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

F12b

MEMORANDUM

Date: June 14, 2007

To: Commissioners and Interested Parties

From: Peter M. Douglas, Executive Director
Robert S. Merrill, District Manager – North Coast District
Jim Baskin, Coastal Program Analyst – North Coast District

Subject: **Addendum to Commission Meeting for Friday, June 15, 2007**
North Coast District Item F12b, CDP Application No. 1-06-036
(City of Arcata Department of Environmental Services – *McDaniel Slough Wetland Enhancement Project*)

STAFF NOTE

The staff is proposing to make certain changes to the staff recommendation on Coastal Development Permit Amendment Application No. 1-06-036 revising a special condition requiring the applicant to complete all trail improvements before the opening of the facility. Staff is revising Special Condition No 13 and related findings as written in the staff report and modifying the condition and findings to more precisely state when the coastal access improvements are to be completed.

Staff continues to recommend that the Commission approve the amended project with the special conditions included in the staff recommendations of May 31, 2007 as modified by the revisions described below.

I. REVISIONS TO STAFF RECOMMENDATION

The revisions to the staff report dated May 31, 2007, including the modification of special condition language and related findings regarding the completion of coastal access trail and support facilities for the *McDaniel Slough Wetland Enhancement Project* are discussed below.

Text to be deleted is shown in ~~strikethrough~~, text to be added appears in **bold double-underline**.

- *Revise Special Condition No. 13 to read as follows:*

  13. Trail Linkage to Samoa Boulevard

  PRIOR TO ~~COMMENCEMENT OF ANY USE OF~~ BREACHING THE BAYFRONT RECLAMATION LEVEE TO INUNDATE PORTIONS OF THE PROJECT SITE ~~AS A FISH AND WILDLIFE~~ FOR SALTMARSH RESTORATION ~~AND ENAHANCEMENT FACILITY~~ PURPOSES, the permittee shall construct the public access and nature trail improvements proposed within the permit application and as supplemented by the amendment to Coastal Development Permit Application No. 1-06-036, dated May 30, 2007.

- *Revise the first paragraph on page 51 of Findings Section IV.H.2 Public Access and Coastal Recreational Opportunities to read as follows:*

  To assure that the proposed access improvements are incorporated into the restoration/enhancement project, the Commission attaches Special Condition No. 13. Special Condition No. 13 requires the permittee to construct the proposed trail and support amenities identified in the project application materials prior to ~~commencement of the use of~~ **breaching the bayfront reclamation levee and allowing intertidal waters to inundate portions of** the project site ~~as a public fish and wildlife habitat~~ **for saltmarsh** restoration ~~/enhancement facility~~ **purposes**.

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Filed:	January 5, 2007
49th Day:	February 23, 2007
180th Day:	July 4, 2007
Staff:	Jim Baskin
Staff Report:	May 31, 2007
Hearing Date:	June 15, 2007
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-06-036**

APPLICANT: **City of Arcata – Environmental Services Department**

PROJECT LOCATION: Within the open seasonal wetland pasture areas adjacent to Arcata Bay south of Samoa Boulevard, west of South I Street, and south and east of the intersection of V Street and Old Samoa Road, Arcata, Humboldt County. (APNs 21-191-05, 503-251-02, -03, -10, 505-251-10, 506-011-02, and -08)

PROJECT DESCRIPTION: Restore and enhance wetland function to 240 acres of reclaimed former tidal salt/brackish marsh to a combination of 205 acres of intertidal saltmarsh wetlands and 35 acres of impounded freshwater and brackish wetlands by: 1) excavating the pond areas; 2) deepening approximately 5,200 lineal feet of existing slough channels within the reclaimed area; 3) constructing approximately 21,000 lineal feet of flood, eco-levee, and pond perimeter levees around the periphery of the project component areas; 4) removing a total of approximately 1,200 lineal feet of portions of portions of the existing flood control levees along the lower reaches of McDaniel Slough to form roosting islands out of the remnant portions of the levees; 5) breaching the reclamation levee separating the project site from Arcata Bay at two

	locations to form muted tidal openings to provide access for anadromous salmonids, tidewater goby, and other marine fish species; 6) planting appropriate elevation-specific native saltmarsh plants on the inner faces of the eco levees; and 7) developing pedestrian and bicycle trail segments along the pond perimeters and out to the reclamation levee breach site.
GENERAL PLAN DESIGNATION:	Agricultural Exclusive (AE).
ZONING DESIGNATION:	Coastal Agricultural Exclusive (C-AE) – City of Arcata portion; Coastal Agricultural Exclusive – Sixty Acre Minimum Parcel Size with Flood Hazard and Transitional Agriculture Combining Zones (AE60/F,T) and Natural Resources with Coastal Wetlands Combining Zone (NR/W) – County of Humboldt portion.
OTHER APPROVALS REQUIRED:	California Department of Fish and Game CFGC Sec. 1603 Streambed Alteration Agreement and U.S. Army Corps of Engineers CWA Section 404 Permit No. 27434N (pending)
SUBSTANTIVE FILE DOCUMENTS:	*McDaniel Slough Wetlands Enhancement Project Final Environmental Impact Report*, SCH No. 2003022091; City of Arcata LCP; and County of Humboldt LCP

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed riparian wetland enhancement project.

The project would restore the diversity of terrestrial and aquatic habitats within the diked seasonal wetlands along the lower reaches of the watercourse known as lower McDaniel Slough, located at the north end of Arcata Bay, within both the municipal boundary of the City of Arcata and in adjoining portions of unincorporated Humboldt County. The proposed project involves phased saltmarsh/brackish/freshwater wetland restoration and enhancement activities for purposes of establishing intertidal and impounded fresh and

brackish water habitat for numerous fish and wildlife species including juvenile and adult coho salmon, steelhead and coastal cutthroat trout, tidewater goby, numerous estuarine nursery stocks, and a wide variety of resident and migratory shorebirds, raptors, and passerine bird species. The proposed project includes construction of levees around the perimeter of the property and breaching segments of the reclamation levee separating the lower McDaniel Slough floodplain from Humboldt Bay, allowing tidal waters to flow into a 205-acre area behind the levee. A series of three fresh and brackish water ponds would also be constructed within a 35-acre area on the eastern periphery of the restored saltmarsh area. These ponds are intended to increase the habitat diversity of the site, provide a transitional "ecotone" between the restored saltmarsh areas and more terrestrial areas further inland, function as a settling and bio-filtration catchment for stormwater runoff prior to its entry into coastal waters, and provide an opportunity for the reuse of treated wastewater.

In addition, 30,000 to 40,000 cubic yards of the materials graded from creation of the fresh- and brackish-water ponds would be applied over the lowermost 23 acres of the opened intertidal areas to raise the marsh plain by one-foot, to an elevation suitable to support the development of highly-desirable pickleweed (*Salicornia virginica*) marsh habitat. Approximately 2,100 lineal feet of existing tidal slough channels within the reclaimed project area would also be deepened to facilitate tidal exchange with the bay, and a total of approximately 1,200 lineal feet of portions of the existing flood control levee along the lower reaches of McDaniel Slough would be removed, leaving remaining disconnected segments of the levee to function as roosting islands. Other filled uplands, comprising former farm roadbeds, barn building site cattle corral and paddock areas, and portions of graveled parking areas would be removed to restore additional wetland areas.

Following completion of the earth-work, restorative planting with native saltmarsh species would be undertaken in the inboard slopes of the new eco-levees, with the upland areas capable of supporting riparian forest and perennial grassland seeded with a native grass seed mixture and planted with a variety of native trees and shrubs appropriate for the area. Finally, a public trail would be constructed along the berm of the brackish pond, transiting through the western side of the adjacent Arcata Marsh and Wildlife Sanctuary, and extending along the bayfront reclamation levee to terminate at the vista point bird blind constructed at the eastern breach site. The project also includes development of a trail linkage between the project site and Samoa Boulevard / State Route 255 running along the boundary of an adjacent property currently in the process of being acquired by the City. The proposed trail linkage would be served by a small parking lot to be constructed near the highway frontage.

The project includes wetland fill in the form of the installation of the construction of the approximately 21,000 lineal feet of flood control revetment, the so-called "eco-levee", and berming to form the ponds' perimeters. A total of 80,000 cubic yards of fill materials would be placed over a roughly 6.5-acre area in installing the containment levees and other fill-based improvements. Conversely, fill placed in the past to channelize

McDaniel Slough through adjoining pasturelands, concrete revetment rubble, culverts, and agricultural accessory structures and upland paddock areas would be removed over a 6.64-acre area, resulting in a net ⅛-acre of wetlands being recreated by the project.

Most of the dredging and filling of wetlands is being performed for "restoration purposes" with the stated intention of reinstituting and enhancing wetland habitat values at the site and is therefore an allowable use consistent with Coastal Act Section 30233(a)(7). In addition, through the integration of a freshwater pond component to foster the site's overall biological diversity and the inclusion of public interpretative trails along the filled pond berms and a portion of the breached reclamation levee adjoining Arcata Marsh and Wildlife Sanctuary, the remaining component of dredging and filling of wetlands is for "nature study…or similar resource dependent activities," and is therefore an allowable use consistent with Section 30233(a)(8).

However, to assure that the proposed project does not result in unintended significant adverse impacts to coastal resources and actually enhances wetland habitat values consistent with the water quality and habitat resource protection provisions of Sections 30230, 30231, and 30233, staff recommends that the Commission attach Special Condition Nos. 1-9.

To ensure that the goals and objectives of the fish and wildlife habitat enhancement project are met, Special Condition No. 1 requires the applicant to submit a final monitoring plan for the review and approval of the Executive Director detailing specific performance criteria to be measured over a five-year period following completion of the installation of the project improvements and identifying corrective action, as necessary, to remediate any unforeseen environmental impacts the project might cause.

Special Condition No. 2 sets construction, debris disposal, and excavated materials disposition performance standards for the development.

Special Condition No. 3 requires the applicant to submit prior to issuance of the coastal development permit and for the review and approval of the Executive Director an erosion and stormwater runoff control plan to prevent impacts to coastal water quality during and following installation of the proposed stream enhancements.

Special Condition No. 4 requires that the permittee use only native plants obtained from local genetic stock sources for all restorative planting, stipulates that the proposed planting of pond-side vegetation originating from cuttings be conducted during the late-autumn / early winter months to maximize the success of the vegetation's establishment, and, prohibits the use of certain bio-accumulating rodenticides.

Special Condition No. 5 requires the applicant prior to issuance of the coastal development permit, to submit for the review and approval of the Executive Director, a final grading and debris disposal plan.

Special Condition No. 6 requires that all final design and construction plans for the levees and other structural site improvements, comply with all recommendations within the geotechnical report prepared for the project.

Special Condition No. 7 requires the applicant to provide evidence, for the review and approval of the Executive Director, of all property rights necessary to construct the trail and public access support facilities on properties adjacent to the project site.

Special Condition No. 8 requires the applicant to submit evidence that any necessary authorization from the State Lands Commission has been obtained prior to issuance of the permit to assure that the applicant has a sufficient legal property interest in the site to carryout the project and to comply with the terms and conditions of this permit.

Special Condition No. 9 requires the applicant, prior to issuance of the coastal development permit, to provide a copy of an executed Fish and Game Code Section 1600 Streambed Alteration Agreement for the subject restoration and enhancement work.

Special Condition No. 10 requires the permittee, prior to the commencement of the restoration and enhancement construction to provide a copy of the Clean Water Act Section 404 permit issued by the U.S. Army Corps of Engineers authorizing the subject restoration and enhancement work.

Special Condition No. 11 requires the permittee, prior to commencement of the restoration and enhancement construction to provide a copy of the development permit issued by the Humboldt Bay Harbor, Conservation, and Recreation District for all work within the intertidal reaches of Humboldt Bay associated with the breaching of the reclamation levee.

Special Condition No. 12 requires the permittee to assume all risks and agree to defend the Commission against any and all claims that may result from development in an area with known flood and geologic hazards.

Special Condition No. 13 requires the permittee to construct the proposed public access and nature trail improvements.

Staff believes the proposed project as conditioned is consistent with the Coastal Act and recommends approval of the proposed project with the above-identified conditions.

The motion to adopt the staff recommendation of approval with conditions in found on page 6.

STAFF NOTES

1. Jurisdiction and Standard of Review.

The proposed project is located in the Commission's retained jurisdiction. The City of Arcata has a certified LCP, but the site is within an area shown on State Lands Commission maps over which the state retains a public trust interest (see Exhibit No. 3). Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution:

I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-06-036 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 as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of the majority of the Commissioners present.

Resolution to Approve Permit:

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

II. STANDARD CONDITIONS: See attached.

III. SPECIAL CONDITIONS:

1. Final Restoration Monitoring Program

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-06-036**, the applicant shall submit for review and written approval of the Executive Director, a final detailed restoration monitoring program designed by a qualified wetland biologist for monitoring of the wetland enhancement site. The monitoring program shall at a minimum include the following:

1) Performance standards that will assure achievement of the restoration goals and objectives set forth in Coastal Development Permit Application No. 1-06-036 as summarized in the Findings IV.B, "Project Description," and shall include but not be limited to the following standards: (a) utilization by one or more of the following species: steelhead (*Oncorhynchus mykiss*), coho salmon (*Oncorhynchus kisutch*), coastal cutthroat trout (*Oncorhynchus clarki*) and/or tidewater goby (*Eucyclogobius newberryi*); (b) increases in saltmarsh, brackish water, and freshwater aquatic habitat by construction of the various project features, including terra-forming the lower McDaniel Slough stream, tidal channels, and floodplain areas, constructing new flood- and eco-levees, breaching the bayfront reclamation levee to allow for direct intertidal connection to Arcata Bay, removal of 6.64 acres of existing fill materials from wetland areas, and construction of the brackish water and freshwater ponds; and (c) increasing riparian vegetation by the planting of native tree and shrub species on island within the brackish pond and in areas surrounding the freshwater ponds.

2) Provisions for monitoring at least the following attributes: (a) presence of steelhead (*Oncorhynchus mykiss*), coho salmon (*Oncorhynchus kisutch*), coastal cutthroat trout (*Oncorhynchus clarki*), and/or tidewater goby (*Eucyclogobius newberryi*); and (b) increases in saltwater, brackish, and freshwater aquatic habitat, and saltmarsh and riparian vegetation at the following frequency: biannually for ten years using methods such as: fyke netting / electro-fishing sampling, transect sampling, photo plots, and/or direct counting of surviving tree and shrub plantings.

3) Provisions for submittal within 30 days of completion of the initial enhancement work of (1) "as built" plans demonstrating that the initial enhancement work has been completed in accordance with the approved enhancement program, and (2) an assessment of the initial biological and ecological status of the "as built" enhancements. The assessment shall include an analysis of the attributes that will be monitored pursuant to the program, with a description of the methods for making that evaluation.

4) Provisions to ensure that the enhancement site will be remediated within one year of a determination by the permittee or the Executive Director that monitoring results indicate that the site does not meet the goals, objectives, and performance standards identified in the approved enhancement program and in the approved final monitoring program.

5) Provisions for monitoring and remediation of the enhancement site in accordance with the approved final enhancement program and the approved final monitoring program for a period of ten years.

6) Provisions for submission of annual reports of monitoring results to the Executive Director by October 1 each year for the duration of the required monitoring period, beginning the first year after submission of the "as-built" assessment. Each report shall include copies of all previous reports as appendices. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the wetland enhancement project in relation to the performance standards.

7) Provisions for submission of a final monitoring report to the Executive Director at the end of the five-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist. The report must evaluate whether the enhancement site conforms with the goals, objectives, and performance standards set forth in the approved final enhancement program. The report must address all of the monitoring data collected over the five-year period.

B. If the final report indicates that the enhancement project has been unsuccessful, in part, or in whole, based on the approved goals and objectives set forth in Coastal Development Permit Application No. 1-06-036 as summarized in Findings IV.B "Project Description," the applicant shall submit a revised or supplemental enhancement program to compensate for those portions of the original program which did not meet the approved goals and objectives set forth in Coastal Development Permit Application No. 1-06-036 as summarized in Finding IV.B "Project Description." The revised enhancement program shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

C. The permittee shall monitor and remediate the wetland enhancement site in accordance with the approved monitoring program. Any proposed changes from the approved monitoring program shall be reported to the Executive Director. No changes to the approved monitoring program shall occur without a Commission

amendment to this coastal development permit unless the Executive Director determines no amendment is legally required.

2. Construction Responsibilities, Debris Removal, and Disposition of Excavated Materials

The permittee shall comply with the following construction-related requirements:

(a) No construction materials, debris, or waste shall be placed or stored where it may be subject to entering waters of McDaniel Slough, the back-drains behind the reclamation levee, or Arcata Bay or;

(b) All construction debris, including fencing materials, gating, and demolished agricultural structures shall be removed and disposed of in an upland location outside of the coastal zone or at an approved disposal facility; and

(c) All grading activities, including the placement of fill, dredging and diking of channels, and excavations and re-cover operations shall be conducted during the dry season period of June 1 through October 1. Additional coastal development permit authorization shall be obtained for any grading conducted during the period of October 1 through May 31.

3. Erosion and Runoff Control Plan

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-06-036**, the applicant shall submit, for review and approval of the Executive Director, a plan for erosion and run-off control.

1) The run-off, spill prevention and response plan shall demonstrate that:

(a) Run-off from the project site shall not increase sedimentation in coastal waters;
(b) Run-off from the project site shall not result in pollutants entering coastal waters;
(c) Best Management Practices (BMPs) shall be used to prevent the entry of polluted stormwater runoff into coastal waters during the construction of the authorized structures, including but not limited to the following:
(i.) Stormwater runoff diversion immediately up-gradient of the excavation for building foundations; and
(ii.) Use of 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 (i.e., BMP Nos. EC-1 – *Scheduling*, EC-2 – *Preservation of Existing Vegetation*, EC-12 – *Streambank Stabilization*, SE-1 – *Silt Fence* and/or SE-9 – *Straw Bale Barrier*, NS-9 – *Vehicle and Equipment Fueling*, NS-5 – *Clean Water Diversion*, NS-10 – *Vehicle and Equipment Maintenance and Repair*; WM-1 – *Material Delivery and Storage*, WM-4 – *Spill Prevention and Control*; see http://www.cabmphandbooks.com).

(d) An on-site spill prevention and control response program, consisting of best management practices (BMPs) for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials from entering coastal waters.

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

(a) A schedule for installation and maintenance of appropriate construction source control best management practices (BMPs) to prevent entry of stormwater run-off into the construction site and the entrainment of excavated materials into run-off leaving the construction site; and

(b) A schedule for installation, use and maintenance of appropriate construction materials handling and storage best management practices (BMPs) to prevent the entry of polluted stormwater run-off from the completed development into coastal waters.

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

4. <u>Restoration Site Revegetation</u>

The coastal pond and riparian corridor enhancement sites shall be revegetated as proposed and comply with the following standards and limitations:

a. Only native plant species shall be planted. All proposed plantings shall be obtained from local genetic stocks within Humboldt County. If

documentation is provided to the Executive Director that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside of the local area may be used. 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.

b. Only California Crop Improvement Association-certified "yellow tag" California native grass seed shall be used in the proposed soil stabilization applications.

c. All planting will be completed within 60 days after completion of construction of the realigned and restored stream channels.

d. All required plantings will be maintained in good growing conditions throughout the life of the project, and whenever necessary, shall be replaced with new plant materials to ensure continued compliance with the landscape plan.

e. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.

f. Willow, alder, and spruce cuttings shall comply with the following:

(1) Cuttings shall be taken from nearby willow trees and planted during the period of November 1 to March 1;

(2) The stakes shall be obtained from long, upright branches taken off the parent plant by cutting the branch at an angle, so that it makes a point. Live stakes shall be between 18 and 24 inches long and at least three-eighths inch (⅜″) in diameter;

(3) Leaves and small branches shall be removed from the stakes as soon as possible after cutting them, to keep the stakes from drying out;

(4) Stakes shall be planted within 24 hours of their cutting for best results. The cuttings shall be kept moist and wet by storing them in buckets or wet burlap sacks. The cuttings shall be kept in the shade until they are planted; and

(5) The stakes shall be inserted angle-cut end down a minimum of one foot deep into the streambank, with three to six inches of the cutting exposed above the ground surface to allow for leaf sprouting.

5. Final Grading and Debris Disposal Plans

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-06-036**, the applicant shall submit, for review and [written] approval of the Executive Director:

1. Final plans for site excavation, grading, and filling that substantially conform with the plans submitted to the Commission, titled *McDaniel Slough Wetland Enhancement Project – Project Summary* dated August 9, 2006, and

2. Final plans for disposal of all construction debris or export fill materials that substantially conform with the plans submitted to the Commission, titled *McDaniel Slough Wetland Enhancement Project – Project Summary* dated August 9, 2006, and the requirements of Special Condition No. 2.

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

6. Conformance of Design and Construction Plans to Geotechnical Report Geologic and Flood Hazards

A. All final design and construction plans, including foundations, grading and drainage plans, shall be consistent with all recommendations contained in *Geotechnical Evaluation of McDaniel Slough Marsh Enhancement Project* prepared by SHN Consulting Engineers and Geologists, Inc. and dated November 2003. **PRIOR TO THE ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-06-036**, the applicant shall submit, for the Executive Director's review and approval, evidence that an appropriate licensed professional has reviewed and approved all final design and construction plans and certified that each of those final plans is consistent with all of the recommendations specified in the above-referenced geologic evaluation approved by the California Coastal Commission for the project site.

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

7. Demonstration of Adequate Property Rights

PRIOR TO COMMENCEMENT OF DEVELOPMENT OF ANY PUBLIC ACCESS/NATURE TRAIL AND SUPPORT FACILITIES ON APNs 505-251-06, AND -13, the permittee shall submit, for the review and approval of the Executive Director, copies of all grant deeds and access easement conveyances for the above-listed properties clearly demonstrating that: (a) fee-title has been secured to the "Moranda parcel" on which development of public access trail and support facilities have been authorized; and (b) rights of ingress and egress across the adjoining "Industrial Electric Company parcel" have been expanded and/or perfected to allow for public access across the subject property to the adjoining trail and parking lot improvements.

8. State Lands Commission Review

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT NO. 1-06-036, the applicant shall submit to the Executive Director a written determination from the State Lands Commission that:

a. No State or public trust lands are involved in the development; or

b. State or public trust lands are involved in the development and all permits required by the State Lands Commission have been obtained; or

c. State or public trust lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the approved project as conditioned by the Commission to proceed without prejudice to that determination.

9. California Department of Fish and Game Approval

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT NO. 1-06-036, the applicant shall provide to the Executive Director a copy of a permit issued by the California Department of Fish and Game (CDFG)**,** 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 CDFG. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

10. U.S. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, the permittee shall provide to the Executive Director a copy of a permit issued by the 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 Army Corps of Engineers. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

11. Humboldt Bay Harbor, Recreation, and Conservation District Approval

PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-06-036, applicant shall provide to the Executive Director a copy of a permit issued by the Humboldt Bay Harbor, Recreation, and Conservation District (HBHRCD) 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 HBHCRD. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

12. Assumption of Risk, Waiver of Liability and Indemnity Agreement

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from waves, storm surge, and flooding; or, erosion and earth movement; (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.

13. Trail Linkage to Samoa Boulevard

PRIOR TO COMMENCEMENT OOF ANY USE OF THE SITE AS A FISH AND WILDLIFE RESTORATION AND ENAHANCEMENT FACILITY, the permittee shall construct the public access and nature trail improvements proposed within the permit application and as supplemented by the amendment to Coastal Development Permit Application No. 1-06-036, dated May 30, 2007.

IV. FINDINGS AND DECLARATIONS.

The Commission hereby finds and declares as follows:

A. Site Description.

The City of Arcata proposes to restore and enhance riparian wetlands within the reclaimed lower reaches of the McDaniel Slough to provide greater habitat value and diversity for water-associated wildlife. The Janes Creek / McDaniel Slough watershed comprises approximately 1,800 acres and drains the northeastern industrial corridor south of State Route 299 and the western third the city, originating as a third order stream on the lower northwest-facing slopes of Fickle Hill, the landform that forms the eastern backdrop of the City of Arcata (see Exhibit Nos. 1 and 2).

The 240-acre restoration/enhancement site is situated within the diked seasonal wetlands along and adjoining the channelized segment of the lower McDaniel Slough stream course below State Route 255 to it's juncture with the Arcata Bay lobe of Humboldt Bay, at elevations ranging from approximately -2 to +14 feet above mean sea level (msl) referenced from the 1929 National Geodetic Vertical Datum ($NAVD_{29}$).

The project site was historically part of the extensive tidal marshes of Humboldt Bay. In the decades immediately following European settlement of the North Coast area in the early 1850s, efforts were undertaken to reclaim much of the intertidal fringes of Humboldt Bay primarily for construction of a regional railroad system and for agricultural purposes. The project properties were converted to agricultural use following the construction of a levee around this portion of Humboldt Bay in 1886. The western 2/3s of the site was farmed and grazed up until 1987 when the area was acquired by the California Department of Fish and Game (DFG) with Proposition 19 Bond funds intended specifically for the acquisition of coastal wetlands. Subsequently, the vegetation grew to be tall and rank, and a dense mat of dead vegetation developed over much of the ground surface. This dense, tall vegetation provides habitat for some wildlife at the site, but precludes use of the area by many water-associated wildlife species. In recent years the presence of water-associated wildlife on the Mad River Slough Wildlife Area portion has noticeably decreased. Later, in 1999, the eastern 1/3 of the site was acquired by the City of Arcata who continues to allow cattle grazing over approximately 67 acres of the best-drained portions of the site.

After passing through a tidegate beneath Samoa Boulevard (State Route 255) and entering the project site, McDaniel Slough assumes a meandering slough pattern, a remnant of its former intertidal character, before passing through a malfunctioning tidegate and entering Arcata Bay. Laterally beyond the levee-confined portions of the slough channel, the site consists of a mosaic of seasonal emergent, scrub-shrub wetlands, and seasonal agricultural wetlands in the form of cropped grazing pastures incised by

several tide-gated remnant tidal channels radiating landward off of Arcata Bay. Borrow ditches paralleling and outboard of the confinement berms along the slough channel and a back-drain channel along the base of the bayfront reclamation levee add to the aquatic diversity of the site. Non-wetland areas within the project bounds are limited to the existing containment levees flanking the slough channel, and filled farm road, barn, and paddock areas in the northeastern quadrant of the project site (see Exhibit No. 3).

Arcata Bay, its feeder creeks and the surrounding agricultural, public facility, and open space lands provide habitat for a diversity of wildlife. The project area is habitat for a wide variety of resident and migratory waterfowl, shorebirds, wading birds, songbirds, and raptors. A smaller number of mammals, amphibians and reptiles also inhabit the area. Several significant species of fish have been found in these coastal watercourses, including *coho* salmon (*Oncorhynchus kisutch*), listed as endangered federally and as a threatened species in California, steelhead (*Oncorhynchus mykiss*) a state-listed threatened species, coastal cutthroat trout (*Oncorhynchus clarki*), a California species-of-special-concern, and tidewater goby (*Eucyclogobius newberryi*), federally listed as endangered and a California species-of-special-concern. Numerous avian species are also known to commonly forage at the site include the northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), Great blue heron (*Ardea herodias*), and Snowy egret (*Egretta thula*).

The subject intertidal and seasonal wetlands and peripheral uplands are situated on former tidelands that made up the northern third of the Arcata Bay lobe of Humboldt Bay prior to its reclamation in the late 1800s. After their reclamation, the former salt marsh intertidal channel comprising the delta of Janes Creek became more of a freshwater stream, periodically discharging into Arcata Bay on low tides. Due to malfunctioning of the tidegate and general subsidence of the area, the lower McDaniel Slough basin contains and convey a mixture fresh, brackish, and/or saltwater. As a result of this dynamic hydrology, past and current cattle grazing, eight distinct, but intergrading vegetative communities can be identified on the site: (1) ruderal/upland; (2) agricultural field; (3) perennial grassland; (4) freshwater marsh; (5) brackish marsh; (6) willow riparian; (7) aquatic bed; and (8) denuded/landscaped developed areas. Table A below, summarizes the size, typical vegetative cover, and wildlife habitat offered by each area:

Table A: McDaniel Slough Enhancement Project – Existing Habitat Areas

Habitat Type	Size (acres)	Predominate Vegetation	Common Wildlife Species	Defining Characteristics
Ruderal/Upland	9.6	Coyote brush Himalayan blackberry Sitka spruce Wild radish Velvet grass Bird's foot trefoil Aster English plantain	House mouse Black rat Deer mouse Striped skunk Raccoon Opossum Feral cat European starling	Dike faces, slough banks, perimeter pasturelands

Habitat Type	Size (acres)	Predominate Vegetation	Common Wildlife Species	Defining Characteristics
			Song sparrow White-crowned sparrow American goldfinch Pacific tree frog Rough skinned newt Northern alligator lizard	
Agricultural Fields	76	Perennial rye Fescue Velvet grass Canada thistle Bird's foot trefoil Curly dock Salt grass (along slough channels)	California vole Vagrant shrew Coast mole Barn swallow Common raven Long-billed curlew Killdeer Northern harrier White-tailed kite Turkey vulture Western garter snake Grebes Cormorants Various shorebirds	Portions exhibit wetland characteristics typical of seasonally grazed agricultural lands with level topography and heavy-textured soils. Observed evidence of wetland hydrology includes sediment cracks and algal mat formation in depressions, and vegetation associated with saturated soils.
Perennial Grassland	141.9	Fescue Velvet grass Facultative sedges Yarrow Curly dock Salt grass Slough sedge Water parsley Himalaya berry	California vole Western harvest mouse Deer mouse Vagrant shrew Gray fox Long-tailed weasel White-tailed kite Northern harrier Red-shouldered hawk Barn owl Western meadowlark Savannah sparrow California quail Dark-eyed junco White-crowned sparrow Western garter snake Western toad	Floristic composition the result of 16-year fallow field management wherein seasonal saturation has led to domination by mature water-tolerant forbs and grasses and scattered patches of berry thickets affording roosting habitat for raptors.
Freshwater Marsh	5.7	Cattail Bullrush Slough sedge Soft rush Tufted hairgrass Pacific silverweed Water foxtail Water parsley	American bittern Red-winged blackbird Marsh wren Pied-billed Grebe American coot Great-blue heron Great egret Snowy egret Cinnamon teal River otter Red-legged frog Northwestern salamander	Comprises the upper McDaniel Slough channel, small borrow ditch east of the slough and at a former stock pond on southern project site margins.
Brackish Marsh	0.8	Alkali bullrush Arrow grass	(see Ruderal/Upland and Freshwater Marsh	Limited to inside Of bayfront levee and

Habitat Type	Size (acres)	Predominate Vegetation	Common Wildlife Species	Defining Characteristics
		Salt rush Soft rush Lyngby's sedge	species lists)	along the two remnant slough channels in southwest portion of project area, providing foraging habitat for herons and egrets, and dabbling ducks.
Willow Riparian	1.0	Arroyo willow Sitka willow Himalayan blackberry California blackberry	Anna's hummingbird American goldfinch Black phoebe Bewick's wren Green heron American kestrel White-crowned sparrow Chestnut-backed chickadee Ruby-crowned kinglet Winter wren Rufous hummingbird Yellow warbler Yellow-rumped warbler Orange-crowned warbler Wilson's warbler Pacific-slope flycatcher Cassin's vireo Cedar waxwing Brush rabbit Striped skunk	Limited to four small patches along the edges of McDaniel Slough, providing high quality riparian habitat for diversity of passerine avian species.
Aquatic Bed	4.3	Canary reedgrass	Mallard Green-winged teal Canvasback Bufflehead Ruddy duck American coot Pied-billed grebe Striped skunk Feral cat Coastal cutthroat trout Three-spine stickleback	Comprising McDaniel Slough main channel, former tidal channels, and borrow ditch; vacillating between saltwater, brackish, and freshwater conditions diurnally and seasonally.
Developed	0.3	Largely denuded with fringing patches of ruderal grasses and forbs	Limited surface and subsurface terrestrial arthropod habitat	Mad River Slough Wildlife Area access parking lot.
Total Acreage	**239.6**			

There are no rare, threatened, endangered or special-status plants within the McDaniel Slough Enhancement Project area proper. Three plant species enumerated on the

California Native Plants Society's "List 1B" and "List 2"[1] of rare native plants, Humboldt Bay Owl's Clover (*Castilleja ambigua* ssp. *humboldtensis*), Point Reyes Birdsbeak (*Cordylanthus maritimus* ssp. *palustris*), and Lyngbye's sedge (*Carex lyngbyei*), are found in the general vicinity of the project area. However, these rare plant outcroppings are not within the immediate area where the levee construction would be performed and care would be taken in the staging of equipment and materials to avoid impacts to these distinct and readily-identifiable rare plants.

The project site is surrounded by a mixture of open space, agricultural, public facility, commercial-industrial, and residential uses, taking the form of the open water areas of Humboldt Bay, grazing pastures and paddocks, the Mad River Slough Wildlife Area, the Arcata Marsh and Wildlife Sanctuary, state highway and railroad corridors, electrical control componentry, forest products processing, and pipe manufacturing concerns, and the *Windsong Village* and *Villa Way* residential subdivisions across Samoa Boulevard to the north. The portions of the project site within the City of Arcata's municipal boundary are designated Coastal Agricultural Exclusive (C-AE), with the parts within the unincorporated area designated Coastal Agricultural Exclusive – Sixty Acre Minimum Parcel Size with Flood Hazard and Transitional Agriculture Combining Zones (AE60/F,T) and Natural Resources with Coastal Wetlands Combining Zone (NR/W) under the City of Arcata and County of Humboldt's LCPs, respectively.

In addition to the unpaved roadside walkways and Class III bike lanes along Samoa Boulevard, there are numerous coastal access and recreational amenities for hiking, cycling, bird-watching, and boating in the immediate project vicinity. These facilities include the Arcata Marsh and Wildlife Sanctuary, the Butcher Slough Restoration Project, the Arcata Marsh Interpretative Center, and the Department of Fish and Game's Mad River Slough Restoration Area to the west of the project parcels.

The portions of the project site east of V Street are identified in Arcata's LCP as part of the "Samoa Boulevard scenic route" entry to the City. In addition all land on the western Arcata plain designated Agricultural Exclusive is identified in the certified LCP as a "coastal scenic area."

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[1] Pursuant to the Native Plant Protection Act (NPPA) and the California Endangered Species Act (CESA), plants appearing on the California Native Plant Society's "List 1B" and "List 2" meet the definition as species eligible for state listing as a rare, threatened, or endangered plant. List 1B plants are defined as "rare plant species vulnerable under present circumstances or to have a high potential for becoming so because of its limited or vulnerable habitat, its low numbers of individuals per population (even though they may be wide ranging), or its limited number of populations." List 2 plants are defined as "plants rare, threatened, or endangered in California, but more common elsewhere." The NPPA mandates that plants so listed be considered in the preparation of all environmental analyses conducted pursuant to the California Environmental Quality Act (CEQA).

B. Project Description.

The City of Arcata proposes to restore and enhance the lower reaches of the McDaniel Slough watercourse. The lower reaches of Janes Creek/McDaniel Slough consist of a Class II, first-order coastal stream that has been significantly culverted, and channelized along its approximately 3½-mile lower length over the last century. As a result, much of the original streamside riparian canopy has been removed and major portions of the creek lie in closed culverts beneath the mixed single- and multi-family residential neighborhoods of west-central Arcata. Similarly, the formerly unconstrained tidewater portions of the watercourse have been confined within berms with the surrounding overflow areas reclaimed chiefly for agricultural grazing and forage crop production through the erection of a levee complex along the margins of Arcata Bay commencing in the 1880s (see Exhibit Nos. 3 and 4).

Past Regional Coastal Stream Habitat Restoration and Enhancement Efforts

Despite this history of impacts, the habitat potential of the Janes Creek/McDaniel Slough watershed, along with that of the other urban creeks within the northern Humboldt Bay region, has been recognized by numerous public resource agencies and non-government organizations alike that have expressed a common interest to restore the creek. In 1981, the City created the Arcata Marsh and Wildlife Sanctuary, comprising a 75-acre area including 30 acres of freshwater wetlands for use as both open space parkland and for tertiary bio-filtration of the City's sewerage, establishing the City as a leader in the fields of wetland restoration and innovative wastewater treatment technology. In 1986, under a City-issued coastal development permit, previously culverted, channelized, and denuded sections of the creek above the project site on the other side of the Highway 101 – Samoa Boulevard interchange were significantly re-contoured and revegetated as part of the City's community park and sports complex project. Similar efforts to restore or "daylight" other sub-surfaced urban creeks within the City have been ongoing since the mid-1980's. In addition, pursuant to Coastal Development Permit No. 1-03-031, approved by the Commission on November 6, 2003, the City has constructed cattle exclusion fencing to enclose an 8.7-acre area along a 2,537-foot reach between the currently proposed Campbell Creek realignment and Gannon Slough tidegate replacement sites, and has re-vegetated the enclosed area with native plants, as the first phase of the *Arcata Baylands Wetlands Restoration and Enhancement Project*. More recently under Coastal Development Permit and Amendment Nos. 1-05-017 and 1-05-017-A1, an additional 3,200 lineal feet of the lower reaches of Campbell and Beith Creeks/Gannon Slough were further enhanced through construction of a meandering channel, planted riparian corridor, and laying back bankside confinement levees to improve the connectivity between the watercourses' incised channel and floodplain.

Evolution of Project Design

The inclusion of the development's non-marine freshwater pond was the result of initial public input on the project's design and potential effects received during the

environmental review scoping and impact report comment processes. As originally presented, the project envisioned full restoration of all 240 acres to saltmarsh habitat, either by removing the reclamation levee along its full bay frontage with the project site, or through a series of muted openings as is presently proposed. However, numerous comments were received urging that the project be modified to provide other habitat opportunities besides saltmarsh. As rationale for the requested revision, the commenters cited the need for the project to: (1) offset the loss of the existing freshwater marsh habitat that had developed on the site since its reclamation from the bay; (2) provide transitional habitat linkage between the project's saltmarsh and brackish marine components and upland terrestrial areas further inland for better utilization by species with broad ecological tolerances and anadromous lifecycles; (3) increase the project's overall biological diversity, especially for more freshwater-oriented waterfowl such as ducks, passerine songbirds, and raptors; and (4) interface more directly with the freshwater-based recreational and tertiary wastewater treatment facility in the adjoining Arcata Marsh and Wildlife Sanctuary. The tenor of these public meetings was portrayed by one participant as follows:

> At a public meeting in May 2000, the City of Arcata prepared a list of objectives, opportunities, and constraints associated with the project. Local ranchers, other concerned community members, wildlife and botany professionals, and city staff discussed proposals by a consulting firm, Philip Williams and Associates. Public comments varied from those strongly supporting the plan (largely for botanical, ichthyological, or recreational reasons) to those in strong opposition (largely for bird and other wildlife reasons). In February 2001, another meeting was held in which similar concerns were voiced, with some tension among opposing viewpoints. Dr. Stan Harris (2001) in a letter to the Arcata Eye argued against the salt marsh plan and encouraged considering an additional freshwater habitat in the project area by expanding the Arcata Marsh & Wildlife Sanctuary. This was followed by a rebuttal from the local chapter of the California Native Plant Society (CNPS 2001). A third public meeting was held in November 2001, during which CDFG and the City of Arcata described their most favored option, called "Alternative 4," which includes the creation of both fresh and salt marsh habitats.[2]

In the subsequent design document prepared for the development, the project consultant further chronicalized these scoping session exchanges as follows:

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[2] *Modeling Wildlife Responses to a Proposed Marsh Enhancement for the McDaniel Slough Project Area Arcata, California*, Matthew Johnson and the Upland Wildlife Habitat Ecology Class, Humboldt State University – Department of Wildlife, June 1, 2002, pp. 2-3.

> Philip Williams & Associates, Ltd. (PWA) with their subconsultants H.T. Harvey and Associates, and Winzler and Kelly, were retained by the City to develop a restoration plan for the 240-acre site, that would not increase and if possible reduce flood hazards upstream, comparing a no-action alternative with two full tidal alternatives. As part of the study process the City solicited community input on the formulation of the alternatives. Many interested members of the public expressed strong concerns that restoring the eastern portion of the site to tidal marsh would preclude the opportunity for using freshwater discharges from adjacent Arcata Marsh and Wildlife Sanctuary wastewater treatment wetlands to expand the adjacent managed wetland habitat. As a result, a fourth alternative was developed by the City that set aside 35 acres in the eastern portion of the site for expansion of managed freshwater ponds that will allow discharges of treated wastewater into the tidally restored site. This alternative also has the advantage of providing an on-site resource of fill material to construct perimeter flood control levees.
>
> The City has adopted Alternative 4 as the selected alternative.[3]

In response to these public comments, the City directed the project consultants to redesign the development proposal to include the pond features to better integrate with the existing adjoining constructed freshwater pond public recreational/tertiary wastewater treatment facility.

Project's Habitat Restoration and Enhancement Objectives

As part of its ongoing efforts to preserve and protect fish and wildlife habitat, with assistance and funding from the North American Wetlands Conservation Council, the State Coastal Conservancy, and the California Department of Fish and Game's (CDFG) Wildlife Conservation Board, the City of Arcata together with the CDFG has acquired and began to actively manage the streamside and grassland portions of the 240-acre area through which the waters of lower McDaniel Slough flow. The environmental document for the *McDaniel Slough Wetland Enhancement Project* states the primary and secondary goals of the development as follows:

Primary Objectives

- Maximize opportunities for restoring a large area of pickleweed (*Salicornia virginica*) dominated by intertidal saltmarsh habitat;
- Provide unimpeded access for anadromous fish migration between Humboldt Bay and McDaniel Slough/ Janes Creek;

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[3] *A Restoration Plan for the McDaniel Slough Tidal Marsh*, Phillip Williams and Associate, Ltd. (PWA), October 25, 2002, p. 1.

- Create a tidal channel system that maximizes the estuarine fisheries habitat in the larger high-order subtidal channels;
- Provide connectivity of habitats using "eco-levees" to create a gradation between the saltmarsh/mudflat habitats and uplands;
- Provide connectivity with existing adjacent habitats (i.e., freshwater meadows, riparian, fresh and brackish marsh) within adjoining Arcata Marsh and Wildlife Sanctuary and the Mad River Slough Wildlife Area;
- Achieve desired wetland ecologic function as rapidly as possible for the freshwater and brackish water ponds and within a period of a few decades for the establishment of saltmarsh habitat; and
- Alleviate rural and urban area flooding due to existing tide gate restrictions.

Secondary Objectives

- Create a visually appealing landscape;
- Provide increased opportunities for public access, education and recreation;
- Create to the greatest extent possible a passively managed system that minimizes the need for maintenance activities on the site; and
- Breach the bayfront levee to achieve reduced flooding upstream of Samoa Boulevard and increase tidal scour in lower Janes Creek.

Project Component Areas

The proposed project site consists of three sub-area segments: (1) the reclaimed lower McDaniel Slough floodplain slated for saltmarsh restoration; (2) transitional open areas between the seasonal agricultural wetlands to the north and west, and the City's South I Street commercial-industrial corridor to be bermed and excavated for creation of the 14-acre brackish pond; and (3) the northeastern, roughly six-acre grazed pasturelands proposed for excavated freshwater ponds (see Exhibit No. 4).

The proposed **McDaniel Slough Saltmarsh Restoration Area** (MSSRA) is situated at the southwestern entry to Arcata in the grazing lands lying along the southern side of State Route 255 east and southeast of V Street and Old Samoa Road, respectively (see Exhibit No. 4). The McDaniel Slough Saltmarsh project area comprises the western 205 acres of a 166-acre portion of land held by the California Department of Fish and Game comprising the eastern half of the Mad River Slough Wildlife Area, together with 88 acres of pastureland tract recently purchased by the City for restoration purposes extending southward from State Route 255, immediately adjacent to the South I Street commercial-industrial area.

Project work within the MSSA would entail the removal of portions of the confinement berms along the lower channel of McDaniel Slough and other fill materials associated with past agricultural uses and structures, deepening historic bay tidal channels, raising the lowest portions of the floodplain to elevations favorable to the formation of pickleweed (*Salicornia virginica*) marsh, removal of problematic culverts, constructing

an elevated boardwalk accessway to one of the PG&E electrical transmission line towers, constructing 21,000 lineal feet of new perimeter flood- and eco-levees, breaching the bayfront levee at two locales to allow for muted intertidal flow into the project area, and constructing coastal access trail improvements along the bayfront levee.

The proposed **Brackish Pond Restoration Area** (BPRA), comprises a roughly 20-acre area extending westerly across from the Northwestern Pacific Railroad line onto the project property, bordered by the Arcata Marsh and Wildlife Sanctuary on the southern side, the proposed Freshwater Pond Enhancement Area situated to the north, and an existing 1.2-acre freshwater pond created by the City in 2005 to the east across the rail line.

The approximately 17-acre brackish pond will be excavated to appropriate elevations for mixing bay water with treated wastewater to create the brackish marsh habitat. The treated wastewater meets Humboldt Bay discharge standards and is an expansion of the City's beneficial reuse of wastewater. Approximately 1-6 cubic feet per second (cfs) of treated wastewater will be gravity fed to the new brackish marsh. Flow volumes will be managed to mimic natural seasonal fluctuations in other Humboldt Bay tributaries. This flow is in addition to the existing surface runoff that will continue to be directed to the brackish pond from an upland area of approximately 20 acres. Approximately 3,200 lineal feet of perimeter eco-levee would be constructed to impound the waterbody. In addition, four ½- to one-acre islands would be formed and planted with native riparian shrubbery and trees as waterfowl habitat areas.

The proposed **Freshwater Ponds Enhancement Area** (FPEA) is located on the transitional margins of the reclaimed lower McDaniel Slough basin, immediately south of the Industrial Electric Company-owned parcels abutting the southern side of State Route 255 partially within the city limits of Arcata. The roughly ten-acre freshwater pond complex and adjoining riparian vegetation planting area occupies the highest elevation within the project site and together with the adjoining Brackish Pond Restoration Area, is currently leased for cattle grazing use.

Project work within the FPEA would entail the excavation of two ponds totaling 5.5 acres in size to depths of between six and ten feet below existing grade. The estimated 71,000 cubic yards excavated to form the ponds would be immediately utilized in constructing the flood- and eco-levees around the MSSRA perimeter. Conifer snags, nesting ledges, and "bat-boxes" would also be installed on and along the pond islands to enhance roosting bird and flying mammal habitat. In addition, a combination of willow (*Salix* sp.), alder (*Alnus* sp.), Sitka spruce (*Picea sitchensis*), and shore pine (*Pinus contorta contorta*) would be planted within the surrounding 1½ acre area around the periphery of the ponds as riparian corridor enhancement.

Development Sequence and Phasing

Because of the necessity of obtaining fill for constructing the proposed flood and eco-levees from on-site sources, the need for the completion of certain portions of the

development to precede and be completed prior to undertaking other portions of the development, and the inundated end-point condition of major portions of the site, the McDaniel Slough Wetlands Enhancement Project work is proposed to be conducted in a particular sequence of phases. Table B below summaries the project's various development phases:

Table B: McDaniel Slough Wetland Enhancement Project Development Phases

Phase	Work Tasks to be Performed	Project Area(s) Affected
I 6/07-11/07	Excavate to form freshwater ponds; stockpile dredged soils for levee construction	FPEA; MSSRA
	Enhance 1,440 lineal feet of eastern side historic tidal slough channels through deepening to increase aquatic habitat diversity	MSSRA
	Remove 1,200 lineal feet east bank levee of McDaniel Slough to form isolated roosting islands	MSSRA
	Construct 9,800 lineal feet of eco-levees along eastern side of slough floodplain and around brackish pond and 7,300 lineal feet of flood- and eco-levees along Samoa Boulevard and V Street frontages	MSSRA BPRA FPEA
	Excavate and contour brackish pond, bottom ridges, and islands, install riparian plants in pond and on islands	BPRA
	Fill Brackish Pond with treated wastewater and initially utilize as freshwater pond habitat	BPRA
	Build elevated access boardwalk and structurally reinforce PG&E electrical transmission tower bases	MSSRA
	Construct trails and viewing structures, install kiosks and interpretive panels	MSSRA BPRA FPEA
II 12/07-4/08	Mute open culvert outfall to Arcata Bay to allow for partial dewatering of western project area while sustaining tidal channel flows on eastern side	MSSRA
	Construct and revegetate 3,900 lineal feet of flood-levee along Old Samoa Road frontage and southwestern project site perimeter	MSSRA
	Isolate and dewater borrow ditching, install tide-gated culvert and connect to existing levee	MSSRA
	Modify western tidal channel remnants to maintain and enhance tidewater goby habitat	MSSRA
	Remove tide gates and breach 50-foot-wide segment of reclamation levee	MSSRA

Phase	Work Tasks to be Performed	Project Area(s) Affected
III 4/08-10/08	Install saltmarsh vegetation plantings on inboard eco-levee faces	MSSRA
	Remove remaining project site cross-culverting	MSSRA
	Install rock slope protection at breached opening of reclamation levee	MSSRA
	Install intertidal culvert connection to brackish pond, manage pond for brackish water habitat	BPRA

C. Conversion of Agricultural Lands.

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30241 states:

> *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*
>
> *(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*
>
> *(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.*
>
> *(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.*[4]

[4] The portion of referenced Section 30250 applicable to this project type and location (sub-section (a)) requires that, "*New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources*."

> *(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*
>
> *(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*
>
> *(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.*

Coastal Act Section 30242 states:

> *All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

2. Consistency Analysis

The Coastal Act sets forth policies that relate to the protection of prime agricultural lands[5] and sets limits on the conversion of all agricultural lands to non-agricultural uses. Section 30241 also enumerates a series of measures to be undertaken to minimize conflicts between agricultural lands —both prime and non-prime— and urban uses.

Maintaining Maximized Production of Prime Agricultural Land

Prior to acquisition of the project site by the CDFG and the City, the property comprised parts of several ranches continually used for agricultural purposes, primarily animal husbandry uses, since their reclamation from Humboldt Bay in the 1880s. Given the fine

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[5] Coastal Act Section defines "prime agricultural land" through incorporation-by-reference of paragraphs (1) through (4) of Section 51201(c) of the California Government Code. Prime agricultural land entails land with any of the follow characteristics: (1) a rating as class I or class II in the Natural Resource Conservation Service land use capability classifications; or (2) a rating 80 through 100 in the Storie Index Rating; or (3) the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture; or (4) the ability to normally yield in a commercial bearing period on an annual basis not less than two hundred dollars ($200) per acre of unprocessed agricultural plant production of fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years.

sediment size generally associated with fluvially deposited soil materials within bays and estuaries, the low relief of the area, the relatively shallow water table, and the limited amount of tillage and organic material or other soils component amendments made to the site over the last century since their reclamation, these seasonally waterlogged soils and their high bulk density severely limit the types and agricultural activities that may be feasibly undertaken at the site. As a result the primary use pattern for the site has mainly been low intensity cattle grazing land and dry season fodder production in the form of hay cropping.

Based on information derived from the Natural Resources Conservation Service (NRCS), the project site is comprised of three distinct soil mapping units: Arlynda, 0-2 percent slopes, Arlynda, 0-9 percent slopes, and Occidental, 0-2 percent slopes. The Arlynda series consists of very deep, very poorly drained soils on back swamps, depressions, meander scars, and low flood-plain steps on alluvial plains near the Pacific Ocean and along lower reaches of rivers and streams. These soils formed in alluvium derived from mixed sources. The Occidental series consists of very deep, very poorly drained soils on reclaimed salt marshes and tidal marshes on alluvial plains. Both of these soils units are identified as hydric soils and are recognized as having several impediments to extensive agricultural uses. As a result the NRCS has assigned Class III through VII classifications to the project site soils as a locale which has "severe limitations that reduce the choice of plants or require special conservation practices, or both." Thus, under the NRCS land capability classification system, the soils at the project site do not meet the first criterion for the definition of prime agricultural soils.

According to information submitted by the City, based on Soils of Western Humboldt County, California (McLaughlin and Harradine, 1965), the project site contains Class 2 and 3 Bayside silty clay loam (Ba_2 and Ba_3) and Class 3 Loleta loam (Lo_3), which are all poorly or imperfectly drained soils with 0-3% slopes. The Ba_2 soils have a Storie Index rating of 36 and Ba_3 soils have a Storie Index rating of 49. The Storie Index for Lo_3 soils is 52; thus, the project area does not qualify as prime agricultural land under the second prong of the Coastal Act's definition.

The third potential qualifying definition of prime agricultural land —the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal-unit per acre as defined by the United States Department of Agriculture— similarly does not apply to the project site. Based on correspondence regarding the *Arcata Baylands* development, a related restoration and enhancement project site with soils similar to those on the McDaniel Slough project site, Gary Markegard, County Farm Advisor for the US Cooperative Extension, indicates that the low-lying, poorly drained, saltwater intruded, and flood-prone soils along the northern reclaimed fringes of Humboldt Bay typically require three acres per animal-unit.

Finally, with regard to the site's potential qualification as prime agricultural land based upon its potential for commercial fruit or nut crop production at specified minimal yields,

the project area similarly fails to meet the criterion. Due to the maritime-influenced climate of the western Humboldt County, commercial nut production is precluded along the immediate coastal areas by the significant precipitation and limited number of warm, overcast-free days to allow for full seed maturation. In addition, due to the high bulk density of the soils underlying the project site and the relatively shallow water table, fruit and berry crops suitable for the North Coast's temperate setting are similarly restricted to areas further inland, primarily on uplifted marine terraces and within well developed river floodplain areas with improved drainage and more friable soil characteristics. As a result, fruit and nut production on an economically successful commercial basis is not currently, nor has ever been historically pursued in open coastal environs, such as the project area.

Therefore, based upon the above discussed set of conditions at the project site, the Commission finds that the subject site does not contain prime agricultural soils or livestock and/or crop productivity potential and the first directive of Section 30241 regarding maintaining the maximum amount of prime agricultural land in agricultural production is therefore not applicable to the project site.

Minimizing Conflicts Between Agricultural and Urban Land Uses

Currently, seasonal livestock grazing occurs on approximately 67 acres of the northeastern quarter of the project site (see Exhibit No. 5). The proposed project would entail alterations in site hydrology and the coverage of portions of the project site with permanent structures that would prevent future agricultural use of the property. The construction of the flood- and eco-levees and associated breaching of the reclamation levee to allow intertidal flows of bay water into the site, and the brackish and freshwater impoundments would exclude grazing from the whole of the currently grazed area. Section 30241 requires that conflicts between urban and agricultural land uses be minimized through all of the following:

(a) Establish stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses;

(b) Limit conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development;

(c) Permit the conversion of agricultural land surrounded by urban uses only where the conversion of the land would be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services

and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources;

(d) Develop available lands not suited for agriculture prior to the conversion of agricultural lands;

(e) Assure that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality; and

(f) Assure that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands does not diminish the productivity of such prime agricultural lands.

The Commission finds that the conversion of grazing lands to the proposed habitat restoration and enhancement use would occur around the periphery of an urban area and is consistent with the above criteria on Section 30241 for minimizing conflicts between urban and agricultural use for the following reasons:

(a) Establishing Stable Boundaries Between Urban and Rural Uses

The project parcels are situated at the City of Arcata's western entry along State Route 255. The project parcels are juxtaposed between public facility, commercial-light industrial, heavy industrial, and residential uses to the southeast, east and north (i.e., Arcata Marsh and Wildlife Sanctuary /Municipal Wastewater Treatment Facility, Little Lake Industrial Park, Johnson Industries, and Industrial Electric Company, Humboldt County Waste Management Authority Transfer Station, *Villa Way* and *Windsong Village* subdivisions) and large tracts of agricultural and natural resource lands further to the west and south (i.e., Dias, DeMello, Moranda, Santos, and Lambert ranch holdings, CDFG Mad River Slough Wildlife Area, open waters of Humboldt Bay).

Given this location relative to adjoining land uses, development of the restoration and enhancement project on the currently grazed portions of the site would serve to minimize conflicts between agricultural and urban land uses by establishing a stable boundary separating urban and rural areas, thereby providing a clearly defined buffer between potentially incompatible uses.

(b) Limiting Conversions Around Urban Periphery to Complete Stable Boundaries

The proposed conversion of agricultural lands constitutes a conversion of agricultural land around the periphery of urban areas where the viability of existing agricultural use is already severely limited by conflicts with urban uses, namely light, noise, and human activity, and stormwater runoff associated with the industrial and commercial areas to the

east and northeast. Given this location relative to adjoining land uses, development of the restoration and enhancement project on the currently grazed portions of the site would serve to minimize conflicts between agricultural and urban land uses by establishing a stable boundary separating urban and rural areas, providing a clearly defined buffer between potentially incompatible uses.

Furthermore, , the proposed conversion of agricultural lands would contribute to the creation of a two-mile wide continuous band of fish and wildlife refuge area spanning from the eastern side of the Arcata Marsh and Wildlife Sanctuary at mouth of Jolly Giant Creek/Butcher's Slough westerly to the far side of the CDFG's Mad River Slough Wildlife Area. Such a significant land area would effectively preclude further westward expansion of the City of Arcata into the agricultural and open space lands of the southern Arcata Bottom significantly reducing pressures for conversion of the agricultural lands to nonagricultural uses. Moreover, the conversion of these grazing lands would complete a logical and viable neighborhood by expanding the current bayfront natural conservation lands comprising the Arcata Marsh and Wildlife Sanctuary, the Butcher's Slough Restoration Area, and South I Street Freshwater Pond Enhancement Site around the southwest periphery of the City, establishing a stable limit on the encroachment of urban development into the agricultural areas comprising the Arcata Bottom.

(c) Limiting Conversions Around Urban Periphery to Areas with Adequate Service Availability

As noted above, the site of the proposed conversion of the 67 acres of grazing agricultural land is surrounded by, and contiguous with urban uses on one side and additional agricultural and fish and wildlife refuge areas on the other side. The predominant open space nature of the proposed use would not result in land use conflicts by introducing a potentially incompatible use (e.g., residential development) in close proximity to the industrial and public facility areas along the Samoa Boulevard corridor. Furthermore, with respect to the project's effect on other agricultural operations in the surrounding area, the proposed extinguishment of cattle grazing from the subject 67 acres would eliminate grazing for approximately 22 animal-units, which, based on the analysis by the County's Farm Advisor discussed above, would represent a relatively insignificant amount from a regional perspective. In addition, considering the continued side-by-side coexistence of similar agricultural operations with the numerous other wetland restoration and enhancement work undertaken by the City in the surrounding area, the project is not likely to contribute to cumulative significant adverse effects on the viability of existing agricultural grazing lands or operations within the North Bay / Arcata Bottom area. Accordingly, conversion of the grazing area to fish and wildlife habitat area would not have significant adverse impacts, either individually or cumulatively, on coastal resources.

(d) Develop Lands Not Suitable for Agriculture First Before Converting Agricultural Lands

The proposed conversion of the 67 acres of grazing land around the periphery of an urban area would occur on land not particularly suited for agriculture use and whose development would avoid conversion of productive agricultural lands. A combination of deferred maintenance of the reclamation levee's tidegates and ongoing subsidence of the area has caused substantial saltwater intrusion into portions of the grazing lands, resulting in saline soil levels toxic to many of the established crop cover within the agricultural lands and further limiting the seasonal use of these lands for open grazing. With the listing of the tidewater goby as an endangered species and the identification of the borrow ditching and tidal sloughs within the draft recovery plan, the U.S. Fish and Wildlife Service has indicated that the Service would not support the replacement of the malfunctioning tidegates on Arcata Bay as habitat utilization has been established in the area and cutting off the tidal flux to the area would constitute a form of "take" prohibited by the federal Endangered Species Act. Accordingly, given the mandated allowance for continued intrusion of saltwater onto the subject property, ongoing regional subsidence, and predicted incremental rise in sea level, the suitability of the grazing lands for continued agricultural use is expected to continue to degrade over time and possibly be completely extinguished by these forces within a decade.

(e) Avoid Public Service Facility Expansion That Would Impair Viability of Agricultural Lands

Although the project is a public facility, the development does not involve an extension of utility lines or other public services on the site or to adjacent agricultural lands. Therefore, the proposed conversion of grazing lands would not result in the development of infrastructure that would be financed through assessments against the adjoining agricultural properties.

Furthermore, the proposed conversion of grazing lands, as part of the proposed habitat restoration and enhancement project as conditioned, would not result in emissions or discharges that would degrade air and water quality and thereby impact agricultural viability of the surrounding agricultural lands.

(f) Avoid Diminishment in Productivity Associated with Divisions of Prime Agricultural Land

This particular land use conflict minimization measure is not applicable as the proposed conversion of grazing lands does not entail a subdivision of prime agricultural lands.

The Commission also notes that, with respect to planned land use objectives, the subject grazing land portion of the site is planned and zoned for Agriculture Exclusive uses within the City of Arcata's certified LCP. Section 1-0207.1(a) of the City's Land Use and Development Guide recognizes "wildlife habitat management — including fisheries… and related temporary structures" as one of the "rural uses" allowed by-right

within the A-E zoning district. However, the grazing lands and the entire project site are within the Commission's retained jurisdiction and therefore, the standard of review is the Coastal Act rather than the LCP. Nonetheless, as the above-stated analysis concludes, the Commission finds that the proposed conversion of grazing lands is consistent with Section 30241 of the Coastal Act as the proposed discontinuation of agricultural uses would not occur on prime agricultural land as defined by the Coastal Act and would occur on agricultural lands that: (1) are located around the periphery of an urban area; (2) are declining in quality due to continuing subsidence and saltwater intrusion; (3) represent a minor conversion of agricultural land from a regional perspective; (4) would not adversely affect the viability of agricultural uses on adjoining areas; (5) would establish a stable boundary separating urban and rural areas; and (6) would serve to minimize urban-rural land use conflicts.

D. Restoration of Marine Resources, Protection of Coastal Water Resources, and Permissible Filling, Dredging, and Diking of Wetlands.

1. Applicable Coastal Act Policies and Standards

Section 30108 defines the term "feasible" as follows:

> *'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.*

Coastal Act Section 30230 states as follows:

> *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.* [Emphasis added.]

Coastal Act Section 30231 states as follows:

> *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. [Emphases added.]

Coastal Act Section 30233 provides as follows, in applicable part:

> *(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:…*
>
> *(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…*
>
> *(6) Restoration purposes.*
>
> *(7) Nature study, aquaculture, or similar resource dependent activities…*
>
> *(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…* [Emphasis added.]

2. Consistency Analysis

Coastal Act sections 30230 and 30231 require in part, that marine resources and coastal wetlands be maintained and enhanced. These policies also call for restoration of marine resources, coastal waters, streams, wetlands, and estuaries where feasible. Restoration in the strictest sense generally refers to the *in situ* reestablishment of biophysical functions and characteristics of the resource that existed prior to human disturbance. Section 30233 of the Coastal Act states that the diking, filling, or dredging of wetlands shall be permitted only when: (a) it is only for one of more of a limited set of enumerated uses; (b) there is no feasible less environmentally damaging alternative to the proposed development; (b) all feasible mitigation measures have been provided to minimize adverse environmental effects; and (d) the functional capacity existing wetlands or estuaries would be maintained.

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project

can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

(1) Oceanic, open shoreline, estuarine, intertidal, riverine, wetland, and impounded waterbody aquatic resources, and the functional capacity of the habitat therein would be maintained and enhanced where feasible, and that the development has been designed in such a manner to sustain the biological productivity of coastal waters so that healthy populations of all species of marine organisms are maintained adequate for long-term commercial, recreational, scientific, and educational purposes;

(2) The purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;

(3) Feasible mitigation measures have been provided to minimize adverse environmental effects; and

(4) The project has no feasible less environmentally damaging alternative.

(1) Maintenance and Enhancement of Biological Productivity and Functional Capacity

The first general requirement set forth by Sections 30230, 30231, and 30233 is that any proposed development, particularly as may include the dredging, diking, or filling in coastal wetlands, must maintain, and enhance where feasible, the biological productivity and functional capacity of the habitat.

The proposed restoration of the lower McDaniel Slough watercourse and related non-marine improvements in surrounding areas would enhance the biological productivity and functional capacity of estuarine, intertidal saltmarsh, and nearshore habitats. Although the project would result in only a very small net increase in wetland area (.12-acre), the 205 acres of potentially highly-productive saltmarsh proposed to be restored from the currently degraded and relatively low productivity riverine, emergent, and seasonal agricultural grazing wetlands, together with the additional 35 acres of brackish and freshwater pond and planted riparian area would provide substrates that could support significant biomass production by a wide variety of estuarine, intertidal, and terrestrial organisms. The restored saltmarsh, brackish water, and intertidal streambanks would provide a mosaic of deep to shallow in-water and emergent shoreline areas where anadromous salmonids, tidewater goby, and a wide assortment of other amphibian and aquatic wildlife could hold, feed, rest, and rear their young. The native planting of the detached roosting islands, brackish pond islands, and areas surrounding the ponds would restore a riparian character to the site periphery, providing additional shade and cover for fish, and tree- and shrub-covered habitat for other terrestrial organisms.

In addition to the direct benefits to coastal biological resources associated with the project's proposed habitat restoration and enhancement aspects, the increased connectivity between the Janes Creek / McDaniel Slough watercourse, the intertidal marsh plain, and the open waters of Arcata Bay would serve to increase sequestration and flow of carbon in and through the margins of northern Humboldt Bay. With the increase in hydraulic exchange between these water bodies that the project would furnish, dissolved and suspended carbon materials, and other nutrients, would be more readily transported through the fluvial system and into estuarine and coastal areas, fostering greater overall productivity throughout the watershed. In addition, fixation of carbonaceous organic compounds in the forms of vegetation biomass with high carbon-to-nitrogen ratios typical of intertidal marsh plain settings, and/or as buried peat sediments, would also help reduce the amount of gaseous carbon dioxide entering the atmosphere, a major factor in global warming.[6]

Furthermore, as discussed below in the section of this finding on mitigation, the conditions of the permit would ensure that the project would not have significant adverse individual or cumulative impacts on existing wetland habitats or on the water quality of McDaniel Slough or Arcata Bay. Thus, the proposed project would maintain and enhance the diversity, sustainability, and productivity of wetland habitats historically and currently existing on the site. For all of the above reasons, the proposed project will maintain and enhance the biological productivity and functional capacity of the wetlands consistent with the requirements of Sections 30230, 30231, and 30233(c) of the Coastal Act.

(2) Allowable Use for Dredging and Filling of Coastal Waters

The second test set forth above is that any proposed filling, diking or dredging must be for an allowable purpose as specified under Section 30233 of the Coastal Act. Among the allowable purposes for diking, filling, or dredging, under Section 30233(a) are "incidental public service purposes," "restoration purposes," and "nature study… or similar resource dependent activities." As discussed in detail above, the proposed project intends to restore and enhance approximately 1,600 lineal feet freshwater/saltmarsh transitional wetlands along the lower reaches of Campbell Creek / Gannon Slough.

Development of Saltmarsh and Brackish Pond

The Commission finds that the saltmarsh and brackish pond portions of this wetland enhancement project, where the sole purpose is restoring historical intertidal wetland habitat values, constitutes allowable fill, dredging, and diking for "restoration purposes"

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[6] For a more in-depth discussion of the role of coastal areas in carbon sequestration, please refer to *Carbon Sinks in Nearshore Marine Vegetated Ecosystems*, Thom, Blanton, Woodruff, *et al.*, Pacific Northwest National Laboratory, Paper published in *Proceedings of the First National Conference on Carbon Sequestration*, Washington, DC, May 14-17, 2001

pursuant to Section 30233(a)(6) and is, therefore, an allowable use for the diking, dredging, and filling of wetlands under Section 30233.

Since being reclaimed behind the dikes built along the bay margins in the late 1880s, the subject site now functions as a combination of brackish-freshwater, riparian, scrub-shrub, and emergent (grazing-dominated seasonal agricultural) wetlands. However, prior to its reclamation, the whole of the subject site historically consisted of intertidal saltmarsh off of Humboldt Bay with the exception of a small, roughly 1.8-acre area along the northeasternmost fringes of the property (see Exhibit Nos. 7 and 8). Thus, with regard to the directed restoration of the various enumerated coastal aquatic resources, where deemed feasible, re-establishment of intertidal mesosaline saltmarsh, including diurnal and seasonally fluctuating, transitional oligohaline "brackish" water areas, would be the resource type applicable to the project site.[7]

According to information from the U.S. Fish and Wildlife Service (USFWS), in the Humboldt Bay region it is estimated that between 7,000 and 8,700 acres of salt marsh were present prior to human development. Since the mid-1800's, most of what was likely to have been historic salt marsh has been diked or filled and has been reduced to a total area of around 900 acres, a reduction of at least 87%. In general, restoring areas that have historically supported tidal salt marsh is preferable when the physical conditions of a site present such an opportunity. The USFWS for example, has indicated that restoration of salt marsh habitats around the Bay is a high priority, as salt marsh restoration is important for the protection, enhancement, and restoration of native fish, wildlife, and plant communities, some of which are dependent on salt marsh for their existence.

The project proposes to reestablish intertidal saltmarsh and brackish water habitat over approximately 222 acres of the 240-acre project, or over 92 percent, while enhancing the freshwater and vegetated riparian character of the remaining 18 acres, resulting in the enhancement of a diverse variety of aquatic habitats and intervening ecotonal transitional areas.

This finding that the portion of proposed diking, filling, and dredging that will reestablish saltmarsh and brackish water habitat constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in increasing wetland habitat values. Should the project be unsuccessful at increasing wetland habitat values, or worse, if the proposed filling impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually

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[7] For a further in-depth discussion of the distinctions and habitat implications between "marine," "estuarine," and "freshwater" wetlands with respect to salinity concentration, please refer to *Classification of Wetlands and Deepwater Habitats of the United States*, Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. December 1979, U.S. Fish and Wildlife Service Office of Biological Service, Washington, D.C.

be for "restoration purposes." To ensure that the restored saltmarsh and brackish pond components of the project achieve the wetland restoration/enhancement objectives for which the project is intended, the Commission attaches Special Condition No. 1. Special Condition No. 1 requires the applicant to submit a final monitoring plan for review and approval by the Executive Director prior to the issuance of the coastal development permit. The monitoring plan is required to outline a method for measuring and documenting the improvements in habitat value and diversity at the site, including wildlife species and abundance, over the course of ten years following project completion. Furthermore, Special Condition No. 1 requires the monitoring plan to include provisions for remediation to ensure that the goals and objectives of the wetland enhancement project are met. Special Condition No. 1 further requires the applicant to repair and maintain the revegetated areas. Should any of the scheduled restoration plants die or otherwise be removed, the plants shall be replaced at a 1:1 ratio.

Development of Freshwater Pond

As described within Project Description Findings Section IV.B and the preceding analysis regarding maintenance and enhancement of marine resources, the freshwater pond component of the project was included in the interest of better integrating the project with the adjacent Arcata Marsh and Wildlife Sanctuary (AM&WS) to expand public access and natural resource-based recreational opportunities and to facilitate the reuse of treated wastewater. Constructed in 1981 and interlinked with the adjacent municipal wastewater treatment plant in 1986, the 38-acre AW&WS serves multiple purposes including providing a visitor destination-level public trail system for hiking, cycling, bird-watching and other similar natural resource related recreational pursuits, affording wildlife habitat to a diverse assortment of resident and migratory waterfowl, fish, and other wildlife species, fostering environmental education in the form of an outdoor laboratory utilized by numerous local primary, secondary, and university students, and research-based, salmon-rearing aquaculture, as well as tertiary wastewater treatment. The new freshwater pond will include a trail system that extends along the west side of the pond and will provide additional opportunities for wildlife viewing and natural resource education.

In addition, the freshwater component of the project would provide opportunities for the bio-filtration of area stormwater runoff from an adjoining roughly 20-acre area along Samoa Boulevard and South I Street developed with a variety of general commercial to light industrial/manufacturing uses whose drainage is currently flowing untreated into the project area wetlands through the City's roadside ditching and road culvert under-crossings. As proposed, runoff from the adjoining commercial-industrial area would be conveyed first into the easterly freshwater pond to detain the runoff and allow entrained sediments and other pollutants to decant and degrade. This pond would be connected in turn to the Brackish Pond where additional soluble contaminants, such as soil nutrients could be filtered by the pond's vegetation. Accordingly, the bio-treatment of area drainage by the City routing existing stormwater runoff through the freshwater pond is

incidental to the City's existing stormwater drainage system use and is for the public service purpose of protecting state waters.

Therefore, the Commission concludes that the dredging of seasonal wetlands for the excavation of the freshwater pond and the placement of fill for erection of the portion of eco-levee that would segregate the pond area from the saltmarsh restoration site and provide the base for the access/nature trail, represent permissible diking, filling, or dredging of wetlands under Sections 30233(a)(4) and (a)(7) for "nature study… or similar resource dependent activities" or for "incidental public service purposes."

Electrical Powerline Tower Boardwalks and Stanchion Enhancements

The project also includes a proposal for placing a relatively minor amount of fill for construction of narrow elevated boardwalk walkways out to two of the five PG&E electrical powerline towers that traverse the project site. A boardwalk of 500 lineal feet would be constructed leading south from Old Samoa Road to the PG&E power tower in the northwest corner of the site. Another 300-lineal-foot boardwalk access would be erected from the existing bayfront reclamation levee east of the breach site. The boardwalks would be constructed with redwood joists and beams and/or recycled plastic lumber planking. In addition, a third tower located in the middle of the site would be reinforced through extending the tower bases of cylindrical concrete sleeves to fortify the stanchions against corrosion in submerged conditions. PG&E will access that tower for maintenance by boat or helicopter as needed. The total wetland fill for these improvements is estimated to cover approximate 50 square-feet of wetlands. As the PG&E powerline corridor through the site is an existing public utility facility and the purpose for the proposed fill would be for continued maintenance access and structural integrity, the Commission finds this portion of the development is incidental to the existing powerline use and is for a public service purpose. Therefore, the proposed boardwalks and powerline tower base extensions comprise "incidental public service purposes" that are a permissible use for the filling, dredging, and diking of wetlands pursuant to Coastal Act Section 30233(a)(4).

Conclusion

The Commission finds that as conditioned, the proposed filling in coastal wetlands for the proposed restoration and enhancement of coastal stream, riparian, and tidal slough habitats and to place fill for an access boardwalk to and structural reinforcement of the electrical powerline stanchions are allowable uses pursuant to Sections 30233(a)(4), (6), and (7) of the Coastal Act.

(3) Adequate Mitigation Measures

The third test set forth by Section 30233 is that adequate mitigation must be provided for adverse environmental impacts. Potential significant adverse impacts that could result from the proposed dredging or filling within the lower McDaniel Slough floodplain

include: (a) modification of freshwater and brackish marsh, and willow riparian habitat to saltmarsh; (b) filling of agricultural field seasonal wetlands to construct the new flood- and eco-levees; (c) impacts to fish and wildlife habitat from water pollution in the form of sedimentation or debris entering coastal waters and wetlands; (d) introduction through re-planting of exotic invasive plants species that could compete with native vegetation and negate the habitat improvement they would provide; and (e) use of certain rodenticides that could deleteriously bio-accumulate in predator bird species. Overall, the project would enhance wetland habitat values and would produce generally only beneficial environmental effects. However, the proposed project has been conditioned to ensure that habitat enhancement results and that potentially significant adverse impacts are minimized.

(a) Modification of Existing Freshwater and Brackish Marsh, and Willow Riparian Habitats to Saltmarsh

A potential significant adverse impact resulting from the dredging, diking and filling in wetlands is the conversion of habitat from one type to another. In many cases the consequences of wetland development will be a combination of the direct loss to habitat area, and reductions in biological productivity and/or species diversity. As discussed in Project Description Findings Section IV.B, the proposed project would involve the erection and breaching of levees, and the grading of low elevation sites within and adjacent to the lower McDaniel Slough water channel and floodplain to facilitate intertidal flow into the 205-acre western three-quarters of the project site. As a result of this land alteration, a combined 7.5-acre area of freshwater and brackish marshes, and willow riparian area will to converted to pickleweed (*Salicornia virginica*) dominated salt marsh.

The freshwater and brackish marsh and riparian vegetation along and within the portion of McDaniel that would be either inundated, filled, or otherwise converted, is currently comprised of a mixture of ruderal species that are generally found along disturbed streams and adjoining bankside areas, including range from obligate wetland plants such as arrow grass (*Triglochin maritima*), cattail (*Typha latifolia*), bullrushes, (*Scripus* sp.) sedges, (*Carex* sp.), rushes (*Juncus* sp.) to more mesic willow thickets (*Salix* sp.) and blackberry brambles (*Rubus* sp.). Given the scant numbers of fish and wildlife species normally found along coastal streams of this size, the significant presence of numerous invasive pioneering plant species and the reduced habitat expression of tidewater habitat due in part to the vacillating water regime, subsidence, and nutrient inputs from adjacent agricultural grazing uses, the existing habitat can be considered to be degraded. Notwithstanding these deficiencies, the area nonetheless provides some open water and riparian habitat diversity in an area dominated by seasonal wetland agricultural fields.

The direct loss of the 7.5-acre area comprising the Freshwater and brackish marshes and willow riparian thickets would be off-set by the excavation and revegetation of the 35-acre area comprising the Brackish Pond Restoration Area and Freshwater Pond

Enhancement Area on the eastern side of the project site. The newly created brackish, freshwater and riparian replacement wetlands would provide increased habitat area for water-associated fish and wildlife including, salmonid fish species, shorebirds, wading birds, perching songbirds, and raptors, and small mammals such as stripped skunk and raccoons.

(b) Filling of Agricultural Fields Seasonal Wetlands

The construction of the new 21,000-lineal-foot levee field to contain the intertidal flow that would be allowed through the proposed breach in the bayfront reclamation levee would entail the placement of approximately 80,000 cubic yards of earthen materials excavated in creating the project's freshwater and brackish water pond components, comprising a roughly 6.5-acre area currently consisting of a mixture of fallow and grazed seasonal wetland agricultural fields. To offset the filling of these wetlands, approximately 6.64 acres of fill materials comprising portions of the existing channel containment levees together with the bed of a former ranch road, paddock/corral, and barn building pad, a small parking lot on the eastern side of Mad River Slough Wildlife Area, and other superfluous and dislodged riprap debris along the reclamation levee dike face and scattered within the back-drain borrow ditching. After completion of all of the project work, the total amount of wetland within the project area would be slightly increased by approximately ⅛ acre. To ensure that the proposed removal of 6.64 acres of fill is accomplished to offset the approved filling of wetlands, Special Condition No. 1 requires the submittal for the review and approval of the Executive Director of a final restoration monitoring program that provides for the removal of the fill and provides for as-built plans to be subsequently submitted that demonstrate that the planned fill removal has occurred.

(c) Sedimentation Impacts to Aquatic Habitat and Water Quality

The proposed restored saltmarsh and created freshwater and brackish pond wetlands modified by the levee construction and breaching are being undertaken to provide cover, forage, and nesting opportunities to a variety of fish and wildlife species including listed salmonids such as the *coho* salmon, steelhead, and coastal cutthroat trout, and the muted tidal slough inhabiting tidewater goby. The seasonal wetlands provide habitat to a wide assortment of terrestrial organisms, most notably several environmentally sensitive avian species, including the northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), Great blue heron (*Ardea herodias*), and Snowy egret (*Egretta thula*).

Potential adverse impacts to both existing and to-be-restored/enhanced fish and wildlife habitat related water quality could occur in the form of sedimentation or debris from project diking and dredging (i.e., soils disturbed during the placement and/or removal of the new and existing flood- and eco-levees and constructing the freshwater and brackish ponds), and filling (i.e., the materials excavated in raising the lowermost mudflat-prone areas to elevations suitable for pickleweed marsh formation). Although the project

description states that such impacts would be prevented and minimized by conducting the ground-disturbing work during the dry weather season and through incorporating various other best management practices into a final erosion and sediment control plan, the application provides few details as to precisely how this fill would be placed or excavation performed relative to: (1) the potential for causing stream bank soil materials to enter into the slough during the erection/removal of the levees; and (2) the potential for materials to become entrained into areas subject to intertidal inundation by installing the fill across the existing low lying areas and during the construction of the freshwater and brackish ponds. In addition, although a net surplus of material beyond that needed for levee construction and marsh plain terra-forming (135,219 yd^3), would be excavated in forming the ponds and in removing the existing channel confinement levees (±120,000 yd^3) no information was provided as to where the excess excavated materials would ultimately be disposed.

Given the necessity of using mechanized heavy equipment for performing the fill and grading work, the project poses significant risks to the water quality of the receiving coastal waters. To ensure that adverse impacts to water quality do not occur from construction activities conducted along the immediate stream bank margins, the Commission attaches Special Condition Nos. 2, 3, 4, and 5. Special Condition No. 2 requires the applicant to undertake the development pursuant to certain construction and debris removal performance standards. Specifically, no construction materials, debris, or waste are to be placed or stored where they may enter the coastal waters of McDaniel Slough or Humboldt Bay. In addition, all construction debris, including fencing posts and wiring scraps, fasteners, road base, building debris, and riprap are to be removed and disposed of in an upland location outside of the coastal zone or at an approved disposal facility. Special Condition No. 3 similarly requires the applicant to submit, for the Executive Director's review and approval, an erosion and runoff control plan that is to include certain specified water quality best management practices for minimizing impacts to coastal waters associated with the dredging, filling, and diking of McDaniel Slough. To maximize the success of the soil-binding revegetation proposed to be planted. Special Condition No. 6 requires that the willow planting be performed during a late autumn to mid-winter timeframe. During this period (± November 1 to March 1), auxin production in most temperate plants is suppressed to the point where the growth of root tissue occurs at higher rates than foliage from apical and lateral buds. Planting cuttings during this period will allow adequate time for the stem tissue to undergo adventitious differentiation into root tissue and for the new roots to become established prior to the onset of budding in the early spring, when, if adequate roots have not developed, the plants could desiccate and expire. Special Condition No. 5 requires the applicant to submit, for the Executive Director's review and approval, a debris disposal plan detailing the methods, schedule and confirmed final destination of the materials dredged from the site.

c) Introduction of Exotic Invasive Plants

The use of non-invasive plant species adjacent to environmentally sensitive habitat areas (ESHAs) is critical to protecting such areas from disturbance. If invasive species are planted adjacent to an ESHA they can displace native species and alter the composition, function, and biological productivity of the ESHA.

The project identifies the planting of a variety of native tree- and shrub-layer species and the use of a "native annual grass" mixture to stabilize ground-disturbed areas. However, the proposed project does not further specify the source or composition of the seed mix nor precludes the planting of other plant species beyond those identified in the permit application.

To assure that the grass mixture is composed solely of native annual grass seeds, Special Condition No. 6 requires that only seed stock bearing the California Crop Improvement Association "yellow tag" certification as California native grass seed be used in the proposed soils stabilization applications. Furthermore, Special Condition No. 6 specifically prohibits the planting of any 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. Furthermore, no plant species listed as a 'noxious weed' by the governments of the State of California or the United States are to be utilized in the revegetation portion of the project.

d) Use of Anticoagulant-based Rodenticides

To help in the establishment of vegetation, rodenticides are sometimes used to prevent rats, moles, voles, 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 bio-accumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species.

To avoid this potential cumulative impact to environmentally sensitive wildlife species, Special Condition No. 6 contains a prohibition on the use of such anticoagulant-based rodenticides.

The Commission finds that the proposed wetland restoration/enhancement project is a permitted use under Section 30233 of the Coastal Act, and that as conditioned, all potential adverse impacts have been avoided or minimized to the maximum extent feasible.

(5) Alternatives Analysis

The final test set forth by Section 30233 is that the proposed fill project must have no feasible less environmentally damaging alternative. In this case, the Commission has considered the various alternatives presented by the applicant and determines that there is no feasible less environmentally damaging alternative to the project as conditioned by Special Conditions No. 1-13. A total of four possible alternatives to the proposed project have been identified including: (a) the "no project" alternative; (b) restoration of the entire project site as muted saltmarsh; (c) full site restoration of open intertidal saltmarsh; and (d) full site reclamation for freshwater habitat (see Exhibit No. 9).

(a) No Project

The "no project" alternative would leave the lower channel reaches and floodplain of McDaniel Slough in their current condition with no restoration or enhancement actions being taken. The "no project" alternative would eliminate the opportunity for increased habitat diversity and increased species abundance within a degraded anadromous fish-bearing coastal stream. Therefore, the no project alternative is not a less environmentally damaging feasible alternative as it would not accomplish the project objectives of enhancing wetland habitat values within City creeks.

(b) Full Site Restoration of Muted Saltmarsh Habitat Only

The levee breach alternative would allow tidal action to be reintroduced to the site by removing the existing tidegates and excavating a breach in the levee sufficient to convey tidal and flood flows on Janes Creek/McDaniel Slough. Estimates of breach sizing indicate that a breach of 100 feet or more may be required. A new levee system composed of eco-levees and flood control levees would be reconstructed inboard around the perimeter of the site. The levees would be designed to be constructed to elevation 8.0 feet $NGVD_{29}$ to protect against the 100-year tide level of 6.5 feet $NGVD_{29}$ documented by the Federal Emergency Management Agency (FEMA).

The loss of 7.5 acres of brackish and freshwater marsh and riparian willow thicket would not be mitigated for, as no similar habitat types would be included within the overall site plan. As discussed further in Public Access and Recreational Opportunities Findings Section IV.G below, this alternative would also preclude any feasible future use of the bayfront reclamation levee as a regional trail link. For these reasons, the restoration of the whole of the project site to intertidal area is not a feasible less environmentally damaging alternative.

(c) Full Site Restoration of Open Intertidal Saltmarsh

The open saltmarsh restoration alternative would involve the complete removal of the 4,237 lineal-foot segment of reclamation levee along the site's bay frontage together with selective filling of the levee back-drain borrow ditch to allow for

direct, unimpeded exchange of tidal waters across its 240-acre entirety. Complete hydrologic and ecologic connectivity would be established between Arcata Bay and the restored marsh plain. Tidal connector channels and additional levee breaches would be designed according to the respective drainage areas. The impetus for the alternative is based on restoring, where possible, the tidal drainage system as shown on the 1870 U.S. Coast Survey of Humboldt Bay. Removing the levee would allow for the formation of a woody debris wrackline during spring tides that creates natural disturbance and colonization opportunities for rare plants. This alternative would limit trail access to the northeastern flank of the new flood control levees to minimize human disturbance to wetland wildlife use.

Although this alternative results in the greatest amount of future restored saltmarsh habitat area and places stringent limits on human activity within the project area, the overall quality of the habitat, in terms of biomass, direct and secondary productivity, and species richness may not necessarily be similarly maximized. For example, by not placing fill on the marsh plain to raise it to an elevation suitable for pickleweed growth and by limiting the floodplain grading work to the erection of the new levee field, removal of the reclamation levee front, and restoration of the tidal channels, there is an increased likelihood that the site would either take the end form of an unvegetated mud flat and/or be colonized by the adjoining mat of exotic/invasive cordgrass (*Spartina densiflora*). Either condition would offer less forage, cover, holding, and nesting than the pickleweed marsh plain to be sought under the proposed project. In addition, the free unimpeded tidal flux over the whole of the project site would dramatically alter the flow and salinity regimes within the lower tidal channels and borrow ditching, effectively removing habitat conditions favorable to slackwater species such as the tidewater goby. Moreover, the loss of 7.5 acres of brackish and freshwater marsh and riparian willow thicket would not be mitigated for, as no similar habitat types would be included within the overall site plan. As discussed further in Public Access and Recreational Opportunities Findings Section IV.G below, this alternative would also preclude any feasible future use of the bayfront reclamation levee as a regional trail link. For these reasons, the restoration of the whole of the project site to intertidal area is not a feasible less environmentally damaging alternative.

(d) Full Site Freshwater Habitat Reclamation

Developing the whole of the project site for freshwater habitat would involve repairing and upgrading the bayfront levee tidegates to allow for increased seasonal riverine overflow inundation within the lower McDaniel Slough floodplain behind the reclamation levee such that seasonal freshwater wetlands would predominate the area. The bayfront levee would be raised to a level of 6.5 feet $NGVD_{29}$ to protect against the 100-year tide level. In addition, the McDaniel Slough area waterfowl habitat would be enhanced with two shallow freshwater

seasonal ponds fed by groundwater. Fill excavated during pond construction would be used to improve the bayfront levee, however, no grading of the

While this alternative would maintain most of the existing freshwater/agricultural wetlands, the continued utilization of tidegate barriers between the bay and the McDaniel Slough / Janes Creek watershed would not optimize access for anadromous fish species. Moreover, questions have surfaced as to the feasibility of this option: In response to the identification of conditions favorable to the tidewater goby within the lower slough channels and borrow ditching, and the inclusion of these water features within Unit "HUM-3" of the revised designated critical habitat areas for the species (for which enhanced protections are imposed in the interim until a final rulemaking is completed for such designation), the U.S. Fish and Wildlife Service has recently determined that the Reclamation District No 768 proposal to recover and reinstall the detached McDaniel Slough tidegate, disconnected from the reclamation levee culvert during the 2006-07 News Year Day Storm, would be inconsistent with the protections afforded the species by federal endangered species law. Therefore, the Commission finds full freshwater restoration of the site is not a feasible less environmentally damaging alternative.

Based on the alternatives analysis above, the Commission concludes that, when compared to the other identified project alternatives, the proposed development would result in numerous significant benefits to the physical and biological resource base of the area by, among other measures: (1) removing accumulated silt material from existing channels to deepen or enhance drainage and flood capacity; (2) facilitating the enhanced channels and surrounding areas to function as estuarine wetlands; (3) improving conditions for downstream migrant juvenile salmonids; (4) increasing avian and amphibian species habitat opportunities by including construction of diverse habitat types including saltmarsh, freshwater ponds, and brackish wetlands; (5) enhancing conditions to allow for further natural propagation of sensitive and rare Point Reyes birds'-beak and Humboldt Bay owl's clover; and (6) improving overall drainage from McDaniel Slough into Humboldt Bay with a corresponding reduction in flood hazards on Janes Creek. Therefore the Commission finds that the proposed project is the least environmentally damaging feasible alternative for protecting and enhancing wetland habitat values at the site and is consistent with Section 30233.

(6) Conclusion

The Commission thus finds that the proposed fill is for an allowable use, that there is no feasible less environmentally damaging alternative, that feasible mitigation is required for potential impacts associated with the dredging and filling of coastal wetlands, and that the biological productivity and functional capacity of the wetland habitat affected by the dredging and filling will be maintained and enhanced. Therefore, the Commission finds

that the proposed development, as conditioned, is consistent with Sections 30230, 30231 and 30233 of the Coastal Act.

F. Geologic Stability.

1. Applicable Coastal Act Policies and Standards

The Coastal Act contains policies to assure that new development provides structural integrity, minimizes risks to life and property in areas of high flood hazard, and does not create or contribute to erosion. Section 30253 of the Coastal Act states in applicable part:

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

2. Consistency Analysis

The project's new levee system is composed of a series of flood control diking and eco-levees to be constructed inboard around the landward perimeter of the site. The levees have been designed to be constructed with 1:2 to 1:10 side slopes and to an elevation of 8.0 feet $NGVD_{29}$ adequate to protect the site from inundation from storm surge at a tide level of 6.5 feet $NGVD_{29}$, the 100-year flood-equivalent water elevation set by FEMA, factoring in an additional 1.5 feet of height to compensate for the anticipated 0.2- to 0.9-foot of sea level rise projected over the 50-year economic life of the structure. Therefore, the proposed project minimizes this hazard. In addition, the toe of the bayfront reclamation levee would be armored with quarry stone rock slope protection around the breach, similar to that in place along the whole of the dike face, to prevent scour related erosion from the flux of tides through the opening.

To further assure the structural integrity of the levee field, especially with regard to seismic shaking, liquefaction, and long-term ongoing subsidence of the area, a geotechnical analysis was performed for the project improvements. The evaluation (SHN Consulting Engineers and Geologists, November 2003) reviewed the stability of the proposed flood- and eco-levee side slopes and set forth several construction criteria and development recommendations for assuring the structures long-term reliability. Among these recommendations, are specific grading lift-depth and material compaction standards, incorporation of clay sills within the cross-sectional composition of the levees

to prevent seepage through the dike, and height over-design construction provisions to compensate for planned settlement. To ensure that these design features are incorporated into the development such that its structural stability and integrity are assured, the Commission attaches Special Condition No. 6. Special Condition No. 6 requires the applicant to incorporate the recommendations of the geotechnical analysis into the construction of the project levees and submit evidence, for the review and approval of the Executive Director, that a professional engineer has approved the construction plans and verified incorporation of the report's recommendations.

Moreover, given that the applicant has chosen to implement the project despite the identified flooding and geologic stability risks, the applicant must assume the risks. Therefore, the Commission imposes Special Condition 12. Special Condition No. 12 notifies the applicant that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand the hazards. In addition, the condition ensures that future owners of the property will be informed of the risks and the Commission's immunity from liability. As conditioned, the Commission finds the proposed project is consistent with Section 30253 of the Coastal Act.

G. Visual Resources.

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30251 requires permitted development to be designed and sited to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas.

2. Consistency Analysis

The viewshed of the project area primarily comprises the open pasture fields, roadside hedgerows, coastal streams, and scattered tree and shrub thickets visible from the south side of Samoa Boulevard / State Route 255, along lower V Street and the eastern end of Old Samoa Road, along portions of South I Street and from the trails within the Arcata Marsh and Wildlife Sanctuary (AM&WS). Low-angle oblique views of Humboldt Bay across the project site from northern vantage points are obstructed by the presence of the intervening bayfront reclamation levee. Notwithstanding these impediments to direct shoreline viewing, the project area east of the intersection of V Street and Samoa Boulevard is designated as a scenic route entry to Arcata within the City's LCP.

The project will introduce two new visual elements into the southern Arcata Bottom landscape: (1) a five- to eight-foot above-grade levee field running over three and one-half miles along the perimeter of the site, the majority of which will be visible from

various adjoining public vantage points, including Samoa Boulevard / State Route 255, from the eastern margins of the Mad River Slough Wildlife Area, and from the westernmost trails within the Arcata Marsh and Wildlife Sanctuary; and (2) the appearance of open intertidal waters in areas currently comprising reclaimed agricultural pastureland.

Notwithstanding their significant bulk and scale, when viewed from the similarly elevated roadway and levee tail locales, the new flood- and eco-levees would be relatively low-profile visual elements. As depicted on the three-dimension visual simulation prepared for the project, although these new horizontal components would be directly visible, their low relief together with a backdrop of the bayfront reclamation levee, trees and shrubs within the AM&WS, and the silhouetted outlines of the commercial industrial buildings along Samoa Boulevard and South I Street would serve to mute the visual expression of the new levees, rendering them similar to other raised topography breaks in the area (see Exhibit No. 10). In addition, the earthen materials from which the outboard faces of the levees would be constructed are expected to rapidly colonize with grasses and forbs from the surrounding area further softening their contrast with surrounding open sod-covered pasturelands.

As regards the introduction of views of open intertidal waters into the areas surrounding the project site, the Commission observes that such a visual element would be similar to the flooded field conditions that currently occur seasonally in the area during the wet winter and spring months, and especially during high tide periods, when stormwater runoff and creek discharges pool within the fields behind the various reclamation and flood control levees and berms of the area. Moreover, the Commission notes that the project would also enhance views to and along the shoreline by increasing the amount of viewable shoreline from vista points currently located well inland from the bay.

Therefore, the Commission finds that the proposed development, as designed and conditioned, will protect views to and along the ocean and scenic coastal areas, minimize the alteration of landforms, and be compatible with the character of the surrounding area consistent with Section 30251 of the Coastal Act.

H. Public Access and Coastal Recreational Opportunities.

1. Applicable Coastal Act Policies and Standards

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions.

Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired

through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety.

In applying Sections 30211 and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

2. Consistency Analysis

The entire expanse of the adjacent Mad River Slough Wildlife Area (MRSWA) is open to the public with the exception of the bayfront reclamation levee and the five former agricultural residential and accessory structures on the site. The MRSWA is open to the public year-round for wildlife-related activities such as bird watching, kayaking, hunting (pursuant to applicable seasons and regulations), research, and education. Activities that are not compatible with wildlife, such as off-road vehicle riding, are not allowed at the site. Similarly, within the exception of dusk to dawn closures, the whole of the Arcata Marsh and Wildlife Sanctuary is open for public use for hiking, birdwatching, picnicking, and other similar non-consumptive passive recreational pursuits.

The proposed project does not involve any changes or additional restrictions to existing public access including during project construction that would interfere with or reduce the amount of area public access and recreational opportunities. In fact, public use of the project site and the flanking state and municipal wildlife areas are expected to increase as people are drawn to the project's enhancements to the abundance and diversity of wildlife habitat.

Moreover, the project proposes to provide new, additional public access and coastal recreational opportunities through integrating with the AM&WS's trail system, with trails continuing onto the project site on the crests of the levees to be constructed around the brackish and freshwater ponds, and from the crook in South I Street out along the reclamation bayfront levee to the breach site. In addition, the City has identified and included a trail linkage out to a small parking lot on the south side of Samoa Boulevard near an existing sewer booster pump station to be improved once acquisition of the property through which the trail would pass has been completed. With construction of this new access support facility and the continued availability of similar facilities within the AM&WS and MRSWA to the east and west, respectively, sufficient parking would exist to accommodate the current level of public use as well as the anticipated increase in use following project completion.

To assure that the proposed access improvements are incorporated into the restoration/enhancement project, the Commission attaches Special Condition No. 13. Special Condition No. 13 requires the permittee to construct the proposed trail and support amenities identified in the project application materials prior to commencement of the use of the project site as a public fish and wildlife habitat restoration /enhancement facility.

Therefore, the Commission finds that the proposed project would not have an adverse effect on public access, and that the project as proposed with new public access and conditioned to construct the proposed access and support facilities, is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

H. State Waters.

The project site entails areas which were submerged, intertidal and/or overflow lands at the time of California's statehood in 1850. Notwithstanding that most of the site is currently not subject to tidal inundation, the site remains subject to public trust review by the State Lands Commission. To assure that no aspect of the project would be inconsistent with the public trust limitations as may continue to be applied to the site, the Commission attaches Special Condition No. 8. Special Condition No. 8 requires the applicant, prior to issuance of the permit to submit for the review and approval of the Executive Director, evidence that the State Lands Commission has reviewed the approved development proposal and determined what is any permits or other grants of authority may be required before the project work may commence.

I. Other Agency Approvals.

The project requires review and authorization 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. The project also requires a Section 1600 Streambed Alteration Agreement from the California Department of Fish and Game (CDFG). Additionally, the proposed breach to be excavated in the bayfront reclamation levee is located within the development project permitting jurisdiction of the Humboldt Bay Harbor, Recreation, and Conservation District. To ensure that the project ultimately approved by the Corps, CDFG, and the Harbor District is the same as the project authorized herein, the Commission attaches Special Condition Nos. 9, 10, and 11, which require the City to submit to the Executive Director evidence of these agencies' approval of the project prior to the issuance of the permit and prior to the commencement of construction, respectively. The conditions require that any project changes resulting from these other

agency approvals not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

I. California Environmental Quality Act.

On December 20, 2006, the City of Arcata as lead agency certified the Final Environmental Impact Report (SCH No. 2003022091) for the subject *McDaniel Slough Wetlands Enhancement Project*. The document consisted of the Draft Environmental Impact Report, previously released on May 27, 2006, together with response to comments submitted during the subsequent 45-day public review period. The final environmental document also included supplemental technical information regarding regional agricultural production and a revised project site plan with an offsite lateral trail link into the project site redacted.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

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 be consistent with the policies of the Coastal Act. The 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 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 which would substantially lessen any significant adverse impacts which 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 to conform to CEQA.

IV. EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. State:Local Government Coastal Development Permitting Jurisdictional Map
4. Project Site Aerial
5. Project Description Narrative, Site and Vegetation Plans, and Levee Structural Cross-sectionals

6. Existing Habitat Conditions
7. Existing Grazing Lands
8. Zoning of Site and Surrounding Land Uses
9. Wetland and Upland Impacts Map
10. Extent of Historic Saltmarsh in Northern Humboldt Bay circa 1870-1890
11. Comparison of Mad River Delta and Coastal Stream Morphology 1854-1862 with 1995-1997
12. Project Alternatives
13. Three-Dimensional Prospective View Rendition of Project Site and Surroundings
14. Applicant Correspondence

APPENDIX A

STANDARD CONDITIONS

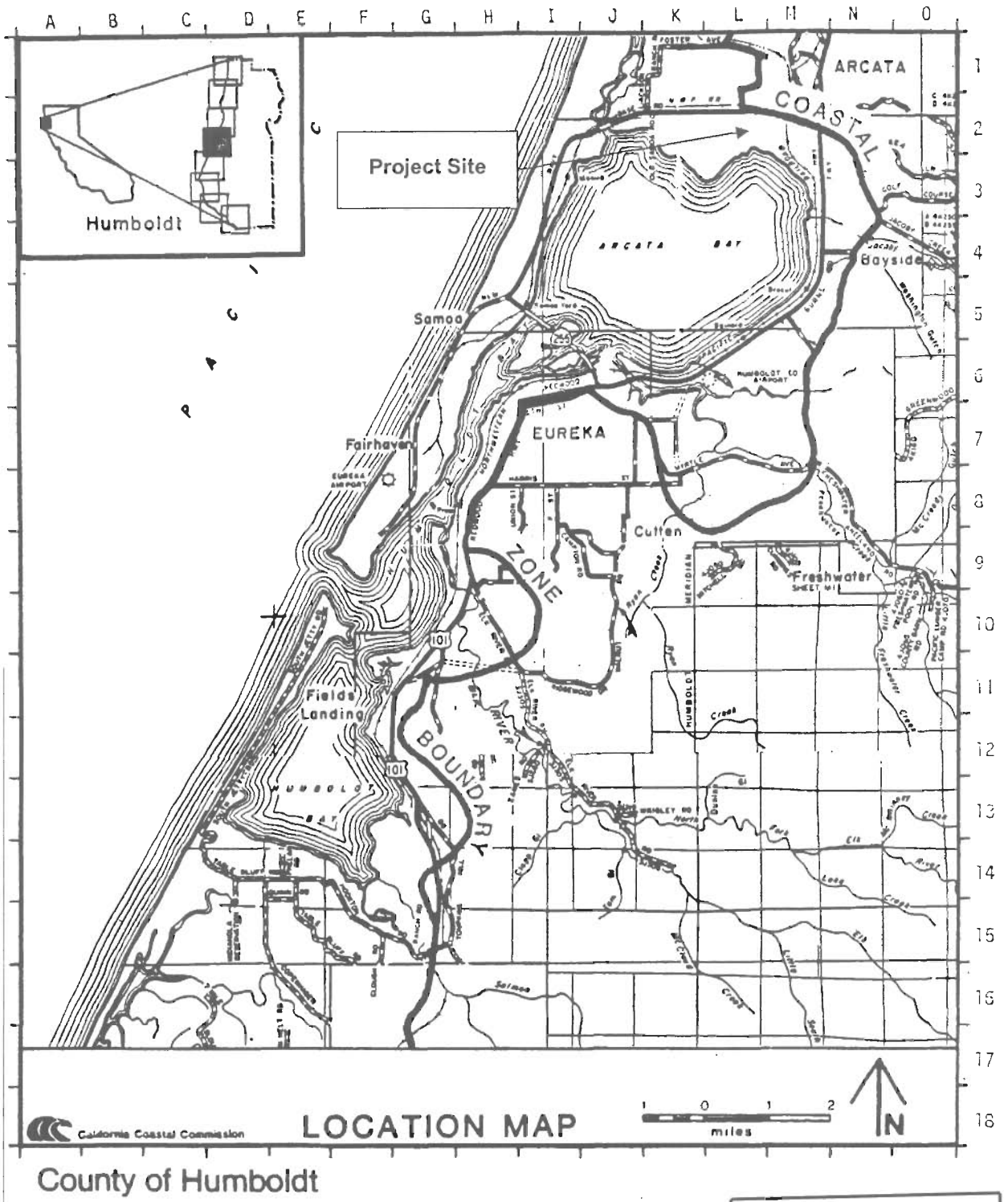
1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

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 amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of 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.



County of Humboldt

EXHIBIT NO. 1
APPLICATION NO.
1-06-036
CITY OF ARCATA
REGIONAL LOCATION MAP

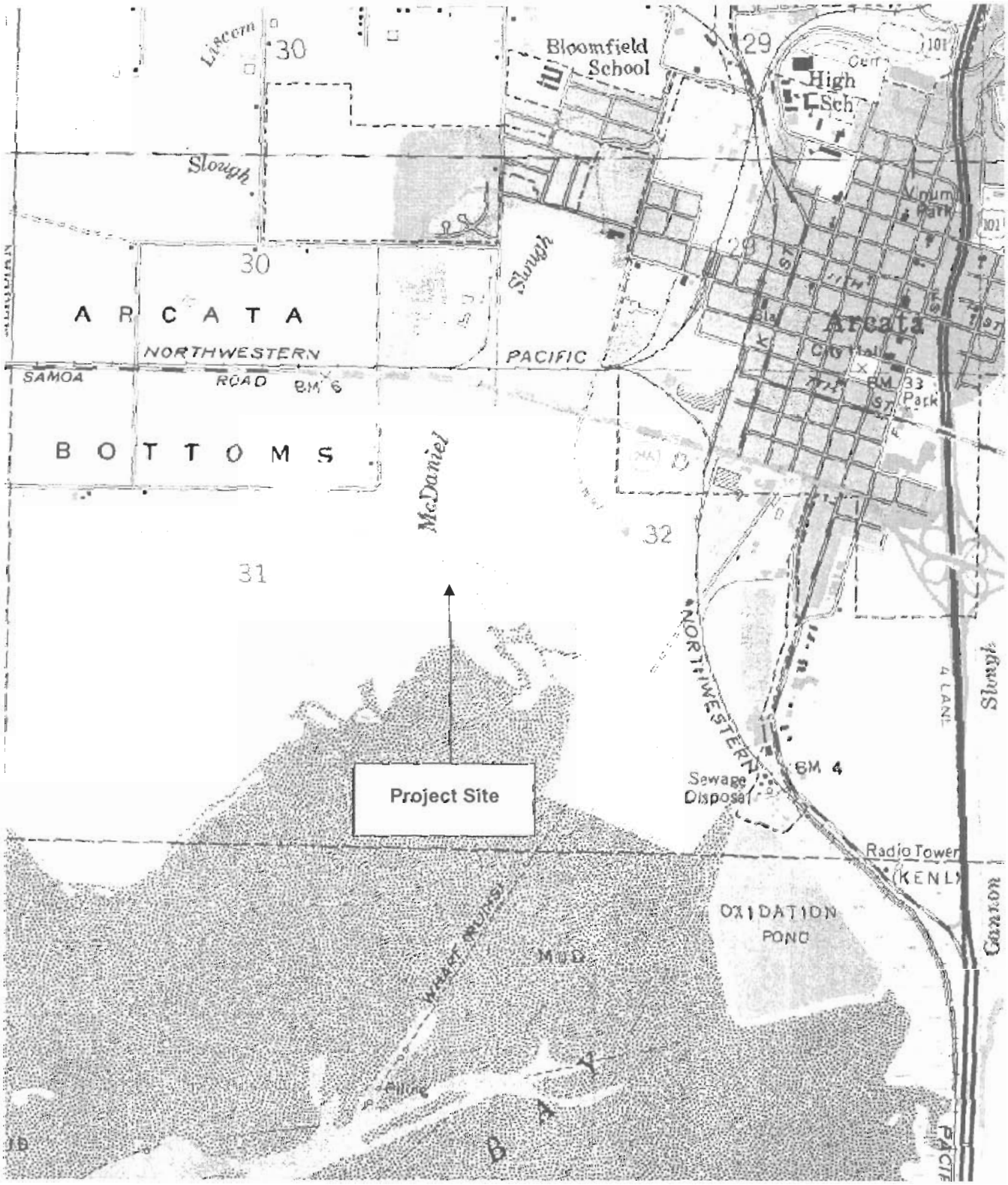


EXHIBIT NO. 2
APPLICATION NO.
1-06-036
CITY OF ARCATA
VICINITY MAP

Figure 2

POST LCP CERTIFICATION
PERMIT AND APPEAL JURISDICTION BOUNDARY
MCDANIEL SLOUGH PROJECT AREA

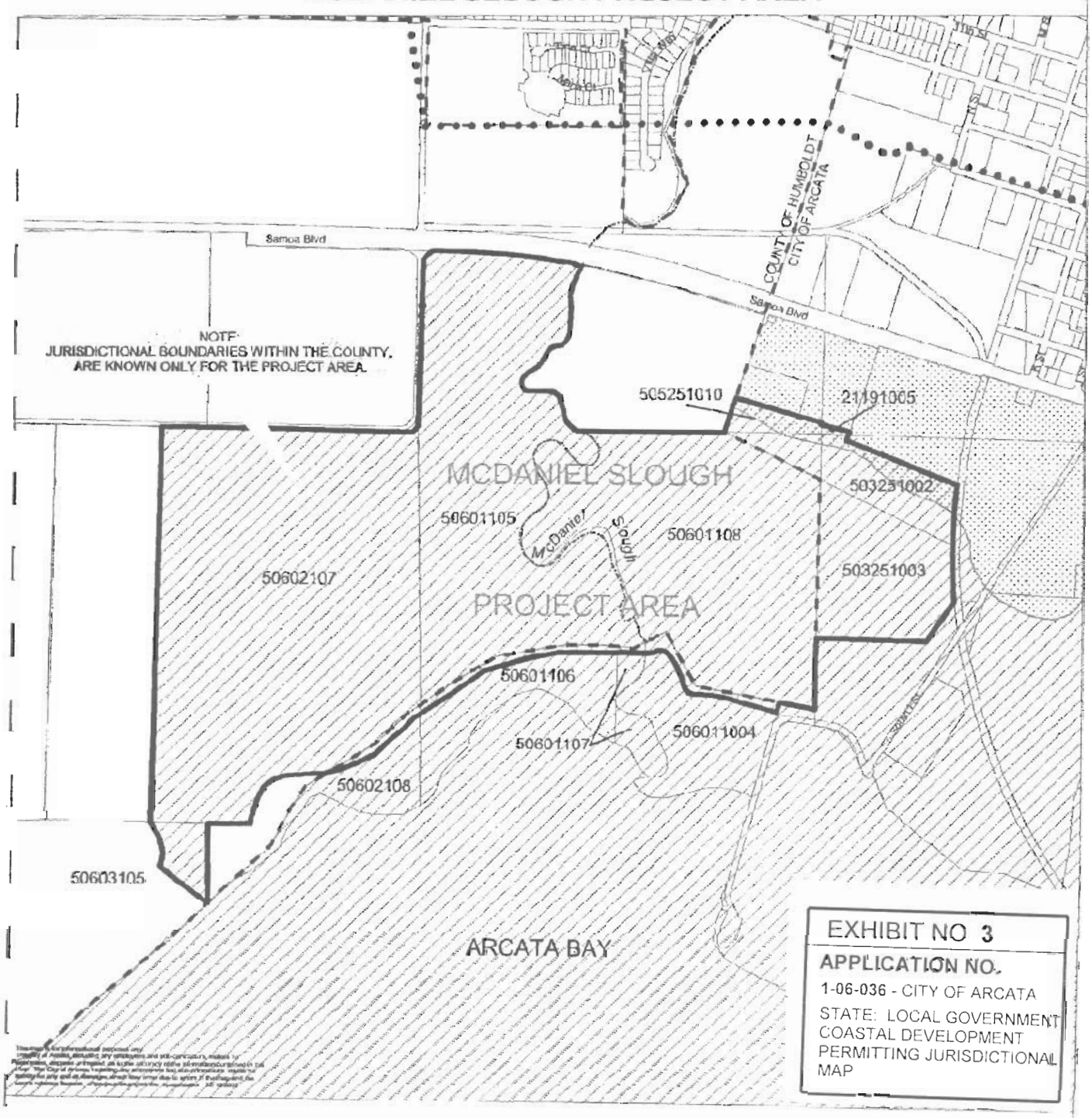


EXHIBIT NO 3
APPLICATION NO.
1-06-036 - CITY OF ARCATA
STATE: LOCAL GOVERNMENT COASTAL DEVELOPMENT PERMITTING JURISDICTIONAL MAP

PERMIT AND APPEAL JURISDICTION BOUNDARY
APPEAL JURISDICTION
PERMIT JURISDICTION
MCDANIEL SLOUGH PROJECT AREA
COASTAL ZONE BOUNDARY
ARCATA CITY LIMITS
CREEKS
PARCELS

N

500 0 500 1000 1500 2000 Feet

GIS

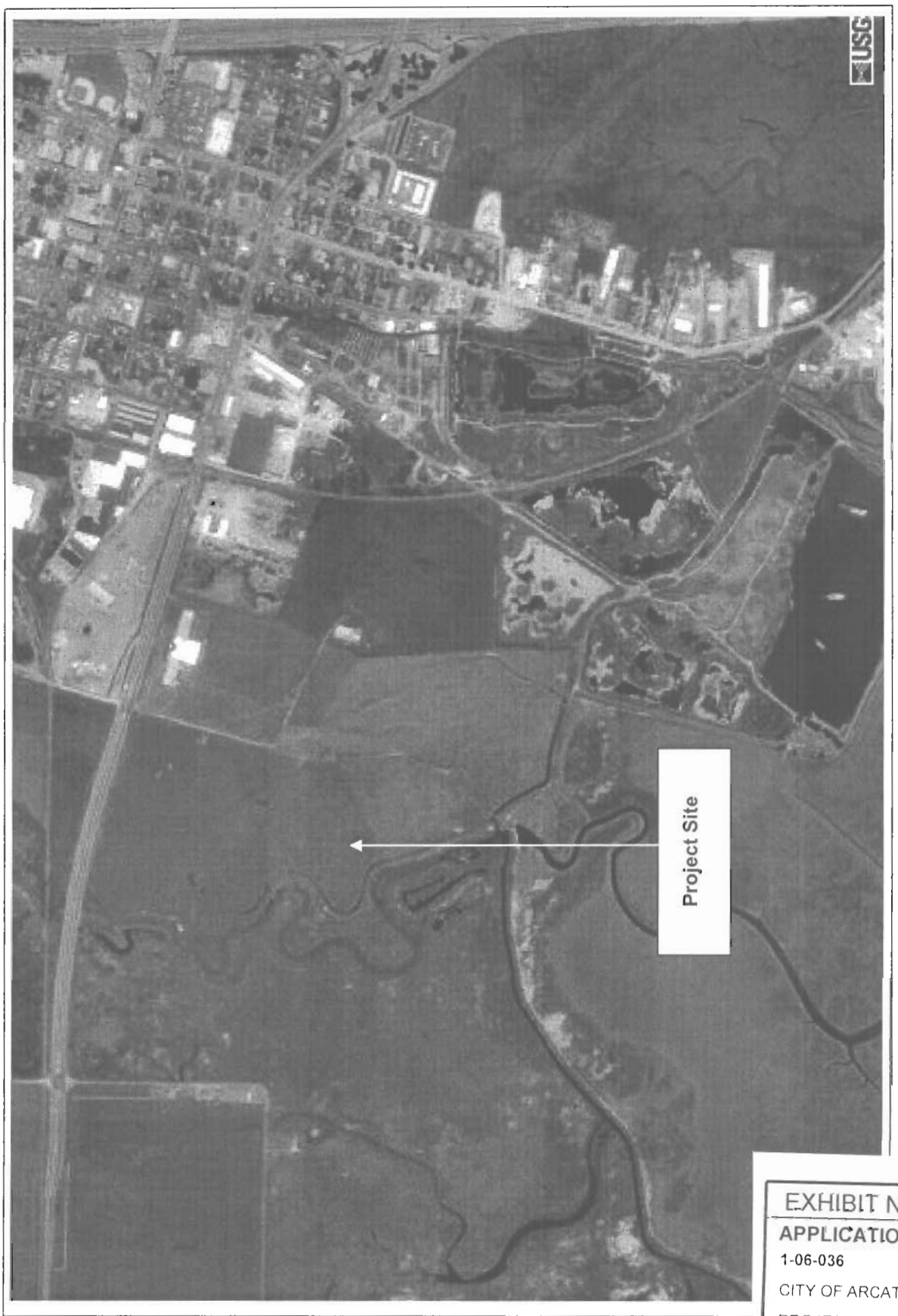


EXHIBIT NO. 4
APPLICATION NO.
1-06-036
CITY OF ARCATA
PROJECT SITE AERIAL

2.2 PROPOSED MARSH ENHANCEMENT: PROPOSED PROJECT (MIXED HABITAT ALTERNATIVE)

The goal of the McDaniel Slough Marsh Enhancement Proposed Project, as specified by the City of Arcata, DFG and California Coastal Conservancy, is:

> "To restore and enhance coastal and riparian wetland habitats on the northern portion of Humboldt Bay by integrating City and State held lands. The Proposed Project will create a self-sustaining tidal marsh through the restoration of natural geomorphic and biologic processes and create brackish and freshwater wetlands on the eastern portion of the site."

The City of Arcata (City) and the California Department of Fish and Game plan to restore tidal wetland functions to 200 of 240 acres of former tidal salt/brackish marsh and freshwater wetlands adjacent to Humboldt Bay in northern California. The remaining 40 acres will be enhanced and managed as freshwater and brackish ponds, and grassland/riparian areas. The proposed Project was identified as the Freshwater / Estuarine Alternative 4.1 in the Restoration Plan for the McDaniel Slough Tidal Marsh (PWA 2002). This is a modified version of Alternative 4 from the Enhancement Plan. The Proposed Project is shown in Figure 2.2-4 on page 2-10.

The Proposed Project area is owned by the City (88 acres) and the CDFG (166 acres). The Proposed Project site is located adjacent to the existing Arcata Marsh and Wildlife Sanctuary's (AMWS) northwest boundary. This 88-acre, City owned property provides a critical link from the 154-acre AMWS to the CDFG Mad River Slough Wildlife Area (547 acres) located west of Janes Creek/McDaniel Slough. The Humboldt Bay National Wildlife Refuge is located to the south of the AMWS. These properties form a total area of contiguous public land on north Humboldt Bay of more than 1,000 acres.

The City of Arcata would be responsible for implementing the project under a cooperative agreement with the California Department of Fish and Game (CDFG).

McDaniel Slough/Janes Creek Tidal Restoration

The Proposed Project includes the enhancement of McDaniel Slough/Janes Creek. The enhancement is designed to remove barriers to fish access and includes deepening historic slough channels, partial removal of failing or obsolete levees, and restoring the tidal estuary.

To restore the tidal connection between Humboldt Bay and the tidal 200 acres of the site, the tidegates at McDaniel Slough would be removed creating a single breach through the Bayfront levee. Approximate breach dimensions will be 100 feet wide at the top of the levee and 40 to 50 feet wide at the bottom of the levee. Channel depth will be 10 ft below MHHW (i.e. seven feet NGVD thalweg elevation). (NGVD is a vertical geodetic datum formerly called "Sea Level

Datum of 1929" or "mean sea level". The datum was found by averaging the sea level over a period of many years at 26 tide stations along the coasts of the US and Canada. Because it is an average, it does not represent the local mean sea level at any particular place).

The McDaniel Slough breach site would be armored with rock riprap to protect the levee from scour. The breach dimensions are designed to allow for adjustments depending on results of ongoing monitoring.

The Proposed Project would improve fish passage to McDaniel Slough/Janes Creek by removal of the tidegates; which would allow tidal exchange to the slough/stream reaches. The existing tidegates have effectively blocked salmonid migration into McDaniel Slough/Janes Creek because they close during high tides when fish have the best opportunity to move through the Bay channels. McDaniel Slough/Janes Creek has had an absence of salmonids over the past few years except during a season when one of the tidegates failed. During the period of tidegate failure, adult salmonids where found upstream in Janes Creek.

However, because the bed of the Samoa Boulevard Culvert is at –0.7 ft NGVD (National Geodetic Vertical Datum), which is several feet higher than the natural channel bed, there would still remain a possible barrier to fish passage on Janes Creek following scour of the channel post tidegate removal.

Reestablishing tidal influence would eliminate cattail and reed canary grass that have developed in the lower channel. The cattails and canary grass trap sediments in the stream channel, which exacerbates sedimentation and creates a morphological feature that is not desired at this site. Allowing tidewater to return to the channel would cause die-off of sediment trapping vegetation, which would allow the channel to deepen and remain open to fish passage.

The several smaller historic slough channels that have aggraded with sediment will be deepened by excavation to improve site drainage and habitat. Deepening the channels provides increased habitat diversity for native vegetation and wildlife.

Portions of the existing levee that borders the McDaniel Slough/Janes Creek channel will be removed to improve marshplain drainage and habitat transition. The existing levee system adjacent to McDaniel Slough/Janes Creek channel does not allow for floodplain function, channel meandering, or marsh plain drainage. Some portions of the levee will remain intact to serve as roosting islands and to break up wave fetch within the project area in order to promote deposition of suspended sediment.

Rapid colonization of the intertidal area of this Proposed Project is expected within the first ten years, because the site has suitable elevations for colonization and a nearby source of estuarine sediment. After 50 years, a mature marshplain will develop throughout the area below MHHW, with initial colonization of pickleweed (*Salicornia virginica)* in the lower elevations and cordgrass (*Spartina densiflora*) in higher areas. Approximately 30,000-40,000 cubic yards of suitable excavated soil obtained from the freshwater and brackish pond sites will be graded onto 23 acres of low elevation subsided areas within the Proposed Project area in order to build up the marsh plain and accelerate the development of the desirable pickleweed habitat. Building up the

marshplain elevation in selected areas will also serve to break up the wind fetch potential within the project area.

Saltmarsh vegetation will be planted on much of the area suitable for saltmarsh. A planting plan is described in Appendix H.

Freshwater and Brackish Ponds

The eastern 35 acres of the Proposed Project includes the creation of two freshwater ponds, that utilize ground and stormwater, and a brackish pond that utilizes a mix of treated discharged wastewater and bay water. The brackish pond will be excavated to appropriate elevations for mixing bay water with treated wastewater to create the brackish marsh habitat. The treated wastewater meets Humboldt Bay discharge standards and is an expansion of the City's beneficial use of wastewater. Approximately 1-6 cubic feet per second (CFS) of treated wastewater will be gravity fed to the new brackish marsh. Flows volumes will be managed to mimic natural seasonal fluctuations in other Humboldt Bay tributaries. This flow is in addition to the existing surface runoff that will continue to be directed to the brackish pond from an upland area of approximately 20 acres. Stormwater flows will be buffered by flowing to a 2.5-acre freshwater marsh prior to discharge to the brackish pond location. The brackish marsh outlet will be adjustable in order to mute the tidal cycle and to provide flexibility to adjust salinity to desired ranges. Desired salinity ranges of 5-10 parts per thousand (ppt) within the brackish marsh will be suitable for tidewater gobies. The brackish marsh will serve to extend the estuarine conditions of McDaniel Slough and likely provide similar habitat conditions as that of McDaniel Slough when one of the tidegates was missing. That is, a muted tidal exchange with a freshwater input. Islands in the brackish marsh provide roosting and nesting habitat and maximize hydraulic mixing.

Upland areas will support the riparian forest and perennial grassland. These areas will be seeded with a native grass seed such as *Dechampsia cespitosa, Bromus carinatus, Hordeum brachyantherum and Leymusa triticoides,* and planted with native trees and shrubs such as *Alnus rubra, Picea sitchensis* and *Salix sp.*

The freshwater ponds will be excavated to six- to 10-foot depths to expose groundwater and provide year round pond habitat. The ponds will provide recreational opportunities and increased storm water storage capacity while reducing storm water pollution to Humboldt Bay. The existing "log pond" located within the AMWS southeast of the project site on South G Street provides a reference site. The proposed freshwater ponds are expected to develop similar habitat conditions. Excavated fill from both types of ponds will be used for levee construction and to build up marshplain elevations in low-lying areas. The upland area around the freshwater ponds will be planted with native trees and shrubs creating a riparian forest. Artificial roosting "snags" will be installed by excavating deep holes and setting several large conifer logs into the soil set on end. Bat boxes and swallow nesting platforms will be anchored to the snags.

Trails and Interpretive Facilities

The Proposed Project includes trails, wildlife viewing structures, benches, and information kiosks. An 800-foot trail would be constructed along the eastern portion on the bayfront levee trail that would provide access from the Arcata Marsh to the McDaniel Slough main levee breach. A wildlife viewing structure and information signs describing the Proposed Project

would be located at the mouth of Janes Creek. A second hiking trail would be constructed along the eco-levee that separates the ponds and the McDaniel Slough tidal marsh. Wildlife viewing structures, benches, and interpretative signs would also be constructed along the eco-levee trail. The levee trails would enhance the views to and along Humboldt Bay.

A barn with cultural significance existed adjacent to the proposed eco-levee trail. The barn blew down in a late December windstorm.

Storm-Water Storage Capacity and Drainage Changes
The Proposed Project includes changes to the Proposed Project site drainage pattern resulting in improved flood capacity and sediment routing. The Proposed Project includes a natural deepening of the McDaniel Slough/Janes Creek channel, installation of drainage pipes with tidegates into the newly constructed levees, and construction of freshwater ponds.

The tidegate and culvert removal would result in a natural deepening of the McDaniel Slough/Janes Creek channel. Resulting tidal scour will kill emergent vegetation in the channel, increasing channel capacity. This deepening at the mouth would move upstream into the lower reaches of Janes Creek. Incision is needed to return the channel to a more natural condition that existed before installation of the tidegates. A deeper channel would increase channel capacity, which should reduce flooding in residential portions of the Arcata Bottom.

Drainage of properties adjacent to the restoration Proposed Project, as well as overflow from the proposed freshwater ponds, will be controlled by the installation of drain pipes equipped with tidal flap gates. The drainpipes and tidegates allow adjacent properties to drain to the Proposed Project site at lower tides and prevent tidal flooding of the adjacent properties during extreme high tides. A larger tidegate at the southwest corner of the Proposed Project site, which serves to drain the large storage area to the west, will remain. The culvert located at the southeast corner of the Proposed Project site would be removed.

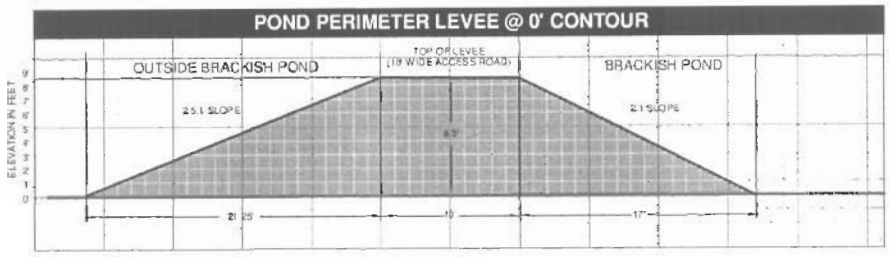
Construction of the two freshwater ponds would improve storm water storage capacity that should reduce flooding on surrounding property. The ponds would be excavated to a depth that exposes groundwater during the summer dry season. During the rainy season, runoff from surrounding property will enter the ponds via surface flow.

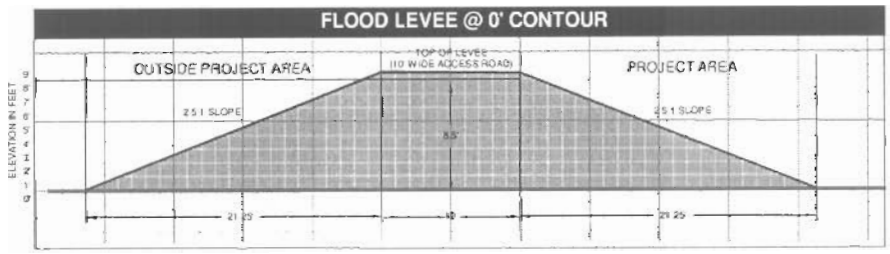
Levee Construction
Three types of levees will be constructed around the Proposed Project site perimeter to provide improved flood protection for surrounding properties, create a transition from low saltmarsh to high saltmarsh to upland habitat, and contain constructed ponds. The levees will blend with the natural environment.

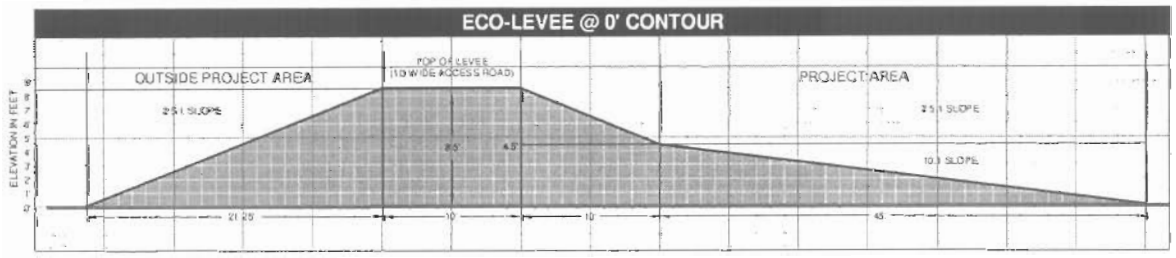
Construction of levees on the Proposed Project site would result in the filling of agricultural wetlands. The restoration of tidal wetland function and construction of the fresh water and brackish ponds in the east portion of the Proposed Project would mitigate for wetland loss caused by levee construction.

The following levees would be constructed as part of the Proposed Project:

- flood levees,
- eco-levees with benched upland slopes, and
- pond perimeter levees.







The eco-levees will be constructed adjacent to private property along the northwest site boundary with Old Samoa Road, along the boundary with the fresh and brackish wetlands and along the existing levee for Gearheart Marsh. Eco-levees are to be constructed in locations where no further marsh expansion is likely to occur at any time in the future. Eco-levees are designed to be permanent features. Levee elevation of +8.0 feet NGVD provides protection against the 100-year extreme tide (includes accounting for sea level rise).

The eco-levees will have an approximate 2.5:1 outboard slope and an approximate 10:1 inboard side slope. The eco-levees will provide a band of transitional from low to high marsh habitat.

The eco-levees will have a 2.5:1 side slope down to 4.5 ft NGVD and a 10:1 side slope on the inboard side between 4.5 and 3.5 feet NGVD. The eco-levees are designed to support a wider range of vegetation and provide a more diverse range of wildlife habitat. In addition, the eco-levee is a more aesthetically pleasing levee design that blends more naturally with the bay/saltmarsh environment.

The footprint of an eco-levee is greater than the footprint of the flood or pond levees because of the gradual slope on one side. However, the larger area of the footprint does not cause additional wetland areas to be filled because the lower slope of the levee continues to support wetland vegetation.

The flood levees would be constructed along the west side of the Proposed Project perimeter and along the northeast portion of the Proposed Project. The flood levees will be constructed with a straight 2.5:1 side slope down to existing grade and will therefore require less fill material. Flood levees would be constructed in locations adjacent to the Proposed Project where future restoration of property is possible.

The pond perimeter levees would be similar to the flood levee; however, they would be designed to permanently contain pond water. The pond perimeter levees would be constructed on the north, east, and south sides of the brackish pond. The total amount of fill material required to develop the levees is 60,000 cubic yards.

The proposed project would eliminate the need for Reclamation District #768 to maintain 4,234 linear feet (or 28% of the total current bayfront levee structure) of levee and the associated tidegates. Long-term management and maintenance of the proposed project perimeter levees would be the responsibility of the City of Arcata and DFG.

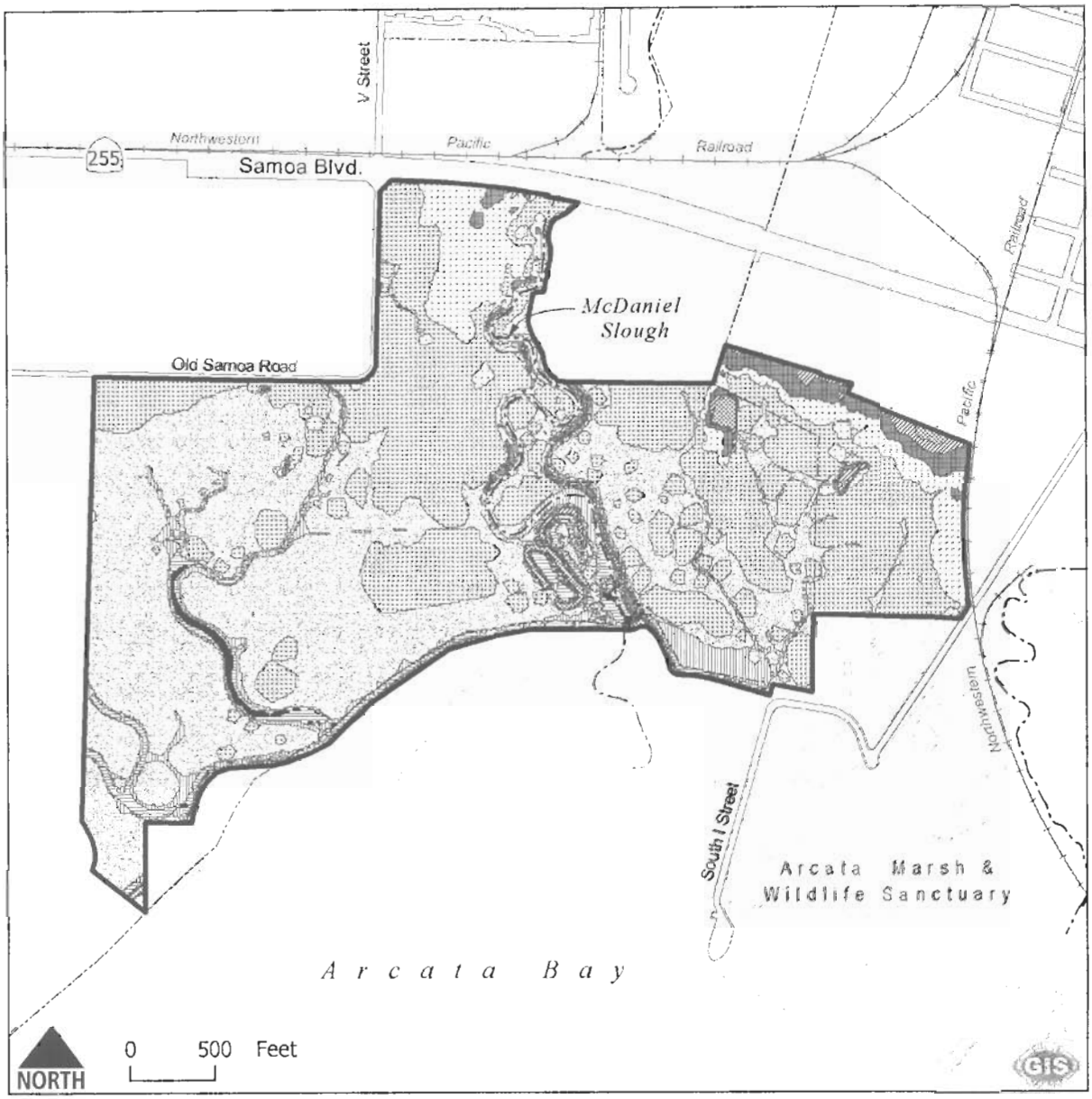
Transmission Tower Access

The Proposed Project would include features to accommodate PG&E power transmission line tower access. A PG&E access boardwalk leading south from Old Samoa Road to a PG&E power tower will be constructed. Another access will be provided from the existing levee east of the breach. Boardwalks will be constructed with redwood or recycled plastic lumber. A third tower that is located in the middle of the site will be reinforced. PG&E will access that tower by boat or helicopter as needed.

Project Phasing and Timing

The project will be implemented as follows:

1. Construct the freshwater ponds, build up marshplain, construct northern and western levee sections, remove Janes Creek lateral levees and plant upland areas. June-Nov. 2006
2. Construct power line access spurs, brackish marsh and eastern levee section. Plant new levee sections and islands. April-December 2006
3. Remove tidegates, construct trails, plant saltmarsh areas, open to public access. December -April 2007
4. Breach bayfront levee, final native plant planting of saltmarsh and estuary areas, October -2007



Boundaries
- Project Boundary
- Arcata City Limits

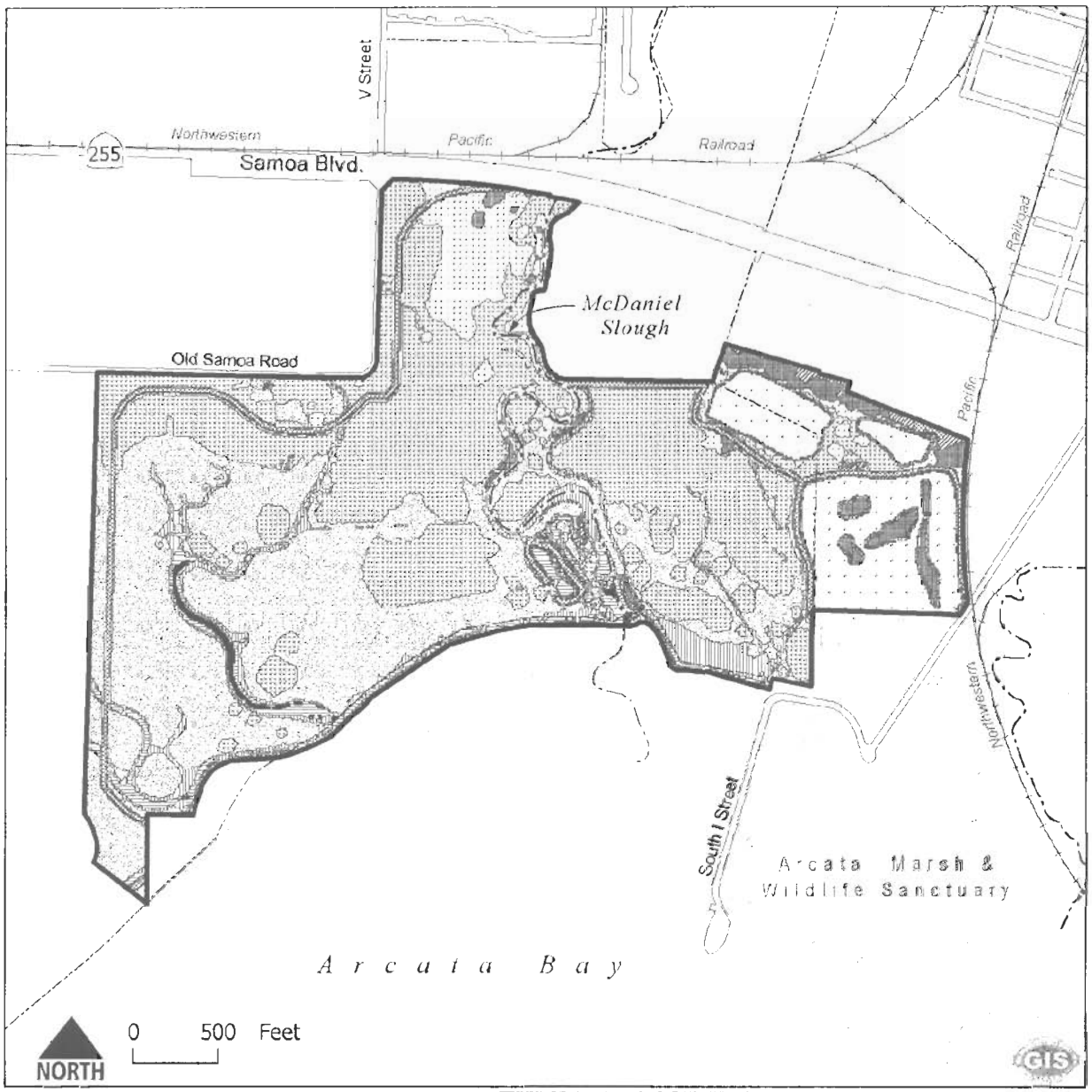
Water Features
- Streams
- Waterbody

Transportation
- Railroad
- Streets

Source:
Geonex Aerial Surveys
1' contour mapping
1995, NGVD29

Elevation in Feet
- -2 - -1
- -1 - 0
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 15

Figure 2.2 - 2
McDaniel Slough
EXISTING TOPOGRAPHY



Boundaries
- Project Boundary
- Arcata City Limits

Water Features
- Streams
- Waterbody

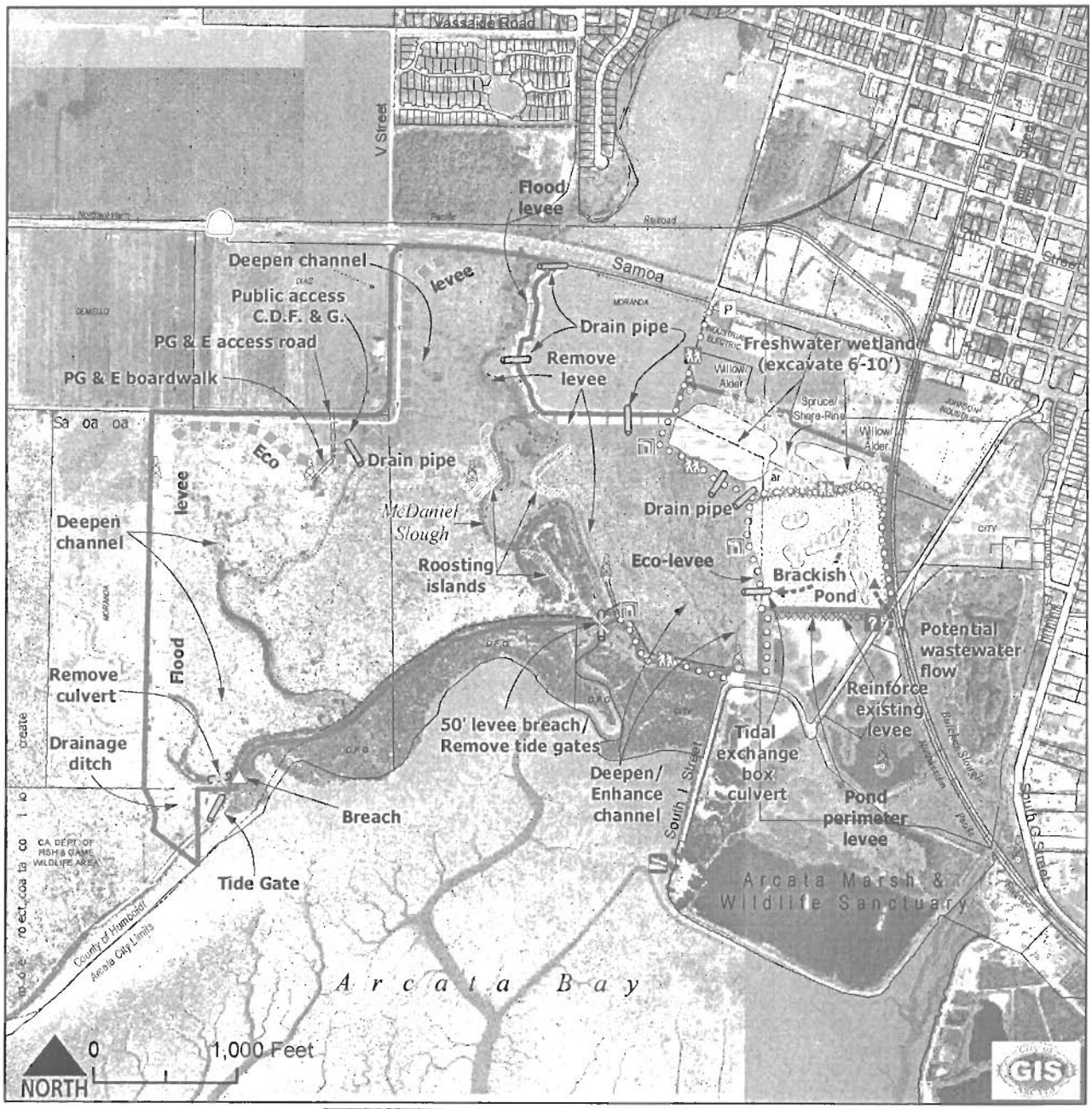
Transportation
- Railroad
- Streets

Source:
Geonex Aerial Surveys
1' contour mapping
1995, NGVD29

City of Arcata, Environmental Services

Elevation in Feet
- -8 - -2
- -2 - -1
- -1 - 0
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- 6 - 15

Figure 2.2 - 3
MCDANIEL SLOUGH
POST PROJECT TOPOGRAPHY



Boundaries
- Project Boundary
- Arcata City Limits

Recreation
- Trail
- Bird Blind
- Information Kiosk
- Boat Launch

Levee Types
- Flood Levee
- Eco-Levee
- Pond Perimeter Levee

Water Features
- Streams
- Freshwater Marsh
- Brackish Pond

Transportation
- Access Road
- Railroad

Other Features
- Potential wastewater flow
- Surface Water Flow
- Drainage Ditch
- Remove Culvert/Tide gate
- Drainage pipe
- PG & E Tower
- Trees
- Remove Levee
- Roosting island
- Parcel

Source: City of Arcata

City of Arcata
Coa ta Co i io A icatio

McDaniel Slough

PROPOSED PROJECT

9923

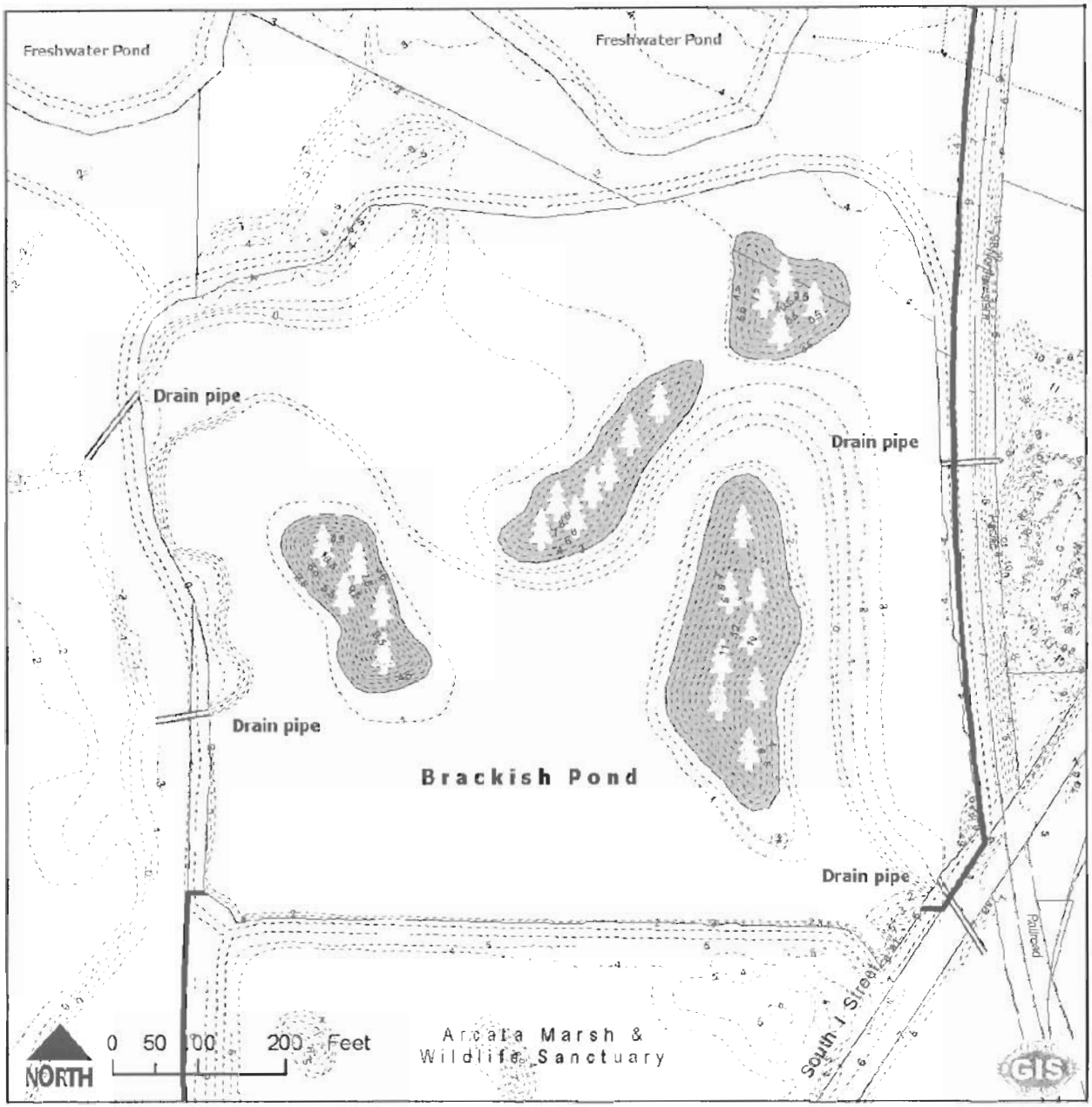


Figure 2.2-5

McDaniel Slough EIR

BRACKISH POND POST TOPOGRAPHY

Boundaries
- Project Boundary

Transportation
- Access Road (8.5' Contour)
- Railroad

Other Features
- Levee Footprint
- Waterbody
- Islands
- Potential wastewater flow
- Surface Water Flow
- Drainage pipe
- Parcel
- 1' Contour Interval
- Trees

Source: City of Arcata

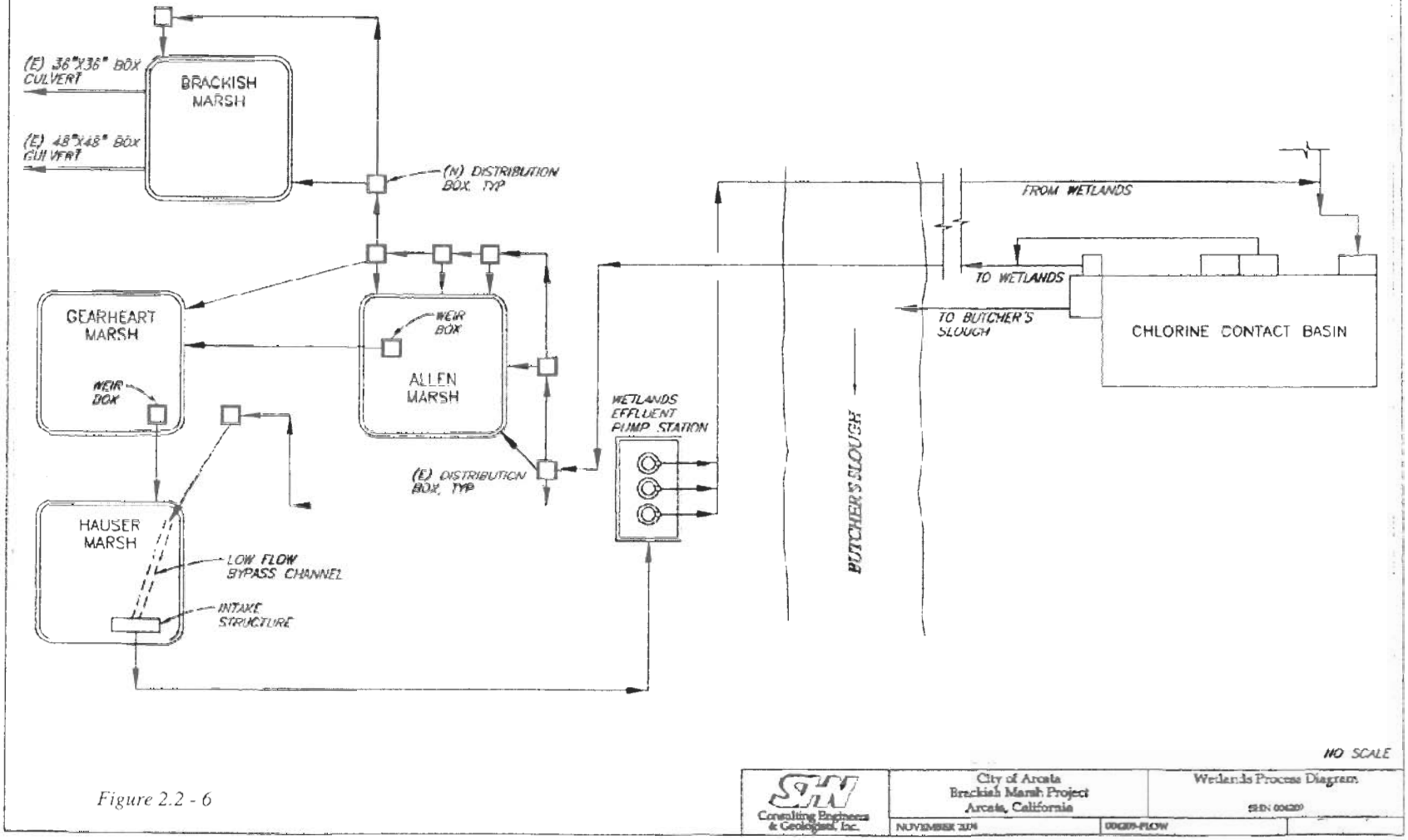
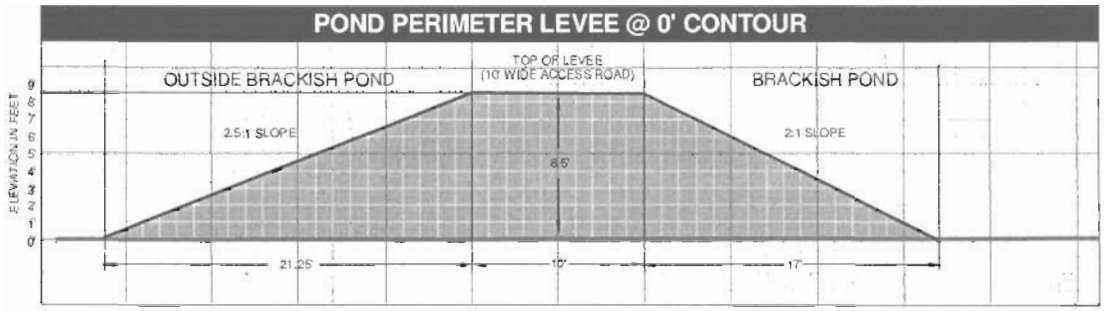
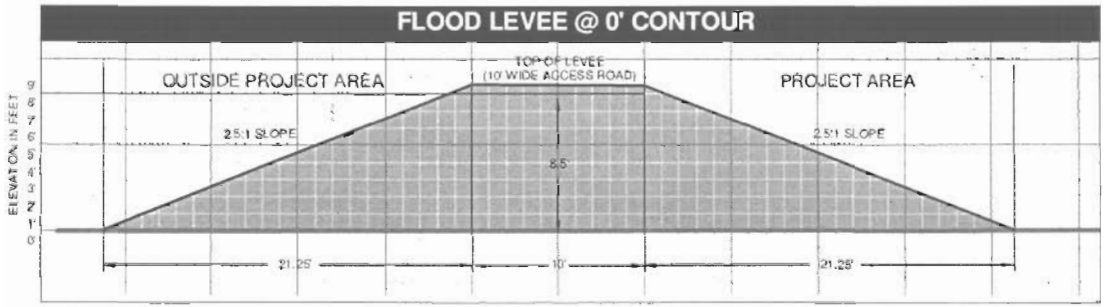
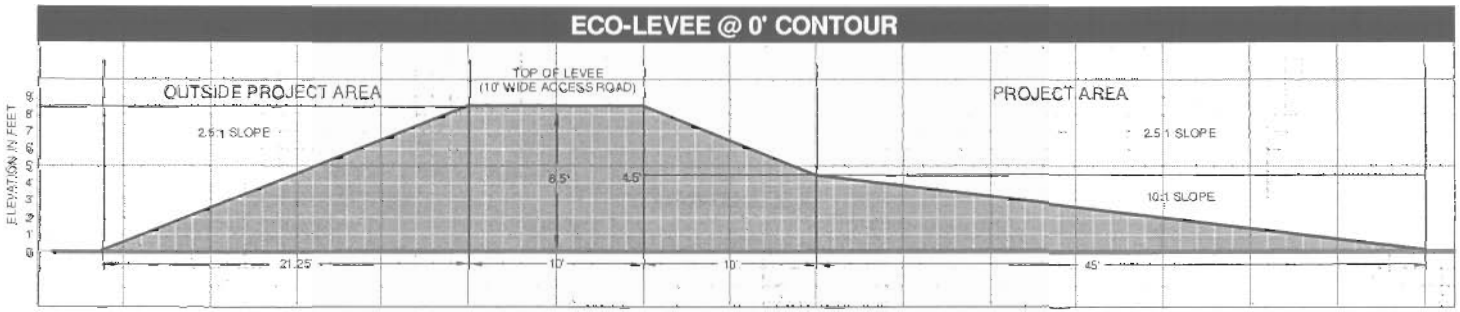

(E) 36"X36" BOX CULVERT
(E) 48"X48" BOX CULVERT
BRACKISH MARSH
(N) DISTRIBUTION BOX, TYP
FROM WETLANDS
TO WETLANDS
TO BUTCHER'S SLOUGH
CHLORINE CONTACT BASIN
GEARHEART MARSH
WEIR BOX
ALLEN MARSH
WEIR BOX
WETLANDS EFFLUENT PUMP STATION
(E) DISTRIBUTION BOX, TYP
HAUSER MARSH
LOW FLOW BYPASS CHANNEL
INTAKE STRUCTURE
BUTCHER'S SLOUGH
NO SCALE
Consulting Engineers & Geologists, Inc.
City of Arcata
Brackish Marsh Project
Arcata, California
Wetlands Process Diagram
NOVEMBER 2004

Figure 2.2 - 6

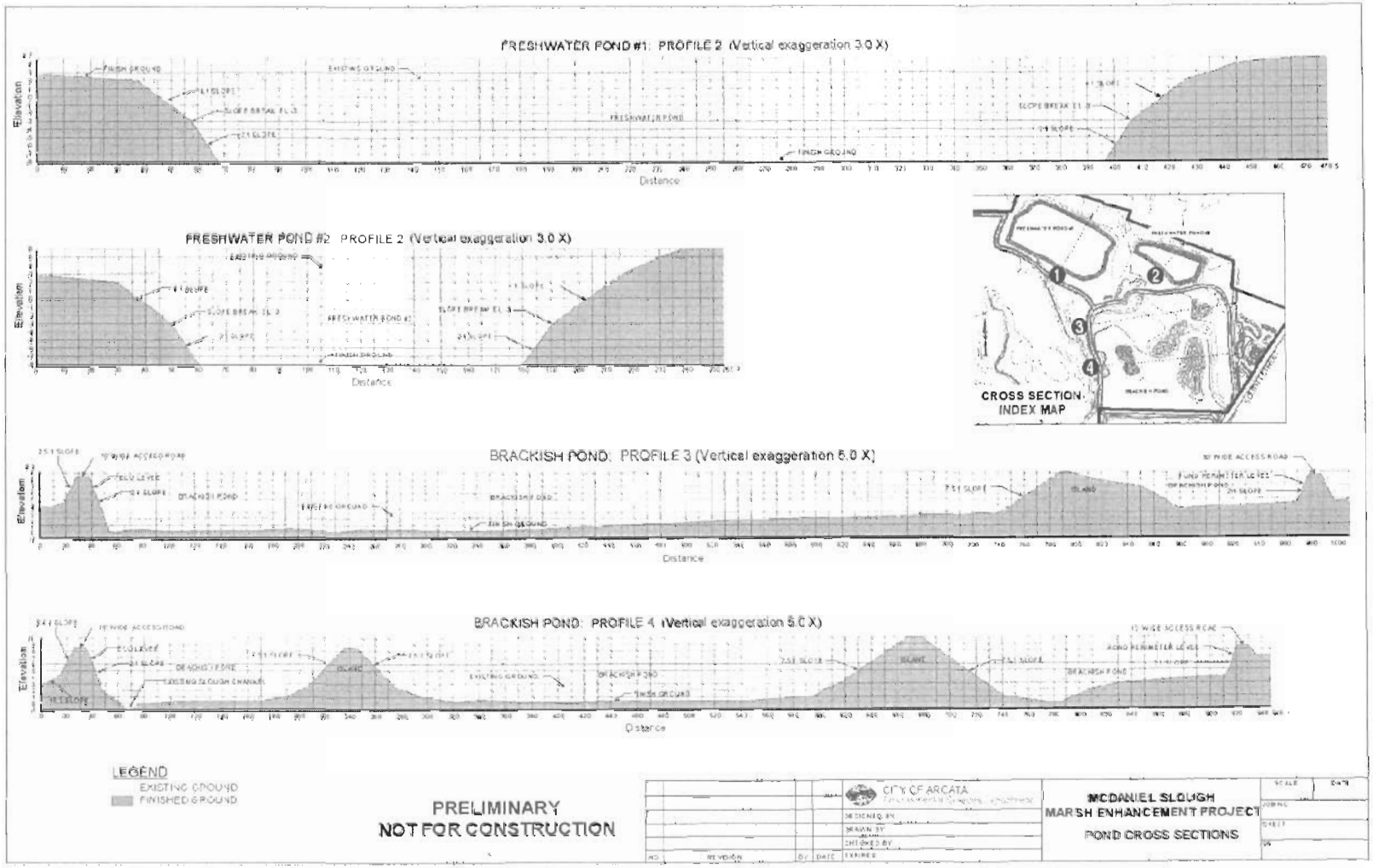
Appendix J
Levee Cross-Sections







Appendix I
Pond Cross-Sections



Appendix H
Project Planting Plan

N.O.A.A. GRANT APPLICATION

Community Based Restoration

VEGETATION PLAN

Redwood Community Action Agency,
City of Arcata & Cal. Dept. of Fish & Game

MCDANIEL SLOUGH WETLAND ENHANCEMENT PROJECT 2004.

Boundaries
- Project Boundary
- Arcata City Limits

Recreation
- Trail
- Bird Blind
- Information Kiosk
- Boat Launch

Levee Types
- Flood Levee
- Eco-Levee
- Pond Perimeter Levee

Water Features
- Streams
- Freshwater Marsh
- Brackish Pond

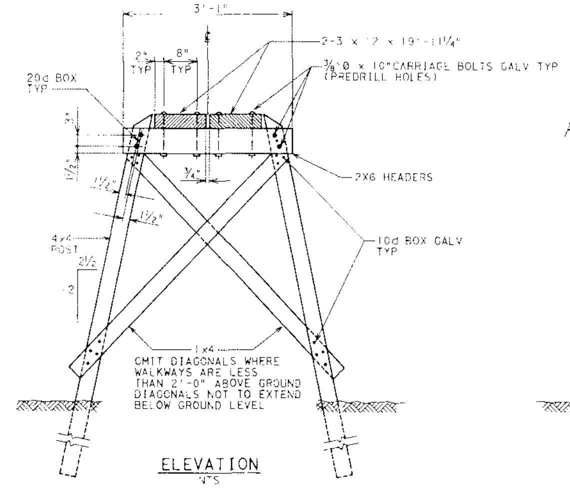
Vegetation
- Trees(various)
- Snags
- Native Shrubs
- Freshwater Wetland Plants
- Salt Marsh Plants

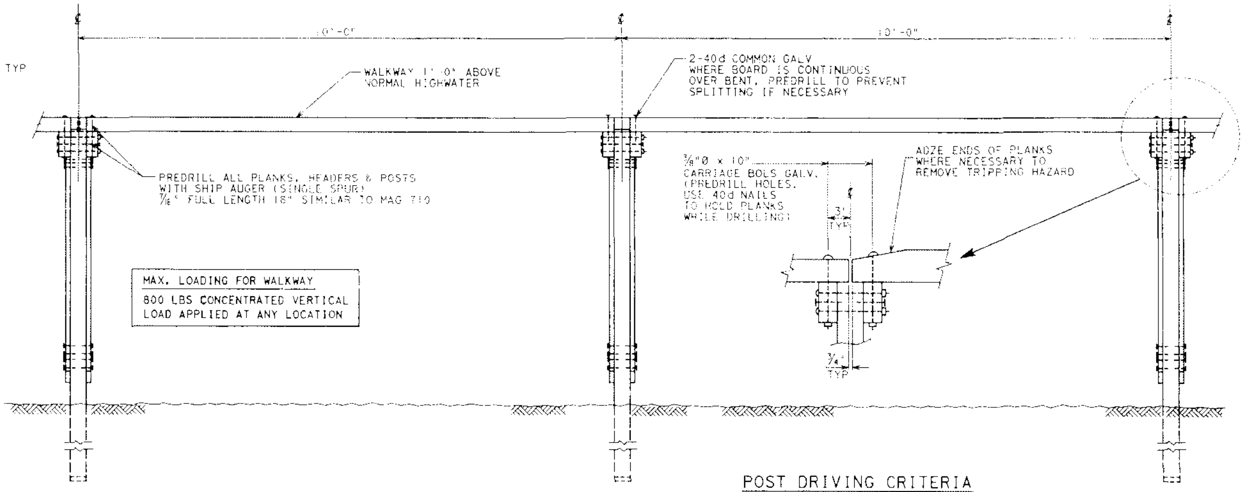
Transportation
- Access Road
- Railroad

Other Features
- PG & E Tower
- Drainage Ditch
- Remove Culvert/Tide gate
- Drainage pipe
- Remove Levee
- Roosting Island
- Parcel

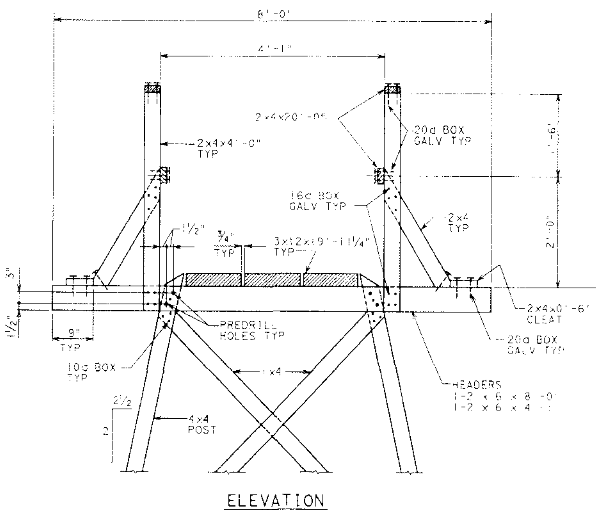
Source: City of Arcata

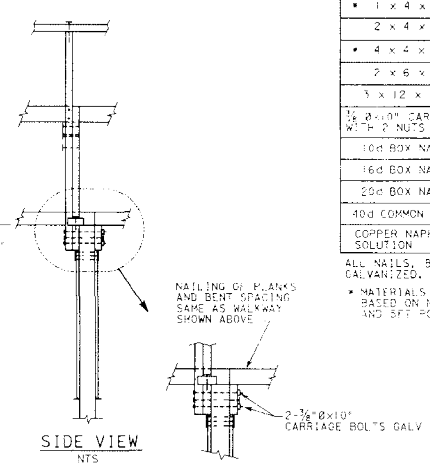
FOR USE OVER TIDAL AND MARSH LANDS
(LOCATIONS WHERE WALKWAY IS NOT MORE THAN 4'-0" ABOVE GROUND)





FOR USE OVER CHANNEL CROSSINGS
(WHERE WALKWAY IS MORE THAN 4'-0" AND LESS THAN 10'-0" ABOVE GROUND AND OTHER HAZARDOUS LOCATIONS)





BILL OF MATERIAL		
MATERIALS REQUIRED PER 1000 FT OF WALKWAY		
DESCRIPTION	2 FT WIDE	3 FT WIDE
* 1 x 4 x 16'-0"	101	202
2 x 4 x 20'-0"	N/A	276
* 4 x 4 x 16'-0"	202	202
2 x 6 x 16'-0"	51	01
3 x 12 x 19'-11¼"	100	50
⅜ Ø x 10" CARRIAGE BOLTS WITH 2 NUTS & FLAT	850	1050
10d BOX NAILS (LBS)	45*	45*
16d BOX NAILS (LBS)	N/A	35*
20d BOX NAILS (LBS)	15*	70*
40d COMMON NAILS (LBS)	25*	35*
COPPER NAPHTHENATE SOLUTION	8 GAL	10 GAL

ALL NAILS, BOLTS, NUTS & FLATS TO BE HOT DIP GALVANIZED.

* MATERIALS FOR POSTS & DIAGONALS BASED ON MAXIMUM WALKWAY HEIGHT AND 5FT POST EMBEDMENT.

POST DRIVING CRITERIA

EACH 4x4 POST SHALL BE DRIVEN INTO GROUND SUCH AS TO REACH A MINIMUM VERTICAL LOAD RESISTANCE OF 800 LBS TOTAL. EMBEDMENT SHALL NOT BE LESS THAN 2'-0".

GENERAL NOTES

1. ALL LUMBER TO BE FULL SAWN COASTAL DOUGLAS FIR.
2. FOR LUMBER LISTED BELOW, REFER TO GRADING RULES BY WEST COAST LUMBER INSPECTION BUREAU, 1993 STANDARD NO. 17.
   - 1 x 4 DIAGONALS - DF SELECT MERCHANTABLE BOARDS PER SEC. 2, PARAGRAPH 118-a.
   - 2 x 4 RAILING - STRUCTURAL LIGHT FRAMING, DF #2 PER SEC. 3, PARAGRAPH 124 - c.
   - 2 x 6 HEADERS - STRUCTURAL JOISTS AND PLANKS, DF #1 PER SEC. 3, PARAGRAPH 123 - b.
   - 3 X 12 PLANKS - STRUCTURAL JOISTS AND PLANKS, DF #1, PER SEC. 3, PARAGRAPH 123 - b.
   - 4 x 4 POSTS - STRUCTURAL LIGHT FRAMING, DF #2, PER SEC. 3, PARAGRAPH 124 - c.
3. INSTALL DOUBLE NUTS ON ALL CARRIAGE BOLTS.

PRESERVATIVE TREATMENT

a. ALL LUMBER SHALL BE PRESSURE TREATED IN ACCORDANCE WITH AMERICAN WOOD PRESERVERS' ASSOCIATION (AWPA) STANDARD C18-92 TO GIVE A MINIMUM RETENTION OF 2.5 pcf USING A WATERBORNE PRESERVATIVE PER P5-93 OR EQUIVALENT.

b. ALL FIELD CUTS AND BOLT HOLES SHALL BE FIELD TREATED BY COPPER NAPHTHENATE (TENINO) OR WATERBORNE PRESERVATIVES PER AWPA STANDARD M4 91.

REFERENCES — DWG. NO.

GATE FOR BOARDWALK ACCESS 364567
PLASTIC WOOD WALKWAY (LOW CONSTRUCTION) 364563
PLASTIC WOOD WALKWAY (HIGH CONSTRUCTION) 364564

REGISTERED PROFESSIONAL ENGINEER MICHAEL S.Y. CHEUNG No. 26503 CERT. EXPIRES 3-31-04 CIVIL STATE OF CALIFORNIA

REV	DATE	DESCRIPTION	JOB NO	DSG/DWN	CHKD	SUPV	APVD
3	9-25-03	GENERAL REVISIONS	—	TKL		FC	MC
2	06-01-95	REDRAWN DWG & MISC REVISIONS	—	LCR	VC	PN	MC
1	10-11-85	APPROVED FOR CONSTRUCTION	—	MC	SC	MS	MC

REVISION 1
DSG M. CHEUNG
DWN R. YEE
CHKD S. CHIU
SUPV M. SIMON
APVD
APVD
DATE 10-11-85

CIVIL
WOOD WALKWAY FOR ACCESS TO TRANSMISSION LINE TOWERS

GRID MAINTENANCE AND CONSTRUCTION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST
SUPSDS 206688
SUPSD BY
SHEET NO OF SHEETS
350670 REV 3

SCAN 3

350670m.c04 9-25-03

3rd FLOOR

Draft Monitoring, Mitigation and Adaptive Management Plan

Impact	**Mitigation Measure**	**Significance after Mitigation**	**Responsible Agency**	**schedule**	**Reporting regs**
	HYDROLOGY AND WATER QUALITY		City of Arcata		
3.1.1 Drainage Impacts	3.1.1a A culvert and tidegate will be installed in the newly constructed western levee at the location of the existing borrow ditch north of the Bayfront levee. This culvert and tidegate will mitigate the potential negative impact of preventing runoff from the Arcata Bottom from discharging to McDaniel Slough. The culvert will be designed to preserve the existing capacity of the borrow ditch.	Less than significant with mitigation measures.	City of Arcata		
3.1.4 Surface Water Quality Impacts Construction Related Impacts	• Construction work occurs during the dry season from May 15th thru November 15th to prevent ground disturbance during rainstorms. • In the event of unseasonable rainfall, construction will not occur during periods when any surface runoff occurs on exposed soil due to rainfall. • All exposed soil that could erode to a channel leading to Janes Creek will be mulched with weed-free straw mulch. • Bare soil surfaces will be allowed to vegetate prior to the breach of the bayfront levee. • All vehicles and construction equipment shall be parked, and equipment refueling and maintenance shall take place only in designated areas where potential spills of fuel, lubricants, or coolants can be contained and cleaned up without impacts to aquatic habitats. • Erosion control plan. Will include seeding and mulching of exposed bare soil including new drainage swales prior to Nov. 15th.	Less than significant with mitigation measures.	City of Arcata		
3.1.4 Surface Water Quality Impacts **Project Related impacts**	**3.1.4a** The Erosion and Sediment Control Plan shall include storm water pollution prevention measures applicable to the scope of construction activities proposed and shall include Best Management Practices (BMPs) as provided in the CalTrans *Storm Water Quality Handbook* or an equivalent approved by the City. **3.1.4b** A Stormwater Pollution Prevention Plan (SWPPP) would be prepared as required by the Regional Water Quality Control Board.	Less than significant with mitigation measures	City of Arcata		

BIOLOGY					
3.2.1 Impacts to Wetlands	**3.2.1a** The locations of habitats and species to be avoided will be clearly identified in the contract documents (plans and specifications). **3.2.1b** Construction activities in wetlands will be restricted to the dry season. **3.2.1c** Before clearing and grubbing commences; construction and staging areas will be flagged to clearly define the limits of the work area. These areas will be clearly identified on the contract documents (plans and specifications). **3.2.1d** Sensitive areas outside of the construction corridor will be so labeled on construction documents (plans and specifications) as "Sensitive Biological Resources—Do Not Disturb." **3.2.1e** Watering of exposed earth will be conducted consistent with good construction practices to minimize dust production. **3.2.1f** A qualified biologist will be on-site to observe construction activities as appropriate when construction in or adjacent to sensitive habitat occurs. **3.2.1g** Contractors awarded contract packages will sign a document stating that they have read, agree to, and understand the required resource avoidance measures, and will have construction crews participate in a training session on sensitive area resources. **3.21h** All haul roads and portions of construction staging areas that are no longer required for construction and maintenance of the restoration project and have not been converted to a new use shall be restored to pre-project conditions.	Less than significant with mitigation measures	City of Arcata		
3.2.2 Impacts to Fish and Associated Habitat	**3.2.2a** Construction activities occurring within the watercourse would occur following recommendations from qualified California Department of Fish and Game biologists. **3.2.2b** In stream work will be done during the dry season at low tide with a fish biologist on site during in stream operations to monitor for the presence of anadromous fish and other wildlife species. **3.2.2c** Tidegates would be removed from the pipes one year prior to breaching the levee and removing the pipes. This will allow for development of erosion control vegetation on the levees prior to the breach thus minimizing sediment inputs. The breach would occur during low flow and low tide. **3.2.2d** Consult with the U.S Fish and Wildlife Service regarding Tidewater Goby. **3.2.2e** Consult with the NOAA Fisheries regarding salmonids. **3.2.2f** Install outlets from brackish pond that allow for controlling outflow to adjust for optimal salinity ranges.	Less than significant with mitigation measures	City of Arcata		
3.2.4 Impacts to Avian Species and Associated Habitat	**3.2.4a** Construction activities would occur during the breeding and nesting season only following pre-construction site-specific surveys that find an absence of nesting Northern harrier. **3.2.4b** Following pre-construction surveys, work would begin following recommendations of a qualified biologist. **3.2.4c** Riparian habitat will be enhanced by planting willow, alder and native conifers along Janes Creek. Near the freshwater ponds, large logs suitable for roosting will be buried upright to serve as snags.	Less than significant with mitigation measures	City of Arcata		
3.2.6 Impacts to Mammal Species	**3.2.6a** Installation of snags, bat boxes and retention of some tall grass perennial uplands on City property landward of the dikes with a mosaic of new upland forest areas.	Less than significant with mitigation measures.	City of Arcata		
Geology and Soils					
3.3.1 Impacts Due to Tsunami Inundation	**3.3.1a** Place tsunami warning and evacuation route signs on trails within the project area.	Less than significant with mitigation	City of Arcata		

<table>
<tr><td></td><td></td><td>measures.</td><td></td><td></td><td></td></tr>
<tr><td>3.3.2 Impacts Due to Soil Stability and Erosion</td><td>3.3.2a The City will use California Best Management Practices to minimize erosion during construction of the project. Table 3-1 lists erosion control practices that could be used.

Table 3-1 Erosion Control BMPs
<table>
<tr><th>BMP #</th><th></th><th>BMP Name</th></tr>
<tr><td>EC-1</td><td>Scheduling</td><td></td></tr>
<tr><td>EC-2</td><td>Preservation of Existing Vegetation</td><td></td></tr>
<tr><td>EC-3</td><td>Hydraulic Mulch</td><td></td></tr>
<tr><td>EC-4</td><td>Hydroseeding</td><td></td></tr>
<tr><td>EC-5</td><td>Soil Binders</td><td></td></tr>
<tr><td>EC-6</td><td>Straw Mulch</td><td></td></tr>
<tr><td>EC-7</td><td>Geotextiles & Mats</td><td></td></tr>
<tr><td>EC-8</td><td>Wood Mulching</td><td></td></tr>
<tr><td>EC-9</td><td>Earth Dikes and Drainage Swales</td><td></td></tr>
<tr><td>EC-10</td><td>Velocity Dissipation Devices</td><td></td></tr>
<tr><td>EC-11</td><td>Slope Drains</td><td></td></tr>
<tr><td>EC-12</td><td>Streambank Stabilization</td><td></td></tr>
</table>
Source: California BMP Handbook

3.3.2b A geotechnical report would be prepared to describe options for levee construction. The report would describe the conditions at the site that could affect levee stability. The report would include design recommendations for levee construction to reduce the potential impacts due to levee failure to a less than significant level.</td><td>Less than significant with mitigation measures</td><td>City of Arcata</td><td></td><td></td></tr>
</table>

3.3.3 Impacts Due to Geologic Hazards	• Levees and roadbeds should be constructed with upper clay/silt soil. • To limit saltwater intrusion, sandy material below the clay should be mixed with the clay at a minimum ratio of 1:1. • Levees and roadbeds should be raised in lifts not exceeding eight inches. A geotechnical report would be prepared to describe options for levee construction. The report would describe the conditions at the site that could affect levee stability. The report would include design recommendations for levee construction to reduce the potential impacts due to levee failure to a less than significant level.	Less than significant with *mitigation* measures.	City of Arcata		
3.4.1 Release of Particulate Matter During Construction Activities	**3.4.1a** All active construction areas shall be watered at a rate sufficient to keep soil moist and prevent formation of wind-blown dust. **3.4.1b** All trucks hauling soil, sand, and other loose materials shall be covered, or all trucks shall be required to maintain at least 2 feet of freeboard. **3.4.1c** All unpaved access roads, parking areas, and construction staging areas shall be paved, watered daily, or treated with non-toxic soil stabilizers during construction. **3.4.1d** All paved access roads, parking areas, and construction staging areas shall be cleaned daily with water sweepers during construction. **3.4.1e** If visible soil is carried out onto adjacent streets, the area shall be washed with water or by a water sweeper truck. **3.4.1f** Hydroseeding or non-toxic soil stabilizers shall be applied to inactive construction areas (previously graded areas inactive for ten days or more). **3.4.1g** Exposed stockpiles of dirt, sand, and similar material shall be enclosed, covered, watered daily, or treated with non-toxic soil binders. **3.4.1h** Traffic speeds on unpaved roads shall be limited to 15 miles per hour. **3.4.1i** Sandbags, hay bales, or other erosion control measures shall be installed to prevent silt runoff to public roadways. **3.4.1j** Vegetation in disturbed areas shall be replanted as quickly as possible. **3.4.1k** *Outdoor dust-producing* activities shall be suspended when high winds create visible dust plumes in spite of control measures. •	Less than significant with mitigation measures.	City of Arcata		

AIR QUALITY, PUBLIC HEALTH, HAZARDS, AND HAZARDOUS MATERIALS				
3.5.1 Accidental Release of Hazardous Materials During Construction or Ongoing Maintenance.	**See mitigation measure 3.1.4**	Less than significant with mitigation measures.	City of Arcata	
3.5.2 Expose the Public to Disease Vectors (e.g. mosquitoes).	Bat boxes and swallow nesting boards will be installed and mounted on the "snags" placed vertically in the ground for bird roosting platforms. In time, when the planted trees are large enough, additional bat boxes and swallow nesting structure can be mounted on trees.	Less than significant with mitigation measures.	City of Arcata	
3.5.3 Impacts Due to an Increased Risk to Public Safety from Design, Implementation, and Construction Activity	**3.5.3a** Laminated informational signs would be placed at major public access points, such as trails and roads, to the project informing the public of the safety hazards related to heavy equipment, and requesting that no trespassing occur. **3.5.3b** During operation of heavy equipment, the construction manager would ensure that someone is on site at all times to monitor for approaching visitors. On-site personnel would be responsible for maintaining safe working conditions at the site. **3.5.3c** Because of the recreational use of the AMWS, all loaded vehicles would be required to travel a maximum of 15 mph on South I Street.	Less than significant with mitigation measures.	*City of Arcata*	
Cultural and Historic Resources				
4.1.1 Impacts to archaeological and Paleontogical Resources	**4.1.1a** Should concentrations of archaeological materials, paleontogical resources, or human remains be encountered during construction, all ground-disturbing work would be temporarily halted in that area. Work near the archaeological finds would not be resumed until a qualified archaeologist has evaluated the materials and offered recommendations for further action. Project personnel shall not collect cultural resources. In the event human remains are discovered, the County Coroner shall be contacted immediately and all work would cease until further instruction from qualified personnel. **4.1.1b.** A representative from the Wiyot Tribe or a trained archaeological monitor would be on site to oversee excavations of the ponds and levees in the eastern most portion of the project. A cultural resources monitor would ensure that any significant subsurface cultural deposits are quickly recognized and recorded.	Less than significant impact with mitigation measures.	City of Arcata	
4.1.2 Impacts to Historic Resources	**4.1.2a** The City shall officially record the levee sections proposed for removal (for example, as recorded in the Cultural Resources Investigation).	Less than significant impact with mitigation measure	City of Arcata	

AESTHETICS AND VISUAL RESOURCES				
4.3.1 Impacts Due to Short-Term Effects on Existing Visual Character or Quality of Site During Construction	**4.3.1a** All temporary roads or routes used for transportation of levee construction fill material would be de-compacted with rippers or tilling equipment prior to completion of the project to allow for rapid revegetation to cover over vehicle tracks. **4.3.1b** Exposed soil would be mulched with a weed-free straw or planted with native materials to disguise areas of disturbance. **4.3.1c** Any sites affected by heavy equipment that do not have natural vegetation recovery one year following construction would be seeded or planted with vegetation that would blend with the surrounding features.	***Less than significant with mitigation measures.***	*City of Arcata*	
4.3.2 Impacts Due to Potential Long-term Effects on Scenic Vistas, Highways, or Scenic Resources	**4.3.2a** Levees would be graded, curved, and smoothed to blend with the surrounding features. Native vegetation planted on levees will help structures blend in with the natural environment. **4.3.2b** The existing bayfront levee from South I Street to the mouth of Janes Creek will be improved visually by removing existing concrete slabs from the levee sides. **4.3.2c** The proposed bird blinds will be constructed with weathered barn lumber and will be placed in areas that are planted with heavy vegetation in order obscure them from view. The blinds will be constructed with a low profile as well.	Less than significant with mitigation measures.	City of Arcata	

PUBLIC UTILITIES AND SERVICES				
4.4.3 Impacts to Utility Transmission Systems	The City in cooperation with PG&E, will provide access and prevent damage to towers by: **4.4.3a** Developing a soil fill buttress surrounding the tower foundations. The buttress would be composed of material excavated from the pond areas. The buttress would be a circular mound of material surrounding the foundation to provide additional stability to the site, as well as provide a zone above flood elevations from which crews can perform maintenance. **4.4.3b** Constructing a boardwalk for pedestrian access to the towers. **4.4.3c** Extending the concrete base foundations to a higher elevation to protect against corrosion.	Less than significant with mitigation measures.	City of Arcata	
NOISE				
4.9.1 Impacts Due to Increased Noise Levels.	**4.9.1a** (1985 Noise Element 4.6) Construction activities that generate noticeable sound offsite would be limited from 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 7 p.m. on Saturday. No work will be allowed on Sunday. **4.9.1b** (1985 Noise Element 4.6) Construction equipment would be maintained in proper condition to prevent excessive noise **4.9.1c** Backup beepers would be no louder than necessary.	Less than significant with mitigation measures	City of Arcata	

Adaptive Management (Draft)

Project Uncertainty

Due to the long time frame for tidal marsh evolution, it may be difficult to determine at what point in time project success can be determined. Evolution of the salt marsh for example, is expected to take decades. Scour of sediment from the main channel may also take decades. Therefore the project incorporates post-construction monitoring and adaptive management to assess whether the natural processes can sustain the long-term evolution of the site to the desired conditions. The freshwater ponds are an exception as success of those habitat types should be able to be measured within a 5-year period.

Post Project Success Criteria
Due to the size of the project, success criteria includes establishment of various habitats for wildlife use, but not populations and densities.

Success Criteria

1. Control and management of exotic and invasive plant and animal species
2. Establishment of wildlife habitat for an array of species resulting in an increase (over current conditions) in biological diversity.
3. Success of planting of native plants and tree species

The Adaptive management process consists of the following:

1.) Evaluate field monitoring data and assess the progress of restoration
2.) Identify potential adverse conditions impacting progress of restoration
3.) Determine if adverse conditions can or should be remedied, and
4.) Implement the appropriate adaptive management action, as required

The project team (City of Arcata and Department of Fish and game staff) will confer to assess the results of monitoring data and determine if adaptive management actions are necessary.

Adaptive management would be used to address one of the five scenarios:

1.) Wildlife populations are adversely affected
2.) There are unanticipated consequences of the restoration effort
3.) Salinity control in the managed brackish marsh is more difficult than anticipated
4.) Habitat evolution is slower than predicted
5.) There are adverse impacts to receiving water body or pond area water quality.

Monitoring

Monitoring of the McDaniel Slough Wetland Enhancement Project will be coordinated with the Regional Water Quality Control Board, the City Creeks and Wetlands Committee, DFG and other State and federal agencies. Biological monitoring may be required to satisfy mitigation requirements under the biological opinion (BO) issued to the project by the U.S. Fish and Wildlife Service (USFWS). The objectives of the project monitoring are to:

- Monitor and evaluate the physical evolution of restored habitats including *Spartina* colonization
- Assess water and sediment quality in the channels
- Determine compliance with applicable water quality standards
- Vegetation surveys will be used to assess development of marsh vegetation and success of planting efforts.
- Water quality parameters will be assessed in order to determine the desired salinity, PH, temperature and water depth in the brackish marsh and freshwater ponds.
- Channel cross-sections will be installed to monitor channel scouring on Janes Creek/McDaniel Slough main stem.
- Invertebrates, fish and waterbird surveys will be conducted in the restored habitats.

5.8 CONSISTENCY WITH ADOPTED PLANS, POLICIES AND LEGISLATION

ADOPTED PLANS AND POLICIES AFFECTING THE PROJECT AREA

Relevant Plans and Ordinances of the City of Arcata

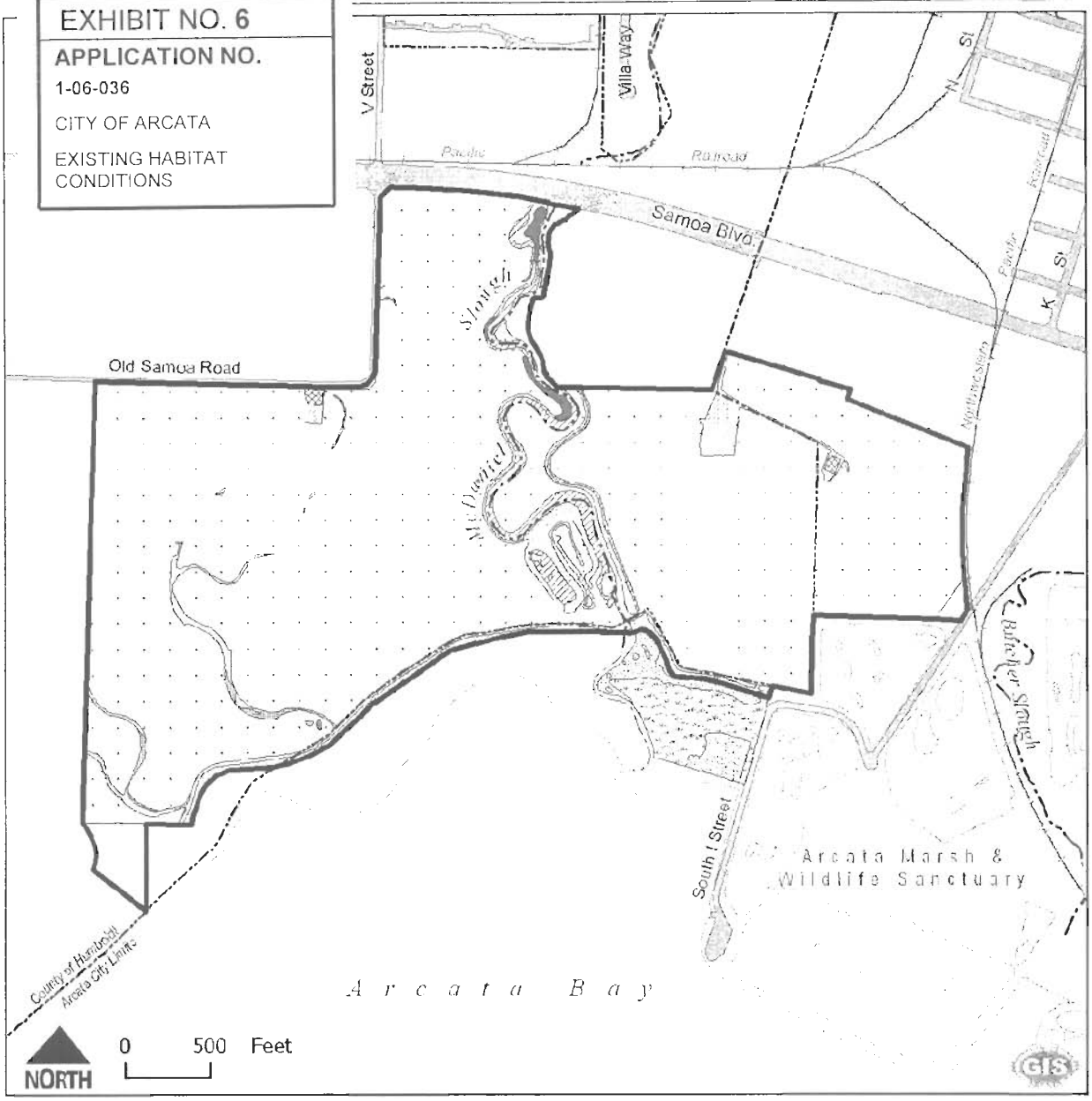
EXHIBIT NO. 6

APPLICATION NO.

1-06-036

CITY OF ARCATA

EXISTING HABITAT CONDITIONS



Boundaries
- Project Boundary
- Arcata City Limits

Water Features
- Streams
- Waterbody

Transportation
- Railroad
- Streets

Habitat Types
- Agricultural Field/ Perennial Grassland
- Aquatic
- Brackish Marsh
- Developed
- Freshwater Marsh
- Mudflat
- Ruderal/Upland
- Salt Marsh
- Willow/Riparian

Source: H.T. Harvey & Associates, 6/2000 field survey

Figure 3.2 - 1
McDaniel Slough EIR

HABITAT CONDITIONS

Boundaries
- Project Boundary
- Arcata City Limits

Transportation
- Railroad
- Streets
- Access Road

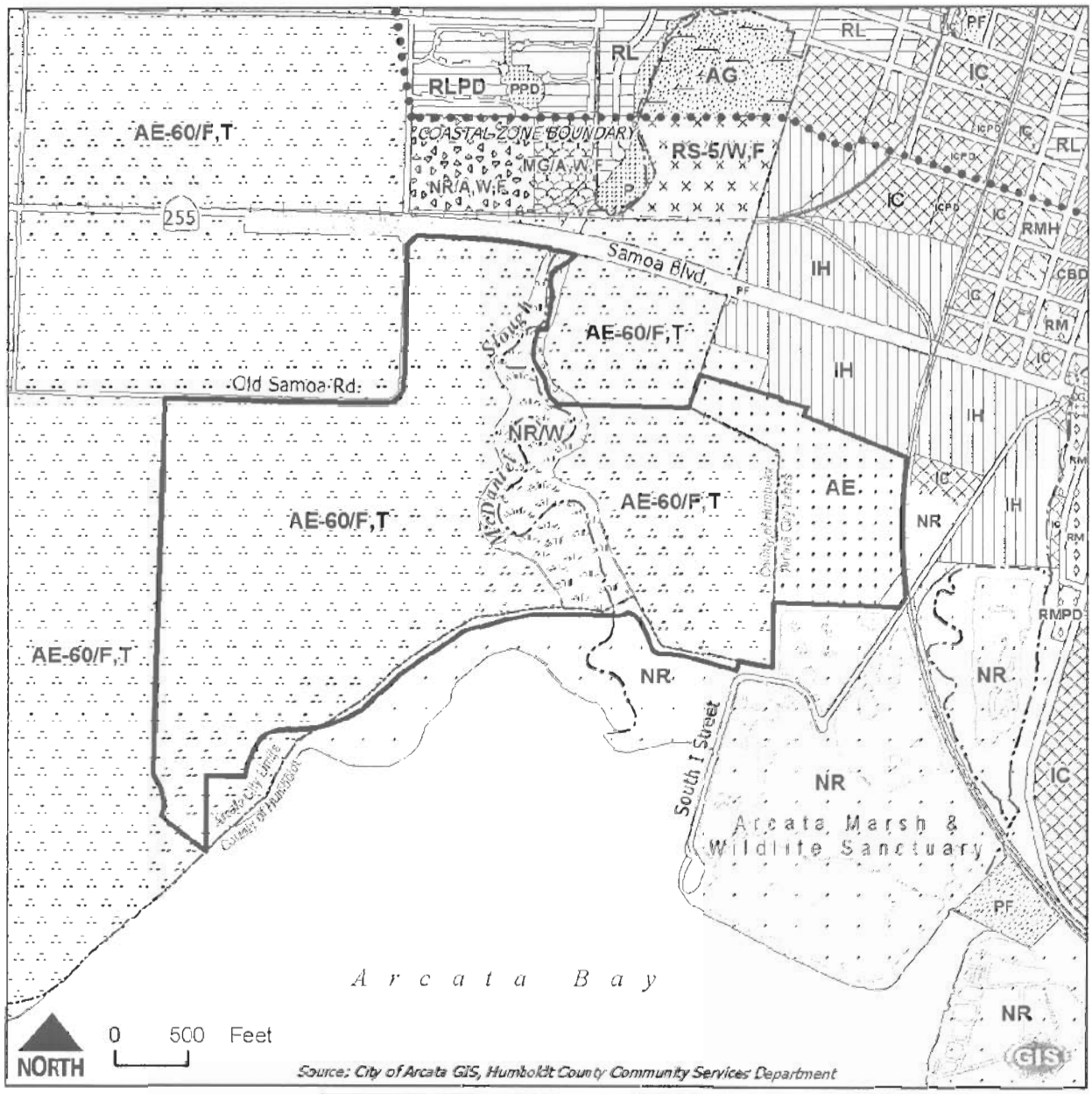
Water Features
- Streams
- Waterbody

Grazing Lands
- Grazed by the City of Arcata

Source: City of Arcata

Figure 4.8-1
McDaniel Slough EIR
GRAZING LANDS

EXHIBIT NO. 7
APPLICATION NO.
1-06-036
CITY OF ARCATA
EXISTING GRAZING LANDS



Boundaries
- Project Boundary
- Arcata City Limits
- Coastal Zone Boundary

Water Features
- Streams
- Waterbody

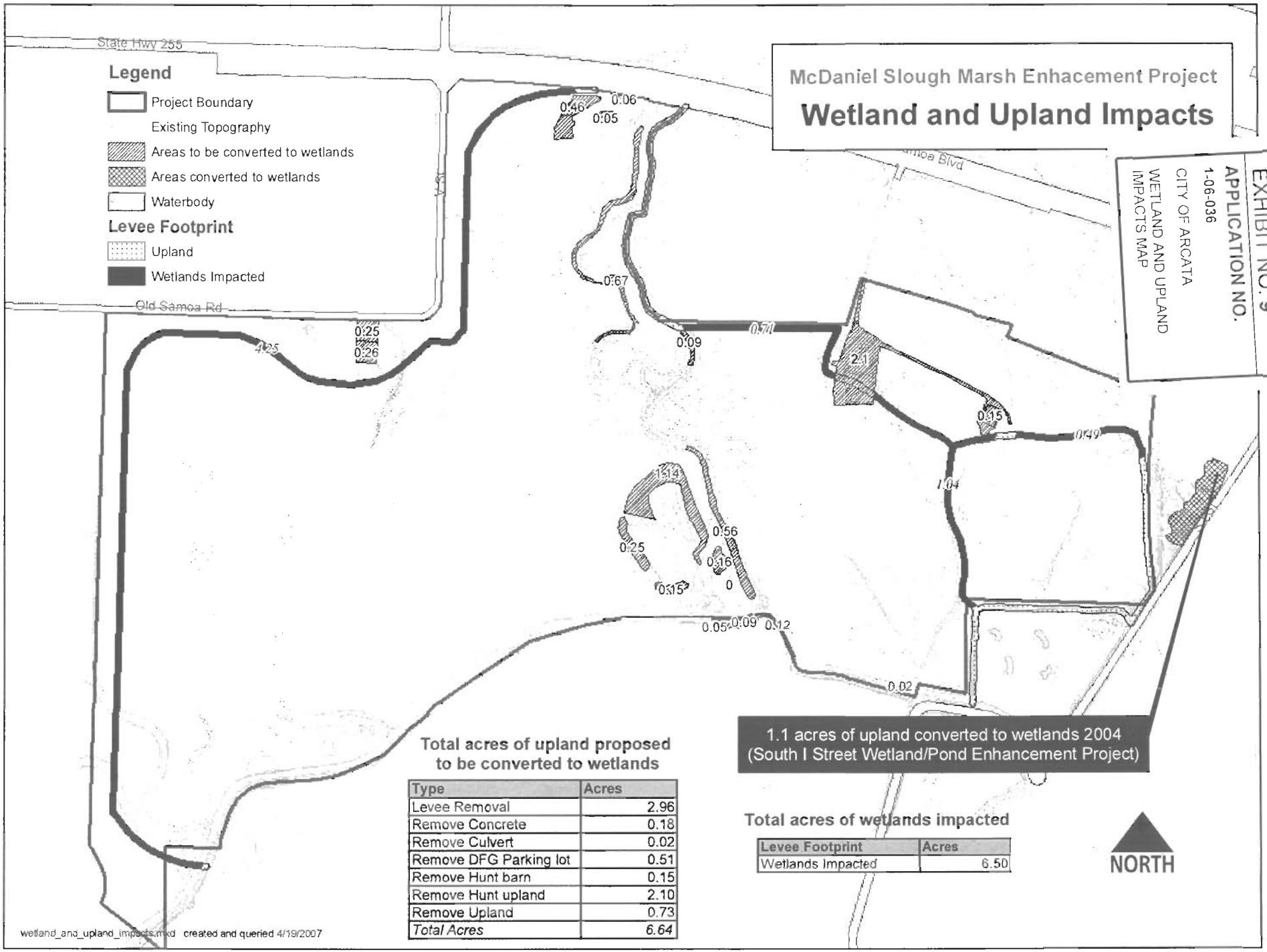
Transportation
- Streets
- Railroad

City of Arcata General Plan Designations
- Heavy Industrial [I-H]
- Industrial Commercial [I-C], [I-C-PD]
- Public Facility [P-F], [P-F-PD]
- Public Facility-Parks [P]
- General Commercial [C-G]
- Residential-Medium Density [R-M]; [R-M-PD]
- Residential-Medium High Density [R-MH], [R-MH-PD]
- Residential-Low Density [R-L]; [R-L-PD]
- Natural Resource [NR]
- Agriculture-Exclusive [A-E]

County Zoning Designations
- Agriculture Exclusive-AE-60/F,T
- Natural Resource-NR/A,W,F
- Natural Resource-NR/W
- Agriculture General-AG
- Industrial General-MG/A,W,F
- Residential Suburban-RS-5/W,F

Figure 4.2-2
McDaniel Slough EIR
ZONING DESIGNATIONS

EXHIBIT NO. 8
APPLICATION NO.
1-06-036
CITY OF ARCATA
ZONING OF SITE AND SURROUNDING LAND USES



Total acres of upland proposed to be converted to wetlands

Type	Acres
Levee Removal	2.96
Remove Concrete	0.18
Remove Culvert	0.02
Remove DFG Parking lot	0.51
Remove Hunt barn	0.15
Remove Hunt upland	2.10
Remove Upland	0.73
Total Acres	*6.64*

Total acres of wetlands impacted

Levee Footprint	Acres
Wetlands Impacted	6.50

wetland_and_upland_impacts.mxd created and queried 4/19/2007

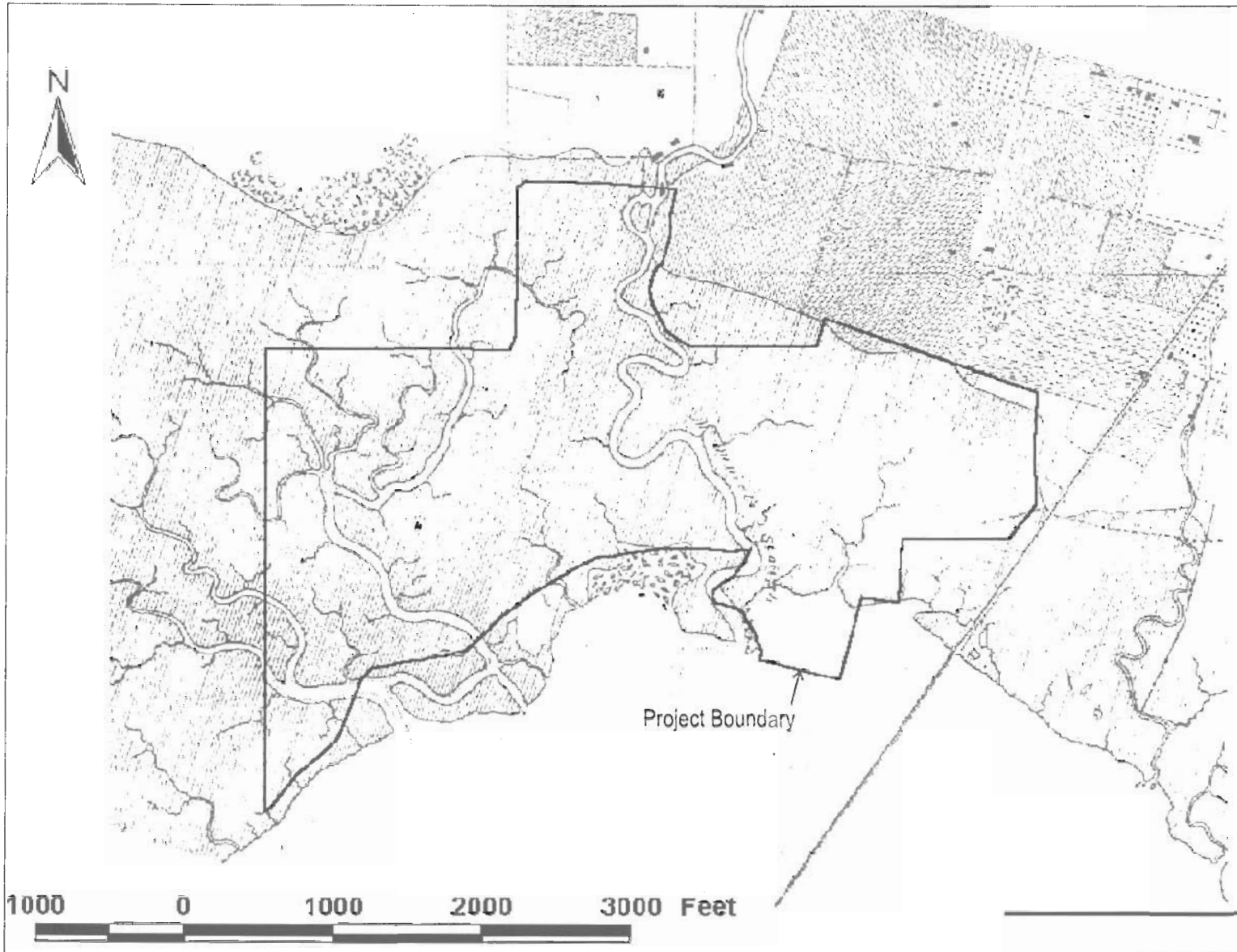


EXHIBIT NO. 10
APPLICATION NO.
1-06-036 - CITY OF ARCATA
EXTENT OF HISTORIC SALTMARSH IN NORTHERN HUMBOLDT BAY CIRCA 1870-1890 (1 of 2)

figure 3-1

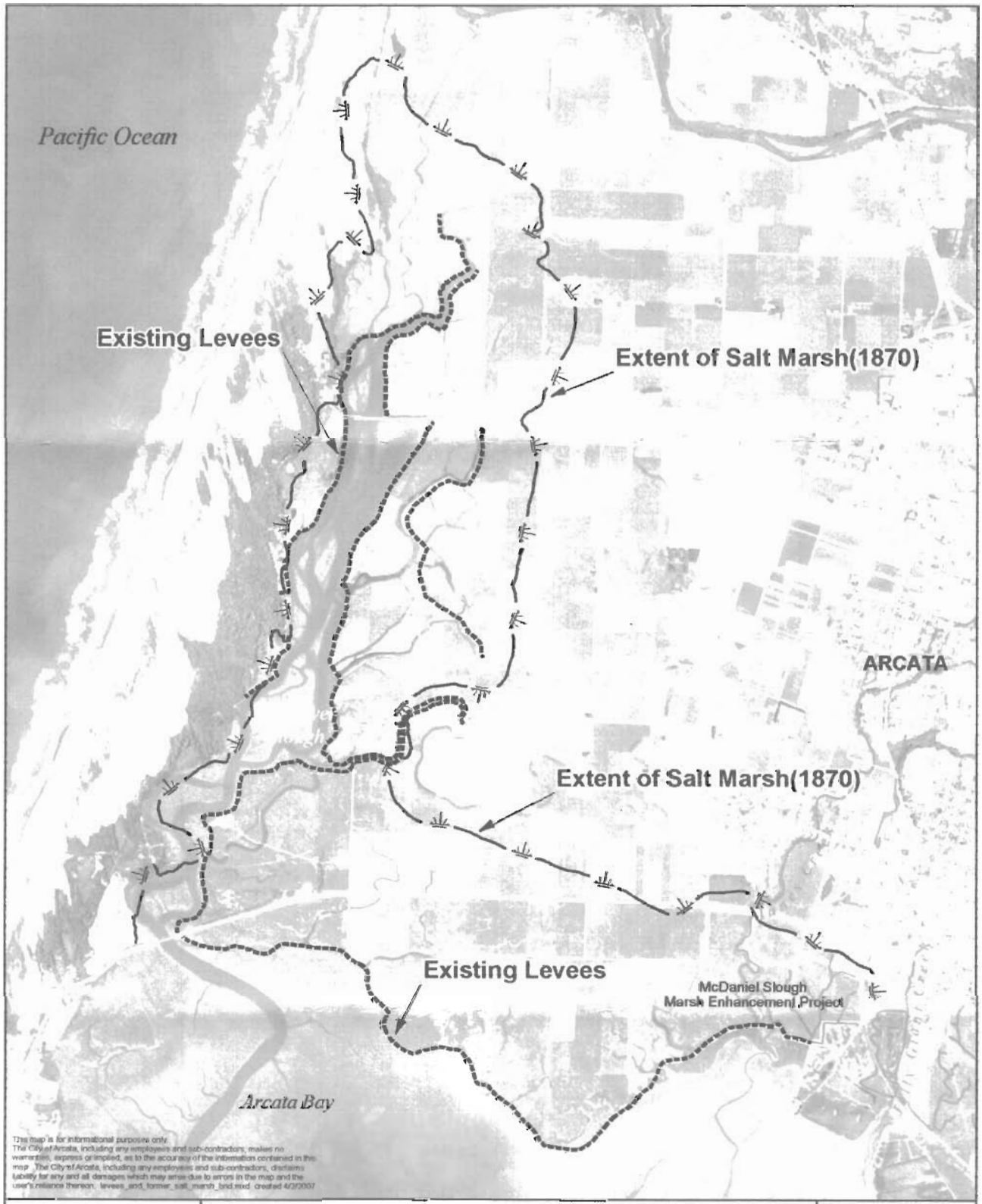
McDaniel Slough

1870 Historic Survey Map

Source: U.S. Coast & Geodetic Survey Map of Humboldt Bay

PWA

a:\1624 Historic Map fig 3.14.cdr



City of Arcata
Environmental Services

McDaniel Slough Marsh Enhancement Project

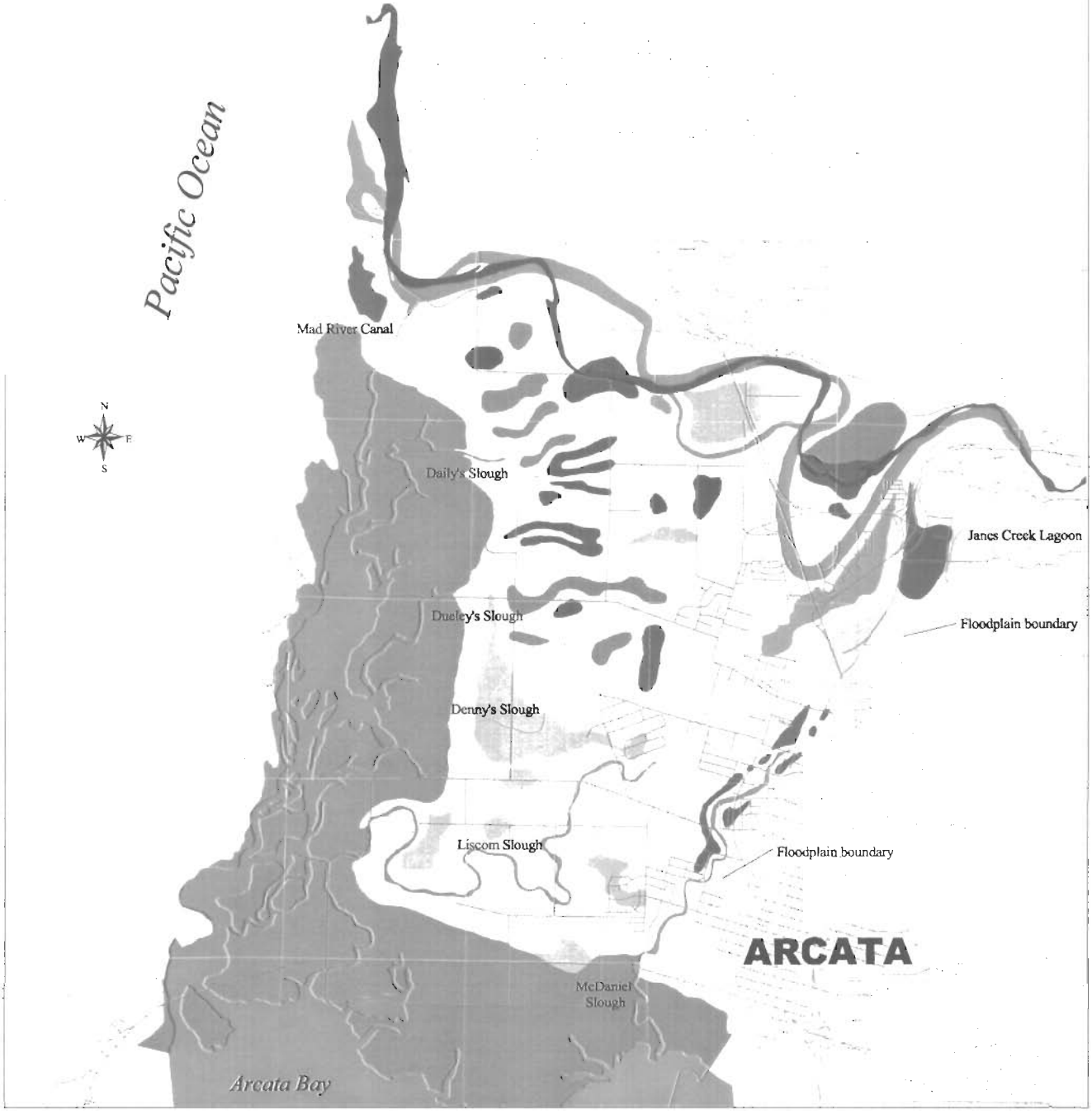
North Humboldt Bay Existing Levees and Former Extent of Salt Marsh Boundary (1870)

NORTH

1,000 Feet

2 of 2

Analysis of Mad River Delta, 1854-1862 Compared with Mad River, 1995-1997



Mad River Delta, 1854-1862

- Prairie
- Willow
- Alder
- Brush
- Not Defined
- Willow Brush
- Willow Thicket
- Willow/Salmonbrush/Spruce
- Salt Marsh
- Spruce/Brush
- Spruce Forest
- Creeks
- Humboldt Bay/ Mad River Ponds
- Public Land Survey Grid

Mad River and Roads 1995-1997

- Mad River
- Roads

0 1 2 3 Kilometers

EXHIBIT NO. 11

APPLICATION NO.

1-06-036 - CITY OF ARCATA

COMPARISON OF MAD RIVER DELTA & COASTAL STREAM MORPHOLOGY 1854-1862 WITH 1995-1997

Sources:
J.S. Murray, 1854
U.S. Coast and Geodetic Survey map, 1870
NAD 1927, UTM Projection

c:\projects\bkang\madr1870

EXHIBIT NO. 12
APPLICATION NO.
1-06-036
CITY OF ARCATA
PROJECT ALTERNATIVES
(1 of 4)

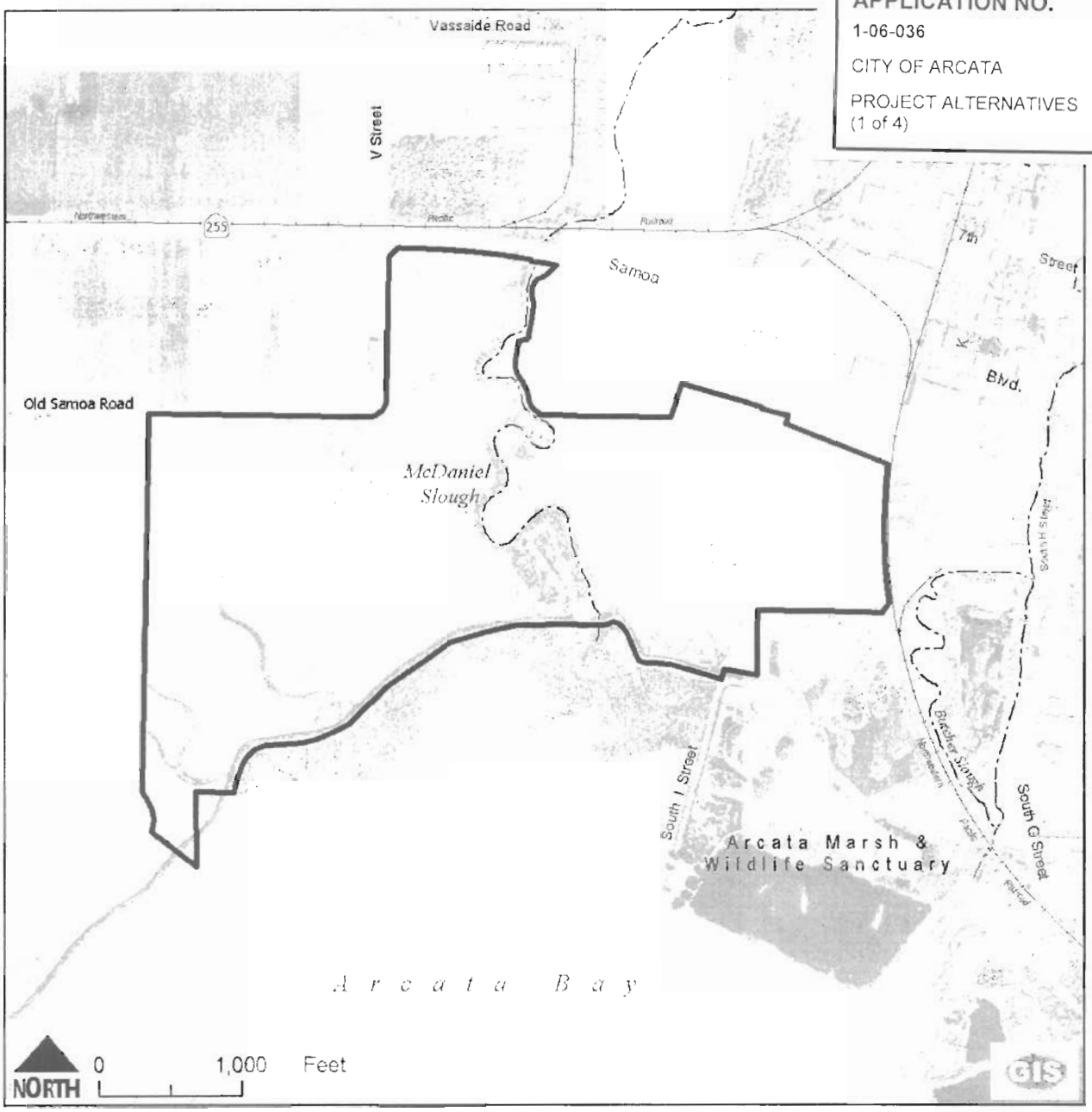


Figure 2.3-1
McDaniel Slough EIR
ALTERNATIVE 1
NO-ACTION ALTERNATIVE

Boundary
Project Boundary

Transportation
Railroad

Water Features
Streams

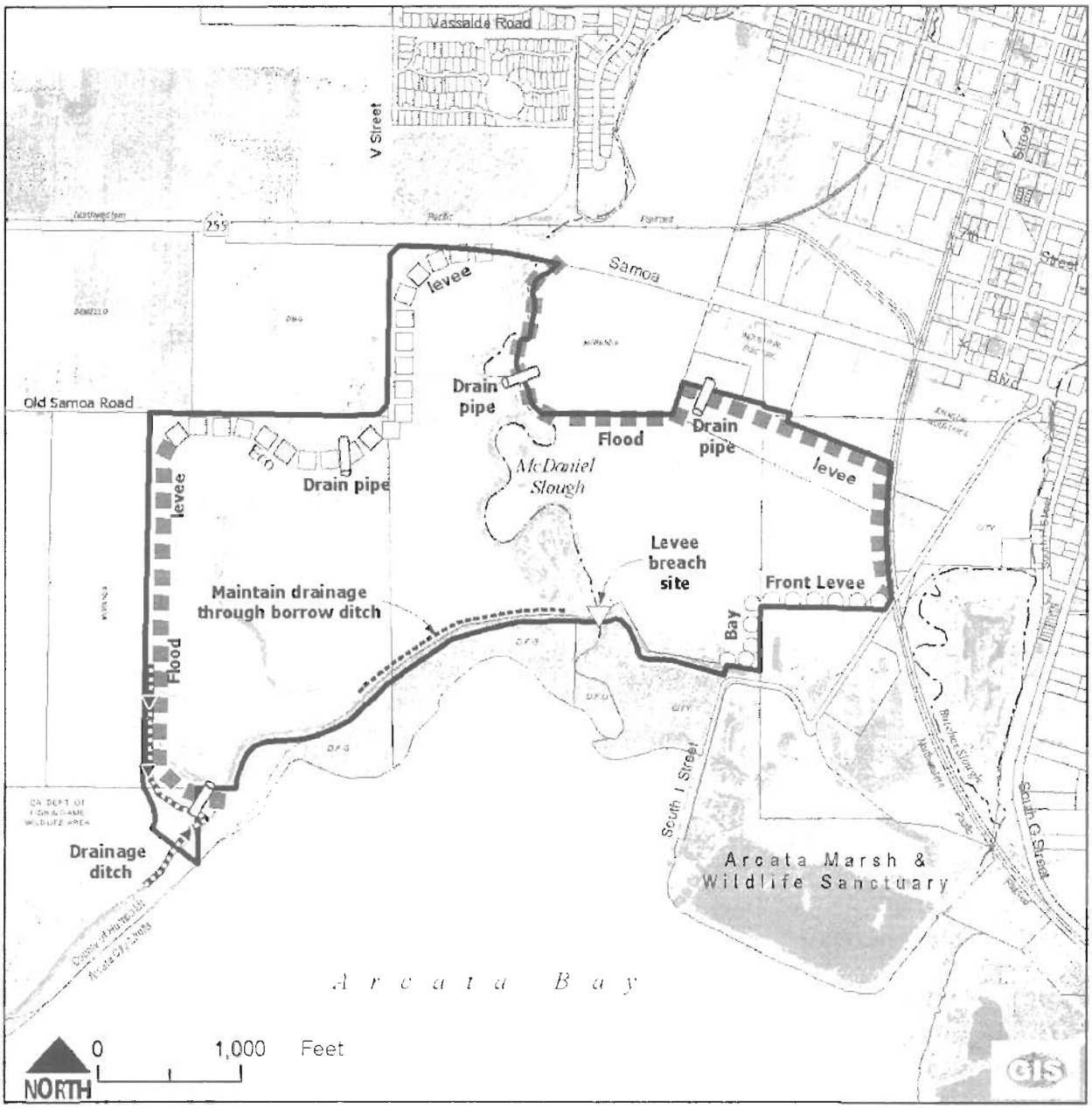


Figure 2.3-2

McDaniel Slough EIR

ALTERNATIVE 2

TIDAL RESTORATION WITH BAY-FRONT LEVEE BREACH

Boundaries
- Project Boundary
- Arcata City Limits

Levee Types
- Flood Levee
- Eco-Levee
- Bay front levee

Features
- Drain pipe/Tide gate
- Drainage Ditch
- Railroad
- Streams
- Maintain drainage through borrow ditch
- Levee breach site
- Parcel

Source: PWA McDaniel Slough Draft Alternatives, 11/1/2000, "Alternative A"

294

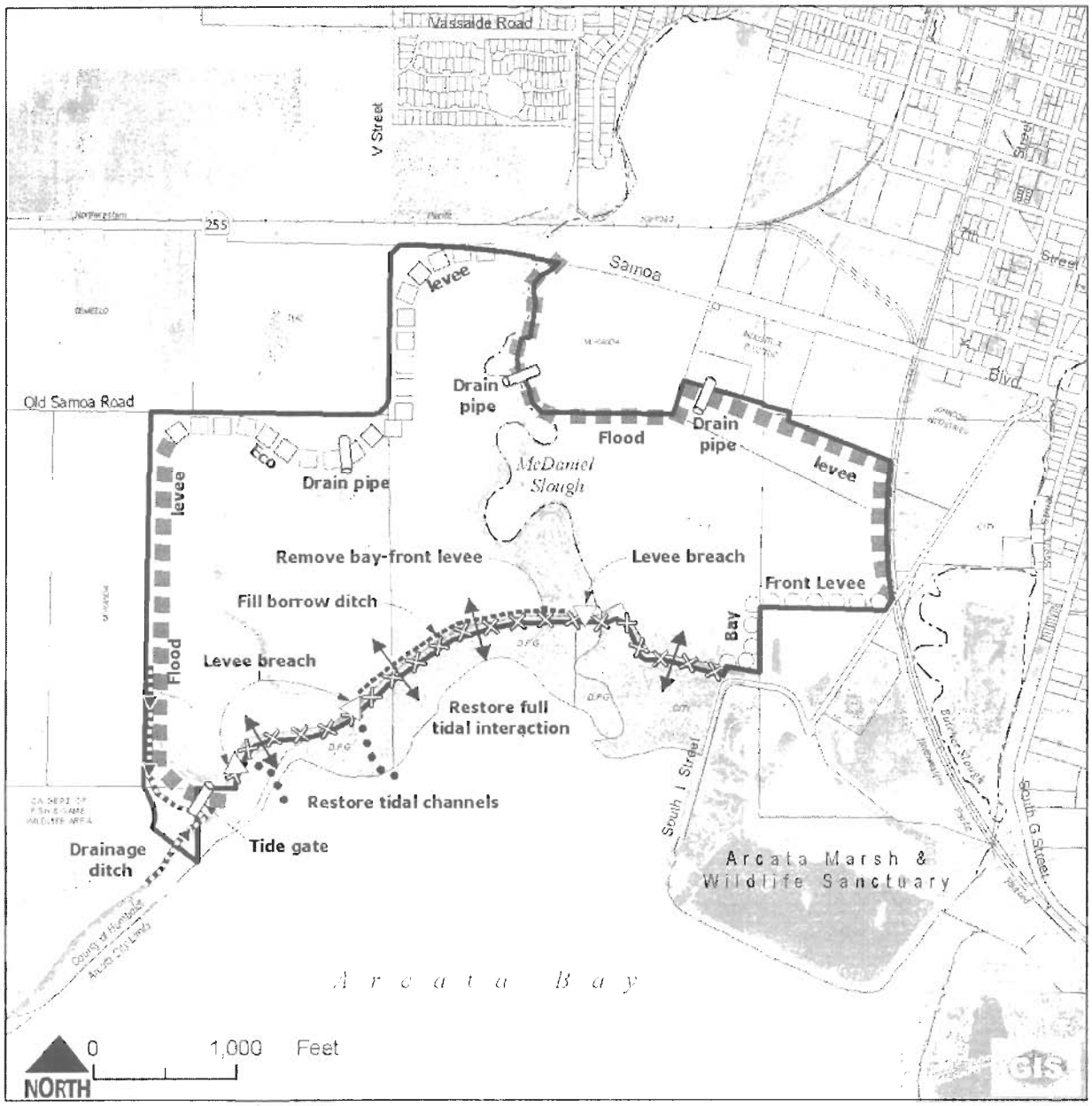


Figure 2.3-3

McDaniel Slough EIR

ALTERNATIVE 3

TIDAL RESTORATION WITH BAY-FRONT LEVEE REMOVAL

Boundaries
- Project Boundary
- Arcata City Limits

Levee Types
- Flood Levee
- Eco-Levee
- Bay front levee

Features
- Drain pipe/Tide gate
- Drainage Ditch
- Railroad
- Streams
- Restore tidal channels
- Restore full tidal interaction
- Fill borrow ditch
- Remove bay-front levee
- Levee breach
- Parcel

Source: PWA A restoration plan for the McDaniel Slough tidal marsh, 10/25/2002, "Alternative 3"

3 of 4

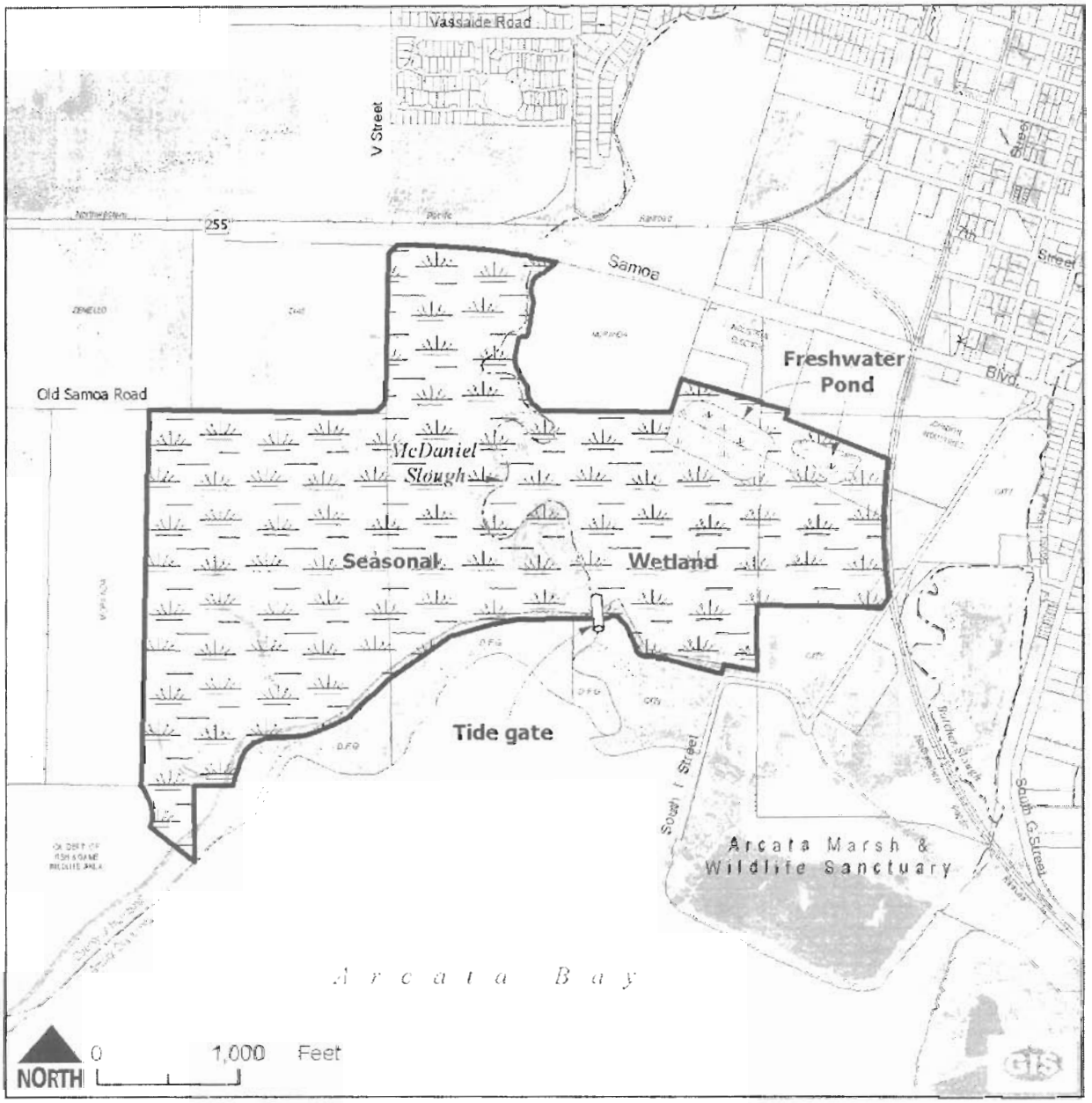


Figure 2.3-4

McDaniel Slough EIR

ALTERNATIVE 4

FRESHWATER MARSH & STRENGTHENED BAYFRONT LEVEE

494

Appendix D-1
3D Observation Locations

MCDANIEL SLOUGH MARSH ENHANCEMENT PROJECT

3D OBSERVATION LOCATIONS

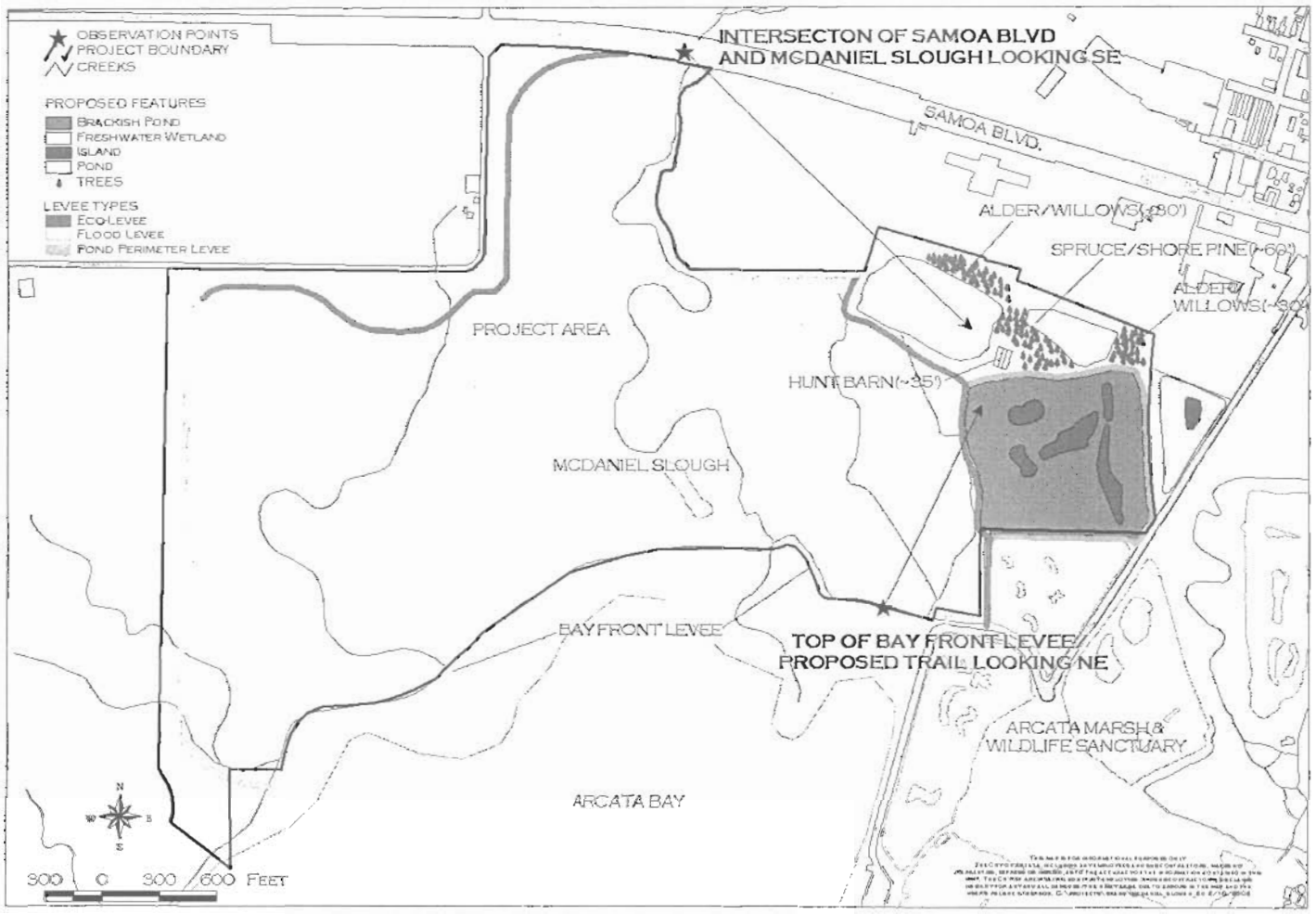


EXHIBIT NO. 13

APPLICATION NO.

1-06-036 - CITY OF ARCATA

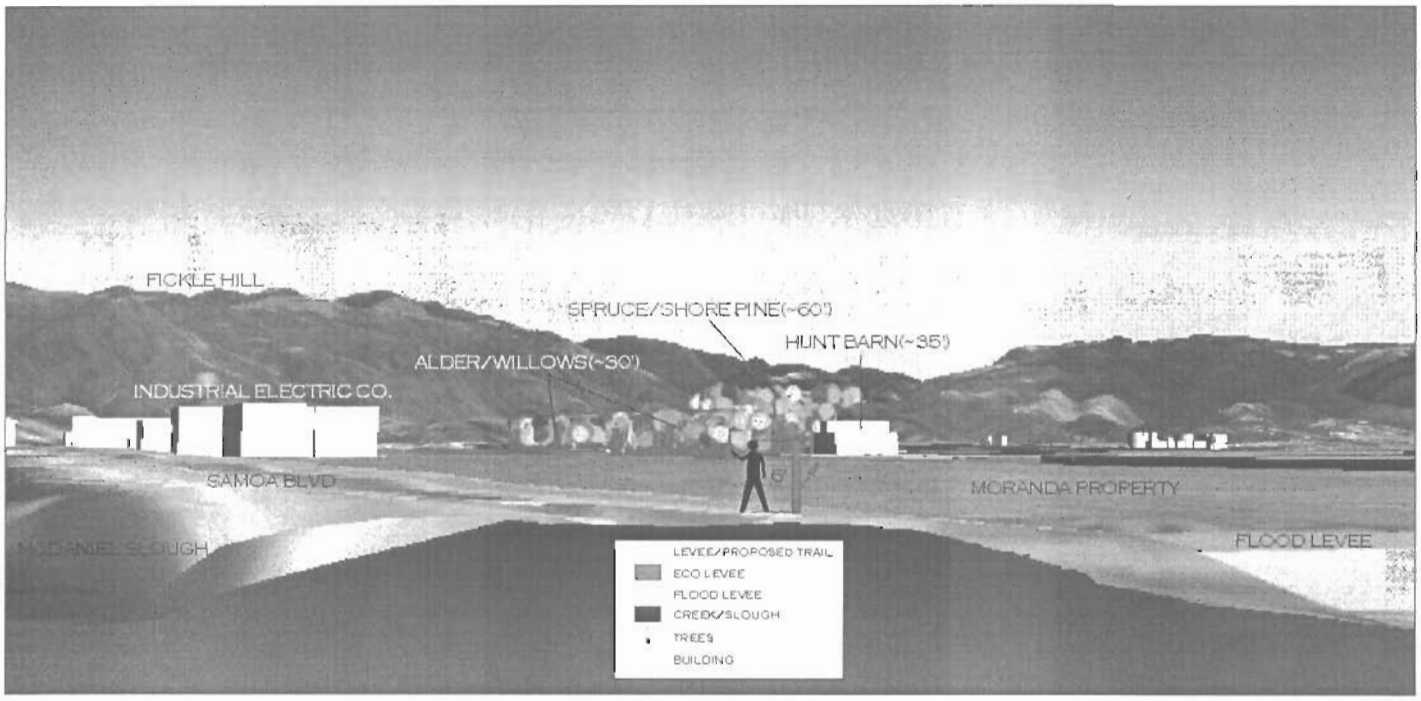
THREE-DIMENSIONAL PROSPECTIVE VIEW RENDITION OF PROJECT SITE & SURROUNDINGS (1 of 3)

Appendix D-2
3D perspective view: Samoa Blvd looking Southeast

MCDANIEL SLOUGH MARSH ENHANCEMENT PROJECT

3D PERSPECTIVE

INTERSECTION OF SAMOA BLVD AND MCDANIEL SLOUGH LOOKING SE TO FORMER HUNT BARN

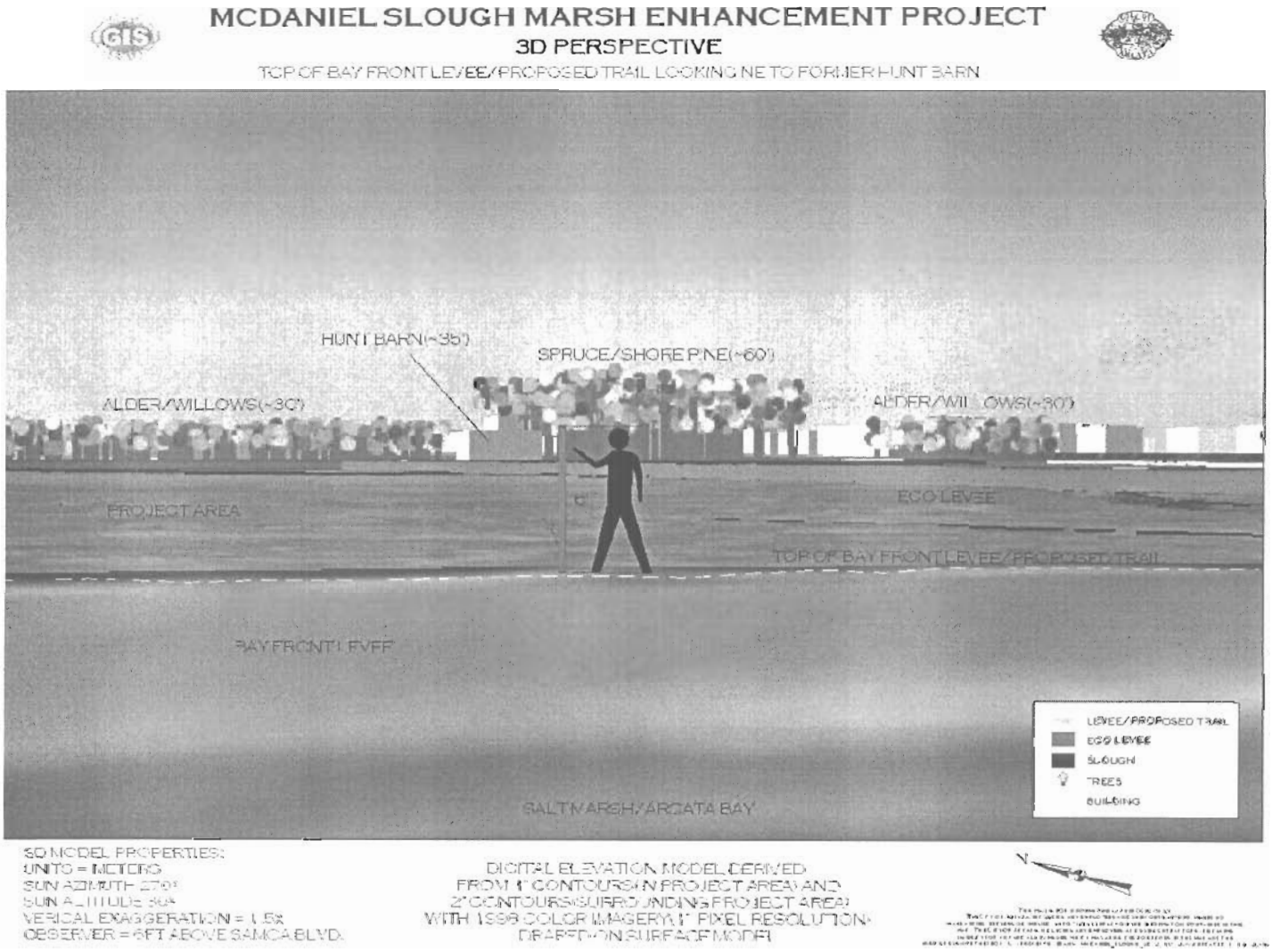


3D MODEL PROPERTIES:
UNITS = METERS
SUN AZIMUTH 270°
SUN ALTITUDE 30°
VERICAL EXAGGERATION = 1.5x
OBSERVER = 6FT ABOVE SAMOA BLVD.

DIGITAL ELEVATION MODEL DERIVED FROM 1' CONTOURS(IN PROJECT AREA) AND 2' CONTOURS(SURROUNDING PROJECT AREA) WITH 1998 COLOR IMAGERY(1' PIXEL RESOLUTION) DRAPED ON SURFACE MODEL

N

Appendix D-3
3D-perspective view: Bayfront levee looking Northeast



City of ARCATA

City Manager (707) 822-5953
Environmental Services 822-8184
Police 822-2428
Recreation 822-7091
Community Development 822-5955
: Works -5957
Transportation 822-3775

736 F Street
Arcata, CA 95521

April 2, 2007

EXHIBIT NO. 14
APPLICATION NO.
1-06-036
CITY OF ARCATA
APPLICANT CORRESPONDENCE (1 of 4)

RECEIVED
APR 03 2007
CALIFORNIA COASTAL COMMISSION

CERTIFIED MAIL - RETURN RECEIPT

Jim Baskin
California Coastal Commission
710 E Street, Suite 200
Eureka, CA 95501

RE: City of Arcata - Additional Information for CDP for McDaniel Slough Project–Arcata, California

Dear Jim:

The following information is being provided as a response to the concerns raised by yourself in an email to the City on March 9, 2007 regarding Coastal Act consistency with respect to (1) the discontinuance of agricultural uses over the eastern quarter of the site, (2) whether creation of the freshwater and brackish water ponds constitute "restoration purposes," one of the allowable use for dredging, diking, and filling within wetlands, (3) the adequacy of the planting plan with respect to native salt marsh species revegetation performance standards to prevent the establishment of invasive/exotics such as cordgrass within the enhancement area, and (4) assurances that the diversion of treated wastewater effluent into the brackish pond would not free up excess discharge capacity beyond that permitted by the City's NPDES permit such that growth inducement could result.

1) Discontinuance of agricultural uses over the eastern site - Attached is a map that shows the current agricultural uses on the site to be 47.4 acres due to the fact that some of the land along McDaniel Slough has never been accessible to the cows and that a large portion of the area near the bay is covered by the tide due to the failure of two of the tide gates. While the Reclamation District was allowed to replace one of the gates, they have not been allowed to repair the lowest culvert as per NOAA requirements to maintain fish passage to McDaniel Slough. The attached map shows this information.

It is also important to note the USFWS service has designated all the remnant slough areas in the McDaniel Slough area (as well as all the remnant slough areas in the bottoms) as critical habitat for the tidewater goby. This will also limit agricultural use.

A more complete discussion of the Project's consistency with the Coastal Act as it applies to agricultural lands and restoration of coastal resources is included in the attached memo from Aldaron Laird to Mark Andre and Karen Kovacs dated March 27, 2007.

2) Creation of freshwater and brackish ponds was developed after community review of the project. Dr. Stan Harris and others in the community requested that fresh and brackish water habitat be included in the project to provide greater habitat complexity and therefore additional wildlife benefits. *The Ecology of Humboldt Bay, California (January 1992)* - states that the Bay's original size 10,931 hectares has been

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reduced to 7,290 hectares at mean high tide. The document also references the loss of salt marsh habitat (originally about 2,833 compared to 393 hectares remaining). The diking, filling, and dredging and the use of tide gates in Humboldt Bay has restricted both the size of sloughs and the tidal exchange that can occur in those systems. Therefore any new brackish habitat is clearly a restoration of a habitat type that was historically much more extensive than it is today. An 1870 map that shows the extent of salt marsh habitat and sloughs in the Arcata bottoms and Mad River slough area is attached. During the winter months at a minimum freshwater from Daily's, Dueley's, Denny's, Liscom and McDaniel slough would have mixed with tidal waters creating brackish conditions in the area. The North Humboldt Bay Existing Levees and Former extent of Salt Marsh Boundary Map shows how levee construction has cut off tidal access to these sloughs and therefore severely impacted the brackish habitats associated with those sloughs.

It is important to note that the diking and filling for the levees is necessary for creation of the tidal restoration. No diking or filling is occurring to create the freshwater ponds. Rather the creation of the freshwater ponds provides the material to build the levees so that the tidal restoration project can occur, though the freshwater ponds also provide habitat benefits.

The analysis of the Mad River Delta when compared to current air photos of the area shows Daily's, Dueley's, Denny's, and Liscom Slough being much more extensive than they are today. The levee overlay on the Mad River Delta map shows how the current levees limit tidal access to former tide lands and these sloughs. McDaneil Slough also lost much of its brackish habitat with the construction of the levees along its length and the installation of the tide gates at is mouth. The mixing of salt and fresh water in these slough has diminished as a result of levees, railroad and highway construction and tidegates through out Humboldt Bay with a resulting loss of brackish habitat. The brackish pond proposed as part of the project is a restoration of lost brackish habitat.

3) Adequacy of planting plan – City staff met with USFWS, NOAA and RCCA staff on March 23 to define the best approach to planting, monitoring and adaptive management with respect to establishing and maintaining native salt marsh vegetation in the project area. At that meeting the following was agreed upon:

Collection and propagation of *Distichlis spicata* and *Salicornia virginica* will occur during the next two years to include seed, cuttings and plugs for planting stock. Actual planting will occur after the levee is breached at the mouth of Janes Creek.

There is consensus that *Spartina densiflora* will invade the project area due to its widespread establishment in the bay and its aggressiveness. Control in the project area will meet with limited success since *Spartina densiflora* will continue to flourish throughout the rest of Humboldt Bay providing a continuous seed source for new invasions.

Preventing *Spartina* invasions and eradication of *Spartina* will continue to be limited in scope until resources managers have a better understanding of the factors that can practically be employed. The City of Arcata, CDFG, USFWS, NOAA and RCCA have proposed a planting and monitoring design to help develop information that will further *Spartina* control and eradication efforts throughout Humboldt Bay.

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The planting design includes planting between 6 and 12 acres of the project area that is projected to rapidly develop high salt marsh characteristics with *Distichlis spicata* and *Salicornia virginica*. The City and DFG will also look to establish *Carex lyngbii* and *Scirpus maritima* in brackish areas where they have a good chance of out competing *Spartina*. *Scirpus maritima* has out competed *Spartina* at certain elevations at the Butchers Slough restoration project.

Monitoring and adaptive management for the project area are proposed to be a cooperative undertaking with City of Arcata staff, USFWS staff, NOAA staff and HSU masters students. The following experimental design is proposed:

Phase I – Pre-project – Beginning in June 2007 - Establish between 10 and 20 plots (after analyzing topography and distance from freshwater influence) - 10 m^2 size plots and determine baseline elevation, cover by species, and soil characteristics (bulk density, organic matter, salinity, and cations).

Phase II - Post tide gate removal - monitoring of baseline plots established in Phase I as described above.

Phase III – Post Breach – Continue annual monitoring of baseline plots established in Phase I as described above. Establish new plots in revegetated high salt marsh areas to establish control plots (no planting) and plots of up to three different planting densities and with different species compositions (100% one species, (50% distichlis, 50% salicorina) and (75% 25%).

Monitor yearly for mortality by propagule type if possible, and species composition including *Spartina.*

After completing year one monitoring, incorporate control techniques for *Spartina* into the experimental design should that be necessary. *Spartina* control will include mowing at different times during the year and pulling/digging of young plants.

Repeat monitoring and control treatment annually for five years.

4) The treated effluent must meet all the discharge standards required for discharge to Humboldt Bay before it can be used as the freshwater source for the brackish pond. Therefore it must be completely treated before it can enter the brackish pond. The brackish pond will not be providing any treatment. Our communication with the RWQCB is clear on that point. We are allowed to send water to the brackish pond because once we discharge it from our treatment plant it is considered waters of the state.

The Coastal Commission should be aware that the McDaniel Slough project is consistent with:

DFG planning objectives for Mad River Slough Wildlife Area (1993) - Based in part on the Fish and Game Commission's Wetland Policy and acquisition monies from Proposition 19, management for the Mad River Slough Wildlife Area require that the primary emphasis in management be directed towards wetland protection, restoration and enhancement. The ultimate intent will be to provide the optimum diversity of habitat types to achieve the highest biological productivity. Featured biological elements were identified to include; waterfowl, shorebirds, wading birds, raptors, riparian habitat and salt marsh.

Humboldt Bay Watershed Salmon and Steelhead Conservation Plan (Redwood Community Action Agency, March 2005 - The Humboldt Bay Watershed Salmon and Steelhead Conservation Plan contains

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goals and objectives aimed at protecting and restoring watershed processes in order to preserve and enhance salmon and steelhead habitat in the sub-watersheds of Humboldt Bay,)

USFWS Coastal Program – Humboldt Bay North Coast Region Coastal Program (2005) - The USFWS Coastal Program lists Humboldt Bay as one of 18 high-priority coastal ecosystems in the United States. The McDaniel Slough Project will support or implement the following Coastal Program goals: Restore and protect coastal habitats through inter-agency projects; provide technical assistance in the restoration process; and provide cost-share where appropriate; develop regional or estuary-wide partnership strategies to restore, enhance and protect coastal habitats; use an ecosystem approach to restoration and enhancement of habitats; Promote natural self-sustaining populations of native species within their historic ranges.

Pacific Coast Joint Venture Strategic Plan (USFWS, 1996)-The *Pacific Coast Joint Venture Strategic Plan* calls for the following actions in the Humboldt Bay Region, which are supported by the McDaniel Slough Project:

- Restore diked former tidelands where feasible and appropriate;
- Restore or enhance floodplain riparian forests;
- Support creation of wetlands for wildlife habitat and water quality management where feasible and appropriate; and

Western Hemisphere Shorebird Reserve Network (Established 1985; strategic plan written by Manomet Center For Conservation Sciences) - The Western Hemisphere Shorebird Reserve Network's mission is to conserve shorebird species and their habitats across the Americas through a network of key sites. The Western Hemisphere Shorebird Reserve Network identifies Humboldt Bay is as a Site of International Importance for shorebirds. The McDaniel Slough Project will further conserve and enhance bird habitat in and around Humboldt Bay site.

The Estuary Restoration Act contains a goal to restore 1,000,000 acres of estuary habitat by the year 2010. The McDaniel Slough Project will conduct restoration or enhancement activities on 200 acres of estuarine habitat in Humboldt Bay. Estuary Restoration Act (U.S. Army Corps of Engineers (ACOE), National Oceanic and Atmospheric Administration (NOAA), U.S. Environmental Protection Agency (EPA), USFWS, and U.S. Department of Agriculture, Nov 2000)

Please feel free to be in touch with me if you need additional information to clarify any of these points. Or if addition information is needed to prepare the staff report for this CDP application to be ready to go the Commission's May meeting.

Sincerely

Julie Neander

Julie Neander
Resource Specialist
Environmental Services Department

Enc.