

Figure 1. Typical RSP Repair Section for Inner Boat Basin

EXHIBIT NO. 7
APPLICATION NO. 1-10-035-A1
CRESCENT CITY HARBOR DISTRICT
REVETMENT REPAIR SECTIONS (1 of 2)

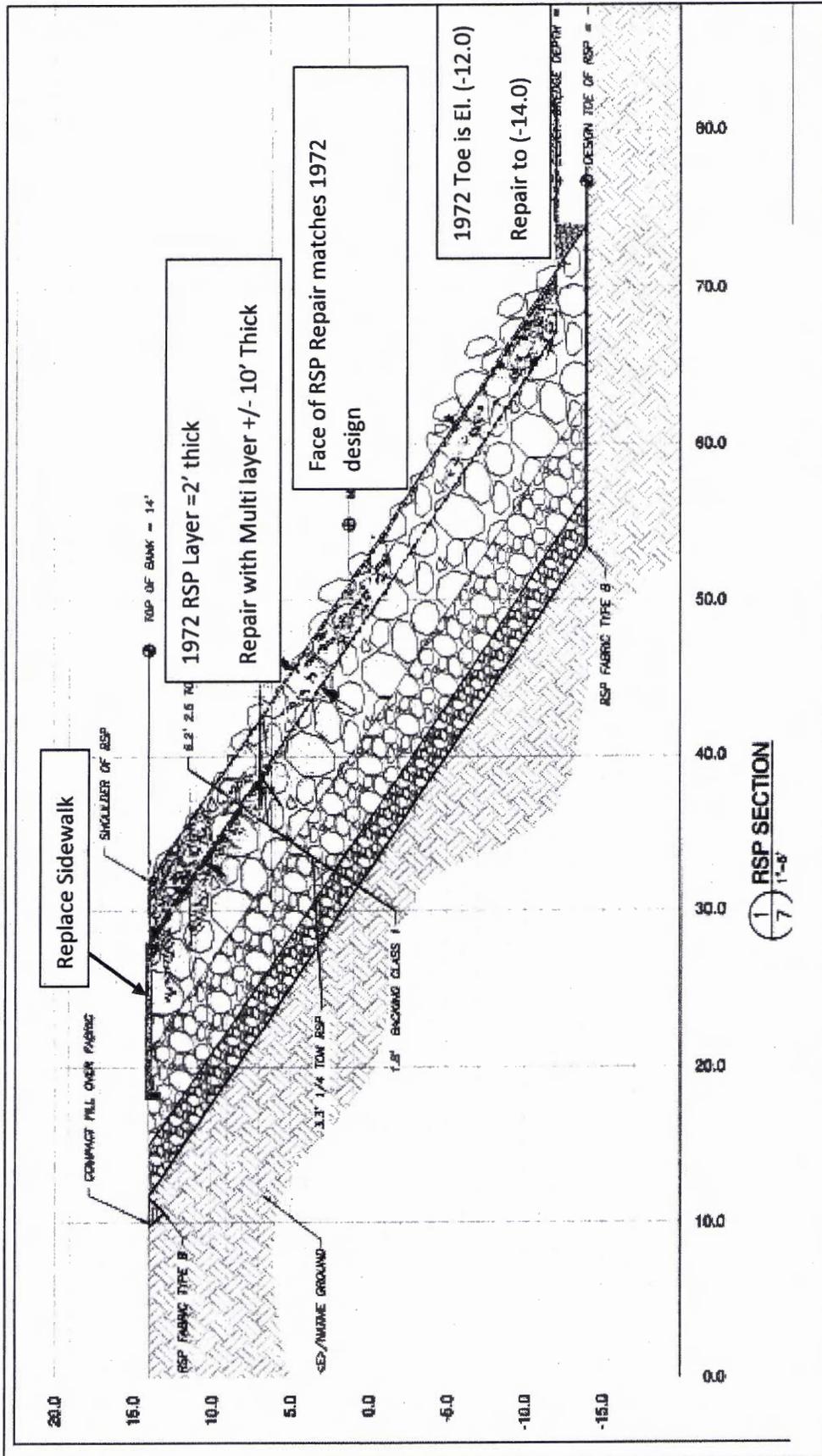
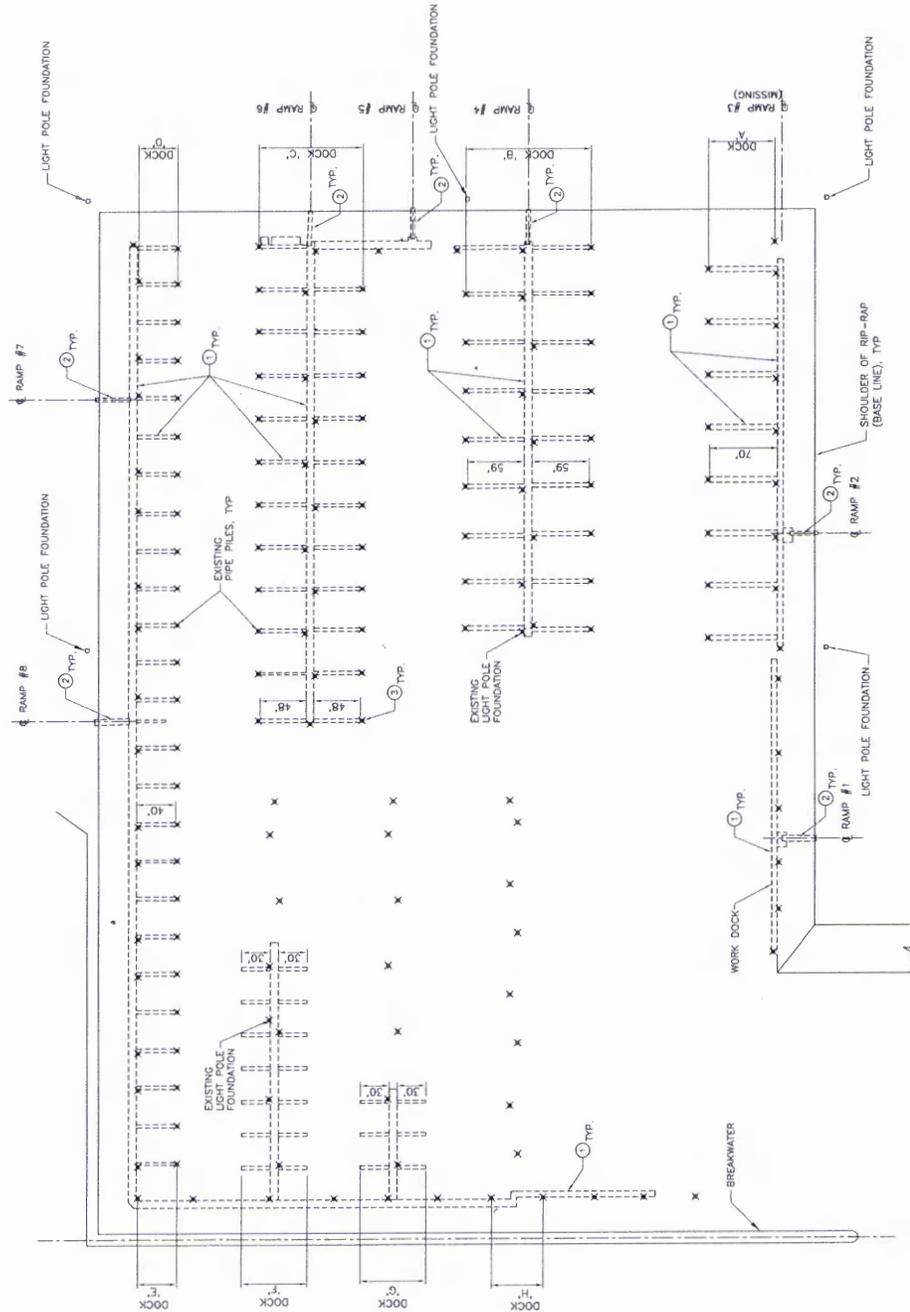


Figure 3. Overlay of 1972 RSP design on proposed repair work

2 of 2

EXHIBIT NO. 8
APPLICATION NO.
 1-10-035-A1
CRESCENT CITY HARBOR DISTRICT
SITE PLAN EXCERPTS FROM ORIGINAL PERMIT (1 of 2)

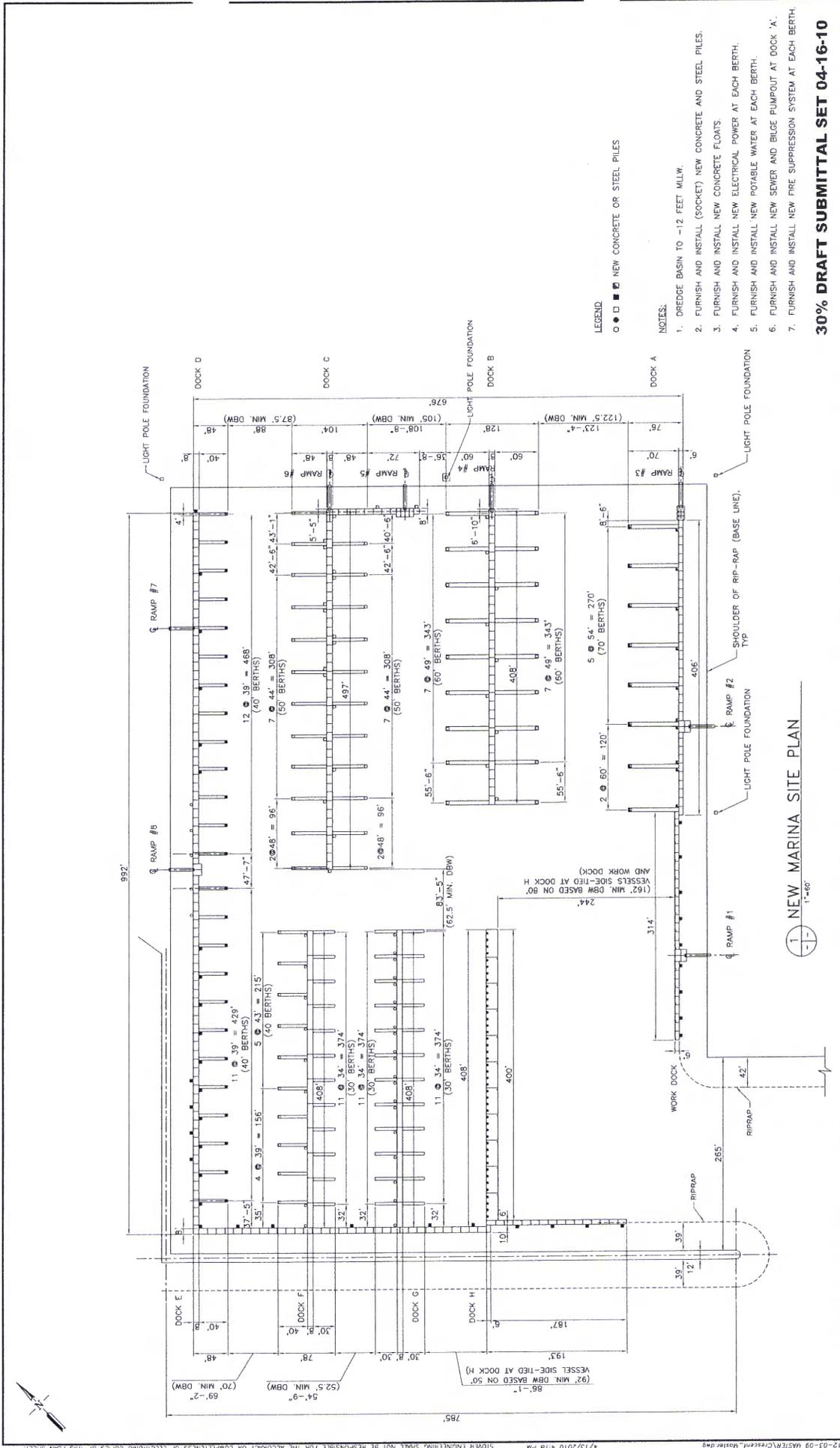


- LEGEND**
- X EXISTING STEEL PILE TO BE REMOVED FOR NAVIGATIONAL HAZARDS
 - EXISTING FLOAT TO BE REMOVED
- DEMOLITION KEY NOTES:**
- ① REMOVE EXISTING FLOATS
 - ② REMOVE EXISTING RAMPS
 - ③ REMOVE EXISTING STEEL PILES FOR NAVIGATIONAL HAZARDS

1 MARINA DEMOLITION PLAN
 1"=40'

30% DRAFT SUBMITTAL SET 04-16-10

JOB NO. 2009-040 SCALE: DATE: 04-16-10 SHEET	CRESCENT CITY HARBOR DISTRICT BOAT BASIN CRESCENT CITY, CA	BEN C. GERWICK, INC. 2000 CALIFORNIA AVENUE, SUITE 600 OAKLAND, CA 94612 FAX: (510) 838-9715	PRELIMINARY	STOVER ENGINEERING Civil Engineers and Consultants PO BOX 785, 711-H STREET CRESCENT CITY, CA 95531 · 707-465-6742	REVIEWED BY: _____ DATE: _____ DESIGNED BY: _____ DATE: _____ DRAWN BY: _____ DATE: _____ CHECKED BY: _____ DATE: _____ ALL DIMENSIONS TO FACE UNLESS OTHERWISE NOTED. 1"=40' SCALE UNLESS OTHERWISE NOTED.	MS1.04
						MARINA DEMOLITION PLAN



NEW MARINA SITE PLAN

1"=60'

PRELIMINARY

STOVER ENGINEERING
Civil Engineers and Consultants
PO BOX 783 - 711 H STREET
CRESCENT CITY, CA 95531 - 707-465-6742

BEN C. GERWICK, INC.
1000 CLAY STREET, SUITE 400
CRESCENT CITY, CA 95531-8972
TEL: (510) 838-8972
FAX: (510) 838-8975

CRESCENT CITY HARBOR DISTRICT
BOAT BASIN
CRESCENT CITY, CA
NEW MARINA SITE PLAN

MS1.05

30% DRAFT SUBMITTAL SET 04-16-10

JOB NO. 2009-040
SCALE:
DATE: 04-16-10
SHEET

202

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
 710 E STREET • SUITE 200
 EUREKA, CA 95501
 VOICE (707) 445-7833
 FACSIMILE (707) 445-7877



EMERGENCY PERMIT

Richard Young, CEO/Harbormaster
 Crescent City Harbor District
 101 Citizen's Dock Road
 Crescent City, CA 95531

Date: October 03, 2011
 Emergency Permit No.: 1-11-032-G

LOCATION OF EMERGENCY WORK:

At numerous locations within and along the Inner Boast Basin and its breakwater, and Synchro-lift areas within the Crescent City Harbor, Del Norte County (APNs 117-020-16 and 117-170-11).

WORK PROPOSED:

Repair damage to portions of the Crescent City Harbor caused by the March 11, 2011 Tohoku Tsunami entailing: (a) excavation of the approximately 140,000 cubic yards (yd³) of tsunami-deposited sediment materials from within the Inner Boat Basin and Synchro-lift areas; (b) excavation and replacement of approximately 56,000 yd³ of engineered rock slope protection along the faces of the inner harbor, within their existing fill prism; (c) rehabilitation of the damaged outer 280-lineal feet of the Inner Boat Basin Breakwater; and (d) extrication of damaged dock piles and installation of approximately 150 new replacement piles and 1,500 lineal feet of temporary floating dock assemblies, as more fully described in detail within the *Application for Emergency Permit*, dated June 23, 2011, as subsequently revised August 19, 2011.

PERMIT RATIONALE:

This letter constitutes approval for continuation of the emergency work you or your representative has requested to be done at the locations listed above. I understand from your information and our site inspection that an unexpected occurrence in the form of tsunami inundation has resulted in extensive damage to the harbor's boat basin facilities including the deposition of a significant quantity of sediment within the Inner Boat Basin and synchro-lift areas. I also understand that the timely restoration of the inner boat basin facilities must occur before the high-demand fall-winter crabbing season to avoid significant impacts to the commercial fishing sector. Therefore, given the critical nature of the harbor in terms of serving as both a home and transient port to commercial fishing vessels and as a harbor-of-refuge to all mariners, immediate and expedited action is needed to conduct repairs to restore, repair, or maintain public service facilities.

Pursuant to Title 14 of the California Code of Regulations, Section 13009, the Executive Director of the Coastal Commission hereby finds that:

- (a) An emergency exists which requires action more quickly than permitted by the procedures for administrative or ordinary permits and the development can and will be completed within 30 days unless otherwise specified by the terms of this permit; and
- (b) Public comment on the proposed emergency action has been reviewed as time allows; and
- (c) As conditioned, the work proposed would be consistent with the requirements of the California Coastal Act of 1976.

The work is hereby approved, subject to the conditions listed on the attached page.

If you have any questions about the provisions of this Emergency Permit, please contact the Commission's North Coast District Office.

Sincerely,

EXHIBIT NO. 9
APPLICATION NO.
1-10-035-A1
CRESCENT CITY HARBOR DISTRICT
EMERGENCY PERMIT NO.
1-11-032-G (1 of 2)

CHARLES LESTER
 Executive Director

By: Robert S. Merrill
 North Coast District Manager

CONDITIONS OF APPROVAL:

1. The enclosed Emergency Permit Acceptance form must be signed by the APPLICANT and returned within 15 days.
2. Only work specifically described in this permit and for the specific property listed above is authorized. The project shall be undertaken in accordance with the plans and other information submitted to the Coastal Commission. Any additional work requires separate authorization from the Executive Director.
3. To avoid impacts to adjoining coastal waters and environmentally sensitive habitat areas, the emergency work shall be performed consistent with: (a) the Best Management Practices identified within the emergency permit application transmitted on behalf of Crescent City Harbor District by Stover Engineering, dated June 2, 2011, June 3, 2011, and June 16, 2011; (b) the special conditions attached to the U.S. Army Corps of Engineers' authorization letter for Nationwide Permit Nos. NWP3 and NWP11, File No. 2011-00203N, dated August 3, 2011; and (c) the conditions attached to the U.S. Environmental Protection Agency's *Post-Tsunami Dredging Suitability Determination and Concurrence for Ocean Disposal*, dated August 17, 2011, with respect to performance standards for dredging of the sediment deposits and their transport through state waters to the Humboldt Open Ocean Disposal Site (HOODS).
4. A report describing the actual repairs performed shall be submitted to the Executive Director within 30 days of the completion of the emergency work and no later than December 31, 2011.
5. In exercising this permit, the applicant agrees to hold the California Coastal Commission harmless of any liabilities for damage to public or private properties or personal injury that may result from the project.
6. This permit does not obviate the need to obtain necessary authorizations and/or permits from other agencies, including the U.S. Army Corps of Engineers, the California Department of Fish and Game, the County of Del Norte, or the City of Crescent City.

The emergency work is considered to be TEMPORARY work done in an emergency situation. If the property owner wishes to have the emergency work become a permanent development, a Coastal Development Permit or amendments to previously issued Coastal Development Permits must be obtained. A regular permit or permit amendment would be subject to all of the provisions of the California Coastal Act and may be conditioned accordingly. These conditions may include provisions for public access (such as an offer to dedicate an easement) and/or a requirement that a deed restriction be placed on the property assuming liability for damages incurred from storm waves.

If you have any questions about the provisions of this emergency permit, please call the Commission's North Coast District Office at the address and telephone number list on the first page.

Cc: County of Del Norte Community Development Services Dept., 981 H Street, Suite 110, Crescent City, CA 95521
City of Crescent City Planning Department, 377 J Street, Crescent City, CA 95531

Encl: Emergency Permit Acceptance Form, Regular Permit Application Form

2012



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

April 26, 2011

In response refer to:
2011/00045

EXHIBIT NO. 10

APPLICATION NO.

1-10-035-A1
CRESCENT CITY HARBOR
DISTRICT
NOAA FISHERIES
CONSULTATION (1 of 7)

Mr. Jay Sarina
County of Del Norte
County Administrative Officer
981 H Street, Suite 210
Crescent City, California 95531

Dear Mr. Sarina:

On January 7, 2011, NOAA's National Marine Fisheries Service (NMFS) received the county of Del Norte's (County) letter requesting initiation of informal consultation pursuant to section 7(a) (2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and its implementing regulations (50 CFR Part 402), for the Crescent City Harbor District's Inner Boat Basin Rehabilitation Project. The County will use U.S. Department of Housing and Urban Development (HUD) Community Block Development Grant (CBDG) funds for the project and has been certified by the HUD San Francisco office to act as the "responsible entity" (24 CFR Part 58.5) for ESA compliance. The project will: (1) dredge an estimated 7,424 cubic yards of tsunami-deposited sediment from the basin for disposal within the Crescent City Harbor District's (District) adjacent upland spoils disposal ponds; (2) repair and replace tsunami-damaged rock slope protection at approximately 10 discrete locations; (3) replace approximately 161 damaged docking structural piles and install approximately 80 additional piles; (4) install a new storm surge/tsunami attenuator; (5) remove and replace damaged dock platforms; (6) install American Disability Act (ADA)-compliant gangways; (7) replace dock utilities; and (8) install a fire protection system.

The County also requested consultation on essential fish habitat (EFH) for species managed under the Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagics Fishery Management Plans, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267, 16 U.S.C. 1801 *et seq.*) and its implementing regulations [50 CFR 600.920(a)].

This letter constitutes informal consultation for the following federally threatened species: (1) Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*; 70 FR 37160, June 28, 2005); (2) southern Distinct Population Segment (DPS) North American green sturgeon (*Acipenser medirostris*; 71 FR 17757, April 7, 2006); and (3) eastern DPS Steller sea lion (*Eumetopias jubatus*, November 26, 1990, 55 FR 49204). In addition, this letter completes EFH consultation, serves as consultation under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), and addresses requirements of project effects relative to the Marine Mammal Protection Act of 1972.

RECEIVED

APR 29 2011

CRESCENT CITY
HARBOR DISTRICT



PROPOSED ACTION

HUD proposes to fund the District's Crescent City Inner Boat Basin Rehabilitation project to restore the boat docks and to strengthen their resiliency to storm surge and tsunami waves. To minimize effects to marine resources, the inner boat basin improvements would be constructed incrementally over 2 years with all in-water pile driving and dredging activities restricted to June 1 through November 15. All work will occur within the existing inner boat basin footprint. The following tasks are proposed:

Tsunami-Deposited Sediment Material Dredging and Disposal

Approximately 7,424 cubic yards of silt and other sediment materials (deposited in the 2006 tsunami) would be removed from the inner boat basin. The dredged materials would be pumped from the floor of the inner boat basin by the District's barge-mounted, hydraulic suction dredge. The suction dredge spoils slurry would then be conveyed via a 12-inch-diameter flexible pipeline to the District's 15-acre uplands deposition area disposal facility located to the north of the small boat basin. All dredging is expected to be completed in 5 to 7 days.

Rock Slope Protection Repair and Replacement

The 2006 tsunami displaced an estimated 8,506 cubic yards of rock slope protection (RSP) within the interior perimeter of the inner boat basin. Two revetment areas located in the southeast corner of the inner boat basin require extensive repair. The lengths of the two areas are approximately 45 feet and 150 feet. At these two locations, most of the RSP is missing and the underlying geo-textile fabric is crumpled and exposed. There are also approximately eight other locations along the inner boat basin's perimeter where spot repairs are necessary as the fabric was exposed by scouring. The damaged RSP areas require the replacement of the geo-fabric and placement of one- and two-ton revetment materials (rock). The various spot repairs may only require resetting of the revetment materials, depending upon the condition of the fabric. All RSP would be placed on the revetment area to match the existing 1.5 to 1 slope within the excavated areas in a manner that requires no further encroachment into the marina waters.

Piling Removal and Replacement

Due to the intensity of the 2006 tsunami waves and the relatively shallow depth of the footings, the repeated pounding of the marina docks against the piles damaged all of the 12 to 14-inch diameter piles within the inner boat basin beyond repair. The loosened, damaged piles would be either extricated from the marina waters by a barge-mounted vibratory hammer or winched out by a crane. Each new pile will be installed first by vibratory driving a steel casing through the silt on the bottom of the inner boat basin and then impact driving the steel casing approximately six inches into the rock under the silt. The casing would be oversized for the pile to be installed. For example, a 30-inch-diameter casing would be used for a 24-inch-diameter concrete pile. After removal of the overburden within the steel casing, a down-the-hole hammer or auguring rig would be used to bore into the underlying bedrock to the required depth, ranging from 20 to 40 feet depending upon location, to ensure adequate lateral and vertical support for the estimated pile static and live loads. The drilling spoils within the steel casing would be removed for proper disposal. Following the boring, a new pile, pre-fabricated steel-reinforced concrete in most cases, steel in some limited locations, would be lowered by a crane into the socket bored beneath the casing. After a piling has been set at its appropriate depth, the space between the casing and the pre-fabricated piling would be grouted. Pile installation would require the use of a derrick barge to install the casing, place the pile, and grout the socket, and a drill barge to auger the socket. In addition to replacing and upgrading the 161 damaged piles, 80 additional piles would be installed to further increase resiliency of the dock structures to wave attack, of which 44 of the new piles will be used to support the tsunami wave

attenuator. To attenuate the underwater sound pressure levels (SPLs), a bubble curtain throughout the water column depth will enclose piles driven with an impact hammer.

Floating Dock Removal and Replacement

All of the floating dock components would be replaced with new floating dock components of approximately the same square footage as the previously existing docks (57,100 square-feet). All removed docks will be disposed at a properly permitted disposal site. Due to extensive damage, some of the previous docks were removed immediately after the 2006 tsunami event. The remaining docks would be removed on an individual, as needed basis in preparation for piling removal. These docks would be lifted from the water surface and placed in a storage yard in the harbor. Final disposal of the damaged docks would be through the Del Norte Solid Waste Authority or another approved disposal method. The new prefabricated docks would be trucked in from the manufacturer to the staging site located adjacent to the inner boat basin within the existing paved parking lot and harbor storage yard. Once the pilings are set, the new docks will be lowered onto the water and connected together to the new pilings.

Tsunami Wave Attenuator Installation

The southwest portion of the marina experienced the most significant damage from the 2006 tsunami. A tsunami study for the project determined the most effective wave attenuator would consist of an open layout with shallow floats, capable of vertical motion to ride out tsunami waves while allowing wave energy to vent underneath the floats. This open design offers a more tsunami-resistant solution while allowing the movement of water and animals through the wave attenuator. The attenuator will consist of eleven 36-foot-long by 16-foot-wide by 7-foot-deep semi-buoyant, rectangular concrete-polymer structures. Each structure will be perforated with a series of 2 to 3-foot-tall by 6-foot-wide openings, to allow passage of fish, marine mammals and other aquatic wildlife, to be installed in tandem on the row of the forty-four 30-inch-diameter, reinforced concrete-filled steel pilings that would comprise replacement Dock H.

Gangway Installation

Due to the slopes involved, the compliant gangways would require installation of a concrete headwall support for each gangway ramp. Each of the four headwalls would measure 65-feet by 3-feet (max.) and would require excavation for a footing within the existing parking lot where the rock slope protection and the parking lot adjoin. Water quality best management practices (BMPs) would be utilized within each headwall site during construction in order to minimize sediment delivery into the waters of the inner boat basin. Four piles installed in a similar manner as the float piles would support the gangway abutment for each access.

Dock Utilities Replacement

The removal of the existing docks and associated utilities will necessitate replacement of the utilities. The new dock utilities include electrical switching, distribution units, service pedestals, conduit, wire, and a potable water system. NMFS does not anticipate exposure of listed species or their habitats during dock utilities replacement; therefore, this action will not be discussed in further detail.

Fire Protection System Installation

Currently, there is no fire protection system on the floating docks. The proposed fire protection system would consist of approximately 5,000 lineal feet of four-inch-diameter pipe providing water to 15 hose reel stations. NMFS does not anticipate exposure to listed species or their habitats during fire protection

system installation; therefore, this action will not be discussed in further detail.

Minimization Measures

The County will implement the following measures to minimize construction-related effects to the aquatic environment: (1) no construction materials, equipment, debris, or waste shall be placed or stored where it may be subject to wave, wind, or rain erosion and dispersion (for example, construction materials shall be stored in approved designated staging and stockpiling areas); (2) public roadway surfaces adjacent to the construction site entrances shall be swept at the end of each day to remove sediment or construction materials deposited due to construction activities and prevent such sediment and/or materials from contaminating coastal waters or other environmentally sensitive habitat areas; (3) any and all debris resulting from construction activities shall be removed from the inner boat basin and adjacent beach areas on a daily basis and disposed of at an appropriate location(s); (4) any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas. Mobile fueling of construction equipment and vehicles on and around the inner boat basin construction site is prohibited. Heavy equipment and other vehicles used during construction shall not be stored or re-fueled within 50 feet of drainage courses and other coastal waters; (5) temporary staging and storage of construction machinery, equipment, debris, and other materials during the construction period shall occur at property owned by the District adjacent to the inner boat basin, and will not occur within the inner boat basin or adjacent beaches; (6) machinery and construction materials not essential for project improvements are prohibited at all times in the subtidal or intertidal zones; (7) construction vehicles shall be maintained and washed in confined areas specifically designed to control runoff and located more than 100 feet away from the mean high tide line; (8) floating booms shall be used to contain debris discharged into coastal waters, and any debris discharged shall be removed as soon as possible but no later than the end of the each day; (9) during construction, all trash shall be properly contained, removed from the work site, and disposed of on a regular basis to avoid contamination of habitat during inner boat basin rehabilitation activities. Following construction, all trash and construction debris shall be removed from work areas and disposed of properly; and (10) fuels, lubricants, and solvents shall not be allowed to enter the coastal waters. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call.

Action Area

The action area includes a 500-meter radius from the entrance of the inner boat basin due to noise anticipated from pile driving activities. Juvenile SONCC coho salmon may migrate and rear within Crescent City Harbor, with peak abundance likely occurring in April and decreasing through June. Adult SONCC coho salmon could be present during migration from the ocean to nearby Elk Creek from November through January, with peak abundance likely occurring in December. Little data exist for the Elk Creek coho salmon population, however, the best available information indicates extremely low abundance for both juveniles and adults. NMFS expects the project will result in an insignificant mobilization of sediment, which is not expected to kill juvenile salmon prey (marine invertebrates) due to the limited duration and concentration of mobilized sediment. A small number of coho salmon prey may be killed during pile removal and installation, but rapid re-colonization of prey is expected to occur. Due to the timing of proposed in-water activities (June 1 through November 15), NMFS thinks exposure of coho salmon in the action area is unlikely and the project will have insignificant effects to SONCC coho salmon.

Southern DPS green sturgeon are believed to spawn and rear exclusively in the Sacramento River. Therefore, migrating adults are believed to be the only individuals that may be present in the project area. NMFS is unaware of information that suggests green sturgeon regularly frequent the action area, and given the lack of observations or incidences of bycatch in California fisheries, NMFS believes they are rare visitors to the action area. A small number of green sturgeon prey (benthic invertebrates) may be killed during dredging and pile removal and installation, but rapid re-colonization of prey is expected to occur. Therefore, NMFS believes the project will have insignificant effects to southern DPS green sturgeon.

The movement patterns of Steller sea lions are not well understood. They do not migrate, but exhibit seasonal movements between rookery and haul out sites. Relative to the project area, Castle Rock (approximately 5 km to the northwest) is the nearest Steller sea lion haul out site, the Saint George Reef Rookery (approximately 15 km to the northwest) is the nearest major breeding site, and Pyramid Rock (approximately 80 km to the north) is the nearest Steller sea lion critical habitat. Any Steller sea lion that may approach the inner boat basin would be a transiting adult that would likely avoid the area due to the level of human activity in the harbor. In addition, a biological monitor will be present to shut down in-water construction activities if a marine mammal enters the action area. Therefore, NMFS believes the project will have insignificant effects to eastern DPS Steller sea lions.

The project occurs within SONCC coho salmon and southern DPS green sturgeon critical habitat. However, for reasons explained above, NMFS believes effects to habitat within the project area will be temporary, short in duration, and therefore insignificant.

Effects of the Proposed Action

Implementation of the project would result in underwater sound generated from pile removal and pile placement, diminished water quality during dredging activities, and pollution from heavy equipment. Noise generated during pile removal and placement will be brief (approximately 10 successive strikes per pile), and will be reduced by the use of a bubble curtain. Effects from dredging will be brief due to the use of a suction dredge that will pipe sediment to an upland location, as well as the physical characteristics of the site (sand size or coarser sediment, high-energy wave and tidal environment. NMFS expects the timing of in-water construction activities and the construction-related minimization measures previously described in conjunction with species utilization of the action area during project implementation will reduce potential effects to listed species and their critical habitats to insignificant levels.

ESA Conclusion

Based on our review of the provided documents and our understanding of listed species and critical habitats within the project area, NMFS concurs with the County's determination that the proposed project may affect, but is not likely to adversely affect federally threatened SONCC coho salmon, southern DPS North American green sturgeon, eastern DPS Steller sea lions, or their designated critical habitats.

This concludes ESA consultation in accordance with 50 CFR 402.14(b)(1) for the proposed project. Further consultation may be required if: (1) new information reveals effects of the action may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to the listed species that was not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the project.

EFH CONSULTATION

NMFS determined that the project would adversely affect EFH for species managed under the Pacific Coast Salmon, Pacific Coast Groundfish, and Coastal Pelagics Fishery Management Plans. As previously discussed, habitat quality of the water column will be diminished during dredging, pile removal and installation, because of elevated turbidity from suspended sediments. However, NMFS expects recolonization of the substrate within a year. NMFS thinks the project design minimizes and reduces the magnitude of potential effects associated with elevated turbidity in the water column during project implementation. Therefore, NMFS provides no additional conservation recommendations. This concludes EFH consultation for the Project. Pursuant to 50 CFR 600.920(l), the County must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH.

FWCA CONSULTATION

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage [16 U.S.C. 662(a)]. Consistent with this consultation requirement, NMFS may provide recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. NMFS has no recommendations to make beyond the methods for avoiding impact already incorporated into the project design.

MMPA CONSULTATION

Marine mammals likely to be in the immediate project area are the California sea lion (*Zalophus californianus*) and possibly the Pacific harbor seal (*Phoca vitulina richardii*). Impacts to marine mammals from the proposed project could result from underwater sound from project-related vessels and pile driving.

Seals and sea lions are protected under the Marine Mammal Protection Act (MMPA; 16 U.S.C. § 1361 *et seq.*) Under the MMPA, it is generally illegal to "take" a marine mammal without prior authorization from NMFS. Pursuant to the MMPA, the term "take" means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. Except with respect to military readiness activities and certain scientific research conducted by, or on behalf of, the Federal Government, "harassment" means any act of pursuit, torment, or annoyance which— has the potential to injure a marine mammal in the wild; or has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Sounds introduced into the sea by man-made devices could have a deleterious effect on marine mammals by causing stress or injury, interfering with communication and predator/prey detection, and changing behavior. Exposure to loud sounds may result in a temporary or permanent loss of hearing (termed a temporary or permanent threshold shift) depending upon the location of the marine mammal in relation to the source of the sound. NMFS is currently in the process of determining safety criteria (*i.e.*, guidelines) for marine species exposed to underwater sound. However, pending adoption of these guidelines, we have preliminarily determined, based on past projects, consultations with experts, and published studies, that 180 dB re 1 μ Pa_{RMS} (190 dB re 1 μ Pa_{RMS} for pinnipeds) is the impulse sound pressure level that can be received by marine mammals without injury. Marine mammals have shown behavioral changes when

exposed to impulse sound pressure levels of 160 dB re $1\mu\text{Pa}_{\text{RMS}}$ and non-impulsive sound pressure levels of 120 dB re $1\mu\text{Pa}_{\text{RMS}}$ (such as the continuous sound produced by a vibratory pile driver). Most incidental take authorizations to date have involved the incidental harassment of marine mammals by noise.

Harassment of marine mammals may occur if hauled animals flush the haul out site and/or move out of the immediate aquatic area to increase their distance from pile driving or dredging-related activities, such as noise associated with the dredging, pile driving, presence of workers, or unfamiliar activity in proximity to a haul out site. Percussive piles, such as an impact hammer or drop hammer, generally result in the greatest noise production when compared to other methods of pile installation. Although percussive pile driving does not produce a continuous noise, the high amplitude and repeated blows of the hammer every few seconds can increase ambient noise levels in the surrounding acoustic environment. The force used to drive a pile, or power setting of the hammer, pile type and diameter, and hardness of the substrate the pile is driven, are important factors in determining the amount of energy released into the surrounding waters. Because of the high amplitude and wide frequency spectrum of pile driving noise, many species can potentially be affected. Animals have been observed flushing from haul out sites at a sound exposure level of less than 100 dBA, and it is possible that marine mammals may modify their behavior as a result of the noise produced by the pile driving and dredging operations.

Although Pacific harbor seals and California sea lions have regularly hauled out on boat docks in the past, most suitable docks in the project area were destroyed during the 2006 and 2011 tsunamis; therefore, NMFS expects that the number of marine mammals within the harbor will be relatively low. Any marine mammals in the action area would likely be transiting through the area. In order to prevent disturbance to marine mammals in the project area, the County will adhere to NMFS' MMPA biological monitoring guidance that outlines non-injurious methods of deterring marine mammals from the project area.

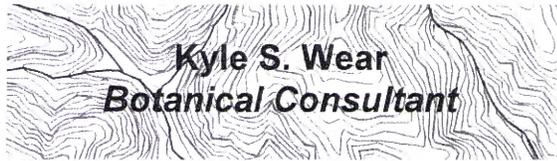
Please contact Mr. Zane Ruddy at (707) 825-5173, or via e-mail at zane.ruddy@noaa.gov if you have any questions concerning these consultations.

Sincerely,



for Rodney R. McInnis
Regional Administrator

cc: Chris Yates, NMFS, Long Beach
Ernest Molins, HUD, San Francisco
Carol Heidsiek, Corps, Eureka
Richard Young, Harbor District, Crescent City
Copy to File: ARN 151422SWR2010AR00350



3484 Zelia Court, Arcata, CA 95521
Phone: (707) 826-1398
Mobile: (707) 601-1725
Email: kyle_wear@suddenlink.net

Richard Young
Crescent City Harbor District
101 Citizens Dock Road
Crescent City, CA 95531

RE: Preliminary Eelgrass Surveys for Proposed Rock Slope Protection Areas

Dear Mr. Young,

On March 13, 2012 Kyle Wear and Frank Galea conducted dive surveys for eelgrass (*Zostera marina*) at the request of the Crescent City Harbor District within and adjacent to all areas within the harbor where damage to rock slope protection (RSP) from the March 11, 2011 tsunami is proposed to be repaired.

The survey was conducted outside of the growing season for eelgrass in northern California (May-September) in order for Harbor District permitting deadlines to be met and in response to a March 8, 2012 letter submitted by the Department of Fish and Game alerting the Coastal Commission, the North Coast Regional Water Quality Control Board, and the Harbor District of the potential for eelgrass to occur within pending project areas of the harbor.

A thorough pre-construction survey of the project area will be conducted at minus tides during the growing season in May. This will include all of the RSP repair sites and all areas within and adjacent to proposed dredging in the harbor.

Methods

The survey involved numerous free dives in all shallow water (less than 15 feet) within and adjacent to the RSP areas. When eelgrass beds were encountered they were mapped using a combination of GPS and hand mapping. The data was overlaid on the 2010 NAIP image for Del Norte County using GIS software. Due to windy conditions and poor visibility, it was not feasible to GPS the edges of the beds or determine the cover or density of turions. The survey was conducted between 9 am and 12 pm. The tides on March 13 were:

3:34 am High 7.5
10:35 am Low -0.2
5:05 pm High 5.3
10:15 pm Low 2.6

Results and Discussion

Two eelgrass beds were located during the survey and are shown on the attached maps. The bed located southwest of the entrance to the public boat launch area (ZOMA-1) is approximately 289 square meters. The bed located at the entrance of the inner boat basin

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(ZOMA-2) is approximately 241 square meters. The beds were in approximately one to five feet of water at the time of the survey. With the exception of a few turions along the southwestern edge of ZOMA-1, the eelgrass was not visible from the surface. Eelgrass was not encountered rooted in the public boat launch area. Several pieces of fresh eelgrass vegetative material (rhizomes and leaves) were found in debris left by high tide on the boat ramp, but none was observed rooted in the bottom of the boat launch area. This material was possibly uprooted from elsewhere in the harbor by high winds that occurred on March 12 or during another recent storm.

ZOMA-2 at the entrance to the inner boat basin could be adversely impacted by the proposed project. A portion of ZOMA-1 may also be impacted as the bed generally extends to the toe of the existing breakwater adjacent to the most of the RSP area. Any disturbance from construction beyond the existing toe of the breakwater would be within the bed.

Recommendations

Both eelgrass beds shall be re-evaluated during minus tides in May 2012 prior to construction activities. The beds will be mapped with GPS and measurements of turion density and cover will be made.

The areas adjacent to all of the RSP repair sites shall be re-surveyed in May 2012 in addition to all areas of the outer harbor within and adjacent to any dredging. Prior to these surveys, detailed surveys methods shall be provided to the California Department of Fish and Game for review.

If ZOMA-1, ZOMA-2, or any additional eelgrass beds located during the May survey will be impacted by the project, a mitigation and monitoring plan shall be developed and submitted to the California Department of Fish and Game for approval prior to any project activities that could adversely affect the eelgrass.

Sincerely,

Kyle Wear

Kyle Wear
Botanical Consultant

Cc:

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Coast Commission (bmerrill@coastal.ca.gov and jdixon@coastal.ca.gov)

NOAA (korie.schaeffer@noaa.gov)

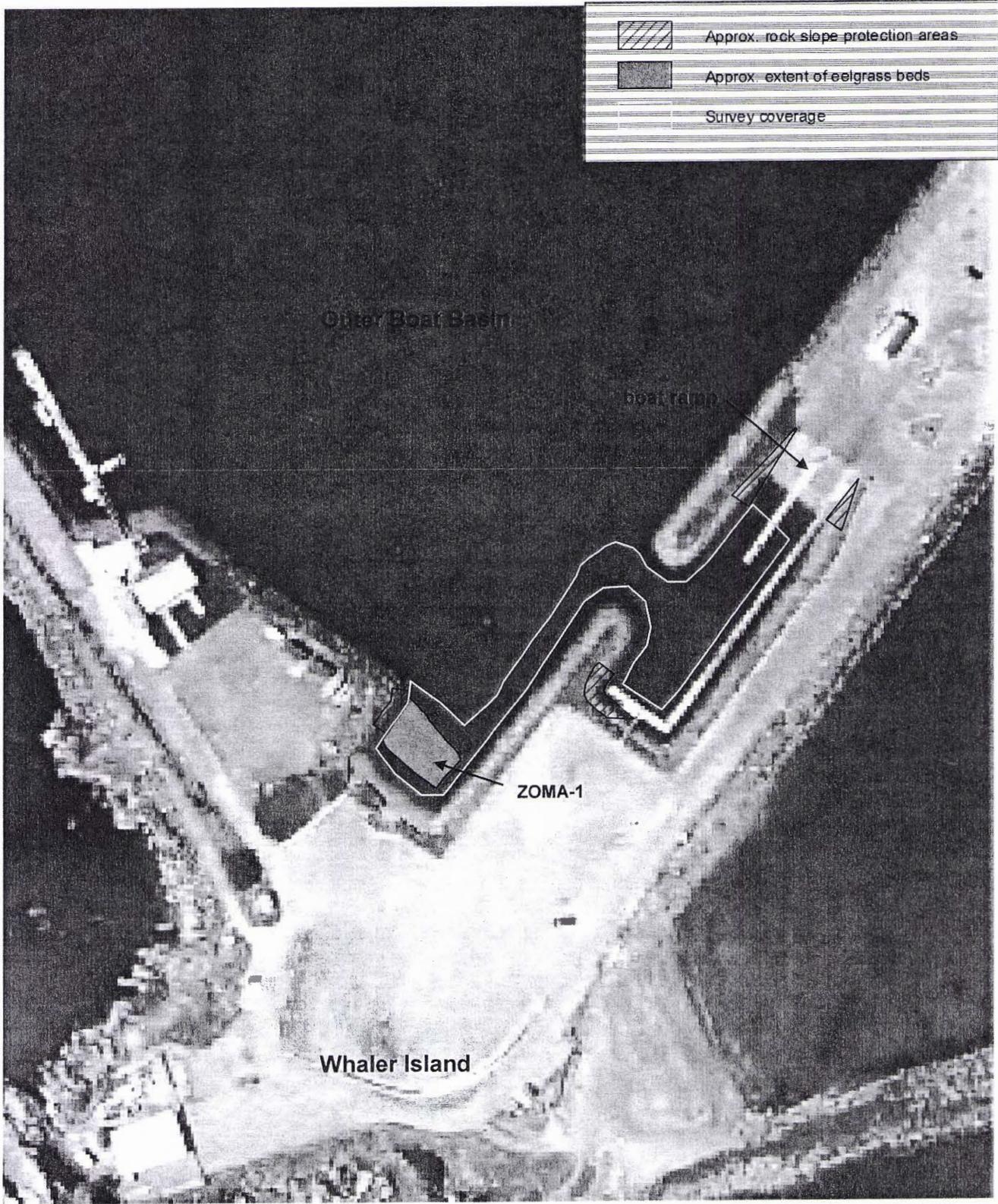
Water Board (dprat@waterboards.ca.gov)

Frank Galea (frankgalea@charter.net)

Attachments:

Maps of eelgrass beds located during the survey

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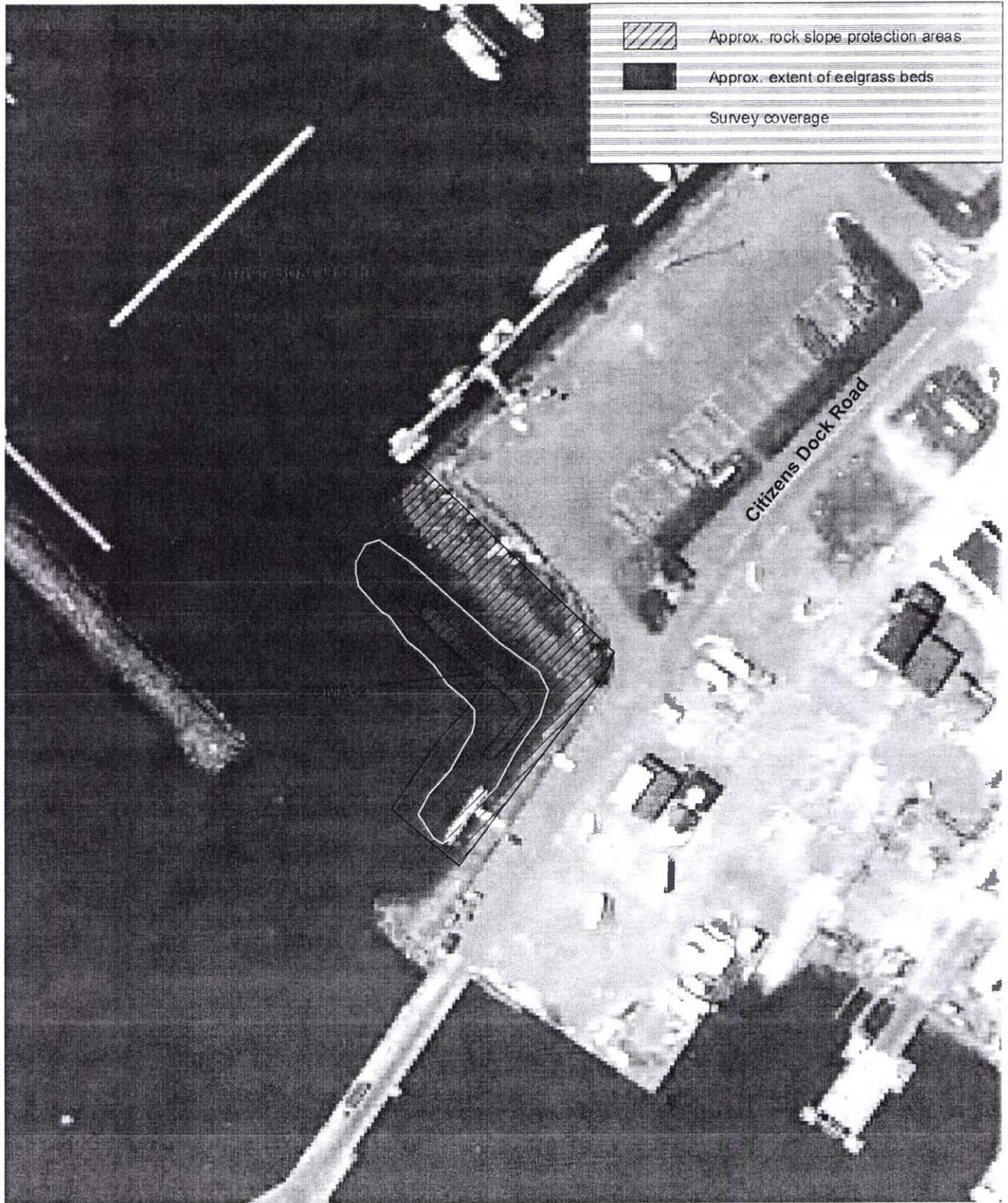


Map 1. Location of Eelgrass Beds located within and adjacent to proposed RSP areas on March 13, 2011.

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Map 2. Location of Eelgrass Beds located within and adjacent to proposed RSP areas on March 13, 2011.

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