

**GEOTECHNICAL ENGINEERING REPORT**

**PROPOSED SHEET PILE WALL**

**MAD RIVER SLOUGH LEVEE REPAIR  
ARCATA, CALIFORNIA**

**Prepared for**

Oscar Larson and Associates, Inc.

317 Third Street

Eureka, CA 95501

**EXHIBIT NO. 9**

**APPLICATION NO.**

1-03-004-A3

RECLAMATION DISTRICT 768

GEOTECHNICAL  
ENGINEERING REPORT  
(1 of 22)

**Prepared by**

Anchor Environmental CA, L.P.

28202 Cabot Road, Suite 620

Laguna Niguel, California 92677

**June 2007**



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**June 2007**

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## List of Acronyms and Abbreviations

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CPTs	cone penetrometer tests
FRC	Fiber-Reinforced Polymer
MLLW	mean lower low water
OLA	Oscar Larson and Associates



## 1 INTRODUCTION

This report presents the results of our geotechnical engineering study for the proposed sheet pile wall along a portion of levee at the Mad River Slough in Arcata, California, and our geotechnical recommendations for design and construction of the wall. This study was conducted for Oscar Larson and Associates (OLA) as part of the overall design process for the levee repair project being undertaken by OLA for Reclamation District 768.

### 1.1 Site and Project Description

The Mad River Slough is a tidally-influenced waterway located approximately 4 miles east of Arcata, California. It is connected to the northern end of Humboldt Bay, as shown on Figure 1, the Vicinity Map. Approximately 5 miles of levee run along the southern edge of the slough and the north shore of Humboldt Bay. The levee is managed by Reclamation District 768.

Erosion and localized breakdown of the levee has occurred over the years, with pronounced erosion developing during the winter storms of 2005 to 2006. As a result, OLA is working with Reclamation District 768 to design repairs for the levee, and has obtained emergency permits for the construction work.

In many areas the repair will take the form of a rock armored embankment to protect the levee slope from erosion. An alternative approach is being considered for an approximately 900-foot-long stretch of levee along the Mad River Slough, involving installation of a sheet pile wall, which would provide a steeper levee face and to prevent further encroachment into the slough at this location.

### 1.2 Scope of Work

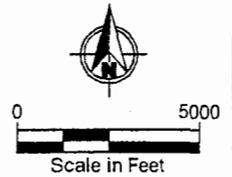
The scope of this geotechnical engineering study was as follows:

- Determine subsurface soil conditions along the proposed length of sheet pile wall through a series of geotechnical explorations, consisting of three cone penetration tests (CPTs).
- Use the results of the explorations to formulate geotechnical engineering recommendations and input parameters for use by the structural engineer designing the sheet pile wall, and other recommendations to the design team regarding site work.

Jun 11, 2007 11:23am dholmer K:\Jobs\070458-MAD RIVER SLOUGH\070458-01\07045801-001.dwg Vicinity Map



Source: Drawing prepared from California USGS Quads: Tyee City, Arcata North, Arcata South, and Eureka.  
Vertical Datum: Mean Lower Low Water (MLLW).



## 2 SUBSURFACE CONDITIONS

### 2.1 Method of Subsurface Investigation

The subsurface investigation program for this project consisted of three CPTs, advanced through the top of the levee to depths ranging from 43 feet to 55 feet. Their locations, based on measuring their positions relative to other landmarks in the field, are indicated on Figure 2, the Site and Exploration Map. The explorations were advanced from locations along the top of the levee.

CPT explorations involve pushing an instrumented probe into the subsurface while pressure transducers on the probe continuously record soil resistance, skin friction, and pore pressures. This information can be used to determine the soil types (i.e., clays, sands, gravels, etc.) and layer thicknesses in the subsurface.

Logs from the CPT explorations are presented in Appendix A to this report.

### 2.2 Previous Work Performed by Others

We are unaware of any existing subsurface geotechnical data at the site. About one-third of a mile northeast of this site location, Kleinfelder, Inc. (1998) performed a geotechnical investigation for a set of pipeline crossings over the Mad River Slough. For this study, three borings were advanced to depths ranging from 31 feet to 146.5 feet below the bottom of the slough channel.

### 2.3 Soil Conditions

Our CPT explorations encountered a general soil sequence that was fairly consistent among the three explorations. Figure 3 illustrates the generalized soil profile that was encountered. The soil types were as follows:

- The upper 12 feet of soil (measured below the top of the levee) represent the material that comprises the levee itself. This was a soft to medium-stiff clay.
- Below this initial layer, the next 13 feet of soil (to a depth of approximately 25 feet) are characterized by interbedded silty sands, sandy silty, and clayey silts, which appear to be generally granular in nature, according to the density and pore pressure readings from the CPT. This material appears to be loose to medium dense.



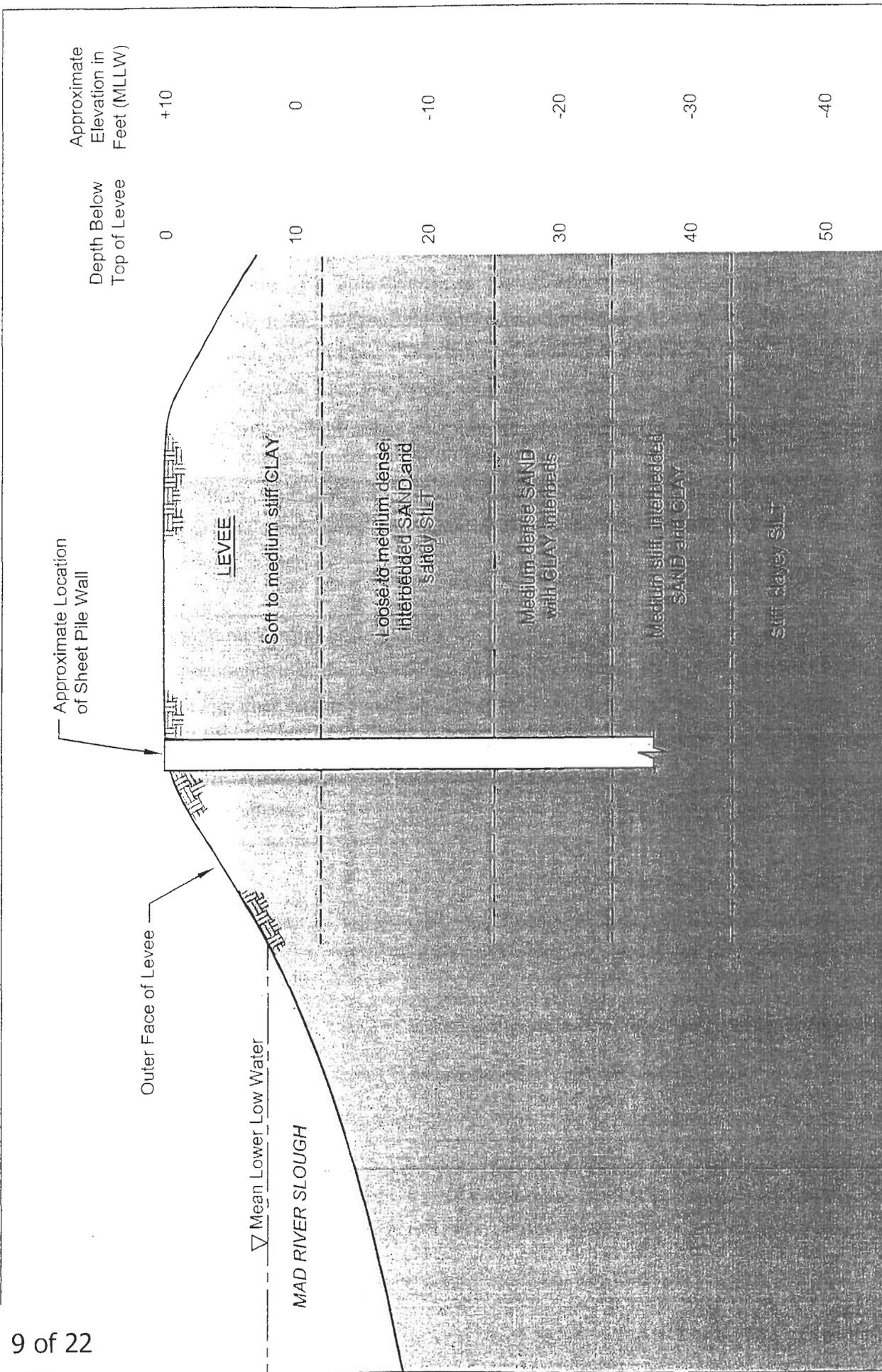
Source: Google, 2005

AN-CPT-1 ○ CPT Location and Designation

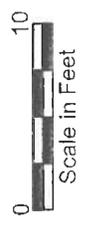
Not to Scale



**Figure 2**  
 Site and Exploration Plan  
 Mad River Slough  
 Arcata, California



**Figure 3**  
 Generalized Soil Profile  
 Mad River Slough  
 Arcata, California



- The upper 12 feet of soil (measured below the top of the levee) represent the material that comprises the levee itself. This was a soft to medium-stiff clay.
- Below this initial layer, the next 13 feet of soil (to a depth of approximately 25 feet) are characterized by interbedded silty sands, sandy silty, and clayey silts, which appear to be generally granular in nature, according to the density and pore pressure readings from the CPT. This material appears to be loose to medium dense.
- Below that, the material is predominantly a medium-dense to occasionally-dense sand with some clay interbeds. This material extends to a depth of about 34 feet. This material will provide the most lateral support to an embedded sheet pile wall.
- The medium-dense sands grade into a deposit of medium stiff clays and interbedded sands, to a depth of approximately 43 feet.
- At the bottom of our explorations, we encountered stiff clayey silts and silty clays, with occasional sand layers. This material extends to the full depth of our explorations (55 feet).

For comparison, three borings accomplished by Kleinfelder, Inc. (1998) indicated that clay and silty clay predominate in the upper 30 to 40 feet (to elevation -20 to -30 feet mean lower low water [MLLW]), then become medium dense to very dense sands and clayey sands below that. The CPTs conducted for this study indicate that the sand layer begins and ends at shallower depths. It also appears to be less dense here than it is indicated to be at the Kleinfelder (1998) locations.

### 3 GEOTECHNICAL ENGINEERING CONCLUSIONS AND RECOMMENDATIONS

We understand that OLA is planning to design a cantilevered sheet pile wall to provide protection for the levee face. Although some consideration has been given to installing ground anchors or tiebacks behind this wall, doing so would require work in the adjacent undisturbed land behind the levee, which is owned by Humboldt State University and is protected. These options are therefore undesirable.

We understand that consideration has also been given to incorporating "king piles" into the sheet pile wall design. King piles are stronger than sheet piles, and can therefore augment the sheet piles in retaining the soil.

Below, we provide recommendations for design of both the sheet piles and for potential king piles.

#### 3.1 Design Recommendations for Cantilever Sheet Piles

We have developed geotechnical engineering parameters for your use in designing a cantilevered sheet pile wall at the site. The parameters reflect the geologic units encountered by our explorations, as well as parameters that would apply if backfill were placed behind the wall in any locations. Our recommended soil parameters are summarized in Table 1.

Some other factors to be considered in designing the sheet pile wall:

- Unbalanced hydrostatic forces behind the wall during low tide events will likely present the critical design condition. Although the sheet pile wall may allow some seepage of water through it, we recommend assuming full hydrostatic loading of 64 per cubic foot (for salt water).
- A "flexible" sheet pile wall can be designed with active earth pressures rather than with at-rest earth pressures, if it can deflect at least 0.2 percent of its retained height.
- Include the effect of vehicle or equipment traffic adjacent to and behind the sheet pile wall by applying a surcharge equivalent to 2 vertical feet of soil.
- The earth pressures presented in Table 1 represent flat ground in front of and behind the wall. Sloping ground conditions in front of or behind the wall would affect these earth pressure values. Downward sloping ground in front of the wall would reduce the available passive resistance, while upward sloping ground behind the wall would increase the active pressures.

- "Ultimate" passive earth pressure values are presented in Table 1. Apply a factor of safety of at least 1.5 for computing passive resistance to lateral loads.
- Note that three of the geologic layers have cohesion in addition to the internal friction angle. This will modify the forces calculated from the earth pressures alone, as it will reduce the active forces and increase the passive forces.
- Under seismic conditions, there will be a temporary increased load on the unbalanced height of the wall. We recommend applying a uniform increase of 5H to the lateral pressure acting behind the wall (where H is the retained height of the wall), in addition to the active and pressure values presented above. It is not necessary to apply the seismic pressure and the 2 foot equipment surcharge simultaneously.

**Table 1**  
**Recommended Geotechnical Engineering Parameters for Sheet Pile Wall Design**

Soil Description	Granular BACKFILL (if placed and compacted behind or in front of wall)	Soft to Medium-Stiff CLAY (levee material)	Loose to Medium- Dense, Interbedded Silty SANDS; Sandy and Clayey SILTS	Medium-Dense SAND with Occasional Clay Interbeds	Medium-Stiff Interbedded SANDS and CLAYS	Stiff Clayey SILT to Silty CLAY
Depth Range (feet) <sup>1</sup>		0 to 12 feet	12 to 25 feet	25 to 34 feet	34 to 43 feet	43 ft and below
Soil unit weight (psf)						
Total	120	90	110	120	105	100
Effective (submerged) <sup>2</sup>	56	26	46	56	41	36
Internal Friction Angle (degrees)	28	16	26	28	16	16
Cohesion (psf)	0	100	0	0	100	100
Earth Pressure Parameters <sup>3</sup>						
Ka (active)	0.36	0.57	0.39	0.36	0.57	0.57
Ko (at-rest)	0.53	0.72	0.56	0.53	0.72	0.72
Kp (passive) <sup>4</sup>	2.77	1.76 <sup>5</sup>	2.56	2.77	1.76	1.76
Friction Parameters Angle (degrees)						
Coefficient	0.36	0.27	0.36	0.36	0.27	0.27

Notes:

1. Depth below top of levee elevation (approximately +10 feet MLLW per OLA survey).
2. Assumes unit weight of salt water = 64 pcf.
3. These earth pressure parameters reflect flat ground behind and in front of the wall. If the ground slopes behind or in front of the wall, then modified earth pressures will be appropriate.
4. "Ultimate" passive earth pressures are presented. Apply a factor of safety of at least 1.5 for computing passive resistance to lateral loads.
5. This layer (levee material) will be subject to erosion over time and therefore may not be available to provide passive resistance in the long-term.



**3.2 Design Recommendations for King Piles**

As discussed previously, we understand that pipe piles, or "king piles," may be used to supplement the sheet piling to create a cantilevered wall. We also understand that the LPILE computer program will be used for analyzing lateral load capacity and deflection of the pile foundations. Table 2 lists our recommendations for input to the computer model. We have provided input values for three distinct soil layers, equal to those described in the "Subsurface Conditions" section of this report.

**Table 2  
Recommended Soil Parameters for LPILE Input**

Soil Description	Granular BACKFILL (if placed and compacted behind or in front of wall)	Soft to Medium-Stiff CLAY (levee material)	Loose to Medium-Dense, Interbedded Silty SANDS, Sandy and Clayey SILTS	Medium-Dense SAND with Occasional Clay interbeds	Medium-Stiff Interbedded SANDS and CLAYS	Stiff Clayey SILT to Silty CLAY
Depth Range (feet) <sup>1</sup>		0 to 12 feet	12 to 25 feet	25 to 34 feet	34 to 43 feet	43 ft and below
Soil Type	"Sand"	"Clay"	"Sand"	"Sand"	"Clay"	"Clay"
Soil unit weight (psf)						
Total:	120	90	110	120	105	100
Effective (submerged) <sup>2</sup>	56	26	46	56	41	36
K Value (pci) <sup>3</sup>	60	30	30	60	80	300
Shear Strength (psf)	0 <sup>3</sup>	250 <sup>4</sup>	0 <sup>3</sup>	0 <sup>3</sup>	700	900
Internal Friction Angle (degrees)	28	16 <sup>4</sup>	26	28	16	16
E50 (Strain at 50% maximum stress)	0 <sup>5</sup>	0.02 <sup>4</sup>	0 <sup>5</sup>	0 <sup>5</sup>	0.01	0.007

Notes:

1. Depth below top of levee elevation (approximately +10 feet MLLW per OLA survey).
2. Assumes unit weight of salt water = 64 pcf.
3. K value is defined specifically for the LPILE computer program.
4. This layer (levee material) will be subject to erosion over time and therefore may not be available to provide passive resistance in the long-term.
5. LPILE software recommends that these values be zero for soils that are predominantly granular in nature.

Consider the temporary application of seismic forces in the same manner as described in Section 3.1 for the sheet pile wall design.



### 3.3 Construction Considerations for Sheet Piles and King Piles

Based on the soil types we have observed at this site (interbedded clays, silts, and sands), we expect that an appropriately selected model of vibratory hammer could be used to drive the sheet piles to the depths that are likely to be needed.

We do not anticipate any difficulties in driving the sheet piles or king piles through the existing levee. It is our understanding that the levee is constructed of clayey materials previously removed from the slough channel, and our CPT explorations reinforced this expectation. Of course, there is a possibility that previously unknown debris or rock could be present within the levee, which could be encountered during installation.

Installation of sheet piling will cause vibrations which may result in soil movement, particularly on the steeply sloped levee faces. We recommend that the contractor be required to have a plan ahead of time to address this situation if it occurs. Measures that may mitigate vibration-induced slope movement could include pausing pile installation if movement occurs, increasing the time between subsequent sheet pile installation, or adjusting the use and/or settings of the vibratory hammer.

Sheet piles are manufactured with various materials. Steel remains the most typical sheet pile material, but is subject to corrosion over time and therefore is generally accompanied by sacrificial anodes or corrosion-resistant coating. Another alternative that may be worth considering is to use non-metallic sheet pile material, such as PVC or Fiber-Reinforced Polymer (FRC). We have seen these types of materials used cost-effectively on other projects.

### 3.4 Backfilling

We anticipate that backfilling will be required in some areas of the levee to create ground surface behind the sheet pile wall. We recommend that in such areas, a compacted, largely granular backfill material be used.

We recommend that areas to be backfilled be initially prepared by removing topsoil, vegetation, and organic-rich soils from the backfilling area. If possible, compact the remaining subgrade to a firm and non-yielding condition.

Place backfill in individual lifts ranging from 8 to 12 inches in loose thickness, depending on the size of compaction equipment that is used, and compact each lift to 90 to 95 percent of the backfill's maximum dry density (as determined by the modified Proctor test). If the final surface will not need to convey equipment or traffic, then 90 percent compaction will be sufficient, and will avoid loading the sheet pile wall unnecessarily.

We recommend that backfill material be granular and well-graded in nature, to facilitate compaction and improve its long-term performance. The backfill should not contain organics, clay lenses, debris, or other undesirable or compressible materials. Ideally the backfill material will be a mixture of sand and gravel that contains less than 5 percent by weight of fines (that portion passing the U.S. No. 200 sieve), with that percentage being based only on the material that is finer than three-fourths of an inch. Typically, this type of fill material can be readily compacted, even in relatively wet weather conditions. Backfill materials with higher percentages of fines tend to be increasingly difficult to compact in wet weather.

If soil materials are excavated from the levee, we anticipate that the excavated materials will be predominantly clayey and silty materials, which would be poorly suited for use as backfill because they would be very difficult to compact under wet conditions.

#### 4 ADDITIONAL RECOMMENDATIONS

We recommend that Anchor Environmental be consulted during the remainder of the design phase to refine our geotechnical recommendations as more information about project requirements becomes available, and as specific project elements change or are refined.

We make the following recommendations for subsequent efforts on this project:

- Provide Anchor the opportunity for a general review of the final plans and specification in order to verify that geotechnical recommendations presented herein are properly interpreted and implemented in the design and specifications.
- Retain Anchor to provide geotechnical engineering services on an as-needed basis during wall installation. The purpose of these observations is to determine compliance with the design concepts, specifications, or recommendations and to allow design changes in the event that subsurface conditions differ from that anticipated prior to the start of construction.

This work was completed in accordance with our existing contract between OLA and Anchor. This report has been prepared for the exclusive use of OLA, its design subconsultants, and Reclamation District 768 for specific application to the project and site under study and design.

This work has been performed in accordance with generally accepted geotechnical engineering practices in the same or similar localities, at the time the work was performed. No warranty is made, express or implied.

If you have any questions about the information contained in this report, then please do not hesitate to contact Michael Whelan at (949) 347-2783, or John Verduin at (206) 287-9130.

## 5 REFERENCES

Kleinfelder, Inc. 1998. Geotechnical Investigation: Mad River Slough Pipeline Crossings, Arcata, California. Prepared for Humboldt Bay Municipal Water District, August 7, 1998.



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**APPENDIX A**  
**FIELD EXPLORATION LOGS**

The subsurface investigation program for this project consisted of three cone penetrometer tests (CPTs), advanced to depths of 43 to 55 feet below the top elevation of the levee. The CPT explorations were conducted on May 25, 2007 by Fisch Drilling of Valley Springs, California, using a track-mounted, remote-control Geoprobe 6600 rig. Representatives from Anchor and OLA were present during the CPT work.

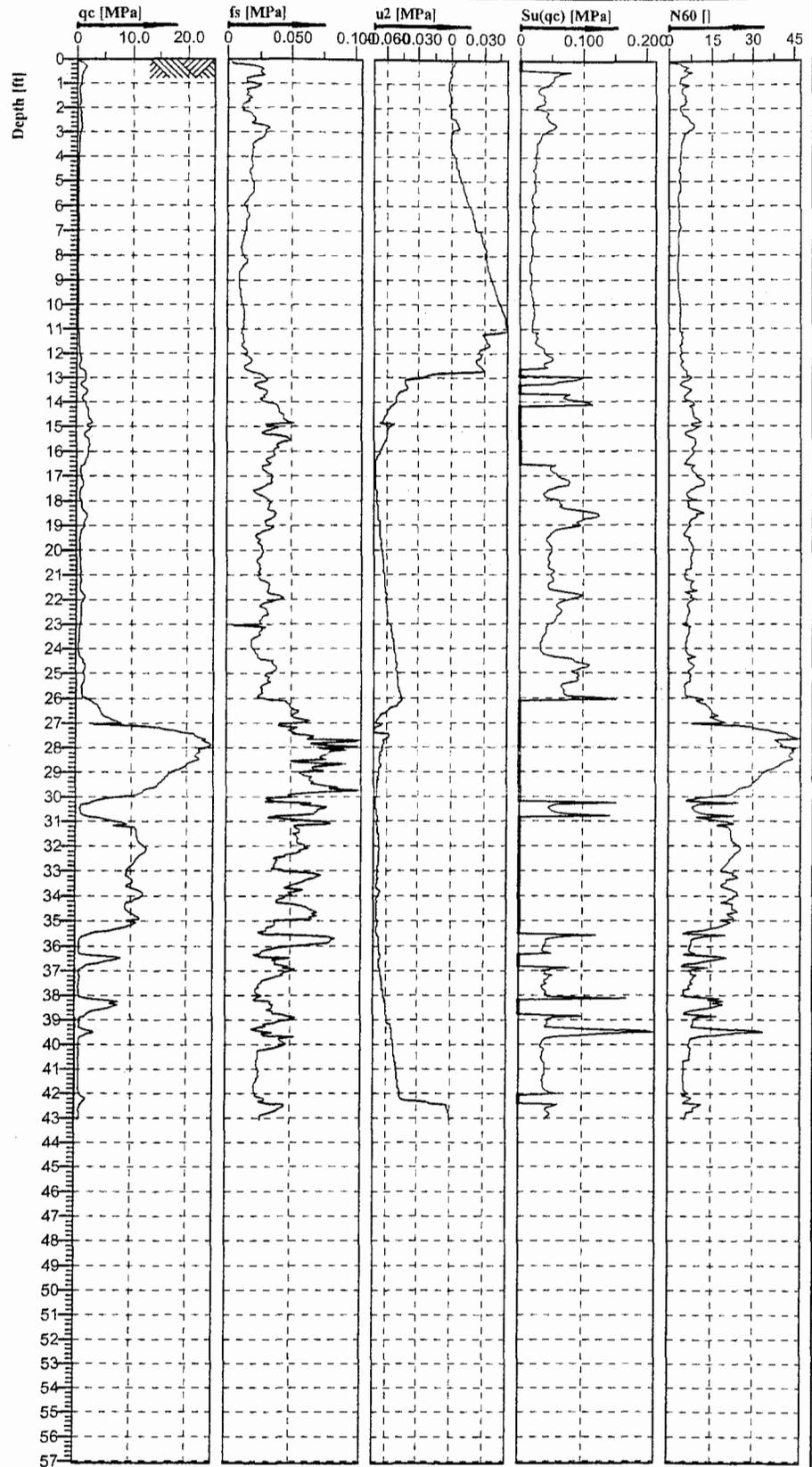
The CPT rig has built-in transducers which feed data in real time to a computer mounted on the rig. Tip resistance, side friction, and pore pressure were recorded continuously. At the completion of the work, the data files were provided in plotted form for Anchor's use. CPT software was used by the driller to determine estimates of undrained strength ( $S_u$ ) and standard penetration test (N60) throughout the soil profile. The resulting CPT logs are presented in this appendix.

The final depths of the CPT explorations were selected based on the judgement of the Anchor engineering field representative. None of the CPT explorations met refusal.

No soil samples were obtained during CPT explorations.

**Classification by  
Robertson 1986**

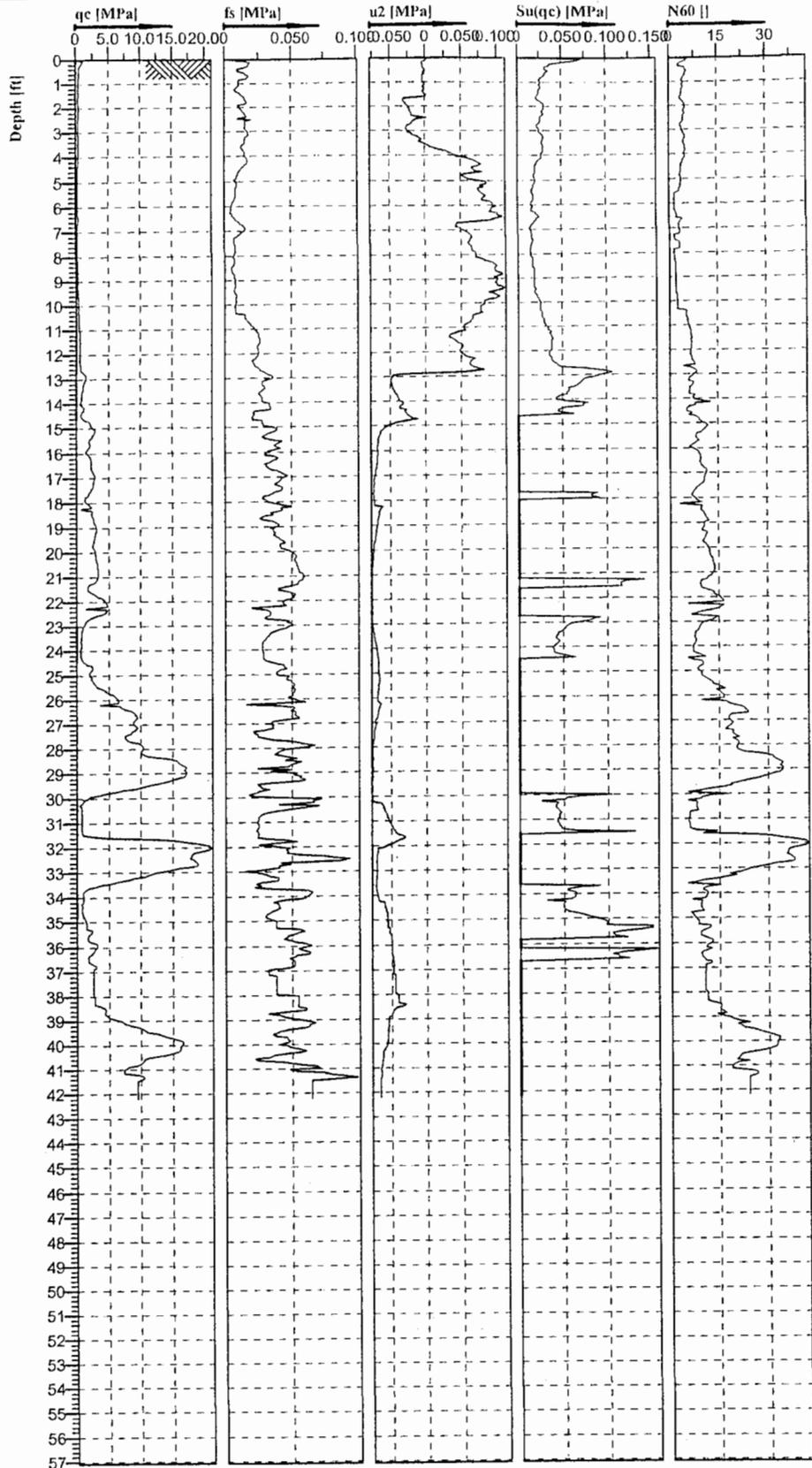
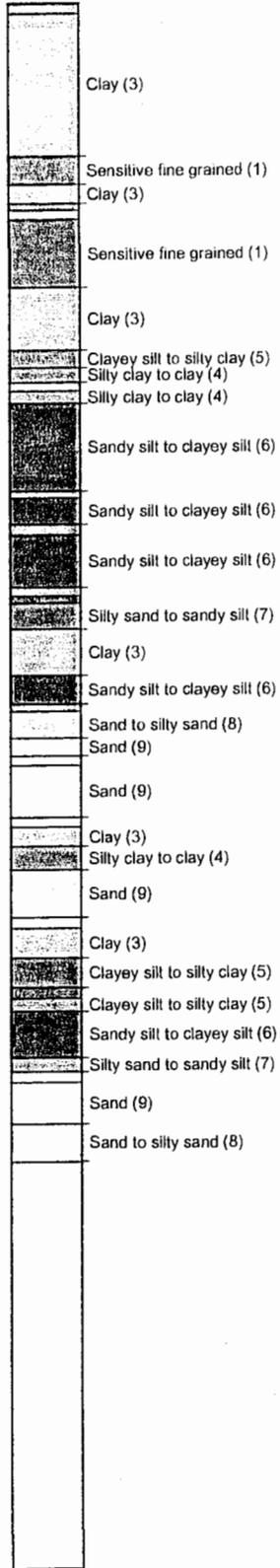
- Sandy silt to clayey silt (6)
- Clay (3)
- Clay (3)
- Clayey silt to silty clay (5)
- Sandy silt to clayey silt (6)
- Clay (3)
- Silty clay to clay (4)
- Clayey silt to silty clay (5)
- Clay (3)
- Silty clay to clay (4)
- Clay (3)
- Silty clay to clay (4)
- Clay (3)
- Clayey silt to silty clay (5)
- Silty sand to sandy silt (7)
- Sand (9)
- Sand (9)
- Clay (3)
- Sand (9)
- Sand (9)
- Sand (9)
- Clay (3)
- Sand to silty sand (8)
- Clay (3)
- Sand to silty sand (8)
- Clay (3)
- Silty clay to clay (4)



Cone No: 3335  
 Tip area [cm<sup>2</sup>]: 10  
 Sleeve area [cm<sup>2</sup>]: 150

Location: Samoa, CA	Position: X: 0.00 ft, Y: 0.00 ft	Ground level: 0.00	Test no: 1
Project ID: G3341	Client: Anchor Environmental	Date: 5/25/2007	Scale: 1 : 80
Project: Mad River Slough		Page: 1/1	Fig:
		File: ANcpt1.CPT	

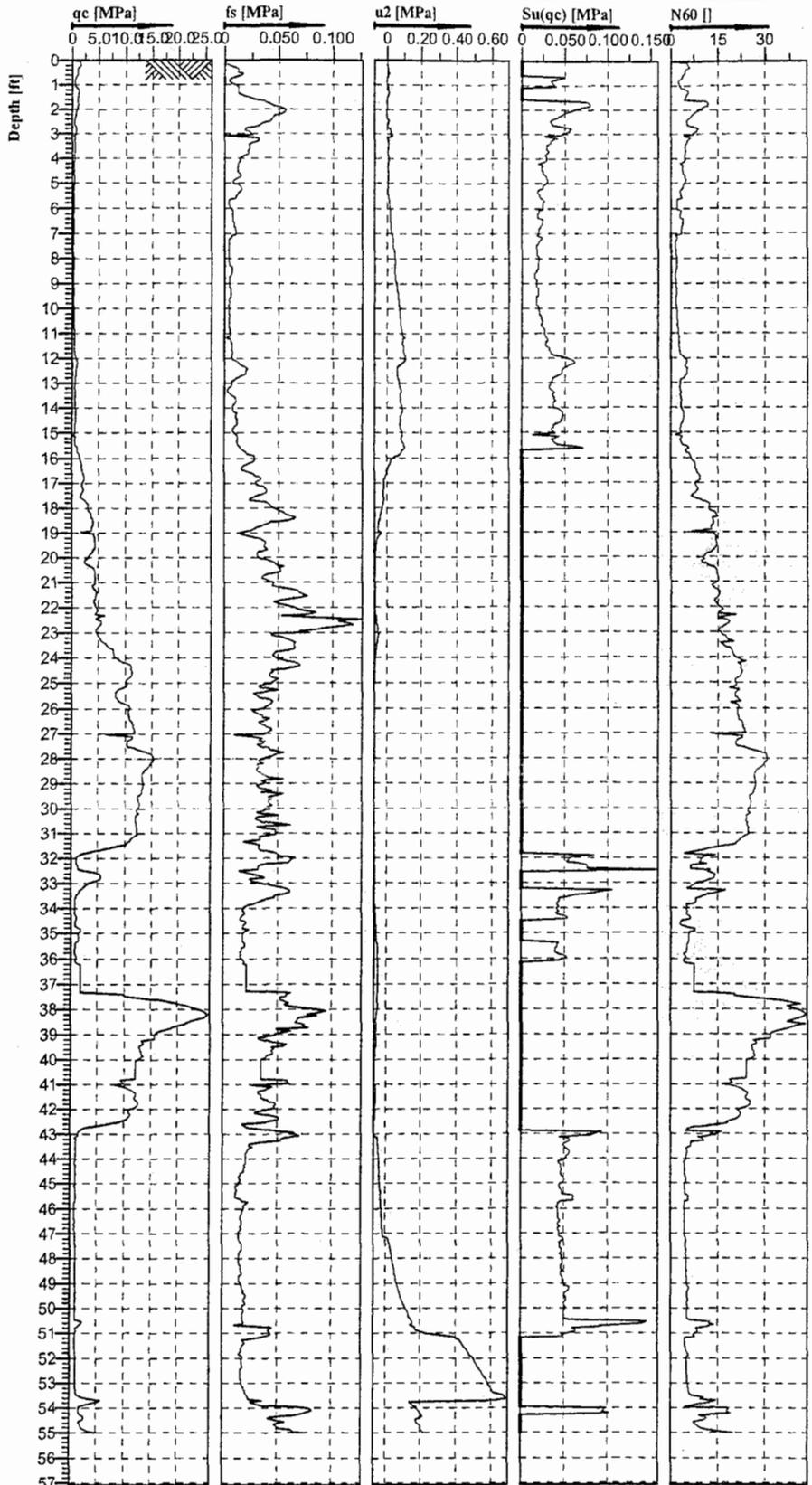
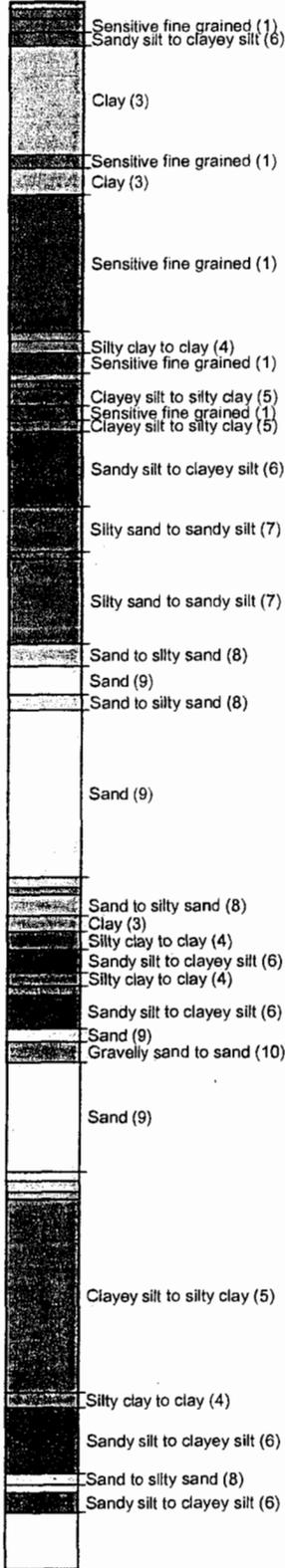
Classification by  
Robertson 1986



Cone No: 3335  
Tip area [cm2]: 10  
Sleeve area [cm2]: 150

Location: Samoa, Ca	Position: X: 0.00 ft, Y: 0.00 ft	Ground level: 0.00	Test no: 2
Project ID: G3341	Client: Anchor Environmental	Date: 5/25/2007	Scale: 1 : 80
Project: Mad River Slough		Page: 1/1	Fig:
File: ANcpt2.CPT			

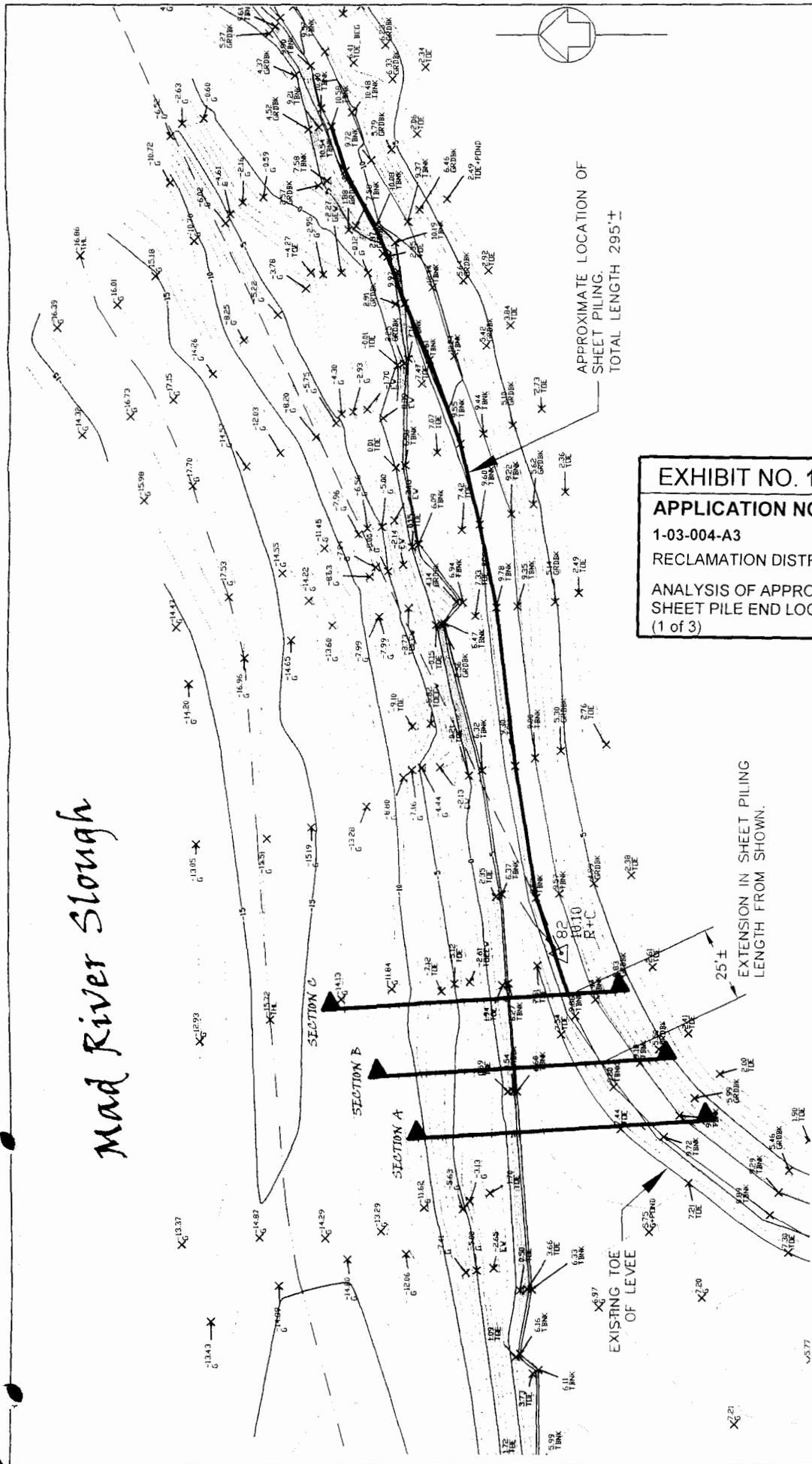
Classification by  
Robertson 1986



Cone No: 3335  
Tip area [cm<sup>2</sup>]: 10  
Sleeve area [cm<sup>2</sup>]: 150

Location: Samoa, Ca	Position: X: 0.00 ft, Y: 0.00 ft	Ground level: 0.00	Test no: 3
Project ID: G3341	Client: Anchor Environmental	Date: 5/25/2007	Scale: 1 : 80
Project: Mad River Slough	Page: 1/1	File: ANcpt3.CPT	Fig:

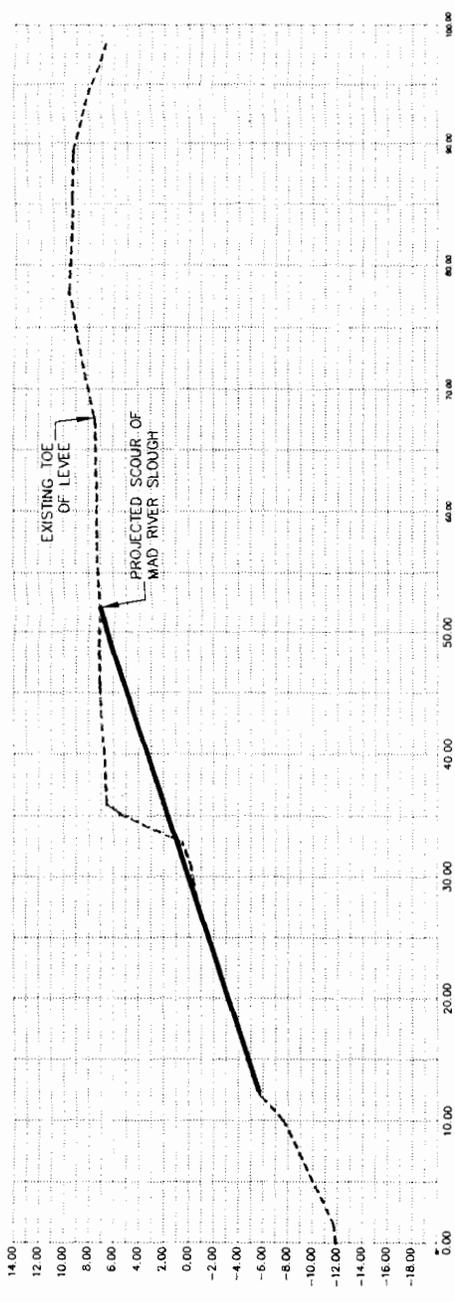
# Mad River Slough



**EXHIBIT NO. 10**  
**APPLICATION NO.**  
 1-03-004-A3  
 RECLAMATION DISTRICT 768  
**ANALYSIS OF APPROPRIATE SHEET PILE END LOCATION**  
 (1 of 3)

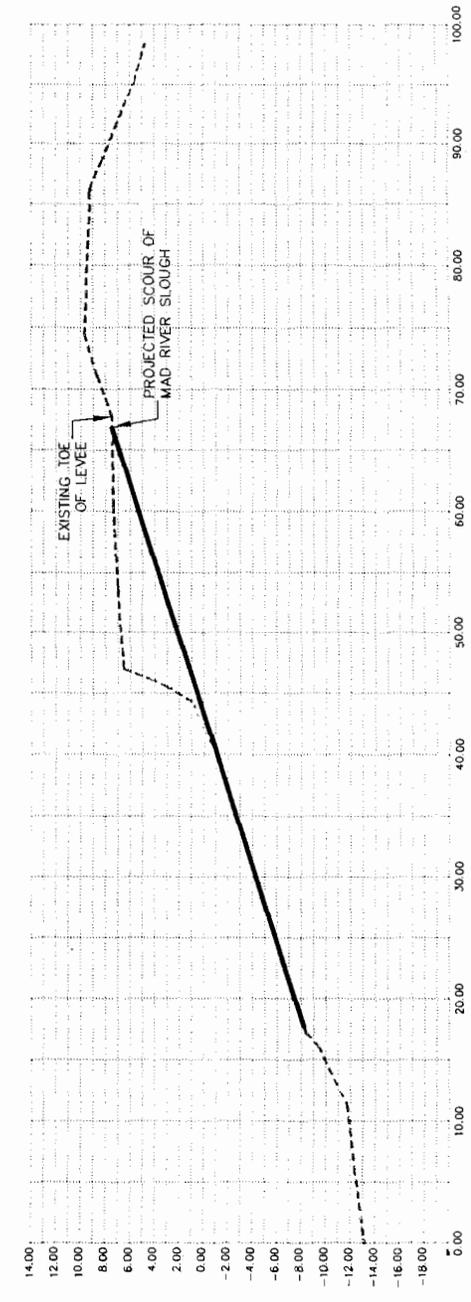
NOTE:  
 VERTICAL DATUM IS NAVD 88 BASED ON A DIFFERENTIAL LEVELING TIE TO THE NGS TIDAL BENCH MARK, PID# LV0346. ELEV. = 14.90', RETRIEVAL DATE 12/11/2006

RECLAMATION DISTRICT 768  
 END SHEET PILING SECTIONS  
 PAGE 1 OF 3  
 SCALE: 1" = 30'  
**OSCAR LARSON & ASSOCIATES**  
*Attachment 5*



SECTION A

SECTION A: PROJECTED EROSION OF THE SLOUGH WOULD NOT REACH OR UNDERMINE LEVEE IN THIS LOCATION. SHEET PILING DOES NOT NEED TO EXTEND THIS FAR TO THE SOUTHWEST.



SECTION B

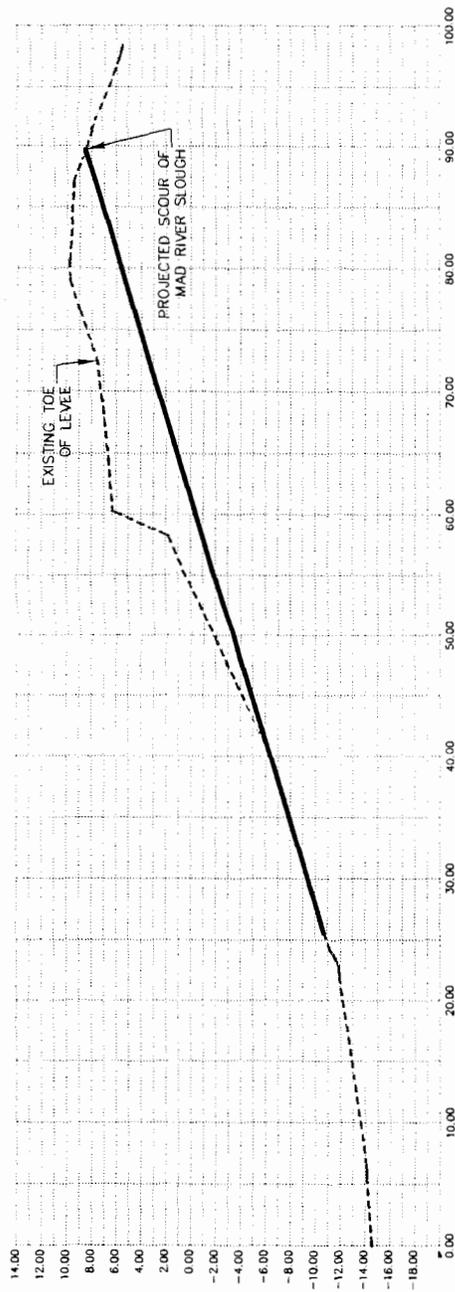
SECTION B: THIS IS THE LOCATION WHERE THE PROJECTED EROSION OF THE SLOUGH ENDS JUST IN FRONT OF LEVEE TOE. THIS IS THE APPROPRIATE LOCATION TO END THE SHEET PILING.

NOTE:  
NEW ROCK SLOPE PROTECTION PLACEMENT AT WEST END OF SHEET PILING SHALL BE PLACED WITHIN THE FOOTPRINT OF THE EXISTING LEVEE.

DATUM NOTE:  
VERTICAL DATUM IS NAVD 88 BASED ON A DIFFERENTIAL LEVELING TIE TO THE NGS TIDAL BENCH MARK, PID# LV0346, ELEV. = 14.90'. RETRIEVAL DATE 12/11/2006

RECLAMATION DISTRICT 768  
END SHEET PILING SECTIONS  
PAGE 2 OF 3  
SCALE: 1"=1'H 1"=1'V  
OSCAR LARSON & ASSOCIATES

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SECTION C: PROJECTED EROSION OF THE SLOUGH WOULD UNDERMINE THE LEVEE IN THIS LOCATION. SHEET PILING SHOULD CONTINUE FURTHER TO THE SOUTHWEST OR ELSE THE RISK IS INCREASED OF SCOUR BEHIND THE END OF THE SHEET PILING AND OF THE ADJACENT SALT MARSH.

SECTION C

NOTE: NEW ROCK SLOPE PROTECTION PLACEMENT AT WEST END OF SHEET PILING SHALL BE PLACED WITHIN THE FOOTPRINT OF THE EXISTING LEVEE.

DATUM NOTE:  
 VERTICAL DATUM IS NAVD 88 BASED ON A DIFFERENTIAL LEVELING TIE TO THE NGS TIDAL BENCH MARK, PID# LV0346, ELEV. = 14.90', RETRIEVAL DATE 12/11/2006

RECLAMATION DISTRICT 768  
 END SHEET PILING SECTIONS  
 PAGE 3 OF 3  
 SCALE: 1"=11'H 1"=1'V  
**OSCAR LARSON & ASSOCIATES**

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## CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE  
710 E STREET • SUITE 200  
EUREKA, CA 95501-1865  
VOICE (707) 445-7833  
FACSIMILE (707) 445-7877

MAILING ADDRESS:  
P. O. BOX 4908  
EUREKA, CA 95502-4908



Hearing Date: March 17, 2005  
Commission Action: **Approved with  
Conditions, March 17, 2005**

ADOPTED FINDINGS

APPLICATION NUMBER: **1-03-004**

APPLICANT: **Reclamation District #768; Lois Wallace,  
Domingo Santos, and Earl Moranda Directors**

PROJECT LOCATION: 1,500- to 1,600-acre Reclamation District located north and south of Highway 255 along the northern shoreline of the Arcata Bay lobe of Humboldt Bay and the banks of Mad River Slough, Arcata Bottom area, Humboldt County

PROJECT DESCRIPTION: Repair of a 230-foot-long breach in a portion of the levee north of Hwy 255, replacement of three 36-inch-diameter culverts and floodgates, and a ten-year permit for routine repair and maintenance activities on the levee system.

LOCAL APPROVALS: Humboldt County Planning approval, April 17, 2003

SUBSTANTIVE FILE DOCUMENTS: Humboldt County Local Coastal Program

**EXHIBIT NO. 11**

**APPLICATION NO.**

1-03-004-A3

RECLAMATION DISTRICT 768

STAFF REPORT FOR CDP  
NO. 1-03-004 (1 of 18)

STAFF NOTES:1. Adopted Findings

The Commission held a public hearing and approved the permit at the meeting of March 17, 2005. The adopted findings for approval differ from those contained in the written staff recommendation dated November 4, 2004. At the hearing, the staff presented an addendum that modified the staff recommendation to (1) incorporate certain changes to Special

Condition No. 2 and the corresponding findings, (2) correct certain factual errors in the project description finding regarding the extent of flooding that occurred as a result of a previous breaching of the Mad River levee and the emergency permit that had been issued to repair the breach. The Commission adopted the changes to the staff recommendation in their entirety.

The following resolution, conditions, and findings were adopted by the Commission on March 17, 2005 upon conclusion of the public hearing.

**2. Standard of Review**

The proposed development will be performed on levees located within state tidelands and public trust lands in Humboldt County. Pursuant to Section 30519 of the Coastal Act, the Coastal Commission retains jurisdiction over the review and issuance of Coastal Development Permits in these areas even though the County of Humboldt has a certified Local Coastal Plan. The standard of review for projects located in the Commission's original jurisdiction is Chapter 3 of the Coastal Act.

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**RESOLUTION TO APPROVE THE COASTAL DEVELOPMENT PERMIT:**

The Commission hereby approves the coastal development permit on the ground that the development as conditioned, will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the coastal development permit complies with the California Environmental Quality Act because either: (1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the amended development on the environment; or (2) there are no feasible mitigation measures or alternatives that would substantially lessen any significant adverse effects of the amended development on the environment.

**II. STANDARD CONDITIONS** See attached.

**III. SPECIAL CONDITIONS**

**1. Length of Development Authorization**

Development authorized by this permit is valid for five (5) years from the date of Commission approval (until March 17, 2010). One request for an additional five-year

period of development authorization may be accepted, reviewed and approved by the Executive Director for a maximum total of 10 years of development authorization, provided the request would not substantively alter the project description, and/or require modifications of conditions due to new information or technology or other changed circumstances. The request for an additional five-year period of development authorization shall be made prior to March 17, 2010. If the request for an additional five-year period would substantively alter the project description, and/or require modifications of conditions due to new information or technology or other changed circumstances, an amendment to this permit will be necessary.

2. **Standards for Repair and Maintenance Work**

- a. **Armoring Rock**: All new revetment material to be used shall consist of either clean quarry rock or concrete rubble materials that are free of asphalt and waste materials. The revetment materials shall not be greater than three feet in any one direction or smaller than one cubic foot in size. All exposed reinforcement bar shall be removed prior to installation of any concrete rubble riprap. Armoring rock shall be stockpiled outside seasonal wetlands and transitional agricultural lands. No rock shall be placed outside of the existing footprint of the levee system.
- b. **Fill Material**: Only dry, clean fill may be used for levee repairs and must be free of debris (vegetation, asphalt etc.). Fill material shall be stockpiled outside of seasonal wetlands or transitional agricultural lands. No fill shall be placed outside of the existing footprint of the levee system.
- c. **Placement of Materials**: Materials placed on the levees to be repaired, including all riprap, shall not extend into the slough or Arcata Bay beyond the footprint of the levee as it existed before the repair. The determination of the location of the front of the levee shall be made through a 'string line' method, whereby the portions of the levee that are not in need of repair or restoration on each side of the areas that is in need of repair shall be used to determine the maximum extent of the repair. Revetment material shall not be end-dumped, but placed in an interlocking fashion along the levee face to avoid spreading beyond the former footprint of the levee and to provide a structurally integrated revetment.
- d. **Revegetation Of Disturbed Areas**: When repair and maintenance activities disturb more than 100 square feet of area within the existing footprint of the levee, the disturbed area shall, immediately upon completion of the repair and maintenance activity, be revegetated with appropriate native plants. Naturalized plants, approved by the Department of Fish & Game, may be used to revegetate the upland portions of the site.

- e. Disposal of Excess Material and Vegetation: All construction debris and cut vegetation, except grass clippings from mowing the top of the levee, shall be removed from the site and disposed of only at an authorized disposal site. Side casting of such material or placement of any such material within Arcata Bay, Mad River Slough, any wetland area including the grazed seasonal wetlands inboard of the levees is prohibited.
- f. Installation of Silt Fences: Silt fences or equivalent devices shall be installed along the perimeter of each repair site prior to the placement of any fill materials to reduce the discharge of fill materials and sediment laden runoff into Arcata Bay, Mad River Slough, or the wetlands on the inboard sides of the damaged levees. The installed silt fences or equivalent devices shall be maintained during project construction and removed upon completion of the project.
- g. Spill Prevention: To prevent and address spills of equipment fuels, lubricants, and similar materials, the repair work shall incorporate the following measures: (a) no equipment fueling shall occur on the site or elsewhere along the levees; (b) all equipment used during construction shall be free of oil and fuel leaks at all times; (c) oil absorbent booms and/or pads shall be on site at all times during project construction and deployed if necessary in the event of a spill; and (d) all spills shall be reported immediately to the appropriate public and emergency services response agencies.
- h. Wet Season Work Prohibited: Repair and maintenance activities authorized by this permit shall only be performed during the dry season (April 15 to October 15).
- i. No Wetland Fill: No permanent or temporary fill of tidal wetlands or of the inboard ditch or any other seasonal wetland is allowed by this permit. Ditch crossings must be accomplished by temporary bridging that must be removed within one week of completion of work on that portion of the levee served by the bridge.
- j. Pre-construction Contractor Training: Prior to the commencement of any repair and maintenance activities authorized by this permit which have not yet been undertaken, the Applicant shall ensure that the Contractor understands and agrees to observe the standards for work outlined in this permit and in the detailed project description included as part of the Applicants submittal and as revised by these conditions.

- k. Monitoring: Repair and maintenance activities shall be monitored by a qualified Civil Engineer, or equivalent expert, during the dry season no less frequently than every three months to ensure that work performed under this permit is consistent with the terms of the permit. The Monitor shall have the authority to stop work and to recommend remediation of ongoing work in order to comply with the terms and conditions of this permit.
- l. Annual Reports: The Applicant shall submit an annual report to the Executive Director by November 15 annually for the life of the permit. The report shall describe the repair and maintenance activities completed during the reporting period and identify potential activities for the coming year.
- m. Annual Inspection: The levee system shall be inspected by a qualified Civil Engineer or equivalent, to identify areas where repair and maintenance work will be needed within the coming year. The location and type of work needed shall be described in a written report. The Engineers report shall be submitted to the Reclamation Board of Directors, the district's biologist and to the Executive Director. The report is due annually on November 15. If, based on this report, the biologist identifies any work areas that are within potential habitat areas, the biologist shall survey those areas for the presence of Point Reyes Bird's Beak or Humboldt Bay Owl's Clover. If either of these species are found in the area scheduled for disturbance, the plants shall be avoided.

#### IV. FINDINGS AND DECLARATIONS

The Commission finds and declares as follows:

##### A. Project Description.

The proposed project includes three separate, but related, elements as discussed below. All of the proposed work will be, or has already been, done by Reclamation District No. 768 on the 4.9 miles of earthen levees included within the district boundaries. The District itself was officially formed by resolution of the Humboldt County Board of Supervisors in 1904 and is considered a "Special District" under the definition found in Section 30118 of the Coastal Act. The district is responsible for maintaining the levees and appurtenant development (e.g., culverts, flood gates, levee access etc.) within its boundaries. The levee system exists to protect approximately 1,500 to 1,600 acres of agricultural land, homes, farm buildings, public utilities and roads (See Exhibit A, Location Map).

Project Components

**Follow-up Permitting for Culvert Replacement Emergency Permit Nos. 1-03-070-G and 1-04-017-G:** The first part of the project is a follow up permit to two Emergency Permits granted by the North Coast District Office in 2003 and 2004 for the replacement of three failing corrugated metal culverts and floodgates located at the west end of the levee system along Humboldt Bay and south of State Highway 255 (see Exhibit No 1). The failed culverts were replaced with the same type and size of culverts and floodgates, with clean armoring rock re-installed around the outboard side of the levee (adjacent to Humboldt Bay), consistent with the conditions placed on the Emergency Permits specifying the type of materials to be used in the repair of this section of the levee.

**Follow-up Permitting for Major Levee Breach Repair Emergency Permit No. 1-04-060-G:** On December 23, 2003, a combination of extraordinarily high tides and 45 mile-per-hour (mph) winds caused a 230-foot-long breach in a portion of the levee located north of Highway 255 (Please see Exhibit A. This breach resulted in the flooding of about 600 acres of pasture and a local County Road and was temporarily contained by the installation of large “water bag” dikes. Emergency Permit No. 1-04-060-G was subsequently obtained from the North Coast District Office for repair of the breach along the original alignment with an earthen levee and outboard armoring as had existed prior to the incident, as well as the repair of 15 other, smaller eroded areas on the levee fronting Arcata Bay. This Emergency Permit was conditioned to require the use of clean fill for the levee and clean rock (i.e., no debris, no re-bar) for the outboard armoring.

**Ten Year Programmatic Permit for Ongoing Repair and Maintenance Activities:** The final part of the project is a proposal for a ten-year permit to undertake routine repair and maintenance of the levee system. A detailed description of the proposed activities and method for accomplishing them is attached as Exhibit C. In summary, the Reclamation District maintenance program includes vegetation control (mowing) along the top of the levees to allow access for maintenance equipment, replacement of rip rap that has migrated or is needed to repair erosion, placement of clean fill to repair eroded areas and flood gate and culvert replacement with the same size facilities. All of the work is proposed within the existing footprint of the levee and will not result in any encroachment into Humboldt Bay or on the inboard (reclaimed land) side of the levee into the seasonal wetlands.

**B. Permit Authority, Extraordinary Methods of Repair and Maintenance.**

Coastal Act Section 30610(d) generally exempts from Coastal Act permitting requirements the repair or maintenance of structures that does not result in an addition to, or enlargement or expansion of the structure being repaired or maintained. However, the Commission retains authority to review certain extraordinary methods of repair and

maintenance of existing structures that involve a risk of substantial adverse environmental impact as enumerated in Section 13252 of the Commission regulations. Section 30610 of the Coastal Act provides, in relevant part:

*Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: . . .*

*(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter. [Emphasis added]*

Section 13252 of the Commission administrative regulations (14 CCR 13000 *et seq.*) provides, in relevant part:

*(a) For purposes of Public Resources Code section 30610(d), the following extraordinary methods of repair and maintenance shall require a coastal development permit because they involve a risk of substantial adverse environmental impact: . . .*

*(3) Any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams that include:*

*(A) The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials;*

*(B) The presence, whether temporary or permanent, of mechanized equipment or construction materials.*

*All repair and maintenance activities governed by the above provisions shall be subject to the permit regulations promulgated pursuant to the Coastal Act, including but not limited to the regulations governing administrative and emergency permits. The provisions of this section shall not be applicable to methods of repair and maintenance undertaken by the ports listed in Public Resources Code section 30700 unless so provided elsewhere in these regulations. The provisions of this section shall not be applicable to those activities specifically described in the document*

*entitled Repair, Maintenance and Utility Hookups, adopted by the Commission on September 5, 1978 unless a proposed activity will have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean. ...*  
[Emphasis added.]

The proposed project is a repair and maintenance project because it does not involve an addition to or enlargement of the levee. Although certain types of repair projects are exempt from CDP requirements, Section 13252 of the regulations requires a coastal development permit for extraordinary methods of repair and maintenance enumerated in the regulation. The proposed levee repair involves the placement of construction materials and removal and placement of solid materials within 20 feet of coastal waters. The proposed repair project therefore requires a coastal development permit under Sections 13252(a)(1) of the Commission regulations.

In considering a permit application for a repair or maintenance project pursuant to the above-cited authority, the Commission reviews whether the proposed *method* of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the underlying existing development.

The repair and maintenance of levees can have adverse impacts on coastal resources, in this case primarily bay waters and the inboard seasonal wetlands, if not properly undertaken with appropriate mitigation. The Applicant proposes to maintain the levees in their existing footprint by repairing eroded areas with clean fill material similar to the existing earthwork, replacing outboard armoring as needed to avoid erosion, replacing failing culverts and floodgates to ensure that they function properly as drainage facilities and to keep access open along the top of the levees so that equipment and supplies can be brought in as needed. The methods proposed for maintaining the existing system are typical of levee maintenance statewide. The District has included a number of mitigation measures as part of their proposal such as limiting vegetation removal to the minimum necessary to allow access along the top of the levees, various spill prevention measures, designated staging areas and the consistent use of siltation fences in areas under active repair. These measures and others proposed by the District in their application are appropriate, however, additional measures are needed to avoid as necessary, or minimize impacts on water quality, wetlands and Environmentally Sensitive Habitat (ESHA). The conditions required to meet this standard are discussed in the following findings relevant to water quality and ESHA. Finally, the Applicant has requested a ten year permit for the on going maintenance and repair activities outlined in their application and described in Exhibit B. The Commission has, on occasion granted special districts multi-year permits for such activities (i.e. 3-04-72, Moss Landing Harbor District routine pier replacement; and 3-00-034, Santa Cruz Port District, routine maintenance dredging; and 3-02-047,

Monterey Harbor, routine operations and maintenance) in order to reduce both Commission and District staff workload associated with processing repetitive, routine coastal permits. However, given the fact that circumstances can change over time and techniques for addressing maintenance needs can also evolve, the Commission chooses to grant an initial five year period of development authorization with a one-time ability to extend the period of development authorization for another five years for a maximum total of 10 years of development authorization if there are no changed circumstances that require review. This permit is conditioned accordingly. Therefore, as conditioned in these Findings, the Commission finds that the proposed project is consistent with PRC Section 30236.

**C. Public Access.**

This project is located between the first public road and the sea (Please see Exhibit A, Location Map). Section 30604 (c) of the Coastal Act requires that every Coastal Development Permit issued for development between the first public road and the sea “shall include a specific finding that the development is in conformity with the public access and public recreation policies of Chapter 3 (commencing with Section 30200).”

Coastal Act Policies

Section 30210 of the Coastal Act states:

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

Section 30211 of the Coastal Act states:

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

Section 30212 of the Coastal Act states:

*(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or (3) agriculture would be adversely affected. Dedicated access*

*way shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the access way.*

- (b) *For purposes of this section, "new development" does not include:*
- (1) *Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.*
  - (2) *The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.*
  - (3) *Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.*
  - (4) *The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not seaward of the location of the former structure.*
  - (5) *Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.*

*As used in this subdivision, "bulk" means total interior cubic volume as measured from the exterior surface of the structure.*

(c) *Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution. [Emphasis added.]*

The access policies cited above are those relevant to this project and direct the Commission to generally require maximum public access in new development unless the access would be inconsistent with public safety, resource protection, private property

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RECLAMATION DISTRICT #768  
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rights, or military security needs (§§30210 and 30212) or would be otherwise exempt from providing access by statute (§30212(b)(5)). Coastal Act Section 30211 requires that new development shall not interfere with existing public access that has been acquired either by use or through legislative authorization.

Analysis

As stated above, the proposed project is for the ongoing repair and maintenance of a pre Coastal Act levee system. Ordinarily, routine repair and maintenance is an exempt activity under Coastal Act Section 30610(d) and thus no coastal development permit would be required. Certain repair and maintenance activities are, however, excepted from this general exemption by regulation, as authorized by Section 30610(d), because they may “*involve the risk of substantial adverse environmental impact*”. The Commission’s regulations identify repair and maintenance activities performed near the shoreline, as proposed by this application, must obtain coastal development permits and are not exempt under Section 30610 (d) (California Code of Regulations, Title 14, Section 13252 (a) (3)). However, because repair and maintenance is not considered new development for purposes of Section 30212, Coastal Act Section 30212(b)(5) excludes these repair and maintenance activities from Coastal Act access requirements unless the Commission “*determines that the activity will have an adverse impact on lateral beach access.*”

The proposed repair and maintenance activities will have no impact on lateral beach access because the proposed work will be accomplished within the existing footprint of the levees, staging areas are located outside of any access or access points and because there is no beach adjacent to the levees. The project is, therefore consistent with the requirements of Sections 30210 and 30212.

Coastal Act Section 30211 also requires new development to not interfere with existing access. While exempt from this policy as discussed above, the Commission notes that the levee system has not been used by the public to gain access to the shores of Humboldt Bay and Mad River Slough during its long existence except by permission of the owners.

In conclusion, the proposed project is not considered new development for the purposes of application of the Public Access Policies of the Coastal Act because it is a repair and maintenance activity that will not adversely affect lateral beach access and is therefore consistent with the policy direction found in Section 30212.

**D. Water Quality.**

The proposed repair and maintenance work will take place on levees located immediately adjacent to Humboldt Bay on the outboard side and seasonal wetlands on the inboard

side. thus there is a potential for adverse impacts to water quality of the bay waters and the waters that feed the seasonal wetlands.

Coastal Act Policy

Section 30231 of the Coastal Act states:

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

Coastal Act Section 30233 states:

- (a) *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
- (1) *New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
  - (2) *Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
  - (3) *In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*

- (4) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
- (5) *Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
- (6) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
- (7) *Restoration purposes.*
- (8) *Nature study, aquaculture, or similar resource dependent activities.*

*(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.*

*(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.*

*For the purposes of this section, 'commercial fishing facilities in Bodega Bay' means that not less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.*

*(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which*

*would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

These policies require the protection of coastal waters to ensure biological productivity, protect public health and water quality. New development must not adversely affect these values and should help to restore them when possible.

#### Analysis

Implementation of the proposed repair and maintenance program will result in the transportation and placement of fill and armoring materials to the sites to be maintained, the removal and replacement of culverts and flood gates, the use of staging areas for stockpiling of materials to be used for the project and other material to be disposed of (old culverts, excess fill etc.) and the removal of vegetation by mechanical mowing equipment. Unless appropriate protocols are followed, all of these activities could result in fuel or oil spills, improper storage of materials in or adjacent to sensitive areas, increased turbidity that would have adverse impacts on water quality. The repair and maintenance program proposed by the District includes a number of protocols to protect water quality including the use of geo-textile fabric between fill and armoring to reduce migration of fill into bay waters, the consistent use of siltation fences at work sites to reduce discharges, proper disposal of abandoned or excess materials and vegetation to appropriate off site disposal facilities, a prohibition on the storage of any excess materials within any wetland including the transitional agricultural lands, spill prevention measures and the location of a staging area outside any sensitive lands (see Exhibits C, Project Description).

In general, the protocols proposed by the District are appropriate to protect water quality although they lack adequate specificity in some instances, a lack that is remedied by conditions attached to these Findings. The District's proposal also includes one measure that does not meet current standards however, and that is the provision for the temporary filling of the inboard ditch to provide levee top access for equipment (Ditch Crossings, page 2, Project Description, Exhibit B). The inboard ditch, has over the years, taken on the characteristics of a wetland (hydric soils, wetland vegetation, etc). The introduction of the temporary fill and culverts will have an adverse impact on the portion of the wetland covered by the material and also on the water quality of the unfilled portions

nearby due to increased turbidity caused by fill placement. The use of a temporary bridge to gain access is feasible and would avoid the need to place fill in the wetland.

The proposed protocols are also incomplete in other areas. For example, the proposed protocols do not limit repair and maintenance activities to dry periods. Work performed during rainy periods is much more likely to result in the discharge of inappropriate material into the adjacent waters because the fill will be saturated. The proposed protocols also lack specificity regarding the type of fill material and armoring that can be used. The normal run off from the use of contaminated materials would have an adverse impact on water quality. Finally, the protocols do not provide for monitoring, or pre-construction training for the contractor to ensure the proper protocols are understood and carried out.

As conditioned to add specificity to proposed protocols, bridge rather than fill the ditch, limit work to dry times, identify appropriate fill and armoring materials, monitor the work and train the contractor, this project is consistent with the direction of Policy 30231 and 30233 to protect water quality.

#### E. Marine Resources.

The outboard side of the levee system is, in most places adjacent to Humboldt Bay and the proposed repair and maintenance program has the potential to adversely affect marine resources. The following section of the Coastal Act requires that new development maintain, enhance and where feasible restore damaged marine resources.

#### Coastal Act Policy

Section 30230 of the Coastal Act states:

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

#### Analysis

The waters of Humboldt Bay provide habitat for a number of marine species. The Biological Report prepared by Mad River Biologists on August 14, 2003 discusses the habitat value of the bay and bay muds near the project site and reports that Humboldt Bay in the vicinity of the project is home to one endangered species, the Tidewater Goby and

two plant species of concern, Point Reyes Birds Beak and Humboldt Bay Owls Clover. (see Exhibit D, Habitat Assessment for Humboldt County Reclamation District 768, Culvert and Flood Gate Replacement Project.). The report states that the Tidewater Goby is sensitive to turbidity in the water and therefore recommends that siltation fences be used when working on the outboard side of the levee in order to avoid the discharge of sediments into the bay waters. As conditioned to train contractors prior to work and to require the use of siltation fences, the impact on the Tidewater Goby from the proposed repair and maintenance activities will be insignificant. The habitat assessment also identified rare salt marsh plants growing in the vicinity of the project but did not survey all of the outboard side of the levee to determine the location, if any, of these plants on the Districts levees. The report does state that “no habitat likely to support either the Point Reyes Birds Beak or the Humboldt Bay Owl’s Clover exists on the site.” In order to assure protection of these resources, Special Condition No. 2m requires an annual survey of any sites chosen for repair and maintenance activities that are within potential habitat areas prior to the commencement of that year’s work to determine if either of the rare plants exist within the work areas. If such rare plants are found, significant disruption of the plants must be avoided. As conditioned, the project can be found consistent with the Coastal Act Policy 30230.

**F. Environmentally Sensitive Habitat.**

Because the Tidewater Goby and the Point Reyes Bird Beak and Humboldt Bay Owl’s Clover are rare, their habitat meets the definition of Environmentally Sensitive Habitat (ESHA) found in the Coastal Act (PRC Section 30107.5) and thus development adjacent to these habitats must also comply with Section 30240 (b) of the Coastal Act.

Coastal Act Policy

Section 30240 of the Coastal Act states:

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

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

Analysis

For the reasons discussed in the previous Findings on Marine Resources and Water Quality, as conditioned, the proposed project will not significantly degrade the adjacent Tidewater Goby, Point Reyes's Birds Beak or Humboldt Bay Owl's Clover habitat and is compatible with the continuance of the habitat as required by PRC Section 30240 (b).

**G. California Environmental Quality Act (CEQA).**

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

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. This staff report has discussed the relevant coastal resource issues with the proposal, and has recommended appropriate mitigations to address adverse impacts to said resources. Accordingly, the project is being approved subject to conditions which implement the mitigating actions required of the Applicant by the Commission (see Section III, "Special Conditions").

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As discussed above, the proposed project has been conditioned to achieve consistency between the proposed project and the requirements of the applicable policies of the Coastal Act. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. Mitigation measures that will minimize or avoid all significant adverse environmental impact have been required.

As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA. As such, the Commission finds that only as modified and conditioned by this permit will the proposed project not have any significant adverse effects on the environment within the meaning of CEQA.

**V. EXHIBITS**

**1-03-004 – ADOPTED FINDINGS  
RECLAMATION DISTRICT #768  
PAGE 18**

- A. Location Map
- B. Emergency Permits
- C. Project Description
- D. Habitat Report

## CALIFORNIA COASTAL COMMISSION

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# F 8a

Filed: June 5, 2007  
49<sup>th</sup> Day: July 24, 2007  
180<sup>th</sup> Day: December 2, 2007  
Staff: Melissa B. Kraemer  
Staff Report: June 29, 2007  
Hearing Date: July 13, 2007  
Commission Action:

**STAFF REPORT:**  
**PERMIT AMENDMENT**

<b>EXHIBIT NO. 12</b>
<b>APPLICATION NO.</b> 1-03-004-A3 RECLAMATION DISTRICT 768 STAFF REPORT FOR CDP AMENDMENT NO. 1-03-004-A1 (1 of 39)

APPLICATION NUMBER: **1-03-004-A1**

APPLICANT: **Reclamation District 768**

AGENT: Oscar Larson & Associates (Attn: Stein Coriell)

PROJECT LOCATION: 1,500-acre Reclamation District, including a 4.9-mile-long levee system, located north and south of Highway 255 along the northern shoreline of the Arcata Bay lobe of Humboldt Bay and the banks of Mad River Slough, Arcata Bottom area, Humboldt County.

DESCRIPTION OF PROJECT PREVIOUSLY APPROVED: Repair of a 230-foot-long breach in a portion of the levee north of Hwy 255, replacement of three 36-inch-diameter culverts and floodgates, and a 10-year permit for routine repair and maintenance activities on the levee system.

DESCRIPTION OF AMENDMENT REQUEST: Amend the project description to include the proposed "2007 Levee Repair Project", which would repair and/or protect approximately 7,877 linear feet (~1.5 miles) of eroded and damaged levee in 2007.

OTHER APPROVALS:

- 1) U.S. Army Corps of Engineers Clean Water Act Section 404 Individual Permit No. 4002350N (pending)
- 2) North Coast Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification No. 1B06068WNHU
- 3) Humboldt Bay Harbor, Recreation, and Conservation District Administrative Permit No. A-2007-04 (dated May 31, 2007)
- 4) U.S. N.O.A.A.-Fisheries Informal Consultation File No. 2007/00730 (dated April 18, 2007)
- 5) U.S.D.I. Fish and Wildlife Service (USFWS) Formal Consultation File No. 8-14-2006-3050 (dated April 27, 2007)

SUBSTANTIVE FILE  
DOCUMENTS:

- 1) Commission CDP File No. 1-03-004
- 2) Commission CDP File No. 1-03-061-G
- 3) Commission CDP File No. 1-03-070-G
- 4) Commission CDP File No. 1-04-017-G
- 5) Commission CDP File No. 1-04-040-G
- 6) Commission CDP File No. 1-04-050-W
- 7) Commission CDP File No. 1-04-060-G
- 8) Commission CDP File No. 1-07-008-G
- 9) Commission CDP File No. 1-05-044-G
- 10) Humboldt County Local Coastal Program

**SUMMARY OF STAFF RECOMMENDATION**

On March 17, 2005, the Commission approved Coastal Development Permit No. 1-03-004 (Reclamation District 768) for repair of a 230-foot-long breach in a portion of the levee north of State Highway 255, replacement of three 36-inch-diameter culverts and floodgates, and a ten-year permit for routine repair and maintenance activities on the levee system. The proposed permit amendment requests authorization to implement the 2007 Levee Repair Project, which proposes to repair and/or protect approximately 7,877 linear feet (~1.5 miles) of the applicant's 4.9-mile long levee system. This includes approximately 60 repair sites, each with damage/repairs extending from 10 to 1,520 feet in length. The 2007 Levee Repair Project is funded by the Federal Emergency Management Agency (FEMA) Public Assistance Program and in part by the State of California Office of Emergency Services and is proposed to repair substantial damage caused by severe winter storms and associated storm surge during the 2005-2006 and 2006-2007 winters.

The methods and protocols proposed for the 2007 Levee Repair Project for the most part do not differ significantly from those authorized under the existing permit in terms of erosion control measures, types of materials and equipment, *etc.* In addition, the footprint of the levee is proposed to match the original levee footprint and will not extend into Arcata Bay, the sloughs, or landward wetland areas further than its original configuration, as was required under the original authorization. However, the 2007 Levee Repair Project is significantly larger in scale than project activities authorized under the existing permit. With the attachment of various conditions, and minor changes to existing permit conditions, the development authorized by the amended permit would be consistent with the Commission's intent in granting the original permit with conditions to avoid significant adverse impacts to wetland and other ESHA resources. Added special conditions require 1) the permittee to undertake all development in accordance with the least environmentally damaging methods feasible for installation of temporary access roads, staging areas, and ditch crossings; 2) specific erosion control procedures and best management practices to be used to protect water quality and sensitive coastal resources; 3) submittal of a debris disposal plan prior to issuance of the permit amendment for the disposal of excess construction-related debris such as broken concrete and vegetation and soil spoils; 4) implementation of various measures to minimize project impacts on Tidewater goby and Tidewater goby proposed critical habitat; implementation of rare plant mitigation measures to minimize impacts to two rare plant species in the area; 5) submittal of an archaeological plan in the event that cultural resources are unearthed during construction activities; 6) the applicant to assume the risks of injury and damage from hazard and waive any claim of damage or liability against the Commission; 7) documentation of U.S. Army Corps approval prior to commencement of construction; and 8) the applicant to grant Commission staff permission to inspect the premises for determining condition compliance.

Staff believes that the amended development, as conditioned, is consistent with all Coastal Act policies.

**The Motion to adopt the Staff Recommendation of Approval with Conditions is on Page 6.**

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**STAFF NOTES:**

**1. Procedural Note**

Section 13166 of the California Code of Regulations states that the Executive Director shall reject an amendment request if: (a) it lessens or avoids the intent of the approved permit; unless (b) the applicant presents newly discovered material information, which he or she could not, with reasonable diligence, have discovered and produced before the permit was granted.

On March 17, 2005, the Commission approved Coastal Development Permit No. 1-03-004 (Reclamation District 768) for repair of a 230-foot-long breach in a portion of the levee north of State Highway 255, replacement of three 36-inch-diameter culverts and floodgates, and a ten-year permit for routine repair and maintenance activities on the levee system. The Commission approved the project with two special conditions. Special Condition No. 1 addresses the length of development authorization (5 years with up to one request for an additional 5-year period of development authorization). Special Condition No. 2 addresses standards for the repair and maintenance work, including specifications on armoring rock, fill material, placement of materials, revegetation of disturbed areas, spoils disposal, erosion control, spill prevention, no wet season work, no wetland fill, pre-contractor training, monitoring, annual reports, and annual inspections.

The proposed permit amendment requests authorization to implement the 2007 Levee Repair Project, which proposes to repair and/or protect approximately 7,877 linear feet (~1.5 miles) of the applicant's 4.9-mile long levee system. This includes approximately 60 repair sites, each with damage/repairs extending from 10 to 1,520 feet in length. The 2007 Levee Repair Project is funded by the Federal Emergency Management Agency (FEMA) Public Assistance Program and in part by the State of California Office of Emergency Services and is proposed to repair substantial damage caused by severe winter storms and associated storm surge during the 2005-2006 and 2006-2007 winters.

The methods and protocols proposed for the 2007 Levee Repair Project for the most part do not differ significantly from those authorized under the existing permit in terms of erosion control measures, types of materials and equipment, *etc.* In addition, the footprint of the levee is proposed to match the original levee footprint and will not extend into Arcata Bay, the sloughs, or landward wetland areas further than its original configuration, as was required under the original authorization. However, the 2007 Levee Repair Project is significantly larger in scale than project activities authorized under the existing permit. The existing permit authorizes routine repair and maintenance activities through 2010 (with an option to request additional authorization through 2015).

The scale of the 2007 Levee Repair Project requires modification of some of the basic procedures for performing levee repairs authorized under the original permit which approved a program of smaller scale periodic repairs rather than one large massive repair project to occur all at once. For example, construction staging areas need to be much larger, and additional construction access roads are required. Temporary fill of grazed seasonal wetlands is required to accommodate these staging areas and roads for the larger 2007 project. Special Condition No. 1 of the original permit, among other requirements, precludes the placement of either permanent or temporary wetland fill outside of the footprint of the existing levees to avoid significant adverse effects to such wetlands. However, given the need to repair large portions of the levee in a timely fashion to avoid catastrophic flooding from further deterioration and breaching of the levees and the lack of sufficient upland areas for staging and construction access near the repair sites, some wetland fill for staging and access roads is unavoidable.

The proposed use of wetlands for staging and access roads conflicts with the conditions of the original permit. However, the levee damage from the storm events of recent winters since issuance of the original permit and the need to perform a much larger levee repair project constitute newly discovered material information which the applicant could not have discovered and produced or even known about before the original permit was granted. Furthermore, with the attachment of the conditions described below, the development authorized by the amended permit would be consistent with the Commission's intent in granting the original permit with conditions to avoid significant adverse impacts to wetland and other ESHA resources. The relevant new conditions attached to the permit amendment include the following:

- Special Condition No. 3 requires the permittee to undertake all development in accordance with the least environmentally damaging methods feasible for installation of temporary access roads, staging areas, and ditch crossings. This condition also requires restoration of temporarily impacted wetland areas to pre-project conditions, and monitoring and reporting to ensure restoration success. In addition, the special condition requires specific construction protocols to be used to ensure water quality protection and to minimize project impacts on sensitive resources.
- Special Condition No. 4 requires specific erosion control procedures and best management practices to be used to protect water quality and sensitive coastal resources.
- Special Condition No. 5 requires submittal of a debris disposal plan prior to issuance of the permit amendment for the disposal of excess construction-related debris such as broken concrete and vegetation and soil spoils.
- Special Condition No. 6 requires implementation of various measures to minimize project impacts on Tidewater goby and Tidewater goby proposed critical habitat.
- Special Condition No. 7 requires implementation of rare plant mitigation measures to minimize impacts to two rare plant species in the area: Humboldt Bay owl's-clover and Point Reyes bird's-beak.

Therefore, the Executive Director has determined that the proposed amendment would not lessen or avoid the intent of the approved permit and has accepted the amendment request for processing.

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## **1. Commission Jurisdiction and Standard of Review**

The proposed development will be conducted on levees located within state tidelands and public trust lands in Humboldt County. Pursuant to Section 30519 of the Coastal Act, the Coastal Commission retains jurisdiction over the review and issuance of Coastal

Development Permits in these areas even though the County of Humboldt has a certified Local Coastal Program. The standard of review for projects located in the Commission's original jurisdiction is Chapter 3 of the Coastal Act.

## 2. Scope

This staff report addresses only the coastal resource issues affected by the proposed permit amendment, provides recommended special conditions to reduce and mitigate significant impacts to coastal resources caused by the development, as amended, in order to achieve consistency with the Coastal Act, and provides findings for conditional approval of the amended development. All other analysis, findings, and conditions related to the originally permitted development, except as specifically affected by the proposed permit amendment and addressed herein, remain as stated within the original permit approval adopted by the Commission on March 17, 2005.

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## I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

### Motion:

I move that the Commission approve the proposed amendment to Coastal Development Permit No. 1-03-004 pursuant to the staff recommendation.

### Staff Recommendation of Approval:

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

### Resolution to Approve with Conditions:

The Commission hereby approves the proposed permit amendment and adopts the findings set forth below, subject to the conditions below, on the grounds that the development with the proposed amendment, as conditioned, will be in conformity with the Chapter 3 policies of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because all feasible mitigation measures and alternatives have been incorporated to substantially lessen any significant adverse impacts of the development on the environment.

II. **STANDARD CONDITIONS:** See Attachment A.

III. **SPECIAL CONDITIONS:**

**Note:** Special Condition Nos. 1 and 2 of the original permit are modified and reimposed as conditions of this permit amendment and remain in full force and effect. Special Condition Nos. 3 through 11 are added as conditions of CDP Amendment No. 1-03-004-A1.

Deleted wording within the modified special conditions is shown in ~~strikethrough~~ text, new condition language appears as **bold double-underlined** text.

1. **Length of Development Authorization for Ongoing Routine Repair and Maintenance Authorized by CDP 1-03-004**

Development authorized by this permit, **other than the development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project**, is valid for five (5) years from the date of Commission approval (until March 17, 2010). One request for an additional five-year period of development authorization may be accepted, reviewed and approved by the Executive Director for a maximum total of 10 years of development authorization, provided the request would not substantively alter the project description, and/or require modifications of conditions due to new information or technology or other changed circumstances. The request for an additional five-year period of development authorization shall be made prior to March 17, 2010. If the request for an additional five-year period would substantively alter the project description, and/or require modifications of conditions due to new information or technology or other changed circumstances, an amendment to this permit will be necessary.

2. **Standards for Repair and Maintenance Work for Ongoing Routine Repair and Maintenance Authorized by CDP 1-03-004**

**The permittee shall undertake all development authorized by this amended permit, other than the development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project, in accordance with the following standards:**

- a. **Armoring Rock:** All new revetment material to be used shall consist of either clean quarry rock or concrete rubble materials that are free of asphalt and waste materials. The revetment materials shall not be greater than three feet in any one direction or smaller than one cubic foot in size **except for the Light Class RSP placed between the RSP fabric and the exposed armoring rock**. All exposed reinforcement bar shall be removed prior to installation of any concrete rubble riprap. ~~Armoring rock shall be~~

~~stockpiled outside seasonal wetlands and transitional agricultural lands.~~  
No rock shall be placed outside of the existing footprint of the levee system.

- b. Fill Material: Only dry, clean fill may be used for levee repairs and must be free of debris (vegetation, asphalt etc.). Fill material shall be stockpiled outside of seasonal wetlands or transitional agricultural lands. No fill shall be placed outside of the existing footprint of the levee system.
- c. Placement of Materials: Materials placed on the levees to be repaired, including all riprap, shall not extend into the slough or Arcata Bay beyond the footprint of the levee as it existed before the repair. The determination of the location of the front of the levee shall be made through a 'string line' method, whereby the portions of the levee that are not in need of repair or restoration on each side of the areas that is in need of repair shall be used to determine the maximum extent of the repair. Revetment material shall not be end-dumped, but placed in an interlocking fashion along the levee face to avoid spreading beyond the former footprint of the levee and to provide a structurally integrated revetment.
- d. Revegetation of Disturbed Areas: When repair and maintenance activities disturb more than 100 square feet of area within the existing footprint of the levee, the disturbed area shall, immediately upon completion of the repair and maintenance activity, be revegetated with appropriate native plants. Naturalized plants, approved by the Department of Fish & Game, may be used to revegetate the upland portions of the site.
- e. Disposal of Excess Material and Vegetation: All construction debris and cut vegetation, except grass clippings from mowing the top of the levee, shall be removed from the site and disposed of only at an authorized disposal site. Side casting of such material or placement of any such material within Arcata Bay, Mad River Slough, any wetland area including the grazed seasonal wetlands inboard of the levees is prohibited.
- f. Installation of Silt Fences: Silt fences or equivalent devices shall be installed along the perimeter of each repair site prior to the placement of any fill materials to reduce the discharge of fill materials and sediment laden runoff into Arcata Bay, Mad River Slough, or the wetlands on the inboard sides of the damaged levees. The installed silt fences or equivalent devices shall be maintained during project construction and removed upon completion of the project.
- g. Spill Prevention: To prevent and address spills of equipment fuels, lubricants, and similar materials, the repair work shall incorporate the following measures: (a) no equipment fueling shall occur on the site or

elsewhere along the levees; (b) all equipment used during construction shall be free of oil and fuel leaks at all times; (c) oil absorbent booms and/or pads shall be on site at all times during project construction and deployed if necessary in the event of a spill; and (d) all spills shall be reported immediately to the appropriate public and emergency services response agencies.

- h. Wet Season Work Prohibited: Repair and maintenance activities authorized by this permit shall only be performed during the dry season (April 15 to October 15).
- i. No Wetland Fill: No permanent or temporary fill of tidal wetlands or of the inboard ditch or any other seasonal wetland is allowed by this permit. Ditch crossings must be accomplished by temporary bridging that must be removed within one week of completion of work on that portion of the levee served by the bridge.
- j. Pre-construction Contractor Training: Prior to the commencement of any repair and maintenance activities authorized by this permit which have not yet been undertaken, the Applicant shall ensure that the Contractor understands and agrees to observe the standards for work outlined in this permit and in the detailed project description included as part of the Applicants submittal and as revised by these conditions.
- k. Monitoring: Repair and maintenance activities shall be monitored by a qualified Civil Engineer, or equivalent expert, during the dry season no less frequently than every three months to ensure that work performed under this permit is consistent with the terms of the permit. The Monitor shall have the authority to stop work and to recommend remediation of ongoing work in order to comply with the terms and conditions of this permit.
- l. Annual Reports: The Applicant shall submit an annual report to the Executive Director by November 15 annually for the life of the permit. The report shall describe the repair and maintenance activities completed during the reporting period and identify potential activities for the coming year.
- m. Annual Inspection: The levee system shall be inspected by a qualified Civil Engineer or equivalent, to identify areas where repair and maintenance work will be needed within the coming year. The location and type of work needed shall be described in a written report. The Engineers report shall be submitted to the Reclamation Board of Directors, the district's biologist and to the Executive Director. The report is due annually on November 15. If, based on this report, the biologist identifies

any work areas that are within potential habitat areas, the biologist shall survey those areas for the presence of Point Reyes Bird's Beak or Humboldt Bay Owl's Clover. If either of these species is found in the area scheduled for disturbance, the plants shall be avoided.

3. Standards for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project in accordance with the following standards:

- a. Temporary access roads and staging areas: As described in the Project Description dated June 21, 2007 (Exhibit No. 3), road surfacing materials (including road stabilization fabric, redwood bark and/or road base) shall be placed directly on top of the existing ground and then removed immediately upon completion of construction activities in the area. The existing topsoil shall not be removed for any purpose.
- b. Temporary ditch crossings: The permittee shall use only the temporary bridge design for temporary ditch crossings, as depicted in Figure 8 of Exhibit No. 3. No culverts or fill shall be placed in ditches for temporary crossing purposes. Any temporary bridge crossing shall remain in place for no more than 30 days maximum.
- c. Upon completion of project activities in the area and prior to October 15, 2007, all temporarily disturbed seasonal wetlands (including but not limited to temporary staging areas, access roads, and ditch crossings) shall be decompacted and reseeded, as needed, with a mix of regionally appropriate native grasses and/or noninvasive agricultural species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property.
- d. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.
- e. Within 18 months of completion of the 2007 Levee Repair Project, the permittee shall submit, for the review and written approval of the

Executive Director, a vegetation monitoring report prepared by a qualified biologist or botanist which evaluates whether the objective of reestablishing vegetation in all of the seasonal wetland areas (diked former tidelands) impacted by project construction to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of any of the disturbed areas, including the temporary access roads and staging areas identified on Figure 4 of Exhibit No. 3, has not been successful, in part or in whole, the permittee shall submit a revised revegetation program to achieve the objective. The revised revegetation program shall require an amendment to Coastal Development Permit No. 1-03-004.

- f. Heavy equipment shall not operate in the bay or wetted channel. All repair or restoration work shall be done from the top of the levee or from the landward side of the channel by loader, backhoe, or excavator;
- g. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering waters of Arcata Bay, Mad River Slough, or seasonal wetlands outside of levee repair areas and temporary staging areas and access roads;
- h. All construction debris shall be removed and disposed of in an upland location at an approved disposal facility within 10 days of project completion;
- i. All construction activities shall be conducted during the dry season period of April 15 through October 15;
- j. All construction activities shall be conducted during low tide or limited to the areas above mean high water;
- k. 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 restoration activities. Following construction, all trash and construction debris shall be removed from work areas and disposed of properly;
- l. Any debris discharged into coastal waters shall be recovered immediately and disposed of properly;
- m. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas;

- n. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or seasonal wetlands. 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;
- o. All temporary access roads and staging areas shall be limited to the locations and sizes specified in the permit amendment application.
- p. Armoring Rock: All new revetment material to be used shall consist of either clean quarry rock or concrete rubble materials that are free of asphalt and waste materials. The revetment materials shall not be greater than three feet in any one direction or smaller than one cubic foot in size except for Light Class RSP placed between the RSP fabric and the exposed armoring rock. All exposed reinforcement bar shall be removed prior to installation of any concrete rubble riprap. No rock shall be placed outside of the existing footprint of the levee system.
- q. Fill Material: Only dry, clean fill may be used for levee repairs and must be free of debris (vegetation, asphalt etc.). No fill shall be placed outside of the existing footprint of the levee system.
- r. Placement of Materials: Materials placed on the levees to be repaired, including all riprap, shall not extend into the slough or Arcata Bay beyond the footprint of the levee as it existed before the repair. The determination of the location of the front of the levee shall be made through a 'string line' method, whereby the portions of the levee that are not in need of repair or restoration on each side of the areas that is in need of repair shall be used to determine the maximum extent of the repair. Revetment material shall not be end-dumped, but placed in an interlocking fashion along the levee face to avoid spreading beyond the former footprint of the levee and to provide a structurally integrated revetment.

4. Erosion Control Procedures for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project in compliance with the following erosion control procedures:

- A. The permittee shall use relevant best management practices (BMPs) as detailed in the "California Storm Water Best Management (Construction and Industrial/Commercial) Handbooks, developed by Camp, Dresser & McKee, et al. for the Storm Water Quality Task Force (see <http://www.cabmphandbooks.com>).
- B. All repair or restoration activities involving the levee shall include the placement of geotextile or similar erosion control material between the authorized fill and the levee and the placement of the riprap to reduce or minimize the amount of erosion that may otherwise occur.
- C. Effective erosion control measures shall be in place at all times during construction. Construction must not commence until all temporary erosion control devices (e.g., silt fences, floating turbidity curtains, etc.) are in place downslope or downstream of the project site. A supply of erosion control materials shall be maintained on site to facilitate a quick response to unanticipated storm events or emergencies. If continued erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided. Erosion control devices are temporary structures and shall be removed after completion of construction
- D. Erosion controls shall be used to protect and stabilize stockpiles and exposed soils to prevent movement of materials (e.g., silt fences, berms of hay bales, plastic sheeting held down with rocks or sandbags over stockpiles, etc.).
- E. If operations are not adequately containing sediment, the activity shall cease. Turbid water shall be contained and prevented from being carried away in the tides in amounts that are deleterious to marine resources or could violate state pollution laws.
- F. Work sites shall be winterized at the end of each day when significant rains are forecast that may cause unfinished excavation to erode.
- G. After project completion and before the close of the seasonal work window, all exposed soils present in and around the project site which may deliver sediment to a wetland, the bay, or the slough shall be stabilized with mulch, seeding, and/or placement of erosion control blankets. Erosion control seeding shall include only native, regionally appropriate species or noninvasive agricultural species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be

employed or allowed to naturalize or persist on the site. No plant species listed as a “noxious weed” by the governments of the State of California or the United States shall be utilized within the property.

5. Debris Disposal Plan for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

A. PRIOR TO THE ISSUANCE OF PERMIT AMENDMENT NO. 1-03-004-A1, the applicant shall submit, for the review and approval of the Executive Director, a plan for the disposal of excess construction-related debris from the 2007 Levee Repair Project, including broken concrete removed from levee areas to receive riprap, vegetation spoils (from clearing and grubbing of levees), excess fill, and other materials. The plan shall describe the manner by which the material will be removed from the construction site and identify a disposal site that is in an upland area where materials may be lawfully disposed.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a further Commission amendment to Coastal Development Permit A amendment No. 1-03-004-A1.

6. Implementation of Tidewater Goby Mitigation Measures for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1:

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project in accordance with the following protocols to ensure minimization of impacts to Tidewater goby and Tidewater goby proposed critical habitat:

A. Effective and appropriate erosion control devices shall be used in accordance with all repair work at all times; any erosion control devices used are temporary and shall be removed upon completion of project activities;

B. Any material that slips beyond the levee configuration into the mudflats outside the levee or the inboard borrow ditch and associated wetland channels shall be removed to staging areas and/or hauled off site;

C. As specified in Special Condition No. 3-b above, the permittee shall use only the temporary bridge design for temporary ditch crossings, as depicted in Figure 8 of Exhibit No. 3. No culverts or fill shall be

placed in ditches for temporary crossing purposes. Any temporary bridge crossing shall remain in place for no more than 90 days maximum.

D. Prior to construction of any temporary ditch crossing, Tidewater gobies shall be excluded from the areas of impact by using seine netting stretching from substrate to water surface and bank to bank. The netting must be a knotless mesh of no greater than 0.125-inch openings in the largest dimension. Netting shall be deployed in such a way that it excludes gobies from the construction area and keeps them from entering the construction zone until the structure is in place and all work within the wetted channels for the purpose of constructing the crossing has been completed. The results of fish exclusion efforts shall be reported to the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and any other relevant agencies.

7. Rare Plant Mitigation Plan for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE 2007 LEVEE REPAIR PROJECT ON BOTH THE JACKSON RANCH LEVEE AND THE ARCATA BAY LEVEE EAST OF REPAIR SITE #58 AS SHOWN ON FIGURE 4 OF EXHIBIT NO. 3, the permittee shall submit a plan for the review and approval of the Executive Director for the dispersal of seed from individual specimens of Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtensis*) and Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) growing in these areas to adjacent salt marsh habitat.

1. The plan shall demonstrate that:

- (a) No construction activities shall occur in the affected areas until after all Humboldt Bay owl's clover and Point Reyes bird's beak plants have set seed, as determined by a qualified botanist;
- (b) If any rare plants are located in areas of potential impact, a qualified botanist shall collect and conserve all seed of the affected individuals to be distributed in a suitable habitat nearest to where the seed was collected that already contains Humboldt Bay owl's clover and Point Reyes bird's beak ; and

- (c) Collected seed shall be distributed into the identified habitat areas at the phenologically appropriate time, as determined by the qualified botanist.

2. The plan shall include at a minimum the following components:

- (a) Seasonally appropriate botanical surveys conducted by a qualified botanist for Humboldt Bay owl's clover and Point Reyes bird's beak that indicates the number of Humboldt Bay owl's clover and Point Reyes bird's beak located on the levee system in the areas of potential impact;
- (b) A map that locates the affected areas of levee construction relative to the habitat area where seed will be distributed; and
- (c) A narrative that describes the seed collection and distribution program and methods, identifies the habitats that will receive the seeds to be dispersed and why the receiver sites were selected, and discusses the phenologically appropriate time for distribution of the seed.

- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

8. Area of Archeological Significance for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

- A. If an area of historic or prehistoric cultural resources or human remains are discovered during the course of the 2007 Levee Repair Project, all construction shall cease and shall not recommence except as provided in subsection (B) hereof, and a qualified cultural resource specialist shall analyze the significance of the find.
- B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit an archaeological plan for the review and approval of the Executive Director.

- (a) If the Executive Director approves the Archaeological Plan and determines that the Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, construction may recommence after this determination is made by the Executive Director.
- (b) If the Executive Director approves the Archaeological Plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.

9. Assumption of Risk for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

By acceptance of this permit amendment for the 2007 Levee Repair Project, the applicant acknowledges and agrees (i) that the site may be subject to hazards from flooding; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

10. U.S. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE 2007 LEVEE REPAIR PROJECT, the permittee shall provide to the Executive Director a copy of a permit issued by the U.S. Army Corps of Engineers, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the U.S. Army Corps of Engineers. Such changes shall not be incorporated into the project until the applicant obtains a further amendment to Coastal Development Permit No. 1-03-004-A1, unless the Executive Director determines that no amendment is required.

11. Permission to Inspect for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1

The Coastal Commission staff shall have the right, upon 24-hours notification to the permittee, to enter and inspect the premises for the purpose of determining compliance with Coastal Development Permit Amendment No. 1-03-004-A1.

#### IV. FINDINGS & DECLARATIONS

The Commission finds and declares the following:

##### A. Project & Site Description

###### 1. **Background & Project Setting**

Local winter storms from December 30, 2005 through January 3, 2006 led to overtopping, accumulation of debris, and the erosion of levees under the jurisdiction of Reclamation District 768. The 3.5-mile-long Arcata Bay levee is located south of State Highway 255 along the north side of Arcata Bay (Humboldt Bay), and the 1.4-mile-long Jackson Ranch levee is located north of State Highway 255 adjacent to the Mad River Slough (see Exhibit Nos. 1 and 2). The levees were originally constructed with Humboldt Bay mud and are 20 to 24 feet wide at the base and 10 to 12 feet wide at the top. Levee height ranges from approximately 7 to 10 feet above mean sea level.

Reclamation District 768 was established in 1904 and consists of approximately 1,500 acres of land. The District is responsible for the maintenance of the 4.9-mile levee system. Currently the property in the District is owned by 15 separate owners, including private citizens, the City of Arcata, Humboldt State University, the California Department of Fish and Game, and Arcata Lodge #106 (see Figure 1 of Exhibit No. 3). The publicly owned property is used primarily as marshland and wildlife habitat. The privately owned lands and the Arcata Lodge property are used as cattle pasture lands.

A major breach of the levees would subject all of the property in the Reclamation District to flooding. State Highway 255 and residential property and public infrastructure in the southwest portion of the City of Arcata also are at risk of flooding in the event of a major breach. The Commission has, in the past four years, issued at least nine permits for repair and maintenance of the levee system (see Substantive File Documents, page 2), including seven emergency permits that were necessary to protect coastal agricultural lands and public road facilities from flood damage following significant storm events.

The agricultural fields of the Reclamation District represent diked former tidelands of Arcata Bay that were converted to pasture for agricultural purposes after the levee was built around 1880. The fields are considered to be seasonal wetlands. Other jurisdictional wetlands in the proposed project area include the inboard ditches, sloughs, and Arcata Bay and Mad River Slough, which are located outside of the levee system. The only uplands on the project site are the levees themselves.

## 2. Description of Originally Approved Project

On March 17, 2005, the Coastal Commission approved, with conditions, the following project (CDP No. 1-03-004; Exhibit No. 9), which consisted of three separate, but related, components:

- Follow-up Permitting for Culvert Replacement Emergency Permit Nos. 1-03-070-G and 1-04-017-G: The first part of the project was a follow-up permit to two Emergency Permits granted by the North Coast District Office in 2003 and 2004 for the replacement of three failing corrugated metal culverts and floodgates located at the west end of the levee system along Humboldt Bay and south of State Highway 255. The failed culverts were replaced with the same type and size of culverts and floodgates, with clean armoring rock re-installed around the outboard side of the levee (adjacent to Arcata Bay), consistent with the conditions placed on the Emergency Permits specifying the type of materials to be used in the repair of this section of the levee.
- Follow-up Permitting for Major Levee Breach Repair Emergency Permit No. 1-04-060-G: On December 23, 2003, a combination of extraordinarily high tides and 45 mile-per-hour (mph) winds caused a 230-foot-long breach in a portion of the levee located north of Highway 255. This breach resulted in the flooding of about 600 acres of pasture and a local county road and was temporarily contained by the installation of large "water bag" dikes. Emergency Permit No. 1-04-060-G was subsequently obtained from the North Coast District Office for repair of the breach along the original alignment with an earthen levee and outboard armoring as had existed prior to the incident, as well as the repair of 15 other, smaller eroded areas on the levee fronting Arcata Bay. This Emergency Permit was conditioned to require the use of clean fill for the levee and clean rock (*i.e.*, no debris, no re-bar) for the outboard armoring.
- Ten Year Programmatic Permit for Ongoing Repair & Maintenance Activities: The final part of the project involved a 10-year permit to undertake routine repair and maintenance of the levee system. In summary, the Reclamation District maintenance program includes vegetation control (mowing) along the top of the levees to allow access for maintenance equipment, replacement of riprap that has migrated or is needed to repair erosion, placement of clean fill to repair eroded areas, and flood gate and culvert replacement with the same size facilities. All of the work is to occur within the existing footprint of the levee and will not result in any encroachment into Arcata Bay or on the inboard (reclaimed land) side of the levee into the seasonal wetlands.

## 3. Description of Project Activities Proposed Under Coastal Development Permit Amendment No. 1-03-004-A1

The applicant proposes to amend Commission CDP No. 1-03-004 to authorize implementation of the 2007 Levee Repair Project, which is funded in part by the Federal Emergency Management Agency (FEMA) Public Assistance Program and in part by the State of California Office of Emergency Services. The 2007 Levee Repair Project proposes to repair and/or protect 7,877 linear feet (~1.5 miles) of the applicant's 4.9-mile long levee system. This includes approximately 60 repair sites with damage extending from 10 to 1,520 feet in length (see Exhibit No. 3). The footprint of the levee is proposed to match the original levee footprint and will not extend into Arcata Bay, the sloughs, or landward wetland areas further than its original configuration. The following project activities are proposed for the 2007 Levee Repair Project:

- a. Excavation of approximately 898 yds<sup>3</sup> of material (to prepare damaged areas for repair);
- b. Clearing and grubbing and debris removal of approximately 7,127 tons of material.
- c. Placement of approximately 3,631 yds<sup>3</sup> of engineered fill for levee repairs;
- d. Placement of approximately 8,126 yds<sup>3</sup> of rock slope protection (RSP) for levee repairs;
- e. Installation of approximately 8,000 linear feet of temporary access roads through seasonal wetlands (diked former tidelands);
- f. Installation of four 25,000 square-foot staging areas within seasonal wetlands (diked former tidelands) to stockpile and sort construction materials and to store heavy equipment such as excavators, backhoes, tracked dumpers, dump trucks, bulldozers, etc.

The applicant proposes two main types of repairs throughout the levee system: tidal influenced levee repairs and nontidal levee repairs. Both types of repair work involve debris removal (removing and disposing of existing broken concrete from all areas to receive riprap slope repair), clearing and grubbing (clearance of all vegetation and subsurface root masses on a site in anticipation of grading or construction), excavation to the lowest point of damage, and creating a level bench to be backfilled with engineered fill in maximum 8 inch lifts (compacted to a minimum of 90 percent). For tidal influenced levee repair sites, Type B RSP fabric is proposed to be placed on the graded soil slope and anchored at the toe and top of the levee. One-and-a-half-foot thickness of light class RSP (Caltrans Spec Section 72) is proposed to be placed on top of the RSP fabric, and a layer of class ½-ton RSP (Caltrans Spec Section 72) would be placed on top of the light class RSP. For nontidal repair site, coconut/straw erosion blankets are proposed to be installed on all disturbed earth surfaces with a slope greater than or equal to 1 to 1. For both types of repairs, all nontidal disturbed earth surfaces are proposed to be hydroseeded or broadcast seeded. See Figures 5 and 6 of Exhibit No. 3 for more details.

Equipment proposed for use in the project includes tracked or wheeled vehicles and hand tools. Materials proposed for use include engineered imported fill (to replace the existing clay/silt fill lost from the top of the Jackson Ranch levee and for repairing the sides of both the Jackson Ranch and Arcata Bay levees) and engineered imported clay/silt fill (to be used in all repair locations).

The applicant proposes a number of mitigation measures and Best Management Practices (BMPs) to avoid or minimize impacts to coastal resources and the environment. These are included in the project description (Exhibit No. 3), the Stormwater Pollution Prevention Plan, and the Botanical Assessment/Survey (Exhibit No. 4). They also are included as permit terms for the Harbor District's approval of the project (Exhibit No. 6). The proposed mitigation measures and BMPs include the following:

- Air quality: Dust suppression measures in the form of watering the work area are proposed to be used on access roads, materials storage areas, and during materials placement. The amount of water to be used will be the minimum necessary to avoid causing runoff from the top of the levee or outside the boundary of the staging area.
- Cultural resources: Should any historic or prehistoric cultural resources be encountered during construction, work is proposed to be halted in the affected area while a qualified archeologist assesses the significance of the find and develops a suitable mitigation plan.
- Hydrology & Water quality:
  - Refueling and maintenance of equipment is proposed to occur on designated staging areas only, and in compliance with the contractor's Spill Prevention Control and Countermeasure Plan (SPCC) prepared in accordance with 40 CFR §112. No equipment that visually displays signs of leaking fuels, lubricants, or similar materials would be allowed on site.
  - Construction activities are proposed to be limited to low tides and/or areas above mean high water between April 15 and October 15. No equipment would enter the wetted channel of existing drainages or tidal areas.
  - Erosion is proposed to be minimized by placement of geotextile fabric or similar erosion control material between the structural fill of the levee and the placement of riprap. The levee is proposed to be contoured to a stable condition before the equipment leaves the site.
  - Any construction materials that are inadvertently sloughed off into the bay, slough, or other wetland areas are proposed to be immediately removed, and no fill or other construction materials would be deposited into any wetland or water body.
  - The structural fill that is to be excavated is proposed to be placed temporarily on the top of the levee or in designated staging areas only. Materials not suitable for use as backfill are proposed to be spread along

the top of the levee (and subsequently compacted and revegetated, if necessary) or removed to an approved disposal site.

- Silt fences, floating turbidity curtains, or equivalent similar structures that meet sediment control requirements are proposed to be used to reduce the discharge of materials into the bay, slough, and other wetland areas. All erosion control devices would be removed following their use, and all would be installed consistent with the Stormwater Pollution Prevention Plan (SWPPP) prepared for the project and with the requirements of the State Water Resources Control Board permit issued for the project.
- Environmentally Sensitive Habitat Areas (ESHA):
  - Rare plant habitat: The proposed project area contains habitat for two rare plant species known to occur in coastal salt marsh habitat directly adjacent to the levees: Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes' bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). Both species are listed by the California Native Plant Society (CNPS) as List 1B.2 species and therefore meet the definition of ESHA per Coastal Act Section 30107.5 (see Section IV-E below). Both species were documented in areas that potentially may be impacted by the 2007 Levee Repair Project. The applicant completed a Botanical Assessment/Survey for the project and rare plant mitigation plan (Exhibit Nos. 4 and 5) that includes recommendations to avoid or minimize impacts to rare plant ESHA. These include incorporation of BMPs to avoid sedimentation of the salt marsh habitat within the slough, restricting construction and other activities that cause ground disturbance in the areas where rare plants have been identified until after reproductive individuals die back, conserving seed from rare plants growing along the levee and transplanting it to suitable habitat nearby, and pre- and post-construction monitoring of rare plants located immediately adjacent to the construction site to document any impacts that might occur as a result of project activities.
  - Tidewater goby habitat: The U.S. Fish and Wildlife Service's (USFWS) Formal Consultation for the project (Exhibit No. 7) notes that the proposed project is likely to adversely affect the Federally-listed endangered Tidewater goby (*Eucyclogobius newberryi*) and its proposed critical habitat. Tidewater goby is a small, short-lived fish that occurs in coastal brackish water habitats such as lagoons, tidal bays, and estuaries of rivers and streams along the coast. It is unknown how many Tidewater gobies may potentially be affected by the 2007 Levee Repair Project (which is expected to impact no more than 0.6 acres or less than 1 percent of proposed critical habitat for the species), but the USFWS report concludes that project is not likely to jeopardize the continued existence of the Tidewater goby given that the permits issued for the project (including the U.S. Army Corps of Engineers and Humboldt Bay Harbor, Recreation,

and Conservation District permits) include several terms and conditions to minimize project effects on the species. These include using erosion control devices such as silt fences, floating turbidity curtains, *etc.* for all repair activities, and surveying for and excluding any Tidewater gobies found prior to installation of any temporary ditch crossing.

In addition to the mitigation measures and BMPs listed above, the applicant has been issued several permits and associated authorizations for the project that contain conditions of approval or recommendations to avoid or minimize impacts to coastal resources and the environment (see “other approvals” listed on page 2). These documents are attached in Exhibit Nos. 6, 7, and 8.

**B. Permit Authority, Extraordinary Methods of Repair & Maintenance**

Coastal Act Section 30610(d) generally exempts from Coastal Act permitting requirements the repair or maintenance of structures that does not result in an addition to, or enlargement or expansion of the structure being repaired or maintained. However, the Commission retains authority to review certain extraordinary methods of repair and maintenance of existing structures that involve a risk of substantial adverse environmental impact as enumerated in Section 13252 of the Commission regulations. Section 30610 of the Coastal Act provides, in relevant part, the following:

*Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: . . .*

*(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter. [Emphasis added]*

Section 13252 of the Commission administrative regulations (14 CCR 13000 *et seq.*) provides, in relevant part, the following:

*(a) For purposes of Public Resources Code section 30610(d), the following extraordinary methods of repair and maintenance shall require a coastal development permit because they involve a risk of substantial adverse environmental impact: . . .*

*(3) Any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams that include:*

(A) *The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials;*

(B) *The presence, whether temporary or permanent, of mechanized equipment or construction materials.*

*All repair and maintenance activities governed by the above provisions shall be subject to the permit regulations promulgated pursuant to the Coastal Act, including but not limited to the regulations governing administrative and emergency permits. The provisions of this section shall not be applicable to methods of repair and maintenance undertaken by the ports listed in Public Resources Code section 30700 unless so provided elsewhere in these regulations. The provisions of this section shall not be applicable to those activities specifically described in the document entitled Repair, Maintenance and Utility Hookups, adopted by the Commission on September 5, 1978 unless a proposed activity will have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean... [Emphasis added.]*

The proposed amended development is a repair and maintenance project because it does not involve an addition to or enlargement of the levee. Although certain types of repair projects are exempt from CDP requirements, Section 13252 of the regulations requires a coastal development permit for extraordinary methods of repair and maintenance enumerated in the regulation. The proposed 2007 Levee Repair Project involves the placement of construction materials and removal and placement of solid materials within 20 feet of coastal waters. In a few locations, the proposed work will occur either directly within or adjacent to an environmentally sensitive habitat area (rare plant habitat). Therefore, the proposed project requires a coastal development permit under Sections 13252(a)(1) of the Commission regulations.

In considering a permit application for a repair or maintenance project pursuant to the above-cited authority, the Commission reviews whether the proposed *method* of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the underlying existing development.

The repair and maintenance of levees can have adverse impacts on coastal resources, in this case primarily bay waters and the inboard seasonal wetlands, and in some areas rare plant habitat, if not properly undertaken with appropriate mitigation. At all proposed repair sites, the applicant proposes to maintain the levees in their existing footprints by repairing eroded areas with clean fill material similar to the existing earthwork and replacing outboard armoring as needed to prevent erosion. The methods proposed for maintaining the existing system are typical of levee maintenance statewide. The

applicant has included a number of mitigation measures as part of its proposal such as halting work in the event that any cultural resources are encountered until the significance of the find can be assessed by a qualified archaeologist, various BMPs for avoiding and minimizing potential water quality impacts, and measures to avoid or minimize impacts to ESHAs. These measures and others proposed by the applicant in their application are appropriate; however, additional measures are also needed to further avoid, as necessary, or minimize impacts to water quality, wetlands, and ESHAs. The conditions required to meet this standard are discussed in the Findings in the following sections. Therefore, as conditioned in these Findings, the Commission finds that the proposed permit amendment is consistent with the Chapter 3 policies of the Coastal Act.

**C. Public Access**

This proposed amended development is located between the first public road and the sea (see Exhibit No. 2). Section 30604(c) of the Coastal Act requires that every coastal development permit issued for development between the first public road and the sea “shall include a specific finding that the development is in conformity with the public access and public recreation policies of Chapter 3 (commencing with Section 30200).”

Coastal Act Policies:

Section 30210 of the Coastal Act states the following:

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

Section 30211 of the Coastal Act states the following:

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

Section 30212 of the Coastal Act states the following:

*(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or (3) agriculture would be adversely affected. Dedicated access way shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the access way.*

- (b) For purposes of this section, "new development" does not include:
- (1) Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.
  - (2) The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.
  - (3) Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.
  - (4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not seaward of the location of the former structure.
  - (5) Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.

As used in this subdivision, "bulk" means total interior cubic volume as measured from the exterior surface of the structure.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution. [Emphasis added.]

The access policies cited above are those relevant to the proposed amended development and direct the Commission to generally require maximum public access in new development unless the access would be inconsistent with public safety, resource protection, private property rights, or military security needs (§30210 and §30212) or would be otherwise exempt from providing access by statute [§30212(b)(5)]. Coastal Act Section 30211 requires that new development shall not interfere with existing public access that has been acquired either by use or through legislative authorization.

Consistency Analysis:

As stated above, the proposed amended development is for repair and maintenance of a

pre-Coastal Act levee system. Ordinarily, routine repair and maintenance is an exempt activity under Coastal Act Section 30610(d), and thus no coastal development permit would be required. Certain repair and maintenance activities are, however, excepted from this general exemption by regulation, as authorized by Section 30610(d), because they may “*involve the risk of substantial adverse environmental impact.*” The Commission’s regulations identify repair and maintenance activities performed near the shoreline and/or within an ESHA and/or adjacent to an ESHA (as proposed by this permit amendment application) as needing to obtain coastal development permits and are not exempt under Section 30610(d) [CCR, Title 14, Sec. 13252(a)(3)]. However, because repair and maintenance is not considered new development for purposes of Section 30212, Coastal Act Section 30212(b)(5) excludes these repair and maintenance activities from Coastal Act access requirements unless the Commission “*determines that the activity will have an adverse impact on lateral beach access.*”

The proposed 2007 Levee Repair Project would have no impact on lateral beach access because the proposed work would be accomplished within the existing footprint of the levees, staging areas are located outside of any access or access points, and because there is no beach adjacent to the levees. The project is, therefore, consistent with the requirements of Sections 30210 and 30212.

Coastal Act Section 30211 also requires new development not to interfere with existing access. While exempt from this policy as discussed above, the Commission notes that the levee system has not been used by the public to gain access to the shores of Humboldt Bay and Mad River Slough during its long existence, except by permission of the owners.

In conclusion, the proposed amended development is not considered new development for the purposes of application of the public access policies of the Coastal Act because it is a repair and maintenance activity that would not adversely affect lateral beach access and is therefore consistent with the policy direction found in Section 30212.

#### **D. Water Quality**

The Coastal Act contains policies requiring the protection of coastal waters to ensure biological productivity and to protect public health and water quality. New development must not adversely affect these values and should help to restore them when possible.

#### **Coastal Act Policies:**

Section 30231 of the Coastal Act states the following:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion*

*of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Coastal Act Section 30233 states the following:

*(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*

- (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
- (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
- (3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
- (4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
- (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
- (6) Restoration purposes.*
- (7) Nature study, aquaculture, or similar resource dependent activities.*

*(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.*

*(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...*

*(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

The proposed 2007 Levee Repair Project would take place on levees located immediately adjacent to Arcata Bay and Mad River Slough on the outboard side and seasonal wetlands on the inboard side. The project involves soil disturbance, which could increase sedimentation in the bay, slough, and wetlands. Coastal Act Section 30231 protects the quality of coastal waters, streams, and wetlands through, among other means, controlling runoff. Grading and soil disturbance can result in the discharge of sediment into site runoff, which, upon entering coastal waters, increases turbidity and adversely affects fish and other sensitive aquatic species. Sediment is considered a pollutant that affects visibility through the water, and affects plant productivity, animal behavior (such as foraging) and reproduction, and the ability of animals to obtain adequate oxygen from the water. In addition, sediment is the medium by which many other pollutants are delivered to aquatic environments, as many pollutants are chemically or physically associated with the sediment particles. Therefore, the proposed 2007 Levee Repair Project has the potential to adversely impact the water quality and biological productivity of coastal waters and wetlands.

#### Consistency Analysis:

Implementation of the proposed 2007 Levee Repair Project would result in the transportation and placement of fill and armoring materials to the sites to be maintained, the use of staging areas for stockpiling of materials to be used for the project and other material to be disposed of (excess fill, *etc.*), and the removal of vegetation by mechanical mowing equipment in the process of preparing levee sites for repair/maintenance. Unless appropriate protocols are followed, all of these activities could result in various adverse impacts to water quality, seasonal wetlands, or sensitive areas from, for example, fuel or oil spills, improper storage of materials in or adjacent to sensitive areas, increased turbidity, installation of temporary access roads and staging areas through the seasonal wetlands, *etc.* Several sensitive resources, including seasonal wetlands, Tidewater goby, anadromous fish species, and rare salt marsh plants (which are discussed below and in Sections IV-E and IV-F), could potentially be adversely affected as a result of project effects on water quality.

The 2007 Levee Repair Project protocols proposed by the applicant include a number of measures to protect water quality, including the use of geotextile fabric between fill and

armoring to reduce migration of fill into bay and slough waters, the consistent use of siltation fences and other erosion control devices (as appropriate) at work sites to reduce discharges, proper disposal of abandoned or excess materials and spoils to appropriate off-site disposal facilities, a prohibition on the storage of any excess materials within any wetland, including the transitional agricultural lands (except for temporary storage in designated staging areas), spill prevention measures, and other protocols as described in the project description and agency approvals/recommendations for the project. In general, the protocols proposed/recommended are appropriate to protect water quality. However, in a couple of instances certain measures are proposed that do not meet current standards, and some protocols proposed are incomplete or do not go far enough to assure water quality protection.

First, one of two proposed methods for installing access roads and staging areas is not the least environmentally damaging feasible alternative. This method involves removing the top 6 inches of topsoil from up to 8,000 linear feet of temporary access roads and 100,000 square feet of staging areas (four 25,000 ft<sup>2</sup> areas), for a total impact of approximately 4.5 acres of seasonal wetlands (diked former tidelands). Topsoil is proposed to be stockpiled and kept moist for the duration of construction activities. Temporary access roads and staging areas would be surfaced with 8 inches of redwood bark over road stabilization fabric, an average of 6 inches of road base, or an equivalent stabilization method. Following completion of construction activities in the area, road surfacing materials would be removed, topsoil would be reapplied, and areas would be tilled and reseeded.

A less environmentally damaging feasible alternative method for minimizing impacts to seasonal wetlands due to temporary access road and staging area installation is the applicant's other proposed alternative. This alternative would not involve excavation and removal of the top 6 inches of soil, which could adversely impact wetland soils, hydrology, and vegetation characteristics. Instead, road surfacing materials (fabric, bark and/or road base, *etc.*) would be placed directly on top of the existing ground (seasonal wetlands) and then removed upon completion of construction activities in the area. Temporarily impacted wetlands would then be tilled (decompacted) and reseeded as necessary. This method is less environmentally damaging because it does not unnecessarily disturb 4.5 acres of wetland soils and vegetation through excavation, stockpiling, and replacement of topsoil. Instead, impacts to the soil and vegetation are minimized, and the areas would be fully restored to pre-project conditions following the temporary impacts.

Second, one of two proposed methods for temporary ditch crossings is not the least environmentally damaging feasible alternative. This method involves installing a culvert within the ditch (placed over a temporary fabric filter), and then placement of temporary imported fill for the crossing (see Figure 7 of Exhibit No. 3). The temporary culvert crossing is proposed to remain in place for a maximum of 30 days. Materials used in crossing construction are proposed to be placed on top of the levee (without side casting) or removed to dispose of at an authorized location.

A less environmentally damaging feasible alternative method for minimizing impacts to ditch wetlands due to temporary crossing installation is the applicant's other proposed alternative. This alternative would not involve culvert or fill placement within wetland ditches. Instead, a temporary bridge would be placed over ditches to allow crossing (see Figure 8 of Exhibit No. 3). Any temporary bridge crossing is proposed to remain in place for a maximum of 30 days. This method is less environmentally damaging because it does not unnecessarily place fill in ditch wetlands, which, if not completely removed following construction, could adversely affect water quality.

In each case discussed above, the use of the less environmentally damaging alternative methods is feasible and would (1) minimize temporary impacts to seasonal wetlands by not unnecessarily disturbing the wetland soils and vegetation through excavation, stockpiling, and replacement of topsoil (but instead just placing protective fabric beneath the road surfacing material and then removing the materials completely upon project completion and restoring the wetland soils beneath through tilling and reseeded as necessary), and (2) avoid the need to place fill in the ditch wetlands (by simply using temporary bridges rather than temporary culverts and imported fill material). Therefore, staff recommends adding Special Condition Nos. 3-a and 3-b to ensure that the permittee undertakes development in accordance with the least environmentally damaging methods described above. Special Condition Nos. 3-c, 3-d, and 3-e also require post-construction restoration and monitoring to ensure that the seasonal wetlands temporarily impacted by project activities will be fully restored to pre-project conditions, or remedial actions will be required.

Finally, the protocols proposed by the applicants also are incomplete in certain other areas in terms of assuring water quality protection. For example, the proposed erosion control measures are not specific enough or do not go far enough to assure that no construction materials or spills enter the bay or slough, that all construction debris is properly disposed of, and that erosion control measures are effectively in place for the duration of project activities. Therefore, staff recommends Special Condition Nos. 3-f through 3-o, which specify various construction protocols that must be implemented for the duration of the project, including (3-f) heavy equipment shall not operate in the bay or wetted channel; (3-g) no construction materials, debris, or waste shall be placed where it may be subject to entering coastal waters or wetlands; (3-h) all construction debris shall be removed and disposed of in an upland location at an approved disposal facility; (3-i) construction activities shall be restricted to the dry season period of April 15 through October 15; (3-j) construction activities shall be conducted during low tide or limited to areas above mean high water; (3-k) during construction, all trash shall be properly contained, removed, and disposed of regularly and properly; (3-l) any debris discharged into coastal waters shall be recovered as soon as possible; (3-m) any fueling and maintenance of construction equipment shall occur outside of sensitive areas or within designated staging areas; (3-n) hazardous materials management equipment shall be ready and available on-site and a professional clean-up/remediation service shall be locally available on call if necessary; and (3-o) all temporary access roads and staging areas shall be limited to the locations and sizes specified in the permit amendment

application. Additionally, Special Condition Nos. 3-p through 3-r specify standards for armoring rock, fill material, and placement of materials. Furthermore, staff also recommends Special Condition No 4, which enumerates various erosion control procedures to be implemented, such as (a) the use of geotextile fabric between the structural fill and the levee and the placement of the riprap to reduce or minimize the amount of erosion that may otherwise occur; (b) ensuring that effective erosion control measures are in place at all times during construction, (c) protecting and stabilizing stockpiled materials and exposed soils with proper erosion control devices; (d) winterizing work sites at the end of each day when significant rains are forecast; (e) reseeding, mulching, or otherwise stabilizing exposed soils after project completion and before the close of the seasonal work window, and other measures. Finally, staff recommends Special Condition No. 5, which requires the applicant to submit to the Executive Director for review and approval (prior to the issuance of the permit amendment) a debris disposal plan demonstrating that all materials not suitable for backfill (including concrete, soil and vegetation spoils, other debris, etc.) shall be removed completely from the project area and lawfully disposed of at an approved upland location.

Therefore, the Commission finds that as conditioned to (1) require using the least environmentally damaging methods for temporary access roads, staging areas, and temporary ditch crossings, and to fully restore all impacted wetlands to pre-project conditions; (2) to add specificity to proposed construction protocols; (3) to add specificity to proposed erosion control protocols, and (4) to produce and implement an approved debris disposal plan, the proposed permit amendment is consistent with the direction of Coastal Act Sections 30231 and 30233.

#### **E. Marine Resources and ESHA**

The outboard side of the levee system is adjacent to Arcata Bay and Mad River Slough, and the proposed 2007 Levee Repair Project has the potential to adversely affect marine resources and marine environmentally sensitive habitat areas (ESHA). The following section of the Coastal Act requires that new development maintain, enhance, and, where feasible, restore damaged marine resources and protect environmentally sensitive habitat areas.

#### **Coastal Act Policies:**

Section 30230 of the Coastal Act states the following:

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

Section 30107.5 of the Coastal Act defines ESHA as follows:

*“Environmentally sensitive area” means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Section 30240 of the Coastal Act states the following:

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

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

Consistency Analysis:

The waters of Arcata Bay and Mad River Slough provide habitat for a number of marine species. The U.S. Fish and Wildlife Service’s (USFWS) Formal Consultation for the project (Exhibit No. 7) notes that the proposed project is likely to adversely affect the Federally-listed endangered Tidewater goby (*Eucyclogobius newberryi*) and its proposed critical habitat (up to 0.6 acres). Tidewater goby is a small, short-lived fish that occurs in coastal brackish water habitats such as lagoons, tidal bays, and estuaries of rivers and streams along the coast. According to the USFWS report, threats to the species include upstream water diversion, dredging, pollution, siltation, urban development on adjacent lands, and competition/predation from introduced species. The USFWS issued an Incidental Take Statement anticipating that the proposed project would cause “harassment” (disturbance) of an estimated 200 breeding adults and “harm” (injury or death) to no more than 70 individuals. Nevertheless, the USFWS report concludes that project is not likely to jeopardize the continued existence of the Tidewater goby given that the permits issued for the project (including the U.S. Army Corps of Engineers and Humboldt Bay Harbor, Recreation, and Conservation District permits) include several terms and conditions to minimize project effects on the species. These include using erosion control devices such as silt fences, floating turbidity curtains, *etc.* for all repair activities, and surveying for and excluding any Tidewater gobies found prior to installation of any temporary ditch crossing.

In order to ensure that all feasible mitigation measures designed to minimize impacts to the Tidewater goby in the project area are followed, staff recommends Special Condition No. 6, which requires the use of erosion control devices for all repair activities, immediate removal of any material associated with levee repair work that falls into the

mudflats or inboard ditches, using the temporary bridge design for ditch crossings (rather than temporarily placing culverts and fill into ditches), and surveying for and excluding any gobies found at ditch crossings prior to crossing installation.

Arcata Bay and Mad River Slough also contain Eelgrass (*Zostera marina*) beds, which are recognized as Essential Fish Habitat (EFH) by the U.S. Army Corps of Engineers and meet the definition of ESHA under Coastal Act Section 30107.5 (see below). However, the proposed 2007 Levee Repair Project is not expected to adversely affect Eelgrass beds since no repair methods are proposed (e.g., installation of sheet piling at Repair Site #9, which is not included with this permit amendment application) that could lead to scour and habitat degradation for Eelgrass.

The NOAA-Fisheries Informal Consultation for the project (Exhibit No. 8) notes that although three sensitive anadromous fish species – Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon (*O. tshawytscha*), and Northern California (NC) steelhead (*O. mykiss*) – all may occur in Arcata Bay and Mad River Slough (rearing habitat and migration corridor), none of these Federally-listed threatened species or their critical habitats are likely to be directly or indirectly affected by the proposed project. This conclusion was based on the assumptions that heavy equipment will not operate in the bay or wetted channel, that all work will occur during the dry season and during low tide or above mean high water, and that sediment control measures will be incorporated into project activities. Therefore, in order to ensure that these mitigation measures are followed, staff recommends Special Condition Nos. 3 and 4 (described above), which specify that these construction and erosion control protocols shall be implemented.

As conditioned, the Commission finds that the proposed permit amendment to allow for the 2007 Levee Repair Project is consistent with Coastal Act Sections 30230 and 30240 in that it incorporates the least environmentally damaging methods feasible as well as all feasible mitigation measures to avoid significant disruption of Tidewater goby habitat values and to maintain marine resources.

In addition to Tidewater goby discussed above, at least two other ESHAs – habitat for Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes' bird's-beak (*Cordylanthus maritimus* ssp. *palustris*) – also have the potential to be affected by proposed project activities. Because all of these species are rare, their habitat meets the definition of environmentally sensitive habitat (ESHA) found in Coastal Act Section 30107.5. Therefore, development adjacent to these habitats must also comply with Section 30240(b) of the Coastal Act.

Both Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual, hemiparasitic species in the Broom-rape family (Orobanchaceae) that grow in coastal salt marsh habitats primarily along the North Coast of California. In addition to photosynthesizing, these hemiparasites supplement their nutrient intake by parasitizing the live roots of adjacent salt marsh species. Humboldt Bay owl's-clover plants typically germinate in

late winter to spring and bloom sometime between April and August (often peaking in June). Point Reyes bird's-beak plants are slightly later: on average, germination is in spring and flowering is approximately in July (CNPS 2007). Surveys conducted by the applicant's biologist in 2006 and 2007 discovered approximately 450 and 275 (respectively) Humboldt Bay owl's-clover plants on the levee system within areas that potentially would be impacted by project activities (see Exhibit Nos. 4 and 5). These plants are estimated to represent less than 1 percent of the total population of the species in the surrounding suitable salt marsh habitat (as seen on Exhibit Nos. 4 and 5). For the Point Reyes bird's-beak, 2006 surveys found a total of five plants in potential impact areas; 2007 surveys for the species have yet to be conducted (since it is not yet seasonally appropriate). It is expected that the potential number of Point Reyes bird's-beak plants present in impact areas will total less than 1 percent of the population of the species in the surrounding salt marsh habitat (see Exhibit No. 5). Population numbers of each species normally fluctuate from year to year, since, as annuals, germination rates are dependent on a number of environmental factors. In general, both species are threatened by development, nonnative plants, and other causes (CNPS 2007).

The applicant proposes several measures to minimize impacts to rare plant ESHAs in the project area. These measures are detailed in the rare plant mitigation plan (Exhibit No. 5) and include (1) conducting seasonally appropriate pre-construction surveys of the Jackson Ranch levee and the Arcata levee east of site #58 for both species; (2) delaying construction activities on the Jackson Ranch levee and the Arcata levee east of site #58 until after the owl's-clover and bird's-beak plants have died back/set seed (in July or early August); (3) collection and conservation of seed from any individuals observed growing in an area of potential impact; (4) transplantation/distribution of seed in suitable habitat nearby; and (5) pre- and post-construction monitoring of rare plants located immediately adjacent to the construction site to document any impacts that might occur as a result of project activities. The proposed plan for collection and distribution of the seeds to nearby marsh habitat would mimic the natural process that would occur if the project were not being conducted. The Humboldt Bay Owl's Clover and Point Reyes Bird's Beak are annual plants. Individual plants die off each year, and the species depend on dispersal of the seeds from plants by wind and other means to suitable habitat areas nearby where the seeds can grow into new individual plants. As explained in the rare plant mitigation plan, it is not feasible to monitor with confidence the success of the seeds themselves that are conserved and transplanted/distributed since the species grow in a tidal environment in which the tiny seeds may be carried with tidal flow far from their original distribution point. Therefore, the applicant does not propose success standards or monitoring for the transplanted/distributed seeds.

The Commission finds that the proposed rare plant mitigation plan will prevent significant disruption of habitat values and retain marine resources consistent with Coastal Act Sections 30240(a) and 30230. To ensure that all feasible mitigation measures designed to minimize impacts to the rare plant ESHAs in the project area are followed, staff recommends Special Condition No. 7, which requires submittal of a final mitigation plan for the review and approval of the Executive Director that provides for

implementation of the mitigation measures listed above. As discussed above in the water quality analysis, the applicant is also required to fully restore the seasonal wetlands that will be temporarily impacted due to the installation of access roads and staging areas for the project. Special Condition No. 3 requires that at the completion of project activities the permittee must decompact and reseed the area with regionally appropriate native species. To help in the establishment of vegetation, rodenticides are sometimes used to prevent rats, moles, voles, gophers, and other similar small animals from eating the newly planted saplings. Certain rodenticides, particularly those utilizing blood anticoagulant compounds such as brodifacoum, bromadiolone and diphacinone, have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/ wildland areas. As the target species are preyed upon by raptors or other environmentally sensitive predators and scavengers, these compounds can bioaccumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species. Therefore, to minimize this potential significant adverse cumulative impact to environmentally sensitive wildlife species, the Commission attaches Special Condition No. 3-D prohibiting the use of specified rodenticides on the property governed by CDP No. 1-03-004.

As conditioned, the Commission finds that the proposed amended development for the 2007 Levee Repair Project is consistent with Coastal Act Sections 30230 and 30240 in that it retains marine resources consistent with Section 30230 and will avoid significant disruption of habitat values consistent with Section 30240.

#### **F. Archaeological Resources**

Coastal Act Section 30244 provides protection of archaeological and paleontological resources and requires reasonable mitigation where development would adversely impact such resources. Because the levee system was originally constructed around 1880 from Humboldt Bay materials, it is possible that historic or prehistoric archaeological resources occur in the area. The project proposes to use heavy equipment to excavate and remove fill material from the area, and archaeological resources embedded in the levees could be impacted through the course of construction activities.

The proposed project area is located within the ethnographic territory of the Wiyot Indians, who lived almost exclusively in villages along the protected shores of Humboldt Bay and near the mouths of the Eel and Mad Rivers. Several Wiyot villages are known to have occurred along the shores of Arcata Bay in the general vicinity of the project area. The relatively larger and sedentary populations of these villages engaged in an economy of salmon fishing, marine-mammal hunting, shellfish gathering, and seasonal excursions inland for acorns. Pioneers from the gold rush era of the mid-1800's subsequently settled in the Arcata Bay region, and small farms that included gardens, pastures, and animal husbandry were established in the Bayside area by the 1860s. Lumber operations began in the area around 1875, including a logging and quarrying railroad that ran through the Jacoby Creek region to Arcata Bay.

To ensure protection of any cultural resources that may be discovered during construction of the proposed project, staff recommends Special Condition No. 8, which requires that if an area of cultural deposits is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist must analyze the significance of the find. To recommence construction following discovery of cultural deposits, the permittee is required to submit a supplementary archaeological plan for the review and approval of the Executive Director to determine whether the changes are *de minimis* in nature and scope, or whether an amendment Coastal Development Permit No. 1-03-004 is required.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Coastal Act Section 30244, as the development will not adversely impact archaeological resources.

#### **G. Other Agency Approval**

The proposed 2007 Levee Repair Project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, staff recommends Special Condition No. 10, which requires the applicant to submit to the Executive Director evidence of approval of the project by the U.S. Army Corps of Engineers prior to the commencement of construction. The conditions require that any project changes resulting from the Corps approval not be incorporated into the project until the applicant obtains any necessary (additional) amendments to Commission CDP No. 1-03-004.

To further ensure that the permittee undertakes development in accordance with the project as authorized herein, staff recommends Special Condition No. 11, which gives Commission staff the right, upon 24-hours notification to the permittee, to enter and inspect the project area for the purpose of determining condition compliance.

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

The Humboldt Bay Harbor, Recreation, and Conservation District acted as the lead agency for the proposed 2007 Levee Repair Project. As such, the District filed a Notice of Exemption under Section 15269 of the CEQA Guidelines and issued an Administrative Permit for the proposed project (Exhibit No. 6).

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section

21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full, including all associated environmental review documentation and related technical evaluations incorporated-by-reference into this staff report. Those findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse impacts that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

**V. EXHIBITS**

- 1) Location Map
- 2) Vicinity Maps
- 3) Project Description
- 4) Botanical Report
- 5) Rare Plant Mitigation Plan
- 6) Harbor District Permit
- 7) U.S. Fish & Wildlife Service Formal Consultation
- 8) NOAA-Fisheries Informal Consultation
- 9) Staff Report for Commission CDP No. 1-03-004

## ATTACHMENT A

### Standard Conditions:

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

## CALIFORNIA COASTAL COMMISSION

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# F 18a

Filed: March 3, 2008  
49<sup>th</sup> Day: April 21, 2008  
180<sup>th</sup> Day: August 30, 2008  
Staff: Melissa B. Kraemer  
Staff Report: April 25, 2008  
Hearing Date: May 9, 2008  
Commission Action:

**STAFF REPORT:**  
**PERMIT AMENDMENT**

<b>EXHIBIT NO. 13</b>
<b>APPLICATION NO.</b>
1-03-004-A3
RECLAMATION DISTRICT 768
STAFF REPORT FOR CDP AMENDMENT NO. 1-03-004-A2 (1 of 39)

**APPLICATION NUMBER:**

**1-03-004-A2**

**APPLICANT:**

**Reclamation District 768**

**AGENT:**

Oscar Larson & Associates (Attn: Stein Coriell)

**PROJECT LOCATION:**

1,500-acre Reclamation District, including a 4.9-mile-long levee system, located north and south of Highway 255 along the northern shoreline of the Arcata Bay lobe of Humboldt Bay and the banks of Mad River Slough, Arcata Bottom area, Humboldt County.

**DESCRIPTION OF PROJECT  
PREVIOUSLY APPROVED:**

Repair of a 230-foot-long breach in a portion of the levee north of Hwy 255, replacement of three 36-inch-diameter culverts and floodgates, and a 10-year permit for routine repair and maintenance activities on the levee system.

**DESCRIPTION OF FIRST  
AMENDMENT REQUEST  
(1-03-004-A1):**

Amend the approved project description to include the "2007 Levee Repair Project," which would repair and/or protect approximately 7,877 linear feet (~1.5 miles) of eroded and damaged levee in 2007.

DESCRIPTION OF CURRENT  
AMENDMENT REQUEST  
(1-03-004-A2):

Further amend the approved project description to include the following project components: (1) permanently authorize the repairs that were approved under Emergency Permit Nos. 1-06-044-G, 1-07-008-G, 1-07-037-G, and 1-07-048-G for repairs and maintenance to approximately 13,115 linear feet of levee along Arcata Bay and Mad River Slough; (2) repair work to Site #9, which includes installation of approximately 600 feet of rock slope protection; (3) minor relocation of a temporary staging area and access route associated with repairs to the Jackson Ranch levee; and (4) amend the crossing method at the ditch crossing located just south of the Humboldt Bay Municipal Water District pipeline along the Mad River Slough from temporary bridge to a temporary culvert and fill crossing.

OTHER APPROVALS:

- 1) U.S. Army Corps of Engineers Clean Water Act Section 404 Nationwide Permit No. 400663N (authorizes Site #9 repairs) and Individual Permit No. 400235N (authorizes all other repairs)
- 2) North Coast Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification No. 1B06068WNHU (authorizes all repairs, including Site #9)
- 3) Humboldt Bay Harbor, Recreation, and Conservation District Administrative Permit No. A-2007-04
- 4) NOAA.-Fisheries Informal Consultation File No. 2007/00730 (April 18, 2007)
- 5) NOAA.-Fisheries Informal Consultation File No. 2007/04970 (August 9, 2007) (for Site #9)
- 6) Fish and Wildlife Service Biological Opinion and Incidental Take Statement File No. 8-14-2006-3050 (April 27, 2007)
- 7) Humboldt County Grading Permit No. 07-0881X6

SUBSTANTIVE FILE DOCUMENTS:

- |  |   |
|--|---|
| 1) Commission CDP File No. 1-03-004    | 8) Commission CDP File No. 1-04-060-G     |
| 2) Commission CDP File No. 1-03-004-A1 | 9) Commission CDP File No. 1-05-044-G     |
| 3) Commission CDP File No. 1-03-061-G  | 10) Commission CDP File No. 1-06-044-G    |
| 4) Commission CDP File No. 1-03-070-G  | 11) Commission CDP File No. 1-07-008-G    |
| 5) Commission CDP File No. 1-04-017-G  | 12) Commission CDP File No. 1-07-037-G    |
| 6) Commission CDP File No. 1-04-040-G  | 13) Commission CDP File No. 1-07-048-G    |
| 7) Commission CDP File No. 1-04-050-W  | 14) Humboldt County Local Coastal Program |

### **SUMMARY OF STAFF RECOMMENDATION**

On March 17, 2005, the Commission approved Coastal Development Permit (CDP) No. 1-03-004 (Reclamation District 768) for repair of a 230-foot-long breach in a portion of the levee north of State Highway 255, replacement of three 36-inch-diameter culverts and floodgates, and a 10-year permit for routine repair and maintenance activities on the levee system. On July 13, 2007 the Commission approved CDP Amendment No. 1-03-004-A1, which authorized repair and maintenance of approximately 7,877 linear feet (~1.5 miles) of the applicant's 4.9-mile long levee system including approximately 60 repair sites, each with damage/repairs extending from 10 to 1,520 feet in length. The subject amendment application proposes further changes to the permit as previously amended and permanent authorization of emergency repair work implemented along approximately 11,500 lineal feet of levee under Commission Emergency Permit Nos. 1-06-044-G and 1-07-008-G.

The methods and protocols proposed under the current application for the most part do not differ significantly from those authorized under the existing permit, and with the attachment of various conditions and minor changes to existing permit conditions, the development authorized by the amended permit would be consistent with the Commission's intent in granting the original permit with conditions to avoid significant adverse impacts to wetland and other ESHA resources. Added special conditions require 1) a specific protocol for installation of the temporary culvert and fill crossing be followed; 2) implementation of Tidewater goby mitigation measures for ongoing repair and maintenance work; 3) implementation of a rare plant mitigation plan for ongoing repair and maintenance work; and 4) recovery and removal of revetment material placed under emergency authorization that has encroached beyond the historic footprint of the levees.

Staff believes that the amended development, as conditioned, is consistent with all Coastal Act Chapter 3 policies.

**The Motion to adopt the Staff Recommendation of Approval with Conditions is on Pages 5-6.**

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### **STAFF NOTES:**

#### **1. Procedural Note**

Section 13166 of the California Code of Regulations states that the Executive Director shall reject an amendment request if: (a) it lessens or avoids the intent of the approved permit; unless (b) the applicant presents newly discovered material information, which he or she could not, with reasonable diligence, have discovered and produced before the permit was granted.

On March 17, 2005, the Commission approved Coastal Development Permit (CDP) No. 1-03-004 for repair of a 230-foot-long breach in a portion of the levee north of State Highway 255, replacement of three 36-inch-diameter culverts and floodgates, and a 10-year permit for routine repair and maintenance activities on the levee system. The Commission approved the project with two special conditions. Special Condition No. 1 addresses the length of development authorization (five years with up to one request for an additional five-year period of development authorization). Special Condition No. 2 addresses standards for the repair and maintenance work, including specifications on armoring rock, fill material, placement of materials, revegetation of disturbed areas, spoils disposal, erosion control, spill prevention, no wet season work, no wetland fill, pre-contractor training, monitoring, annual reports, and annual inspections.

On July 13, 2007, the Coastal Commission approved CDP Amendment No. 1-03-004-A1, which authorized implementation of the "2007 Levee Repair Project," including repair and/or protection of 7,877 linear feet (~1.5 miles) of the 4.9-mile long levee system including approximately 60 repair sites with damage extending from 10 to 1,520 feet in length. In its approval of the permit amendment, the Commission modified and reimposed Special Condition Nos. 1 and 2 of the original permit. Additionally, the Commission added Special Condition Nos. 3 through 11, which pertain specifically to the "2007 Levee Repair Project" and address construction standards, erosion control procedures, debris disposal, and measures to protect rare plants, tidewater goby, and archaeological resources, among others.

The current permit amendment request includes the following project components: (1) permanently authorize the repairs that were approved under Emergency Permit Nos. 1-06-044-G and 1-07-008-G for repairs and maintenance to approximately 11,500 lineal feet of levee along Arcata Bay and Mad River Slough; (2) minor relocation of a temporary staging area and access route associated with repairs to the Jackson Ranch levee; and (3) amend the crossing method at the ditch crossing located just south of the Humboldt Bay Municipal Water District pipeline along the Mad River Slough from temporary bridge to a temporary culvert and fill crossing.

In approving the original levee repair project, the Commission attached a condition limiting the time period during the year when repairs could be performed to dry season months. The emergency repairs performed under Emergency Permit No. 1-06-044-G and 1-07-008-G required work outside of the work window required by CDP No. 1-03-004, as the work needed to be performed to avoid catastrophic breaches in the levees after the levee system had been severely compromised during a severe storm in the winter of 2005-2006. The new storm damage and the need for immediate repairs constitutes newly discovered material information that could not have been known when CDP No. 1-03-004 was granted in the spring of 2005.

In approving temporary staging areas and access routes under CDP Amendment No. 1-03-004-A1 for the large volume of repairs to be performed under the "2007 Levee Repair Project," the Commission approved the permit amendment on the basis that the project as amended would minimize wetland fill associated with the staging areas and access routes.

The proposed relocation of a temporary staging area and access route associated with the repairs of the Jackson Ranch levee along Mad River Slough under the current amendment request is consistent with the Commission's intent in granting CDP Amendment No. 1-03-004-A1 in that the relocated staging area and access route will result in no greater amount of wetland fill.

The current amendment request necessitates changes to both the original permit conditions that relate to ongoing repair and maintenance activities and the first permit amendment that pertains to the "2007 Levee Repair Project," which has not yet been implemented and is now planned for the 2008 construction season. The proposed use of temporary culverts and fill for crossing the inboard ditch just south of the Humboldt Bay Municipal Water District (HBMWD) pipeline conflicts with the conditions of the original permit, as both the original permit and the first permit amendment required bridging of inboard ditches rather than the use of temporary culverts and fill for crossing purposes. However, since approval of the original permit, the applicant's engineers have performed a detailed survey of soil conditions at the approved ditch crossing just south of the pipeline and determined that due to the load bearing capacity of the soils around this crossing, use of temporary culverts and fill is the only feasible crossing alternative at this location. Furthermore, staff believes that with the attachment of the modified or new conditions described below, the development authorized by the amended permit would be consistent with the Commission's intent in granting the original permit with conditions to avoid significant adverse impacts to wetland and other ESHA resources:

- Modify and reimpose Special Condition Nos. 2-I, 3-B, and 6-C to allow for use of temporary culverts and fill at the single crossing location located just south of the HBMWD pipeline.
- Modify and reimpose Special Condition No. 2-N to require implementation of Tidewater goby mitigation measures for ongoing repair and maintenance activities.
- Modify and reimpose Special Condition No. 2-O to require a rare plant management plan be submitted to the Executive Director prior to commencement of ongoing repair and maintenance activities near known rare plant ESHA.
- Add Special Condition No. 12 to require a rare plant management plan be submitted to the Executive Director prior to commencement of construction near known rare plant ESHA.
- Add Special Condition No. 13 to require recovery and removal of revetment material placed under emergency authorization that has encroached beyond the historic footprint of the levees.

The portion of the permit amendment request seeking permanent authorization of the repairs performed on a temporary basis during the rainy period of the year avoided the

intent of the Commission's action on CDP No. 1-03-004 to limit the time period of work to the dry period of the year. In addition, the portion of the permit amendment request seeking modification of the crossing of the ditch just south of the HBMWD pipeline to allow a culvert crossing conflicts with the intent of the Commission's action on the original permit to limit such crossings to bridges. However, the Executive Director finds that the applicant has presented newly discovered material information that could not have been known when CDP No. 1-03-004 was originally granted, allowing these portions of the amendment request to be accepted despite conflicts with the intent of the original permit. In all other respects, the Executive Director has determined that the proposed amendment as conditioned would not lessen or avoid the intent of the approved permit. Therefore, the Executive Director has accepted the amendment request for processing.

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**1. Commission Jurisdiction and Standard of Review**

The proposed development will be conducted on levees located within state tidelands and public trust lands in Humboldt County. Pursuant to Section 30519 of the Coastal Act, the Coastal Commission retains jurisdiction over the review and issuance of Coastal Development Permits in these areas even though the County of Humboldt has a certified Local Coastal Program. The standard of review for projects located in the Commission's original jurisdiction is Chapter 3 of the Coastal Act.

**2. Scope**

This staff report addresses only the coastal resource issues affected by the proposed permit amendment, provides recommended special conditions to reduce and mitigate significant impacts to coastal resources caused by the development, as amended, in order to achieve consistency with the Coastal Act, and provides findings for conditional approval of the amended development. All other analysis, findings, and conditions related to the originally permitted development and CDP Amendment No. 1-03-004-A1, except as specifically affected by the current permit amendment request and addressed herein, remain as stated within the original permit approval adopted by the Commission on March 17, 2005 attached as Exhibit No. 8, and in the staff recommendation for CDP Amendment No. 1-03-004-A1 adopted by the Commission on July 13, 2007 attached as Exhibit No. 9.

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**I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION:**

The staff recommends that the Commission adopt the following resolution:

**Motion:**

*I move that the Commission approve the proposed amendment to Coastal Development Permit No. 1-03-004-A1 pursuant to the staff recommendation.*

**Staff Recommendation of Approval:**

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

**Resolution to Approve with Conditions:**

The Commission hereby approves the proposed permit amendment and adopts the findings set forth below, subject to the conditions below, on the grounds that the development with the proposed amendment, as conditioned, will be in conformity with the Chapter 3 policies of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because all feasible mitigation measures and alternatives have been incorporated to substantially lessen any significant adverse impacts of the development on the environment.

**II. STANDARD CONDITIONS:** See Attachment A.

**III. SPECIAL CONDITIONS:**

**Note:** The original permit contained two special conditions (Special Condition Nos. 1 and 2), both of which were modified and reimposed as conditions of CDP Amendment No. 1-03-004-A1. Additionally, CDP Amendment No. 1-03-004-A1 added new Special Condition Nos. 3 through 11.

Special Condition Nos. 2, 3, 4, 6, and 9 of CDP Amendment No. 1-03-004-A1 are modified and reimposed as conditions of this permit amendment and remain in full force and effect. Special Condition Nos. 1, 5, 7, 8, 10, and 11 are reimposed as conditions of CDP Amendment No. 1-03-004-A2 without any changes and remain in full force and effect. Special Condition Nos. 12 and 13 are new special conditions added to CDP Amendment No. 1-03-004-A2. For comparison, the text of the conditions of both the original permit and the first permit amendment are included in Exhibit Nos. 8 and 9, respectively.

Deleted wording within the modified special conditions is shown in ~~striketrough~~ text, and new condition language appears as **bold double-underlined** text.

2. Standards for Repair and Maintenance Work for Ongoing Routine Repair and Maintenance Authorized by CDP 1-03-004

The permittee shall undertake all development authorized by this amended permit, other than the development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project, in accordance with the following standards:

- A. Armoring Rock: All new revetment material to be used shall consist of either clean quarry rock or concrete rubble materials that are free of asphalt and waste materials. The revetment materials shall not be greater than three feet in any one direction or smaller than one cubic foot in size except for the Light Class RSP placed between the RSP fabric and the exposed armoring rock. All exposed reinforcement bar shall be removed prior to installation of any concrete rubble riprap. No rock shall be placed outside of the existing footprint of the levee system.
- B. Fill Material: Only dry, clean fill may be used for levee repairs and must be free of debris (vegetation, asphalt etc.). Fill material shall be stockpiled outside of seasonal wetlands or transitional agricultural lands. No fill shall be placed outside of the existing footprint of the levee system.
- C. Placement of Materials: Materials placed on the levees to be repaired, including all riprap, shall not extend into the slough or Arcata Bay beyond the footprint of the levee as it existed before the repair. The determination of the location of the front of the levee shall be made through a 'string line' method, whereby the portions of the levee that are not in need of repair or restoration on each side of the areas that is in need of repair shall be used to determine the maximum extent of the repair. Revetment material shall not be end-dumped, but placed in an interlocking fashion along the levee face to avoid spreading beyond the former footprint of the levee and to provide a structurally integrated revetment.
- D. Revegetation of Disturbed Areas: When repair and maintenance activities disturb more than 100 square feet of area within the existing footprint of the levee, the disturbed area shall, immediately upon completion of the repair and maintenance activity, be revegetated with appropriate native plants. Naturalized plants, approved by the Department of Fish & Game, may be used to revegetate the upland portions of the site.
- E. Disposal of Excess Material and Vegetation: All construction debris and cut vegetation, except grass clippings from mowing the top of the levee, shall be removed from the site and disposed of only at an authorized disposal site. Side casting of such material or placement of any such material within Arcata Bay, Mad River Slough, any wetland area including the grazed seasonal wetlands inboard of the levees is prohibited.
- F. Installation of Silt Fences: Silt fences or equivalent devices shall be installed along the perimeter of each repair site prior to the placement of

any fill materials to reduce the discharge of fill materials and sediment laden runoff into Arcata Bay, Mad River Slough, or the wetlands on the inboard sides of the damaged levees. The installed silt fences or equivalent devices shall be maintained during project construction and removed upon completion of the project.

- G. Spill Prevention: To prevent and address spills of equipment fuels, lubricants, and similar materials, the repair work shall incorporate the following measures: (a) no equipment fueling shall occur on the site or elsewhere along the levees; (b) all equipment used during construction shall be free of oil and fuel leaks at all times; (c) oil absorbent booms and/or pads shall be on site at all times during project construction and deployed if necessary in the event of a spill; and (d) all spills shall be reported immediately to the appropriate public and emergency services response agencies.
- H. Wet Season Work Prohibited: Repair and maintenance activities authorized by this permit shall only be performed during the dry season (April 15 to October 15).
- I. No Wetland Fill: No permanent or temporary fill of tidal wetlands or of the inboard ditch or any other seasonal wetland is allowed by this permit, **except for the inboard ditch crossing located just south of the Humboldt Bay Municipal Water District Pipeline on Mad River Slough. At this crossing only, a temporary culvert and fill crossing consisting of plastic culverts and hay bales may be used in accordance with "Scenario 3" of the August 13, 2007 letter to Coastal Commission staff from Oscar Larson & Associates Project Manager Michael Hollrigel (Exhibit No. 5). The temporary culvert and fill crossing shall be completely removed within 10 days of completion of construction activities for each occurrence of levee repair in the vicinity of the crossing. All other** Ditch crossings must be accomplished by temporary bridging that must be removed within one week of completion of work on that portion of the levee served by the bridge.
- J. Pre-construction Contractor Training: Prior to the commencement of any repair and maintenance activities authorized by this permit which have not yet been undertaken, the Applicant shall ensure that the Contractor understands and agrees to observe the standards for work outlined in this permit and in the detailed project description included as part of the Applicants submittal and as revised by these conditions.
- K. Monitoring: Repair and maintenance activities shall be monitored by a qualified Civil Engineer, or equivalent expert, during the dry season no less frequently than every three months to ensure that work performed

under this permit is consistent with the terms of the permit. The Monitor shall have the authority to stop work and to recommend remediation of ongoing work in order to comply with the terms and conditions of this permit.

- L. Annual Reports: The Applicant shall submit an annual report to the Executive Director by November 15 annually for the life of the permit. The report shall describe the repair and maintenance activities completed during the reporting period and identify potential activities for the coming year.
- M. Annual Inspection: The levee system shall be inspected by a qualified Civil Engineer or equivalent, to identify areas where repair and maintenance work will be needed within the coming year. The location and type of work needed shall be described in a written report. The Engineers report shall be submitted to the Reclamation Board of Directors, the district's biologist and to the Executive Director. The report is due annually on November 15. If, based on this report, the biologist identifies any work areas that are within potential habitat areas, the biologist shall survey those areas for the presence of Point Reyes Bird's Beak or Humboldt Bay Owl's Clover. If either of these species is found in the area scheduled for disturbance, the plants shall be avoided.

**N. Implementation of Tidewater Goby Mitigation Measures for Ongoing Repair and Maintenance Activities:**

**The permittee shall undertake all development in accordance with the following protocols to ensure minimization of impacts to Tidewater goby and Tidewater goby proposed critical habitat:**

- 1. Effective and appropriate erosion control devices shall be used in accordance with all repair work at all times; any erosion control devices used are temporary and shall be removed upon completion of project activities;**
- 2. Any material that slips beyond the levee configuration into the mudflats outside the levee or the inboard borrow ditch and associated wetland channels shall be removed to staging areas and/or hauled off site;**
- 3. The permittee shall use only the temporary bridge design for temporary ditch crossings, as depicted in Figure 8 of Exhibit No. 3 of the June 29, 2007 staff report for CDP Amendment No. 1-03-004-A1, except for the inboard ditch crossing located just south of the Humboldt Bay Municipal Water District Pipeline on Mad River Slough. At this crossing only, a**

temporary culvert and fill crossing consisting of plastic culverts and hay bales may be used in accordance with "Scenario 3" of the August 13, 2007 letter from Oscar Larson & Associates Project Manager Michael Hollrigel (Exhibit No. 5). The temporary culvert and fill crossing shall be completely removed within 10 days of completion of construction activities for each occurrence of levee repair in the vicinity of the crossing. No culverts or fill shall be placed in any other ditches for temporary crossing purposes. Any temporary bridge crossing shall remain in place for no more than 90 days maximum.

4. Prior to construction of any temporary ditch crossing, Tidewater gobies shall be excluded from the areas of impact by using seine netting stretching from substrate to water surface and bank to bank. The netting must be a knotless mesh of no greater than 0.125-inch openings in the largest dimension. Netting shall be deployed in such a way that it excludes gobies from the construction area and keeps them from entering the construction zone until the structure is in place and all work within the wetted channels for the purpose of constructing the crossing has been completed. The results of fish exclusion efforts shall be reported to the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and any other relevant agencies.

O. Rare Plant Mitigation Plan for Ongoing Repair and Maintenance Activities

1. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE INITIAL REPAIR WORK AUTHORIZED BY THIS PERMIT AS AMENDED ON THE JACKSON RANCH LEVEE OR ON THE ARCATA BAY LEVEE EAST OF REPAIR SITE #58, the permittee shall submit a plan for the review and approval of the Executive Director for the dispersal of seed from individual specimens of Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), and Western sand-spurrey (*Spergularia canadensis*) growing in the project area to adjacent salt marsh habitat.

a. The plan shall demonstrate that:

- (1) No construction activities shall occur in the affected areas until after all Humboldt Bay owl's clover, Point

Reyes bird's beak, and Western sand-spurrey plants have set seed, as determined by a qualified botanist;

- (2) If any rare plants are located in areas of potential impact, a qualified botanist shall collect and conserve all seed of the affected individuals to be distributed as appropriate in a suitable habitat nearest to where the seed was collected that already contains Humboldt Bay owl's clover, Point Reyes bird's beak, and/or Western sand-spurrey; and
- (3) Collected seed shall be distributed into the identified habitat areas at the phenologically appropriate time, as determined by the qualified botanist.

b. The plan shall include at a minimum the following components:

- (1) Seasonally appropriate botanical surveys conducted by a qualified botanist for Humboldt Bay owl's clover, Point Reyes bird's beak, and Western sand-spurrey that indicates the number of rare plants located on the levee system in the areas of potential impact;
- (2) A map that locates the affected areas of levee construction relative to the habitat area where seed will be distributed; and
- (3) A narrative that describes the seed collection and distribution program and methods, identifies the habitats that will receive the seeds to be dispersed and why the receiver sites were selected, and discusses the phenologically appropriate time for distribution of the seed.

2. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

P. Area of Archeological Significance

1. If an area of historic or prehistoric cultural resources or human remains are discovered during the course of repair work, all construction shall cease and shall not recommence except as provided in subsection (2) hereof, and a qualified cultural resource specialist shall analyze the significance of the find.
2. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit an archaeological plan for the review and approval of the Executive Director.
  - (a) If the Executive Director approves the Archaeological Plan and determines that the Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, construction may recommence after this determination is made by the Executive Director.
  - (b) If the Executive Director approves the Archaeological Plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.
3. Standards for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1 and for Development Authorized by Amendment No. 1-03-004-A2

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project and for development authorized by Amendment No. 1-03-004-A2 in accordance with the following standards:

- A. Temporary access roads and staging areas: As described in the Project Description dated June 21, 2007 (Exhibit No. 3 of the June 29, 2007 staff report for CDP Amendment No. 1-03-004-A1), road surfacing materials (including road stabilization fabric, redwood bark and/or road base) shall be placed directly on top of the existing ground and then removed immediately upon completion of construction activities in the area. The existing topsoil shall not be removed for any purpose.
- B. Temporary ditch crossings: The permittee shall use only the temporary bridge design for temporary ditch crossings, as depicted in Figure 8 of Exhibit No. 3 of the June 29, 2007 staff report for CDP Amendment No. 1-03-004-A1, except for the inboard ditch crossing located just south of the Humboldt Bay Municipal Water District Pipeline on Mad River Slough. At this crossing only, a temporary culvert and fill

**crossing consisting of plastic culverts and hay bales may be used in accordance with "Scenario 3" of the August 13, 2007 letter to Coastal Commission staff from Oscar Larson & Associates Project Manager Michael Hollrigel (Exhibit No. 5). The temporary culvert and fill crossing shall be completely removed within 10 days of completion of construction activities for each occurrence of levee repair in the vicinity of the crossing.** No culverts or fill shall be placed in **any other** ditches for temporary crossing purposes. Any temporary bridge crossing shall remain in place for no more than 30 days maximum.

- C. Upon completion of project activities in the area and prior to October 15, 2007~~8~~, all temporarily disturbed seasonal wetlands (including but not limited to temporary staging areas, access roads, and ditch crossings) shall be decompacted and reseeded, as needed, with a mix of regionally appropriate native grasses and/or noninvasive agricultural species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property.
- D. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.
- E. Within 18 months of completion of the 2007 Levee Repair Project **and development authorized by CDP Amendment No. 1-03-004-A2**, the permittee shall submit, for the review and written approval of the Executive Director, a vegetation monitoring report prepared by a qualified biologist or botanist which evaluates whether the objective of reestablishing vegetation in all of the seasonal wetland areas (diked former tidelands) impacted by project construction to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of any of the disturbed areas, including the temporary access roads and staging areas identified on Figure 4 of Exhibit No. 3 **of the June 29, 2007 staff report for CDP Amendment No. 1-03-004-A1 and in the site plan for CDP Amendment No. 1-03-004-A2 (Exhibit No. 3)**, has not been successful, in part or in whole, the permittee shall submit a revised revegetation program to achieve the objective. The revised revegetation program shall require an amendment to Coastal Development Permit No. 1-03-004.

- F. Heavy equipment shall not operate in the bay or wetted channel. All repair or restoration work shall be done from the top of the levee or from the landward side of the channel by loader, backhoe, or excavator;
- G. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering waters of Arcata Bay, Mad River Slough, or seasonal wetlands outside of levee repair areas and temporary staging areas and access roads;
- H. All construction debris shall be removed and disposed of in an upland location at an approved disposal facility within 10 days of project completion;
- I. All construction activities shall be conducted during the dry season period of April 15 through October 15;
- J. All construction activities shall be conducted during low tide or limited to the areas above mean high water;
- K. 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 restoration activities. Following construction, all trash and construction debris shall be removed from work areas and disposed of properly;
- L. Any debris discharged into coastal waters shall be recovered immediately and disposed of properly;
- M. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas;
- N. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or seasonal wetlands. 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;
- O. All temporary access roads and staging areas shall be limited to the locations and sizes specified in the permit amendment applications.
- P. Armoring Rock: All new revetment material to be used shall consist of either clean quarry rock or concrete rubble materials that are free of asphalt and waste materials. The revetment materials shall not be greater than three feet in any one direction or smaller than one cubic foot in size

except for Light Class RSP placed between the RSP fabric and the exposed armoring rock. All exposed reinforcement bar shall be removed prior to installation of any concrete rubble riprap. No rock shall be placed outside of the existing footprint of the levee system.

- Q. Fill Material: Only dry, clean fill may be used for levee repairs and must be free of debris (vegetation, asphalt etc.). No fill shall be placed outside of the existing footprint of the levee system.
- R. Placement of Materials: Materials placed on the levees to be repaired, including all riprap, shall not extend into the slough or Arcata Bay beyond the footprint of the levee as it existed before the repair. The determination of the location of the front of the levee shall be made through a 'string line' method, whereby the portions of the levee that are not in need of repair or restoration on each side of the areas that is in need of repair shall be used to determine the maximum extent of the repair. Revetment material shall not be end-dumped, but placed in an interlocking fashion along the levee face to avoid spreading beyond the former footprint of the levee and to provide a structurally integrated revetment.
4. Erosion Control Procedures for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1 and for development authorized by Amendment No. 1-03-004-A2

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project and development authorized by Amendment No. 1-03-004-A2 in compliance with the following erosion control procedures:

- A. The permittee shall use relevant best management practices (BMPs) as detailed in the "California Storm Water Best Management (Construction and Industrial/Commercial) Handbooks, developed by Camp, Dresser & McKee, *et al.* for the Storm Water Quality Task Force (see <http://www.cabmphandbooks.com>).
- B. All repair or restoration activities involving the levee shall include the placement of geotextile or similar erosion control material between the authorized fill and the levee and the placement of the riprap to reduce or minimize the amount of erosion that may otherwise occur.
- C. Effective erosion control measures shall be in place at all times during construction. Construction must not commence until all temporary erosion control devices (*e.g.*, silt fences, floating turbidity curtains, etc.) are in place downslope or downstream of the project site. A supply of erosion control materials shall be maintained on site to facilitate a quick response to unanticipated storm events or emergencies. If continued

erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided. Erosion control devices are temporary structures and shall be removed after completion of construction

- D. Erosion controls shall be used to protect and stabilize stockpiles and exposed soils to prevent movement of materials (*e.g.*, silt fences, berms of hay bales, plastic sheeting held down with rocks or sandbags over stockpiles, *etc.*).
  - E. If operations are not adequately containing sediment, the activity shall cease. Turbid water shall be contained and prevented from being carried away in the tides in amounts that are deleterious to marine resources or could violate state pollution laws.
  - F. Work sites shall be winterized at the end of each day when significant rains are forecast that may cause unfinished excavation to erode.
  - G. After project completion and before the close of the seasonal work window, all exposed soils present in and around the project site which may deliver sediment to a wetland, the bay, or the slough shall be stabilized with mulch, seeding, and/or placement of erosion control blankets. Erosion control seeding shall include only native, regionally appropriate species or noninvasive agricultural species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a “noxious weed” by the governments of the State of California or the United States shall be utilized within the property.
6. Implementation of Tidewater Goby Mitigation Measures for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1 and for development authorized by Amendment No. 1-03-004-A2:

The permittee shall undertake all development authorized by Amendment No. 1-03-004-A1 for the 2007 Levee Repair Project **and for development authorized by Amendment No. 1-03-004-A2** in accordance with the following protocols to ensure minimization of impacts to Tidewater goby and Tidewater goby proposed critical habitat:

- A. Effective and appropriate erosion control devices shall be used in accordance with all repair work at all times; any erosion control devices used are temporary and shall be removed upon completion of project activities;

- B. Any material that slips beyond the levee configuration into the mudflats outside the levee or the inboard borrow ditch and associated wetland channels shall be removed to staging areas and/or hauled off site;
- C. As specified in Special Condition No. 3-b above, the permittee shall use only the temporary bridge design for temporary ditch crossings, as depicted in Figure 8 of Exhibit No. 3 **of the June 29, 2007 staff report for CDP Amendment No. 1-03-004-A1, except for the inboard ditch crossing located just south of the Humboldt Bay Municipal Water District Pipeline on Mad River Slough. At this crossing only, a temporary culvert and fill crossing consisting of plastic culverts and hay bales may be used in accordance with "Scenario 3" of the August 13, 2007 letter from Oscar Larson & Associates Project Manager Michael Hollrigel (Exhibit No. 5). The temporary culvert and fill crossing shall be completely removed within 10 days of completion of construction activities for each occurrence of levee repair in the vicinity of the crossing.** No culverts or fill shall be placed in **any other** ditches for temporary crossing purposes. Any temporary bridge crossing shall remain in place for no more than 90 days maximum.
- D. Prior to construction of any temporary ditch crossing, Tidewater gobies shall be excluded from the areas of impact by using seine netting stretching from substrate to water surface and bank to bank. The netting must be a knotless mesh of no greater than 0.125-inch openings in the largest dimension. Netting shall be deployed in such a way that it excludes gobies from the construction area and keeps them from entering the construction zone until the structure is in place and all work within the wetted channels for the purpose of constructing the crossing has been completed. The results of fish exclusion efforts shall be reported to the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and any other relevant agencies.
9. **Assumption of Risk for the 2007 Levee Repair Project Authorized by Amendment No. 1-03-004-A1 and for development authorized by Amendment No. 1-03-004-A2**

By acceptance of this permit amendment for the 2007 Levee Repair Project **and for development authorized by Amendment No. 1-03-004-A2**, the applicant acknowledges and agrees (i) that the site may be subject to hazards from flooding; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including

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

**12. Rare Plant Mitigation Plan for Development Authorized by Amendment No. 1-03-004-A2**

**A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF THE INITIAL REPAIR WORK AUTHORIZED BY THIS PERMIT AS AMENDED ON THE JACKSON RANCH LEVEE OR ON THE ARCATA BAY LEVEE EAST OF REPAIR SITE #58, the permittee shall submit a plan for the review and approval of the Executive Director for the dispersal of seed from individual specimens of Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), and Western sand-spurrey (*Spergularia canadensis*) growing in the project area to adjacent salt marsh habitat.**

**1. The plan shall demonstrate that:**

- (a) No construction activities shall occur in the affected areas until after all Humboldt Bay owl's clover, Point Reyes bird's beak, and Western sand-spurrey plants have set seed, as determined by a qualified botanist;**
- (b) If any rare plants are located in areas of potential impact, a qualified botanist shall collect and conserve all seed of the affected individuals to be distributed as appropriate in a suitable habitat nearest to where the seed was collected that already contains Humboldt Bay owl's clover, Point Reyes bird's beak, and/or Western sand-spurrey; and**
- (c) Collected seed shall be distributed into the identified habitat areas at the phenologically appropriate time, as determined by the qualified botanist.**

**2. The plan shall include at a minimum the following components:**

- (a) Seasonally appropriate botanical surveys conducted by a qualified botanist for Humboldt Bay owl's clover, Point Reyes bird's beak, and Western sand-spurrey that indicates the number of rare plants located on the levee system in the areas of potential impact;**

- (b) A map that locates the affected areas of levee construction relative to the habitat area where seed will be distributed; and
- (c) A narrative that describes the seed collection and distribution program and methods, identifies the habitats that will receive the seeds to be dispersed and why the receiver sites were selected, and discusses the phenologically appropriate time for distribution of the seed.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

13. Recovery and Removal of Revetment Material Placed Under Emergency Authorization that Has Encroached Beyond the Historic Footprint of the Levees

The permittee shall recover and remove from coastal waters and wetlands any revetment material that was placed under the authorizations of Emergency Permit Nos. 1-06-044-G and 1-07-008-G that has encroached beyond the historic levee footprint. Any such material shall be removed from coastal waters and wetlands and either placed within the historic levee footprint or removed from the site entirely to an authorized disposal site.

#### IV. FINDINGS & DECLARATIONS

The Commission finds and declares the following:

##### A. Project & Site Description

##### 1. Background & Project Setting

Local winter storms from December 30, 2005 through January 3, 2006 led to overtopping, accumulation of debris, and the erosion of levees under the jurisdiction of Reclamation District 768. The 3.5-mile-long Arcata Bay levee is located south of State Highway 255 along the north side of Arcata Bay (Humboldt Bay), and the 1.4-mile-long Jackson Ranch levee is located north of State Highway 255 adjacent to the Mad River Slough (see Exhibit Nos. 1 and 2). The levees were originally constructed with Humboldt Bay mud and are 20 to 24 feet wide at the base and 10 to 12 feet wide at the top. Levee height ranges from approximately 7 to 10 feet above mean sea level.

Reclamation District 768 was established in 1904 and consists of approximately 1,500 acres of land. The District is responsible for the maintenance of the 4.9-mile levee system. Currently the property in the District is owned by 15 separate owners, including private citizens, the City of Arcata, Humboldt State University, the California Department of Fish and Game, and Arcata Lodge #106. The publicly owned property is used primarily as marshland and wildlife habitat. The privately owned lands and the Arcata Lodge property are used as cattle pasture lands.

A major breach of the levees would subject all of the property in the Reclamation District to flooding. State Highway 255 and residential property and public infrastructure in the southwest portion of the City of Arcata also are at risk of flooding in the event of a major breach. The Commission has, in the past six years, issued at least 10 permits and one permit amendment for repair and maintenance of the levee system (see Substantive File Documents, page 2), including nine emergency permits that were necessary to protect coastal agricultural lands and public road facilities from flood damage following significant storm events.

The agricultural fields of the Reclamation District represent diked former tidelands of Arcata Bay that were converted to pasture for agricultural purposes after the levee was built around 1880. The fields are considered to be seasonal wetlands. Other jurisdictional wetlands in the proposed project area include the inboard ditches, sloughs, and Arcata Bay and Mad River Slough, which are located outside of the levee system. The only uplands on the project site are the levees themselves.

## **2. Description of Originally Approved Project**

On March 17, 2005, the Coastal Commission approved, with conditions, the following project (CDP No. 1-03-004; Exhibit No. 8), which consisted of three separate, but related, components:

- Follow-up Permitting for Culvert Replacement Emergency Permit Nos. 1-03-070-G and 1-04-017-G: The first part of the project was a follow-up permit to two Emergency Permits granted by the North Coast District Office in 2003 and 2004 for the replacement of three failing corrugated metal culverts and floodgates located at the west end of the levee system along Humboldt Bay and south of State Highway 255. The failed culverts were replaced with the same type and size of culverts and floodgates, with clean armoring rock re-installed around the outboard side of the levee (adjacent to Arcata Bay), consistent with the conditions placed on the Emergency Permits specifying the type of materials to be used in the repair of this section of the levee.
- Follow-up Permitting for Major Levee Breach Repair Emergency Permit No. 1-04-060-G: On December 23, 2003, a combination of extraordinarily high tides and 45 mile-per-hour (mph) winds caused a 230-foot-long breach in a portion of the levee located north of Highway 255. This breach resulted in the

flooding of about 600 acres of pasture and a local county road and was temporarily contained by the installation of large “water bag” dikes. Emergency Permit No. 1-04-060-G was subsequently obtained from the North Coast District Office for repair of the breach along the original alignment with an earthen levee and outboard armoring as had existed prior to the incident, as well as the repair of 15 other, smaller eroded areas on the levee fronting Arcata Bay. This Emergency Permit was conditioned to require the use of clean fill for the levee and clean rock (*i.e.*, no debris, no re-bar) for the outboard armoring.

- Ten Year Programmatic Permit for Ongoing Repair & Maintenance Activities: The final part of the project involved a 10-year permit to undertake routine repair and maintenance of the levee system. In summary, the Reclamation District maintenance program includes vegetation control (mowing) along the top of the levees to allow access for maintenance equipment, replacement of riprap that has migrated or is needed to repair erosion, placement of clean fill to repair eroded areas, and flood gate and culvert replacement with the same size facilities. All of the work is to occur within the existing footprint of the levee and will not result in any encroachment into Arcata Bay or on the inboard (reclaimed land) side of the levee into the seasonal wetlands.

**3. Description of Amended Development Approved Under CDP Amendment No. 1-03-004-A1**

On July 13, 2007, the Coastal Commission approved, with conditions, an amendment to CDP No. 1-03-004, which authorized implementation of the “2007 Levee Repair Project.” CDP Amendment No. 1-03-004-A1 (Exhibit No. 9) authorized repair and/or protection of 7,877 linear feet (~1.5 miles) of the 4.9-mile long levee system including approximately 60 repair sites with damage extending from 10 to 1,520 feet in length. The amendment was necessary to authorize the installation of 8,000 lineal feet of temporary access roads and four large (25,000-square feet each) temporary staging areas within seasonal wetlands (diked former tidelands) to facilitate the implementation of the large-scale project (to stockpile and sort construction materials and to transport and store heavy equipment such as excavators, backhoes, tracked dumpers, dump trucks, bulldozers, *etc.*). The original permit did not authorize the installation of temporary access roads or staging areas anywhere in the project area during on-going, routine repair and maintenance activities. The temporary access roads and staging areas approved under CDP Amendment No. 1-03-004-A1 were limited to the locations and sizes specified in the permit amendment application.

**4. Description of Amended Development Proposed Under CDP Amendment No. 1-03-004-A2**

Under the current amendment request, the applicant proposes to further amend the amended development to include the following components: (1) permanently authorize

the repairs that were approved under Emergency Permit Nos. 1-06-044-G, 1-07-008-G, 1-07-037-G, and 1-07-048-G for repairs and maintenance to approximately 13,115 linear feet of levee along Arcata Bay and Mad River Slough; (2) repair work to Site #9, which includes installation of approximately 600 feet of rock slope protection according to the traditional levee repair methods described above (and see Exhibit No. 4 for details); (3) minor relocation of a temporary staging area and access route associated with repairs to the Jackson Ranch levee (see Exhibit No. 3); and (4) amend the crossing method at the ditch crossing located just south of the Humboldt Bay Municipal Water District (HBMWD) pipeline along the Mad River Slough from temporary bridge to a temporary culvert and fill crossing (see Exhibit No. 5).

The four separate emergency permits for which the applicant is seeking permanent authorization under this permit amendment approved the following work:

- **Emergency Permit No. 1-06-044-G:** This emergency permit was issued on October 25, 2006 and authorized repair work to 12 identified areas totaling approximately 11,435 lineal feet of the two levees. The work needed to be executed under an emergency authorization to avoid a catastrophic breach in the levees prior to the on-coming winter season. The levee system had been severely compromised during the severe “New Year’s Storm” of 2005/2006, which caused unexpected storm surges and high tidal inundation-related erosion, which in turn compromised the long-term structural integrity of the levees. See Exhibit No. 7 for full details.
- **Emergency Permit No. 1-07-008-G:** This emergency permit was issued on January 22, 2007 and authorized the continuation of repairs previously authorized under Emergency Permit No. 1-06-044-G (which expired on December 24, 2006, prior to completion of the authorized emergency repair work). See Exhibit No. 7 for full details.
- **Emergency Permit No. 1-07-037-G:** This emergency permit was issued on September 11, 2007 and authorized repairs to “Site #9” along the Mad River Slough levee. Authorized repairs to Site #9 included installation of a 300-foot-long metal sheet pile wall combined with approximately 600 feet of RSP revetment. The permit also authorized the use of the temporary culvert and fill crossing method to cross the inboard ditch just south of the Humboldt Bay Municipal Water District Pipeline to access the levee repair site. However, work authorized under this emergency permit was never executed, and the permit expired on December 15, 2007.
- **Emergency Permit No. 1-07-048-G:** This emergency permit was issued on January 22, 2007 and authorized repairs to approximately 780 lineal feet of severely damaged levee along Mad River Slough. The permit also authorized the use of the temporary culvert and fill crossing method to cross the inboard ditch just south of the HBMWD Pipeline to access the levee repair sites. As with

Emergency Permit No. 1-07-037-G, work authorized under this emergency permit was never executed, and the permit expired on February 11, 2008.

The recipient of an emergency permit must apply for a regular coastal development permit to have the development approved under the emergency permit become a permanent development. Although the applicant is seeking permanent authorization as part of this amendment request for the development approved under all four of the emergency permits described above, only the work approved under Emergency Permit Nos. 1-06-044-G and 1-07-008-G was implemented and needs permanent authorization. In other words, there is no need to apply for follow-up permanent authorization for the development approved under Emergency Permit Nos. 1-07-037-G and 1-07-048-G since that work was never executed and the associated emergency permits have expired. The permittee can perform the same scope of work approved under those emergency permits using authorizations granted under CDP No. 1-03-004, as amended through CDP Amendment No. 1-03-004-A2.

Similarly, the applicant is proposing that repair work at Site #9, which involves placement of approximately 600 feet of RSP revetment, be included as part of this amendment request. However, the proposed work at this site, which involves traditional levee repair methods using RSP revetment, is already authorized under CDP No. 1-03-004, which authorized ongoing repair and maintenance work of the same type and methodology proposed for Site #9 through 2015 for the entire levee system.

Therefore, the actual new development that is proposed under this amendment request that has not been previously authorized includes the following:

- Permanent authorization of repair work performed under Emergency Permit Nos. 1-06-044-G and 1-07-008-G (see Exhibit No. 7);
- An amendment to CDP Amendment No. 1-03-004-A1 for minor relocation of a temporary staging area and access route associated with repairs to the Jackson Ranch levee (see Exhibit No. 3); and
- Amendments to both CDP No. 1-03-004 and CDP Amendment No. 1-03-004-A1 to amend the crossing method at the ditch crossing located just south of the Humboldt Bay Municipal Water District pipeline along the Mad River Slough from temporary bridge to temporary culverts and fill (see Exhibit No. 5).

For the temporary culvert and fill crossing, the applicant proposes to bridge the inboard ditch with 48-inch diameter plastic culverts and stacks of hay bales between the culverts to sufficient height above the water level to provide access. The width of the culverts and stacked bales of hay could be adjusted to accommodate all types of hauling equipment.

For the proposed amended staging area and access road locations, the applicant proposes to maintain the same size staging area as approved under CDP Amendment No. 1-03-004-A1 (25,000 square feet). Although not specified, it is presumed that the applicant

proposes to install the access road and staging areas in the same manner as approved under CDP Amendment No. 1-03-004-A1, since the amendment application did not include a proposal to amend the authorized installation methods (see Exhibit No. 4). This installation method involves placing surfacing materials (fabric, bark and/or road base, etc.) for both temporary roads and staging areas directly on top of the existing ground (seasonal wetlands) and then removing the materials upon completion of construction activities in the area. Temporarily impacted wetlands would then be tilled (decompacted) and reseeded as necessary.

The Commission notes that the applicant has been issued several permits and associated authorizations for the project that contain terms and conditions for avoiding or minimizing impacts to coastal resources and the environment (see "other approvals" listed on Page 2).

**B. Permit Authority, Extraordinary Methods of Repair & Maintenance**

Coastal Act Section 30610(d) generally exempts from Coastal Act permitting requirements the repair or maintenance of structures that does not result in an addition to, or enlargement or expansion of the structure being repaired or maintained. However, the Commission retains authority to review certain extraordinary methods of repair and maintenance of existing structures that involve a risk of substantial adverse environmental impact as enumerated in Section 13252 of the Commission regulations. Section 30610 of the Coastal Act provides, in relevant part, the following:

*Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: . . .*

*(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter. [Emphasis added]*

Section 13252 of the Commission administrative regulations (14 CCR 13000 *et seq.*) provides, in relevant part, the following:

*(a) For purposes of Public Resources Code section 30610(d), the following extraordinary methods of repair and maintenance shall require a coastal development permit because they involve a risk of substantial adverse environmental impact:...*

*(3) Any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of*

coastal waters or streams that include:

- (A) *The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials;*
- (B) *The presence, whether temporary or permanent, of mechanized equipment or construction materials.*

*All repair and maintenance activities governed by the above provisions shall be subject to the permit regulations promulgated pursuant to the Coastal Act, including but not limited to the regulations governing administrative and emergency permits. The provisions of this section shall not be applicable to methods of repair and maintenance undertaken by the ports listed in Public Resources Code section 30700 unless so provided elsewhere in these regulations. The provisions of this section shall not be applicable to those activities specifically described in the document entitled Repair, Maintenance and Utility Hookups, adopted by the Commission on September 5, 1978 unless a proposed activity will have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean... [Emphasis added.]*

The proposed amended development is a repair and maintenance project because it does not involve an addition to or enlargement of the levee. Although certain types of repair projects are exempt from CDP requirements, Section 13252 of the regulations requires a coastal development permit for extraordinary methods of repair and maintenance enumerated in the regulation. The proposed amended development involves the placement of construction materials and removal and placement of solid materials within 20 feet of coastal waters. In some locations the proposed work will occur either directly within or adjacent to an environmentally sensitive habitat area. Therefore, the proposed project requires a coastal development permit under Sections 13252(a)(1) of the Commission regulations.

In considering a permit application for a repair or maintenance project pursuant to the above-cited authority, the Commission reviews whether the proposed *method* of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the underlying existing development.

The repair and maintenance of levees can have adverse impacts on coastal resources, in the case of this amendment primarily seasonal wetlands and an inboard ditch, if not properly undertaken with appropriate mitigation. The applicant proposes to minimize impacts to seasonal wetlands due to temporary access road and staging area installation by placing road surfacing materials (fabric, bark and/or road base, etc.) directly on top of the existing ground (seasonal wetlands) and then removing the materials upon completion of construction activities in the area. Temporarily impacted wetlands would then be tilled

(decompacted) and reseeded as necessary. This method is the least environmentally damaging feasible alternative because it does not unnecessarily disturb wetland soils and vegetation through excavation, stockpiling, and replacement of topsoil. Instead, impacts to the soil and vegetation are minimized, and the areas would be fully restored to pre-project conditions following the temporary impacts. The applicant's proposal for the revised crossing of the ditch along the Jackson Ranch Road levee has also been proposed and conditioned in a manner to minimize adverse effects. The applicant proposes to install silt curtains prior to construction and maintain a qualified biologist on site to monitor crossing installation. Prior to crossing installation, the applicant proposes, and special conditions require, that any tidewater gobies in the area will be seined and removed from the impact area. Although various measures proposed by the applicant to minimize adverse impacts to coastal resources are appropriate, additional measures are also needed to further avoid, as necessary, or minimize impacts to water quality, wetlands, and ESHAs. The conditions required to meet this standard are discussed in the Findings in the following sections. Therefore, as conditioned in these Findings, the Commission finds that the proposed permit amendment is consistent with the Chapter 3 policies of the Coastal Act.

### C. Public Access

This proposed amended development is located between the first public road and the sea (see Exhibit No. 2). Section 30604(c) of the Coastal Act requires that every coastal development permit issued for development between the first public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of Chapter 3 (commencing with Section 30200)."

#### Coastal Act Policies:

Section 30210 of the Coastal Act states the following:

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

Section 30211 of the Coastal Act states the following:

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

Section 30212 of the Coastal Act states the following:

(a) *Public access from the nearest public roadway to the shoreline and along*

*the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or (3) agriculture would be adversely affected. Dedicated access way shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the access way.*

- (b) *For purposes of this section, "new development" does not include:*
- (1) *Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.*
  - (2) *The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.*
  - (3) *Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.*
  - (4) *The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not seaward of the location of the former structure.*
  - (5) *Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.*

*As used in this subdivision, "bulk" means total interior cubic volume as measured from the exterior surface of the structure.*

- (c) *Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution. [Emphasis added.]*

The access policies cited above are those relevant to the proposed amended development and direct the Commission to generally require maximum public access in new development unless the access would be inconsistent with public safety, resource protection, private property rights, or military security needs (§30210 and §30212) or would be otherwise exempt from providing access by statute [§30212(b)(5)]. Coastal Act Section 30211 requires that new development shall not interfere with existing public

access that has been acquired either by use or through legislative authorization.

Consistency Analysis:

As stated above, the proposed amended development is for repair and maintenance of a pre-Coastal Act levee system. Ordinarily, routine repair and maintenance is an exempt activity under Coastal Act Section 30610(d), and thus no coastal development permit would be required. Certain repair and maintenance activities are, however, excepted from this general exemption by regulation, as authorized by Section 30610(d), because they may “*involve the risk of substantial adverse environmental impact.*” The Commission’s regulations identify repair and maintenance activities performed near the shoreline and/or within an ESHA and/or adjacent to an ESHA (as proposed by this permit amendment application) as needing to obtain coastal development permits and are not exempt under Section 30610(d) [CCR, Title 14, Sec. 13252(a)(3)]. However, because repair and maintenance is not considered new development for purposes of Section 30212, Coastal Act Section 30212(b)(5) excludes these repair and maintenance activities from Coastal Act access requirements unless the Commission “*determines that the activity will have an adverse impact on lateral beach access.*”

The proposed amended development would have no impact on lateral beach access because the proposed work would be accomplished within the existing footprint of the levees, staging areas are located outside of any access or access points, and because there is no beach adjacent to the levees. The project is, therefore, consistent with the requirements of Sections 30210 and 30212.

Coastal Act Section 30211 also requires new development not to interfere with existing access. While exempt from this policy as discussed above, the Commission notes that the levee system has not been used by the public to gain access to the shores of Humboldt Bay and Mad River Slough during its long existence, except by permission of the owners.

In conclusion, the proposed amended development is not considered new development for the purposes of application of the public access policies of the Coastal Act because it is a repair and maintenance activity that would not adversely affect lateral beach access and is therefore consistent with the policy direction found in Section 30212.

**D. Protection of Water Quality & Wetlands**

The Coastal Act contains policies requiring the protection of coastal waters and wetlands to ensure biological productivity and to protect public health and water quality. New development must not adversely affect these values and should help to restore them when possible.

Coastal Act Policies:

Section 30231 of the Coastal Act states the following:

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

Coastal Act Section 30233 states the following:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

- (1) *New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
  - (2) *Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
  - (3) *In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
  - (4) *Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
  - (5) *Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
  - (6) *Restoration purposes.*
  - (7) *Nature study, aquaculture, or similar resource dependent activities.*
- (b) *Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.*

*(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...*

*(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.*

The proposed amended development is located on levees located immediately adjacent to Arcata Bay and Mad River Slough on the outboard side and seasonal wetlands on the inboard side. The project work involves soil disturbance, which could increase sedimentation in the bay, slough, and wetlands. Coastal Act Section 30231 protects the quality of coastal waters, streams, and wetlands through, among other means, controlling runoff. Grading and soil disturbance can result in the discharge of sediment into site runoff, which, upon entering coastal waters, increases turbidity and adversely affects fish and other sensitive aquatic species. Sediment is considered a pollutant that affects visibility through the water, and affects plant productivity, animal behavior (such as foraging) and reproduction, and the ability of animals to obtain adequate oxygen from the water. In addition, sediment is the medium by which many other pollutants are delivered to aquatic environments, as many pollutants are chemically or physically associated with the sediment particles. Therefore, the proposed development has the potential to adversely impact the water quality and biological productivity of coastal waters and wetlands.

Consistency Analysis:

**1. Permanent authorization of repair work performed under Emergency Permit Nos. 1-06-044-G and 1-07-008-G**

Under Emergency Permit Nos. 1-06-044-G and 1-07-008-G, the applicant completed repair work on approximately 11,546 lineal feet of the levees along both Arcata Bay and Mad River Slough. The work involved clearing, grubbing, and removal of 1,657 tons of debris, removal of 6,379 tons of unsuitable material, and placement of 12,757 tons of imported backfill, 181,576 square feet of RSP fabric, and 21,027 tons of rock slope protection (RSP). The applicant is requesting permanent authorization of this repair work as part of the current amendment request.

The permanent authorization of the emergency repair work described above could adversely affect water quality and wetland habitats if, for example, the placement of

revetment material during emergency repairs was not structurally sound and RSP were to slough off into the slough or bay, thereby impacting tidal mudflat habitat. Such a scenario would constitute “fill” in coastal waters or wetlands that is not for one of the allowable uses enumerated in Coastal Act Section 30233. Therefore, to ensure that any revetment material that was placed under the emergency authorizations does not encroach beyond the historic levee footprint, the Commission attaches added Special Condition No. 13. This condition requires that any revetment material that was placed under the two emergency authorizations that encroaches into coastal waters or wetlands be recovered and either replaced on the levee or removed entirely from the project area.

**2. Minor relocation of a temporary staging area and access route associated with repairs to the Jackson Ranch levee**

The applicant proposes to amend the location of one of the staging areas and a portion of an access road previously approved under CDP Amendment No. 1-03-004-A1 for the “2007 Levee Repair Project.” For the proposed amended staging area and access road locations, the applicant proposes to maintain the same size staging area as approved under CDP Amendment No. 1-03-004-A1 (25,000 square feet). Although not specified, it is presumed that the applicant proposes to install the access road and staging areas in the same manner as approved under CDP Amendment No. 1-03-004-A1, since the amendment application did not include a proposal to amend the authorized installation methods (see Exhibit No. 4), which include placing road surfacing materials (fabric, bark and/or road base, etc.) directly on top of the existing ground (seasonal wetlands) and then removing the materials upon completion of construction activities in the area. Temporarily impacted wetlands would then be tilled (decompacted) and reseeded as necessary. This method is the least environmentally damaging feasible alternative because it does not unnecessarily disturb wetland soils and vegetation through excavation, stockpiling, and replacement of topsoil. Instead, impacts to the soil and vegetation are minimized, and the areas would be fully restored to pre-project conditions following the temporary impacts.

Therefore, the Commission modifies and reimposes Special Condition No. 3-A to ensure that the permittee undertakes development in accordance with the least environmentally damaging methods described above. Special Condition Nos. 3-C, 3-D, and 3-E also require post-construction restoration and monitoring to ensure that the seasonal wetlands temporarily impacted by project activities will be fully restored to pre-project conditions, or remedial actions will be required.

**3. Amending the crossing method at the ditch crossing located just south of the Humboldt Bay Municipal Water District pipeline along the Mad River Slough from temporary bridge to temporary culverts and fill**

The applicant is proposing to amend both the original permit and the first permit amendment to use temporary culverts and fill rather than the authorized temporary bridge to cross the inboard ditch located just south of the Humboldt Bay Municipal Water District (HBMWD) pipeline that crosses Mad River Slough. Repair sites along the

Jackson Ranch levee are inaccessible from the north due to the pipeline itself and from the south due to a PG&E power pole. Special Condition No. 2-I of the original permit and Special Condition No. 3-B of the first permit amendment restrict the placement of fill in wetlands or coastal waters and required the use of the temporary bridge methodology for all crossings. Thus, repair sites authorized under both the original permit for routine repair and maintenance and the first permit amendment for the “2007 Levee Repair Project” are inaccessible under the existing permit conditions.

The applicant completed an alternatives analysis for three different crossing methods (Exhibit No. 5) and determined “Scenario 3” to be the least environmentally damaging feasible alternative. This crossing method involves bridging the ditch with 48-inch diameter plastic culverts and stacking bales of hay between the culverts to sufficient height above the water level to provide access. The width of the culverts and stocked bales of hay could be adjusted to accommodate all types of hauling equipment.

In its amendment application for CDP Amendment No. 1-03-004-A1, the applicant had proposed using either the temporary bridge or the temporary culvert and fill crossing method and did not state that one method or the other would be necessary depending on a particular crossing location. In its findings for approval of both the original permit and the first permit amendment, the Commission found the temporary bridge crossing method to be the least environmentally damaging feasible alternative to avoid impacts to coastal wetlands, waters, and sensitive species (including the Tidewater goby).

The applicant’s engineers have since determined that using a temporary bridge to cross the inboard ditch located just south of the HBMWD pipeline is not feasible due to the load bearing capacity of the soils that would have to support the ends of the temporary bridge. Extensive excavation of the levee would be necessary to accommodate the bridge spread footings leaving the surrounding agricultural lands susceptible to flooding during high tide events. Additionally, the stability of soils on either side of the bridge may be questionable during construction resulting in the likelihood of bank failure into the inboard ditch. Furthermore, the spread footings would be large using this method at this location and potentially difficult to remove upon project completion due to the embedment and restraining properties of silty clay soils.

Thus, the applicant proposes using the least environmentally damaging feasible alternative crossing method at inboard ditch located just south of the HBMWD pipeline, which is the use of temporary culverts and fill as described above. The primary impacts associated with using temporary culverts and fill rather than a temporary bridge for this crossing involve (1) the direct placement of fill in coastal wetland (ditch) habitat; and (2) potential impacts of fill placement on sensitive species that may occur in the ditch habitat, such as the Federally-listed endangered Tidewater goby (*Eucyclogobius newberryi*) and its proposed critical habitat. The U.S. Fish and Wildlife Service issued a Biological Opinion (B.O.) and Incidental Take Statement (I.T.S.) for the “2007 Levee Repair Project” (see “other approvals”, Page 2). The B.O. and I.T.S. were based on the understanding that the project would include the use of temporary culverts and fill within Tidewater goby habitat as an inboard ditch crossing method. The Service found that

project is not likely to jeopardize the continued existence of the Tidewater goby given that the permits issued for the project (including the U.S. Army Corps of Engineers and Humboldt Bay Harbor, Recreation, and Conservation District permits) include several terms and conditions to minimize project effects on the species. These include using erosion control devices such as silt fences, floating turbidity curtains, *etc.* for all repair activities, and surveying for and excluding any Tidewater gobies found prior to installation of any temporary ditch crossing. In addition to the terms and conditions attached to other agency approvals the applicant has received for the project (see Page 2), the applicant's project description (Exhibit Nos. 4 and 5) specifies containing the temporary crossing with silt curtains on either side of the culverts and having a qualified biologist on site during construction activities to perform seining and removal of sensitive species prior to crossing installation.

Therefore, the Commission finds that modifying and reimposing Special Condition Nos. 2-I and 3-B to allow for the applicant to use a temporary culvert and fill crossing as proposed for ongoing repair and maintenance and for the "2007 Levee Repair Project" respectively at the inboard ditch crossing located just south of the HBMWD pipeline only. All other ditch crossings must be accomplished using the temporary bridge method. The amended conditions require that the temporary culvert and fill crossing be installed as proposed by the applicant in Exhibit No. 5, including the use of silt curtains and a qualified biologist to seine any gobies that may be present prior to crossing installation. Furthermore, the amended conditions require that the crossing must be completely removed within 10 days of completion of construction activities.

#### **4. Conclusion**

Therefore, the Commission finds that as conditioned to (1) require that any revetment material that was placed under emergency authorization that encroaches into coastal waters or wetlands be recovered and either replaced on the levee or removed entirely from the project area; (2) use the least environmentally damaging feasible alternative for amended access road and staging area installation and to require post-construction restoration and monitoring of the areas to ensure that the temporarily impacted seasonal wetlands will be fully restored to pre-project conditions; and (3) to limit the use of temporary culverts and fill to a single crossing only located just south of the HBMWD pipeline, and to install and remove the crossing in the least environmentally damaging feasible manner, the proposed amended development is consistent with Coastal Act Sections 30231 and 30233.

#### **E. Marine Resources and ESHA**

The outboard side of the levee system is adjacent to Arcata Bay and Mad River Slough, and the proposed amended development has the potential to adversely affect marine resources and marine environmentally sensitive habitat areas (ESHA). The following section of the Coastal Act requires that new development maintain, enhance, and, where feasible, restore damaged marine resources and protect environmentally sensitive habitat areas.

Coastal Act Policies:

Section 30230 of the Coastal Act states the following:

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

Section 30107.5 of the Coastal Act defines ESHA as follows:

*“Environmentally sensitive area” means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Section 30240 of the Coastal Act states the following:

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

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

Consistency Analysis:

The waters of Arcata Bay and Mad River Slough provide habitat for a number of marine species. The U.S. Fish and Wildlife Service’s (USFWS) Formal Consultation for the project (Exhibit No. 6), which includes the amended development proposed under this CDP amendment, notes that the proposed project is likely to adversely affect the Federally-listed endangered Tidewater goby (*Eucyclogobius newberryi*) and its proposed critical habitat. Tidewater goby is a small, short-lived fish that occurs in coastal brackish water habitats such as lagoons, tidal bays, and estuaries of rivers and streams along the coast. According to the USFWS report, threats to the species include upstream water diversion, dredging, pollution, siltation, urban development on adjacent lands, and competition/predation from introduced species.

The USFWS issued an Incidental Take Statement (I.T.S.) for the “2007 Levee Repair Project” anticipating that the project would cause “harassment” (disturbance) of an estimated 200 breeding adults and “harm” (injury or death) to no more than 70

individuals. The USFWS's opinion and I.T.S. were based on the understanding that the project would include the use of temporary culverts and fill within Tidewater goby habitat as an inboard ditch crossing method. The USFWS report concludes that project would not likely jeopardize the continued existence of the Tidewater goby given that the permits issued for the project (see page 2) include several terms and conditions to minimize project effects on the species. These include using erosion control devices such as silt fences, floating turbidity curtains, *etc.* for all repair activities, and surveying for and excluding any Tidewater gobies found prior to installation of any temporary ditch crossing. In addition to the terms and conditions attached to other agency approvals the applicant has received for the project (see page 2), the applicant's project description (Exhibit Nos. 4 and 5) specifies containing the temporary crossing with silt curtains on either side of the culverts and having a qualified biologist on site during construction activities to perform seining and removal of sensitive species prior to crossing installation.

As discussed above under Section IV-D, the applicant proposes using the least environmentally damaging feasible alternative crossing method at inboard ditch located just south of the HBMWD pipeline, which is the use of temporary culverts and fill as described above. The primary impacts associated with using temporary culverts and fill rather than a temporary bridge for this crossing include potential adverse impacts of fill placement on Tidewater goby and its proposed critical habitat. Therefore, the Commission modified and reimposes Special Condition No. 6. The amended condition requires that the temporary culvert and fill crossing be installed as proposed by the applicant in Exhibit No. 5, including the use of silt curtains and a qualified biologist to seine any gobies that may be present prior to crossing installation. Furthermore, the amended conditions require that the crossing must be completely removed within 10 days of completion of construction activities.

Because the applicants propose to use temporary culverts and fill to cross the inboard ditch just south of the HBMWD pipeline each time ongoing repair and maintenance work of the Jackson Ranch levee is necessary, the Commission modified and reimposes Special Condition No. 2 to require the Tidewater goby mitigation measures described above. Special Condition No. 2-N requires surveying for and excluding any gobies found at ditch crossings prior to crossing installation.

In addition to Tidewater goby, at least three other ESHAs – habitat for Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes' bird's-beak (*Cordylanthus maritimus* ssp. *palustris*), and Western sand-spurrey (*Spergularia canadensis*) – also have the potential to be affected by proposed project activities. Because all of these species are rare, their habitat meets the definition of environmentally sensitive habitat (ESHA) found in Coastal Act Section 30107.5. Therefore, development adjacent to these habitats must also comply with Section 30240(b) of the Coastal Act.

The applicant proposes to permanently authorize the emergency repair work that was conducted under Emergency Permit Nos. 1-06-044-G and 1-07-008-G to over 11,500 lineal feet of the levee system. Some of these repairs took place in the vicinity of salt

marsh habitat where potentially the three rare plant species listed above occur. Both Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual, hemiparasitic species in the Broom-rape family (Orobanchaceae) that grow in coastal salt marsh habitats primarily along the North Coast of California. In addition to photosynthesizing, these hemiparasites supplement their nutrient intake by parasitizing the live roots of adjacent salt marsh species. Humboldt Bay owl's-clover plants typically germinate in late winter to spring and bloom sometime between April and August (often peaking in June). Point Reyes bird's-beak plants are slightly later: on average, germination is in spring and flowering is approximately in July (CNPS 2007). Western sand-spurrey is an annual species in the Pink family (Caryophyllaceae) known only from scattered occurrences around Humboldt Bay.

Surveys conducted by the applicant's biologist in 2006 and 2007 discovered approximately 450 and 275 (respectively) Humboldt Bay owl's-clover plants on the levee system within areas that potentially would be impacted by project activities. These plants are estimated to represent less than 1 percent of the total population of the species in the surrounding suitable salt marsh habitat. For the Point Reyes bird's-beak, 2006 surveys found a total of five plants and 2007 surveys found a total of 314 plants in potential impact areas. Again, this represents less than 1 percent of the population of the species in the surrounding salt marsh habitat. A total of 37 Western sand-spurrey individuals were located on an eroded bank of the levee near Site #9 in 2007, which, as with the others, represents less than 1 percent of the population of the species in the surrounding salt marsh habitat. Population numbers of all three species normally fluctuate from year to year, since, as annuals, germination rates are dependent on a number of environmental factors. In general, the three species are threatened by development, nonnative plants, and other causes (CNPS 2007).

The Commission found, in its approval of CDP Amendment No. 1-03-004-A1, that the rare plant ESHA would not be significantly disrupted by the "2007 Levee Repair Project" with the incorporation of appropriate mitigation measures, including (1) conducting seasonally appropriate pre-construction surveys of the Jackson Ranch levee and the Arcata levee east of site #58 for both species; (2) delaying construction activities on the Jackson Ranch levee and the Arcata levee east of site #58 until after the owl's-clover and bird's-beak plants have died back/set seed (in July or early August); (3) collection and conservation of seed from any individuals observed growing in an area of potential impact; (4) transplantation/distribution of seed in suitable habitat nearby; and (5) pre- and post-construction monitoring of rare plants located immediately adjacent to the construction site to document any impacts that might occur as a result of project activities. As the applicant has not yet implemented the "2007 Levee Repair Project," and to ensure that all feasible mitigation measures designed to minimize impacts to the rare plant ESHAs in the project area are followed, the Commission adds Special Condition No. 12, which requires submittal of a final mitigation plan for the review and approval of the Executive Director that provides for implementation of the mitigation measures listed above. The Commission finds that this condition should also apply to work conducted under ongoing repair and maintenance. Therefore, the Commission modifies and reimposes Special Condition No. 2 (see 2-O), which also requires the

mitigation measures stated above for work near rare plant ESHA (on the Jackson Ranch levee and Arcata Bay levee east of repair site #58).

#### **4. Conclusion**

As conditioned, the Commission finds that the proposed permit amendment to allow for proposed development is consistent with Coastal Act Sections 30230 and 30240 in that it incorporates the least environmentally damaging methods feasible as well as all feasible mitigation measures to avoid significant disruption of ESHA and to maintain marine resources.

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

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

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full, including all associated environmental review documentation and related technical evaluations incorporated-by-reference into this staff report. Those findings address and respond to all public comments regarding potential significant adverse environmental effects of the amended development that were received prior to preparation of the staff report. As discussed above, the amended development has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse impacts that the activity may have on the environment. Therefore, the Commission finds that the amended development, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

#### **V. EXHIBITS**

- 1) Regional Location Map
- 2) Vicinity Maps
- 3) Site Plan for Amended Development
- 4) Project Description & Plans
- 5) Alternatives for Temporary Ditch Crossing
- 6) U.S. Fish & Wildlife Service Formal Consultation
- 7) Emergency Permit Nos. 1-06-044-G & 1-07-008-G and Post-Construction Final Report for the Two Emergency Permits

- 8) Adopted Findings for CDP No. 1-03-004
- 9) Staff Report for CDP Amendment No. 1-03-004-A1