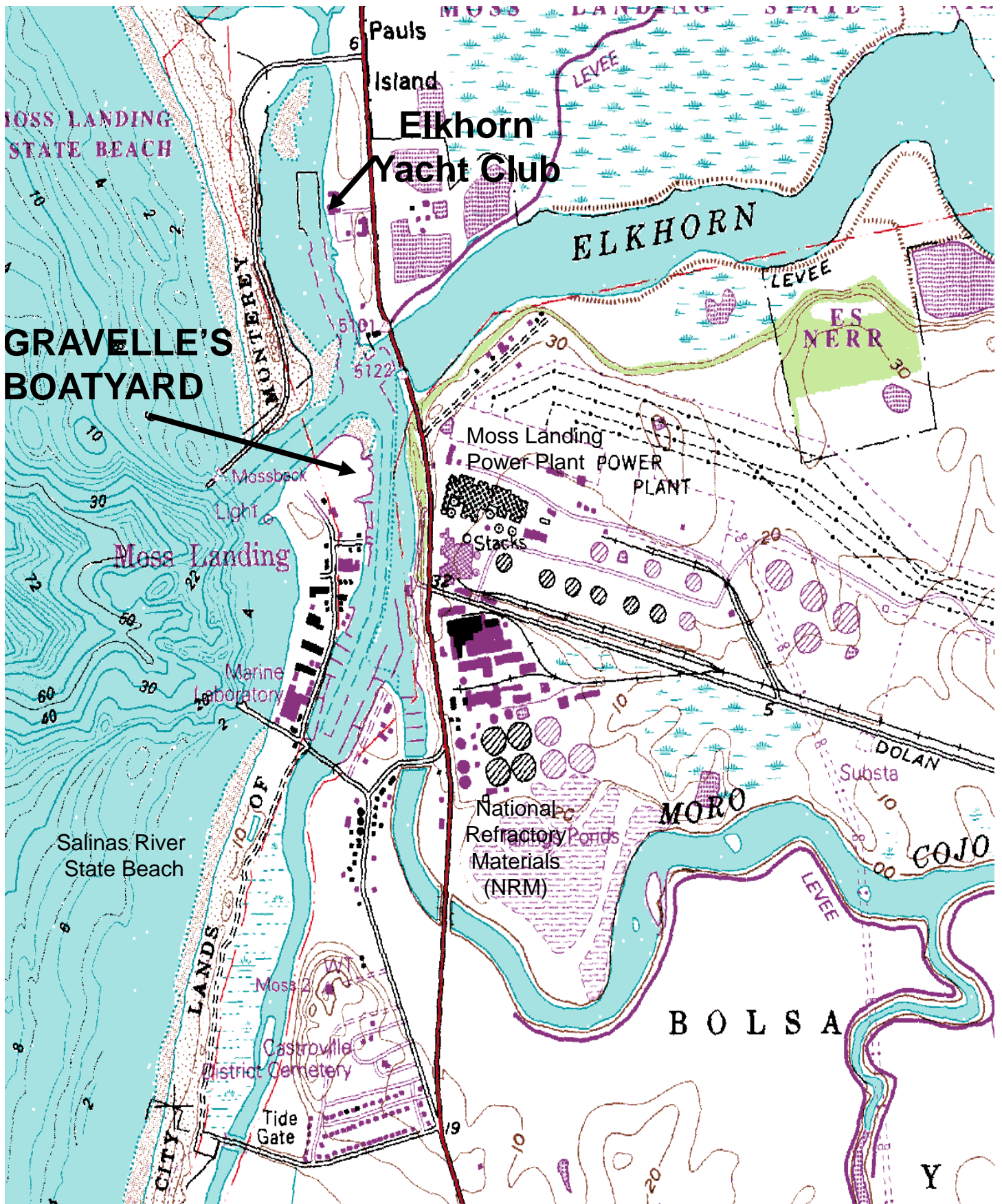
LOCATION MAP



County of Monterey

Sheet 1 of 7









Elkhorn Slough  
main channel

Elkhorn  
Yacht Club

North  
Harbor

Moss Landing  
Harbor

South  
Harbor

Gravelle's  
Boatyard

Sandholdt  
Pier  
(demolished)





# Gravelle's Boatyard Shorefront



Revetment Installed per  
E-permit 3-01-010-G.



# Gravelle's Boatyard Shorefront

Travelift  
Boat Hoist

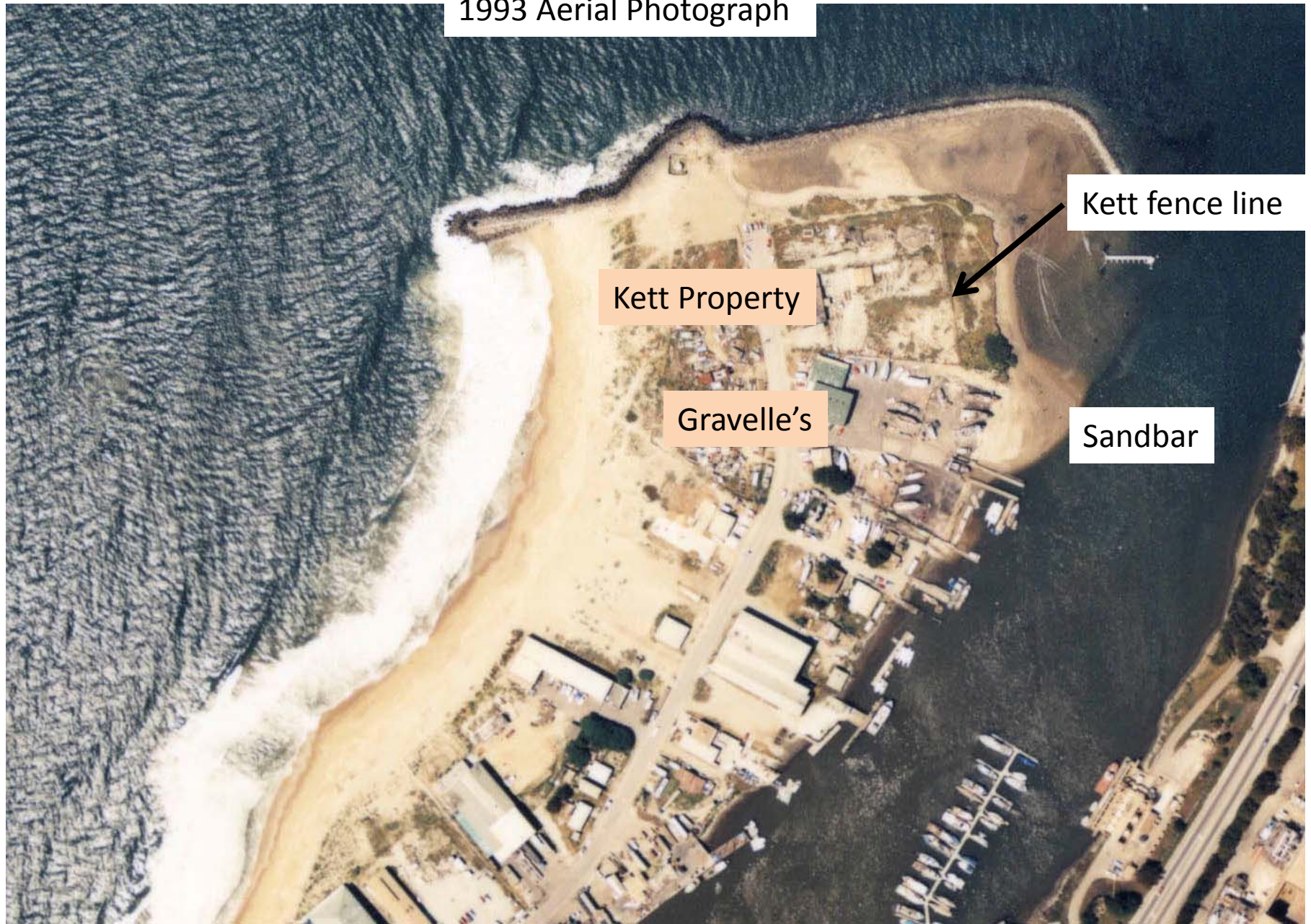
Boat Hoist Pier

Exposed sandbar at toe of  
revetment during low tide  
conditions.

05/03/2013



1993 Aerial Photograph



Source: California Coastal Records Project; Slide 199300117003



2010 Aerial Photograph





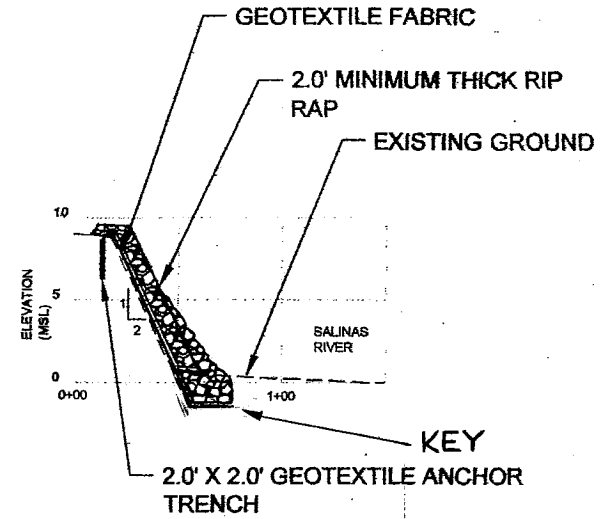
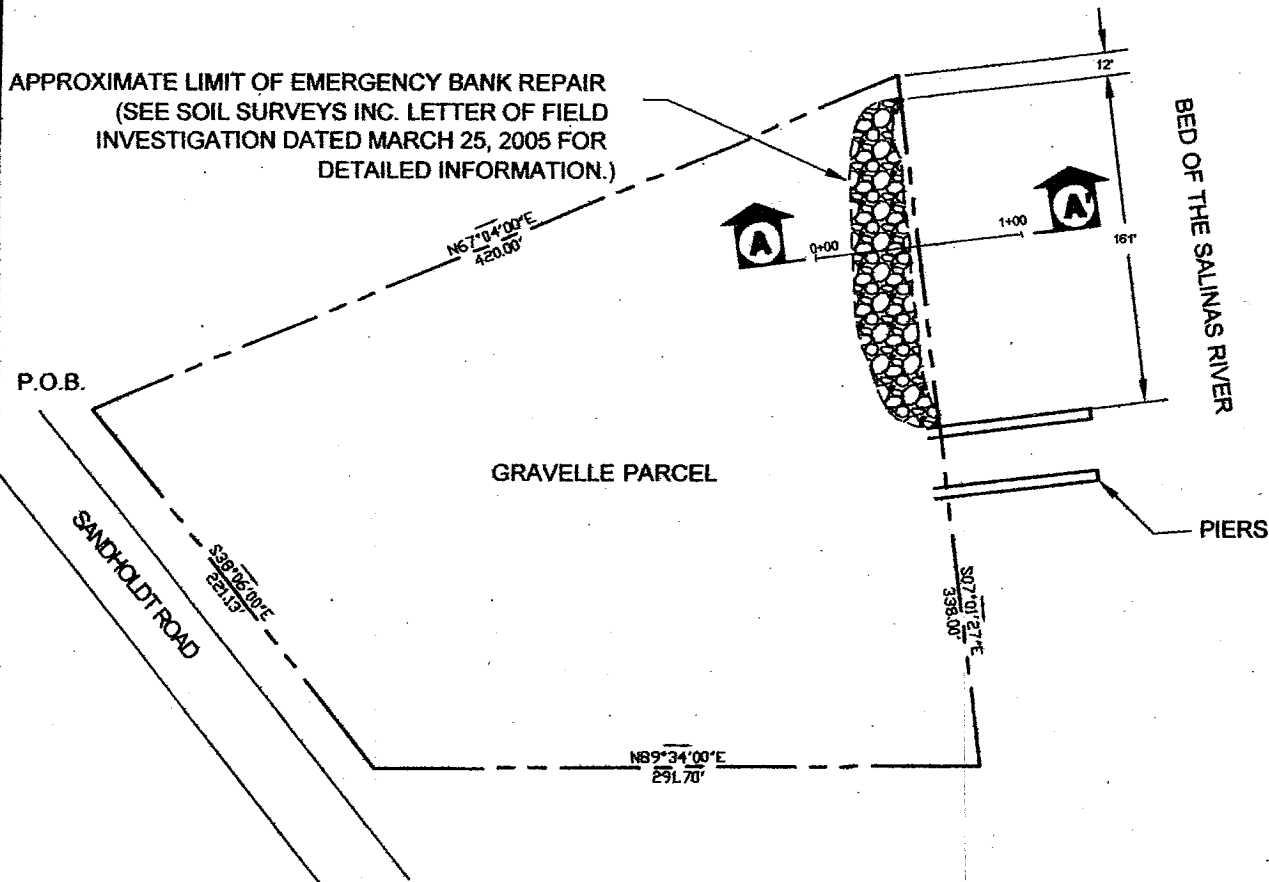
Kett Property Fence  
February 2012



Kett Property  
February 2012



APPROXIMATE LIMIT OF EMERGENCY BANK REPAIR  
(SEE SOIL SURVEYS INC. LETTER OF FIELD  
INVESTIGATION DATED MARCH 25, 2005 FOR  
DETAILED INFORMATION.)



**SECTION A-A'**

SCALE: 1"=60' HORIZONTAL  
1"=4' VERTICAL

**LEGEND**

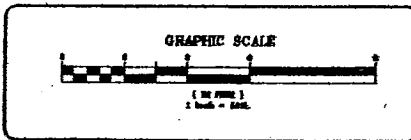


RIP RAP

--- PROPERTY BOUNDARY

- NOTES:
- Measurements start from 0 tide.  
Top of piers 8'3" from 0 tide.

DATE	DATE	DESCRIB	D/B
DRAWN	DRAWN	APPROVED	APPROVED
REV	DATE	DESCRIPTION	APP



GRAVELLES' BOAT YARD  
7501 SANDHOIDT ROAD  
MOSS LANDING, CALIFORNIA  
EMERGENCY BANK REPAIR PERMIT # 3-01-010-G

FIGURE  
**1**  
PROJECT NO.  
204-1.1

**RECEIVED**

MAY 03 2012

CALIFORNIA  
COASTAL COMMISSION  
CENTRAL COAST AREA

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