Regulatory Compliance

Request for Proposals
September 29, 2009 – UPDATED PER ADDENDUM 1

I. INTRODUCTION
The Elkhorn Slough Foundation (ESF) has recently been awarded a grant from the National Oceanic and Atmospheric Administration (NOAA) to design, permit and construct an adjustable sill at the mouth of Parsons Slough. The intent of the sill is to allow for management of tidal energy throughout the Elkhorn Slough estuary. The Elkhorn Slough National Estuarine Research Reserve’s (ESNERR) Tidal Wetland Project (TWP) will lead all tasks associated with implementing the NOAA grant. This Request for Proposals (RFP) seeks firms or consulting teams to assist ESNERR in fulfilling regulatory compliance requirements and obtaining the necessary permits to construct the Parsons Slough Sill Project (project).

Proposals are due by 5:00 p.m. on October 16, 2009. There will be a pre-submittal meeting on October 6 at 10:30 a.m. at the ESNERR Administrative Building Conference Room, located at 1700 Elkhorn Road, Watsonville, CA 95076. See the Proposal Schedule section for more details.

II. PROJECT LOCATION
Elkhorn Slough is a 2440-acre wetland complex located on the edge of Monterey Bay, midway between Santa Cruz and Monterey (Figure 1). A portion of the slough has been designated as a National Estuarine Research Reserve. The Parsons Slough complex is located on the southeast side of Elkhorn Slough and consists of the 254-acre Parsons Slough (including the “Five Fingers” area) and the 161-acre South Marsh area (Figure 2). The proposed adjustable sill would be constructed at the mouth of Parsons Slough, just west of the Union Pacific Railroad (UPRR) tracks.

III. PROJECT BACKGROUND
The Elkhorn Slough estuary, containing California’s second largest tract of salt marsh south of San Francisco Bay, is currently facing unprecedented rates of tidal wetland loss and degradation. Over the past 150 years, human actions have altered the tidal, freshwater, and sediment processes which are essential to support and sustain Elkhorn Slough’s estuarine habitats. Fifty percent of the tidal salt marsh in Elkhorn Slough has been lost in the past 70 years. This habitat loss is a result of past diking and draining, increased tidal flooding, which “drowns” the vegetation.

Accelerating bank and channel erosion in Elkhorn Slough is deepening and widening tidal creeks, causing salt marshes to collapse into the channel, and eroding soft sediments that provide important habitat for invertebrates from channel beds and mudflats. Habitat functions for estuarine fish, shorebirds, and salt marsh are rapidly deteriorating. Increased duration and/or frequency of tidal flooding of marshes from a larger tidal prism are likely causing plants to “drown” in central areas of the marsh. Based on current knowledge, the accelerated rates of tidal erosion and marsh drowning are primarily due to the construction of a harbor in 1947, which enlarged the estuarine mouth by
five times and caused the tidal prism to more than double since that time. The subsidence of marsh areas, the loss of riverine sediment inputs, and sea level rise may also contribute to marsh drowning. It is predicted that the current dramatic rates of marsh loss and tidal habitat degradation in Elkhorn Slough will continue in the near future if no restoration actions are taken. The predicted changes will cause severe habitat impacts by eroding the channel, tidal creeks, and mudflats, causing marsh plants to die, and threaten public and private property.

The Parsons Slough Marsh Complex was historically dominated by tidal salt marsh and tidal creeks. In 1872, a railroad was built along the western side of this area and this railroad embankment blocked off the connections of about half a dozen tidal creeks. By 1913, a number of large, artificial freshwater ponds for waterfowl hunting were created by the construction of earthen levees around marsh areas to block tidal exchange. The entirety of Parsons Slough was removed from tidal exchange by 1956 and large areas were cleared, leveled, and drained for pastureland. The draining of the tidal marsh areas in Parsons Slough caused the marsh sediments to dry out, compact, decompose, and subside by several feet.

During winter of 1982-1983, a levee breached near the mouth of Parsons Slough during a storm event allowing tidal waters to enter Parsons Slough (including South Marsh). The levee to South Marsh was temporarily rebuilt, water was pumped out to finish the creation of habitat islands and tidal channels for the South Marsh restoration project, and then the levee was intentionally breached restoring full tidal exchange to the complex in the fall of 1983. This restoration project took place soon after the Elkhorn Slough Reserve was designated and obtained ownership of these wetlands. Today, due to the increased tidal energy in the system, even these recently restored marsh habitat islands are deteriorating. The Parsons Slough complex now accounts for approximately 30% of the tidal prism in Elkhorn Slough. The increase in Elkhorn Slough’s tidal prism has accelerated tidal marsh loss and habitat degradation throughout the system from tidal erosion of the channel, creeks, mudflats, and marsh banks and tidal flooding of interior marsh areas. A more detailed management history and photos of the Parsons Slough Marsh Complex can be found at http://www.elkhornslough.org/tidalwetland/twmap06.htm

In 2004, ESNERR initiated a planning effort to evaluate the tidal erosion issues at Elkhorn Slough and develop restoration and management strategies. Through the TWP planning process, experts from multiple disciplines agreed that without intervention, excessive erosion will continue widening the tidal channels and converting salt marsh to mudflat. This will result in a significant loss of habitat function and decrease in estuarine biodiversity. Several projects to address the problem were identified. Restoration of Parsons Slough was selected as the highest priority project because significant habitat improvements can be achieved within the complex, while also potentially achieving system-wide benefits. Additional information about the Elkhorn Slough Tidal Wetland Project can be found at http://www.elkhornslough.org/tidalwetlandproject/index.html.

IV. PROJECT OVERVIEW
A Draft Restoration Plan for Parsons Slough was completed in 2008. That plan focused on the large scale addition of sediment to restore tidal marsh to the area, however, such sediment addition is not an element of the present project. Consideration of multiple factors led to the conclusion that the project most able to advance the goals of the Tidal Wetland Project Strategic Plan (http://www.elkhornslough.org/tidalwetland/strategic_plan.htm) and the Draft Parsons Slough
Parson Slough Sill Project

Restoration Plan (http://www.elkhornslough.org/tidalwetland/parsons.htm) is the construction of an adjustable submerged tidal barrier (a sill) at the mouth of Parsons Slough. The proposed project was recommended at a June 3, 2009 Joint Meeting of Strategic Planning Team and Science Panel (http://www.elkhornslough.org/tidalwetland/strategic.htm) of the Elkhorn Slough Tidal Wetland Project.

A brief preliminary project description is provided at the end of this document. Titles and locations for additional information are provided in Section XI. Supporting Materials.

The proposed adjustable sill is expected to provide a moderate reduction in energy compared to the existing tidal regime, while maintaining sufficient tidal exchange and flushing to provide acceptable water quality. The crest of the structure would be adjustable over a range of conditions to enable optimization among multiple management objectives. The structure is expected to reduce the erosion of soft subtidal habitats in large areas of Elkhorn Slough, and will enable to future restoration of salt marsh in Parsons Slough through the addition of sediment.

Regulatory compliance associated with the implementation of this project is the focus of this RFP. A separate consultant selection process is underway for the engineering design of the project. The project conceptual design, location, goals and objectives have been identified. A preliminary Project Description, including construction footprint, effects on habitat and hydraulics, and construction staging areas and access routes is anticipated by November 20, 2009. The 30 percent engineering plans for the structure are scheduled to be provided by the end of December 2009. ESF and ESNERR intend to pursue an aggressive design and regulatory compliance schedule to ensure that the project is ready to bid in June 2010. Construction is planned to begin by August 15, 2010 and be completed by November 15, 2010.

The Supporting Materials section of this RFP provides a summary of goals, objectives and performance requirements for the adjustable sill that are relevant to the design process. Links to reports, maps and other documentation are also provided in the Supporting Materials section. An index of supporting materials is provided at the end of this document. These materials are not meant to be inclusive of all information relevant to the design or environmental review of the project. ESF and its affiliates take no responsibility for the accuracy or interpretation of this information with respect to preparation of a proposal. Particularly important sources of information include the Draft Parsons Slough Wetland Restoration Plan (http://www.elkhornslough.org/tidalwetland/parsons.htm), which includes a Draft Existing Conditions Report that inventories habitats and species occurring in the area. That document also includes a Draft Restoration Plan, which provides includes a draft CEQA Initial Study Checklist for a larger-scale proposed project that entails substantial additions of sediment to restore tidal marsh. The proposed project, which is the subject of this RFP, is substantially smaller in scope that the project characterized by that Initial Study Checklist.

V. SCOPE OF SERVICES
The Consultant’s firm/team shall complete the following tasks:

Task 1. CEQA/NEPA compliance

Regulatory Compliance
Request for Proposals
The California Department of Fish and Game (CDFG) will act as the lead agency for CEQA compliance, and NOAA will act as the lead agency for NEPA compliance. The project team is operating under the assumption that CEQA compliance can be completed by filing a Mitigated Negative Declaration (MND), and NEPA compliance can be fulfilled with an Environmental Assessment (EA) and subsequent Finding of No Significant Impact (FONSI). The Consultant will lead preparation of CEQA compliance documents. The NOAA Restoration Center will lead preparation of NEPA compliance documents, using information provided by the Consultant.

Task 1.1 – Multi-Agency Coordination Meeting
The Consultant will participate in a Multi-Agency Coordination Meeting that will be coordinated and hosted by ESNERR. The purpose of the meeting is to introduce the project to key regulatory agency staff and receive initial feedback on the project. While the Consultant will be invited to participate in discussions, formal presentations or written products in advance of the meeting will not be required. The anticipated date for this meeting is mid-November.

Deliverable: Memorandum to ESNERR on multi-agency coordination, providing recommendations based on the outcomes of the meeting.

See Section VI, Summary of Deliverables for instructions on the requirements of submittals.

Task 1.2 – Administrative Draft Initial Study and supporting information for Environmental Assessment
The Consultant will complete a detailed Administrative Draft Initial Study (IS) to determine the level of environmental review that will be required for the project. The Consultant shall notify the project team immediately if they believe that there are “potentially significant impacts” that cannot be mitigated to a level that is “less than significant.” It is expected that the Consultant will leverage existing information, ESNERR staff resources, and local expertise to evaluate many of the project-related impacts (See Section VIII, Guidance and Assumptions for Preparing Proposals).

Field studies are expected to be limited to reconnaissance-level surveys. ESNERR will facilitate the communication between the Regulatory Compliance Consultant and Engineering Consultant (operating under a separate contract) to identify and evaluate potential project-related impacts. The Engineering Consultant will perform hydrodynamic modeling and other technical analysis, if required, to predict habitat extents, peak current velocities and other physical effects of the project for environmental impact analysis. Such analysis may include predicting future water quality conditions or changes to the distribution of habitats. The Consultant will need to interpret the results to assess the significance of project-related impacts. If the Consultant determines that data gaps or insufficient information exist that could prevent determination of potential impacts and/or mitigation, the Consultant shall immediately notify ESNERR of those gaps. The Consultant will confer with ESNERR and develop potential mitigation strategies for any “potentially significant impacts”.

The consultant will provide information to NOAA to facilitate their production of an EA for the project.

Deliverable: Administrative Draft IS;
Task 1.3 – Draft Environmental Document(s)
The Consultant shall participate in a full-day meeting with the project team to review the Administrative Draft IS and mitigation strategies. The consultant shall identify and incorporate into the draft environmental document standard mitigation measures that address “potentially significant impacts”. For non-standard mitigation measures, the consultant shall suggest mitigation strategies to ESNERR staff, who will facilitate a discussion between the Consultant, ESNERR and the Engineering Consultant to identify the most viable mitigation measures and/or design alternatives. These will be incorporated into a preliminary Draft IS.

The Consultant shall circulate the preliminary Draft IS, receive comments from ESNERR, and present the document at a full-day meeting with the project team to discuss the details of the mitigation strategies and recommended alternatives. The Consultant will then receive any additional comments and incorporate these and the outcomes of the meeting into the environmental documents in order to prepare the Draft IS. The consultant shall provide the NOAA Restoration Center this information to facilitate their production of federal compliance documents.

**Deliverables:** Preliminary Draft IS
Draft IS
Provision of information to NOAA for the development of an EA/FONSI.

Task 1.4 – Final Environmental Document(s)
The Consultant shall circulate the Draft Environmental Document developed in Task 1.3 and finalize the IS document by addressing comments. The Consultant shall respond to comments and inquiries by NOAA related to the information provided in Task 1.3 above. The Consultant shall complete the necessary filings with the state and federal entities for publishing the Environmental Document.

**Deliverables:** Final IS/MND.
Response to inquiries from NOAA

Task 2. Cultural Resources
The Consultant shall complete all surveys, assessments and documentation required for CEQA/NEPA cultural resource evaluation, and Section 106 of the National Historic Preservation Act (NHPA) compliance including, but not limited to, search of the California Historical Resources Information System, Native American consultation, and archeological survey.

**Deliverable:** Cultural Resources report

Task 3. Clean Water Act (CWA) Section 404 and Rivers and Harbors Act (RHA) Permitting
The Consultant shall prepare permit applications and be the primary point of contact with the agencies following permit application submittal until the permit is granted.

Task 3.1 – Conduct Jurisdictional Delineation of Waters of the U.S.
The Consultant shall conduct a wetland delineation within the limits of the project area, which presently consists of Parsons Slough in the vicinity of the UPRR crossing (Figure 2). The Consultant shall prepare a delineation map and report in accordance with guidelines published by the U.S. Army Corps of Engineers (USACE) San Francisco District. The Engineering Consultant shall coordinate receiving permission to access UPRR property. ESNERR shall provide vessel transport to the site for survey purposes.

Deliverable: Wetland Delineation report.

Task 3.2 – Prepare Permit Application and Supporting Documentation
The Consultant shall prepare permit applications and supporting documentation necessary to obtain a CWA Section 404 and RHA Section 10 permits including 404(b)(1) alternatives analysis. The Consultant shall be the primary point of contact with the agencies following permit application submittal until the permit is granted.

Deliverable: CWA Section 404 and RHA Section 10 permit application with supporting documentation.

Task 3.3. Endangered Species Act (ESA) Section 7 Consultation and Marine Mammal Protection Act (MMPA) Consultations.
The Consultant shall complete all assessments and reports required for ESA Section 7 consultation and MMPA consultations. Proposals should assume only reconnaissance-level assessments (i.e., no protocol-level surveys) will be required (See Section VIII, Guidance and Assumptions for Preparing Proposals).

Deliverables: Biological Assessment; MMPA Incidental Harassment Authorization.

Task 3.4. Habitat Mitigation and Monitoring Plan/ Mitigation Monitoring and Reporting Program (MMRP)
The Consultant shall prepare a Habitat Mitigation and Monitoring Plan in accordance with guidelines published by the USACE San Francisco District. The Consultant should assume that this document will incorporate mitigation and monitoring requirements requirement from all regulatory agencies, and will outline the project’s Adaptive Management Plan. Draft monitoring approaches and action thresholds will be proposed by ESNERR and reviewed by the Consultant. This document should encompass the monitoring requirements of other agencies such that it satisfies the CEQA requirements of a Mitigation Monitoring and Reporting Program (MMRP).

Deliverable: Habitat Mitigation and Monitoring Plan.

The Consultant shall complete the surveys, assessments, documents and applications necessary to obtain a CWA Section 401 Water Quality Certification and compliance with all applicable Porter-Cologne Water Quality Control Act requirements. Central Coast Regional Water Quality Control Board staff have instructed ESNERR that the Section 401 Certification will satisfy the Waste
Discharge Requirements of Porter-Cologne. The Consultant shall prepare permit applications and be the primary point of contact with the agency following permit application submittal until the permit is granted.

Deliverable: CWA Section 401 Water Quality Certification permit application with, Self-Monitoring Reporting Program, and other supporting documentation.

Task 5. Coastal Development Permit
The Consultant shall complete the surveys, assessments, documentation and applications necessary to obtain a Coastal Development Permit. The Consultant shall prepare permit applications and be the primary point of contact with the agency following permit application submittal until the permit is granted.

Deliverable: Coastal Development Permit application with supporting documentation.

Task 6. Monterey County Grading Permit
The Consultant shall complete the surveys, assessments, documentation and applications necessary to obtain a Monterey County Grading Permit. Topographic, quantity and project extent information will be provided by the Engineering Consultant. The Consultant shall prepare permit applications and be the primary point of contact with the agencies following permit application submittal until the permit is granted.

Deliverable: County Grading Permit application

Task 7. Monterey Bay National Marine Sanctuary (MBNMS) Permit
The Consultant shall complete the surveys, assessments, documentation and applications necessary to obtain a MBNMS permit or other project approval. While the proposed structure is outside the MBNMS jurisdictional boundary, staging areas and material transport to the project site may occur within the Sanctuary boundary. The Consultant shall prepare permit applications and be the primary point of contact with the agency following permit application submittal until the permit is granted.

Deliverable: MBNMS permit application with supporting documentation.

Task 8. Project Management and Communication
This task includes time for the Consultant to attend project meetings, communicate with ESF/ESNERR staff, and fulfill project reporting requirements (See Contract Terms section).

Deliverables: Attendance at two (2) full-day multi-agency meetings at ESNERR (including both meetings indicated in Task 1); Attendance at two (2) half-day ESA/MMPS consultation meetings at ESNERR; Attendance at one (1) two-hour evening meeting open to the public at ESNERR; Weekly 60-minute conference calls;
NOAA grant reporting documentation requiring approximately 2 hours per month.

**Task 9. On-Call Support**

This task will allow ESF/ESNERR to issue Task Orders for services not described in the scope of Tasks 1 through 8, including other permits and approvals that may be required for the project that are not included in the tasks above. The Consultant should allocate $20,000 to this task as a placeholder in the Consultants’ cost estimate. The proposal should identify what activities are expected under this task.

**Deliverables:** To be determined through Task Orders.
### VI. SUMMARY OF DELIVERABLES

<table>
<thead>
<tr>
<th>Task</th>
<th>Deliverable</th>
<th>Submittals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Multi-Agency Coordination Memorandum</td>
<td>Memo</td>
</tr>
<tr>
<td>1.2</td>
<td>Administrative Draft IS and supporting information for EA</td>
<td>Administrative Draft</td>
</tr>
<tr>
<td>1.3</td>
<td>Draft IS/MND</td>
<td>Preliminary Draft</td>
</tr>
<tr>
<td>1.4</td>
<td>Final IS/MND</td>
<td>Final</td>
</tr>
<tr>
<td>2</td>
<td>Cultural Resources report</td>
<td>Draft</td>
</tr>
<tr>
<td>3.1</td>
<td>Wetland Delineation report</td>
<td>Draft</td>
</tr>
<tr>
<td>3.2</td>
<td>CWA Section 404 and RHA Section 10 permit application with 404(b)(1) Alternatives Analysis</td>
<td>Final</td>
</tr>
<tr>
<td>3.3</td>
<td>Biological Assessment/ MMPA Consultation</td>
<td>Draft</td>
</tr>
<tr>
<td>3.4</td>
<td>Habitat Mitigation and Monitoring Plan</td>
<td>Administrative Draft Agency Review Draft</td>
</tr>
<tr>
<td>4</td>
<td>CWA Section 401 Water Quality Certification permit application</td>
<td>Draft Final</td>
</tr>
<tr>
<td>5</td>
<td>Coastal Development Permit application</td>
<td>Draft Final</td>
</tr>
<tr>
<td>6</td>
<td>County Grading Permit application</td>
<td>Draft Final</td>
</tr>
<tr>
<td>7</td>
<td>Monterey Bay National Marine Sanctuary Permit application</td>
<td>Draft Final</td>
</tr>
<tr>
<td>8</td>
<td>- Attendance at two (2) full-day project meetings at ESNERR - Attendance at two (2) half-day ESA/MMPA consultation meetings at ESNERR - Attendance at one (1) two-hour evening meeting at ESNERR - Weekly, 60-minute conference calls - Grant reporting documentation</td>
<td>Presentations at meetings</td>
</tr>
<tr>
<td>9</td>
<td>To be Determined (TBD)</td>
<td>TBD</td>
</tr>
</tbody>
</table>

All Draft deliverables should be submitted in electronic format (no hard copies required). ESNERR staff will provide comments in electronic format (e.g., track changes in MS word, mark-ups on Adobe documents, etc.). The Consultant may receive up to three sets of comments on each draft and will be required to address all comments and reconcile conflicting comments with ESNERR.
staff. All Final deliverables should include: electronic copies of submittals, two (2) bound copies, and one (1) un-bound copy of reports and permit applications. Assume twenty (20) bound copies of the Final CEQA IS/MND, fifteen (15) of which are for submittal to the State Clearinghouse.

VII. INFORMATION TO BE INCLUDED IN PROPOSAL SUBMITTAL

A. Cover Letter
   This should include complete contact information including a contact person for questions or requests for additional information.

B. Firm/Team Description  Four (4) pages maximum.
   Include a description of the firm/team. Identify all subcontractors. It is not necessary to include boiler plate language about your firm- only provide information directly applicable to this project. Briefly describe which individual staff will perform the work and identify the project/task leads, etc. Provide an organizational chart.

   Provide examples of previous projects that demonstrate a history of efficient collaboration with the specific regional offices of the regulatory agencies that will be processing the permit applications for this project. Demonstrate experience with the most relevant species and habitats.

C. Project Understanding/Intended Approach/Work Plan  Six (6) pages maximum.
   Explain the process that will be used to complete the Scope of Services. Clearly identify gaps in the proposed Scope of Services. Propose optional tasks and budget line items to address these gaps.

D. Schedule  Propose a schedule for the project that enables project construction to begin during August 2010. Provide dates for the deliverables listed in Section VI, the Summary of Deliverables. Include a narrative description of the critical path. Identify key uncertainties that may affect the schedule and recommend strategies to minimize the risk of slippage.

E. Detailed Budget  Provide costs and effort by task and individual staff member. Subconsultant budgets should also be broken down by task and staff member.

F. Relevant Project Experience, Resumes and References  Provide a concise table of references from relevant projects delivered by the individuals who will be working on this project. Include concise abstracts of these projects with contact information (including phone numbers and email addresses) for the clients so that we may contact them in regards to your work. Describe your firm’s/team’s level of involvement in regulatory compliance related to environmental enhancement and tidal wetland projects. Describe why your team members are specifically qualified (or what distinguishes your services from competitors) to accomplish the tasks in this RFP. Include resumes of the individual personnel who will work on the project. No specific formatting or page limit is required for descriptions of related projects and resumes.
VIII. GUIDANCE AND ASSUMPTIONS FOR PREPARING PROPOSALS
The Consultant should base their project approach, staffing and anticipated level of effort (i.e., cost estimate) on the following assumptions:

- ESNERR staff and the design consultants will provide data sets with sufficient detail necessary for evaluating project-related impacts in the following disciplines: Biological Resources (including data relevant to the ESA, MMPA, CESA and the Migratory Bird Treaty Act), habitat extents, and Hydrology/Water Quality. ESNERR staff will provide information regarding the anticipated impacts of the project for these disciplines. The Consultant shall incorporate this information into regulatory compliance documents. The Consultant shall conduct the surveys and assessment necessary for all other disciplines.

- The Consultant shall prepare and submit permit applications, and shall lead the post-submittal consultations with agencies. Modifications to permit applications and supplemental information, if necessary, will be conducted by the Consultant. ESNERR staff will participate in and support post-submittal consultations with agencies as needed.

- A Project Description, including construction footprint, effects on habitat and hydraulics, and construction staging areas and access routes will be prepared by the Engineering Consultant by November 20, 2009.

- The 30 percent engineering plans for the structure will be prepared by the Engineering Consultant by December 30, 2009.

- Construction is planned to begin by August 15, 2010 and be completed by November 2010.

IX. SELECTION PROCESS
The proposals will be ranked on the following criteria:

Project Team/Experience: Demonstrated competence, including the firm/team’s past experience with regulatory compliance in tidal wetlands. The experience of key personnel and the proposed level of their participation; the firm/team’s capability to adequately analyze the project. A primary evaluation criterion will be the local experience of the firm and key personnel, as evidenced by successful projects with the specific offices of each of the agencies that will be reviewing this project.

Approach: The Consultant’s ability to clearly communicate their understanding of the project, its key challenges, and strategies to address these challenges.

Budget: Overall cost and allocation of resources will be considered in the evaluation of proposals.

Schedule: The schedule should generally follow the deadlines listed in Section VI, Summary of Deliverables. Schedules should achieve the project timeline goals, and accommodate uncertainty. The Consultant may suggest alternative schedules. Unrealistic schedules will not
X. PROPOSAL FORMAT AND SCHEDULE
Proposal should be submitted in electronic format (.pdf) no later than 5 p.m. on October 16, 2009. Proposals should use 12-point font, 1.5 spacing, and 8.5x11 inch format. Electronic copy of proposal must be under 3 MB in file size. Proposals should be brief and to the point, adhering to the page limits specified in Section VII above. Proposals should be submitted by email to:

Bryan Largay, Tidal Wetland Project Director
bryan@elkhornslough.org

Please copy Monique Fountain, Tidal Wetland Project Manager, on all communications monique@elkhornslough.org

All submittals received by the deadline will be evaluated. ESF/ESNERR retains the right to decide, at its sole discretion, whether to evaluate submittals received after the deadline.

Addenda to this RFP may be sent by email to prospective applicants. Emails of addenda to the RFP will be sent to individuals who have registered their name and email address by sending an email message with the words “Parsons RFP Updates” in the subject heading. List enrollment messages should not include other content.

Enrollment email messages should be sent to:
Bryan Largay, Tidal Wetland Project Director
bryan@elkhornslough.org

In addition to email updates, addenda may also be posted on the website for the Elkhorn Slough Tidal Wetland Project, Parsons Slough Project. That web page is:
http://www.elkhornslough.org/tidalwetland/parsons.htm. Such postings may occur at any time prior to the proposal submittal deadline. Applicants should check periodically during the application process.

An optional pre-submittal meeting will be held at 10:30 a.m. on October 6, 2009. If you would like to attend this meeting you must RSVP by October 5 at 12:00 p.m. to:
Erin McCarthy, Tidal Wetland Project Specialist
erin@elkhornslough.org
Consultant Selection Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release of RFP</td>
<td>September 29, 2009</td>
</tr>
<tr>
<td>Optional pre-submittal meeting</td>
<td>October 6, 2009, 10:30 a.m.</td>
</tr>
<tr>
<td><em>Proposal submittal deadline</em></td>
<td><strong>October 16, 2009 5:00 p.m.</strong></td>
</tr>
<tr>
<td>Potential interview dates (if needed)</td>
<td>October 20-22, 2009</td>
</tr>
<tr>
<td>Contractor selected</td>
<td>October 28, 2009</td>
</tr>
<tr>
<td>Final scope of work, budget, and contract signed – Notice to Proceed</td>
<td>November 11, 2009</td>
</tr>
</tbody>
</table>

XI. SUPPORTING MATERIALS
Supporting Materials including project goals, objectives, reports and performance requirements for the adjustable sill, are presented at the end of this document. These materials clarify the scope and setting for the proposed project.

XII. CONTACT
Questions regarding this RFP should be directed to Bryan Largay, Tidal Wetland Project Director, Elkhorn Slough National Estuarine Research Reserve, at bryan@elkhornslough.org. No phone calls please.

XIII. CONTRACT TERMS
The Consultant will be hired under contract to ESF. ESF will negotiate a contract with the best qualified firm/team at compensation which ESF determines to be fair and reasonable. If an agreement cannot be reached, negotiation with that firm/team will be terminated and negotiations will then proceed in the same manner with the other firms/teams on the list in order of ranking.

The Consultant will be paid for actual time and expenses on a monthly basis, up to the amount provided for each task in the final project budget.
SUPPORTING MATERIALS

PARSONS SLOUGH SILL PROJECT

Regulatory Compliance
Request for Proposals

Contents

Project Overview ................................................................................................................ 2
Goals and Objectives ......................................................................................................... 2
  Parsons Slough Restoration Project goals ................................................................. 2
  Ecologic goals – Parsons Slough Sill ................................................................. 3
  Management goals – Parsons Slough Sill ............................................................. 3
Structure Details............................................................................................................. 3
  Concept ...................................................................................................................... 3
Performance and Configurations ................................................................................... 4
Expected Effects of the Sill ............................................................................................ 4
Optimization of the structure (adaptive management) .................................................. 6
Additional Resources .................................................................................................... 6
Figures .......................................................................................................................... 8
Project Overview

In 2006 the Elkhorn Slough National Estuarine Research Reserve’s (ESNERR) Tidal Wetland Project (TWP) began a planning process for restoration of Parsons Slough. Consideration of multiple factors led to the conclusion that the project most able to advance the goals of the Tidal Wetland Project Strategic Plan (http://www.elkhornslough.org/tidalwetland/strategic_plan.htm) and the Parsons Slough Restoration Plan (http://www.elkhornslough.org/tidalwetland/parsons.htm) is the construction of an adjustable submerged tidal barrier (a sill) at the mouth of Parsons Slough. TWP, with funding assistance from NOAA, is moving forward with design, permitting, construction and adaptive management of the Parsons Slough Sill Project (project). The implementation of the proposed project is expected to provide a moderate reduction in energy compared to the existing tidal regime, while maintaining sufficient tidal exchange and flushing to provide acceptable water quality. The crest of the structure would be adjustable over a range of conditions to enable optimization among multiple management objectives. This document summarizes goals, objectives and performance requirements for the proposed adjustable sill to inform the design and permitting process.

Goals and Objectives

The Parsons Slough Restoration Project Team, with membership from the Science Panel and Strategic Planning Team set multiple goals for the project. The planning process identified substantial barriers to achieving the top goal of restoring salt marsh in Parsons Slough, but the proposed project could advance the other goals in a timely and cost effective manner.

Parsons Slough Restoration Project goals

Goal 1: To restore and enhance intertidal marsh habitats and functions within the Parsons Slough tidal wetland complex while addressing the needs of special-status species, estuarine-dependent species, and ongoing human uses.

Goal 2: To support the ecological recovery of the larger Elkhorn Slough system to the extent possible while meeting Goal 1.

Goal 3: To conserve high quality subtidal and intertidal estuarine habitats and functions within the Parsons Slough tidal wetland complex.

Findings of the planning process

Goal 1, restoration of salt marsh, does not appear feasible in the near term for technical and economic reasons, which are detailed in the Draft Parsons Slough Restoration Plan (http://www.elkhornslough.org/tidalwetland/parsons.htm). However, supporting ecologic recovery of Elkhorn Slough while conserving high quality subtidal and intertidal habitat in Parsons Slough (Goals 2 and 3) could be advanced by building a submerged tidal barrier (a sill) at the mouth of Parsons Slough.
**Ecologic goals – Parsons Slough Sill**

- Promote recovery of soft subtidal sediments by reducing peak current velocities and tidal scour in Elkhorn Slough, particularly in Parsons Slough and in Lower Elkhorn Slough from Parsons Slough to Moss Landing Harbor
- Promote the recovery of salt marsh in Elkhorn Slough by (1) increasing the retention of sediment in the estuary, making sediment more available to build marshes deposition on the marsh plain, and by (2) reducing the run up of water at the head of the slough through the reduction in tidal scour
- Improve or sustain ecosystem health with respect to dissolved oxygen and other indicators of eutrophication in Parsons Slough
- Accommodate the movement of fish and wildlife in and out of Parsons Slough, specifically sea otters, harbor seals, flatfish and sharks and rays

**Management goals – Parsons Slough Sill**

- Adjustment of the structure will be feasible with existing equipment and staff resources.
- The structure will function with minimal maintenance for at least 30 years, with a lifespan of at least 50 years.
- The structure can be dismantled if its effects are determined to be undesirable.
- Structural failure will not endanger life or property.
- The structure will enable tidal range in Parsons Slough to be managed from unrestricted to a 30 percent reduction compared to existing conditions

**Structure Details**

**Concept**

The present conceptual design for the sill includes a base constructed of 12 and 24-inch diameter rock. Alternative construction methods and materials (e.g., sheet piling) are also being considered. The top of the sill will consist of an adjustable crest. The width and elevation of the crest must be adjustable using panels, stop logs supported by steel posts, or other materials which can be added or removed using hand labor or a boat-mounted hoist. Figure 1 provides a conceptual drawing of the proposed structure.
Performance and Configurations

The proposed structure would block about 75% of the present channel cross-sectional area. A starting point for the invert elevation of the adjustable portion is -1.5 meters (-5 feet) NAVD 88. The opening of the sill could be configured a variety of ways. The base assumption has been that the structure would be a linear feature perpendicular to the channel. Other configurations may warrant exploration, for example, to reduce ebb dominance. An investigation of alternatives for the structure was led by Moffatt and Nichol. The full and half channel width alternatives are discussed in the Draft Parsons Slough Restoration Plan, Section 4. The ‘Narrow’ option was evaluated in a letter report (http://www.elkhornslough.org/tidalwetland/downloads/6266_Parsons_Modeling_Results_3-9-09.doc). They found that the width of the sill crest has a marked effect on tidal exchange.

Expected Effects of the Sill

Tidal scour

The ‘Full Width’ configuration is not expected to reduce tidal scour in the main channel of Elkhorn Slough, because it does not reduce the tidal prism or substantially reduce main channel velocity. However, it would address tidal scour in Parsons Slough by acting to prevent downcutting, and by retaining sediment.

The ‘Narrow’ configuration would reduce tidal prism and peak ebb current velocity in the Main Channel of Elkhorn Slough. This would likely reduce tidal scour. The degree of this effect has not been modeled. The analysis of the effect of the Parsons Slough project on tidal scour by Philip Williams and Associates (PWA) (http://www.elkhornslough.org/tidalwetland/williams_final_report/index.htm) assumed an 80% reduction in the Parsons Slough tidal prism, but this Narrow configuration would reduce it by about 30%. PWA predicted that the more substantial project would reduce the rate of tidal scour by 40%, so the effect of the most restrictive configuration now considered would likely be less than that.

Upstream of Parsons Slough, ebb tide channel velocities are predicted to increase. This would increase tidal scour in that portion of the slough, though the net effect of the structure would be to substantially decrease tidal scour overall.

Salt marsh viability in Elkhorn Slough

The Parsons Slough sill would have no direct effect on marsh dieback in Elkhorn Slough, but its indirect effects, while beneficial for salt marsh are difficult to quantify. It would help balance the overall sediment budget for the slough, but with different effects in different areas. It would increase the rate that the upper slough drains, which may decrease the duration of inundation in the upper slough, benefitting marsh there.
Habitat types in Parsons Slough

The Full Width configuration would have minimal effects on habitat types in Parsons Slough, as the tidal range would remain unchanged.

The Narrow sill configuration would substantially affect the tidal range in Parsons Slough, eliminating the low end of the tidal range and reducing the high end of the tidal range.

Salt marsh extent in Parsons Slough would increase around the perimeter and on islands. The magnitude of that effect would be in the low tens of acres, depending on the sill configuration.

Minimum water levels in the Parsons Slough complex would increase from –0.6 meters (–2.0 feet) to +0.6 meters (+2.0 feet) in elevation. This would convert large areas of intertidal mudflat to shallow subtidal habitat. Approximately 200 acres of the intertidal mudflat could be affected. Maximum water levels would be reduced by approximately 0.3 meters (1.0 feet), which would promote the establishment of a band of salt marsh around the periphery of Parsons Slough. The acreage has not been determined, but could be about 20 acres. This habitat type conversion would represent a substantial shift in Elkhorn Slough habitats and whether this tradeoff is acceptable should be addressed by the group.

Effects on species, fish and wildlife habitat use

Harbor seals, sharks and rays use Parsons Slough for pupping, and the area may be important for the conservation of regional populations of these animals. Sea otters also use the area. Consulted experts with respect to sea otters (Lillian Carswell, USFWS) and sharks (Greg Calliet, MLML, and Aaron Carlisle, Hopkins Marine Station), have indicated that while a more restrictive structure may interfere with movement at some times, it would probably not have a significant effect on the populations. However, monitoring and managing the structure to reduce that risk may be warranted. Habitat conversion from intertidal mudflats to subtidal areas may also affect shark populations, as the intertidal mudflats are the preferred foraging areas, based on detailed data analysis by Aaron Carlisle.

Olympia oysters, other invertebrates and communities dependent on them such as shorebirds, may be adversely affected by the conversion of habitat from low intertidal mudflats to shallow subtidal habitats.

For sharks and Olympia oysters, Parsons supports a substantial fraction of the estuary populations.

Effects on water quality in Parsons Slough

The Full Width configuration would have little effect on the residence time of water in Parsons Slough, which generally suggests that the water quality would not be adversely affected. However, the structure could impede the export of algal mats from Parsons Slough, which would result in increased benthic oxygen demand over time. The importance of this effect is unknown.
The Narrow configuration could have several effects on water quality, and would mute the tides to an extent that could impair water quality. The net effect of this configuration on dissolved oxygen and eutrophication is unclear, but could very likely be undesirable. It is affected by several factors:

- It would decrease the tidal prism by 28 percent and increase the residence time of Parsons Slough by 40 percent. This could result in warmer water, higher primary productivity, increased water column and benthic oxygen demand and decreased dissolved oxygen conditions.

- It would also decrease current velocity in Parsons Slough by up to 40 percent and peak tidal range by up to 60 percent, which could increase stratification and reduce dissolved oxygen concentrations near the bed.

- This configuration would convert approximately 200 acres of intertidal mudflat to shallow subtidal habitats. This would increase the average depth of Parsons Slough. The net effect on dissolved oxygen is unclear. The modeling work done by Ken Johnson on the Elkhorn Slough suggests that the deeper water, by providing a larger reservoir of dissolved oxygen, generally results in higher concentrations of water column dissolved oxygen.

- The same work, however, pointed out that mudflats, when exposed to the atmosphere at low tide exert their benthic oxygen demand on the atmosphere rather than the water column. Under this configuration, the sediment oxygen demand from these former mudflats would be exerted entirely on the water column, which could counter the benefits of a deeper water column.

**Optimization of the structure (adaptive management)**

The concept is that width and depth of the sill opening would be adjusted through an optimization process based on monitoring the achievement of project goals. This would ensure that currents are reduced but high quality existing habitat is not compromised. The structure would be adjusted through different configurations, with monitoring to compare the results against these targets. That process would last for perhaps five years following construction. The best configuration would then be selected based on criteria determined prior to construction. (Formerly, this approach was described as adaptive management, but since that term is somewhat vague, we will use the term optimization instead.)

After that intensive period, annual or seasonal adjustment is presently viewed as undesirable for cost reasons. The most feasible management scheme would settle on a fixed position after this period of adjustment, and then the structure would be left unchanged for several years at a time. Long term changes to conditions or changed management objectives would be the main reason for adjustments during that time. The preferred design would not require frequent operation or maintenance to provide lasting ecologic benefits.

**Additional Resources**

A description of the project, including an initial list of potential impacts is available at [http://www.elkhornslough.org/tidalwetland/downloads/090603_Parsons_Slough_Project](http://www.elkhornslough.org/tidalwetland/downloads/090603_Parsons_Slough_Project)
The proposed project, which includes a single water control structure and no additional sediment additions, was recommended at a June 3, 2009 Joint Meeting of Strategic Planning Team and Science Panel of the Elkhorn Slough Tidal Wetland Project. The management history and photos of the Parsons Slough Marsh Complex can be found at http://www.elkhornslough.org/tidalwetland/twmap06.htm.

The Draft Parsons Slough Wetland Restoration Plan web site includes a Draft Existing Conditions Report that inventories habitats and species occurring in the area. That web page is: http://www.elkhornslough.org/tidalwetland/parsons.htm. On that web page are copies of the Draft Restoration Plan, which includes a CEQA Initial Study Checklist for a separate, larger-scale project entailing sediment addition to restore tidal marsh. That larger-scale project is not proposed at this time.

Additional information about the Elkhorn Slough Tidal Wetland Project can be found at http://www.elkhornslough.org/tidalwetlandproject/index.html. The Tidal Wetland Project Strategic Plan summarizes the outcomes of this planning process, and is posted here: http://www.elkhornslough.org/tidalwetland/strategic_plan.htm.
Figures
FIGURE 1: PROJECT VICINITY MAP.
FIGURE 2: PROJECT LOCATION.
Figure 3. Cross sectional diagram of the adjustable Parsons Slough Sill.

An adjustable section will be built on top of a submerged tidal barrier that is constructed of rock or sheet piling. With the flashboards removed, the structure will provide a cross sectional area similar to pre-development conditions. With the flashboards in place, tidal exchange will be restricted, reducing tidal scour and salt marsh loss. Figure 4 shows a photograph of a similar structure.
Figure 4. Tidal current velocity in Elkhorn Slough under the most restrictive configuration of the sill

This configuration reduces peak velocities by 20 percent in the main channel of Elkhorn Slough, which is expected to substantially reduce tidal scour and salt marsh loss. The least restrictive configuration of the structure would result in a negligible reduction in velocity compared to existing conditions.
Figure 5. Tidal range in Parsons Slough under the most restrictive configuration of the sill

The most restrictive ‘Narrow and Deep’ configuration would reduce the tidal range in Parsons Slough by approximately 50 percent. The least restrictive ‘Full Exchange’ configuration would result in no change in tidal range in Parsons Slough. This ‘full exchange’ configuration would also maintain the existing residence time of water in Parsons Slough.
At North Azevedo Pond, tidal exchange is managed with this water control structure, which is positioned between a railroad bridge and the adjacent subsided salt marsh. The structure consists of an array of adjustable openings, one of which is shown open. Flashboards may be added or removed, enabling the management of a variety of hydrologic regimes without the use of culverts or traditional tide gates, which interfere with the movement of large fish and marine mammals.

A similar approach is proposed for the Parsons Slough Sill, with the adjustable section built on top of a submerged tidal barrier that is constructed of rock or sheet piling. In both Parsons Slough and North Azevedo Pond, subsidence of the marshes on the inland side of the railroad tracks has created a situation where full tidal exchange results in the drowning of salt marsh vegetation on the inland side and the pronounced scour of tidal channels.

The Union Pacific Railroad approved this project, which was built in part on the Union Pacific right of way. Union Pacific has indicated support for the project concept at Parsons Slough, provided specific design requirements are met.

Fencing in the foreground of the picture is remnant from the historical grazing of the area.