



# CITY OF MORRO BAY HARBOR ADVISORY BOARD A G E N D A

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*The City of Morro Bay is dedicated to the preservation and enhancement of the quality of life. The City shall be committed to this purpose and will provide a level of municipal service and safety consistent with and responsive to the needs of the public.*

## **Regular Meeting - Thursday, March 2, 2017 Veteran's Memorial Building - 6:00 P.M. 209 Surf Street, Morro Bay, CA**

Ron Reisner, Chair	Member at Large
Lynn Meissen, Vice Chair	Member at Large
Gene Doughty	South Bay/Los Osos
Bill Luffee	Marine Oriented Business
Neal Maloney	Waterfront Leaseholders
Dana McClish	Recreational Boating
Jeremiah O'Brien	Morro Bay Commercial Fishermen's Organization
Peter Griffin	Alternate to Jeremiah O'Brien (MBCFO)
Owen Hackleman	Alternate to Jeremiah O'Brien (MBCFO)

ESTABLISH QUORUM AND CALL TO ORDER

MOMENT OF SILENCE

PLEDGE OF ALLEGIANCE

CHAIR, ADVISORY BOARD MEMBER & LIAISON ANNOUNCEMENTS & PRESENTATIONS

PUBLIC COMMENT PERIOD

Members of the audience wishing to address the Board on City business matters other than scheduled items may do so at this time. To increase the effectiveness of the Public Comment Period, the following rules shall be followed:

- When recognized by the Chair, please come forward to the podium and state your name and address for the record. Board meetings are audio and video recorded and this information is voluntary and desired for the preparation of minutes.
- Comments are to be limited to three minutes.
- All remarks shall be addressed to the Board, as a whole, and not to any individual member thereof.
- The Board respectfully requests that you refrain from making slanderous, profane or personal remarks against any elected official, Board member and/or staff.
- Please refrain from public displays or outbursts such as unsolicited applause, comments or cheering.
- Any disruptive activities that substantially interfere with the ability of the Board to carry out its meeting will not be permitted and offenders will be requested to leave the meeting.
- Your participation in Board meetings is welcome and your courtesy will be appreciated.

**In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Harbor Department's Office Assistant at (805) 772-6254. Notification 24 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.**

A. CONSENT CALENDAR

- A-1 Approval of Minutes from Harbor Advisory Board meeting held on February 2, 2016.  
**Staff Recommendation: Approve minutes.**

B. PUBLIC HEARINGS, REPORTS, AND APPEARANCES

- B-1 Harbor Department Status Report  
**Staff Recommendation: Receive and file.**

C. BUSINESS ITEMS

- C-1 Update from the Marine Services Facility/Boatyard Ad-Hoc Committee on Committee's Recent Activities  
**Staff Recommendation: Receive and file.**
- C-2 Update from the Finance & Budget Ad-Hoc Committee on Committee's Recent Activities  
**Staff Recommendation: Receive and file.**
- C-3 Update from the Eelgrass Ad-Hoc Committee on Committee's Recent Activities  
**Staff Recommendation: Receive and file.**
- C-4 Update from the Marine Sanctuary Ad-Hoc Committee on Committee's Recent Activities  
**Staff Recommendation: Receive and file.**
- C-5 Update from the Working Waterfront Ad-Hoc Committee on Committee's Recent Activities  
**Staff Recommendation: Receive and file report. Consider whether clarification of Measure D's apparent ambiguities should be tied to the City's update of the General Plan and Local Coastal Plan, and make recommendations accordingly.**
- C-6 Status of City-Required Revetment Inspections on Various City Waterfront Lease Sites  
**Staff Recommendation: Receive and file.**
- C-7 Review and Amendment of Existing Future Agenda Items List  
**Staff Recommendation: Staff recommend the Harbor Advisory Board (HAB) review the existing "future agenda" items pending list, and amend as outlined.**

D. DECLARATION OF FUTURE AGENDA ITEMS

E. ADJOURNMENT

This agenda is subject to amendment up to 72 hours prior to the date and time set for the meeting. Please refer to the agenda posted at the Morro Bay Harbor Department, 1275 Embarcadero, for any revisions or call the department at 772-6254 for further information.

Materials related to an item on this Agenda are available for public inspection during normal business hours at the Harbor Department and at Mill's/ASAP, 495 Morro Bay Boulevard, or online at [www.morrobayca.gov](http://www.morrobayca.gov). Materials related to an item on this Agenda submitted to the Board after publication of the Agenda packet are available for inspection at the Harbor Department during normal business hours or at the scheduled meeting.



**AGENDA NO: A-1**

**MEETING DATE: March 2, 2017**

**CITY OF MORRO BAY**

**HARBOR ADVISORY BOARD**

**SYNOPSIS MINUTES**

The regular meeting of the City of Morro Bay Harbor Advisory Board was held Thursday, February 2, 2017 at 6:00 PM in the Veteran's Hall, 209 Surf ST, Morro Bay, California.

**ESTABLISH QUORUM AND CALL TO ORDER**

Present:	Members:	Gene Doughty Bill Luffee Neal Maloney Dana McClish Lynn Meissen Ron Reisner Jeremiah O'Brien
	Staff:	Eric Endersby, Harbor Director Lori Stilts, Harbor Business Coordinator
	Liaison:	Councilmember Matt Makowetski

The meeting was called to order at 6:02 p.m., with all but Board Member McClish present. Mr. Luffee requested item C-6 be moved to the position of C-1 and C-1 to be discussed when Board Member Mr. McClish arrives.

**MOMENT OF SILENCE  
PLEDGE OF ALLEGIANCE**

**CHAIR AND ADVISORY BOARD MEMBER ANNOUNCEMENTS & PRESENTATIONS**

<https://youtu.be/yKOSR4wXaH0?t=3m14s>

Mr. Doughty asked Mr. Endersby what happens to HAB recommendations after they are referred to the City Council? Mr. Endersby responded with a few different scenarios and with a conclusion to in the future incorporate the status of HAB recommendations in the monthly Harbor Department Status Report.

Mr. O'Brien thanked the City of Morro Bay and Staff to allow him to sit on the Board. Mr. O'Brien also introduced the alternative members who represent the Commercial Fishermen's seat, Peter Griffin and Owen Hackleman.

Mr. Luffee welcomed Mr. O'Brien and both himself and Mr. Reisner who were reappointed.

Mr. Maloney congratulated the new and reappointed members as well. Mr. Maloney also mentioned that construction has started to lay the pipe line for dredging, so you may run into some obstructions on the way to the Rock.

Mr. Reisner explained the Morro Bay Commercial Fishermen's seat designation as it pertains to the Harbor Advisory Board. He went on to say Morro Bay Beautiful will be conducting a beach cleanup on the Sand Spit on Saturday February 25. Also on March 17, between 5PM and 7PM the 28<sup>th</sup> Dixon's Spaghetti Fundraiser will be holding their dinner to raise money for disadvantaged

youth. On March 31 and April 1 once again Morro Bay Beautiful will sponsor the City-wide yard sale. Registration is available at the Morro Bay Chamber of Commerce.

## **PUBLIC COMMENT**

None

### **A. CONSENT CALENDAR**

<https://youtu.be/yKOSR4wXaH0?t=10m9s>

**MOTION:** Ms. Meissen moved the November 3, 2016 Harbor Advisory Board minutes be approved as submitted. The Motion was seconded by Gene Doughty and carried unanimously.

**MOTION:** Mr. Reisner moved the December 1, 2016 Harbor Advisory Board minutes be approved as submitted. The motion was seconded by Mr. Maloney and carried unanimously.

### **B. PUBLIC HEARINGS, REPORTS, AND APPEARANCES**

#### **B-1 Harbor Department Status Report**

<https://youtu.be/yKOSR4wXaH0?t=11m48s>

Mr. Endersby briefed the Board on the following topics:

**Recent Department Activity**

**Harbor Dredging**

**Clean Marina Certification**

**Derelict Vessel Demolitions**

**Recent City Council Activity**

**Lighted Boat Parade**

**Polar Bear Dip**

**"For those Who Wait" statue dedication**

**Winter Bird Festival**

**Women for Fisheries Enchilada Sale 2/4**

**Big Bad & Ugly Surf Invitational 2/18 & 2/19**

Mr. Reisner asked if the current dredging in the bay is a US Army Corps of Engineer's contract, including oversight of the work and onsite representative? Mr. Endersby replied yes, the Army Corps is contracted and overseeing the dredging while on site and from a field office out of Vandenberg.

### **C. BUSINESS ITEMS**

#### **C-6 Election of Harbor Advisory Board Chair and Vice Chair**

<https://youtu.be/yKOSR4wXaH0?t=29m15s>

Mr. Luffee asked again C-6 be moved to the position of item C-1.

**MOTION:** Mr. Luffee moved to nominate Mr. Reisner as Chair of the Harbor Advisory Board. The Motion was seconded by Mr. Doughty and carried unanimously.

**MOTION:** Mr. Luffee moved to recommend to nominate Ms. Meissen as Vice Chair of the Harbor Advisory Board. The Motion was seconded by Mr. Reisner and carried unanimously.

#### **C-2 Update from the Finance & Budget Ad-Hoc Committee on Committee's Recent Activities**

<https://youtu.be/yKOSR4wXaH0?t=30m57s>

Ad-Hoc Chair Maloney stated the committee met twice with staff going over capital requirement schedules for the 5-year forecast. Mr. Maloney gave an overview what was highlighted and capital project requests of staff.

Mr. Endersby presented a brief PowerPoint presentation of the Harbor Department's mid-year budget update.

Mr. Maloney stated Bob Leland met with staff to go over this new and improved forecasting tool. Mr. Endersby clarified his meeting with Mr. Leland and City staff to better understand the forecasting tool and the Harbor component.

Discussion by staff and Board.

**C-3 Update from the Eelgrass Ad-Hoc Committee on Committee's Recent Activities**

<https://youtu.be/yKOSR4wXaH0?t=50m13s>

Ms. Meissen stated the committee hasn't formally met since her last report on the projects planned by NEP and Cal Poly, but Ms. Meissen did give a brief report on the latest project status.

Mr. Doughty gave an oral presentation with an overhead map to show how eel grass can impact and halt development in the bay.

**Public Comment:** Cathy Novak stated she has been recently working with the National Marine Fishery Service on projects where developers could potentially pay into a mitigation fund for problematic projects. Ms. Novak continued to explain that the regulatory agencies are starting to soften and work with us and not stop the development.

Discussion by the Board.

**C-4 Update from the Marine Sanctuaries Ad-Hoc Committee on Committee's Recent Activities**

<https://youtu.be/yKOSR4wXaH0?t=1h10m1s>

Mr. Reisner spoke to the position the San Luis Obispo County Board of Supervisors took at their last board meeting on January 24, regarding the proposed Chumash Heritage National Marine Sanctuary and request to provide staff direction as necessary. The board voted to oppose the sanctuary 3 to 2.

Mr. O'Brien stated at their next meeting this Tuesday the board will chose to officially adopt or not adopt the resolution to oppose the designation.

Discussion by the Board.

**C-5 Development of a Morro Bay Working Waterfront Policy or Policies, and Update from the Working Waterfront Ad-Hoc Committee on Committee's Recent Activities**

<https://youtu.be/yKOSR4wXaH0?t=1h15m9s>

Let the record show Board member McClish arrived and joined the meeting at 6:50 pm.

Mr. Doughty summarized the Working Waterfront Ad-Hoc Committee's project report. The Ad-Hoc Committee strongly recommends that the Harbor Advisory Board self-designate a working waterfront if we are not in the City's general plan.

Discussion by the Board.

**C-1 Review, Input and Recommendation on Final Marine Services Facility/Boatyard Request for Qualifications Document, Including Update from the Marine Services Facility/Boatyard Ad-Hoc Committee on Committee's Recent Activities**

<https://youtu.be/yKOSR4wXaH0?t=1h28m3s>

Mr. Endersby presented his staff report.

Mr. McClish thanked Councilmember Makowetski for keeping this item on the city goals. Mr. McClish stated he just came from the 3<sup>rd</sup> Community workshop for the Downtown Waterfront Strategic master plan where he is happy to report the facility is still in their plan located in the Triangle lot. In addition, Board member McClish recommended to add a new member to the Ad Hoc committee, Pandora Nash-Karner, who is in the audience tonight.

Discussion by staff, Liaison and the Board.

Mr. Reisner provided staff with edits for the RFQ document.

Discussion by staff and the Board.

**MOTION:** Mr. Luffee moved to accept the RFQ with the changes that have been made tonight and recommend to the City Council the RFQ be issued with the caveat that Mr. Reisner sends a letter to Councilmember Makowetski and the other City Council Members concurring the same motion. The Motion was seconded by Mr. McClish and carried unanimously.

Mr. McClish introduced Pandora Nash-Karner as a very quality person to help out and join the Marine Services Ad-Hoc Committee to take Mr. Alward's place.

Ms. Nash-Karner spoke to her background and experience of having lived on the bay for 37 years with a boat in the bay for 17 years and the need of a boat yard in our community.

**MOTION:** Mr. Luffee moved to appoint Pandora Nash-Karner to the Marine Services Facility/Boatyard Ad-Hoc Committee of the Harbor Advisory Board. The Motion was seconded by Mr. McClish and carried unanimously.

**D. DECLARATION OF FUTURE AGENDA ITEMS**

<https://youtu.be/yKOSR4wXaH0?t=1h57m34s>

Mr. Reisner requested the HAB deliberate the topic of paid parking on the Embarcadero and adjacent harbor vicinity properties, with the goal of making a recommendation to City Council. In addition, he would like to suggest obtaining from the Harbor Department the status of revetment and marine foundation engineer assessments and reporting as is embedded in and required by the majority of the Harbor enterprise zone master leases. There was unanimous support for both items.

**Previously Declared:**

- Goals and Objectives – Working Waterfront Designation Measure D
- Commercial Slip Qualification Relief for Crab Permit Holders
- City Code Enforcement for Boats on Trailers on Private Property
- Back Bay Water Use Public Forum
- Coast Guard Building Location Plans
- Inspecting Marine Sanitation Devices on All Vessels in Morro Bay Harbor

**E. ADJOURNMENT**

This meeting was adjourned at 8:00 PM.

Submitted by,



Lori Stilts, Harbor Business Coordinator



AGENDA NO: B-1

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board **DATE:** February 24, 2017  
**FROM:** Eric Endersby, Harbor Director  
**SUBJECT:** Harbor Department Status Report

### **RECOMMENDATION**

Receive and file.

### **BACKGROUND**

#### **Recent Department Activity:**

Harbor Patrol statistics for the month of February 2017 were 5 emergency responses and 101 calls for service, 27 assists of other agencies, 23 enforcement contacts, and 18 weather hazards.

On February 9th, Harbor Patrol Officers responded to a report of 4 double kayaks unable to return back to Kayak Horizons due to the extremely strong outgoing tidal flow. 6 young school age kids and 2 adults were returned safely to shore.

On February 17<sup>th</sup>, during one of the most forceful rain and windy days this month with gusts reaching 79 knots, Harbor Patrol spotted a sailing vessel adrift headed north down the bay north of the anchorage area. The vessel was taken safely in tow and returned to its Marina Square mooring unharmed before colliding with anything.

#### **Harbor Dredging:**

Work continues on the 280,000 cubic yard project. Army Corps contractor Ahtna has commenced 24-hour operations in the Morro Channel, starting with the shoal off Tidelands. Ahtna and the Morro Bay Harbor Department knocked on doors and talked to local business fronting the bay about the 24-hour operations. With the expected cold, windy and wet weather we are hopeful that most homes will have windows closed and the noise will not be an impact. Ahtna will keep in contact with the Harbor Department to manage noise issues.

Prepared By: EE

Dept. Review: EE

As of 2/19/17, Ahtna has moved the dredge into the Morro Channel. They are working from the south to the north, and have the pipe crossing the Navy Channel near channel marker #8 and running along the moored boats on the west side of the channels. There is another crossing behind the dredge. All crossings have buoy markers and we are constantly monitoring the lights as they need daily observation and maintenance. Additional buoy lights have been delivered to the site to help manage this situation. Except for where it rises to the dredge and again where the pipe leaves the water at Coleman, the discharge pipe is intended to be continually submerged.

Ahtna has been affected by the recent weather and had minimal activities on Saturday, 2/18/17, mostly due to wind. The rain has had little effect on the daily operations on this project. Ahtna is currently fusing additional pipe to reach the far south side on the Morro Channel, and they are still planning on removing the pipeline from the Beach area on February 27<sup>th</sup> and 28<sup>th</sup>, where they will move the discharge to the Nearshore Disposal off the sandspit. Starting March, they will be back to the Navy Channel and Sand Trap areas, swell permitting.

In early May, the dredge ship *Yaquina* will be back for approximately 30 days of dredging the harbor entrance.

**Recent City Council Activity:**

At their regular February 14<sup>th</sup> meeting, the Council approved the release of a Request for Qualifications (RFQ) document as recommended by the Harbor Advisory Board (HAB) for the Marine Services Facility/Boatyard. The RFQ process will assist with the development of a “short list” of parties or entities potentially interested and qualified to design, build and operate, or to assist the City in designing, building and operating a full-service marine services facility/boatyard in Morro Bay in the “Triangle Parking Lot” area of the former power plant.

Also on February 14<sup>th</sup>, the Council considered approval of a Conditional Use Permit & Parking Exception for Gray’s Inn, at 561 Embarcadero, for a modest redevelopment of the site, including a public harborwalk and vertical access improvements, building façade improvements, and sidewalk repair. With parking and signage issues still under discussion, the Council deferred action. Mayor Irons moved to continue this item to a date uncertain, with a new resolution that does not include the parking exception (conforms to the requirement for 3 – 9’ spaces), and including a sign exception to allow the existing sign to be mounted as a projection sign, for Council review. Motion was seconded by Councilmember McPherson and carried 5-0.

On February 28<sup>th</sup>, the Council is considering approval of Amendment #1 to the current lease for Lease Site 53-56/53W-56W (Estero Landing), providing ten additional years of lease term for substantial tenant improvement investment completed on the site’s dock, gangway and wharf.

Also on February 28<sup>th</sup>, the Council is slated to consider materials for the annual CMANC “Washington Week” meetings in D.C.

Finally, on the 28<sup>th</sup>, the Council is considering approval of extensions of the performance compliance dates by one year each on the Central Coast Aquarium’s (CCA) current Consent of Landowner (COL) agreement to facilitate CCA’s continued pursuance of funding and intent to redevelop lease site 69-70/69W-70W, the Morro Bay Aquarium.

**Beach Lifeguards:**

The City is now taking applications for beach lifeguards for the 2017 summer season. Applications may be obtained online at [www.morrobayca.gov](http://www.morrobayca.gov) or at the City of Morro Bay City Hall at 595 Harbor Street. Applications are due to City Hall by Thursday March 16, 2017 by 5:00 pm.

**Past Events:**

Women for Fisheries Enchilada Sale 2/4

Big Bad & Ugly Surf Invitational 2/18 & 2/19 – Canceled due to weather

**Upcoming Events:**

Maritime Institute Captain's License Course 3/6-3/17

Rescue Watercraft Conference 3/13-3/14

**Status of Pending HAB Recommendations:**

HAB Recommendation	Date	Status
Staff draft letter to Council encouraging the City to pursue negotiating with State Parks the City assume both marina and café concessions.	5/7/15	Staff's last contact with Parks indicated no Parks interest in giving up the café concession. Since that time, all of Parks' key personnel on the SPM have either retired or positions turned over. Staff's current thinking is we're at a "start-over" point with Parks to begin talks anew, and are acting accordingly before taking anything back to the Council.
Staff provide Council with modified sections of MBMC 15.24 (harbor sanitation) and develop environmental BMP's.	7/22/15	Staff have incorporated this BMP effort into the ongoing Rules & Regs/MBMC updating project. Tentatively slated for the April, 2017 HAB meeting.
Council direct staff to engage consultancy relative to obtaining regulatory approval for cost-effective ocean disposal of SPM dredge material, and/or determine the practical and economic feasibility of using same as landfill.	1/7/16	Staff did engage consultancy and the Corps to investigate regulatory permit approval of SPM material disposal in the Nearshore Disposal area. With consultant cost estimate to <i>attempt</i> this approval of \$178,000, and no guarantee of success, staff ceased pursuing. In discussions with the EPA, permitting success seemed not likely. City also seeking (along with CMANC) regulatory relief of the "80-20" dredge material disposal rule, which could change the playing field.
City Council to approve issuance of the final draft Marine Services Facility/Boatyard Request for Qualifications document.	2/2/17	2/14/17 Council approved the release of a Request for Qualifications (RFQ) document as-proposed.



AGENDA NO: C-1

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board

**DATE:** February 22, 2017

**FROM:** Eric Endersby, Harbor Director

**SUBJECT:** Update from the Marine Services Facility/Boatyard Ad-Hoc Committee on Committee's Recent Activities

### **RECOMMENDATION**

Receive and file.

### **DISCUSSION**

The Marine Services Facility/Boatyard Ad-Hoc Committee will be presenting an oral update on their activities, if any. This is a standing committee report agenda item.

Prepared By: EE

Dept. Review: EE



AGENDA NO: C-2

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board

**DATE:** February 22, 2017

**FROM:** Eric Endersby, Harbor Director

**SUBJECT:** Update from the Finance & Budget Ad-Hoc Committee on  
Committee's Recent Activities

### **RECOMMENDATION**

Receive and file.

### **DISCUSSION**

The Finance & Budget Ad-Hoc Committee will be presenting an oral update on their activities, if any. This is a standing committee report agenda item.

Prepared By: EE

Dept. Review: EE



AGENDA NO: C-3

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board

**DATE:** February 25, 2017

**FROM:** Eric Endersby, Harbor Director

**SUBJECT:** Update from the Eelgrass Ad-Hoc Committee on Committee's Recent Activities

### **RECOMMENDATION**

Receive and file.

### **DISCUSSION**

The Eelgrass Ad-Hoc Committee will be presenting an oral update on their activities, and including discussion of the information included as Attachment #1 regarding eelgrass and Morro Bay Landing.

This is a standing committee report agenda item.

### **ATTACHMENT**

1. Memo and reporting on eelgrass situation at Morro Bay Landing.

Prepared By: EE

Dept. Review: EE

## Memorandum

**To:** Neil Maloney  
**Date:** December 7, 2016  
**From:** Bob Fowler  
**Re:** Eel Grass Reports

**I have included with this memo copies of the following:**

**Sept. 19, 2006 Eel Grass Survey Report**  
**Nov 12, 2013 Eel Grass Pre Construction Survey**  
**Oct. 28, 2016 second Annual Post Construction Survey**

**These are all for my project at Morro Bay Landing.**

**I have also included the Morro Bay Eelgrass Report 2013 done by the Morro Bay Estuary Program.**

**If you'll compare my 2006 survey results (figure 2 on page 3) to the 2016 report's findings ( figure 6 on page 11) you can see that the quantity of eel grass almost tripled in that period.**

**I have highlighted a paragraph on page 10 of the 2016 report that corroborates the additional growth of eel grass over that period. In fact the author says that using the control areas to judge the growth shows a 600% increase in eel grass in this area of the bay.**

**I find that information especially astounding when you compare those findings with the Morro Bay National Estuary Program's 2013 report. They report that the quantity of eel grass overall in the bay has declined from a high of 344 acres in 2007 to a low in 2013 of 10 acres! While the caption under figure 1 on page 5 acknowledges that the 2013 survey was done in the spring and the others in the fall, it only further acknowledges that it might have an effect on the differences for algae. Not eel grass.**

**I am required to do my surveys between September 1<sup>st</sup> and October 31<sup>st</sup> ostensibly because eel grass is an annual plant and grows only between March and October of each year. Comparing a fall survey to a spring survey would then seem to me to be worthless. Somewhat like comparing an aerial photograph of an alfalfa field in March to one in August just before harvest. So the conclusion that eel grass quantity has fallen to historically low levels by use of the 2013 survey is misleading**

**at best and disingenuous at least. Throw out the 2013 survey and all you're seeing is what is probably normal fluctuations of eel grass quantities. The narrative of the report says that the data is only reliable from 2003 forward. If you look at just those quantities in figure 1 and throw out 2013, then the most recent reliable quantity shown of 176 acres is not anything to be anxious about. Especially since so little reliable historic data is available. What is normal, anyway?**

**It is also striking that the Marine Estuary Program's survey shows falling levels of eel grass over the same period that my surveys show substantially increasing levels. Although it might be explained by factors such as less surface runoff into the bay due to drought conditions in certain years or other unknown factors it might also lead one to suspect potential bias in the Program's survey.**

**As I mentioned to you the other day I have spent \$59,712.00 to date on surveys for my project. I still have a two year survey to be done on my Phase 1B of the dock project next year that will add an additional \$17,500 to the cost. In all I spent about \$800,000 building the docks so these surveys represent about 10% of the overall cost. There has been no benefit from this cost whatsoever except the knowledge about eel grass in this specific area.**

**I maintain that this is money thrown down the drain. It seems to me that 10% of overall project costs is way too much to be exacting out of harbor developments and if you're going to exact any costs then you ought to have something to show for it in the end. Here the only beneficiaries are the consultants. And I think they way overcharge for what they do.**

**And we have nothing to show for it.**

# Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey

## Morro Bay Embarcadero Improvement Project

September 19, 2006

Prepared for:

Ms. Cathy Novak  
P.O. Box 296  
Morro Bay, CA 93443

Prepared by:

Tenera Environmental  
141 Suburban Rd., Suite A2  
San Luis Obispo, CA 93401  
805.541.0310

### Project Description

This report describes the results of an eelgrass (*Zostera marina*) survey conducted on August 29-31, 2006 along the 1100 and 1200 block sections of the Morro Bay embarcadero in Morro Bay, California (Figure 1). The purpose of the survey was to describe the occurrence of eelgrass along this length of shore proposed for waterfront improvements (Morro Bay Embarcadero Improvement Project).

The Morro Bay Embarcadero Improvement Project extends downcoast from Virg's Landing at 1215 Embarcadero to the Great American Fish Company located at 1185 Embarcadero (Figures 1 and 2). The Harbor Hut at 1205 Embarcadero is located between Virg's Landing and the Great American Fish Company. The total length of shore along this reach is approximately 545 ft (166 m).

Virg's Landing is a recreational fishing company that has passenger fishing vessels for nearshore fishing. The boats are also used for whale watching tours. The Harbor Hut and Great American Fish Company are restaurants. In addition, the Harbor Hut provides bay tours on the Tiger's Folly.

The owners of the three companies lease their properties from the City of Morro Bay. The three properties are contiguous and extend over water. The owners have collaborated

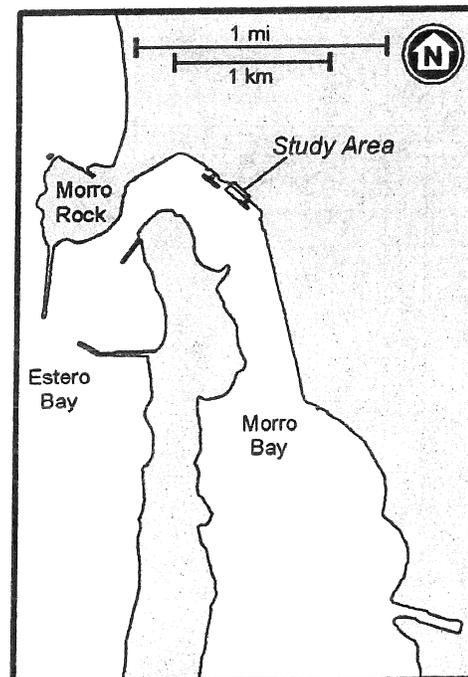


Figure 1. Location of the Morro Bay Embarcadero Improvement Project.



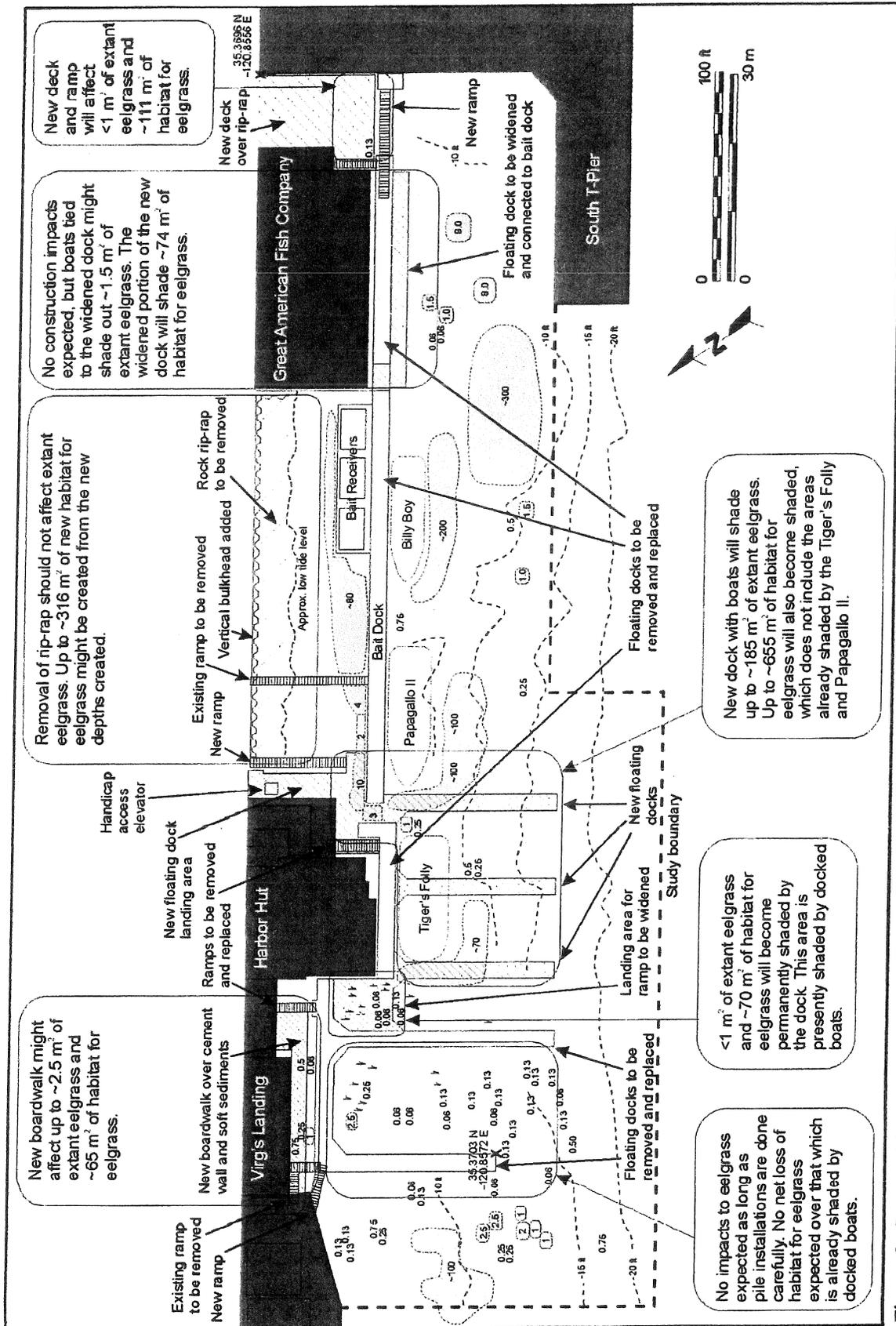
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together in planning improvements on their properties. Over-the-water construction consists of a new floating dock arrangement along all three properties. All existing docks and piles will be replaced with new docks and approximately 40 new piles. The docks will be joined such that they provide a continuous dock system from Virg's Landing to the Great American Fish Company (**Figure 2**). Presently, each facility has its own separate dock system.

The owner of Virg's Landing is also proposing a public bay view boardwalk section on the bayside of the Virg's Landing building (**Figure 3**). A portion of the Virg's Landing floating dock is also proposed to be enlarged for the access ramp (**Figure 4**). The owner of the Harbor Hut is proposing to modify the dock structure that is currently used to dock the Tiger's Folley (**Figure 2**). Three new dock fingers are proposed that will extend into the bay. The plans include a landing dock below one corner of the restaurant where a handicap access elevator will be built to provide handicap access to the Tiger's Folly (**Figure 5**).

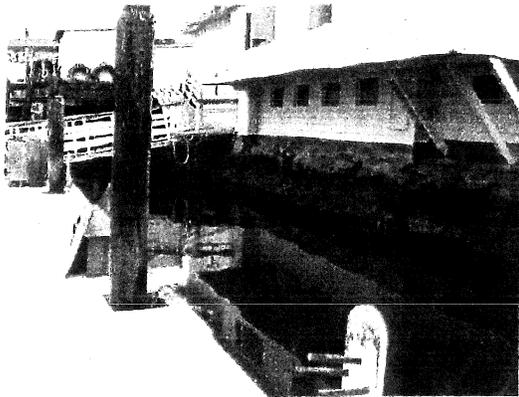
The rip-rap embankment inshore of the bait dock is proposed to be removed and replaced with a vertical bulkhead (**Figure 6**). At the Great American Fish Company, the owner wishes to widen a portion of the existing floating dock beneath the restaurant (**Figure 7**). Also, a ground level patio deck is proposed that will extend from the Great American Fish Company restaurant to the South T-Pier and cover existing rock rip-rap (**Figure 8**).



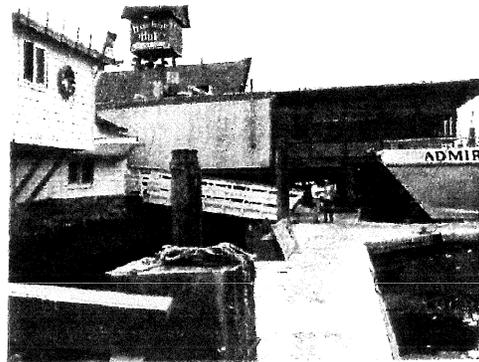


**Figure 2. Proposed Morro Bay Embarcadero Improvement Project components that are over water and results of eelgrass mapping. Existing structures and proposed changes are shown. The numbers over the seabed indicate approximate patch sizes and locations of eelgrass, and patches found to be 1 m<sup>2</sup> and larger in area are shaded in green. The symbol = 1/2 indicates eelgrass of only a few stems. Potential impacts are described. Source of base map: Bruce Elster, PE, Morro Bay, CA, Site Plan/Vicinity Map, Job 233-01.**

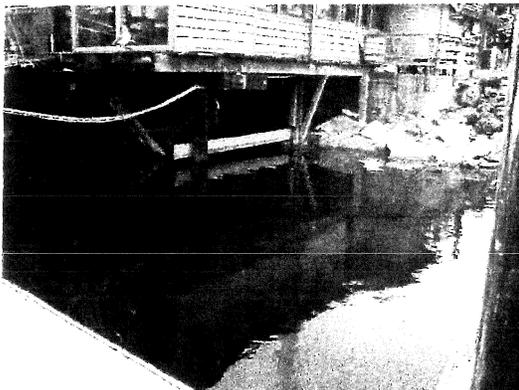




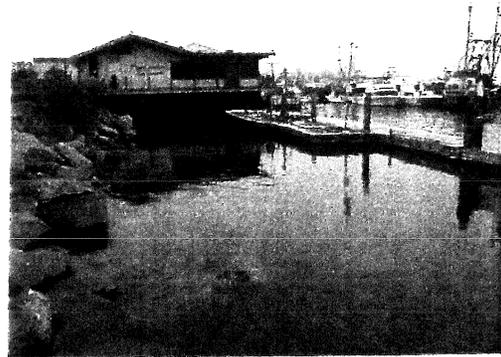
**Figure 3.** Area between the Virg's Landing building and dock for a public access boardwalk. The water would be covered by the boardwalk.



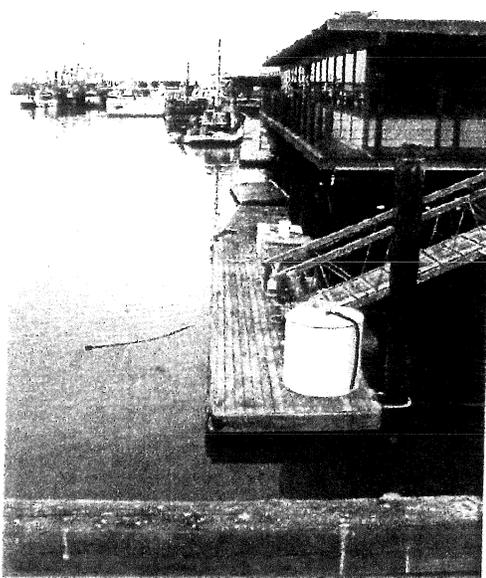
**Figure 4.** View looking south at the base of the Virg's Landing access ramp. The dock landing area for the ramp is proposed to be widened. Presently, the bow of the Admiral is positioned over the landing area where the dock is to be widened. The Harbor Hut restaurant is in the background.



**Figure 5.** Area next to the Harbor Hut where a floating dock landing area is proposed to provide a handicap access elevator to the Tiger's Folly. A portion of the water in the photo will be covered by the new dock landing.



**Figure 6.** Rocky rip-rap embankment inshore of the bait dock that is proposed to be removed and replaced with a vertical bulkhead. The Great American Fish Company restaurant is in the background. The bait dock is to the right in the photo. (View looking south)



**Figure 7.** View from the South T-Pier looking north at the floating dock beneath the Great American Fish Company restaurant. The dock is proposed to be replaced and widened by 8 ft. A ramp is proposed to connect the dock to where the photo was taken on the T-Pier.



**Figure 8.** Area over which a patio deck is proposed between the Great American Fish Company (right side in the photo) and South T-Pier (left side in the photo). Note that the deck will cover largely bare rocky rip-rap.

## Purpose

An eelgrass survey was conducted on August 29-31, 2006 for the Morro Bay Embarcadero Improvement Project as part of the City of Morro Bay development application process (City Application No. UPO-05). The survey consisted of mapping the occurrence of eelgrass and eelgrass habitat and surveying the area for the presence/absence of *Caulerpa taxifolia* (**Figure 2**).

Eelgrass beds are known to occur in the area, and are considered a Special Aquatic Site (SAS) by the U.S. Army Corps of Engineers, California Department of Fish and Game, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service (NMFS). Eelgrass habitat is regulated under Section 404 of the Clean Water Act (CWA), and is also considered Essential Fish Habitat by NMFS. The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) set the Essential Fish Habitat (EFH) provisions to identify and protect important habitats of federally managed marine species. Surveys are required to map the extent and location of eelgrass in projects that may affect eelgrass.



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The survey included a careful search in the project area to determine the presence/absence of *Caulerpa taxifolia*, a highly invasive green algal species that has been introduced into California. *Caulerpa* easily reproduces by fragmentation, and is therefore susceptible to spreading from waterfront construction projects that disturb the seabed.

## Methods

Eelgrass was mapped according to specifications of the Southern California Eelgrass Mitigation Policy (Revision 8), adopted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

Two biologists equipped with SCUBA completed the survey. The survey area was relatively large, and was therefore completed on three consecutive days (August 29, 30, and 31, 2006). The survey each day was done during the early afternoon slack high tide. The high tide level each day was approximately +4.5 ft (+1.4 m) above mean lower low water (MLLW). Underwater horizontal visibility during each of the three survey days was approximately 8 ft (2.4 m).

The along-shore length of the survey area was approximately 545 ft (166 m) and the offshore distance surveyed accounted for a 50 ft (15 m) perimeter surrounding all areas of proposed construction (**Figure 2**). Meter tapes were deployed underwater at appropriate locations to map the locations of eelgrass and to ensure the entire area was evenly searched. Patch sizes were estimated based on using a meter quadrat as a measuring device. Meter tapes were used to estimate the coverage of the larger eelgrass patches.

Eelgrass was also sampled for stem (turion) densities and blade lengths in three areas. The three areas sampled for stem densities and blade lengths were those where eelgrass could be subjected to largest project impacts (e.g. shading effects from docks and docked boats). One area was off the bow of Tiger's Folly and the other near the aft of Tiger's Folly, as the proposed dock additions would shade these areas (**Figure 2**). The third area sampled was inshore of the bait dock where nearby rock rip-rap is proposed to be removed. In each area, stem densities were determined in six-0.25 m<sup>2</sup> (2.7 ft<sup>2</sup>) quadrats placed in pure stands of eelgrass. The blade nearest each corner of each quadrat was measured for length to the nearest inch (2.5 cm).

Predominant species in the survey area were also recorded while mapping eelgrass and searching for the presence of *Caulerpa*.



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## Results

### Habitat Characterization

The shore bank in the survey area is armored. The shore bank at the Virg's Landing building is a sloped cement wall. The shore bank in all other areas is rock rip-rap. The armored shore bank in all areas extends from ground level to about the mean lower low water (MLLW) tide level.

The biota observed in the intertidal zone on the shore bank was mainly barnacles (*Chthamalus* spp.), rough limpets (*Lottia scabra*), shore crabs (*Pachygrapsus crassipes*), hermit crabs (*Pagurus* spp.), littorine snails (*Littorina* spp.), sea lettuce (*Ulva/Enteromorpha* spp.), foliose red algae (*Mastocarpus papillatus*), and chain diatoms (Chrysophyta).

The natural sand/mud seabed extending offshore from the toe of the shore bank was relatively uniform in being largely open space but colonized with eelgrass, of which some patches were over 300 m<sup>2</sup> in area. The seabed was also inhabited with scattered gaper clams (*Tresus nuttallii*). Opalescent nudibranchs (*Hermisenda crassicornis*) were also relatively common. A few spotted nudibranchs (*Triopha maculata*), sea hares (*Aplysia californica*), and bat stars (*Patiria miniata*) were also observed.

Although bladder chain kelp (*Sargassum muticum*), an introduced species, has been observed to be common in other areas along the embarcadero<sup>1</sup>, only a few *Sargassum* plants were observed in the present study area. No giant kelp (*Macrocystis pyrifera*) was observed.

Pier pilings were mainly covered with sponges (Porifera), plumose anemones (*Metridium senile*), sea lettuce, and encrusting bryozoans (Ectoprocta) mainly of the introduced species *Watersipora subtorquata*.

### Eelgrass and *Caulerpa* Mapping

A total of approximately 1,016 m<sup>2</sup> (10,936 ft<sup>2</sup>) of eelgrass was observed in the Morro Bay Embarcadero Improvement study area, mainly as several large patches (Figure 2). Most patches tended to range in size from just a few stems (turions) to clumps less than about 2 m<sup>2</sup> (21.5 ft<sup>2</sup>) in area.

All eelgrass was present on the natural seabed. None was present on the cement wall or rock rip-rap of the shore bank. An exception might be the eelgrass on the inshore side of the bait dock, which is along the opposite side where the Billy Boy (Virg's Landing bait boat) is usually docked (Figure 2). The shore bank inshore of the bait dock is rock rip-rap. Portions of the eelgrass inshore of the bait dock appeared to be growing on soft sediments that have accumulated on top of the toe of rip-rap.

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<sup>1</sup> Tenera Inc. 2006. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey, Otter Rock Cafe, Morro Bay, California. Prepared for Cathy Novak, Morro Bay, Calif. May 31, 2006.



**Table 1.** Results of eelgrass stem density and blade measurements.

Location	Bow of Tiger's Folly		Aft of Tiger's Folly		Inshore of Bait Dock	
No. Quads Sampled	6		6		6	
No. Blades Measured	24		24		24	
	No. Stems / 0.25 m <sup>2</sup>	Blade Lengths (cm)	No. Stems / 0.25 m <sup>2</sup>	Blade Lengths (cm)	No. Stems / 0.25 m <sup>2</sup>	Blade Lengths (cm)
Average	28.7	81.2	28.5	88.8	40.5	71.6
Max	36.0	116.8	36.0	116.8	60.0	109.2
Min	15.0	38.1	22.0	50.8	26.0	35.6

The beds of eelgrass at the bow and aft of Tiger's Folly were nearly identical to each other in stem densities and blade lengths (Table 1). Stem densities and blade lengths were slightly greater in the eelgrass bed located inshore of the bait dock.

No *Caulerpa* was found. A separate report on the absence of *Caulerpa* was prepared for the National Marine Fisheries Service and provided to Ms. Cathy Novak who represents the owners of Virg's Landing, the Harbor Hut, and Great American Fish Company.

## Discussion

### Existing Eelgrass Distribution

The pattern of eelgrass distribution found in the survey area indicates eelgrass in the project area is largely affected by shading from the docks and ramps, including shading from the boats that are tied to docks. The absence or low abundance of eelgrass beneath where boats are regularly docked might also be related to scouring effects from the boat propellers. When boats are tied to floating docks to load and offload passengers (or bait), the boat operator will at times keep power engaged to the propellers in order to help maintain a tight attachment to the dock. Otherwise, waves and wind might cause the boat and floating dock to tilt and sway in opposition to each other and collide against each other. The water movement from propeller wash can cause sediments to be scoured, particularly at low tide when the propellers are closest to the seabed. Scouring on a regular basis can inhibit the establishment and persistence of eelgrass. The areas where the Tiger's Folly, Papagallo II, and Billy Boy are usually docked reflect the influence of shading from boats and possible scouring effects from propeller wash (Figure 2).

### Potential Project Impacts

Potential project impacts to eelgrass include losses in cover from construction, as well as from shading from the new docks, slips, boardwalk, and access ramps. Also, boats that



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use the new docks and slips will shade new areas of the bottom, and the same areas might become exposed to scouring effects from propeller wash.

Estimates on the amount of existing eelgrass that would become subjected to construction impacts, shading effects from the new structures, and shading/scouring effects from boats using the new docks and slips are portrayed in **Figure 2** and **Table 2**. Estimates are also included on the amount of habitat for eelgrass that might become affected. The affected habitat area was defined as the 'footprint' of finished construction over eelgrass habitat and included the areas where docked boats using the new slips and docks might shade the bottom.



**Table 2. Summary of proposed over-water construction of the Morro Bay Embarcadero Improvement Project and estimates of potential impacts to eelgrass and eelgrass habitat.**

Proposed Construction	Potential Effects to Existing Eelgrass	Change to Eelgrass Habitat
Installation of a public boardwalk in front of the Virg's Landing building (Figure 3).	~2.5 m <sup>2</sup> (27 ft <sup>2</sup> ) of existing eelgrass would become permanently shaded.	Up to ~65 m <sup>2</sup> (700 ft <sup>2</sup> ) of potential habitat for eelgrass would become permanently shaded.
Dock widened at the Virg's Landing access ramp (Figure 4).	<1 m <sup>2</sup> (11 ft <sup>2</sup> ) of extant eelgrass will become permanently shaded. This area is already shaded by docked boats.	Up to ~70 m <sup>2</sup> (750 ft <sup>2</sup> ) of potential habitat for eelgrass would become permanently shaded.
New dock arrangement in front of the Harbor Hut with a dock landing area expanded for access ramps (Figures 2 and 5).	Up to ~185 m <sup>2</sup> (1,991 ft <sup>2</sup> ) of existing eelgrass would become subjected to shading effects. The actual amount affected will depend on the areas permanently shaded by the docks and areas regularly shaded by boats using the new docks and slips.	Up to ~655 m <sup>2</sup> (7,050 ft <sup>2</sup> ) of potential habitat for eelgrass would become subjected to new shading effects. This estimate does not include portions within this dock improvement area that are already shaded by the Tiger's Folly and Papagallo II (~200 m <sup>2</sup> , 2,150 ft <sup>2</sup> ).
Removal of rock rip-rap inshore of the bait dock (Figure 6).	No eelgrass would be physically removed, as none presently occurs on the rip-rap. Removing the rip-rap could affect the existing eelgrass bed between the toe of the rip-rap and bait dock if care is not exercised in removing the rocks.	Up to ~316 m <sup>2</sup> (3,400 ft <sup>2</sup> ) of new habitat for eelgrass could be created in lowering the seabed to appropriate depths.
Widening of the floating dock fronting the Great American Fish Company (Figure 7).	No eelgrass would become affected by the widened dock, as no eelgrass was present below the widened dock area. However, boats using the widened dock will shade ~1.5 m <sup>2</sup> (16 ft <sup>2</sup> ) of extant eelgrass.	The widened dock will shade ~74 m <sup>2</sup> (800 ft <sup>2</sup> ) of potential habitat for eelgrass.
Installation of a patio deck between the Great American Fish Company and South T-Pier and addition of a new ramp (Figure 8).	<1 m <sup>2</sup> (11 ft <sup>2</sup> ) of eelgrass that is currently partially shaded in this area would become permanently shaded.	~111 m <sup>2</sup> (1,200 ft <sup>2</sup> ) of potential habitat for eelgrass would become permanently shaded.
Removal and replacement of approximately 40 piles.	Direct effects to eelgrass from pile removal and replacement operations should be small or absent depending on the finesse of the crane operator.	There should be no net change to eelgrass habitat from the pile removal and installation operations. The bases of the piles will remain shaded by boats.
TOTAL	~190 m <sup>2</sup> (2,045 ft <sup>2</sup> ) of extant eelgrass would become subjected to project impacts, largely from shading by the shore improvements and docked boats.	* ~659 m <sup>2</sup> (7,093 ft <sup>2</sup> ) of habitat for eelgrass would become subjected to project impacts, largely from shading by the shore improvements and docked boats.

\* Includes areas of extant eelgrass and considers the ~316 m<sup>2</sup> (3,400 ft<sup>2</sup>) of new habitat created for eelgrass as credit. Note: Rounding metric and English measurement conversions to the nearest square area units results in measurements not being precisely equivalent.



## Caulerpa Report – Morro Bay Embarcadero Improvement Project, Morro Bay, CA

Caulerpa Survey Reporting Form (version 1.2, 10/31/04)

<b>Report Date:</b>	September 19, 2006 (Survey conducted on August 29-31, 2006).
<b>Name of bay, estuary, lagoon, or harbor</b>	Morro Bay, CA
<b>Specific location name:</b> (address or common reference)	Virg's Landing at 1215 Embarcadero, Morro Bay, CA Harbor Hut at 1205 Embarcadero Great American Fish Company at 1185 Embarcadero (see map)
<b>Site Coordinates:</b> (UTM, Lat./Long., datum, accuracy level, and an electronic survey area map or hard copy of map must be included)	See map for reference coordinates: -120.8572 E, 35.3703 N (tip of Virg's Landing north dock) -120.8556 E, 35.3696 N (base of South T-Pier) (2-5 m accuracy, differentially corrected)
<b>Survey Contact:</b> (name, phone, e-mail)	Scott Kimura (Tenera Environmental): (805) 541-0310, skimura@tenera.com
<b>Permit Reference:</b> (ACOE Permit No., RWQCB Order or Cert. No.)	First stage of over-the-water improvement planning and submittal of plans to the City of Morro Bay (Development Application No. UPO-05).
<b>Is this the first or second survey for this project?</b>	This is the first survey report is for this project.
<b>Was <i>Caulerpa</i> Detected:</b> (if <i>Caulerpa</i> is found, please immediately contact NOAA Fisheries or CDFG personnel identified above)	<b>No <i>Caulerpa</i> was found at this site on August 29-31, 2006.</b>
<b>Description of Permitted Work:</b> (describe briefly the work to be conducted at the site under the permits identified above)	<b>See Map:</b> An application for the work described below is being prepared for the City of Morro Bay as the first step in the review and permitting process. The owners of Virg's Landing, Harbor Hut, and Great American Fish Company lease their properties from the City of Morro Bay. The three properties are contiguous and each extends over water. The owners of the properties wish to make over-the-water improvements in a collaborative proposal to the City of Morro Bay. A new floating dock system is presently proposed that consist of connecting the present individual docks together to form a continuous dock system across all three properties. All existing docks would be removed and replaced, and new docks and slips would be added. Approximately 40 piles would be removed and replaced. A portion of the Virg's Landing floating dock would be expanded to provide a larger landing area for the access ramp. A floating dock landing area next to the Harbor Hut would be constructed for a handicap access elevator and to provide a larger dock area for the public boarding the Tiger's Folly for bay tours. A public access bay view boardwalk section is also proposed on the bayside of the Virg's Landing building. A section of existing rip-rap would be removed and replaced with a vertical bulkhead. On the south side of the Great American Fish Company restaurant, a ground level patio deck is proposed that will extend from the restaurant to the South T-Pier and cover mainly rock rip-rap.

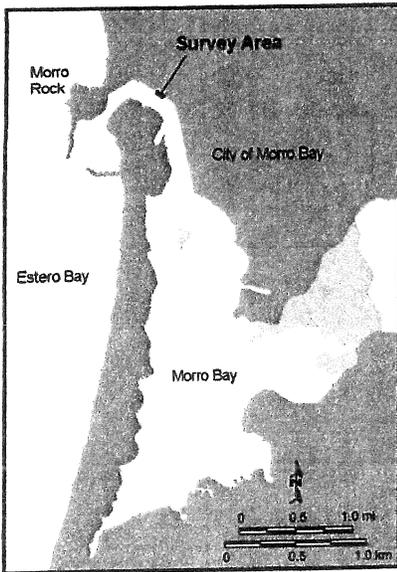
<b>Description of Site:</b> (describe the physical and biological conditions within the survey area at the time of the survey and provide insight into variability, if known. Please provide units for all numerical information).	<i>Depth range:</i>	Mean high tide level to approx. -20 ft (-6 m) MLLW.
	<i>Substrate type:</i>	Shore bank consisting of rock rip-rap and a cement wall that slopes into the water. The toe of the rip-rap and toe of the cement wall terminate at a depth of approximately the mean lower low tide level. Natural sand-mudflat seabed occurs offshore.
	<i>Temperature:</i>	N/A
	<i>Salinity:</i>	N/A
	<i>Dominant flora:</i>	<p>Eelgrass (<i>Zostera marina</i>) was the most conspicuous plant species, which was mainly on the sand-mud seabed.</p> <p>Sea lettuce (<i>Ulva/Enteromorpha</i> spp.), foliose red algae (<i>Mastocarpus papillatus</i>), and chain diatoms (Chrysophyta) were present, but mainly on the intertidal rip-rap and sloped cement wall.</p>
	<i>Dominant fauna:</i>	<p>The biota in the intertidal zone along the shore bank consisted mainly of barnacles (<i>Chthamalus</i> spp.), rough limpets (<i>Lottia scabra</i>), shore crabs (<i>Pachygrapsus crassipes</i>), hermit crabs (<i>Pagurus</i> spp.), and littorine snails (<i>Littorina</i> spp.).</p> <p>The natural sand/mud seabed offshore of the shore bank was relatively uniform in being largely open space but colonized with scattered gaper clams (<i>Tresus nuttallii</i>). Opalescent nudibranchs (<i>Hermisenda crassicornis</i>) were also relatively common. A few spotted nudibranchs (<i>Triopha maculata</i>), sea hares (<i>Aplysia californica</i>), and bat stars (<i>Patiria miniata</i>) were also observed.</p> <p>Pier pilings were mainly covered with sponges (Porifera), plumose anemones (<i>Metridium senile</i>), sea lettuce, and encrusting bryozoans (Ectoprocta) mainly of the introduced species <i>Watersipora subtorquata</i>.</p>
	<i>Exotic species encountered:</i>	A few small individuals of <i>Sargassum muticum</i> plants were present near the cement wall below the Virg's Landing building. The encrusting bryozoan <i>Watersipora subtorquata</i> was common on pier pilings.
	<i>Other site description notes:</i>	There was very little debris in the site, other than 1-2 tires.

<b>Description of Survey Effort:</b> (please describe the surveys conducted including type of survey (SCUBA, remote video, etc.) and survey methods employed, date of work, and survey density (estimated percentage of the bottom actually viewed). Describe any limitations encountered during the survey efforts.	<i>Survey date and time period:</i>	A SCUBA survey was completed on August 29-31, 2006 during the early afternoon slack high tides. The survey area accounted for a 50 ft (15 m) perimeter surrounding all proposed construction (see map). The along-shore length of the survey area was approximately 545 ft (166 m). The purpose of the survey was to map the occurrence of <i>Zostera marina</i> (eelgrass) and to search for the presence of <i>Caulerpa taxifolia</i> . The occurrence of other species was also noted.
	<i>Horizontal visibility in water:</i>	Underwater horizontal visibility was approximately 8 ft (2.4 m), which was as good as what could be expected for the area. Visibility was sufficient to complete the survey.
	<i>Survey type and methods:</i>	The area was visually searched by divers using SCUBA. Meter tapes were used to ensure the entire survey area was evenly searched. Visibility was sufficient to provide a 100% area search.
	<i>Survey personnel:</i>	Scott Kimura and Gery Cox (Tenera Environmental)
	<i>Survey density:</i>	100% of the area was searched.
	<i>Survey limitations:</i>	There were no survey limitations.
<b>Other Information:</b> (use this space to provide any additional information or references to attached materials such as maps, reports, etc.)	See attached map	

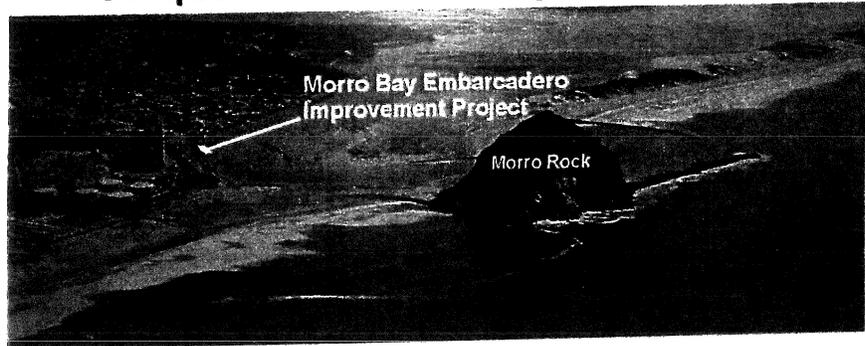
**Caulerpa Survey Reporting Form (version 1.2, 10/31/04)**

# Caulerpa Survey Results (August 29-31, 2006)

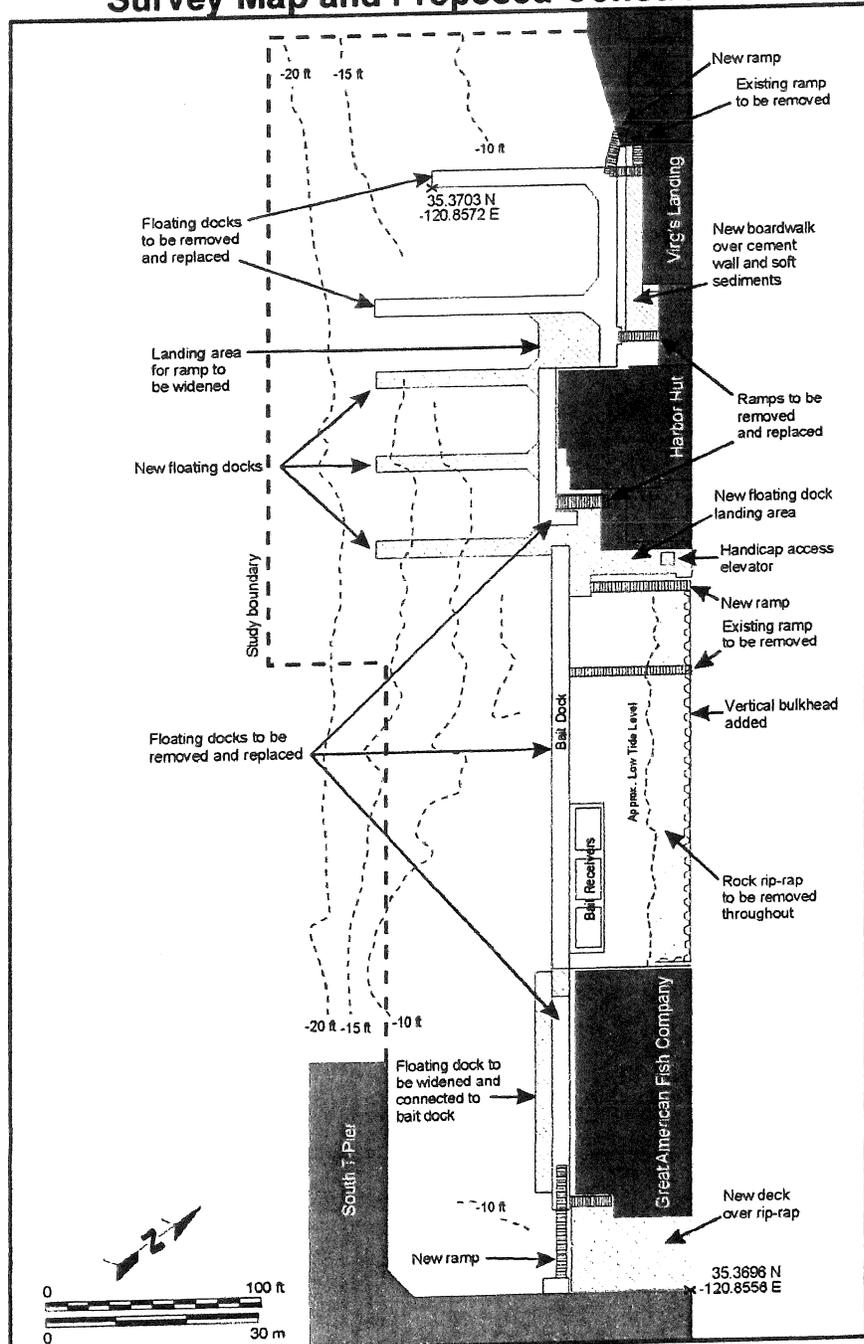
## Project Location



## Oblique Aerial View of Project Location



## Survey Map and Proposed Construction



**CAULERPA FINDING:**  
No *Caulerpa* was observed at this site.

### LOCATION: Morro Bay, CA

- Virg's Landing at 1215 Embarcadero
- Harbor Hut at 1205 Embarcadero
- Great American Fish Company at 1185 Embarcadero

### PERMIT REFERENCE:

City of Morro Bay Development  
Application Number UPO-05

### OVER-WATER CONSTRUCTION:

- Removal / replacement of existing floating docks
- Addition of new floating docks / slips
- Widening of an existing floating dock
- Removal of rip-rap and replaced with a vertical bulkhead
- Public boardwalk addition
- Removal / replacement of ramps
- Removal / replacement of ~ 40 piles

### SURVEY DATE AND CONDITIONS:

Aug. 29-31, 2006  
Tide level ~ +4.5 ft MLLW  
Horizontal visibility ~8 ft

### METHODS:

Study area = 50 ft (15 m) perimeter around all proposed construction.  
Two divers using SCUBA visually searched 100 % of the survey area using meter tapes for orientation.

# Eelgrass (*Zostera marina*) and *Caulerpa taxifolia*

## Morro Bay Landing Pre-Construction Survey

November 12, 2013

Prepared for:

**Mr. Robert Fowler**  
P.O. Box 1008  
Santa Margarita, CA 93453  
805.701.5702

**Cathy Novak Consulting**  
P.O. Box 296  
Morro Bay, CA 93443  
805.772.9499

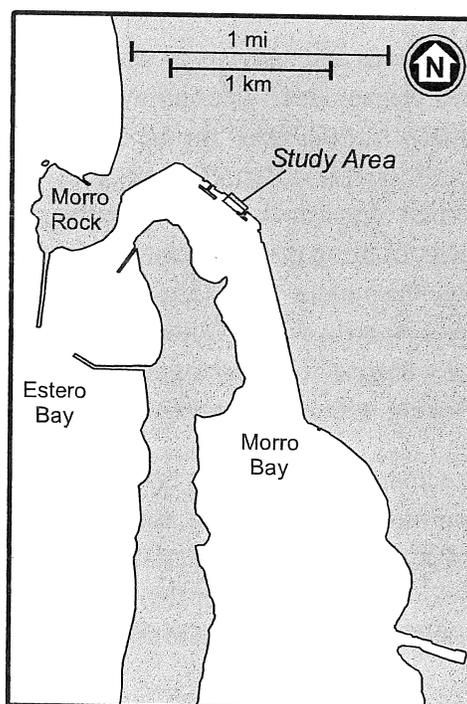
Prepared by:

**Tenera Environmental**  
141 Suburban Rd., Suite A2  
San Luis Obispo, CA 93401  
805.541.0310

## Project Description

This report describes the results of eelgrass (*Zostera marina*) mapping completed on October 2, 7, 8, and 12, 2013 at Morro Bay Landing located at 1215 Embarcadero in Morro Bay California (formerly Virg's Landing, **Figures 1 and 2**). A *Caulerpa taxifolia* survey was also completed at the same site on October 7, 8, and 12, 2013 while completing eelgrass survey work. The purpose of the eelgrass survey was to map the distribution and abundance of eelgrass where new docks and piles are to be installed to replace the current dock, and the purpose of the *Caulerpa* survey was to determine whether this invasive green alga was present in the areas of future construction (conditions for project approval; **Attachments 1, 2, and 3**).

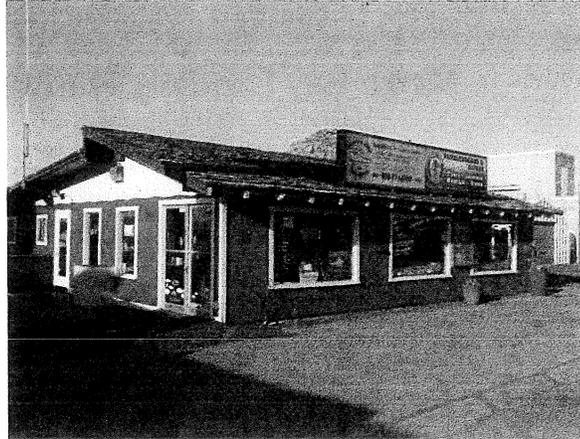
Eelgrass beds are considered a Special Aquatic Site (SAS) by the U.S. Army Corps of Engineers (ACOE), California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS). Eelgrass habitat is regulated



**Figure 1.** Location of the Morro Bay Landing dock project.



under Section 404 of the Clean Water Act (CWA), and is also considered Essential Fish Habitat by NMFS. The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) set the Essential Fish Habitat (EFH) provisions to identify and protect important habitats of federally managed marine species. As such, surveys are required to map the extent and location of eelgrass in projects that have the potential to affect eelgrass.



**Figure 2.** Morro Bay Landing tackle shop store front.

A search was also completed for the presence/absence of *Caulerpa taxifolia*, a highly invasive green algal species that has been introduced into California. *Caulerpa* reproduces easily by fragmentation, and is therefore susceptible to spreading from waterfront construction projects that disturb the seabed, such as from pile driving (and dredging). Concerns are that this alga, if present, can pre-empt space for eelgrass.

A previous eelgrass survey was completed in August 2006 in the Morro Bay Landing dock project area.<sup>1</sup> The survey was completed as part of the California Environmental Quality Act (CEQA)<sup>2</sup> for the City of Morro Bay (lead agency for the project) to issue a Conditional Use Permit for the project (UPO-058). The dock project in that plan was for a much larger dock system than the present plan; the prior plan was a system of new docks fronting three neighboring businesses rather than just Morro Bay Landing. The three businesses were Virg's Landing (now Morro Bay Landing), the Harbor Hut, and Great American Fish Company Restaurant. The larger dock system project, however, was never started. The current dock project is now to replace the docks only at Morro Bay Landing with a new arrangement of dock fingers stabilized by 12 new piles (**Figure 3**).

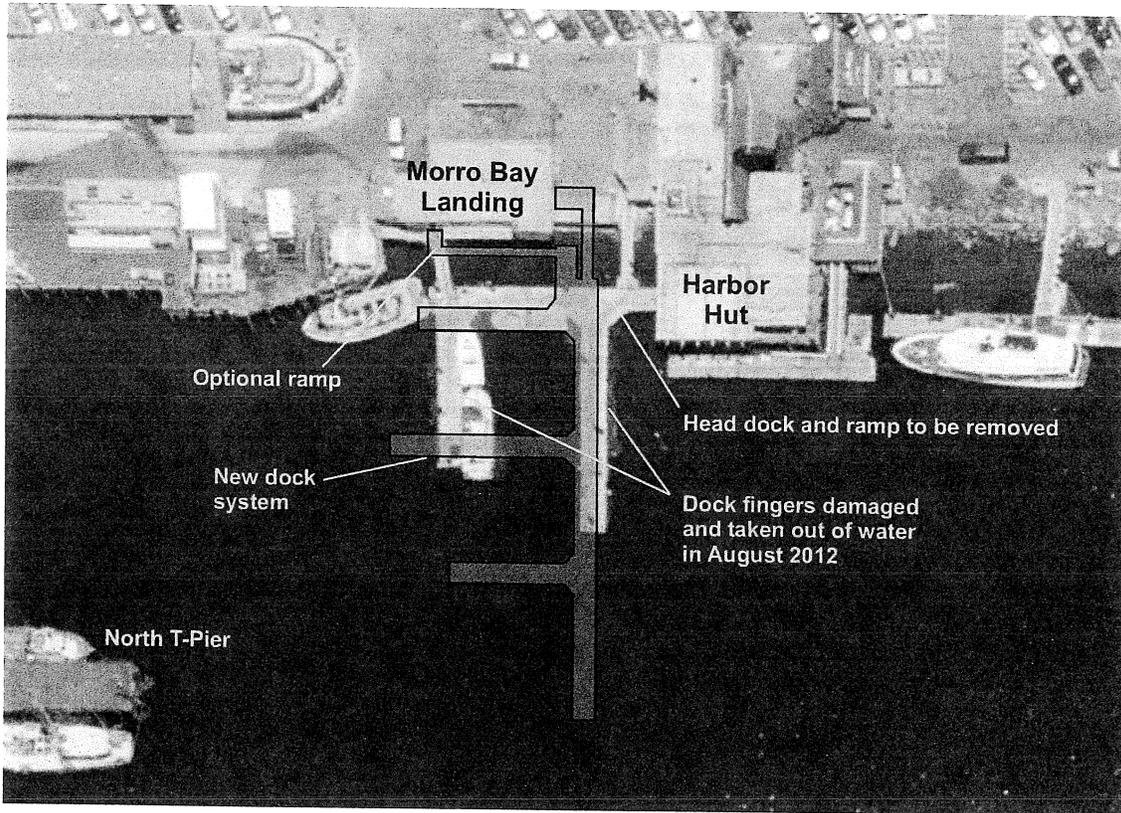
The dock to be replaced, however, was once larger than it is currently (**Figure 3**). Last year on August 21, 2012, the two dock fingers of the dock system were damaged by a fishing boat having lost control and colliding into the dock fingers. The dock fingers were removed from the water two weeks later. This left only the head dock that runs parallel-to-shore just off the tackle shop building as the only dock for Morro Bay Landing. As a

<sup>1</sup> Tenera Environmental. 2006. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey. Morro Bay Embarcadero Improvement Project. Prepared for Cathy Novak Consulting, Morro Bay, CA. September 2006.)

<sup>2</sup> California Code of Regulations, Chapter 3, Title 14.



result of removing the dock fingers, the dock could not be used for multiple boats. The piles of the damaged dock fingers were also removed (cut off near the seabed).



**Figure 3.** Morro Bay Landing dock project. The two former dock fingers were damaged by a boat collision and removed in August 2012. The remaining head dock will be removed. The new dock system will include 12 new piles.

## Methods

Eelgrass was mapped according to specifications of the Southern California Eelgrass Mitigation Policy (Revision 11), adopted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife<sup>3</sup>, as required by the U.S. Army Corps Permit for the project (Special Condition 1, **Attachment 1**).

<sup>3</sup>

[http://www.westcoast.fisheries.noaa.gov/publications/habitat/california\\_eelgrass\\_mitigation/eelpolrev11\\_final.pdf](http://www.westcoast.fisheries.noaa.gov/publications/habitat/california_eelgrass_mitigation/eelpolrev11_final.pdf) (Southern California Mitigation Policy, Revision 11)



## Sonar Surveys

Eelgrass mapping was completed using a combination of multibeam, sidescan, and down-looking sonars. The sonar survey was completed on October 2, 2013 using a survey boat equipped with a Mesotech M3 multibeam sonar, a dual frequency 330/800 kHz Imagenex sidescan sonar, and a BioSonics 201 kHz vertical (downlooking 6.7 degree transducer) split-beam sonar. The sonar surveys were completed along predetermined tracklines spaced to provide overlap mapping. Navigation was provided using moving map software on a portable laptop computer connected to a DGPS and viewed by the steersman.

Sonar horizontal and vertical positions were provided by two dual-frequency Sokkia GPS Units (GSR2600 and GSR2650LB) operating at 5 Hz and Novatel Waypoint post-processing software. Two constantly Continuously Operating Reference Stations (CORS) (P523 and P525) were used to process the GPS data.<sup>4</sup> Stations P523 (Los Osos) and P525 (Morro Creek) are located 4.5 miles (7.3 km) and 4.7 miles (7.6 km) respectively from Morro Bay Landing. This provided 0.8-2.0 in. (2-5 cm) horizontal positioning accuracy for processing of the sonar imagery and bottom elevations. Positions were combined with sonar data by merging with GPS times and using latency correction features.

Eelgrass in the multibeam and sidescan sonar images was identified and confirmed from the BioSonics data by creating two bottom tracking output files, one for the seabed and one for the top of the eelgrass blades that were merged with survey grade post processed locations from the Sokkia GPS. The depths and areas of eelgrass were determined by taking the difference between the seabed tracks and the top of eelgrass using an R-statistics program to create data input files for ArcView GIS.

## GIS Eelgrass Mapping

The sonar imagery was imported into ESRI ArcGIS 10.2 GIS software for manual delineation and digitization of the observed eelgrass bed boundaries. Manual digitization of eelgrass beds was performed at a resolution scale of approximately 1:200 to 1:500. Manual delineation was chosen over automated software pixel selection, because vertical sonar (BioSonics) and diver ground-truth information (below) was also used to help validate the presence/absence of eelgrass in the sonar images, as separate from other aquatic plant life or bottom features (e.g. debris, sawed off pier piles). The BioSonics vertical sonar processing allowed for the presence and absence of eelgrass to be determined (based on a minimum height of 0.7 ft, 0.2 m), as well as extraction of aquatic plant heights measured further above the seabed. This provided an additional GIS layer to help determine eelgrass in the sidescan sonar imagery.

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<sup>4</sup> CORS: <http://sopac.ucsd.edu/sites/getSiteInfo.html>



## Diver Surveys

Diver surveys verified sonar images that were suspected to not be eelgrass as not being eelgrass but rather other features (e.g. harder substrates of compacted/consolidated sediments, piles). Diver surveys also mapped the dimensions of eelgrass found in areas where the sonar boat could not access (e.g. between the tackle shop and current head dock running parallel-to-shore).

The post-construction survey will not be able to use sonar effectively to map eelgrass underneath the new docks and slips. The docks, piles, and boat hulls will interfere with the sonar signals, and the sonar vessel will not be able to move into slips that are occupied. Consequently, any future changes in eelgrass underneath the new docks and slips will not be able to be determined reliably using sonar. As such, the area underneath the future new docks and slips was sampled in the pre-construction survey by divers using the line-intercept method. This method can be repeated in post-construction surveys to assess changes relative to the dock construction and boats using the new docks.

Divers used the line-intercept method to estimate eelgrass coverage along pre-planned transects in the dock footprint area and in reference areas outside the dock footprint (**Figure 4**). For a designated transect, a kayaker<sup>5</sup> with a Garmin GPS unit programmed with the latitude/longitude coordinates of the transect start point (upcoast location) positioned the kayak directly above the starting point and deployed a portable drop buoy to mark the transect start location (origin). Divers then attached a meter tape to the drop buoy anchor and spooled out the meter tape along pre-planned compass headings to the designated transect end point (terminus). Some transects were positioned by divers (rather than by the kayaker) by using distance measurements from the neighboring transect rather than GPS coordinates.

The line-intercept method was then used to record the occurrence of eelgrass along each transect. Along each transect, the distance (meters) which eelgrass occurred directly underneath the transect was recorded. Open seabed spaces not colonized by eelgrass that were one meter or greater in length along the transects were recorded as transect distances lacking eelgrass. The amount of eelgrass along each transect was then calculated as percent cover, the length of eelgrass occurring along the transect relative to the total transect length.

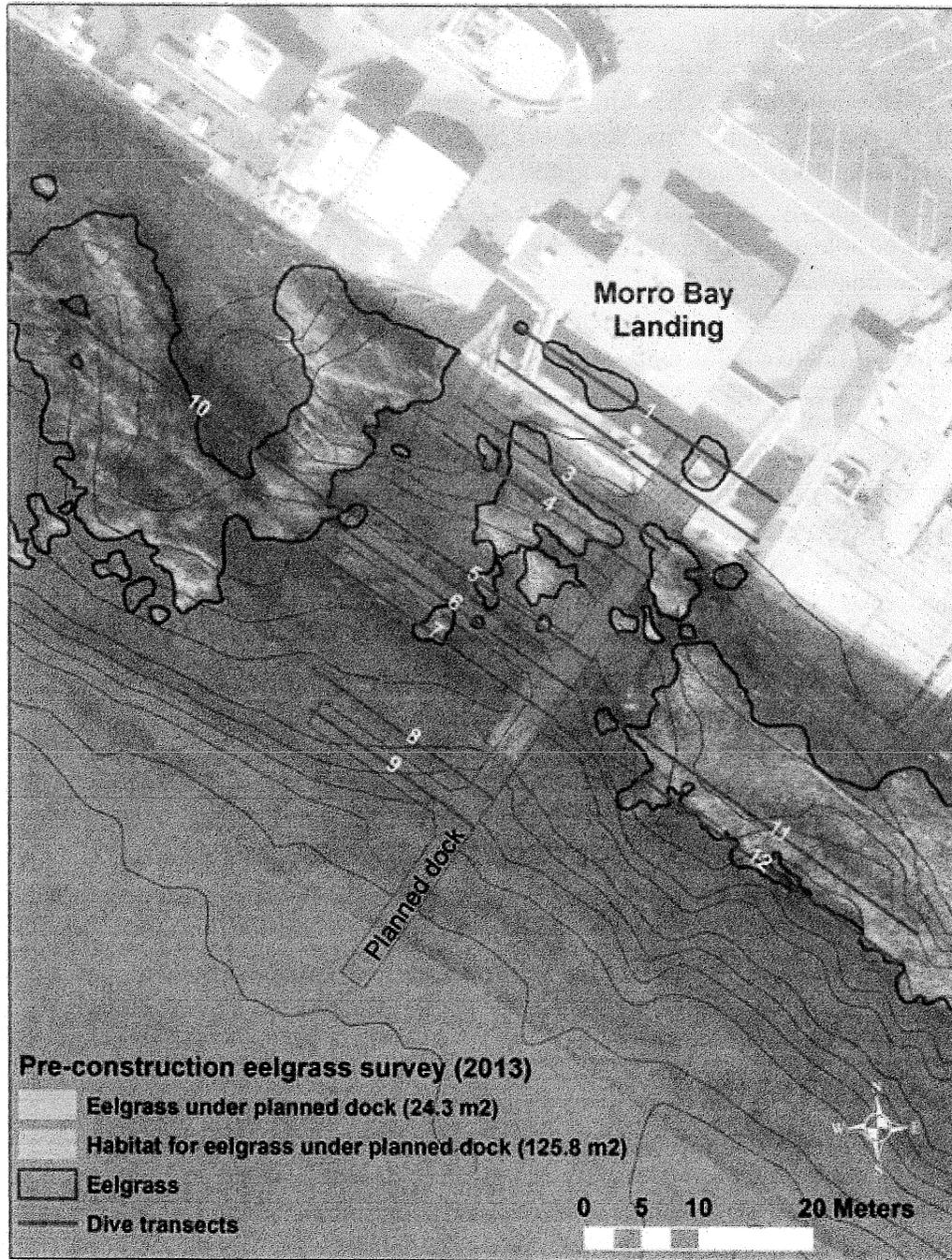
Eelgrass turions (stems or shoots) were also counted and blade lengths measured in quadrats (0.25 m<sup>2</sup>) placed at regular intervals along each transect. In the dock footprint area, excluding Transect 2 that was underneath the head dock and entirely devoid of eelgrass, four quadrats were sampled for eelgrass stem densities and blade lengths (Transects 1 and 3 through 9). Ten quadrats were sampled along each of the reference transects (Transects 10, 11, and 12). The blade nearest each corner of each quadrat was

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<sup>5</sup> The kayak for the survey was provided by Central Coast Paddleboards at Morro Bay Landing.



measured for length (cm). Stem counts were converted into number of stems per square meter.



**Figure 4.** Pre-construction Morro Bay Landing project: eelgrass delineation; estimated eelgrass and habitat for eelgrass (m<sup>2</sup>) that could be directly underneath the new dock; approximate locations of the diver transects that were sampled for eelgrass cover using the line-intercept method.



If there was no eelgrass at the designated quadrat location, eelgrass nearest the pre-designated location was sampled for stem counts and blade lengths. As such, all quadrats had at least one eelgrass stem. A greater number of alternate sampling locations for eelgrass stem densities and blade lengths had to be located for the transects farthest offshore, as generally no eelgrass occurred along those transects (Transects 8 and 9, Figure 4).

## Results

### Habitat Characterization

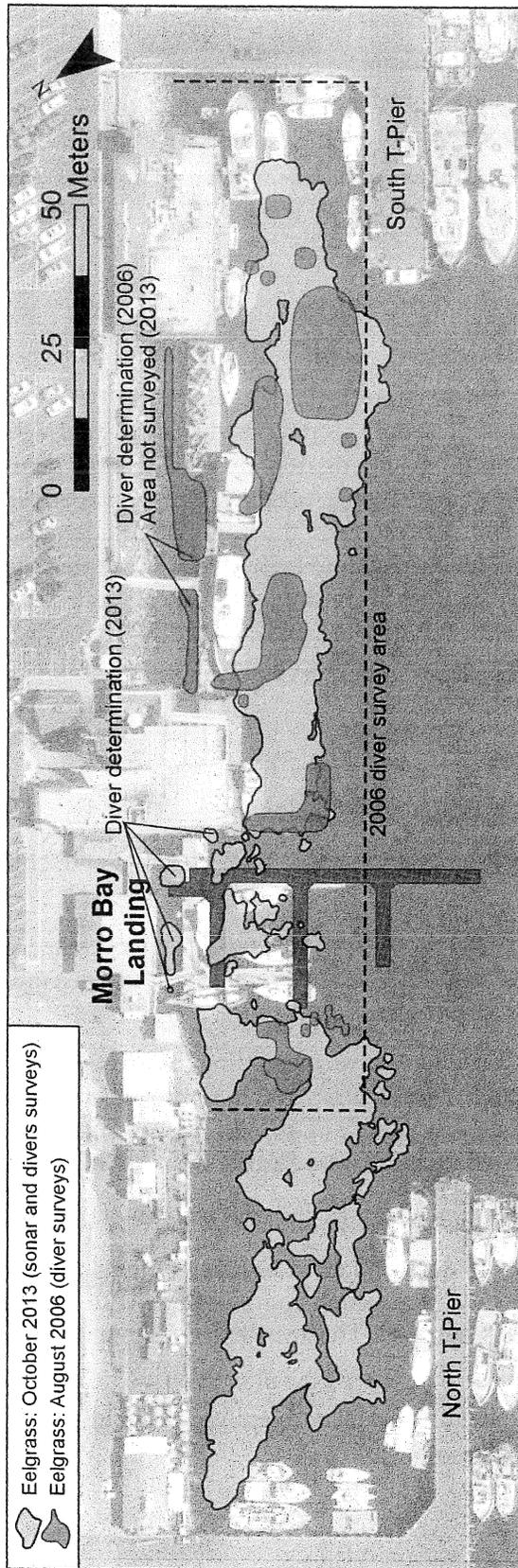
The shore bank of the project is armored, steeply sloping, and was covered with a fine layer of silt. The natural sand/mud seabed extending offshore was flat and gentle sloping. All of the submerged aquatic vegetation was mainly eelgrass. Only a few small scattered clumps of the red alga *Graciliopsis* spp. were seen on the bottom, including only several small non-native *Sargassum muticum* plants (bladder kelp). Hard substrates, such as pilings and docks, were colonized by sponges (Porifera), plumose anemones (*Metridium senile*), sea lettuce (*Ulva* spp.), hydroids (Hydrozoa), and encrusting bryozoans (Ectoprocta), the most conspicuous being the introduced bryozoan *Watersipora subtorquata*.

### Eelgrass and *Caulerpa* Mapping

The eelgrass and *Caulerpa* findings are highlighted below:

- Eelgrass was found inshore of the approximate -16 ft MLLW depth contour (Figure 5).
- The sonar mapping revealed eelgrass to be more patchy in occurrence with more open spaces inside the project footprint area, in comparison to most areas outside the planned project footprint (Figure 5).
- As with the sonar mapping, the diver transect sampling also revealed eelgrass to be less abundant in the project footprint compared to reference/control transects and less abundant with distance from shore (Table 1). Eelgrass stems were also less dense with depth and distance from shore (Table 2).
- Seed-bearing plants were commonly seen by the divers in all areas searched.
- It is estimated that the new head dock and dock fingers will be directly above approximately 24 m<sup>2</sup> (258 ft<sup>2</sup>) of eelgrass and approximately 126 m<sup>2</sup> (1,356 ft<sup>2</sup>) of potential habitat for eelgrass (Figure 4). These estimates do not include areas between the dock fingers.
- Some eelgrass may be damaged directly from the piling installations (amount to be determined in the post-construction survey).





**Figure 5.** Comparison showing increase in eelgrass cover between 2006 and 2013. The 2013 map was created in the present survey by sonar and divers. The 2006 map was created by divers. (Source of 2006 map: Tenera Environmental. 2006. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey. Morro Bay Embarcadero Improvement Project. Prepared for Cathy Novak Consulting, Morro Bay, CA. September 2006.)

- Approximately 30 m<sup>2</sup> (323 ft<sup>2</sup>) of new habitat for eelgrass may be created between the tackle shop building and the new dock finger closest to shore (**Figure 3**), if that potential dock space is not used by boats.
- No *Caulerpa* was found. A separate report on the absence of *Caulerpa* was prepared for and submitted to the National Marine Fisheries Service, California Department of Fish and Wildlife, and Mr. Robert Fowler the project client.

## Discussion

The present eelgrass survey completed between the Morro Bay T-Piers is the second eelgrass survey completed in the area. The first was completed by divers in August 29-31, 2006.<sup>6</sup> As such, there are two surveys describing eelgrass in the planned dock area prior to construction. Both surveys revealed the area between the two T-Piers to be healthy habitat for eelgrass, but colonized differently with eelgrass between 2006 and 2013.

The eelgrass survey in 2006 found eelgrass to be absent-sparse underneath docks and boats tied to the docks of the then Virg's Landing. Eelgrass elsewhere was more abundant, and occurred as dense patches of various sizes. The present survey found eelgrass to have increased in overall abundance between the two T-Piers. In the project footprint area (area of former docks), eelgrass changed from being absent-sparse to being larger patches, while eelgrass elsewhere changed from being large patches to being nearly continuous beds (**Figure 5**).

The new eelgrass in the former dock area was from the area becoming opened up more to sunlight for eelgrass to grow. This was associated with the damaged docks having been removed and from boats not using the docks. Had the docks and boats not been removed, the area would have remained shaded. As such, much less eelgrass would have been

**Table 1.** Summary of pre-construction eelgrass cover along diver transects at Morro Bay Landing (October 8, 2013). See Figure 4 for transect locations.

Area	Transect	Percent Cover
Dock Footprint	1	57.0
	2	-
	3	50.5
	4	72.5
	5	4.0
	6	4.0
	7	7.9
	8	1.4
	9	0
	<b>Mean</b>	<b>24.6</b>
Reference	10	62.5
	11	96.7
	12	8.3
	<b>Mean</b>	<b>55.8</b>

<sup>6</sup> Tenera Environmental. 2006. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey, Morro Bay Embarcadero Improvement Project. Prepared for Cathy Novak Consulting, Morro Bay, CA. September 2006.



probably found than what was found in the present survey (2013). It is possible that the eelgrass could have resembled the sparse-absent pattern seen in 2006.

A post-construction survey is to be completed within 30 days after all of the dock construction is finished and the old dock structures are removed (Special Condition 2, **Attachment 1**). This survey will be mainly to document whether the installation of the new piles and removal of the old piles has affected eelgrass.

Other potential impacts to eelgrass, such as from shading, will probably not have occurred within 30 days after construction has been completed. As such, annual surveys are required to assess potential impacts to eelgrass and habitat for eelgrass from factors that may take longer to manifest (Special Condition 3 - **Attachment 1**, Special Condition 3b - **Attachment 2**). The annual follow-up surveys will utilize the same methods used in the pre-construction survey. Changes in eelgrass in the project footprint relative to changes in eelgrass outside the project footprint will be the basis for assessing the magnitude and scale of impacts. The permittee is to mitigate for any adverse impacts according to specifications in the Southern Eelgrass Mitigation Policy, Revision 11 (Special Condition 4, **Attachment 1**).

Of note, descriptions of changes in eelgrass in Morro Bay have been declines in abundance since about 2007.<sup>7</sup> In contrast, the present eelgrass survey found eelgrass between the two T-Piers to have increased significantly in overall abundance since 2006 (**Figure 5**).

**Table 2.** Summary of pre-construction eelgrass stem densities and blade lengths at Morro Bay Landing (October 8, 2013). See Figure 4 for transect locations.

Area	Transect	Stem Densities /m <sup>2</sup>		Stem Lengths (cm)	
		Average Counts	Std. Dev.	Average Lengths	Std. Dev.
Dock Footprint	1	88.0	58.9	85.2	19.5
	2	40.0	14.2	61.0	7.6
	3	none	none	none	none
	4	73.0	44.8	75.3	25.6
	5	77.0	30.2	63.5	22.9
	6	54.0	30.2	67.3	13.6
	7	40.0	24.2	58.9	10.1
	8	11.0	9.5	47.0	16.1
	9	14.0	13.7	48.8	21.1
	<b>Mean</b>	<b>52.0</b>	<b>39.4</b>	<b>65.5</b>	<b>20.2</b>
Reference	10	95.2	45.0	81.5	17.4
	11	58.4	31.0	84.9	29.4
	12	50.8	17.6	88.6	29.2
	<b>Mean</b>	<b>68.1</b>	<b>37.6</b>	<b>87.2</b>	<b>26.1</b>
<b>Grand Mean</b>		<b>60.1</b>	<b>39.0</b>	<b>76.9</b>	<b>25.8</b>

<sup>7</sup> Morro Bay National Estuary Program. 2010. Morro Bay Eelgrass Report. [http://www.mbnep.org/Our\\_Work/eelgrass.html](http://www.mbnep.org/Our_Work/eelgrass.html)



U.S. Army Corps of Engineers Permit Number: SPL-2008-01157-BAH

**Special Conditions:**

1. The applicant shall conduct a pre-construction eelgrass survey during the growing season of March to October, which will be valid up to 60 days prior to construction activities, to determine the extent of eelgrass in the immediate vicinity of the project. All eelgrass surveys shall be conducted in accordance with the National Marine Fisheries Service's (NMFS) Southern California Eelgrass Mitigation Policy, including identification and mapping of existing and potential eelgrass habitat in the project vicinity. A copy of the pre-construction survey shall be provided to the Corps of Engineers and NMFS. Other data described in the Mitigation Policy shall be provided directly to NMFS.
2. A post-construction survey shall be conducted within 30 days following construction of new docks, walkways and related features in order to determine the project's impact to eelgrass habitat. A copy of the post-construction survey shall be provided to the Corps of Engineers and NMFS.
3. Because impacts associated with any potential changes in hydrology and/or sedimentation patterns from placement of the structures will not become immediately apparent in the 30-day post-construction survey, two additional annual monitoring surveys shall be conducted by September 30 of each of the two years following in-water project construction during each phase. All surveys and any necessary mitigation shall be conducted in accordance with the Southern California Eelgrass Mitigation Policy ([http://swr.nmfs.noaa.gov/hcd/policies/EELP0Lrev11\\_final.pdf](http://swr.nmfs.noaa.gov/hcd/policies/EELP0Lrev11_final.pdf)).
4. The Permittee shall mitigate for adverse impacts to eelgrass habitat (physical disturbance and shading) through enhancement of shallow subtidal estuarine habitat by eelgrass plantings in areas of suitable depth, substrate type, water quality, currents, and lack of cover. Impacts to existing eelgrass habitat, if greater than 100 square meters, shall be mitigated at a ratio of 1.2 to 1. If impacts to existing eelgrass habitat are less than 100 square meters, the impacts shall be mitigated at a ratio of 1.0 to 1. Impacts to unvegetated potential eelgrass habitat (i.e., areas with suitable conditions, such as appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc.) shall be mitigated at a ratio of 1.0 to 1. Degradation of existing eelgrass habitat that results in a reduction of eelgrass density greater than 25 percent, as determined by the two annual monitoring surveys in Special Condition 2, shall be mitigated at a ratio of 1.0 to 1. The compensatory mitigation responsibility will not be considered fulfilled until mitigation success is determined successful and verification of that success is provided by the Corps of Engineers Regulatory Division.
5. The Permittee shall conduct a pre-construction survey of the project area for *Caulerpa* algae in accordance with the *Caulerpa* Control Protocol (attached) not earlier than 90 calendar days prior to planned construction and not later than 30 calendar days prior to construction, preferably within the high growth period of March 1 to October 31. The results of that survey shall be furnished to the Corps of Engineers Regulatory Division,



NOAA Fisheries, and the California Department of Fish and Game (CDFG) within 15 days of completion of each survey and at least 15 calendar days prior to initiation of work in navigable waters. In the event that *Caulerpa* is detected within the project area, the Permittee shall not commence work until such time as the infestation has been isolated, treated, and the risk of spread is eliminated and confirmed by the Corps of Engineers Regulatory Division, in consultation with NOAA Fisheries and CDFG.



CDP 3-08-025 (Harbor Hut/Old Virg's/GAFCO) - As amended up to and including CDP amendment 3-08-025-A1, Issue Date: April 24, 2013

### Special Conditions

**1(j). Eelgrass Mapping.** All existing eelgrass beds shall be avoided as much as possible. The plans shall identify in site plan view all existing eelgrass beds in the project area; all such existing eelgrass beds that will be shaded due to the project (including by docks and boats in slip locations), and all new eelgrass bed areas being created (including by moving docks and boat slips from current locations and by replanting) as part of the project. The Permittee shall undertake development in accordance with the approved Revised Final Plans.

**3. Eelgrass Monitoring Plan.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit two copies of an eelgrass monitoring plan (EMP) to the Executive Director for review and approval. The EMP shall, at a minimum, provide for the following:

- a. Eelgrass Protection. All eelgrass beds in the project area (those unaffected by the project and those created by the project- see Special Condition 1(j)) shall be identified in site plan view, and shall be protected as eelgrass habitat in perpetuity.
- b. Annual Monitoring. Annual monitoring by a qualified biologist experienced with eelgrass shall be conducted to monitor the health and extent of eelgrass beds in the project area. A monitoring report shall be submitted to the Executive Director for review and approval on an annual basis with the first report due one-month following completion of the floating dock component of the project, and subsequent reports due at one year increments after that. All annual reports shall at a minimum include a site plan and written description of the status of eelgrass beds in the project area, including quantifying the amount of new eelgrass coverage observed within the eelgrass beds in the project area. If any annual report identifies a reduction in eelgrass coverage as compared to then existing eelgrass coverage at the time of permit approval (see Special Condition 1(j)), then the report shall identify remedial measures to offset such reduction within the eelgrass beds in the project area. Annual reporting shall continue for at least three years or until all eelgrass beds to be protected pursuant to the EMP are supporting eelgrass as documented in two consecutive annual reports, whichever is later.

The Permittee shall undertake development in accordance with the approved Eelgrass Monitoring Plan.



City of Morro Bay UPO-058

**Conditions of Approval**

BI0-3

The shaded eelgrass shall be surveyed prior to construction and after completion to ensure the area has not lost more than anticipated. Concurrency from the federal agencies and obtain all necessary permits from them before start of construction.





## Eelgrass (*Zostera marina*)

### Morro Bay Landing Phase 1a Dock Project Second Annual Post-Construction Survey and Final Report

October 28, 2016

**Prepared for:**

Mr. Robert Fowler  
P.O. Box 1008  
Santa Margarita, CA 93453  
805.701.5702

Cathy Novak Consulting  
P.O. Box 296  
Morro Bay, CA 93443  
805.772.9499

**Prepared by:**

Tenera Environmental  
141 Suburban Rd., Suite A2  
San Luis Obispo, CA 93401  
805.541.0310

## Project Description

This report describes the results from the second annual post-construction eelgrass (*Zostera marina*) survey completed for the Morro Bay Landing Phase 1a dock replacement project located at 1213 Embarcadero in Morro Bay, California (**Figure 1**).<sup>1</sup> This is the final report of data for assessing potential impacts to eelgrass from the dock replacement. The dock replacement consisted of replacing the former dock with a larger dock consisting of more slips (**Figure 2**).

The Southern California Eelgrass Mitigation Policy (SCEMP, Revision 11)<sup>2</sup> was the policy in place for assessing potential impacts to eelgrass when the project was permitted. The policy specifies that the assessment of impacts be based on mapping results from a pre-construction survey completed within 60 days prior to construction, a post-construction survey completed within 30 days after construction to assess direct/immediate impacts from construction (e.g., installing and removing piles), and two subsequent annual post-construction surveys to assess longer-term potential effects (e.g., from shading).

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<sup>1</sup> Permits: U.S. Army Corps of Engineers Permit SPL-2008-01157-BAH, Coastal Development Permit CDP 3 08-025 (Harbor Hut/Old Virg's/GAFCO), as amended up to and including CDP amendment 3-08-025-A1 (issue date: April 24, 2013, City of Morro Bay UPO-058).

<sup>2</sup> [http://www.westcoast.fisheries.noaa.gov/publications/habitat/california\\_eelgrass\\_mitigation/eelpolrev11\\_final.pdf](http://www.westcoast.fisheries.noaa.gov/publications/habitat/california_eelgrass_mitigation/eelpolrev11_final.pdf)



The pre-construction survey was completed on October 2, 7, 8, and 12, 2013.<sup>3</sup> Removing most of the old dock and installing the new dock followed on October 22-23, 2013 (Figure 2), but the last of the remaining old piles were removed at the start of the following spring. As a result, the 30-day post-construction survey was not completed until March 1, 2014.<sup>4</sup> The results of the 30-day post-construction survey showed no direct impacts to eelgrass from the pile work.

The first annual post-construction survey to assess potential longer-term effects (from shading) was completed in concurrence with the U.S. Army Corps of Engineers and National Marine Fisheries Service,<sup>5</sup> which occurred in fall 2015. The second annual post-construction mapping survey (present survey) was completed on August 24 and September 23, 2016.

An initial eelgrass survey was completed in the dock area 10 years prior, in August 2006.<sup>6</sup>

The findings served as the initial baseline for permitting the project and why SCEMP conditions to assess potential impacts to eelgrass were incorporated into the project's permits. The findings are included and discussed in the discussion section below with the more recent eelgrass abundance levels observed in 2013-2016.

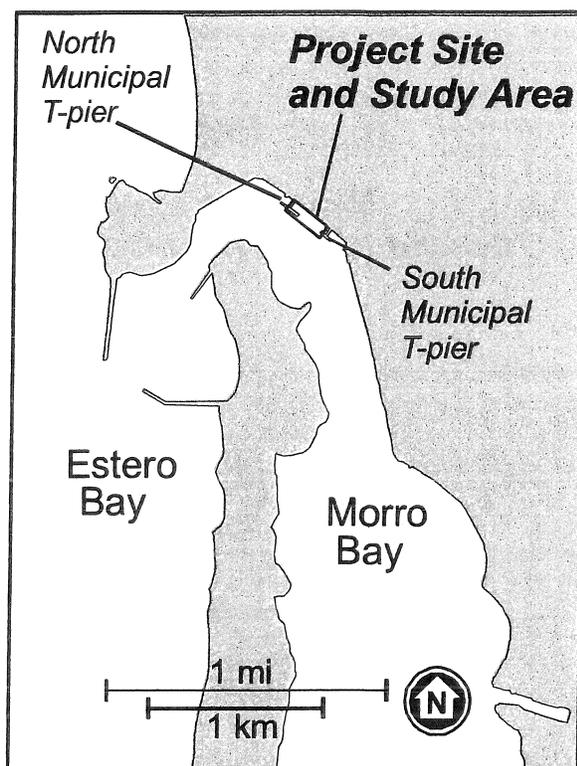


Figure 1. Project location.

## Methods

The mapping of eelgrass in 2006 for permitting the project was done by divers using meter tapes. The next survey was the pre-construction survey completed in 2013. In preparing for that survey, eelgrass was found to have become larger and more complex in distribution and abundance. This

<sup>3</sup> Tenera Environmental. 2013. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Morro Bay Landing Pre-Construction Survey. Prepared for Robert Fowler, Santa Margarita, California and Cathy Novak Consulting, Morro Bay, California. November 2013.

<sup>4</sup> Tenera Environmental. 2014. Morro Bay Landing 30-Day Post-Construction Eelgrass Survey. Prepared for Robert Fowler, Santa Margarita, California and Cathy Novak Consulting, Morro Bay, California. April 2014.

<sup>5</sup> Email from Bruce Henderson (U.S. Army Corps of Engineers) with Adam Obaza (National Marine Fisheries Service) to Scott Kimura (Tenera Environmental) at 11:47 am on Sept. 3, 2014 to conduct the first annual post-construction eelgrass mapping survey in 2015 for the Morro Bay Landing Phase 1a replacement dock project.

<sup>6</sup> Tenera Environmental. 2006. Eelgrass (*Zostera marina*) and *Caulerpa taxifolia* Survey. Morro Bay Embarcadero Improvement Project. Prepared for Cathy Novak Consulting, Morro Bay, CA. September 2006.)



required the mapping in 2013 to be done using hydroacoustic methods, including the two annual post-construction surveys, in 2015 and present survey (2016).

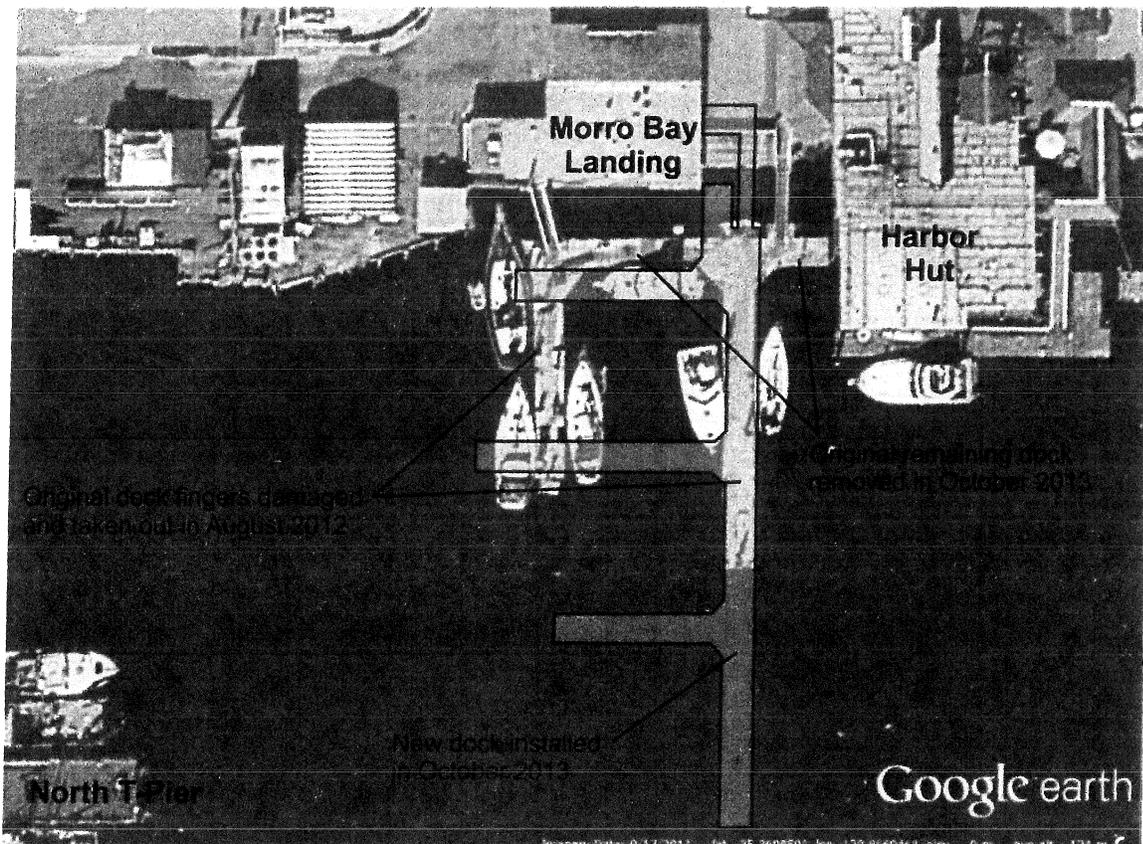


Figure 2. Original and new dock of the Phase 1a dock replacement project.

The present (final) post-construction survey was completed on August 24, 2016. The area surveyed was approximately 2 acres (0.8 hectares) over the soft sediment sand-mudflat seabed (Figure 1). As in the 2013 and 2015 surveys, a diver survey followed, after maps of eelgrass cover were created from the sonar images. Eelgrass maps were created before the diver surveys to determine if there were any specific areas needing direct observations by the divers to resolve uncertain sonar images. The diver survey in the present 2016 survey was completed on September 23, 2016, which also included sampling eelgrass for stem densities and leaf lengths.

## Sonar Surveys

Hydroacoustic mapping of eelgrass was completed using two different sonars, a multibeam sonar operating in sidelooking mode 15 degrees from horizontal for imaging, and a down-looking sonar. The area surveyed was between the two City of Morro Bay municipal T-piers. The survey was completed using a small boat equipped with a Kongsberg Mesotech M3 multibeam sonar and a BioSonics DTX 200 kHz vertical (downlooking 6.7 degree transducer) split-beam sonar. The sonar surveys were completed along predetermined tracklines spaced to provide overlap



between adjacent tracklines. Navigation was provided using mapping software on a portable laptop computer connected to a DGPS and viewed by the boat operator. As in the past, a dual frequency 330/800 kHz Imagenex sidescan sonar was available in case the multibeam sonar had any problems, but this instrument was not necessary. The M3 multibeam sonar was operated as an imaging sonar in the sidescan mode, while the BioSonics DTX sonar was used as an echosounder that recorded bottom bathymetry, as well as the tops of eelgrass plants.

Sonar horizontal and vertical positions were provided by two dual-frequency GPS Units (Novatel Propak3 and Sokkia GSR2650LB) operating at 5 Hz and using Novatel Waypoint post-processing software. The Novatel antenna was positioned above the M3 multibeam sonar and the Sokkia was above the Biosonics transducer. These were aligned directly fore-and-aft and separated by one meter. This provided heading and pitch using differences in position and vertical antennae elevations. The GPS antennas and the sonars were located on the port side of the vessel. A third Sokkia GPS (GSR2600) antenna was located orthogonal to the other two GPS antennas and used to correct for roll. A Continuously Operating Reference Station (CORS) P523 (Los Osos) located 4.5 miles (7.3 km) from Morro Bay Landing was used to process the GPS positioning data, which provided 0.8-2.0 in. (2-5 cm) horizontal positioning accuracy for the sonar imagery and bottom elevations. Positions were combined with sonar data by merging with GPS times and using latency correction features.

Eelgrass in the multibeam sonar images was identified and confirmed from the BioSonics down-looking (vertical) data by creating two bottom tracking output files, one for the seafloor and one for the top of the eelgrass leaves that were merged with survey grade post-processed locations from the Sokkia GPS. The depths and eelgrass detections were determined by taking the difference between the seafloor tracks and the top of eelgrass using an R statistics program to create data input files for a GIS project.

## Image Rectification

Multibeam sonar images were mosaicked using heading corrections via post-processing. The two GPS antennas (separated by 1.0 m [3.3 ft]) were positioned fore and aft, for providing headings, pitches, and positions. A third GPS antenna located at 1.0 meter to starboard was used with the Novatel Propak3 antenna to provide roll measurements. An R Statistics program was used to create a file that contained timestamps, headings, and data on pitch, roll, and position from the three antennas' computed positions. This program also had capability for adjusting a time latency and a fixed heading correction (e.g. the multibeam head was pointed 90 degrees from the compass heading). The heading file was then used in a set of two compiled C++ programs to rewrite the multibeam sonar file with corrected and accurate headings, pitches, rolls, and positions. GeoTiff images were then created using a playback capability of the Kongsberg Mesotech M3 acquisition program, cropping the fan beam to the center 15% and outputting this section along a transect every 1 m (3.3 ft). Open source geospatial software (OSGeo4W) used gdalwarp (image reprojection and warping utility) to combine the GeoTiffs into a single image for input into a GIS project.



## GIS Eelgrass Mapping

The sonar imagery was imported into GIS software (ESRI ArcGIS 10.2) for manual delineation and digitization of the observed eelgrass bed boundaries. As in previous surveys, the multibeam imagery was used preferentially to the Imagenex sidescan sonar because it can more reliably recognize eelgrass extents with its higher resolution.

Manual delineation of eelgrass beds was performed at a resolution scale of approximately 1:200 to 1:500. Manual delineation was chosen over automated software pixel selection, because vertical sonar (BioSonics) and diver information was also used to help validate the presence/absence of eelgrass in the sonar images.

The BioSonics vertical sonar processing allowed for the presence and absence of eelgrass to be determined based on a minimum height of 0.1 m (0.3 ft) above the seafloor (**Figure 3**). This provided an additional GIS layer to help identify eelgrass extents in the sonar imagery.

## Diver Surveys

The diver survey using SCUBA was completed on September 23, 2016. The purpose was to verify that the sonar images were eelgrass and not other structures, to sample quadrats for stem densities and leaf lengths, and to sample transects for eelgrass cover (**Figure 4**). The transects were meter tapes deployed between GPS waypoints and between locations from fixed structures (e.g., piles). Quadrats (0.25 m<sup>2</sup>) were placed at regular intervals along the transects and at locations where eelgrass was present to count eelgrass stems (turions/shoots) and to measure leaf lengths (cm). The quadrat data was converted to stems/m<sup>2</sup>. The line-intercept method was used to sample eelgrass for cover along the transects, particularly underneath the new docks; the distance intervals (meters) of eelgrass underneath the transect meter tapes were noted. These data were collected in case the sonar images did not adequately provide images of eelgrass underneath docks and boat hulls in the dock slips.

## Analysis Methods

For analysis, the area surveyed between the two Morro Bay T-piers was divided into subareas to compare changes in eelgrass abundance in the Phase 1a dock area to eelgrass in three combined control areas having no docks or boats (**Figure 5**). The dock project area consisted of the area with the new dock sections and the areas between the new dock fingers for boats to berth. The three control beds were not contiguous but large overall, especially the control bed-north and control bed-south. This resulted in large scaling differences needing to be taken into account in calculating changes in the much smaller eelgrass bed in the dock area relative to changes in the much larger control eelgrass beds.<sup>7</sup>

The area between the two T-piers included two other dock replacement projects, the Phase 1b dock project that was completed last year (2015) and the pending Phase 2 dock project fronting

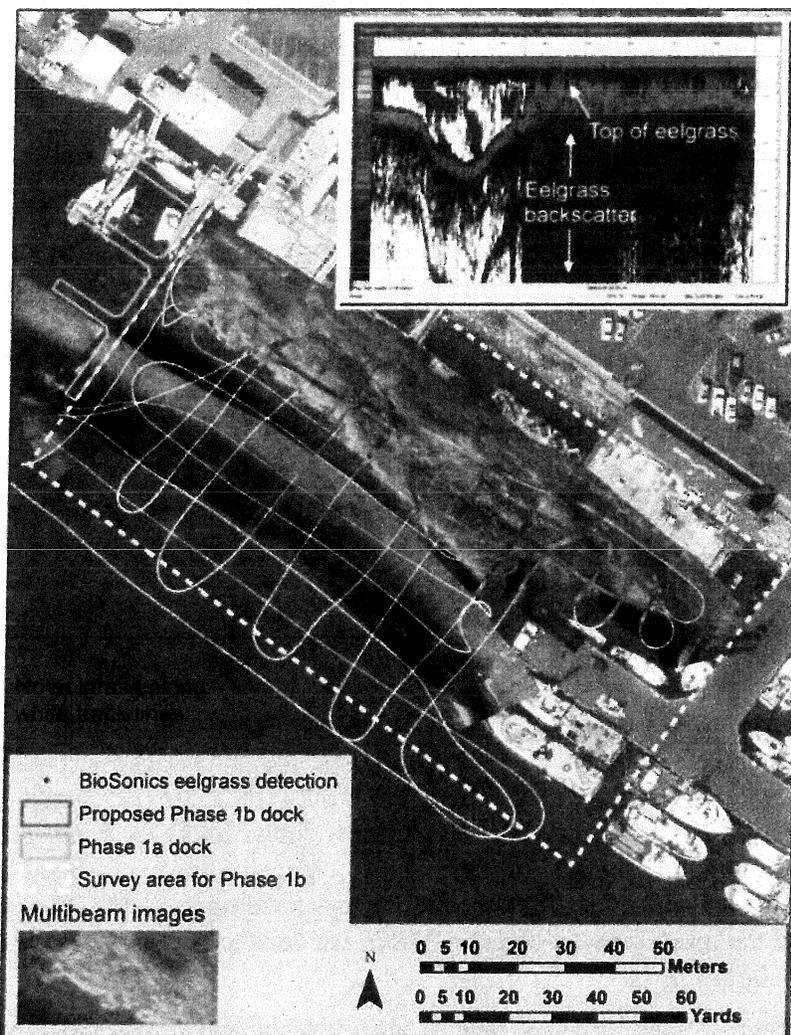
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<sup>7</sup> Tenera Environmental. 1997. Diablo Canyon Thermal Effects Monitoring Program Analysis Report. Chapter 1 – Changes in the Marine Environment Resulting from the Diablo Canyon Power Plant Discharge. Prepared for Pacific Gas and Electric Company, San Francisco, California. December 1997.

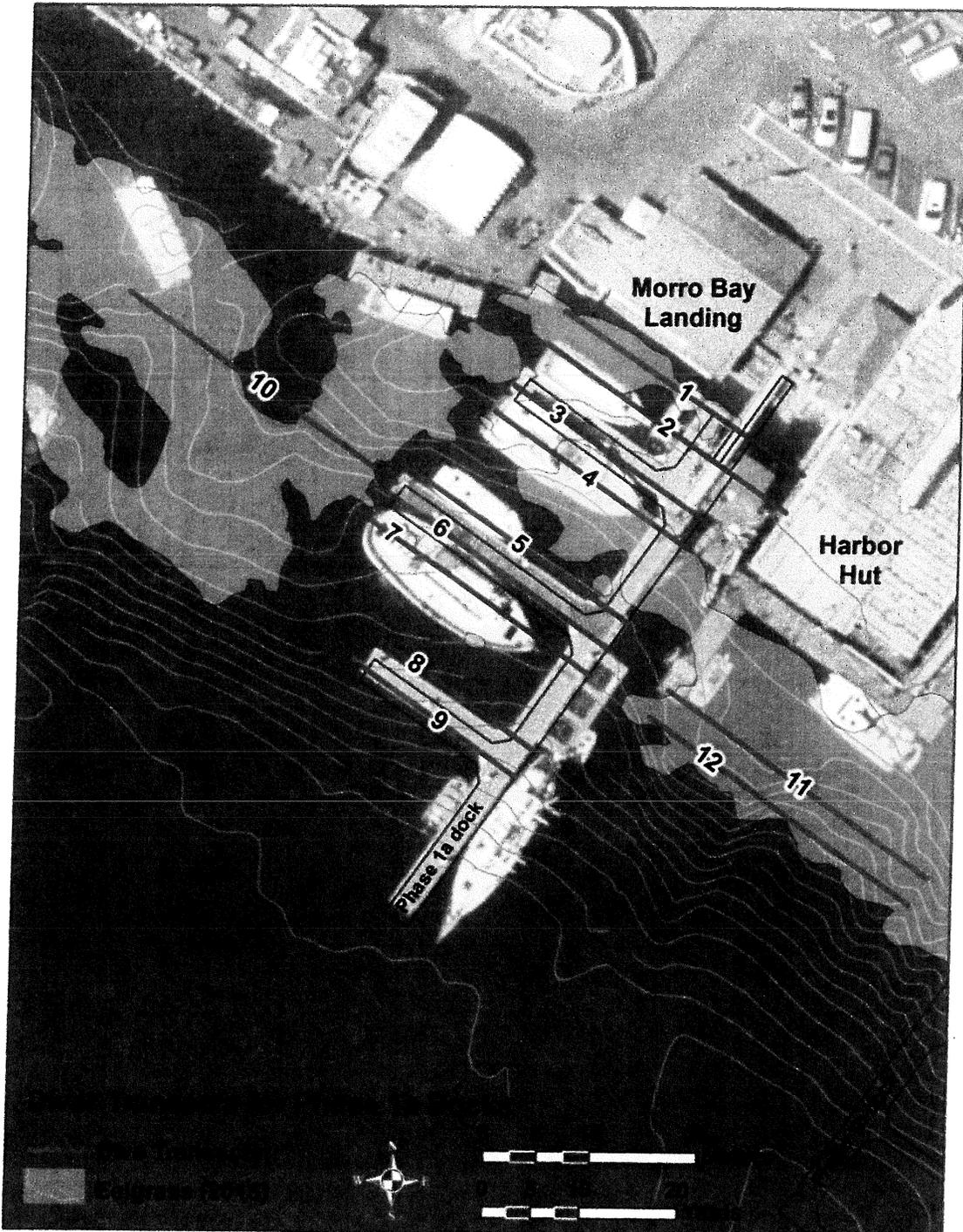


the Harbor Hut Restaurant (Figure 5). The middle control area used in the analysis for this report did not include the area where the Phase 2 docks might be installed later. Also, the area of the Phase 1b docks and Phase 2 docks were not included in any comparisons of eelgrass abundance for the present report, but was included in estimating the total size of the eelgrass bed between the two T-piers (Figure 5).

The multibeam sidescan sonar was able to detect (and map) eelgrass that occurred underneath dock fingers and underneath boat hulls in the dock slips. As such, the estimates of eelgrass coverage using sonar were more accurate than estimates collected using the diver line-intercept transect sampling method.

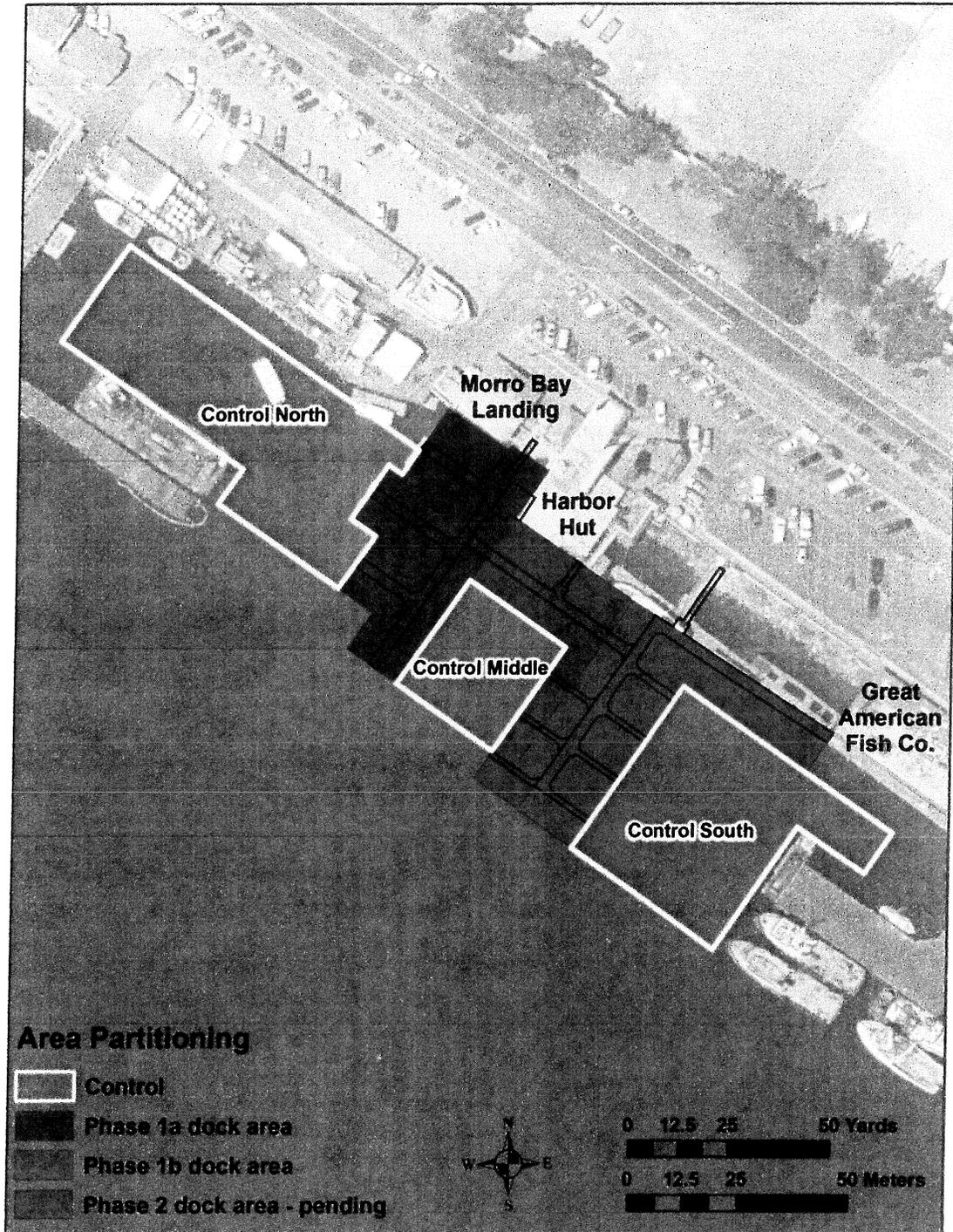


**Figure 3.** Example of BioSonic vertical sonar tracklines and eelgrass detections to aid in delineating eelgrass in multibeam images. Upper right diagram shows BioSonic profile of eelgrass. Source: Tenera Environmental. 2015. Morro Bay Landing Phase 1b Pre-Construction Eelgrass (*Zostera marina*) Survey. Prepared for Robert Fowler, Santa Margarita, California and Cathy Novak Consulting, Morro Bay, California. October 2015.



**Figure 4.** Diver transects sampled for eelgrass cover and for placing quadrats to sample eelgrass stem densities and leaf lengths. The eelgrass shown is from the first annual post-construction survey (2013).





**Figure 5.** Area partitioning to analyze changes in eelgrass abundance in the Phase 1a dock area relative to controls.



## Results

The 2013 pre-construction and two annual post-construction surveys found eelgrass to be abundant between the two Morro Bay T-piers, in mainly areas shallower than approximately -15 ft MLLW (**Figure 6**). The total size of the eelgrass bed between the T-piers was approximately 0.9 acres (0.4 hectares), on average among the three surveys. This does not include the small strip of eelgrass inshore of the Phase 1 b dock section closest to shore (**Figure 6**).

Changes in the abundance of eelgrass in the Phase 1a dock area and in the three combined control areas are shown in **Figure 7**. The changes between areas generally paralleled each other.

The abundance levels are shown in **Table 1a**, and changes in eelgrass in the dock area, relative to controls, are shown as increases/decreases in **Table 1b**. After the first year of dock construction, eelgrass increased in abundance in the dock area by approximately 20 m<sup>2</sup> (215 ft<sup>2</sup>), relative to controls. After the second year, eelgrass in the dock area was lower in abundance, in comparison to the pre-construction survey. This represents a loss of approximately 8 m<sup>2</sup> (86 ft<sup>2</sup>) of eelgrass, relative to controls. The decline resulted in eelgrass returning to the pre-construction level of abundance, a no net change.

Eelgrass stem densities and leaf lengths were not largely different between the dock and control areas over time (**Table 2**). Also, fertile eelgrass (seed bearing) plants were seen in the dock and control areas during the survey.

## Discussion

This report is the final report on potential impacts to eelgrass from the Morro Bay Landing Phase 1a dock replacement project. The change in eelgrass abundance from the pre-construction (2013) to the first post-construction survey (2015) was an increase in the dock area of 20 m<sup>2</sup>, relative to controls. In the end there was a decline of 8 m<sup>2</sup> of eelgrass, relative to controls, between the pre-construction and final post-construction survey (2013-2016).

The initial increase in eelgrass cover after the new docks being installed was due in part to the increase in the width of the eelgrass patch closest to shore (next to the Morro Bay Landing building) (**Figure 6**). The widening was likely from the former dock section closest to shore being moved slightly offshore by approximately 8 ft (**Figure 2**), thus opening up more space and light for eelgrass to expand into.

The decline detected in the next (final) post-construction survey appears to have been from decreases having occurred in eelgrass in other areas of the docks, from shading as more boats began occupying the new dock slips. The result was eelgrass in the dock area returned back to the same abundance level of the pre-construction survey, a no net change (**Table 2a**, **Figure 7**).

The difference of 8 m<sup>2</sup> of eelgrass, relative to controls, between the pre-construction and second (final) post-construction survey, represents a small amount, and likely a result of sampling variation and natural variation than a difference associated with an impact. Especially, the



difference should be considered to be very small, as eelgrass in the combined control areas was greater in abundance by an order of magnitude to the dock area eelgrass (**Figure 7**).

For coastal development projects that impact less than 10 m<sup>2</sup> of eelgrass, Subsection 2 of Section 12 in the SCEMP describes exclusions from mitigation that would otherwise involve eelgrass transplanting as a form of restoration. An exemption can be granted provided that suitable out-of-kind mitigation can be met. Accordingly, the next step is for the U.S. Army Corps of Engineers, City of Morro Bay, and California Coastal Commission, the permitting agencies requiring the eelgrass surveys to be completed for the project, must decide whether the data are sufficient to conclude that eelgrass was impacted by the project and by how much, or alternatively to conclude there was a no net change in eelgrass in the dock area, and that the small changes, relative to controls, may be accounted for by natural variation, including sampling variation. The latter decision would mean studies are no longer needed for the project, mitigation measures are unnecessary, and that this is the final report for the project.

An important additional finding from the project's surveys is eelgrass being found to be significantly more abundant than 10 years ago in the same area (**Figure 8**). Different mapping methods were used across surveys but the results indicate eelgrass underwent an approximate 250 % increase in abundance between 2006 and 2016, in comparing the same areas between years. The increase in the dock area, relative to the same controls areas surveyed in 2006 and 2016, represents well over a 600 % increase over the past 10 years (i.e., eelgrass increased more in the dock area than in control areas on a relative basis).

The overall large increase in eelgrass abundance between the two Morro Bay T-piers from 2006 to 2016 provides more information on eelgrass dynamics in Morro Bay; the increase was directly opposite in change of major declines that occurred over the same time span in eelgrass abundance in other portions of the bay, declines that started after about 2007.<sup>8</sup> The increase spanning 10 years would have not been detected without the surveys completed for the project.

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<sup>8</sup> <http://www.mbnep.org/wp-content/uploads/2014/12/2013-Eelgrass-Monitoring-Report.pdf>



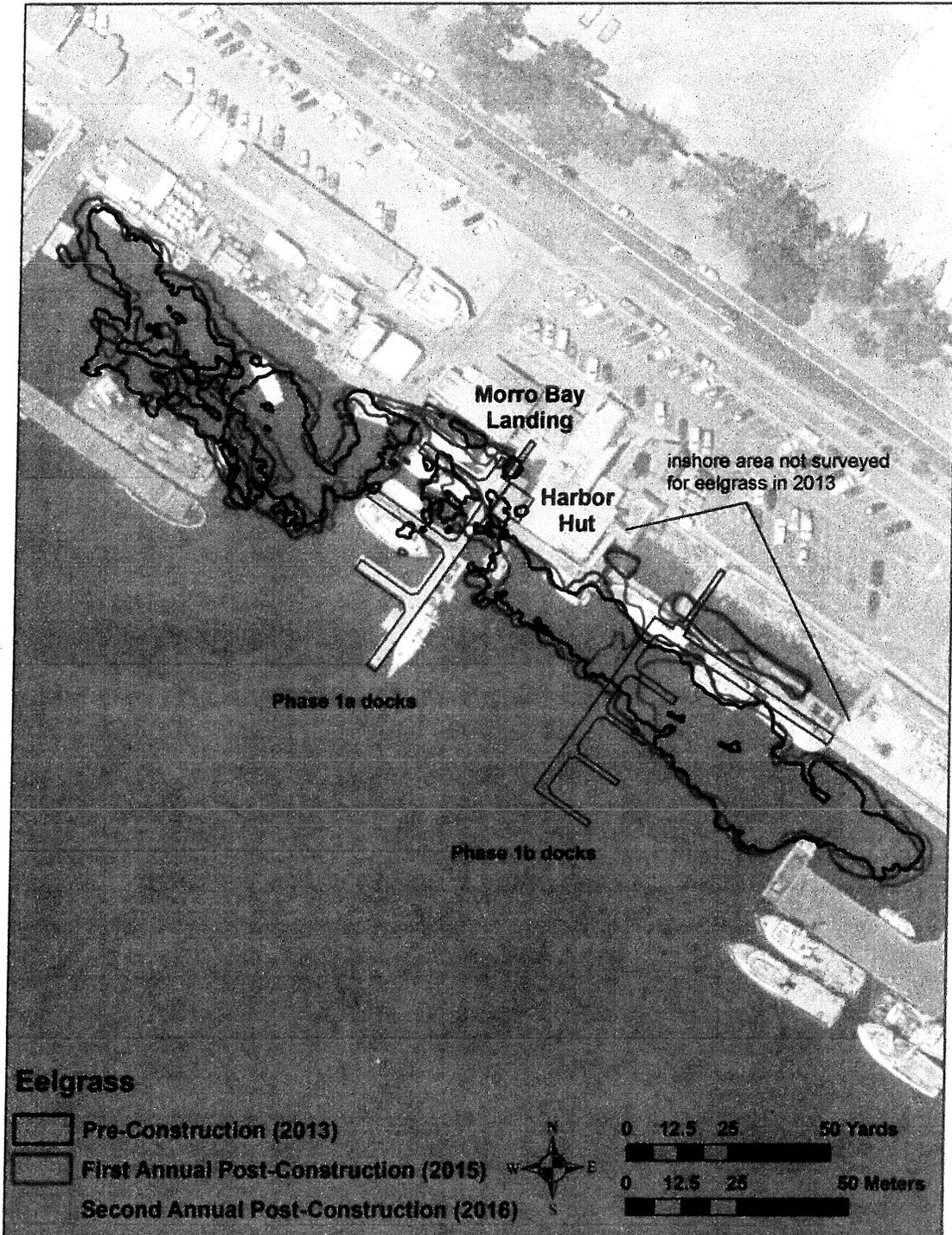


Figure 6. Areas with eelgrass from surveys in 2013, 2015, and 2016.



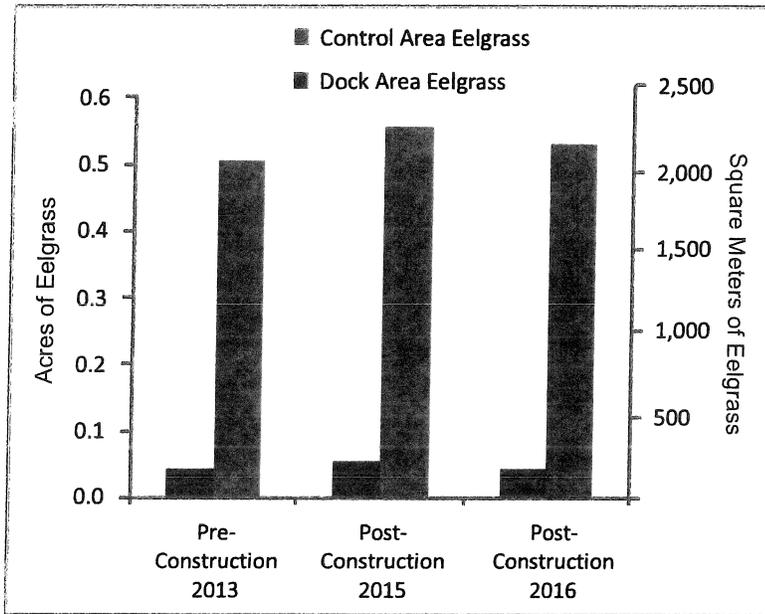


Figure 7. Changes in eelgrass abundance between the Phase 1a dock area and three combined control areas.

Table 1. Comparisons of eelgrass cover between areas among surveys.

<b>a) Changes over time in eelgrass cover (acres)</b>				
	Pre-Construction 2013	First Annual Post-Construction 2015	Second Annual Post-Construction 2016	Average of Two Post-Construction Surveys 2015/2016
Phase 1a Dock Area	0.044	0.054	0.044	0.049
Control Areas Combined	0.507	0.555	0.532	0.544
<b>b) Changes in eelgrass cover, relative to controls</b>				
Survey Comparisons	Coverage of Eelgrass in the Dock Area Gained (+) or Lost (-) Relative to Control Eelgrass			
Pre-Construction Survey to the First Annual Post-Construction Survey	+0.005 acres (+20 m <sup>2</sup> )			
Pre-Construction Survey to the Second Annual Post-Construction Survey	-0.002 acres (-8 m <sup>2</sup> )			
Pre-Construction Survey to the Average of Both Post-Construction Surveys	+0.002 acres (+8 m <sup>2</sup> )			



**Table 2.** Eelgrass stem densities and leaf lengths at Morro Bay Landing Phase 1a dock site.

Survey	Transect Nos.	Area	Mean No. Stems/m <sup>2</sup>	Std Dev	n	Mean Leaf Length (cm)	Std Dev	n
Pre-Construction	1 thru 9	Dock	52.0	39.4	30	65.5	20.2	109
	10 thru 12	Control	68.1	37.6	30	87.2	26.1	120
First Annual Post-Construction	1 thru 9	Dock	64.0	43.9	11	72.0	13.8	40
	10 thru 12	Control	77.0	39.3	29	84.0	27.2	111
Second Annual Post-Construction	1 thru 9	Dock	67.1	55.5	9	71.4	20.6	36
	10 thru 12	Control	66.5	35.8	29	76.1	24.8	116



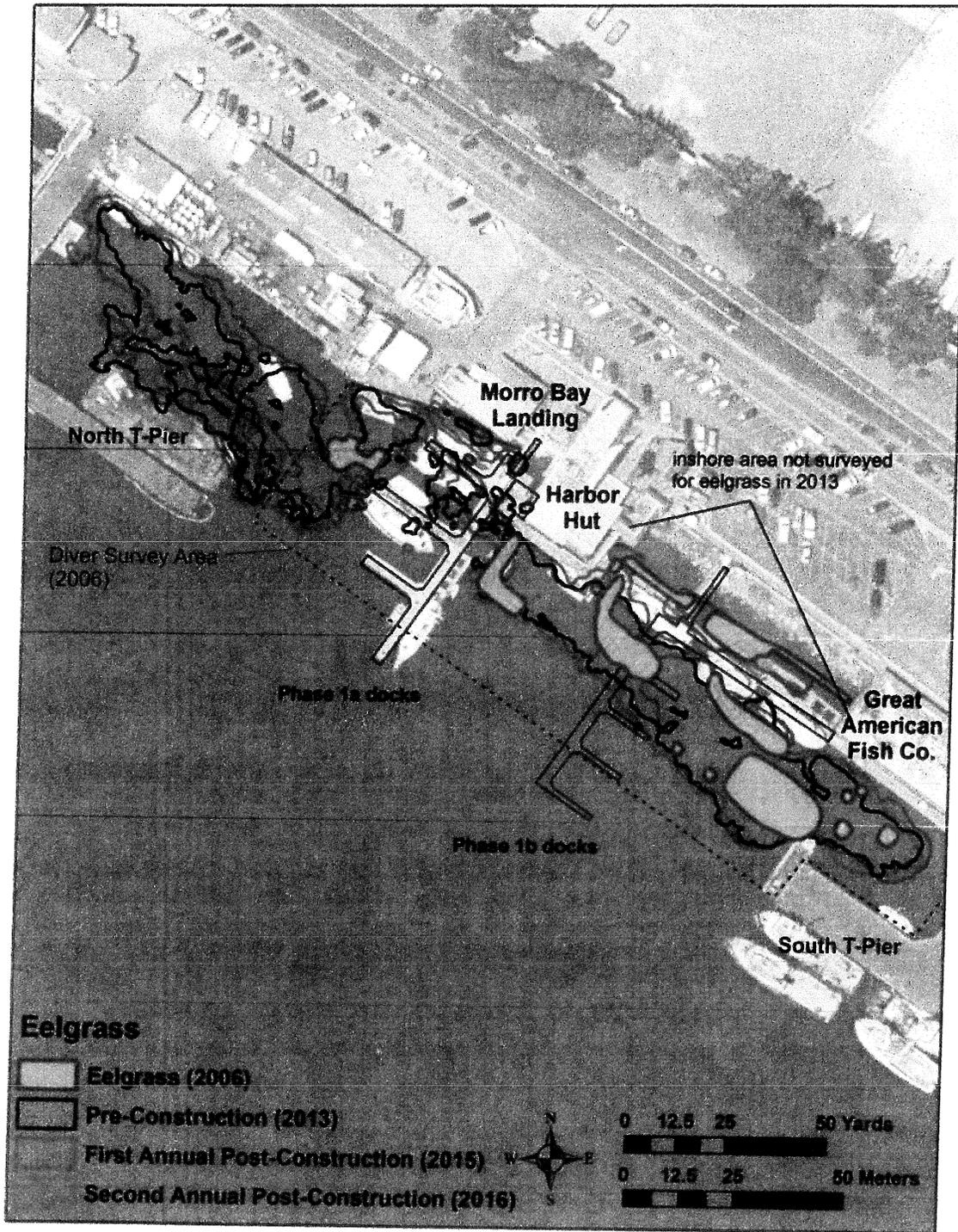


Figure 8. Comparison of eelgrass (2006-2016) showing a significant increase in abundance in the dock area and proximity since 2006.





AGENDA NO: C-4

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board

**DATE:** February 22, 2017

**FROM:** Eric Endersby, Harbor Director

**SUBJECT:** Update from the Marine Sanctuary Ad-Hoc Committee on Committee's Recent Activities

### **RECOMMENDATION**

Receive and file.

### **DISCUSSION**

The Marine Sanctuary Ad-Hoc Committee will be presenting an oral update on their activities, and including a written report included as Attachment #1 to this report.

This is a standing committee report agenda item.

### **ATTACHMENT**

1. February 22, 2017 Marine Sanctuary Ad-Hoc Committee Report.

Prepared By: EE

Dept. Review: EE

**Morro Bay Harbor Advisory Board  
Marine Sanctuary Ad Hoc Committee Report  
February 22, 2017**

During local dialog regarding a proposed Marine Sanctuary off the coast of Morro Bay, various parties have asserted that a Marine Sanctuary is necessary to protect our section of the California coast from the threat of oil and gas development, and offshore drilling. A December 2016 article from *E&E News*, which is attached to this report, appears to make clear that at present there are very substantial protections against the proliferation of offshore drilling along the California coast - protections that appear to obviate the need of establishing a local Marine Sanctuary for that particular purpose.

Also, as it relates to the protection of the coastal environment in general, as well as to protections for marine life, the fisheries, and antiquities resources and features within that environment - research by the Harbor Advisory Board's Marine Sanctuary Ad Hoc Committee has identified and reported a number of existing Federal, State, and local protections (**see attached list**). Several of these existing protections apply to the prospect of coastal mineral development as well.

On February 7, the San Luis Obispo County Board of Supervisors voted to approve a Resolution opposing creation of the proposed Chumash Heritage National Marine Sanctuary, off our portion of the California Central Coast. The Resolution stated in part that “several stakeholders expressed opposition to [the sanctuary’s] creation”, and stated that the Board of Supervisors opposes the Sanctuary “in part due to concerns about the loss of local control.”

Before the vote, Supervisor Compton added an amendment to the Resolution reaffirming the Board’s commitment to Measure A, which was approved by voters in 1986. That Measure requires a public vote before the County can approve a permit for development of onshore facilities to support offshore oil and gas development.

The Board of Supervisor’s Resolution notes that multiple layers of Federal, State and local laws already serve to protect California’s coast without the need for a federal marine sanctuary designation [refer to attached list and article].

Rather than supporting the proposed National Marine Sanctuary, Supervisor Compton encouraged people to support a bill introduced in Congress last week by Rep. Salud Carbajal, a Central Coast Democrat, which would permanently ban any new offshore oil leases along our coast.

**Existing Federal, State and Local Protections  
for  
The Effective and Efficient Conservation, Protection & Management  
of  
The Ocean Marine Environment Between Cambria and Santa Barbara  
(Two Pages)**

**Federal**

- The Outer Continental Shelf Lands Act, 43 U.S.C. § 1331 et seq.
- The Deep Seabed Hard Mineral Resources Act, 30 U.S.C. § 1401 et seq.
- Obama administration ban on California offshore drilling until 2022
- The Ocean Thermal Energy Conversion Act, 42 U.S.C. § 9101 et seq.
- The Rivers and Harbors Appropriations Act of 1899, 33 U.S.C. §§ 401, 403
- The Federal Water Pollution Control Act (i.e. the Clean Water Act)
- The Ocean Dumping Act, 33 U.S.C., §§ 1401-1402
- The Oil Pollution Control Act
- The Act to Prevent Pollution from Ships
- The National Invasive Species Act
- The Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9610
- The Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901-6992
- The Clean Air Act
- The Fish and Wildlife Coordination Act and Implementing Regulations, 16 U.S.C. §§ 661 – 666c
- The Marine Mammal Protection Act
- The Migratory Bird Treaty Act
- The Endangered Species Act
- The National Environmental Quality Act
- The Coastal Zone Management Act
- The Magnuson-Stevens Fishery Conservation and Management Act
- The Sustainable Fisheries Act, P.L. 104-297
- The Native American Graves Protection and Repatriation Act of 1990, 25 U.S.C. §§ 3001- 3013
- The National Historic Preservation Act of 1966, 16 U.S.C. §§ 470-470x-6
- The Archaeological Resources Protection Act of 1979, 16 U.S.C. §§ 470aa – 470mm
- The Abandoned Shipwrecks Act of 1987, 43 U.S.C. §§ 2101-2106

- The Antiquities Act of 1906, 16 U.S.C. §§ 431-433

**State** (Note: The State of California controls mineral resources in the coastal zone three miles out into the ocean)

- The Submerged Lands Act (43 U.S.C. § 1301 et seq.)
- The California Coastal Sanctuary Act (which since 1994 bans any new leasing of State offshore mineral tracts; i.e. oil and gas)
- The California Endangered Species Act, California Fish and Game Code §§ 2050-2111.5
- The California Coastal Act, California Public Resources Code § 30000
- The Porter-Cologne Water Quality Control Act, California Water Code
- The State Water Resources Control Board
- California Assembly Bills 2093 and 2672
- The Marine Life Management Act, AB 1241
- The California Fish and Game Code §§ 1600-1607
- The Marine Life Protection Act
- The Ballast Water Management for Control of Nonindigenous Species section of the California Public Resources Code (Cal. Pub. Res. Code §§ 71203-71210.5)
- The California Marine Invasive Species Act,
- The California Environmental Quality Act

**Local**

- Regional Water Quality Control Board
- San Luis Obispo County

## ***“Trump seeks more oil drilling; in Calif., that's not so easy”***

*Anne C. Mulkern, E&E NEWS reporter*

*Published: Wednesday, December 7, 2016, E&E NEWS*

*President-elect Donald Trump pledged to increase oil and gas drilling and "unleash an energy revolution." If he wants to do it in California, he'll hit obstacles that could take years to surmount, experts said.*

*Drilling both offshore and on federal land requires crafting a detailed plan and surviving environmental reviews. And in the Golden State, there's a major political hurdle. California has fought fiercely against attempts to increase offshore drilling, with Democrats and Republican lawmakers uniting on the issue.*

*"California is a daunting place," said Mark Delaplaine, the California Coastal Commission's manager of the energy ocean coastal resources unit. "We've had more than one administration salivate over the idea of drilling off all of California, and it hasn't happened. You have to look at history and say, 'This is going to be difficult.'"*

*Efforts to open up new drilling on federal lands in the Golden State in recent years also have failed. Courts twice have stopped Obama administration attempts to open public lands to fracking, said Kassie Siegel, Climate Law Institute director at the Center for Biological Diversity.*

*"The Trump administration will have the same legal problems that the Obama administration did," Siegel added.*

*Just yesterday, a federal judge halted litigation tied to plans for new oil and gas development in Los Padres National Forest, east of Santa Barbara. The Forest Service last month announced it would indefinitely stop new leasing at the site. The Center for Biological Diversity, Los Padres ForestWatch and Defenders of Wildlife sued in 2007 and had threatened to sue again to block new leases (see related story).*

*The Trump transition team did not respond to requests for comment on his plans and whether he would include California in the push for expanded oil drilling. On his transition website, Trump says that he will "open onshore and offshore leasing on federal lands, eliminate moratorium on coal leasing, and open shale energy deposits."*

*It's not clear how much oil companies would want to pursue drilling in California and push the Trump administration to allow new leasing. Oil companies typically want the security of knowing they will be able to proceed without numerous obstacles. In California, that's not the case, several said. Additionally, the low price of oil has depressed interest, said Athan Manuel, director of the lands protection program at the Sierra Club.*

*"This industry is in flux," Manuel said. "Just because the Trump administration wants to do it, economically we're not sure companies are champing at the bit to have new areas*

leased to them."

Rock Zierman, CEO of the California Independent Petroleum Association, or CIPA, said in an email that "we have major production currently on [Bureau of Land Management] onshore land and that can certainly increase." He said companies would be interested if leases became available.

In the case of offshore drilling, Trump would need to deal with a recent Obama administration legacy. Obama's Interior Department just issued its final five-year plan for leasing from 2017 through 2022. After a 60-day congressional review period, the agency's director likely will formally adopt it. That would make it law a few days before Trump is inaugurated.

Trump could decide he's going to throw it out and pursue more drilling in the Atlantic Ocean, off California and off Alaska. But he would need to launch and go through a formal review, and that process takes several years. His administration would need to complete environmental studies to support going in a different direction from the Obama plan, said a person familiar with federal drilling, who asked not to be identified to speak freely.

Obama's draft leasing plan did contemplate additional drilling off Alaska and in the Atlantic Ocean. That means there would be relatively less work involved in expanding drilling in those locations. But the Obama plan didn't do that for California, so extensive studies and new findings would be required to include the Golden State in a new five-year leasing program, he said.

"California, though, would be a big hill to climb," he said. "It has not been a part of leasing programs for many years."

California Coastal Commission likely to oppose:

Any new Trump administration offshore leasing plan would be subject to review by the California Coastal Commission, which oversees activities affecting 1,100 miles of coast. The Trump administration would need to tell the commission its federal leasing plan was consistent with the California Coastal Act, a tough protection law. The commission could say yes or no, or negotiate changes, and ultimately could go to court to stop the plan from proceeding, said Delaplaine with the commission.

"We have not had a difficult time justifying that leasing offshore California has been for the most part inconsistent with our coastal protection laws," Delaplaine said. "It's not a difficult case to make. That's a hurdle that they would have to face."

Some drilling is allowed offshore in the Santa Barbara Channel. There are 23 platforms in federal waters in that region. But the agency likely would disagree with a new plan seeking additional offshore drilling, he said.

*"The risks to coastal resources are just limitless, the risk of oil spills, the risk of air quality impacts," Delaplaine said. "There's a whole litany of effects on California that drilling in a new area brings into play."*

*Even when the political makeup of the commission has changed over the years, its position in the issue has stayed consistent, he added. "They've been generally united about concerns about offshore oil drilling," Delaplaine said. "These are almost always unanimous votes."*

*Trump is unlikely to get help from Congress, either. For decades, both Democratic and Republican lawmakers from the state have opposed offshore drilling, supporting residents who don't want oil derricks obstructing coastal views. Sen. Pete Wilson (R-Calif.) in the 1980s led a fight against it during the George H.W. Bush administration. Several said that bipartisan approach is unlikely to change now, even with a Republican-controlled White House and Congress.*

*"It's been known as kind of a third rail of politics," allowing new oil drilling off California, said Ann Notthoff, California advocacy director for the Natural Resources Defense Council. "The coastal economy of California is critical. It's very valuable. The costs of threatening that with oil drilling has long been thought to not be worth it."*

*Zierman with CIPA said that in terms of offshore drilling, "new platforms are very unlikely." But oil companies can drill directionally from one of the existing platforms to an adjacent lease. That's a way of getting a new lease and tapping new resources without installing a new platform, he said.*

*Federal lands in Calif. also have challenges:*

*On federal lands in California, allowing more drilling theoretically would be easier than offshore, but that hasn't worked out as desired for the Obama administration.*

*After Trump's inauguration, his Interior Department could launch the effort to hold new lease sales. But that process probably would take two years, said Manuel with the Sierra Club.*

*Manuel said he was skeptical the Trump administration would seek additional drilling in California, instead of Wyoming or Colorado. Seeking drilling in California, Oregon or Washington, "you would open up a hornet's nest of opposition," Manuel said.*

*Environmental groups have stopped recent efforts to increase drilling on federal land, Siegel with the Center for Biological Diversity said. Those challenges under the National Environmental Policy Act, or NEPA, said there had been insufficient environmental review, she said.*

*CBD and the Sierra Club in 2013 won a challenge against a lease sale by Obama's Bureau of Land Management along the state's central coast. This year, CBD and Los*

*Padres ForestWatch prevailed in a case against BLM's resource management plan for the Bakersfield region. Both times, the court found that BLM had failed to sufficiently analyze the risks of fracking.*

*"There has been no leasing since 2013 because of these legal victories," Siegel said.*



AGENDA NO: C-5

MEETING DATE: March 2, 2017

## Staff Report

**TO: Harbor Advisory Board**

**DATE: February 22, 2017**

**FROM: Eric Endersby, Harbor Director**

**SUBJECT: Update from the Working Waterfront Ad-Hoc Committee on Committee's Recent Activities**

### **RECOMMENDATION**

Receive and file report. Consider whether clarification of Measure D's apparent ambiguities should be tied to the City's update of the General Plan and Local Coastal Plan, and make recommendations accordingly.

### **BACKGROUND**

The Working Waterfront Ad-Hoc Committee will be presenting an oral update on their activities, if any, and including possible discussion of whether Measure D's apparent ambiguities should be tied or included in the City's current efforts to update its General Plan and Local Coastal Plan?

This is a standing committee report agenda item.

Prepared By: EE

Dept. Review: EE



AGENDA NO: C-6

MEETING DATE: March 2, 2017

## Staff Report

**TO:** Harbor Advisory Board

**DATE:** February 22, 2017

**FROM:** Eric Endersby, Harbor Director

**SUBJECT:** Status of City-Required Revetment Inspections on Various City Waterfront Lease Sites

### **RECOMMENDATION**

Receive and file.

### **BACKGROUND**

Most of the City's waterfront leases include a section requiring the lessees to periodically inspect their revetment and other water improvements for condition and needed repairs and maintenance, and to plan for said repair and maintenance. There is no certain provision, however, on how often these inspections must be conducted, rather, the language stipulates it shall be done at "reasonable intervals."

Last fall, after having found no evidence of "reasonably" recent such inspections in department files, and in light of the recent failure of the seawall at the Boatyard complex, the City required all lessees with the requirement in their leases to conduct the inspections.

### **DISCUSSION**

An oral report will be provided by staff on the status of the inspections. No action is being requested of the HAB.

Prepared By: EE

Dept. Review: EE



AGENDA NO: C-7

MEETING DATE: March 2, 2017

# Staff Report

**TO: Harbor Advisory Board**

**DATE: February 22, 2017**

**FROM: Eric Endersby, Harbor Director**

**SUBJECT: Review and Amendment of Existing Future Agenda Items List**

## **RECOMMENDATION**

Staff recommend the Harbor Advisory Board (HAB) review the existing “future agenda” items pending list, and amend as outlined.

## **BACKGROUND**

There are several “future agenda” items pending on the HAB’s list. Recently, the HAB Chair and staff reviewed the list and are making recommendations as discussed below.

## **DISCUSSION**

The following items are currently on the future agenda list, with a recommendation for each.

1. Goals and Objectives – Working Waterfront Designation.

Recommendation: this item to **remain** on the list as it is being actively pursued by an Ad-Hoc committee, and is part of the current HAB goals and objectives work plan.

2. Measure D

Recommendation: this item to **remain** on the list, and consideration of folding input on Measure D into the GP/LCP updates under consideration in agenda item C-5 of this meeting.

3. Commercial Slip Qualification Relief for Crab Permit Holders

Recommendation: this item be **dropped** from the future agenda item list as a recommendation to Council was made, and the conditions that led to the crab “crisis” are no longer an issue.

4. City Code Enforcement for Boats on Trailers on Private Property

Recommendation: this item be **dropped** as it is no longer being pursued by the City at this time.

5. Back Bay Water Use Forum

Recommendation: this item to **remain** on the list, with possible agendaing for April or

Prepared By: EE

Dept. Review: EE

May, 2017 as an informational item.

6. Coast Guard Building Location Plans

Recommendation: this item be **dropped** and simply added to the department monthly status report agenda item.

7. Inspecting Marine Sanitation Devices on all Vessels in Morro Bay Harbor

Recommendation: this item be **dropped** until such a time that evidence is presented there is an actual environmental problem that exists and that could be solved by such inspections.

8. Deliberation on Paid Parking on the Embarcadero and Adjacent Vicinities

Recommendation: this item to **remain** on the list.

**CONCLUSION**

The HAB is reminded their primary focus needs to remain on the adopted City Council-approved work plan items, and other items will only be addressed as time, manpower and/or the need arises.