

AGENDA
REGULAR MEETING OF THE BOARD OF COMMISSIONERS
HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT

DATE: September 28, 2017

TIME: Executive Closed Session – 6:00 PM
Regular Session – 7:00 PM

PLACE: Woodley Island Marina Meeting Room

The Meeting Room is wheelchair accessible. Accommodations and access to Harbor District meetings for people with other handicaps must be requested of the Director of Administrative Services at 443-0801 at least 24 hours in advance of the meeting.

1. **Call to Order at 6:00 p.m.**
 - a. Move to Executive Closed Session pursuant to the provisions of the California Government Code Sections 54956.8 (Conference with Real Property Negotiators).
 1. Conference with Real Property Negotiator
Agency Negotiator: Board President, Executive Director and District Counsel
Under Negotiation:
 - a. Exclusive Right to Negotiate with Inyo Networks. (Existing)
 - b. Exclusive Right to Negotiate with Renewable Energy Capital (New)
 2. Conference with Real Property Negotiator
Agency Negotiator: Board President, Executive Director and District Counsel
Under Negotiation: Tideland Lease with Sequoia X, LLC.
2. **Adjourn Executive Closed Session**
3. **Call to Order Regular Session at 7:00 P.M. and Roll Call**
4. **Pledge of Allegiance**
5. **Report on Executive Closed Session**
6. **Public Comment**

Note: This portion of the Agenda allows the public to speak to the Board on the various issues not itemized on this Agenda. A member of the public may also request that a matter appearing on the Consent Calendar be pulled and discussed separately. Pursuant to the Brown Act, the Board may not take action on any item that does not appear on the Agenda. Each speaker is limited to speak for a period of three (3) minutes regarding each item on the Agenda. Each speaker is limited to speak for a period of three (3) minutes during the PUBLIC COMMENT portion of the Agenda regarding items of special interest to the public not appearing on the Agenda that are within the subject matter jurisdiction of the Board of Commissioners. The three (3) minute time limit may not be transferred to other speakers. The three (3) minute time limit for each speaker may be extended by the President of the Board of Commissioners or the Presiding Member of the Board of Commissioners at the regular meeting of the District. The three (3) minute time limit for each speaker may be enforced by the President of the Board of Commissioners or the Presiding Member of the Board of Commissioners at the regular meeting of the District.

7. **Consent Calendar**
 - a. Approval of meeting minutes for August 17, 2017
 - b. Approval of meeting minutes for September 7, 2017
8. **Communications and Reports**
 - a. Executive Director Report
 - b. Staff Reports
 - c. District Counsel, District Planner, District Engineer and District Treasurer Reports
 - d. Commissioner and Committee Reports
 - e. Other

Agenda for September 28, 2017 Regular Board Meeting

9. Non Agenda

10. Unfinished Business

- a. Consideration of acceptance of final report for the Coordinated Regional Sediment Management Plan (CRSMP) for the Eureka Littoral Cell.
- b. Consideration of Tideland Lease with Sequoia X, LLC.
- c. Consideration of approval of Executive Director Selection Committee.

11. New Business

- a. Consideration of selection of Anchor or ICF for Preparation of Programmatic Environmental Impact Report for Implementation of Coordinated Regional Sediment Management Plan.
- b. Consideration of Exclusive Right to Negotiate Agreement with Renewable Energy Capital to develop a wood waste power generator at Redwood Marine Terminal II.
- c. Consideration of accepting for filing Permit Application 17-03 for City of Eureka Elk River Estuary Enhancement and Coastal Access Project.

12. Administrative and Emergency Permits

- a. USCG Maintenance Dredging Administrative Permit A-2017-03

13. Adjournment

**DRAFT MINUTES
SPECIAL MEETING OF THE BOARD OF COMMISSIONERS
HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT**

August 17, 2017

The Humboldt Bay Harbor, Recreation, and Conservation District met in regular session on the above date, 6:00 P.M. Closed Session, 7:00 P.M. Open Session, at the Woodley Island Marina Meeting Room, 601 Startare Drive, Eureka, CA 95501.

1) CLOSED SESSION - 6:00 P.M.

The Commission met in closed session to discuss the following items:

- a. Move to Executive Closed Session pursuant to the provisions of the California Government Code Section 54956.8 (Conference with Real Property Negotiators) and Conference with Legal Counsel, Existing Litigation, pursuant to Government Code Section 54956.9: Security National Lease Extension.
 - i. Conference with Real Property Negotiators
Agency Negotiator: Board President, Executive Director and District Counsel
Under Negotiation: Sequoia Investments X Lease extension.

2) ADJOURN EXECUTIVE CLOSED SESSION

3) OPEN SESSION – 7:05 P.M.

ROLL CALL:

PRESENT: MARKS
HIGGINS
DOSS

ABSENT: KULLMANN
DALE

QUORUM: Yes

4) PLEDGE OF ALLEGIANCE

5) REPORT ON EXECUTIVE CLOSED SESSION

- 1) Noted that the “Conference with Legal Counsel, Existing Litigation, pursuant to Government Code Section 54956.9” noted in the agenda was a mistake. No litigation was discussed. The only item discussed was the Sequoia Investments X Lease extension. No action to report out on. Item on agenda under New Business 11.b, but it will be discussion only. Negotiations will continue with Security National.

6) PUBLIC COMMENT: The following individuals addressed the Commission regarding subject matters not on this meeting’s agenda: Kent Sawatzky.

7) CONSENT CALENDAR:

- a. Consideration of approval of Board meeting minutes for July 27, 2017.
 - I.COMMISSIONER HIGGINS MOVED TO APPROVE THE CONSENT CALENDAR. COMMISSIONER DOSS SECONDED.
 - II.Chair Marks then opened up public comment on the item. Seeing no members of the public wishing to speak, Chair Marks then moved the discussion back to the Commission.
 - III.VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS
Noes: NONE
Absent: KULLMANN, DALE
Abstain: NONE

8) COMMUNICATIONS AND REPORTS:

- a. **Executive Director, Jack Crider Report:**
 - o Presented general update on District operations.
- b. **Staff Reports**
 - o Director of Maintenance & Operations, Alan Bobillot:
 - a) Presented update of District facilities and staff activities.
 - o Director of Harbor Operations and Bar Pilot, Tim Petrusha:
 - a) Presented recent harbor activities on the Bay
- c. **District Counsel, District Planner, District Treasurer and District Engineer Reports**

- o District Counsel
- o District Engineer
- o District Planner,
- o District Treasurer

d. Commissioner and Committee Reports

- o Commissioners reported on recent activities and meetings.

e. Other NONE.

9) NON-AGENDA: NONE.

10) UNFINISHED BUSINESS:

A. CONSIDERATION OF GRANTING ONE-YEAR EXTENSION FOR PERMIT NO. 15-01 FOR THE HUMBOLDT BAY POWER PLANT FINAL SITE RESTORATION PLAN IMPLEMENTATION.

- I. COMMISSIONER HIGGINS MOVED TO APPROVE A ONE-YEAR EXTENSION FOR PERMIT NO. 15-01. COMMISSIONER DOSS SECONDED THE MOTION.
- II. Executive Director Jack Crider presented the item.
- III. Chair Marks then opened up public comment on the item. Kent Sawatzky commented on this item. Chair Marks then moved the discussion back to the Commission.
- IV. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS
Noes: NONE
Absent: KULLMANN, DALE
Abstain: NONE

11) NEW BUSINESS:

A. RESOLUTION NO. 2017-12. A RESOLUTION APPROVING THE APPLICATION FOR GRANT FUNDS FOR THE ENVIRONMENTAL ENHANCEMENT AND MITIGATION (EEM) PROGRAM.

- I. Executive Director Jack Crider presented the item.
- II. COMMISSIONER HIGGINS MOVED TO APPROVE RESOLUTION NO. 2017-12. COMMISSIONER DOSS SECONDED THE MOTION.
- III. The Commission discussed the item.
- IV. Chair Marks then opened up public comment on the item. Kent Sawatzky and Uri Driscoll commented on this item. Chair Marks then moved the discussion back to the Commission.
- V. ROLL-CALL VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS
Noes: NONE
Absent: KULLMANN, DALE
Abstain: NONE

B. CONSIDERATION TO PURCHASE DOCK FINGER SECTIONS, NOT TO EXCEED \$16,000.

- I. Executive Director Crider presented the item.
- II. COMMISSIONER HIGGINS MOVED TO APPROVE THE PURCHASE OF DOCK FINGER SECTIONS, NOT TO EXCEED \$16,000. COMMISSIONER DOSS SECONDED THE MOTION.
- III. The Commission discussed the item.
- IV. Chair Marks then opened up public comment on the item. No members of the public commented. Chair Marks then moved the discussion back to the Commission.
- V. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS
Noes: NONE
Absent: DALE, KULLMANN
Abstain: NONE

C. CONSIDERATION TO PROCEED WITH COSTS OF PHASE 1 ENVIRONMENTAL FOR THE SHIP WRECK MITIGATION PROPERTY AT KING SALMON, NOT TO EXCEED \$6,500.

- I. Executive Director Crider presented the item.

- II. COMMISSIONER HIGGINS MOVED TO APPROVE THE COSTS OF PHASE 1 ENVIRONMENTAL FOR THE SHIP WRECK MITIGATION PROPERTY AT KING SALMON, NOT TO EXCEED \$6,500. COMMISSIONER DOSS SECONDED THE MOTION.
- III. The Commission discussed the item.
- IV. Chair Marks then opened up public comment on the item: Kent Sawatzky commented on the item. Chair Marks then moved the discussion back to the Commission.
- V. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS
Noes: NONE
Absent: DALE, KULLMANN
Abstain: NONE

D. CONSIDERATION OF REQUEST BY SEQUOIA X, LLC TO EXTEND ITS CURRENT LEASE DATED OCTOBER 28, 2015 FOR TIDELAND LEASE LOCATED AT FAIRHAVEN FOR AN ADDITIONAL 15 YEAR TERM WITH TWO OPTIONS TO RENEW OF 10 YEARS EACH, PURSUANT TO EXTENSION AGREEMENT TO BE PREPARED BY DISTRICT COUNSEL AND APPROVED AND EXECUTED BY THE DISTRICT EXECUTIVE DIRECTOR.

- I. Executive Director Crider presented the item.
- II. Chair Marks then opened up public comment on the item: Kent Sawatzky and Uri Driscoll commented on the item. Chair Marks then moved the discussion back to the Commission.
- III. As noted in the report out on the closed session, no action was taken on this item by the Commission at this meeting.

12) ADMINISTRATIVE AND EMERGENCY PERMITS: NONE.

13) ADJOURNMENT

APPROVED BY

Patrick Higgins
Secretary

RECORDED BY:

George Williamson
District Planner

**DRAFT MINUTES
SPECIAL MEETING OF THE BOARD OF COMMISSIONERS
HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT**

September 7, 2017

The Humboldt Bay Harbor, Recreation, and Conservation District met in regular session on the above date, 11:30 A.M. Closed Session, 12:30 P.M. Open Session, at the Woodley Island Marina Meeting Room, 601 Startare Drive, Eureka, CA 95501.

1) CLOSED SESSION – 11:30 A.M.

The Commission met in closed session to discuss the following items:

- a. Move to Executive Closed Session pursuant to the provisions of the California Government Code Sections 54957(b)(1) (Public Employee Performance Evaluation) and 54956.8 (Conference with Real Property Negotiators).
 - i. Public Employee Performance Evaluation
 1. Title: Executive Director (Termination of Employment Contract)
 - ii. Conference with Real Property Negotiators
 1. Agency Negotiator: Board President, Executive Director and District Counsel
 - a. Under Negotiation: Sequoia Investments X Lease extension. Under Negotiation: Sequoia Investments X Lease extension.

2) ADJOURN EXECUTIVE CLOSED SESSION

3) OPEN SESSION – 7:00 P.M.

ROLL CALL:

PRESENT: MARKS
HIGGINS
DOSS
KULLMANN
DALE

ABSENT: NONE.

QUORUM: Yes

4) PLEDGE OF ALLEGIANCE

5) REPORT ON EXECUTIVE CLOSED SESSION

- 1) No action to report out on, however the item is on the agenda under 7a.

6) PUBLIC COMMENT: The following individuals addressed the Commission regarding subject matters not on this meeting's agenda: Robert Dumoschel, Kent Sawatzky, and Susan Penn.

7) NEW BUSINESS:

A. CONSIDERATION OF ACCEPTANCE OF EXECUTIVE DIRECTORS RESIGNATION AND TO TERMINATE EMPLOYMENT AGREEMENT, EFFECTIVE OCTOBER 31, 2017.

- I. Executive Director Jack Crider presented the item.
- II. COMMISSIONER HIGGINS MOVED TO ACCEPT THE EXECUTIVE DIRECTOR'S RESIGNATION TO TERMINATE EMPLOYMENT AGREEMENT, EFFECTIVE OCTOBER 31, 2017. COMMISSIONER DALE SECONDED THE MOTION.
- III. The Commission discussed and commented on the item.
- IV. Chair Marks then opened up public comment on the item. Kent Sawatzky commented on this item. Chair Marks then moved the discussion back to the Commission.
- V. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS, KULLMANN, DALE
Noes: NONE
Absent: NONE
Abstain: NONE

B. CONSIDERATION OF APPROVAL OF PROCESS TO SOLICIT FOR A NEW EXECUTIVE DIRECTOR.

- I. Executive Director Crider presented the item.
- II. COMMISSIONER HIGGINS MOVED TO APPROVE THE PRESENTED PROCESS TO SOLICIT FOR A NEW EXECUTIVE DIRECTOR. COMMISSIONER KULLMANN SECONDED THE MOTION.

- III. The Commission discussed the item.
- IV. Chair Marks then opened up public comment on the item. Kent Sawatzky, Susan Penn, and Karen Brooks commented on the item. Chair Marks then moved the discussion back to the Commission.
- V. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS, KULLMANN, DALE
Noes: NONE
Absent: NONE
Abstain: NONE

C. CONSIDERATION OF APPROVAL OF EXECUTIVE DIRECTOR SELECTION COMMITTEE.

- I. Executive Director Crider presented the item.
- II. COMMISSIONER HIGGINS MOVED TO APPROVE THE ESTABLISHMENT OF THE EXECUTIVE DIRECTOR SELECTION COMMITTEE AS PRESENTED. COMMISSIONER KULLMANN SECONDED THE MOTION.
- III. The Commission discussed the item.
- IV. Chair Marks then opened up public comment on the item: Kent Sawatzky, Ken Bates, Karen Brooks, and Susan Penn commented on the item. Chair Marks then moved the discussion back to the Commission.
- V. COMMISSIONER HIGGINS WITHDREW HIS MOTION, AND COMMISSIONER KULLMANN REMOVED HIS SECOND.
- VI. COMMISSIONER KULLMANN MOVED TO CONTACT THE THREE PEOPLE ON THE CURRENT LIST, AND TO CREATE AN OPPORTUNITY FOR THE PUBLIC TO CONTACT THE COMMISSION, IF THEY ARE INTERESTED IN SERVING ON THE SELECTION COMMITTEE. THE COMMISSION WILL THEN CONSIDER SELECTION COMMITTEE SIZE AND APPOINTMENTS AT ITS UPCOMING SEPTEMBER 28TH MEETING. COMMISSIONER DOSS SECONDED THE MOTION.
- VII. The Commission discussed the new motion.
- VIII. Chair Marks then opened up public comment on the item: Kent Sawatzky and Karen Brooks commented on the item. Chair Marks then moved the discussion back to the Commission.
- IX. VOICE VOTE WAS CALLED, MOTION CARRIED WITHOUT DISSENT.
Ayes: MARKS, DOSS, HIGGINS, DALE, KULLMANN
Noes: NONE
Absent: NONE
Abstain: NONE

CI. ADMINISTRATIVE AND EMERGENCY PERMITS: NONE.

CII. ADJOURNMENT

APPROVED BY

Patrick Higgins
Secretary

RECORDED BY:

George Williamson
District Planner



September 2017

HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT



Preparation of a Programmatic Environmental Impact Report for Implementation of Coordinated Regional Sediment Management Plan for the Eureka Littoral Cell

Submitted by Anchor QEA



P.O. Box 2326
McKinleyville, California 95519
Phone 707.633.6094

September 15, 2017

Mr. Richard Marks and Mr. Jack Crider
Humboldt Bay Harbor, Recreation and Conversation District
P.O. Box 1030
Eureka, California 95502-1030

Re: Response to Request for Qualifications for Preparation of a Programmatic Environmental Impact Report
for Implementation of Coordinated Regional Sediment Management Plan for the Eureka Littoral Cell

Dear Mr. Marks and Mr. Crider,

Anchor QEA, LLC, is pleased to submit the attached qualifications and proposal for preparation of the Programmatic Environmental Impact Report (PEIR). Our team is uniquely qualified and excited about this opportunity to work with the Humboldt Bay Harbor, Recreation and Conservation District (Harbor District) as we have experience developing regional sediment management plans and preparing programmatic environmental documents and understand the local setting of Humboldt Bay.

Specific to this effort, we understand the Harbor District's need to prepare a long-term sediment management plan and PEIR that responds to current logistical practicalities of dredging (working with the U.S. Army Corps of Engineers [USACE]) and that plans for the future when additional options for management of dredged material may be available. We also understand that funding for this project would be provided through a grant from the California Natural Resources Agency on behalf of the California Sediment Management Workgroup and that staff from both entities would participate in meetings and comment on draft documents to ensure the project is consistent with their goals.

Our proposal demonstrates our experience preparing programmatic sediment management plans in a variety of settings and related California Environmental Quality Act and National Environmental Policy Act documents in similar circumstances working with other USACE Districts and local sponsors in California.

Our team includes the firms HT Harvey & Associates and DZC Consulting, local biological resources and cultural resources specialists, respectively, to ensure that our team is equipped to undertake all CEQA resource topic considerations in preparing the PEIR.

We look forward to your review of our proposal. Please contact us with any questions or comments.

Sincerely,

Elizabeth Appy
Project Manager

Joshua Burnam, MPH, D.Env.
Principal Environmental Planner

INTRODUCTION TO THE PROJECT TEAM

Anchor QEA

Anchor QEA is an engineering and environmental consulting firm that provides full-spectrum environmental planning services specializing in sediment management, waterfront development, and navigation. As highlighted in our approach and relevant projects, our firm's expertise in understanding management of dredged material, our experience preparing similar **sediment management frameworks**, and our knowledge of the needs of ports and small-craft harbors sets us apart from our competition.

Anchor QEA has prepared numerous plans for the management of dredged material, including those coupled with California Environmental Quality Act and National Environmental Policy Act (CEQA/NEPA) evaluations. We fully understand the challenge of **managing and proactively planning for the reuse of dredged material** while also being responsive to short-term dredging needs. Our work has led to the creation of dredged material management frameworks that serve the Los Angeles region, the Sacramento-San Joaquin Delta, the City of Newport Beach, the City of Long Beach, the Ports of Los Angeles and Long Beach, and Crescent City Harbor.

Nearly all the permitting and planning efforts that Anchor QEA leads include a CEQA and/or NEPA documentation requirement. Our staff are skilled at preparing technical documentation in a variety of disciplines to evaluate and address project impacts and develop mitigation alternatives. We are **well-versed in all elements of the CEQA and NEPA processes** and have assisted clients in environmental **scoping**; preparing **purpose and need** statements; facilitating **public, agency, and tribal outreach**; conducting field work to document resources; **coordinating with local, state, and federal lead agencies**; maintaining administrative records; and developing CEQA and NEPA documentation. Based on our experience in southern California and Crescent City Harbor, we also understand the nuances of preparing a **programmatic document** that future documents tier from, allowing for **consistency and predictability** for future permitting of dredging activities.

We deliver **high-quality documentation** that meets public, agency, and legal scrutiny. We have managed large and complex Environmental Impact Reports (EIRs) and Environmental Impact Statements (EISs), including joint

We helped generate sediment management frameworks that serve:

- Sacramento-San Joaquin Delta
- Crescent City Harbor
- Los Angeles region
- City of Newport Beach
- City of Long Beach
- Ports of Los Angeles and Long Beach



Dredged Material Management Program Facilitation

Anchor QEA facilitated the Sacramento-San Joaquin Delta Long-term Management Strategy Program for dredging and dredged material management. The program's goals are to develop beneficial reuse opportunities for dredged material in the Delta (focusing on levee stability and repairs as flood protection measures); ultimately produce a regional Long-term Management Plan for dredged material; and develop joint permit applications for regional dredging and reuse scenarios.

documents, for USACE, National Park Service, Port of Stockton, and other municipal agencies, including Bay Area cities and counties.

Anchor QEA is recognized as one of the dredging industry's most respected consulting firms and is the on-call dredging consultant for many ports, industrial clients, and the USACE. Our staff serve as board members for the Western Dredging Association (WEDA), represent the United States (along with one USACE representative) in the International Navigation Congress committee on dredging best management practices, support **Dredged Material Management Programs** across the country, facilitate the **San Francisco Bay Long-term Management Strategy**, and provide expert witness support to attorneys and the U.S. Department of Justice. Anchor QEA principals have national credibility at the highest government levels, having testified in front of the U.S. Congress on sediment and dredging issues and participated on both National Science Foundation and National Resource Council committees. Anchor QEA principals—and the entire firm—were recipients of Dredger of the Year awards by WEDA; no other firm in the United States has this distinction.

Anchor QEA is a three-time winner of WEDA's Dredger of the Year Award:

- 2004
- 2005
- 2012

Additional Team Members

Our proposed team members consist of professionals with experience developing documents and conducting assessments to support CEQA reviews in Humboldt Bay and the vicinity, consistent with the geography of the Eureka Littoral Cell. Our team members include H.T. Harvey & Associates (HT Harvey) for their expertise and experience with biological and natural resources of Humboldt Bay and DZC Consulting for their expertise and familiarity with cultural resources within and around Humboldt Bay. Brief descriptions of each team member are provided below.

H.T. Harvey & Associates

HT Harvey ecologists and professionals provide consulting services to public agencies, private entities, and nonprofit organizations. Their staff's expertise encompasses a range of **biological and design disciplines** required to perform high-quality work on ecological projects. HT Harvey helps clients work with the regulatory agencies to successfully acquire approvals for their projects. Decades of experience and their reputation for applying sound science have earned HT Harvey credibility among the agencies, which helps to anticipate and address any agency concerns.

HT Harvey integrates with project planning teams to develop a permitting strategy that considers the proposed project improvements, construction methods, potential permitting avenues, costs, and timelines. They often collaborate with project engineers to redesign plans to **minimize impacts on biological resources and advance the permitting process**. Their services include assembling permit applications, facilitating permit processing, and preparing the technical studies commonly required to support permits. Some of this supporting information is developed through impact assessments conducted for compliance with CEQA and NEPA.

DZC Consulting

DZC Consulting provides professional archaeological, historical, and cultural resource management services to county, state, and federal agencies and private clients. They offer efficient guidance through the regulatory process, anticipating problem areas and helping clients plan for optimal solutions. They also assist with **preservation planning and management guidance tailored to the client's project goals**, aiming to minimize cost while protecting our collective heritage.

DZC Consulting understands the dynamic nexus of **cultural resources and riparian/estuarine environments**. The company's Principal Investigator and founder, Dimitra Zalarvis-Chase conducted her GIS-based Master's thesis work in Wiyot territory, analyzing pre-contact sites in Humboldt Bay and within the Mad and Eel River watersheds. As an avid sport-fisher and 30-year resident of Fairhaven, Ms. Zalarvis-Chase has spent many hours navigating the channels of Humboldt Bay and observing dredging and its effects in action. Her project work has included the analysis of historic slough, river, and creek channels and the effects on cultural resources resulting from their historic modification and modern restoration; working with interdisciplinary teams on the interpretation of cultural resources in and around the Middle Fork of the Feather River; and working with Stormwater Pollution Prevention Plan specialists to execute best management practice installation near sensitive areas. She has also had discussions with tribes on the effects of dredging on **traditional marine resources**, and conducted work specifically in support of a pilot project using **dredged material to nourish and restore marshlands in Humboldt Bay**. This range of experience allows DZC Consulting to identify sensitive cultural resource locations, work with community and agency stakeholders to identify areas that may be enhanced by dredged sediment placement or affected by dredging, and provide recommendations that benefit cultural resources while moving forward towards long-term management goals and interdisciplinary environmental stewardship.

KEY STAFF

We have a compiled a team that understands **regional sediment management** and **beneficial use issues** and how to develop a **programmatic framework to facilitate CEQA** and regulatory permitting and future sediment management decisions while considering the existing **biological and cultural resources of Humboldt Bay** and the surrounding area. In addition, our team has experience with engineering design and permitting for dredging and dredge material disposal options and hydrodynamics and sediment transport issues. We also understand the importance of stakeholder input and involvement in the success of the project.

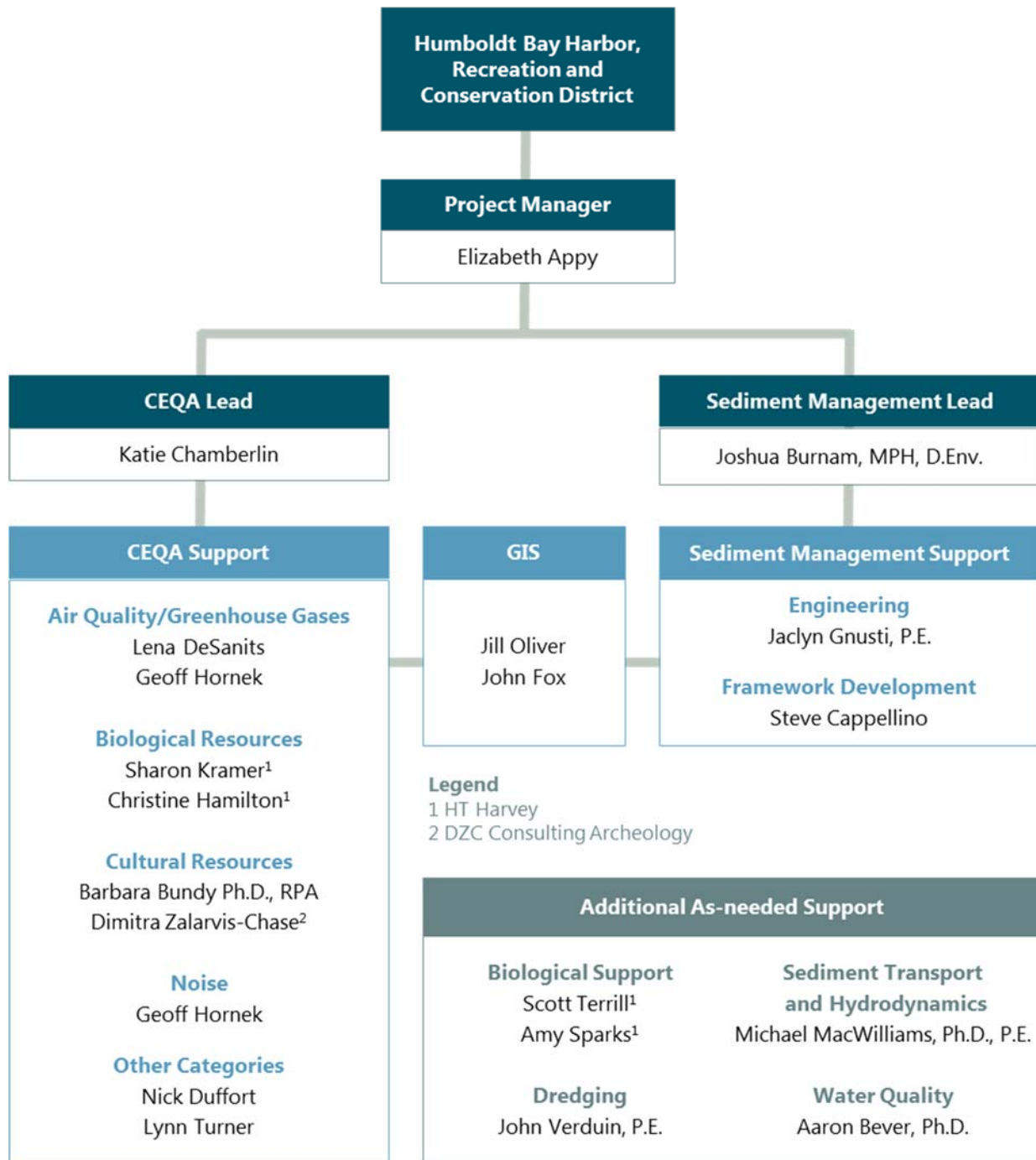
The project team will be led by Elizabeth Appy, a managing scientist in Anchor QEA's McKinleyville office. Ms. Appy has worked in Northern California and the Pacific Northwest for more than 17 years on a variety of sediment management-related projects, including permitting and natural resource management for maintenance dredging and disposal and sediment remediation projects. She will serve as the **local point of contact** and ensure the Humboldt Bay Harbor, Recreation and Conservation District's (Harbor District's) objectives are met, ensure appropriate resources are available, and provide biological resource management technical expertise. With her **multi-disciplinary natural resource background**, understanding of sediment management issues, and **proactive leadership style**, Ms. Appy is well suited for this role. She will be supported by Katie Chamberlin, a managing planner at Anchor QEA, who will serve as the CEQA lead. Ms. Chamberlin has extensive experience with developing CEQA documents, including **Programmatic Environmental Impact Reports (PEIRs)**, for sediment management-related and waterfront projects, and she led our team in developing the Dredged Material Management Plan (DMMP) for Crescent City under a contract with USACE.

Ms. Appy will also be supported by Dr. Joshua Burnam for sediment management issues. Dr. Burnam is a past U.S. Army Corps of Engineers (USACE) Senior Regulator, who held the position of Chairman of the Los Angeles Regional Dredging and Disposal Operations sub-committee of the Los Angeles Regional Contaminated Sediments Task Force (CSTF). In this role, Dr. Burnam participated in **regional DMMP development** and management of a Los Angeles Regional sediment framework.

Additional key support will be provided by others, including Dr. Sharon Kramer of HT Harvey for biological resources and natural resource management, and Ms. Dimitra Zalarvis-Chase of DZC Consulting for cultural resources.

ORGANIZATIONAL CHART

The organizational chart below depicts key staff and their roles as well as lines of communication. Resumes are provided as Appendix A.



TENTATIVE SCHEDULE

The graphic below shows the Anchor QEA team's proposed schedule for completing the tasks outlined in the Request for Qualifications (RFQ). The assumptions made in developing this schedule are noted in the following section.



DESCRIPTION OF THE APPROACH

Scope of Work

Task 1: Project Description Development

Our team's approach to this task is to **work collaboratively and interactively** with the Harbor District, California Sediment Management Workgroup (CSMW), California State Coastal Conservancy, and stakeholders to develop a project description, based on a **programmatic plan for sediment management**, that will be used for the environmental analysis and PEIR development (Task 2). First, we will work with the Harbor District to **develop and refine key goals and objectives** for the proposed project and implementation of the Coordinated Regional Sediment Management Plan (CRSMP), including planning for future sediment management through adaption and reuse. These goals will help inform the development of the project description and will help guide stakeholder meetings. The alternatives evaluated in the PEIR for the management plan are expected to cover locally managed dredging activities, pumping of dredged material directly to reuse sites, development of site for dewatering and stockpiling, and placement of materials for habitat restoration, sea level rise adaptation, or other beneficial uses.

Drafting of the project description and **establishing the programmatic framework for current and future alternatives** in compliance with CEQA is the key for the overall process. The project description will outline the programmatic setting for the appropriate use or implementation of the noted alternatives, and when done properly, will allow for **easy tiering of future environmental documents** and support future Clean Water Act Section 404(b)(1) compliance decisions. This effort is where Anchor QEA's experience distinguishes us. We supported the creation of the project description frameworks used by the USACE Los Angeles and San Francisco Districts in developing their sediment management plans.

Before drafting the project description, we will hold a meeting to **engage stakeholders and elicit feedback** on the activities listed above and typical methods and general locations that could be used for each activity. At a minimum, we will bring our project manager, CEQA lead, sediment management lead, and an engineer to the first stakeholder meeting. Because the EIR is programmatic, we will include as many methods in the project description as appropriate and a typical location for each activity to confirm that the environmental analysis in the PEIR covers the range of methods and location types (e.g., in-water nearshore, in-water ocean, upland) that would typically be used for each activity.

After receiving input from the Harbor District, CSMW, California State Coastal Conservancy, and stakeholders, our team will



San Francisco Bay Dredged Material Management Program Support

Anchor QEA supported the San Francisco Bay Long-term Management Strategy Program—the primary dredging and sediment management program in San Francisco Bay—by facilitating meetings, preparing technical white papers, and coordinating symposia on various technical issues. Anchor QEA led the program's 12-year review process, a public process involving stakeholder outreach meetings and preparation of a report assessing the program's performance. Through this role, Anchor QEA developed trusted relationships with the program managers and members of the dredging community and an understanding of regional dredging policy issues.

prepare a draft project description that describes typical and/or regionally acceptable methods and location types that could be used to accomplish the general activities listed above and any other activities that might arise during stakeholder coordination. We have experience **working directly with the California State Coastal Conservancy on a CEQA project** in Monterey and will bring our understanding of the agency's primary concerns in developing project descriptions and CEQA documents to this project. We will provide the draft project description to the Harbor District, CSMW, and California State Coastal Conservancy for review and comment. The project description will then be revised and finalized based on any comments and feedback. We will provide the revised draft project description along with a letter summarizing the process and highlighting specific areas where we want feedback to the group of stakeholders for review prior to a second in-person meeting. At the second stakeholder meeting, we will present the important elements of the draft project description and **highlight any areas where we want specific feedback**. Based on the feedback received during this second stakeholder meeting, we will work collaboratively with the Harbor District to finalize the project description for use in Task 2.

Deliverables

- Draft and final summaries of key outcomes from each stakeholder meeting
- Draft and final versions of the project description

Task 2: Environmental Analysis and PEIR Development

Immediately following development of the final project description (Task 1), we will prepare a draft Notice of Preparation (NOP) for review by the Harbor District, CSMW, and California State Coastal Conservancy and subsequently a final draft for circulation. The NOP will be published on the Harbor District's website and circulated to the State Clearinghouse, public agencies, special districts, and members of the public requesting such notice. The purpose of the NOP is to **formally initiate public scoping** and to convey that the Harbor District is **preparing a PEIR for implementation of the CRSMP**, and that as Lead Agency, is soliciting input regarding the scope and content of the environmental information to be included in the PEIR. Anchor QEA will assist in facilitating the scoping meeting and addressing public comments received during scoping.

Our project team will provide support to the Harbor District for the requirements of PRC Section 21080.3.1 (commonly known as AB 52). We will prepare text for a letter from the Harbor District **initiating consultation with Humboldt Bay area tribes** and the Native American Heritage Commission. Although CEQA requires initiation of consultation no later than 14 days prior to an agency decision, our experience indicates that this step is best completed earlier in the process. **Early consultation allows for continuity with tribal staff** through the PEIR process and increases opportunities for cooperation.



Programmatic Environmental Documentation for Sediment Management Projects

Anchor QEA managed the development of the joint Programmatic EIR/EIS for the Port of Stockton and USACE San Francisco District for the San Francisco Bay to Stockton Navigation Improvement Study. The study involved navigational deepening and dredged material beneficial reuse and placement within the Stockton Deep Water Ship Channel. Anchor QEA conducted water quality modeling, including salinity intrusion and sea level rise forecasting, for the dredging program alternatives in combination with a suite of upland and in-water dredged material placement scenarios.

Upon completion of public scoping, the Anchor QEA team will prepare the administrative draft of the PEIR, including programmatic impact analyses for the following resource topics:

- Land use/planning
- Aesthetics
- Transportation/traffic
- Agriculture and forestry
- Biological resources
- Cultural resources
- Tribal cultural resources
- Geology/soils
- Noise
- Population/housing
- Public services
- Recreation
- Air quality
- Greenhouse gases
- Mineral resources
- Utilities and service systems

The PEIR will document existing conditions, analyze potential environmental impacts, identify applicable policies and programs outlined in the CRSMP that serve as mitigation, and identify additional mitigation measures to reduce potentially significant effects of the proposed implementation of the CRSMP. The PEIR will **integrate the results of the two public scoping meetings** and **represent the goals and objectives of the Harbor District** to facilitate improved regional sediment management. Specifically, the PEIR will include discussions of the following:

- Program background
- Program purpose and need
- Program objectives
- Proposed program and alternatives, including a No Project Alternative
- Applicable laws and regulations
- Existing conditions
- Level of impact (e.g., duration, intensity, and type)
- Cumulative impacts
- Applicable mitigation measures, as appropriate

Our team has reviewed the CRSMP and available technical reference documents in detail and will **rely to the extent possible on existing information** rather than preparing new technical studies. This approach will **minimize costs**; however, there may be a need to either augment existing reports or to prepare new reports based on public input received during the public scoping meeting or in response to comments received during the public notice period. We have compiled a **team of experts with local experience and expertise** to either augment or develop supporting technical reports to develop and substantiate conclusions in the PEIR.

Following the review of the administrative draft PEIR by the Harbor District, CSMW, and California State Coastal Conservancy, we will revise the document and prepare a revised draft PEIR, which will be provided to the Harbor District for review, after which we will prepare the public draft PEIR. Our team will then facilitate distribution of the public draft PEIR and other required



Sediment Management Plan Development

Anchor QEA is currently working with the City of Newport Beach to develop a long-term sediment management plan for maintaining and expanding its navigational channels within Newport Bay. Included in this plan are updates to the City of Newport Beach's Regional General Permit and eelgrass mitigation plan, a strategy for deepening the federal navigational channels, and pilot studies to develop innovative disposal opportunities to make dredging and disposal more cost effective for residents.

forms, including draft and final versions of the Notice of Completion (NOC), to the State Clearinghouse for circulation to the appropriate state and local agencies on the Harbor District’s behalf. Our team will prepare for and host up to two public meetings during the public comment period. We understand the **public’s interest in the project**—both positive and negative—and will act as a mediator to host the meetings and prepare draft meeting materials to respond to any preliminary public comments.

Once the 45-day public comment period closes, the Anchor QEA team will work with the Harbor District to address any comments received on the PEIR. The final PEIR will respond to comments on the draft PEIR as well as include a Mitigation Monitoring and Reporting Program (MMRP) and a summary of any changes made to the document from the draft PEIR. Once the Harbor District certifies the final PEIR, we will prepare a draft and final version of the Notice of Determination (NOD) to file with the County Clerk and State Clearinghouse.

Deliverables

- Draft and final versions of the NOP
- Draft and final notes from public scoping meeting
- Administrative draft, draft, and final versions of the PEIR
- Draft and final versions of the NOC
- Draft and final notes from up to two public meetings
- Administrative draft, draft, and final versions of the PEIR with responses to comments
- Draft and final versions of the MMRP
- Draft and final versions of the NOD

Task 3: Final Meeting

This task includes preparing for and holding a final meeting with entities conducting dredging in Humboldt Bay and interested stakeholders. The final meeting will be held at a time soon after the PEIR is certified. We will coordinate with the Harbor District to **identify appropriate entities to invite** to the meeting and will notify the invitees with details of when and where the meeting will occur well in advance of the date. During the meeting, our team will present a summary of the final project description and environmental analysis prepared as part of Task 2. Key elements will be highlighted and discussed during the presentation. Throughout and after the presentation, our team will **facilitate discussion and work with the group to identify next steps for implementation**.

Deliverables

- Notes from the final meeting, including a discussion of next steps for implementation

Estimated Time by Task and Team Member

Table 1 presents the estimated number of hours that each team member is expected to devote to each task noted in the RFQ and an overall estimate of the percentage of time each team member will devote to the project based on their role. Our project manager and team members listed below will prioritize work on this project and are expected to have times of intense work periods followed by times of less intense work periods as the team goes through the CEQA process. We will also be available on short-notice for unexpected tasks or meetings that come up during the project.

TABLE 1. ESTIMATED HOURS FOR EACH TASK AND EACH TEAM MEMBER

Team Member	Estimated Hours			Estimated % of Time Devoted to the Project
	Task 1	Task 2	Task 3	
Elizabeth Appy	80	120	40	45%
Joshua Burnam	60	40	20	20%
Katie Chamberlin	60	140	40	40%
Jaclyn Gnusti	40	8	0	<5%
Nicolas Duffort	80	240	0	50%
Lynn Turner	8	220	0	40%
Lena DeSantis	12	188	0	35%
Geoff Hornek	0	80	0	15%
Barbara Bundy	12	80	8	20%
Jill Oliver	8	0	0	<5%
John Fox	32	60	8	20%
Jordan Theyel (Admin)	20	120	20	25%
Sharon Kramer	16	72	12	20%
Christine Hamilton	16	180	0	35%
Dimitra Zalarvis-Chase	12	180	16	35%

Assumptions

In developing the projection of hours for each team member by task, as noted above, as well as the tentative schedule previously presented, our team assumed the following:

- Notice to Proceed will be issued by October 15, 2017.
- Analyses necessary to develop the PEIR will be limited to high-level qualitative analyses for air quality, greenhouse gas emissions, noise, and traffic. Existing information and studies can be used for all other sections of the PEIR. Our team includes technical specialists that can conduct additional analytical modeling (e.g., hydrodynamic and sediment transport, water quality, air quality, greenhouse gas emissions, and noise) or that can collect additional information in the field; however, we propose to use existing modeling and survey results to the extent possible to prepare the PEIR. If additional quantitative analysis, modeling, or field surveys are required, additional hours would need to be added to Task 2.
- Task 1 will take approximately 3 months to complete, Task 2 will take approximately 10 months to complete, and Task 3 will take approximately 1 month to complete. However, these timeframes may need to be altered based on unknown conditions, comments received during the scoping process and/or Harbor District requirements.

TEAM REFERENCES

Reference	Contact Information	Project
Jason Cashman, Esq. Environmental and Regulatory Affairs Manager Port of Stockton	jcashman@stocktonport.com (209) 946-0246	Port of Stockton On-call Environmental Services and San Francisco Bay to Stockton Navigation Improvement Study
Brian Aviles Chief of Planning Golden Gate National Recreation Area	brian_aviles@nps.gov (415) 561-4942	Alcatraz Ferry Embarkation EIS and Initial Study/Mitigation Negative Declaration
Tim Tucker City Engineer City of Martinez	ttucker@cityofmartinez.org (925) 372-3500	Marina Maintenance Dredging and Upland Placement Site
Jill Demers Executive Director Humboldt County, Recreation and Conservation District ¹	jillhcrcd@gmail.com (707) 296-3992	Permitting for a restoration project
Scott Washington Environmental Compliance Manager PG&E Humboldt Bay Generating Station ²	S2WH@pge.com (707) 273-7119	Humboldt Bay Generating Station

Notes:

1 Provided by HT Harvy

2 Provided by DZC

CONFLICT OF INTEREST

We are not aware of any potential conflicts of interest that our team may have in carrying out the tasks described in the RFQ.

PROJECT EXPERIENCE

Our team has project experience directly related to the tasks described in the RFQ and this proposal. Specifically, we have completed projects in California, the Pacific Northwest, and the Gulf Coast that address all aspects of sediment management, including dredging, dredge material placement, beneficial use of dredged material for restoration activities, programmatic framework development, and permitting and planning activities. Three example projects that highlight our experience are provided below.

Los Angeles Regional Dredged Material Management Plans and PEIS

USACE Los Angeles District



Anchor QEA led the development of two key Long-term Management Plans for clean and contaminated dredged sediments in Southern California. These two documents have formed the basis for how sediments are evaluated by both the regulatory agencies and ports and harbors throughout Southern California.

The Los Angeles District DMMP is a 20-year plan that focuses on clean and contaminated sediments originating in federal channels from San Diego north to Morro Bay. The DMMP also includes the development of a PEIS to evaluate potential impacts associated with the recommended reuse and disposal alternatives. The CSTF Long-term Management Strategy is also a 20-year plan, but focused primarily on management alternatives for impacted sediments.

Both documents include management frameworks, summarized as decision trees for how to conduct the evaluations, and extensive research and development in the form of field pilot studies. The decision trees were created to assist project proponents in developing suitable ranges of alternatives for project-specific evaluations, as was a comprehensive list of best management practices to aid in minimizing potential dredging-related impacts. A focal point of each framework was to develop regional beneficial reuse alternatives for both clean and contaminated dredged material, including the development of treatment technologies for remediating contaminated sediments to produce reusable products.

Applicable Experience

Regional sediment management

Beneficial reuse alternatives

PEIS

Environmental analysis

Stakeholder coordination and input

Key Staff and Responsibilities

Steve Cappellino, Principal-in-Charge

Joshua Burnam, Planner

Crescent City Harbor Dredged Material Management Plan and Environmental Assessment

USACE San Francisco District



Anchor QEA prepared an update to the Crescent City Harbor DMMP and Environmental Assessment (EA) for the USACE San Francisco District. The purpose of the DMMP is to outline a viable 20-year plan for dredging and dredged material disposal conducted within the federal navigation channels located in Crescent City Harbor. As part of this effort, Anchor QEA is authoring most of the DMMP, completing all engineering analyses associated with forecasting future dredging volumes and disposal needs, coordinating closely with USACE and the Crescent City Harbor District on project details, participating in public outreach and interagency meetings with the USACE in Crescent City, and attending all project team meetings.

We also led development of the EA, including technical impact evaluations for air quality, greenhouse gas emissions, water quality, biological resources, cultural resources, hazardous materials, land use, transportation, noise, recreation, and socioeconomics.

Applicable Experience

- Sediment management
- Beneficial reuse
- Environmental assessment
- Permitting and planning
- Stakeholder coordination and input

Key Staff and Responsibilities

- Josh Burnam, Principal-in-Charge
- Katie Chamberlin, Project Manager
- Elizabeth Appy, Technical Support
- Nicolas Duffort, Planner
- Barbara Bundy, Archeologist
- Lena DeSantis, Planner

On-call Environmental Services

Port of Stockton



Anchor QEA has provided on-call support to the Port of Stockton (Port) since 2013. This effort includes regulatory permitting, CEQA compliance, biological studies, technical studies, engineering design, and agency negotiations related to mitigation for wetland and sensitive species impacts. We led CEQA reviews, associated technical analyses, and the regulatory permitting processes for the development of new upland and in-water dredged material placement sites for the Port and USACE federal channel maintenance dredging efforts and dock maintenance dredging projects, as well as numerous other types of Port and Port tenant activities. We have also assisted the Port with forecasting dredging volumes at docks and within the federal Stockton Deep Water Ship Channel, developing plans and specifications for dredging projects, conducting sediment sampling and analysis, and planning for dredged material placement at existing sites.

Anchor QEA has performed cultural and archeological resources and biological studies (e.g., wetland delineations, habitat surveys, special status species surveys) as required for several Port projects. We conducted a biological evaluation of the Rough and Ready Island dredged material placement site on the Port's West Complex and conducted an island-wide wetland delineation for developing the Rough and Ready Island Jurisdictional Delineation Report.

Lastly, Anchor QEA represents the Port in its role as local sponsor for the proposed San Francisco Bay to Stockton Navigation Improvement Study, led by USACE. Specific to this project, we led research and coordination efforts associated with using dredged material to restore emergent marsh habitat at subsided Delta islands, reducing project impacts associated with salinity intrusion and improving economic justification by restoring valuable habitat.

Applicable Experience

- Sediment management
- Beneficial reuse
- CEQA compliance and permitting
- Natural resource management
- Cultural resources
- GIS mapping

Key Staff and Responsibilities

- Joshua Burnam, Principal-in-Charge
- Katie Chamberlin, Project Manager
- Nicolas Duffort, Planner
- Barbara Bundy, Archaeologist
- Lena DeSantis, Planner



Appendix A: Resumes

Elizabeth Appy

Managing Scientist

Elizabeth Appy has 17 years of experience as a scientist with a strong emphasis in environmental assessment and monitoring for sediment management projects, including sediment remediation and maintenance dredging projects and programs; permitting, planning, and Endangered Species Act compliance; aquatic habitat assessment; and restoration planning. Ms. Appy brings a dynamic and effective leadership style to the project team with her multidisciplinary natural resource background and proactive approach. She has managed and implemented sediment and water quality field sampling and monitoring activities, conducted biological field studies and analyses, prepared biological assessments, and managed permitting and environmental compliance projects with a sediment management component in Oregon, Washington, and California.

Education

M.S., Marine Resource Management, Oregon State University, 2001

B.A., Biology, Colby College, 1994

Licenses/Certifications

Washington Department of Fish and Wildlife Certified Forage Fish Biologist

Project Experience

Crescent City Harbor DMMP and EA

*USACE San Francisco District
San Francisco, California*

Ms. Appy reviewed draft versions of the Dredged Material Management Plan (DMMP) and Environmental Assessment (EA) for Crescent City Harbor and participated in public outreach meetings with the U.S. Army Corps of Engineers (USACE) in Crescent City. The goal of the DMMP was to outline a viable 20-year plan for dredging and dredged material disposal for navigation dredging.

Portland Harbor Site-wide Biological Assessment

*Lower Willamette Group
Portland, Oregon*

Ms. Appy managed a multidisciplinary effort to develop a programmatic Biological Assessment (BA) that covers a wide range of activities that could be implemented in the future. The BA addresses listed salmonid species, green sturgeon, eulachon, and Steller sea lions. The proposed actions include dredging and disposal of dredged material, placement of sand and gravel material, removal and installation of piles, and off-channel and shallow water habitat restoration activities. Ms. Appy was responsible for developing the BA and associated analyses through extensive internal and external team coordination and collaboration.

San Diego Shipyard Sediment Site Remediation

*NASSCO
San Diego, California*

Ms. Appy managed the environmental compliance component of the San Diego Shipyard Sediment Site remediation project. Her role was to compile, organize, and track more than 400 permit conditions that applied to all phases of construction (i.e., pre-construction, during construction, and post-construction) and to manage compliance field teams. Key components of the environmental compliance program included avian, eelgrass, water quality, and sediment quality monitoring activities.

Project Experience

Trinity River Restoration Program Review of Phase I Actions

*Trinity River Restoration Program
Weaverville, California*

Ms. Appy was part of a team of biologists and geomorphologists supporting a review conducted by the Trinity River Restoration Program's Scientific Advisory Board. The review evaluated benefits to juvenile and adult salmonid habitat from channel and floodplain rehabilitation actions, increased amounts of flow to restore fluvial processes and reduced fine sediment accumulations, and coarse sediment augmentation to create spawning and rearing habitat. She was responsible for compiling data and comparing the amount and quality of juvenile salmonid habitat created through mechanical rehabilitation actions at 12 sites and for summarizing the progress made by the program relative to the program's performance measures, such as spawner escapement and juvenile abundance.

Sacramento River Deep Water Ship Channel SEIS/SEIR

*USACE San Francisco District
Sacramento, California*

Ms. Appy was a member of the project team responsible for preparing a Supplemental Environmental Impact Statement/Report (SEIS/SEIR) for compliance with National Environmental Policy Act and California Environmental Quality Act regulations for the USACE San Francisco District for a channel deepening and widening project. She was responsible for preparing the impact assessment sections for biological and physical resources for the proposed project and project alternatives.

La Push and Grays Harbor Sediment Characterization

*USACE Seattle District
La Push and Grays Harbor,
Washington*

Ms. Appy was the field coordinator for these two sediment characterization projects along the Pacific coast of Washington. USACE conducts routine maintenance dredging activities at these two locations to maintain the authorized navigation depth. Periodically, the sediment is required to be evaluated to ensure compliance with the Dredged Material Management Program and Washington State Department of Ecology Sediment Management Standards guidelines for disposal options. Ms. Appy was responsible for developing the sampling and analysis plan for the proposed field work; coordinating the sampling event, including sediment collection and processing; evaluating the sediment chemistry results; and preparing the sediment characterization report for each project.

Jorgensen Forge Facility Early Action

*EMJ
Seattle, Washington*

Ms. Appy led environmental compliance for this sediment cleanup project on the Lower Duwamish Waterway. The cleanup consisted of dredging, backfilling to grade, and shoreline stabilization activities. Her responsibilities included leading the development of the BA for formal Endangered Species Act consultation and the Section 404(b)(1) Evaluation and helping with the development of the water quality monitoring program. Ms. Appy provided environmental compliance support during the design phase and was the environmental compliance lead during the construction phase.

Katie Chamberlin

Senior Managing Environmental Planner

Katie Chamberlin has 13 years of experience specializing in federal, state, and local environmental permitting and regulation; public and stakeholder involvement; and federal and state environmental documentation related to waterfront development, sediment management, and transportation. She has managed numerous complex and high-profile Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs) in the San Francisco Bay-Delta region. Ms. Chamberlin also leads planning and permitting efforts related to waterfront development, restoration, and maintenance projects for cities, counties, ports, and private industries in California.

Education

M.A., Marine Affairs, University of Washington, 2004

B.A., International Studies, University of Washington, 2002

Project Experience

Crescent City Harbor DMMP

*USACE San Francisco District
Crescent City, California*

Ms. Chamberlin led the technical aspects of this Dredged Material Management Plan (DMMP) for the Crescent City Harbor District. The effort involved public and agency scoping, developing dredged material management alternatives (including beneficial reuse and ocean disposal options), assessing the current maintenance dredging needs of the harbor, and evaluating the feasibility of the dredged material management alternatives. In 2016, Ms. Chamberlin also co-managed an Environmental Assessment to evaluate the impacts of the potential near-term alternatives identified in the DMMP and prepared permit applications for the program.

San Francisco Bay Long-term Management Strategy Facilitation

*USACE San Francisco District
San Francisco, California*

For more than 5 years, Ms. Chamberlin facilitated the San Francisco Bay Long-term Management Strategy (LTMS) program, which comprises a group of regulatory and resource agencies, including the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), San Francisco Bay Regional Water Quality Control Board (RWQCB), San Francisco Bay Conservation and Development Commission (BCDC), National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (USFWS), that review dredging projects in the Bay. In this role, Ms. Chamberlin led meetings, coordinated symposia, and facilitated the LTMS program's 12-year review, a public process involving numerous stakeholder meetings, coordination, and development of a final report assessing the program's performance.

Port of Stockton On-call Services

*Port of Stockton
Stockton, California*

Since 2013, Ms. Chamberlin has been the Anchor QEA team's project manager for this on-call contract. She has overseen the preparation and successful completion of more than ten CEQA documents, including EIRs and IS/MNDs for both internal Port of Stockton projects as well as port tenant projects. Ms. Chamberlin has also led numerous successful permitting efforts, including for new dredged material placement sites, maintenance dredging, and new tenant facilities.

Project Experience

She regularly oversees Anchor QEA and subconsultant biologists tasked with carrying out wetland delineations, hydrologic studies, and sensitive species surveys for a variety of Port of Stockton projects. She works closely with Port of Stockton environmental staff on broad-based environmental policy strategies and approaches.

Martinez Marina Renovation and Maintenance Dredging

*City of Martinez
Martinez, California*

Ms. Chamberlin led the environmental permitting process for replacement of a breakwater wall, maintenance dredging, and upland placement of dredged material at the Martinez Marina. She worked with the Dredged Material Management Office to obtain permits from USACE, RWQCB, and BCDC. She completed a California Endangered Species Act (ESA) consultation for longfin and delta smelt, a formal ESA consultation for salt marsh harvest mouse with the USFWS, and an informal ESA consultation for salmonids with the NMFS.

Ms. Chamberlin also negotiated and developed mitigation for impacts on salt marsh harvest mouse habitat and is currently overseeing monitoring efforts at the project's mitigation site.

Sleepy Hollow Steelhead Rearing Facility Upgrades

*Monterey Peninsula Water
Management District
Monterey, California*

Ms. Chamberlin is leading the regulatory permitting and CEQA documentation efforts for a project involving upgrades to the Sleepy Hollow steelhead rearing facility on the Carmel River. The project, which is funded by the State Coastal Conservancy, involves installation of a new intake structure to convey water to the rearing facility as well as a water recirculation system so that water diversions from the Carmel River are reduced and the facility can operate more often. The CEQA process was completed in November 2016 and permitting for the improvements is currently underway.

Alcatraz Ferry Embarkation Environmental Impact Statement

*National Park Service
San Francisco, California*

Ms. Chamberlin led the NEPA review for the National Park Service's (NPS') effort to evaluate and identify a new embarkation site for principal ferry service between the northern San Francisco waterfront and Alcatraz Island. The final EIS, which identified the preferred alternative at the Port of San Francisco's Pier 31½, was released in January 2017. Ms. Chamberlin is currently leading the CEQA review for the Port of San Francisco's issuance of a 50-year lease to NPS for construction and operation of the Alcatraz ferry embarkation site at Pier 31½, which consists of preparing an Initial Study/Mitigated Negative Declaration (IS/MND). Anchor QEA is also overseeing transportation and air quality analyses required to support the CEQA review, as well as supporting the client group with obtaining regulatory permits and approvals.

Contra Costa County Public Works Department Environmental On-call

*Contra Costa County Public Works
Department
Martinez, California*

Since 2014, Ms. Chamberlin has managed this on-call contract with the County. She has managed preparation of numerous CEQA documents, including IS/MNDs and Categorical Exemptions. She has also overseen the completion of field investigations and technical studies (biological resource, cultural resource, air quality, noise, and traffic) for several Contra Costa County projects.

Joshua Burnam, MPH, D.Env.

Principal Environmental Planner

Dr. Joshua Burnam is a principal environmental planner with 19 years of environmental planning and permitting experience, including design and construction work. Dr. Burnam is an expert in National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Clean Water Act (CWA), Rivers and Harbors Act, and Essential Fish Habitat and Endangered Species Act (EFH/ESA) regulations. He specializes in the application of NEPA and other environmental regulations to infrastructure projects such as industrial development, port development, transportation projects, and dredging.

Prior to joining Anchor QEA, Dr. Burnam was a senior regulatory project manager and regional subject matter expert for dredging, port development, and energy infrastructure for the USACE Regulatory Program. He was the Los Angeles District regulatory dredging coordinator and Chairman of the Dredging Operations Subcommittee of the Los Angeles Contaminated Sediments Task Force (CSTF). Dr. Burnam was in charge of USACE's role as lead federal agency for numerous Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) documents addressing complex actions at major ports in Southern California.

Education

D.Env., Environmental Science and Engineering, University of California, Los Angeles, 2001

MPH, Environmental Policy and Toxicology, Tulane University, 1997

B.A., Geography/Environmental Studies, University of California, Los Angeles, 1996

Project Experience

Contaminated Sediments Task Force Long-term Strategy

*Regional CSTF Dredging and Disposal Operations Subcommittee
Los Angeles, California*

Dr. Burnam was the USACE regulatory liaison and chairman for the Regional CSTF Dredging and Disposal Operations Subcommittee in Los Angeles. In this capacity, Dr. Burnam participated in preparation of a long-term management strategy for managing contaminated sediments in the Los Angeles Region, development of regional permitting initiatives, and development of a consolidated permit application for multiagency use. The Long-term Strategy includes dredged material suitability criteria, dredge monitoring requirements, disposal options, and streamlined regulatory approach. The framework was developed to be Section 404(b)(1) compliant and was included in a Draft EIS prepared for USACE Los Angeles District.

Crescent City Harbor DMMP

*USACE San Francisco District
Crescent City, California*

Dr. Burnam managed Anchor QEA's efforts during preparation of a Dredged Material Management Plan (DMMP) for the Crescent City Harbor District. The effort involved public and agency scoping, developing dredged material management alternatives (including beneficial reuse and ocean disposal options), assessing the current maintenance dredging needs of the harbor, and evaluating the feasibility of the dredged material management alternatives.

Project Experience

Port of Stockton On-call Services

*Port of Stockton
Stockton, California*

Dr. Burnam is the principal-in-charge for the Anchor QEA team providing regulatory and biological support for projects located on the Port of Stockton's property. Anchor QEA has completed all state and federal permitting documents as well as an EIR Addendum for the Port of Stockton's West Complex rail line extension project; prepared the Section 404(b)(1) Alternatives Analysis and addressed regulatory agency comments for the Docks 16 to 20 maintenance dredging project; conducted a biological evaluation of the Rough and Ready dredged material placement site and addressed regulatory agency comments regarding the Port of Stockton's proposed use of the site; and conducted a delineation of waters of the United States and State of California on Rough and Ready Island and developed a Jurisdictional Delineation Report summarizing the findings. Anchor QEA has also completed CEQA documentation for rail line and road infrastructure projects. Anchor QEA prepared NEPA compliance documents for the San Joaquin International Gateway project.

DMMP Pilot Studies and Marina del Rey Contaminated Sediment Maintenance Dredging

*USACE Los Angeles District
Marina del Rey, California*

Dr. Burnam assisted with the preparation of the Environmental Assessment (EA) and associated studies to identify and select suitable dredged material disposal alternatives for contaminated sediments located within the entrance channel to Marina del Rey. The EA was completed as part of Anchor QEA's efforts for the Los Angeles Region Dredged Material Maintenance Program Pilot Program for USACE Los Angeles District. The program involved conducting four simultaneous projects for the CSTF that were aimed at evaluating treatment options for contaminated sediments in the Los Angeles Basin area. Studies included an aquatic capping pilot study, cement stabilization bench-scale and field pilot study, sediment washing bench-scale study, and sediment blending study. These projects were conducted specifically for use in preparing the CSTF Long-term Strategy. The four treatment options were evaluated for contaminant containment, cost-effectiveness, ease of implementation, and environmental impacts to be used in the preparation of a DMMP for the Los Angeles Region. A full-scale sand-separation study was completed at Marina del Rey.

Lena DeSantis

Managing Planner

Lena DeSantis is a managing planner with more than 15 years of experience in applied environmental science and policy, specifically focused on aquatic development projects. She is well versed in the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Clean Water Act (CWA) permitting as well as federal and California state air quality laws and regulations. Ms. DeSantis is actively involved in preparing and reviewing numerous CEQA/NEPA analyses, including documents for the Port of Los Angeles, Port of Stockton, Department of Toxic Substances Control (DTSC), Contra Costa County, and the National Park Service (NPS). She has worked extensively with the public and other regulatory agencies, including the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), National Marine Fisheries Service (NMFS), California Air Resources Board (ARB), and numerous air districts.

Prior to joining Anchor QEA, Ms. DeSantis worked at the Port of Los Angeles where she led the group responsible for environmental project reviews and permitting under CEQA and NEPA. She directed the development of the Port of Los Angeles' Health Risk Assessment and greenhouse gas (GHG) protocols. Ms. DeSantis was awarded the Career Service Award—the highest civilian award in the City of Los Angeles—for her role in managing the TraPac Terminal Development Environmental Impact Assessment/Environmental Impact Report (EIS/EIR). She has coordinated and led numerous public outreach initiatives to educate and gain consensus on a wide array of development planning and sustainability projects.

Education

*M.S., Environmental Health Science,
University of California, Los Angeles
2002*

*B.A., Biology, Wesleyan University,
1998*

*Marine Resource Management,
School for Field Studies, 1996*

*Port Management Program,
American Association of Port
Authorities, 2007*

Project Experience

Alcatraz Ferry Embarkation Environmental Impact Statement

*National Park Service
San Francisco, California*

Ms. DeSantis is providing NEPA and CEQA analyses to support NPS' evaluation of a new embarkation site for principal ferry service between the northern San Francisco waterfront and Alcatraz Island and for the Port of San Francisco's lease to the NPS to operate the embarkation facility. Ms. DeSantis managed the development of several technical sections of the EIS, including air quality and traffic, and is currently managing these sections in the Initial Study/Mitigated Negative Declaration (IS/MND). She was also involved in the EIS' public scoping process and helped prepare the Public Scoping Comment Analysis Report using NPS' Planning, Environment, and Public Comment website.

Project Experience

San Francisco Bay to Stockton Navigation Improvements

*US. Army Corps of Engineers
San Francisco, California*

Ms. DeSantis provided air and climate change support for the CEQA analysis to support and manage preparation of the EIS/EIR for the San Francisco Bay to Stockton Navigation Improvement Study. The study involved phased deepening of the John F. Baldwin and Stockton Deep Water Ship Channels (DWSCs) throughout the San Francisco Bay and Sacramento-San Joaquin Delta and includes coordination with the Bay Area Air Quality Management District and the San Joaquin Air Pollution Control District.

Exide Technologies Facility Closure Plan Environmental Impact Report

*Department of Toxic Substances
Vernon, California*

Ms. DeSantis managed the EIR supporting closure of the Exide Technologies, Inc., facility. As the lead CEQA consultant for the project, Anchor QEA prepared analysis and manages a team of subconsultants for the EIR while working with DTSC and South Coast Air Quality Management District to ensure that the overall project goals were achieved in coordination with the EIR process. The controversial EIR included a full hazardous material assessment, air quality and GHG assessment, and a complex alternatives analysis. Responding to more than 300 individual comments, the Final EIR was successfully certified and approved in December 2016.

Twitchell and Mandeville Island Placement Sites Initial Study/Mitigated Negative Declaration

*Port of Stockton
Stockton, California*

Ms. DeSantis provided air, traffic, and climate change support for the CEQA analysis to support the Port of Stockton's establishment of three new dredged material placement sites along the Stockton DWSC. The new sites are located on Twitchell and Mandeville islands to the north of the port and would be used by USACE during routine maintenance dredging of the Stockton DWSC.

RSL Operating Inc., Wood Grinding Facility Initial Study/Mitigated Negative Declaration

*Port of Stockton
Stockton, California*

Ms. DeSantis provided CEQA support for a new wood grinding facility at the Port of Stockton. The project involved constructing and operating a facility to receive and process wooden railroad ties and urban "green" wood waste. The IS/MND examined the potential effects of handling and storing hazardous waste at the site. Ms. DeSantis managed the traffic, air quality, and climate change sections of the IS/MND.

NEPA and CEQA Program

*Port of Los Angeles
Los Angeles, California*

As the program supervisor, Ms. DeSantis directed the NEPA/CEQA program for the largest container port in the United States with the goal of promoting sustainable development. She oversaw 15 major development projects integrating economic growth with sustainability and environmental issues, including air quality, health risk assessments, lifecycle analyses, transportation, land use and zoning, and socioeconomics. She coordinated federal and state regulatory agency permitting and involvement in the CEQA/NEPA process, including General Conformity Determinations under the Clean Air Act. Projects included the Channel Deepening EIS/SEIR, Berth 97-109 (China Shipping) Terminal Development Project EIS/EIR, Berth 121-131 (TraPac) Terminal Development Project EIS/EIR, and the Pacific LA Marine Terminal EIS/EIR.

Geoff Hornek

Senior Scientist

Geoff Hornek is an environmental scientist with more than 20 years of experience in environmental and occupational air quality and noise analysis. He has prepared many technical reports for a variety of industrial, commercial, transportation, and urban development projects and is well-versed in the federal, state, and local regulatory framework that guides development. He has excellent working relationships with public agency contacts and environmental professionals in urban and transportation planning and government and industry sectors. Much of his most recent work has been on California Environmental Quality Act and National Environmental Policy Act (CEQA/NEPA) studies in the San Francisco Bay Area for a variety of lead agencies.

Mr. Hornek's technical capabilities include measuring ambient air pollutant and noise levels, performing computer-based air dispersion and noise attenuation modeling, conducting air toxic health risk assessments, and designing environmentally superior alternatives to mitigate air pollutant and noise problems and their related health impacts.

Education

*M.S., Applied Science/Engineering,
University of California,
Davis/Livermore, 1980*

B.A., Physics, Queens College, 1974

Project Experience

Oakland Army Base Redevelopment

*City and Port of Oakland
Oakland, California*

Mr. Hornek advised the City and Port of Oakland on updates to the air toxics health risk assessment prepared for the original Environmental Impact Report (EIR) 10 years ago, and he was co-author of the construction air monitoring plan and construction noise control plan that were produced under the requirements of the current EIR.

San Mateo Union High School District New District Office Building

*San Mateo Union High School
District
San Mateo, California*

Mr. Hornek performed the air quality, climate change, and noise analyses addressing CEQA checklist issues for the Initial Study/Mitigated Negative Declaration (IS/MND). Major issues addressed and mitigated were the potential for air toxic health risk and noise impacts from diesel equipment to the adjacent residents.

La Entrada Middle School Master Plan

*Las Lomitas Elementary School
District
Menlo Park, California*

Mr. Hornek performed the air quality, climate change, and noise analyses addressing CEQA checklist issues for the IS/MND. Major issues addressed and mitigated were the potential for air toxic health risk from diesel equipment exhaust and noise impacts from building HVAC equipment and early morning school bus arrivals.

Project Experience

**New Main Library/
Community Learning Center**
*City of Hayward
Hayward, California*

Mr. Hornek performed the air quality, climate change, and noise analyses addressing CEQA checklist issues for the IS/MND. Major issues addressed and mitigated were the potential for air toxic health risk from diesel equipment exhaust to local residents and vibration impacts to the historic post office building next door.

**Central Kitchen, Instructional
Farm and Education Center**
*Oakland Unified School District
Oakland, California*

For the proposed kitchen/farm, Mr. Hornek provided air quality and noise constraints information and the air quality, climate change, and noise analyses for the project CEQA document. He also presented technical findings at public hearings/meetings.

Mission Creek Restoration
*Alameda County Flood Control
District
Fremont, California*

Mr. Hornek performed the air quality, climate change, and noise analyses addressing CEQA checklist issues for the East Bay Regional Parks District's IS/MND. Major issues addressed and mitigated were the potential for air toxic health risk and noise impacts from construction of creek bed improvements and habitat restoration.

**City of Oakland General Plan
Housing Element**
*City of Oakland
Oakland, California*

Mr. Hornek provided senior review of the air quality and noise technical studies for the EIR and was directly responsible for assessment of the potential housing opportunity sites with respect to air toxic sources within the City of Oakland. The Housing Element outlines goals and policies that direct future housing development and identifies the locations where future housing could be developed with the goal of identifying locations for 13,501 new housing units to be built during the planning period.



Sharon H. Kramer, PhD Principal, Fish Ecologist

skramer@harveyecology.com
707.822.4141 x101



H. T. HARVEY & ASSOCIATES
Ecological Consultants

HIGHLIGHTS

- Fish ecology
- Coastal, estuarine, and riverine ecosystems
- Salmonids and tidewater goby
- Endangered Species Act compliance
- Ecological impacts of marine renewable energy projects
- Habitat conservation plans
- FERC licensing processes for renewable energy projects

EDUCATION

PhD, Marine Biology, University of California, San Diego,
Scripps Institution of Oceanography

MS, Zoology, University of Hawai'i, Mānoa

BA, Aquatic Biology, University of California, Santa
Barbara

PERMITS AND LICENSES

U.S. Fish & Wildlife Service 10(a)(1)(A) Permit
Authorized Individual tidewater goby

California/CDFW Scientific Collecting Permit

PROFESSIONAL EXPERIENCE

Principal, H. T. Harvey & Associates, 2007–present

Senior Aquatic Ecologist and Principal, Stillwater Sciences,
2000–07

Regional Science Coordinator, National Marine Fisheries
Service, 1997–2000

Resource Specialist, Metropolitan Water District of Southern
California, 1996

Fish/Wildlife Biologist, U.S. Fish and Wildlife Service,
Pacific HCP, 1994–95

Science Associate, California Sea Grant College Research
Program, 1993–94

Postdoctoral Researcher, Australian Institute of Marine
Science, 1991–93

PUBLICATIONS

Kramer, S. H., et al. 2015. Evaluating the Potential for
Marine and Hydrokinetic Devices to Act as Artificial
Reefs or Fish Aggregating Devices, Based on Analysis
of Surrogates in Tropical, Subtropical, and Temperate
U.S. West Coast and Hawaiian Coastal Waters. OCS
Study BOEM 2015-021. U.S. Department of Energy,
Energy Efficiency and Renewable Energy, Golden,
Colorado.

Complete list of publications available upon request.

PROFESSIONAL PROFILE

Dr. Sharon Kramer is a principal who heads H. T. Harvey & Associates' Arcata, California, office and the company's fish and aquatic ecology team. She has more than 25 years of experience in aquatic ecology and fisheries biology in the Pacific Northwest, California, Australia, and Hawai'i.

Sharon is well-versed in fish and aquatic habitat restoration and monitoring, project permitting, and work related to the federal Endangered Species Act (ESA). She has been planning, coordinating, implementing, and evaluating all aspects of habitat conservation plans since the early 1990s. Sharon has considerable experience with salmonids and their habitats. She is also at the forefront of efforts to assess and mitigate ecological effects associated with marine renewable energy projects.

PROJECT EXAMPLES

Led the aquatic ecology efforts associated with restoration design and planning for 7.7 miles of the Salt River Channel and over 400 acres of tidal salt marsh on Riverside Ranch in Humboldt County, California. The project included **restoring aquatic habitats for listed coho salmon and tidewater goby**.

Assisted with planning, design, and permitting for the Eel River Estuary and Centerville Slough Enhancement Project, focusing on minimizing and mitigating impacts and **restoring estuary habitat for aquatic species, including listed coho salmon, longfin smelt, and tidewater goby**.

Provided **fish ecology support for efforts to develop and permit restoration projects in Elkhorn Slough**, including analysis of flatfish habitat requirements and permitting and design support for tidal wetland restoration.

Principal in charge for development of the Biotic Constraints Assessment for the **Arcata Living Shoreline Project**. Provided support for **permitting challenges and species of concern**.

Contributed to establishing the **marine biological baseline, effects assessment, and monitoring and adaptive management processes** of the FERC pilot license application for PG&E's Humboldt WaveConnect project.

Served as principal investigator for a Department of Energy market acceleration project to **develop an environmental assessment framework for wave and tidal renewable energy projects**.

Developed biological assessments and informed design and permitting efforts relating to listed fish for the **South Bay Salt Pond Restoration Program**; coordinated with the National Marine Fisheries Service to develop fish monitoring plans.



Christine Hamilton, MS

Wildlife Ecology

chamilton@harveyecology.com



H. T. HARVEY & ASSOCIATES

Ecological Consultants

HIGHLIGHTS

- Avian and marine ecology
- Regulatory permitting and compliance
- Environmental impact assessment (NEPA/CEQA)
- Migratory Bird Treaty Act

EDUCATION

MS, Natural Resources, Humboldt State University

BA, Environmental Studies, Warren Wilson College

PROFESSIONAL EXPERIENCE

H. T. Harvey & Associates,
On-call ecologist 2, 2015–present

Ecologist 2, 2008–15

Biological technician, Humboldt State University Foundation, 1999–2004, 2007–10

Fish and wildlife biologist, U.S. Fish and Wildlife Service, 2004–07

Research assistant, Massachusetts Audubon Society, 1998

Research intern, Puffin Project, National Audubon Society, 1997

PUBLICATIONS

Kramer, S. H., et al. 2015. Evaluating the Potential for Marine and Hydrokinetic Devices to Act as Artificial Reefs or Fish Aggregating Devices, Based on Analysis of Surrogates in Tropical, Subtropical, and Temperate U.S. West Coast and Hawaiian Coastal Waters. OCS Study BOEM 2015-021. U.S. Department of Energy, Energy Efficiency and Renewable Energy, Golden, Colorado.

Hamilton, C. D., R. T. Golightly, and J. Y. Takekawa. 2011. Relationships between breeding status, social-congregation attendance, and foraging distance of Xantus's murrelets. *Condor* 113:140–149.

Hamilton, C. D., R. T. Golightly, and J. Y. Takekawa. 2005. Characteristics of diving in radio-marked Xantus's murrelets. *Marine Ornithology* 33:155–159.

Complete list of publications available upon request.

PROFESSIONAL PROFILE

Christine Hamilton is a wildlife ecologist with H. T. Harvey & Associates. She has more than ten years' experience in California working with federal and state environmental permitting, compliance and consultation, including CEQA and NEPA documents, biological and environmental assessments, formal and informal incidental take consultations, habitat conservation plans, safe harbor agreements, monitoring plans, and bird-bat conservation strategies. She also has field, academic, and applied experience in seabird and marine ecology, with a variety of west coast species and habitats, including fish, birds, mammals, reptiles, and amphibians.

Christine has lent her permitting expertise to many projects conducting biological constraints assessments, pre-activity surveys, and biological monitoring for impacts to sensitive species. She has also contributed her expertise to offshore and terrestrial renewable energy projects.

PROJECT EXAMPLES

Assisted with ESA and NEPA compliance (BA, EA, Adaptive Management and Monitoring Plans, and Bird-Bat Conservation Plan) **for licensing and permitting of the Humboldt WaveConnect project**, the marine wave energy project (Pacific Marine Energy Center- South Energy Test Site) in Oregon, and with a **Habitat Conservation Plan for the Bear River Ridge Wind Energy Project** in Humboldt County.

Assisted with biological assessments, California Safe Harbor Agreement, and 2081 permit application for listed species including tidewater goby, coho salmon, longfin smelt, and yellow-billed cuckoo, **for restoration projects in Humboldt County** designed to restore ecological and hydraulic functions to the Salt and Eel river channels and associated tidal salt marshes.

Conducted biological constraints assessments, preactivity surveys, and biological monitoring for impacts on sensitive species and habitats (nesting birds, wildlife, and eelgrass) **for the PG&E Hydrotest and Chevron dock retrofitting projects in Humboldt County.**

Worked with the California State Coastal Conservancy on **endangered species consultations and habitat restoration planning for the Invasive Spartina Project** in Humboldt County.

Contributed to the draft HCP for steelhead and red-legged frog for the Lopez Water Project on Arroyo Grande Creek, San Luis Obispo County, California. The HCP accounts for instream flows and other mitigations, using hydrologic modeling results to document the potential effects of water releases from Lopez Dam.

Assisted in developing a **framework and monitoring protocols for analyzing environmental impacts from marine renewable energy projects on the West Coast and Hawai'i**, using an offshore wind project off Humboldt County as a case study.

Barbara Bundy, Ph.D., RPA

Cultural Resources Specialist

Dr. Barbara Bundy is an archaeologist with more than 20 years of experience. She has prepared cultural resources survey reports, National Register of Historic Places (NRHP) nominations, California Environmental Quality Act and National Environmental Policy Act (CEQA/NEPA) documentation, excavation monographs, and peer-reviewed articles. Her field experience includes reconnaissance, testing, excavation, and construction monitoring, with an emphasis on using GPS and GIS technology to increase accuracy and efficiency of data collection.

Dr. Bundy specializes in managing Section 106 compliance on transportation, habitat restoration, and sediment management projects as well as projects with complex regulatory and technical issues. She has drafted several Memoranda of Agreement and Programmatic Agreements for both standard and design-build projects. Dr. Bundy has extensive experience consulting with state and federal agencies and tribes, including preparing documentation of Traditional Cultural Properties. Dr. Bundy serves as the Principal Investigator for archaeological studies and is the primary author of many cultural resources reports.

Education

Ph.D., Anthropology, University of Oregon, 2005

M.A., Anthropology, University of Arkansas, 1998

B.A., Anthropology, Clark Honors College at the University of Oregon, 1996

Licenses/Certifications

Register of Professional Archaeologists (RPA)

Project Experience

Alcatraz Ferry Embarkation Environmental Impact Statement

*National Park Service
San Francisco, California*

Dr. Bundy is leading the cultural resources effort for this project that seeks to identify and develop a long-term embarkation site for ferry service to Alcatraz Island from the San Francisco waterfront. Her tasks included identification of historic properties; evaluation of impacts under NHPA Section 106, NEPA, and CEQA; and assistance with mitigation development.

Dredged Material Disposal Sites Identification

*Port of Stockton
San Joaquin County, California*

Dr. Bundy is providing cultural resources analysis under CEQA for this waterfront facilities development project at the Port of Stockton. Tasks include background research, analysis of archaeological potential, management of historic structures issues, and documentation.

San Francisco to Stockton Navigation Improvements

*USACE San Francisco District
San Francisco, California*

Dr. Bundy provided NEPA compliance services, including analysis of impacts to environmental justice and marine navigation, transportation, and circulation for this large-scale channel deepening Environmental Impact Statement (EIS).

Sleepy Hollow Steelhead Rearing Facility Upgrades

*Monterey Peninsula Water
Management District
Carmel Valley, California*

Dr. Bundy provided cultural resources analysis, as well as other CEQA services, for this upgrade of a steelhead rearing facility on the Carmel River. In addition to analyzing archaeological and historic potential, tasks included analysis of population, housing, and public services.

Project Experience

Sacramento Deep Water Ship Channel Navigation Improvements

*USACE San Francisco District
Sacramento, California*

Dr. Bundy provided cultural resources assistance to USACE on this NEPA EIS project. Tasks included review of existing documentation and recommendations for integrating Section 106 documentation with NEPA requirements.

Scorpion Pier Replacement, Channel Islands National Park

*National Park Service
Ventura, California*

Dr. Bundy is the cultural resources lead for Anchor QEA's role in managing development of CEQA and NEPA documents and permit applications for the proposed replacement of Scorpion Pier in Channel Islands National Park. Her tasks include assisting with archeological survey and testing field work, preparing an EIS chapter, and preparing Section 106 reporting.

Dredged Material Disposal Sites Identification

*Port of Stockton
San Joaquin County, California*

This project, which evaluated sites in the San Joaquin delta for dredged material disposal, required compliance with CEQA and Section 106 support. Dr. Bundy managed subconsultant field work, prepared CEQA documentation, and coordinated with the U.S. Army Corps of Engineers (USACE).

Port of Stockton Navy Drive Widening

*Port of Stockton
Stockton, California*

This road widening project included federal grant funding and therefore required Section 106 compliance. Dr. Bundy provided cultural resources documentation and tribal consultation assistance in compliance with CEQA and Section 106.

Hemme Station Park

*Contra Costa County
Alamo, California*

The new Hemme Station Park will serve as a way station for travelers on the Iron Horse Trail in Contra Costa County. Dr. Bundy led cultural resources review under CEQA, including managing subconsultant field work.

Marsh Creek Bridge Replacement

*Contra Costa County Public Works
Clayton, California*

Dr. Bundy provided cultural resources analysis in support of CEQA for this bridge replacement project. Tasks included background research, preparation of CEQA documentation, and integration of Assembly Bill 52 tribal consultation requirements.

Avalon Tuna Club Building Renovation

*Tuna Club of Avalon
Santa Catalina Island, California*

This permit application required a CEQA review, and Dr. Bundy provided cultural resources analysis. Tasks included review of literature, evaluation of previous work at the site, and preparation of the CEQA chapter.

Exide Technologies Facility Closure Plan Environmental Impact Report

*Department of Toxic Substances
Vernon, California*

This permit application required a CEQA review, and Dr. Bundy provided cultural resources analysis. Tasks included review of literature, evaluation of previous work at the site, and preparation of the CEQA chapter.

Dimitra Zalarvis-Chase

Registered Professional Archaeologist

Areas of experience

- Project Management
- Section 106/NHPA/CEQA
- USFS Region 5 PA
- GIS; Cartography; Predictive Modeling and Spatial Analysis
- Fuel Reduction and Post-Fire Evaluation & Mitigation
- Historic Logging, Agricultural, and Mining Landscapes
- Participatory Mapping & Community-Based Research
- Construction Monitoring
- Business Development

Years of Experience

8 fulltime, 11 overall

Education

M A/ Environment and Community (Emph. Cultural Resources Management & GIS)/ Humboldt State University/2010
Superior Academic Achievement

BA/ Anthropology (Honors)/ Humboldt State University/2002
Superior Academic Achievement

AA, Humanities (Honors)
AA, Social Studies (Honors)
AA, Transfer Studies (Honors)
College of the Redwoods/1998

Memberships

- Registry of Professional Archaeologist (USA)
- Society for California Archaeology
- Pi Gamma Mu, National Social Science Honor Society

Overview

Dimitra Zalarvis-Chase is Registered Professional Archaeologist (RPA) meeting the Secretary of Interior standards in Archaeology and is qualified as a Principal Investigator for both Prehistoric and Historical Archaeology. She has eleven years of cultural resource management experience throughout California and the southern Great Basin and is the founder and Principal Investigator of DZC Archaeology & Cultural Resource Management (est. 2010), a 100% woman-owned, certified WBE/DBE small business. Ms. Zalarvis-Chase has planned and directed cultural resource investigations for CEQA, Section 106/NHPA, and NEPA compliance in both the private and public sectors. Investigations have included professional level archival research, field surveys, site recordation, construction monitoring, mitigation plans, data recovery testing plans, and curation. Specialized research includes historic agriculture, mining, and logging landscapes, GIS predictive analysis, pre and post-fire management, ceramics, basketry, and TEK. Specialized industry experience includes the energy sector, construction monitoring, fire landscapes (WUI, BAER) and mine cleanup (CERCLA). Ms. Zalarvis-Chase has worked with a variety of agencies and companies including PG&E, CPUC, CEC, FCC, Cal-Trans, BLM, Forest Service, National Parks, and Native American communities as a client liaison, Federal employee, and as a private consultant. She has conducted original socio-cultural & economic research, participatory community mapping, interviews with minority ethnic groups, public archaeology projects, taught site stewardship, and has led interpretive talks for various agencies and organizations.

Registrations & Certifications

- RPA Registered Professional Archaeologist # 989240
- Registered Consultant with the California Historic Resources Information System
- CAL-OSHA Construction/ Hazwoper Safety Certified
- Owner: DZC Consulting (5 years)
- **SBE** - California Certified Small Business #1732908
- **DBE**- CA #41768
- **WBE** - California Public Utilities Commission; Woman-Owned Diversity Supplier VON#10110091
- DUNS # 078366000/Cage Code 70WD6

Thesis: A GIS based predictive model of the prehistoric Wiyot Cultural Area in Northwest Coastal California

RFQ Specific Relevant Project Experience – Humboldt County

Cultural Resource Current Conditions Assessment - Old Arcata Road Improvements Project

Cultural Resource Specialist (DZC Consulting), 20 hours, November 2016

In partnership with SHN and under CEQA and NEPA framework. DZC reviewed archival material including previous archaeological reports, site records, oral histories, photos, and maps; compiled a current conditions assessment; provided guidance on enhancing, protecting, documenting, and interpreting cultural resources, then provided project guidance on environmental compliance relative to cultural resources. This project included consideration of historic creek channels and bayside high water levels.

Cultural Resource Current Conditions and Permit Requirement Assessment and Phase 1 Resource Inventory - Maple Creek to Hoopa 29-Mile Reconductoring Project; Pacific Gas and Electric, Humboldt County, CA

Cultural Resource Specialist (DZC Consulting), 300 hours, October 2017

In partnership with CH2M Hill and under multiple jurisdictional boundaries including private, Forest Service, and BIA lands. Project conducted under CEQ and NEPA framework. DZC conducted an intensive Phase 1 pedestrian survey, reviewed archival material including previous archaeological reports, site records, oral histories, photos, and maps. The deliverables included a Phase 1 Archaeology Inventory Report, and a Risk and Permitting Assessment with regard to the nexus of cultural resources and specific land planning units across multiple jurisdictional boundaries.

Phase I Cultural Resource Inventory Report, Fisherman's Channel Dredging and Beneficial Reuse Pilot Project, January 2016, Humboldt County, California

Cultural Resource Specialist (DZC Consulting), January, 2016

In partnership with CH2M Hill and prepared for both the Humboldt Bay Harbor, Recreation, and Conservation District and USACE; directed under CEQA, NEPA, and subject to the rivers and Harbors Act of 1899. DZC conducted an intensive Phase 1 pedestrian survey of a bayside corridor and wetland to assess the effects of a proposed dredging project on cultural resources within the spoils transportation corridor. Deliverables included a Phase I Cultural Resource Inventory for review under by the HBHRC, the California Coastal Commission, and USACE; the report was used to secure a Coastal Development Permit.

PG&E Cultural Resource Risk Analysis and Monitoring for the Remediation of the HBPP Nuclear Cooling System Intake at Buhne Slough and Discharge Canal on Humboldt Bay, Humboldt Bay Generating Station; Eureka, CA

Cultural Resource Specialist (DZC Consulting), 95 hours, 2016-2018

Provided a risk analysis for project impacts, developed mitigation and monitoring program; provided an Archaeological Resource Protection Plan to secure a Coastal Development Permit. Currently providing monitored for subsurface disturbances and assessing inadvertent finds near Buhne Slough.

Nicolas Duffort

Senior Environmental Planner

Nicolas Duffort is a senior environmental planner with extensive experience assisting with regulatory compliance on waterfront projects in the San Francisco Bay Area and throughout California. Mr. Duffort is frequently responsible for obtaining permits from jurisdictional agencies including the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife, California Coastal Commission, San Francisco Bay Conservation and Development Commission (BCDC), and State Lands Commission. Mr. Duffort additionally provides California Environmental Quality Act and National Environmental Policy Act (CEQA/NEPA) services, with a focus on the resource areas of terrestrial and aquatic biology; water quality and hydrology; soils, geology, and seismicity; land use; agriculture; and hazards and hazardous materials. In conjunction with providing these services, he is frequently responsible for completing Biological Assessments (BAs) and Jurisdictional Wetland Delineations, Land Evaluation Site Assessments, special status species consultations, and mitigation plans to address sensitive resource impacts. Mr. Duffort also provides construction services, including biological monitoring and permit compliance assurance.

Education

*B.A., Environmental Studies,
University of California, Santa Cruz,
2005*

Project Experience

Port of Stockton On-call Services

*Port of Stockton
Stockton, California*

Mr. Duffort has authored numerous planning documents, Initial Study/Mitigated Negative Declarations (IS/MNDs), and permit applications under the Port of Stockton On-call Services contract. Effort has included wetland and habitat delineations for both Rough and Ready Island (more than 800 acres) and the Navy Drive widening project. Mr. Duffort was the primary author for the Navy Drive widening project IS/MND and prepared permit applications. He was closely involved in the entitlement process for use of Twitchell and Mandeville Islands as dredged material disposal sites; he contributed to the project IS/MND and assisted with USFWS consultations. Mr. Duffort has also acted as the primary author for several Port of Stockton tenant CEQA deliverables, including the Nautilus Data Storage Facility IS/MND and the Eco Energy IS/Notice to Proceed.

Sleepy Hollow Steelhead Rearing Facility Upgrades

*Monterey Peninsula Water
Management District
Monterey, California*

Ms. Duffort is the lead author of the regulatory permitting and CEQA documents for a project involving upgrades to the Sleepy Hollow steelhead rearing facility on the Carmel River. The project includes installation of a new intake structure to convey water to the rearing facility as well as a water recirculation system so that water diversions from the Carmel River are reduced and the facility can operate more often.

Project Experience

Alcatraz Ferry Embarkation Environmental Impact Statement

*National Park Service
San Francisco, California*

Mr. Duffort assisted with preparing an Environmental Impact Statement (EIS) to evaluate potential impacts associated with ferry service to Alcatraz Island from several embarkation site alternatives along the San Francisco waterfront. Mr. Duffort prepared resource analysis sections related to public services and utilities, geology and soils, water quality and hydrology, terrestrial and aquatic biology, and hazardous materials. He also completed an analysis of project bioacoustics impacts and is currently leading consultations with the National Marine Fisheries Service and U.S. Fish and Wildlife Service (USFWS) for aquatic species status species and habitat impacts.

Honeywell Bay Point Site Permitting and Mitigation Support

*Honeywell International
Bay Point, California*

Mr. Duffort prepared the permit applications, mitigation plan, and revisions to the BA and wetland delineations required for berm repairs and construction of an improved outfall and retention basin in tidal waters. He is also leading consultations with the California Department of Fish and Wildlife and USFWS for special status species and habitat impacts. The proposed activities are part of a larger Department of Toxic Substances Control-mandated site remediation effort.

Stockton Deepening USACE San Francisco District Stockton, California

Mr. Duffort authored the draft BA for project effects to special status species and habitats from the proposed deepening of the federal navigation channel. He is also the primary author for the joint EIS/Environmental Impact Report for the project, which is under development.

Contra Costa County Public Works Department Environmental On-call Contra Costa County Public Works Department Martinez, California

Mr. Duffort provides services related to CEQA compliance for the Contra Costa County On-call Services contract. Effort has included providing senior review of the Marsh Creek Bridge IS/MND and acting as lead author for the West County Expansion IS/MND (currently under preparation).

Scorpion Pier Replacement Environmental Impact Statement

*National Park Service
Ventura, California*

Mr. Duffort is the primary author of the EIS that evaluates potential impacts associated with installation and operation of a replacement pier facility at Santa Cruz Island. To date, he has prepared resource analysis sections related to terrestrial and aquatic biology; geology, soils, and seismicity; water quality and hydrology; visual resources; and recreation and visitor use. Mr. Duffort additionally prepared the Floodplain Statement of Findings and was responsible for responding to comments on the draft EIS.

Lynn Turner

Environmental Planner

Lynn Turner is an environmental planner with a range of experience in planning and process management. She has more than 13 years of experience with complicated information synthesis and development of environmental documentation, including natural resource management plans, Ecosystem Recovery Plans, and National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and Washington State Environmental Policy Act (SEPA) documentation. She has been extensively involved in the preparation of Environmental Checklists, Baseline Conditions Reports, Environmental Assessments, and large Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs). She coordinates complex processes, working with consultant teams, agencies, and stakeholders. Ms. Turner's problem-solving, communication, and specialized documentation skills bridge regulatory requirements and audience needs, resulting in products that communicate well and meet the needs of regulators and the public.

Education

*B.A., Integrated Social Sciences,
University of Washington, 2017*

Project Experience

Alcatraz Ferry Embarkation Environmental Impact Statement

*National Park Service
San Francisco, California*

Ms. Turner oversaw document quality assurance/quality control (QA/QC) for the National Park Service's (NPS') effort to design and evaluate a new embarkation site for ferry service between the San Francisco waterfront and Alcatraz Island. She designed templates and a style guide to comply with NPS standards and provided QC for compliance and consistency through publication of the draft EIS. Documents included feasibility assessments, conceptual plans, public materials, alternatives analyses, and the draft EIS. For the final EIS, Ms. Turner assisted with the Comment Analysis Report and comments and responses in the NPS database.

Port of Stockton On-call Services

*Port of Stockton
Stockton, California*

Ms. Turner has supported several Port of Stockton projects through an on-call agreement. Recently, she developed award application booklets depicting the Port of Stockton's Antioch Dunes restoration project and its Barn Owl Nest Box Program, which resulted in successful award wins for the Port of Stockton for both environmental enhancement and stakeholder involvement. Previously, she authored sections of a CEQA Initial Study/Mitigated Negative Declaration assessing the environmental effects of developing three new dredged material placement sites for maintenance dredging of the Stockton Deep Water Ship Channel.

Project Experience

On-call Surface Water Planning and Facilitation Services

*Snohomish County
Everett, Washington*

Ms. Turner provides planning and facilitation for Snohomish County under an on-call agreement. She is currently facilitating several reach-scale plans, intended to identify multi-benefit projects for agricultural viability, salmon recovery, and river hydrology. She also recently supported the Snohomish County in a collaborative effort with tribes, municipalities, and nongovernmental organizations (NGOs) to develop an Ecosystem Recovery Plan for two large watersheds. She developed conceptual models, facilitated decision-making, and synthesized information. Previously, she supported development of the Snohomish Basin Protection Plan to identify strategies to prevent degradation of hydrologic processes.

Sacramento Deep Water Ship Channel Navigation Improvements

*U.S. Army Corps of Engineers,
San Francisco District, and
Port of West Sacramento
West Sacramento, California*

Anchor QEA worked with USACE and the Port of West Sacramento on NEPA and CEQA documentation for a major dredging project to improve navigation at the Port of West Sacramento and in the region. Ms. Turner provided technical editing for the Baseline Conditions Report, Draft Supplemental EIS/Subsequent EIR, and Draft Section 404(b)(1) Alternatives Analysis. She also designed presentation boards for public scoping meetings and was responsible for ensuring consistency for the project documents despite numerous authors, sources, and reviewers.

Regional General Permit Implementation Program

*City of Newport Beach
Newport Beach, California*

Under a new Regional General Permit (RGP) 54 from USACE, the City of Newport Beach is authorized to assume primary permitting responsibility for small maintenance dredging projects within a designated area, incorporating a specially designed Eelgrass Protection and Mitigation Plan. With issuance of RGP 54 and permits from California Coastal Commission and the Regional Water Quality Control Board, the City of Newport Beach faced hundreds of permit conditions and high demand for maintenance dredging. Ms. Turner developed a program to manage: 1) the applicant process; 2) tracking of dredge/disposal volumes, monitoring results, and impacts and mitigation; and 3) the City of Newport Beach's agency reporting. The program includes a redesigned dredging website, application materials and reporting templates, process charts, and an integrated tracking system.

Chehalis Basin Strategy Programmatic SEPA EIS

*Washington State Office of
Financial Management
Lewis, Thurston and Grays Harbor
counties, Washington*

The Chehalis Basin Strategy aims to substantially reduce flood damages and restore degraded aquatic species habitat. Ms. Turner worked with a team of consultants led by Anchor QEA and agency representatives to develop a programmatic SEPA EIS to help the Washington State Department of Ecology and other stakeholders evaluate various alternatives. For the draft EIS, she contributed to sections, coordinated graphics for a diverse author group, and was the primary author of the Executive Summary. For the final EIS, she developed the comment database, led the comment analysis and categorization, and developed the Response to Comments document and Executive Summary.

Jill Oliver, GISP

Managing GIS Analyst

Jill Oliver is an environmental sciences manager at Anchor QEA, leading an interdisciplinary team of eight GIS analysts and overseeing the implementation and management of Anchor QEA's Enterprise GIS. Ms. Oliver has more than 17 years of research and consulting experience using GIS in the environmental arena for natural resource data collection, geodatabase management and design, environmental planning, multiyear habitat and baseline monitoring, and multiyear Remedial Investigation/Feasibility Study (RI/FS) projects. She has provided technical expertise for the planning, development, and delivery of complex geodatabases, development and deployment of Server for ArcGIS, development and management Collector for ArcGIS field data collection, and development of advanced spatial analysis tools integrating Python programming.

Education

M.S. (sin thesis), Geology, North Carolina State University

B.S., Geology, University of North Carolina at Charlotte, 1997

B.S., Criminal Justice, University of North Carolina at Charlotte, 1991

Project Experience

Two-dimensional Sedimentation and River Hydraulics GIS Interface (SRH-2D)

*U.S. Bureau of Reclamation
Weaverville, California*

Ms. Oliver led the effort to create a standalone desktop application to allow scientists to better visualize their 2D model outputs. The Trinity River Reclamation Project analyzed a 40-mile segment of the Trinity River to determine priority and implementation sequencing for its Phase 2 channel rehabilitation projects. A comprehensive approach and quantitative tool was developed by the U.S. Bureau of Reclamation and Anchor QEA to analyze this complex river system. The approach combined the output metrics from 2D hydraulic modeling with salmonid habitat data and geomorphic river attributes at various spatial scales and flow discharges. The geo-spatial variables from these data sets were imported into a complex Logic Model framework used to perform quantitative analyses. Using the framework, hydraulic parameters were integrated with biological, ecological, physical, and cadastral elements to evaluate key metrics using statistical techniques. Working side by side with the U.S. Bureau of Reclamation, Anchor QEA developed a standalone GIS application using ArcGIS Engine to support custom visualization and data analysis of the model results. The application includes 2D mapping, Thiessen polygon creation, custom layers with dynamic binning, and report visualization including tables, box plots, and scatter plots. The application was built with the flexibility to support any river rehabilitation program.

Puget Sound Nearshore Ecosystem Restoration *Washington Department of Fish and Wildlife Puget Sound, Washington*

Ms. Oliver led the GIS team to support site designers for 13 Puget Sound restoration sites. These sites were designed to return areas within the Sound to near historical conditions by identifying and removing nearshore stressors. These 10% designs were stored and analyzed using relational GIS geodatabases and quality checked using ArcInfo topology. Designs were converted between CAD and GIS data formats.

Project Experience

Habitat Atlas

*Coastal Bend Bays and Estuary
Program
Corpus Christi, Texas*

Anchor QEA applied its expertise in coastal mapping and GIS analysis to meet the needs of the Coastal Bend Bays and Estuaries Program (CBBEP) in developing a Habitat Atlas of its Program Area. Ms. Oliver developed the Quality Assurance Project Plan, based on guidelines in U.S. Environmental Protection Agency's (USEPA's) Guidance for Geospatial Data Quality Assurance Project Plans, which was approved by the Texas Commission on Environmental Quality and USEPA. Ms. Oliver also provided quality assurance/quality control for the Habitat Atlas, which was designed to provide an environmental map atlas of the 12 counties in South Texas covered by the CBBEP Program Area and extend into Calhoun County to cover areas of the Aransas National Wildlife Refuge.

Superfund Remedial Investigation/Feasibility Study Site

*Confidential client
Confidential location*

Ms. Oliver is the GIS lead for this multimillion-dollar project, managing GIS analysis, GIS task budgets, centralized Enterprise GIS, internet GIS mapping, and GIS document/map production. She collaborates with environmental scientists, engineers, and stakeholders throughout the RI/FS process, which includes data collection, data analysis, and reporting. All spatial data go through her team for efficient and centralized communication GIS. She also deploys GIS web maps and internet mapping tools for the project, supporting both Anchor QEA and the client for more streamlined and efficient communication.

I-405 Corridor Program

*Washington State Department of
Transportation
Bellevue, Washington*

Ms. Oliver served as the GIS manager for the Washington State Department of Transportation (WSDOT) I-405 Corridor Program. She established GIS as a core function for the corridor office; coordinated GIS protocol, consistency, and standards for the project office; and worked with traffic engineers, transportation planners, environmental planners, environmental scientists, design engineers, and CAD technicians to help coordinate and represent project information. She coordinated with subconsultants to ensure that all project data deliverables met WSDOT standards and project scope. Ms. Oliver worked on the Kirkland Nickel Environmental Assessment, Renton to Bellevue Environmental Assessment, and South Renton Environmental Assessment. She co-authored the WSDOT Environmental Document Template Procedures (November 2006), which utilized a "Ready Friendly" style of scientific data presentation.

John Fox

GIS Analyst

John Fox is a GIS analyst with 15 years of experience with GIS modeling and spatial analysis, environmental chemistry, GIS database design/maintenance. He also has extensive experience with GPS equipment and the design of data dictionaries for the streamlining and consistency of field data collection. More recently, Mr. Fox has been working on integrating more web mapping and SDE functions into projects to improve data communication and efficiency.

Mr. Fox works extensively with data collection standards across many platforms including recreational GPS devices, mapping grade GPS, survey grade systems, and tablet devices using ArcGIS Collector application. He develops models and data workflows to streamline and standardize the data processing for a site, which enables quick turnaround of complex geoprocessing tasks in a repeatable and reliable way. He applies rigorous cartographic standards across projects to maintain a consistent presentation of the data.

Education

B.S., Geography, Natural Resource Management emphasis, Western Washington University, 2002

72 hours of Geo-Con Worldwide, Individual Survey Grade GPS Training

Project Experience

San Francisco to Stockton Navigation Improvements

*USACE San Francisco District
San Francisco, California*

Mr. Fox worked with multiple parties providing expertise for the various sections of the Environmental Impact Statement (EIS) to combine all needs into clear data and graphic packages to represent the findings of the team.

Port of Stockton On-call Services

*Port of Stockton
Stockton, California*

Mr. Fox is the lead GIS analyst for the Port of Stockton On-call Services contract. He provides regulatory support for multiple permitting projects, including dredge volume and sampling support, and dredge material placement permitting and site designation. He has also developed contaminate interpolations to define the extent for remedial alternatives.

Buchanan Field Business Park Development

*Contra Costa County
Contra Costa County, California*

Mr. Fox provided mapping support for all aspects of this project, from the initial delineation reports and impact calculations to visualization of the development plan. His work was accomplished through the use of GPS data correction from field activities to integration of the development design from AutoCAD into site maps.

Project Experience

Hudson River Remediation

*General Electric Company
Glens Falls, New York*

Mr. Fox has been the primary GIS professional working on the development of the remedial dredging design, down stream sediment transport, navigational draft, and habitat restoration. He has employed advanced GIS techniques and models to streamline data analysis and provide repeatable results for volume calculations. He also provides GIS technical support and quality assurance/quality control (QA/QC) for GIS deliverables.

Esquimalt Graving Dock

*Public Works and Government
Services Canada
Esquimalt, British Columbia*

Mr. Fox has provided data analysis expertise analyzing chemical residuals based on anticipated post-dredge and post-cap results. He has also worked on analysis related to the potential recontamination scenarios for the site. He has also built a detailed web map for further planning and use by the project team and client.

Grasse River Remediation

*Arconic (Formerly Alcoa)
Massena, New York*

Mr. Fox has provided his expertise in the analysis of chemistry data to assist in the delineation of the contamination and the initial design surface. He has also assisted with the habitat delineations and the development of the habitat restoration plans for the project. Mr. Fox designed and maintained three web mapping applications for use by the design team, client, and the regulatory agency as well as for the use of contractors preparing bid documents.

Jaclyn Gnusti, P.E.

Managing Engineer

Jaclyn Gnusti has more than 18 years of experience as a project manager and engineer, with expertise in the program management of cost-effective and environmentally compliant dredging projects in the San Francisco Bay. Her project management and design skills include the ability to assemble and effectively manage a first-rate team of engineers and subconsultants as well as to coordinate with Dredged Material Management Office (DMMO) and Long-term Management Strategy (LTMS) agencies for sediment characterization and Integrated Alternatives Analysis (IAA) disposal site approvals, regulatory permit acquisition, bid document preparation, cost estimation, and owner support during bidding, award, and construction. Ms. Gnusti has also served as chairperson for the Bay Planning Coalition's Dredging and Beneficial Reuse Committee for more than 2 years.

Education

B.S., Civil and Environmental Engineering, University of California, Berkeley, 1998

Licenses/Certifications

Professional Engineer, State of California, No. C62446 (Civil)

Project Experience

Alameda Point Channel Maintenance Dredging

*City of Alameda
Alameda, California*

Ms. Gnusti has supported the City of Alameda for maintenance dredging of the 32-foot channel and turning basin in 2005, 2008, and 2011 and is currently providing support for a proposed event in 2017; each of these periods of support have included overseeing a sediment characterization task. Additionally, Ms. Gnusti's role of program manager includes coordination with the DMMO for disposal in-Bay at the San Francisco Deep Ocean Disposal Site (SFDODS) and upland; negotiating IAA agreements with the LTMS agencies; managing project design and signing as engineer of record; providing support during bidding; obtaining regulatory permits from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), Bay Conservation and Development Commission (BCDC), and California Department of Fish and Wildlife (CDFW); and managing on-site inspections during dredging. Within the past 2 years, Ms. Gnusti managed a sediment characterization effort to assess more than 500,000 cubic yards of sediment and subsequently obtained a Tier 1 for dredging more than 100,000 cubic yards of shoaled material that has accumulated over 2 years.

Port of Redwood City Maintenance Dredging

*Port of Redwood City
Redwood City, California*

Ms. Gnusti provided maintenance dredging support to the Port of Redwood in 2011 and 2015 for the maintenance dredging of four deepwater berths, including collaboration with the DMMO and subconsultants to optimize affordable disposal alternatives under LTMS guidelines. Each episode included dredging and disposal of approximately 40,000 cubic yards per episode, with disposal and placement sites including in-Bay SF-11, SFDODS, and Montezuma foundation. Additional tasks included project design and signing as engineer of record, providing support during bidding, obtaining

Project Experience

regulatory permits from the USACE, RWQCB, BCDC, and CDFW, and managing on-site inspections during dredging.

**Larkspur Ferry Terminal
Maintenance Dredging**
*Golden Gate Bridge, Highway, and
Transportation Department
Larkspur, California*

Ms. Gnusti managed the planning, permitting, and design for routine maintenance dredging and pile repair at the Larkspur Ferry Terminal. The project included almost 400,000 cubic yards of dredging, in addition to demolition of two existing piles, and design and installation of a new 36-inch pile with donut fender and a new channel marker pile. Ms. Gnusti also managed the efforts of four subconsultants, including analysis and compilation of a pile geotechnical and structural analysis report, hydrographic surveying, and comprehensive sediment quality testing. The project spanned approximately 14 months and underwent planning, design, permitting, and implementation under budget and on schedule.

**Brooklyn Basin South Channel
Maintenance Dredging**
*USACE San Francisco District
Oakland, California*

This project was in response to USACE's request to reevaluate maintenance dredging parameters of the South Channel for safe navigation of the U.S. Coast Guard's new fleet of National Security Cutters as well as reevaluate the need for maintaining the existing turning basin. Two options with varying channel depths were evaluated and consisted of removal and disposal of 229,000 cubic yards and 476,900 cubic yards, to a depth of -30 feet mean lower low water (MLLW) and -35 feet MLLW, respectively.

Ms. Gnusti coordinated with a subconsulting laboratory to provide a Sampling and Analysis Plan, and eventual testing and reporting of 52 individual sediment core samples and 12 composite sample areas to determine suitability of the dredge material for in water and upland. She also coordinated with the USACE hydrographic survey department and a geotechnical subconsultant for subsurface borings and laboratory analysis used to evaluate slope stability and potential impact to adjacent pile systems. Project deliverables included comprehensive sediment testing results, a detailed design documentation report, a full set of project plans and specifications, detailed cost estimates, and a geotechnical analysis report.

**Martinez Marina Maintenance
Dredging and Renovation**
*City of Martinez
Martinez, California*

Ms. Gnusti provided regulatory, design, and construction management support for maintenance dredging of the shallow marina. Dredging was performed hydraulically with disposal at designated upland site. Ms. Gnusti coordinated sediment characterization with a subconsulting laboratory to 19 cores that were composited and tested for both in-Bay and upland placement. Ms. Gnusti also coordinated all agency permits, including USACE, RWQCB, BCDC, and State Lands Commission; prepared the project specifications; and provided construction support services.

Steve Cappellino

Principal Scientist

Steve Cappellino is a principal scientist with more than 25 years of experience managing sediment, water, and biological investigations at ports and harbors throughout the United States. These assignments have ranged from small marina redevelopment projects to harbor-wide remediation efforts that included multidisciplinary teams of scientists, planners, and engineers. In previous positions, Mr. Cappellino managed toxicology laboratories in Washington and Texas. During that time, he worked on developing aquatic testing protocols and field monitoring tools. For the last 17 years, Mr. Cappellino has been dedicated to developing sediment management strategies at both the project and regional level. These include long-term sediment management plans for ports and harbors, and for Southern California as a whole.

Education

B.S., Ecotoxicology, Western Washington University, 1990

Project Experience

DMMP

*USACE Los Angeles District
Los Angeles, California*

Mr. Cappellino led the preparation of a Dredged Material Management Plan (DMMP) for sediments dredged within Los Angeles County. Project tasks included identifying suitable disposal options, conducting a programmatic Environmental Impact Statement (EIS) of the feasible management alternatives, identifying mitigation alternatives, and assessing suitable best management practices (BMPs) for dredging.

Sediment Management Plan

*Port of Long Beach
Long Beach, California*

Mr. Cappellino assisted in the development of a long-term sediment management plan to document the Port of Long Beach's internal process for managing clean and contaminated sediments coverings issues such as site characterization, agency review, internal coordination, dredging BMPs, and available permitting strategies.

Environmental Services On-call

*Port of Los Angeles
San Pedro Bay, California*

Mr. Cappellino is assisting in the management of an on-call contract with the Port of Los Angeles' Environmental Services department. Typical work assignments under this contract include sediment investigations, water quality studies, Total Maximum Daily Load development, and sediment remediation evaluations.

West Basin (IR Site 7) Sediment Remediation

*Port of Long Beach and USACE
Los Angeles District
Long Beach, California*

Mr. Cappellino managed a multi-year sediment remediation project at the former Long Beach Naval Shipyard facility, a former Naval Installation Restoration study site. As such, all work was conducted per Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidelines and included full California Environmental Quality Act (CEQA) compliance. Mr. Cappellino oversaw the development of CEQA documents, led the remedial

Project Experience

design, and led field construction management, where more than 500,000 cubic yards of contaminated sediments were dredged and placed inside a confined disposal facility.

Rhine Channel Contaminated Sediment Cleanup

*City of Newport Beach
Newport Beach, California*

Mr. Cappellino managed a multidisciplinary project for the City of Newport Beach to remediate contaminated sediments from the Rhine Channel in Lower Newport Bay. Anchor QEA conducted various studies, sediment sampling, bathymetry surveys, debris field mapping, and structural engineering surveys of the existing shoreline structures. Anchor QEA also managed all construction activities, compliance monitoring, and public outreach.

Los Angeles Pilot Study Cap Site Monitoring Plan

*U.S. Army Corps of Engineers, Los Angeles District
Los Angeles, California*

Mr. Cappellino led the design and implementation of a long-term sediment cap monitoring plan to test the effectiveness of a confined aquatic disposal (CAD) site constructed for USACE inside the Long Beach Inner Harbor. Elements of the plan included sediment and porewater monitoring, benthic sampling and biological surveys, bathymetry, sediment tracer analysis, and diver video surveys.

DMMP Pilot Studies and Marina del Rey Contaminated Sediment Maintenance Dredging

*USACE Los Angeles District
Marina del Rey, California*

Mr. Cappellino was the principal-in-charge for Anchor QEA's efforts for the Los Angeles Region Dredged Material Maintenance Plan Pilot Program for USACE Los Angeles District. The program involved conducting four simultaneous projects for the CSTF that were aimed at evaluating treatment options for contaminated sediments in the Los Angeles Basin area. Studies included an aquatic capping pilot study, cement stabilization bench-scale and field pilot study, sediment washing bench-scale study, and sediment blending study. These projects were conducted specifically for use in preparing the CSTF Long-term Strategy. The four treatment options were evaluated for contaminant containment, cost-effectiveness, ease of implementation, and environmental impacts to be used in the preparation of a Dredged Material Management Program for the Los Angeles Region. A full-scale sand-separation study was completed at Marina del Rey.

Port of Hueneme Maintenance Dredging and CAD Site Construction

*Oxnard Harbor District
Port Hueneme, California*

Mr. Cappellino led design, permitting, and construction management for this multiuser CAD site for contaminated sediments. The project consisted of three phases: 1) excavating a large cell in the middle of the harbor and placing the clean sand onto an adjacent beach; 2) dredging contaminated sediments from the USACE federal channel, Oxnard Harbor District wharves, and U.S. Navy berths and placing the material into the CAD cell; and 3) constructing a clean cap of sand on top of the contaminated layer to seal the cell and prevent chemical migration. Specific elements included CEQA and National Environmental Policy Act (NEPA) permitting, engineering design, environmental characterization, construction management, field construction monitoring, and long-term monitoring and maintenance.



Statement of Qualifications

Preparation of PEIR for Regional Sediment Management Plan

September 15, 2017

Submitted to:

Humboldt Bay Harbor District
601 Startare Drive
Eureka, CA 95501

Submitted by:

ICF
820 Wiley Court
Arcata, CA 95521



September 15, 2017

Jack Crider, Executive Director
Humboldt Bay Harbor District
601 Startare Drive
Eureka, CA 95501

SUBJECT: Statement of Qualifications for Preparation of Programmatic Environmental Impact Report for Implementation of Coordinated Regional Sediment Management Plan

Dear Mr. Crider:

Please find our attached statement of qualifications for development of a Programmatic Environmental Impact Report (PEIR) for the Eureka Littoral Cell Regional Sediment Management Plan. The PEIR will create an implementation path for management of locally dredged sediments in Humboldt Bay and will increase certainty regarding environmental and mitigation requirements for dredging events.

ICF Jones & Stokes, Inc. (an ICF International company hereafter referred to as ICF) has assembled a team that combines staff with in depth knowledge of Humboldt Bay with experts that have completed similar projects at other locations on the west coast. Our team includes experts in Humboldt Bay salt marsh restoration, sea level rise adaptation, sediment characteristics, environmental regulation and all CEQA resource categories. Very importantly, our team also includes experts in the "nuts and bolts" of dredging logistics in Humboldt Bay.

If selected as the successful bidder, ICF looks forward to negotiating mutually acceptable contract terms and conditions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Adam Wagschal", is written over a faint, light blue circular stamp.

Adam Wagschal
Project Manager

TABLE OF CONTENTS

TEAM MEMBERS.....	1
TENTATIVE SCHEDULE.....	2
APPROACH.....	3
Project Description.....	3
Environmental Analysis and PEIR	3
Coordination with Regulatory Agencies and the Public.....	3
ESTIMATES OF HOURS FOR TEAM MEMBERS	4
REFERENCES.....	4
POTENTIAL CONFLICTS	5
EXAMPLE PROJECTS.....	5
CURRICULUM VITAE	7

TEAM MEMBERS

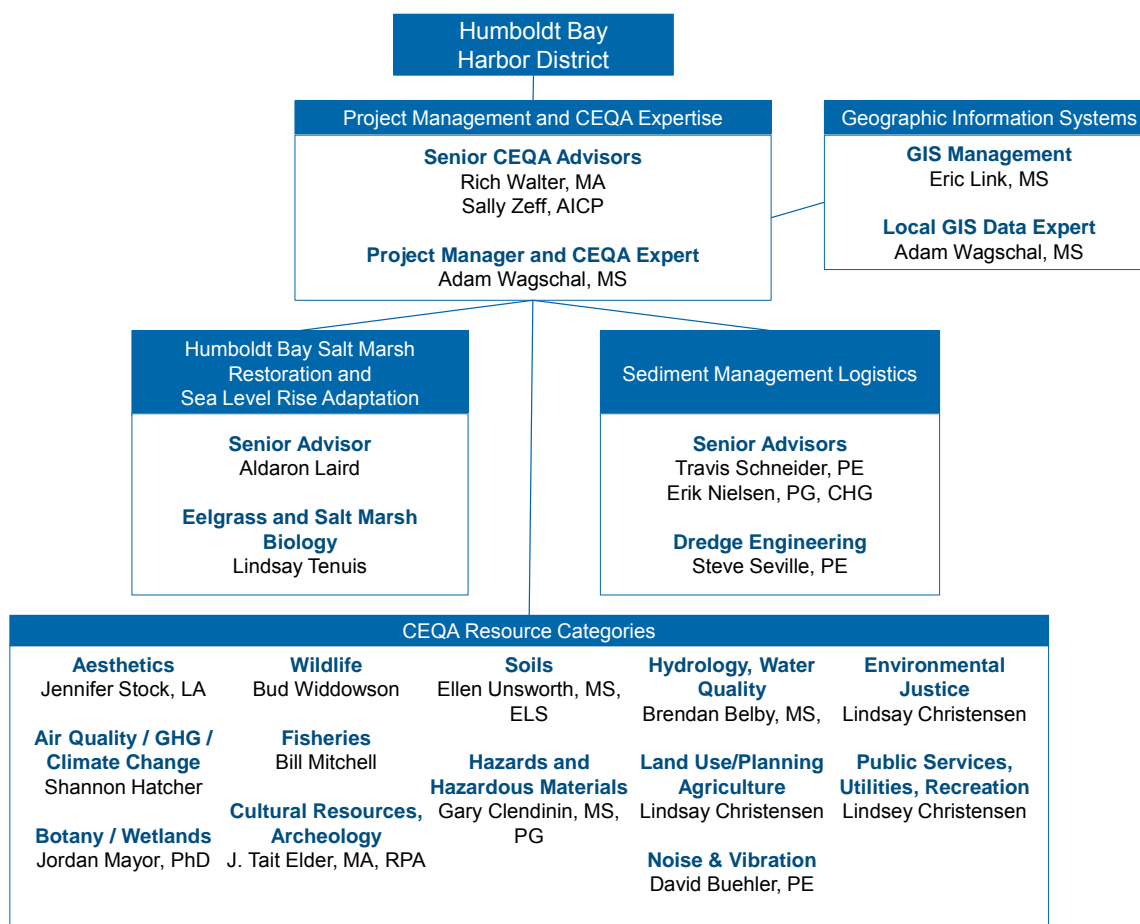
Our team has in depth knowledge regarding Humboldt Bay sediment management and related topics. We also have experience with sediment management in San Francisco Bay, California's central valley and Washington State. We will apply our demonstrated understanding of sediment management solutions towards development of an effective program in Humboldt Bay.

The Humboldt Bay Harbor District's Sediment Management Programmatic Environmental Impact Report (PEIR) will provide an environmental analysis of management alternatives for dredging, transporting and reusing (or disposing of) sediment that accumulates in Humboldt Bay. Primary sediment reuse options to consider are habitat restoration, sea level rise adaptation and beach replenishment. To meet this need, we developed a team with expertise in four important categories:

1. **Managing Humboldt Bay Projects.** Critical to the project's success are a knowledge of bay issues, historical context and working relationships with agency and community stakeholders. Our project manager, Adam Wagschal, has nine years of experience working with local stakeholders and agencies regarding Humboldt Bay projects. Adam would serve as the primary point of contact for the Harbor District, agency staff and community stakeholders. He would work directly on all project components and facilitate coordination among the project team to identify feasible sediment management solutions. Adam would also manage the project's budget and schedule.
2. **Environmental Analysis.** Rich Walter, MA and Sally Zeff, AICP will serve as senior CEQA advisors. Rich has 25 years of experience in environmental planning, compliance strategy, permitting and mitigation development. He served as ICF project director for environmental documentation related to the Hamilton Wetlands Restoration Project (described below), which has similarities to the Harbor District's proposed project. Sally has over 30 years of experience managing complex and controversial CEQA projects. Adam Wagschal, our project manager, has managed numerous CEQA documents for Humboldt Bay projects, including a certified PEIR for invasive plant control and salt marsh restoration. Our team includes experts in all resource categories required by CEQA. Team members continually track new developments in CEQA case law and precedent.
3. **Humboldt Bay Habitat Restoration and Sea Level Rise.** Our senior Humboldt Bay habitat restoration / sea level rise advisor is Aldaron Laird. Aldaron has managed (or is managing) development of sea level rise vulnerability assessment and planning projects on Humboldt Bay for the County of Humboldt, City of Arcata, City of Eureka, Humboldt Bay Harbor District and State Coastal Conservancy. Aldaron also has a central planning and permitting role in Humboldt Bay salt marsh restoration/sea level rise adaptation projects in Humboldt Bay including the Salmon Creek, Elk Creek, Samoa and Lanphere restoration projects.
4. **Dredging.** Travis Schneider and Erik Neilsen will serve as senior advisors regarding design, feasibility and logistics for dredging alternatives. As shown in their resumes, Travis and Erik have had key roles in Humboldt Bay for testing sediments as well as designing, permitting and implementing dredging projects. Understanding and developing feasible options for Humboldt Bay sediment management will be key to the project's success.

Our team has a strong understanding of Humboldt Bay issues, stakeholders and current information about sediment management alternatives. We have worked on dredging, habitat restoration and sea level rise adaption projects in the bay. We also maintain databases of Humboldt Bay sediment characteristics, biological resources and sea level rise information. Additionally, we have strong working relationships with local regulatory agency staff and stakeholders. These attributes will allow us to "hit the ground running" and develop a PEIR that will create efficiencies for both near and long-term sediment management projects.

The following organizational chart presents the roles of project leads described above and staff that will provide expertise on the range of topics that must be addressed by the PEIR. Curriculum Vitae for the project team are included at the end of this proposal.



TENTATIVE SCHEDULE

	Months After Contract Execution											
	1	2	3	4	5	6	7	8	9	10	11	12
Task 1. Project Description												
- Agency Meetings												
- Draft Project Description												
- Final Project Description												
Task 2. Environmental Analysis and PEIR												
- Consultation with Tribes												
- Notice of Preparation												
- Scoping Meeting												
- Draft PEIR												
- Draft PEIR Public Review												
- Public Meetings												
- Final PEIR, MMRP and Response to Comments												
- Final PEIR Considered for Certification												
- Notice of Determination												
Task 3. Final Meeting												

APPROACH

Project Description

The PEIR will describe a long term program for dredging, pumping, dewatering, processing, stockpiling and beneficially using or disposing of bay sediments. The project description must (1) consider the range of dredging projects that may be implemented; (2) be specific enough to support an environmental analysis that will streamline future regulatory approvals; and (3) be feasible to implement. Our process for identifying feasible alternatives would involve the following steps:

1. Identify the dredging, processing/dewatering, re-use and disposal sites to be considered.
2. Develop a “long list” of potential sediment management alternatives for these sites.
3. Screen each alternative based on:
 - a. **Logistical feasibility.** Is the equipment required for the alternative available or could it be reasonable acquired?
 - b. **Regulatory feasibility.** Can the alternative be reasonably permitted under applicable local, state and federal regulations?
 - c. **Social feasibility.** Is there adequate community support for the alternative?
 - d. **Costs.** Can it be reasonably assumed that funding will be adequate for the alternative?

Information for feasibility screening will not be complete (for example, alternatives will not be costed). Our team will work with Harbor District staff and other stakeholders to screen the “long-list” of alternatives as well as possible based on existing information. We recommend that one of the public meetings described in the solicitation be held earlier in the process in order to get public input regarding feasibility. Through the screening process, a range of feasible alternatives will be identified for consideration in the PEIR.

Environmental Analysis and PEIR

Once a set of feasible alternatives is identified they will be more thoroughly researched and described. For each CEQA resource category, potential environmental impacts, avoidance, minimization and mitigation measures will be described. As required by CEQA, the alternatives will be compared to a no-project alternative. The PEIR will be designed so it can be tiered off by future regulatory (including CEQA) documents for individual dredging projects. Specifically, the environmental setting, environmental effects, avoidance, minimization and mitigation measures detailed in the PEIR will inform the requirements and contents of future regulatory documents.

Coordination with Regulatory Agencies and the Public

The PEIR must take into consideration the suite of local, state and federal regulations pertaining to sediment management in Humboldt Bay. Additionally, there is a history of public engagement in decisions regarding Humboldt Bay sediment management. Public support or opposition can be a determining factor in selection of dredging strategies. We recommend early formation of a steering committee comprised of regulatory agency staff and representatives of local conservation advocacy groups such as Humboldt Baykeeper and Surfrider Foundation. The steering committee would provide input on draft documents and participate in discussions regarding PEIR contents. To reduce costs, webinar format rather than in-person meetings would be the primary means of communication for the steering committee. We recommend that separate consultation with the three Humboldt Bay area tribes begin as soon as draft project alternatives are identified.

ESTIMATES OF HOURS FOR TEAM MEMBERS

Team Member	Role	Task 1 Project Description	Task 2 PEIR	Task 3 Final Meeting	Total
Rich Walter	Senior CEQA Advisor	30	30	10	70
Sally Zeff	Senior CEQA Advisor	30	30	10	70
Adam Wagschal	Project Manager	120	200	30	350
Aldaron Laird	Sea Level Rise and Marsh Restoration	70	80	16	166
Lindsay Tenuis	Eelgrass and Saltmarsh Biology	0	40	0	40
Travis Schneider	Dredging Logistics	70	80	16	166
Erik Neilsen	Dredging Logistics	70	80	16	166
Steve Seville	Dredging Logistics	15	15	0	30
Jennifer Stock	Aesthetics	0	20	0	20
Shannon Hatcher	Air Quality, Greenhouse Gas, Climate Change	0	20	0	20
Jordan Mayor	Botany / Wetlands	50	80	16	146
Bud Widdowson	Wildlife	0	80	0	60
Bill Mitchell	Fish	0	80	0	80
Tait Elder	Cultural	0	40	0	40
Ellen Unsworth	Soils	0	20	0	20
Gary Clendinin	Hazardous Materials	0	45	0	45
Brendan Belby	Hydrology, Water Quality	0	20	0	20
Lindsay Christensen	Public Services, Recreation, Environmental Justice	0	50	0	50
David Buehler	Noise	0	20	0	20
Eric Link	GIS	20	20	5	45

REFERENCES

Reference for Rich Walter and ICF team for Hamilton Wetland Restoration Project (described below):

Tom Gandesbery
State Coastal Conservancy
tom/gandesbery@scc.ca.gov
510-286-1015

Reference for Aldaron Laird and Adam Wagschal for Humboldt Bay sea level rise adaptation, habitat restoration and stakeholder coordination experience:

Eric Nelson
Refuge Manager
Humboldt Bay NWR Complex
eric_t_nelson@fws.gov
707-733-5406

Reference for SHN for Noyo Harbor sediment testing, dredge planning and permitting experience (described below):

Justin Pyorre
Harbor Master
Noyo Harbor District
noyohd@gmail.com
707-964-4719

POTENTIAL CONFLICTS

We have reviewed our current clients and projects and do not foresee and potential conflicts.

EXAMPLE PROJECTS

Hamilton Wetland Restoration Project, Dredged Material Aquatic Transfer Facility (ATF) – USACE San Francisco District, San Francisco Bay, California

The Hamilton Wetland Restoration Project (HWRP), as expanded to include the Bel Marin Keys Unit V (BMKV) property, will be one of the largest wetland restoration projects in San Francisco Bay when completed. The project is sponsored by the California Coastal Conservancy and the U.S. Army Corps of Engineers and conducted in cooperation with the San Francisco Bay Conservation and Development Commission. The project will restore wetland ecosystems on subsided agricultural land in Marin County, using dredged material.

Key project features include:

- Wetland and other habitat restoration on nearly 2,500 acres of former military airfield and subsided diked farmland.
- Placement of between 10 to 24 million tons of dredged material, thus avoiding ecological and water quality effects of open water placement.
- Creation of 3+ miles of new San Francisco Bay Trail and public access.
- Accommodation of critical wastewater pipeline and outfall facilities.
- Assessment of dredged material transfer options including a direct offloader and an aquatic transfer facility.
- Design accounts for sea level rise in levee planning over time.

ICF prepared four different environmental compliance documents including an EIR/EIS for the Hamilton Wetland Restoration Project, an EIR/EIS for the Bel Marin Keys Unit V expansion of the project, an EIR for the remediation of contaminated soil and sediment at the Hamilton Army Airfield prior to restoration of wetlands, and an EIR/EIS for a potential aquatic transfer facility for dredged material placement and transfer to shore.

ICF also supported the Corps of Engineers during the parallel Corps planning process and provided wetland design services for the BMKV expansion. ICF provided permitting support by preparing the Section 106 cultural resource inventories and evaluations, Section 7 biological and technical analysis to support SFRWQCB permitting. ICF also conducted public and stakeholder outreach.

Humboldt Bay Sea Level Rise Adaptation Planning Project - California Coastal Conservancy

The Humboldt Bay Sea Level Rise Adaptation Planning Project, was a multi-phased endeavor. That planning effort began with Aldaron Laird's inventory and mapping of the 102 miles of shoreline on Humboldt Bay. This first Phase also included a sea level rise vulnerability assessment of the shoreline. The second Phase of the project involved preparing relative sea level rise projections through 2100 and a sea level rise hydrodynamic model and potential inundation maps of areas surrounding Humboldt Bay, which were produced by Northern Hydrology and Engineers. The

second Phase involved the formation of a regional sea level rise adaptation planning group, for which Aldaron Laird was lead planner that produced a regional vulnerability assessment and adaptation plan for Humboldt Bay. These assessment and planning efforts subsequently led to all three Local Coastal Program authorities on Humboldt Bay to request and secure grants from the Coastal Commission and Ocean Protection Council to address sea level rise.

Noyo Harbor District Dredge Material Management, Fort Bragg, California

SHN provided technical support services for dredge material management to the Noyo Harbor District (NHD) during the period of 2010 through 2016. During this time, projects completed included removal of material from the upland storage site (2013, 2014 and 2016) and dredging of the mooring basin (2015).

Working with state and local agencies in 2014 and 2016, SHN evaluated stored dredge material and potential placement locations and was able to demonstrate the material was suitable for use as fill. By addressing deficiencies in existing chemical data sets, conducting assessments of placement area characteristics for comparison, and showing placement area controls could be implemented for protection of groundwater and surface waters, SHN was able to receive approval for material reuse. The diversion of dredge material from disposal facility to a local reuse project significantly reduced project costs associated with transport and disposal. The North Coast Regional Water Quality Control Board (RWQCB) provided regulatory oversight of the material once placed in the storage site and for the locations of intended placement.

In 2015, SHN assisted the NHD in removing approximately 24,000 cubic yards of accumulated sediment from the Noyo Harbor mooring basin. The Noyo Harbor mooring basin is a commercial and recreational vessel mooring basin that consists of 9 docks and covers an area of approximately 8 acres. Working with state, federal and local agencies, SHN completed appropriate characterization of the in-place material required for placement in the upland storage site. In addition to working with the U.S. Army Corps of Engineers Dredge Material Management Office in San Francisco, numerous state and local agencies were involved to some extent or another with the dredging project. These agencies included; California Department of Fish and Wildlife, NOAA Fisheries, California Coastal Commission, Regional Water Quality Control Board, California State Lands Commission, Air Quality Management District, and the City of Fort Bragg.

SHN contributed to these projects in a variety of means to achieve permitting and implementation requirements, meet the regulatory deadlines, overcome permitting obstacles previously in-place for material reuse, compliance for in-water work and acquiring grant funding. These tasks included:

- Agency required work plan and reporting submittals
- Sediment sample collection and testing
- Pre-and post-dredging eel grass surveys
- Implementation of the 401 water quality certification
- Contractor bid document preparation
- Construction management

CURRICULUM VITAE

ADAM WAGSCHAL

Project Manager/Senior Regulatory Specialist

Adam is an experienced regulatory specialist, researcher and conservation planner. Adam has extensive experience working with local, state and federal agencies, tribes and stakeholders, to develop solutions for land use projects that ensure conservation of natural resources. He has experience navigating local, state and federal environmental regulations.

Adam has also managed fisheries monitoring and research projects in freshwater and marine habitats. Adam specializes in impact assessments and identification of conservation priorities for marine and anadromous species.

Relevant Project Experience

Humboldt Bay Regional *Spartina* Eradication and Salt Marsh Restoration Project Program EIR—California Coastal Conservancy, Humboldt County, California

While employed by H. T. Harvey & Associates, served as project manager. Managed the development of a final Program Environmental Impact Report (EIR) and regulatory approvals under the California Coastal Act, California Harbors and Navigation Code, and Clean Water Act for removal of non-native plants and restoration of native flora on over 1,000 acres of salt marsh in Humboldt Bay, Eel River, and Mad River Estuary. Managed sub-consultants, drafted and reviewed regulatory documents. Consulted with local, state and federal agencies, tribes and stakeholders. Organized and facilitated public and stakeholder meetings. *April/2011–January/2013.*

Trinidad Pier Reconstruction Regulatory Compliance—Trinidad Rancheria, Trinidad, California

While employed by H. T. Harvey & Associates, served as project manager. Designed and managed a compliance monitoring program for the Trinidad Pier reconstruction project, including marine mammal and acoustic monitoring associated with pile removal and installation. Coordinated with federal and state agencies to develop monitoring methods and oversaw all aspects of field work, data analysis and reporting. *February/2012–March/2014.*

Initial Study (IS) Preparation Planning Assistance—Siskiyou County Community Development Department, Siskiyou County, California

Serving as Project Manager. Prepare California Environmental Quality Act (CEQA) documentation for discretionary projects in Siskiyou County. Project types include zoning changes and minor subdivisions. *06/2016–Present.*

Years of Experience

- Professional start date: 01/2000
- ICF start date: 06/2016

Education

- MS, Geography, Geographic Information Science, San Diego State University, 2008
- BS, Fisheries, Humboldt State University, 2000

Certifications

- Certified Scientific and Rescue Diver, NAUI
- Certified Small Boat Operator, California Boating and Waterways

Professional Development

- Meeting Facilitation, Northwest Environmental Training Center, 2013
- California Wetland Rapid Assessment Methods, San Francisco Estuary Institute, 2011
- Applied Fluvial Morphology, Wildland Hydrology, 2002
- Riverine Fish Passage, California Department of Fish and Wildlife (CDFW), 2003

Humboldt Bay Mariculture Pre-Permitting Project Final EIR—Humboldt Bay Harbor District, Humboldt County, California

While employed by Humboldt Bay Harbor District, served as Deputy Director. Managed the development of a final EIR for the Humboldt Bay Mariculture Pre-Permitting Project which involves installation of shellfish culture rafts, with piles and floating walkways on 22 subtidal acres in Humboldt Bay. Consulted with local, state and federal agencies, tribes and stakeholders. Organized and facilitated public and stakeholder meetings. *March/2015–April/2016.*

Humboldt Bay Clam Raft Project—Coast Seafoods Company, Humboldt County, California

While employed by H. T. Harvey & Associates, served as project manager. Managed CEQA documentation and permit obtainment for installation and operation of twenty clam culture rafts in Humboldt Bay, California. Coordinated with tribes, stakeholders, local, state and federal agencies. Managed fish monitoring under the clam rafts associated with the project. *February 2013–April/2014.*

Atlantic Salmon Habitat Conservation Plans and NEPA Environmental Assessments (EAs) for Removal and Retrofit of Small Dams—National Marine Fisheries Service (NMFS), Maine

While employed by H. T. Harvey & Associates, served as project manager. Managed the development of three Habitat Conservation Plans and related Environmental Assessments for the removal and retrofit of small dams in Maine to allow for passage of Atlantic salmon (*Salmo salar*). *January/2011–March/2013.*

Cow Creek Watershed Fish Passage Barrier Inventory and Restoration Prioritization—U.S. Fish and Wildlife Service (USFWS), Red Bluff, California

While employed by H. T. Harvey & Associates, served as project manager. Managed surveys of natural and man-made (e.g., culverts and bridges) salmonid passage barriers throughout the 275,000 acre Cow Creek watershed. Prioritized barriers for restoration. Managed all aspects of field work, data analysis and reporting. Facilitated public and agency meetings. *March/2013–February/2015.*

Guadalupe Creek Flood Control Project Fish Monitoring and Water Temperature Modeling—Santa Clara Valley Water District, San Jose, California

While employed by H. T. Harvey & Associates, served as project manager. Managed fish monitoring and water temperature modeling in Guadalupe Creek following implementation of a major flood control and habitat restoration project. Managed all aspects of field work, modeling and report development. Presented results to a technical advisory team. *April/2011–May/2012.*

Regulatory Program Management—Humboldt Bay Harbor, Recreation and Conservation District, Humboldt County, California

While employed by Humboldt Bay Harbor District, served as Deputy Director. Managed the Humboldt Bay Harbor District's regulatory program. This included permit issuance and CEQA documentation for projects under the Harbor District's regulatory authority, as well as obtainment of regulatory approvals for Harbor District Projects. Developed CEQA documentation for projects involving dock reconstruction, breakwater repair, mariculture, water intakes/discharges, and final site restoration for the Humboldt Bay Nuclear Power Plant. Brought permits and CEQA documents to the Harbor District board for approval and certification. Developed the Harbor District's process to address AB 52, a new law affecting analysis of tribal resources under CEQA. *March/2015–May/2016.*

Humboldt Bay Hagfish Packing Facility—Hagfish Corporation, Humboldt County, California

While employed by Humboldt Bay Harbor District, served as Deputy Director. Managed CEQA documentation and permit obtainment for installation and operation of a hagfish holding and packing facility. The facility includes a water intake and discharge in Humboldt Bay and thirty tanks which maintain live hagfish that are shipped to Korea. *April /2015–December/2015.*

Employment History

ICF International. Project Manager/Senior Regulatory Specialist. San Francisco, California. 06/2016–Present.

Humboldt Bay Harbor, Recreation and Conservation District. Deputy Director. Eureka, California. 03/2015–05/2016.

H. T. Harvey & Associates. Project Manager. Arcata, California. 01/2011–02/2015.

Humboldt Bay Harbor, Recreation and Conservation District. Conservation Director. Eureka, California. 06/2008–12/2010.

County of San Diego. Environmental Land Use Planner. San Diego, California. 01/2005–05/2008.

Pfleger Institute of Environmental Research. Research Biologist. Oceanside, California. 01/2003–12/2004.

Mendocino Redwood Company. Lead Aquatic Biologist. Fort Bragg, California. 01/2000–01/2003.

RICHARD WALTER

Project Director

Rich Walter has more than 25 years of experience in environmental planning, compliance strategy, permitting, and mitigation development and implementation. He has worked on numerous controversial and complex environmental planning and compliance projects. Rich has directed and participated in environmental impact assessment, alternatives analysis, and permitting processes for a variety of proposed developments including: residential subdivisions; golf courses; resorts; flood control; water pipelines; wetland restoration; marine oil terminals; natural gas power plants and pipelines; roads, highways, and bike paths; vineyards; industrial parks; telecommunications, marine landings, backhaul, and urban ring projects; and mines. He has managed projects that comply with National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), federal Endangered Species Act (ESA) and California Endangered Species Act (CESA), National Historic Preservation Act (NHPA), Clean Air Act (CAA), Clean Water Act (CWA), California Coastal Act (CCA), Coastal Zone Management Act (CZMA), as well as other state and local mandates.

Years of Experience

- Professional start date: 06/1992
 - ICF start date: 09/2000
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Education

- MA, International Relations/ Energy, Environment, Science, and Technology, The Johns Hopkins University School for Advanced International Relations, 1993
 - BA, History, Stanford University, 1985
-

Project Experience

Project Manager, Hamilton Wetland Restoration Project/Bel Marin Keys Unit V Wetland Restoration Project/Aquatic Transfer Facility NEPA, CEQA and Environmental Permitting—California Coastal Conservancy and the U.S. Army Corps of Engineers, San Francisco District, California

Served as project manager for NEPA and CEQA compliance for a wetland restoration project sponsored by the California Coastal Conservancy and the Corps and conducted in cooperation with the San Francisco Bay Conservation and Development Commission. The project will restore wetland ecosystems on subsided agricultural land in Marin County using dredged material. When completed, it will represent one of the largest wetland restoration projects in San Francisco Bay. Key technical issues of analysis include bay circulation, short and long-term sedimentation, hazardous materials, effects on marine benthos, wildlife, and shoreline habitats, navigational safety, air quality, shoreline access, and scenic vistas from nearby state and local parks. ICF prepared four different environmental compliance documents including an EIR/EIS for the Hamilton Wetland Restoration Project, an EIR/EIS for the Bel Marin Keys Unit V expansion of the project, an EIR for the remediation of contaminated soil and sediment at the Hamilton Army Airfield prior to restoration of wetlands, and an EIR/EIS for a potential aquatic transfer facility for dredged material placement and transfer to shore. ICF also prepared Section 106 cultural resource assessments to support consultation with SHPO, Section 7 biological assessments to support consultation with USFWS and NMFS. Project analysis also considered sea level rise effects on restoration feasibility.

Estero Marine Terminal EIR—State Lands Commission, Morro Bay, California

Served as project coordinator and analyst and prepared fisheries, land use, socioeconomics, aesthetics, and recreation analyses for the Chevron Marine Oil terminal which transferred crude oil from pipelines from oil fields in Monterey County and Kern County to marine tanker vessels in Morro Bay. Analysis covered potential impacts from a proposed 30-year lease from the State Lands Commission for terminal operation. Fishing patterns and potential fish and fishing impacts from a

variety of marine oil spill scenarios were analyzed. Field investigations of nearly 100 miles of oil pipeline and five pumping stations for oil spill containment and for potentially affected wildlife and plant species were conducted. Developed alternatives to the proposed 30-year lease including variation in offshore berthing, oil throughput, and an inland pipeline alternative to carry crude to Los Angeles and San Francisco refineries. Project included working closely with the State Lands Commission, the County of San Luis Obispo, and the California Coastal Commission. Also supported preparation visual simulations of terminal and offshore berthing alternatives and prepared recreational valuations studies to develop offset mitigation for proposed developments.

Morro Bay and Moss Landing Power Plant Regulatory Review for Reoiling Scenarios—PG&E, Monterey County, California

While employed with Ecology & Environment, served as project manager. In support of strategic planning, conducted a comprehensive evaluation of regulatory compliance measures, including CCA compliance, necessary in the event of a shift in fuel from natural gas to oil at two PG&E power plants. The nexus of regulations included local, state, and federal air, water, emergency response, and coastal regulatory regimes and permitting structures. Developed a strategic approach to streamline permitting in the event of actual reoiling.

Groundwater Remediation EIR—PG&E, Hinkley, California

Serves as project director for the CEQA EIR under direction of the Lahontan RWQCB for the remediation of chromium-contaminated groundwater from the PG&E compressor station in Hinkley. Key subjects of analysis include development of remedial alternatives, chromium background levels, water quality, groundwater levels, land use, and socioeconomic effects.

Altamont Pass Pipeline and Altamont Water Treatment Plant EIR—Zone 7 Water Agency, Alameda County, California

Served as project director for CEQA compliance, permitting, and mitigation development. Supervised preparation of an EIR for an 11-mile water delivery pipeline from the Altamont Pass into Livermore. Project has included evaluation of alternatives by corridor and by reach. Key areas of environmental concern evaluated include sensitive biological resources such as wetland and habitat for listed species, construction traffic delays and detours, cultural resources, and noise. Currently, serves as project director for environmental permitting, mitigation implementation, and monitoring for the construction of the Altamont Water Treatment Plant and pipeline.

Alameda Siphons and Irvington Tunnel Projects—SFPUC, Alameda County, California

Served as contract manager for joint venture and a team of 13 consultants for CEQA compliance and regulatory permitting for a new pipeline crossing of the Calaveras Fault and Alameda Creek by a portion of the Hetch Hetchy water system and a new 3.4-mile water tunnel between Sunol Valley and Fremont. Key areas of environmental concern include sensitive biological resources, construction traffic, spoil disposal, and cultural resources. Project included GHG inventory. 2006–2008.

New Crystal Springs Bypass Tunnel Project—SFPUC, San Mateo County, California

Served as project director for CEQA support and regulatory permitting for a new water tunnel on the Peninsula portion of the Hetch Hetchy water system. ICF analyzed impacts to biological and cultural resources and prepared environmental permits for the project, along with designing mitigation for potential tunnel dewatering impacts.

San Francisco International Airport, Runway Reconfiguration Program, Tidal Marsh Mitigation Planning and CEQA Compliance—San Francisco Airport Commission, California

Served as project manager for strategic planning and CEQA support regarding the development of tidal marsh mitigation alternatives associated with potential runway reconfiguration alternatives. The project examined a range of tidal marsh restoration opportunities throughout San Francisco Bay.

Preliminary Wake Wash Assessments for Ferry Terminals, Coast and Harbor Engineering—San Francisco Water Transit Authority, California

Served as Project Manager. Prepared biological resource summaries for potential ferry terminals at Berkeley/Albany, Hercules, Port Sonoma, and Antioch and associated ferry routes to support preliminary wake wash assessments for the San Francisco Water Transit Authority. Evaluated marine and shoreline environment species potential in areas of potential effect including tidal marsh, tidal mudflats, sandy shorelines, eelgrass, and shellfish beds.

Employment History

ICF International. Project Director. San Francisco, California. 09/2000–Present.

Ecology and Environment. Project Manager. Washington, DC and San Francisco, California. 06/1992–08/2000.

TRINITY ASSOCIATES



Specializing in
Regulatory Compliance in Aquatic Environments
and
Sea Level Rise Assessments and Planning

Aldaron Laird,
Principal, Senior Environmental Planner
Trinity Associates
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Arcata, CA 95521
(707) 845-6877
riverplanner@gmail.com

Trinity Associates specializes in providing professional environmental planning services to clients working in aquatic ecosystems, historical research on California's waterways, as well as sea level rise vulnerability assessments and adaptation planning.

Aldaron has over 27 years of environmental planning experience developing and securing regulatory compliance for projects affecting aquatic resources in California. Aldaron's environmental planning experience has been utilized by technical design teams to identify regulatory constraints to proposed project designs and to prepare environmental documents as well as secure consultations and permit approvals. Aldaron completed the Land Use and Environmental Planning Program at UC Davis in 1991, served on the Secretary of California Natural Resource Agency's CEQA task force that developed the CEQA Guidance's Small Habitat Restoration Projects Categorical Exemption, and prepared the initial draft of California's Salmonid Stream Habitat Restoration Manual for the Department of Fish and Game. Aldaron is also a founding Board member of California's Salmonid Restoration Federation. Aldaron's clients have included private, local, state, federal and tribal entities. Regulatory compliance tasks have included design team consultation, constraint analysis, preparing: project and environmental setting descriptions, CEQA and NEPA documents, Biological Assessments, mitigation monitoring programs, and permit applications. Aldaron also served 10 years as a Planning Commissioner for the City of Arcata, reviewing projects, making findings, conditioning projects, and drafting its 2020 General Plan and Zoning Ordinance.

Since 2010, Aldaron has been involved with nearly every sea level rise vulnerability assessment and adaptation planning project on Humboldt Bay. His shoreline inventory, mapping, and vulnerability assessment project was the first comprehensive sea level rise assessment of Humboldt Bay. Aldaron's has worked to integrate sea level rise assessments and planning on a regional level on Humboldt Bay. He was the principal planner for the Humboldt Bay Sea Level Rise Adaptation Planning Project. His vulnerability assessments and adaptation planning work includes most of the entities addressing sea level rise on Humboldt Bay: Humboldt County, Cities of Eureka and Arcata, Humboldt Bay Harbor, Recreation and Conservation District, Wiyot Tribe, Coastal Conservancy, Caltrans, Coastal Commission, and Humboldt Bay National Wildlife Refuge.

Aldaron has been the senior environmental planner providing design, regulatory compliance, and constraints analysis services on the following aquatic habitat restoration/enhancement projects, predominately in the Humboldt Bay region:

1. 2017 to present, Humboldt Bay Area Mitigation Plan. ICF Jones & Stokes.
2. 2017 to present, Freshwater Creek Off-Channel Restoration Project. Redwood Community Action Agency.
3. 2017 to present, Humboldt Bay Living Shoreline Pilot Demonstration Concepts Project. City of Arcata
4. 2016 to present, Cochran Creek Fish Passage and Channel Restoration Project. Thomas Gast & Associates.
5. 2016 to present, City of Eureka Elk River Estuary and Inter-Tidal Wetlands Enhancement and Public Access Project. Greenway Partners.
6. 2016 to present, Elk River Floodplain Restoration Project. California Trout.
7. 2016 to present, Mad River Floodplain Restoration Project. California Trout.
8. 2015, King Salmon-White Slough Dredged Sediment Reuse-Wetlands Restoration Project. Stillwater Sciences.
9. 2012 to 2015, White Slough Salt Marsh Restoration Project. Humboldt Bay National Wildlife Refuge.
10. 2012 to 2014, Wetland Enhancement: Permit Streamlining in the Coastal Zone Project. Pacific Coast Joint Venture.
11. 2013 to 2014, Martin Slough Tidal Enhancement Project. State Coastal Conservancy.
12. 2008 to 2014, Lower Klamath River Tributary Salmonid Habitat Enhancement Program. Yurok Tribe Fisheries Department.
13. 2004 to 2013, Estuary and Tidal Wetlands Restoration Program, Salmon Creek Estuary Enhancement Phase I, II, and III. Humboldt Bay National Wildlife Refuge.
14. 2011 to 2012, Fay Slough Salt Marsh Restoration Project. Redwood Community Action Agency for Department of Fish and Wildlife.
15. 2004 to 2009, Mad River Slough Tidal Wetland Restoration and Freshwater Wetland Enhancement Project. Miller Family.
16. 2007 to 2008, Wood Creek Estuary Restoration Project. Redwood Community Action Agency.
17. 2006-2008, Salmon Creek Unit Dike Rehabilitation Project. Humboldt Bay National Wildlife Refuge.
18. 2007, Redmond and Cochran Creek Enhancement and Tidal Wetlands Restoration Project. Redwood Community Action Agency.
19. 2006 to 2007, Historical Atlas of Humboldt Bay and Eel River Delta. Humboldt Bay Harbor, Recreation, and Conservation District.
20. 2006 to 2007, *Tuluwat* Village Restoration Project, prepare Final EIR. Wiyot Tribe.
21. 2006 to 2007, McDaniel Slough Wetland Enhancement Project. California Department of Fish and Game.

22. 2006, Enhancing Seasonal Wetlands in the Coastal Zone: A Regulatory Constraint Analysis of the California Coastal Act. Pacific Coast Joint Venture.
23. 2005 to 2006, *Duluwat* (Indian Island) Rookery Restoration Project. Wiyot Tribe.
24. 2003 to 2006, Rocky Gulch Anadromous Salmonid Access and Habitat Restoration Project. McBain and Trush.
25. 2004 to 2005, Lower Reach of the Smith River: Atlas of Historic Channel Planforms. Smith River Advisory Council and Smith River Alliance.
26. 2004, Urban Stream Restoration, Jolly Giant Creek Daylighting Project. McBain and Trush.
27. 2000, An Evaluation of Regulations, Effects, and Management of Aggregate Mining in Northern and Central Coastal California. National Marine Fisheries Service.

Aldaron has also been the senior environmental planner on the following Humboldt Bay sea level rise vulnerability assessment and adaptation planning projects:

1. 2017 to present, City of Arcata, Sea Level Rise Vulnerability and Risk Assessment, Adaptation Policy Development. California Coastal Commission.
2. 2017 to present, Humboldt County, Sea Level Rise Vulnerability and Risk Assessment, Adaptation Policy Development. California Coastal Commission.
3. 2015, Humboldt Bay Harbor, Recreation, and Conservation District, Feasibility Study: Beneficial Reuse of Dredged Materials for Tidal Marsh Restoration and Sea Level Rise Adaptation in Humboldt Bay, California. SHN.
4. 2014 to 2016, City of Eureka, Sea Level Rise Vulnerability and Risk Assessment, Adaptation Plan, and Local Coastal Plan Update. Ocean Protection Council.
5. 2014, District 1 Caltrans, Climate Change Pilot Study, GHD.
6. 2013 to present, Coastal Resiliency Networks Project. The Nature Conservancy.
7. 2012 to 2015, Humboldt Bay Sea Level Rise Adaptation Planning Project. Humboldt Bay Harbor, Recreation, and Conservation District and State Coastal Conservancy.
8. 2010 to 2013, Humboldt Bay Shoreline Inventory, Mapping and Sea Level Rise Vulnerability Assessment Project. State Coastal Conservancy.

Distinguishing Qualifications

- Dredge Material Characterization
- Environmental Services for Current and Former Industrial Sites
- Permitting and Regulatory Compliance
- Program Development
- Site Investigation and Remediation
- Qualified SWPPP Practitioner

Years of Experience: 23

Years with SHN: 15

Education

B.S., Geology; University of the Pacific, Stockton, California, 1994

Geochemistry of Hazardous Waste; UC Berkeley Extension, 1996

Groundwater Hydrology; UC Berkeley Extension, 1997

GIS Short Course; UC Berkeley Extension, 2000

Monitored Natural Attenuation; UC Berkeley Extension, 2003

Professional Registrations

Professional Geologist, California No. 7288
Oregon No. G2071

Certified Hydrogeologist, California; No. HG762

Professional Certifications

HBPP GET/RAD Worker Training

40-hour SARA/OSHA Certified

8-hour SARA/OSHA Certified

SARA/OSHA Supervisor Training

OSHA Competent Person Training.

Qualified SWPPP Practitioner (QSP) CASQA #21533

Erik Nielsen, PG, CHG

Professional Geologist, Certified Hydrogeologist

Relevant Experience

Mr. Nielsen has more than 23 years of experience in environmental and applied geology and hydrogeology while working with federal, state, and local regulatory agencies. Experience includes project management, site assessments, surface and subsurface investigation, site remediation, plan and procedure development, bid preparation, permitting, and subcontractor selection. He has prepared interpretive reports, preliminary plans, working drawings, construction documents, and cost estimates for assessment, characterization, and remediation for land use projects. His field experience includes excavation, dredging, drilling, soil and groundwater sampling, hydrogeologic interpretation, aquifer characterization, lithologic and geophysical logging, well design and installation. Mr. Nielsen has worked in areas contaminated with VOCs, fuel hydrocarbons, metals, PCBs, dioxins, and pesticides.

Representative Projects

Dredge Material Characterization and Reuse, Humboldt Bay Harbor, Recreation and Conservation District, Eureka, CA. Provided technical support to the Harbor District since 2013 for various projects that included beneficial reuse sites, characterization of material, regulatory compliance review, and data gaps evaluation. Task manager for evaluation and placement of in-water and upland stored sediment associated with dredging operations. Worked with federal, state and local agencies to evaluate potential material placement locations around the bay and towards demonstrating the material is suitable for placement as fill.

Dredge Material Management, Noyo Harbor District, Fort Bragg, CA. Project manager for evaluation, removal and placement of in-water and upland stored sediment associated with dredging operations. Provided technical support to the Noyo Harbor District since 2010 for various projects that included removal of material from the upland storage site (2013, 2014 and 2016) and dredging of the mooring basin (2015). Working with state and local agencies, SHN evaluated potential material placement locations and was able to demonstrate the material is suitable for placement as fill with site specific controls, and need not be transported to a licensed disposal facility. Met regulatory guidelines for reuse of dredge material at the City of Fort Bragg Coastal Trail Project.

Investigation, Characterization and Compliance Monitoring Programs, Humboldt Bay Power Plant, PG&E, Eureka, CA. Project manager for environmental and hydrogeologic technical studies for support during the decommissioning of the nuclear power plant. Activities have included implementation of the Radiological Environmental Monitoring Program (REMP), groundwater and soil sampling, well installation, sediment transport analysis, tidal studies, stratigraphic interpretation, surveying, slope stability analysis, excavation dewatering, plan and procedure development, agency coordination, and reporting. Recent site involvement has included working with PG&E to assess final site conditions for compliance with the California Coastal Commission Coastal Development Permit (CDP) associated with facility decommissioning.

Travis Loren Schneider
tschnieder@pacaff.com
(707) 445-3001 X206

Education: 1997-2001 Cal Poly San Luis Obispo San Luis Obispo, CA *Bachelor of Science in Civil Engineering. Areas of emphasis include geotechnical, structural, and hydrology engineering.*

Work History & Skills:

1993 - present
Pacific Affiliates Inc.,
Eureka, CA
Principle Engineer

2001-present
T. Schneider Enterprises
Inc., Eureka, CA
*Principle of Construction
Company*

2001-present
ST Group, Eureka, CA
*President of Land Development
Company*

Background

The base of Travis Schneider's work experience has been within Humboldt Bay. Travis served as the project team lead and Civil Engineer for the 2017 City of Eureka Maintenance Dredge permitting; 2017 MOTEMS upgrades to the Eureka Chevron Terminal; 2016 dock repairs and maintenance for the Eureka Chevron Terminal; 2015 Eureka Forest Products Dredge Permit; and the 2013 Sediment Testing and Analysis of the PGE Fisherman's Channel, Schneider Dock, Eureka Forest Products and Chevron Eureka Terminal. The extensive knowledge and experience developed through the relationships built by Pacific Affiliates and honed through past engineering projects, has provided the foundation for understanding the requirements of permitting, design and project management.

Professional Licenses, Certifications & Affiliations:

- Professional Engineer (CA, OR, WA, MT, ID, NV, AZ, CO, WY, SD, NM, HI, UT, BC) CA Lic. # 67393
- Chevron Loss Prevention Systems Certificate of Training
- Qualified Stormwater Developer/ Practitioner (QSD/QSP) #01338
- 40 Hazwoper Certified
- International Code Council (ICC) Certified Inspector
- Cal EMA Safety Assessment Certified #70506
- Structural Engineers Association of Northern California (SEAONC) – 8 year
- California Stormwater Quality Association (CASQA) – 7 year
- Transportation Workers (TWIC) Certified
- Society of Civil Engineers - 18 years
- Rotary International - 12 years, Past President 2005-2006
- Aircraft Owners Pilots Association (AOPA) – 16 years
- City of Eureka Parking Commission– 10 years, Chairperson 2009
- City of Eureka Design Review Committee – 12 years, Chairperson 2010-2012

Representative Projects:

- 2017 – Chevron Marine Terminal MOTEMS Structural Improvements, Eureka, CA
- 2017 – City of Eureka Maintenance Dredging Permitting, Eureka, CA
- 2017 – Sterling Highway, Palmer, AK
- 2017 – State of California Highway 36 Dinsmore, CA
- 2017 – Deer Creek Fish Passage, Lassen, CA
- 2017 – Big Meadow Creek, Coeur d’Alene, ID
- 2016 – Stampede Dam Stampede Reservoir, CA
- 2016 – Oregon dept. of Transportation (ODOT) US Highway 101 Sinkhole, Brookings Harbor, OR
- 2016 – Washington Department of Natural Resources (WADNR) Waring Creek, Tacoma, WA
- 2016 – South Lake Tahoe Airport Improvement Project, South Lake Tahoe, CA
- 2016 – Truckee Airport Improvement Project, Truckee, CA
- 2015 to 2016 – Border Coast Airport Authority Wetland Mitigation Project, Crescent City, CA
- 2014-2016 - Chevron MOTEMS Compliance Facility Rehabilitation/ Reconstruction Eureka, CA
- 2015 – Alaska Department of Transportation (ADOT) West Dowling Parkway, Anchorage AK
- 2015 - Fred Haight Drive Waterline Relocation, Smith River, CA
- 2015 – Border Coast Airport Authority Runway Safety Area (RSA) Improvement Project, Crescent City, CA
- 2015 – Fortuna Wastewater Treatment Plant, Fortuna, CA
- 2015 – Richardson Highway Multi Plate Valdez, AK
- 2015 – Tesoro Viejo Bridges Bureau of Reclamation, Madera County, CA
- 2015 – Vance Creek Interstate 84 Freeway Crossing, John Day, OR
- 2015 – Robertson Ranch Toll Brothers, Carlsbad, CA
- 2015 to 2016 - Los Patrones Parkway Orange County, Rancho Mission Viejo, CA
- 2015 – La Pata Gap Orange County San Clemente, CA
- 2014 – CALTRANS Corporation Yard Rehabilitation, Fortuna, CA
- 2014 – City of Trinidad Clean Water and Streets Improvement Project - Trinidad, CA
- 2014 – Ducks Unlimited Salt River Restoration Project Phase 1, Ferndale, CA
- 2014 – Humboldt Waste Management Authority Burn Dump Restoration Project, Eureka, CA
- 2014 – Lost Coast Brewery, Eureka, CA
- 2014 – Humboldt Bay Trail to Truesdale City of Eureka, Eureka, CA
- 2014 – Juneau International Airport Bridge, Juneau, AK
- 2013 – Eureka/Arcata Airport County of Humboldt McKinleyville, CA
- 2012-2013– Crescent City Inner Harbor Marina Replacement Crescent City, CA
- 2013 - Humboldt Waste Management Authority Cummins Road Landfill Capping Phase 1, Eureka, CA
- 2012 to 2013– Crescent City Inner Harbor Marina Replacement Crescent City, CA
- 2012-Humboldt Waste Management Authority Cummins Road Landfill Eureka, CA
- 2012 Chevron Maintenance Dredging Eureka, CA
- 2012-Chevron Seawall Repair Honolulu, HI

- 2011-CALTRANS Martins Ferry Bridge Falsework and Temporary Bridge Detour Design & Inspection, Weitchpec, CA
- 2011-United States Coast Guard Breakwater Repair, Samoa, CA
- 2011 - Chevron/Donut Mill Site Cleanup, Eureka, CA
- 2010 - PG&E Humboldt Substation, Eureka, CA
- 2010 - PG&E Tesla Substation, Tracy, CA
- 2009 - Chevron Marine Terminal Ethanol Pipeline, Eureka, CA
- 2009 – Smith River Community Services District/ CALTRANS Waterline Relocation, Smith River, CA

STEVEN SEVILLE, PE

Principal

Steve Seville is a principal with extensive experience as a project engineer and in development and implementation of restoration and mitigation design. His experience includes working with hydrologic models for use in floodplain mapping and tidal estuaries and rivers. Steve's expertise includes levee inspection, topographic and bathymetric survey, hydrologic data analysis, application of hydrologic models for watershed study, water supply investigations, water rights applications, restoration design, erosion control design, and construction oversight. He serves as a project manager on technically based projects requiring the direct oversight of a licensed civil engineer. Steve has led the hydrology and hydraulics group at ICF, and is currently the Pacific Northwest Branch Leader, overseeing operations in Washington, Oregon, Idaho, Alaska, and British Columbia.

Key Skills

Hydraulic Engineering. H&H Modeling, effects of water on projects and in the environment

In-water Construction Planning. Develop and review construction plans and practices required for working in water and nearshore.

Project Experience

Missouri River Commercial Dredging EIS—Corps, Kansas City, Missouri

Served as civil engineer. Investigated the entire catalog of infrastructure features located along approximately 700 miles of the lower Missouri River. The Corps' bank stabilization and navigation project, levees, bridges, and water intake facilities were among the key features reviewed to determine their susceptibility to changes in water surface elevations and river bed elevations over time. 2008 – 2009.

Delta Wetlands CEQA Compliance—Western Development and Storage, Sacramento, California

Served as civil engineer. Reviewed technical levee design, hydrology, hydraulics, and geotechnical reports that investigated the feasibility for the construction and operation of improved levees, water supply improvements, and habitat enhancement on four islands in the Sacramento-San Joaquin Delta. Contributed to CEQA analyses and resource topics affected by these project elements. 2007–2009.

Years of Experience

- Professional start date: 06/1997
- ICF start date: 07/2004

Education

- BS, Civil Engineering, California State University, Sacramento, 1997

Professional Memberships

- Floodplain Management Association
- Consulting Engineers and Land Surveyors of California
- Society for Ecological Restoration
- Society of American Military Engineers

Certifications/Other

- Registered Professional Civil Engineer, Oregon, No. 75617PE, 2005
- Registered Professional Civil Engineering, Washington, No. 41247, 2004
- Registered Professional Civil Engineer, California, No. C60513, 2000

Professional Development

- Project Management Program, ICF, 2013
- Business Development Excellence, ICF, 2015

Languages

- English
-

River Islands EIS—Corps, Sacramento District, Lathrop, California

Served as senior hydraulic engineer to review the flood control and hydrology technical appendix for the investigation of the replacement and reconstruction of levees within a federal project. This investigation initiated review under 33 USC 408 (commonly called Section 408). 2005–2007.

Suisun Marsh Habitat Management, Preservation, and Restoration Plan Programmatic EIR/EIS—DFG, Solano County, California

Served as civil engineer. Developed maintenance dredging criteria and placement plan for exterior levees of Suisun Marsh. Worked with the multiagency task force to determine potential impacts and habitat enhancements to the aquatic communities that may occur from dredging and transition of habitat regimes. 2005–2006.

Stockton Deep Water Ship Channel Aeration Demonstration Project—DWR, San Joaquin County, California

Served as project manager. Provided engineering support during the development, design, construction, and monitoring of a demonstration project to supply oxygen to the channel during seasonal periods of low dissolved oxygen. The project is a cooperative effort between the California Bay-Delta Authority, DWR, and the Port of Stockton. 2005–2008.

North Delta Improvements Project—DWR, Sacramento-San Joaquin River Delta, California

Served as civil engineer. Provided engineering support during investigation of project alternatives for improvements to habitat corridors in conjunction with levee maintenance and flood control needs. Several hydrologic studies and hydraulic models were used to better understand the hydraulic and geomorphic complexities of the North Delta. Stakeholders and differing opinions often required consideration and inclusion in engineering decisions. This engineering support spanned the gap between technical analysis and anecdotal understanding and experience. 2004–2006.

Publications

Seville, Steven. Bioengineering & Restoration Practice. Ectasis, SERCAL. San Jose, CA. 2006.

Training and Lecturing

Seville, Steve. Habitat Restoration – A Two-Day Intensive Course. University of California, Davis. 2004–2010.

Employment History

ICF International. Civil Engineer, Pacific Northwest Branch Leader. Seattle, Washington. 07/2004–Present.

Northwest Hydraulic Consultants. Civil Engineer. West Sacramento, California. 06/1997–07/2004.

J. TAIT ELDER, MA, RPA

Senior Archaeologist

tait.elder@icf.com 206-801-2825

Tait is a qualified professional archaeologist (36 CFR 61) with over a decade of professional cultural resources experience throughout the western United States. His specialized expertise includes geoarchaeology, project management, archaeological research design, and invertebrate faunal analysis.

Tait is experienced in all phases of archaeological inventory, evaluation, and mitigation and has authored or co-authored cultural resource inventory reports, data recovery reports, work plans, treatment plans, archaeological sensitivity memos, and site records. He is experienced in designing and implementing cultural resources projects in accordance with Section 106 of the NHPA, NEPA, and CEQA and has coordinated with SHPOs, Native American tribes and agencies on behalf of his clients. He places particular emphasis on designing cost-effective research strategies for identifying archaeological risk based on the unique landscape history of each project.

Selected Experience

Extended Phase I Proposal and Investigations for Geoarchaeological Studies in Support of the State Route 99/Service Road/Mitchell Road Interchange Project – Caltrans, Ceres, CA, 2016-2017.

Principal Investigator and geoarchaeologist. Tait designed and implemented a geoarchaeological study to determine whether the proposed project had the potential to contain buried archaeological resources. While a previous regional sensitivity model identified the study area as having high potential to contain buried resources, the study revealed that the project was actually located on a landform with limited potential. The study consisted of excavating a series of geoprobe borings and auger probes across the project area and measuring the thickness of soil formation indicators. Tait also recommended a series of revisions to the existing regional model to more accurately depict buried site sensitivity in the project vicinity. The results of the investigation were submitted to Caltrans in accordance with their guidelines for extended phase I technical reports.

Ethnographic Study, Archaeological Survey Report, and Historic Property Survey Report for the Pamo Bridge Replacement Project – San Diego County Department of Public Works, Ramona, CA, 2016.

Principal Investigator. In support of the Pamo Bridge Replacement Project's Section 106 of the NHPA obligations and in compliance with Caltrans guidelines for cultural resources studies, Tait performed an ethnographic study and compiled the results of this study and previous cultural resources investigations into an archaeological survey report and historic property survey report. As part of the ethnographic study, Tait interviewed representatives from Native American tribes and reviewed literature. The project vicinity was also previously documented as an archaeological site. As a result of this study, the study area was recommended eligible for listing

Education

- MA, Archaeology, Portland State University, 2010
- BA, Anthropology w/Minor in Geology, Western Washington University, 2004

Professional Memberships

- Register of Professional Archaeologists
- Society for California Archaeology
- Association of Washington Archaeologists
- Society for American Archaeology
- Geological Society of America

Specialized Expertise

- Geoarchaeology
 - Project Management
 - Invertebrate Faunal Analysis
 - Archaeological Research Design
-

in the NRHP under Criterion A and D as an archaeological site and as a traditional cultural property. The reports were submitted to Caltrans and the California SHPO and received concurrence from both parties.

Class III Cultural Resources Inventory for the Calico Peak Utility Pole Line Project – Bureau of Land Management and Southern California Edison, Barstow, CA, 2016.

Principal Investigator. Under Tait's field supervision, ICF archaeologists performed a pedestrian survey along a power pole installation project proposed by Southern California Edison in support of the project's Section 106 of the NHPA obligations. The project occurred on land managed by the Bureau of Land Management. The survey relocated two previously documented archaeological site and identified one previously undocumented archaeological isolate. Based on the results of the survey, all of the isolates were recommended not eligible for listing in the NRHP. After the survey was completed, Tait co-authored the cultural resources technical report, which was submitted to both the Bureau of Land Management and Southern California Edison.

Cultural Resources Inventory Report for the Cajon Air Center Phase II: North RSA Drainage Improvement, El Cajon, San Diego County, California – County of San Diego Department of Public Works, El Cajon, CA, 2016.

Principal Investigator and project manager. Tait and one ICF staff archaeologist performed a pedestrian survey and limited subsurface investigations at the Cajon Air Center in support of the projects Section 106 of the NHPA and CEQA obligations. Subsurface investigations were accomplished using a hand-powered auger, and revealed that the study area had been graded down to Pleistocene-aged sediments during early development of the airfield. The survey identified no previously undocumented archaeological sites. Tait co-authored the cultural resources technical report, and the report was submitted to San Diego County Department of Public Works, to be distributed to the FAA who was serving and the lead federal agency, within 20 days of completion of fieldwork. 2016.

Phase I Cultural Resources Survey for the Cauzza Property, San Diego County, California – County of San Diego Department of Parks and Recreation, Santa Ysabel, CA, 2016.

Principal Investigator. Under Tait's field supervision, ICF archaeologists performed a pedestrian survey on a property that was recently purchased by San Diego Department of Parks and Recreation (DPR) in support of DPR's CEQA obligations. The survey relocated seven previously documented archaeological sites and identified thirteen previously undocumented archaeological sites and isolates. Tait also coordinated with Native American monitors from Red Tail consulting to make sure that a Native American monitor was on-site during the survey in accordance with DPW's wishes. After the survey was completed, Tait co-authored the cultural resources technical report, which was submitted to the client less than 30 days after completion of the fieldwork.

Phase I Cultural Resources Survey for the Santa Ysabel Nature Center Property, San Diego County, California – County of San Diego Department of Parks and Recreation, Santa Ysabel, CA, 2016.

Principal Investigator. Under Tait's field supervision, ICF archaeologists performed a shovel probe and pedestrian survey on a property that was recently purchased by San Diego Department of Parks and Recreation (DPR) for the creation of a Nature Center. The survey consisted of excavating over 250 shovel probes in archaeologically sensitive areas, performing pedestrian survey across a 100 acre area, and relocating three previously documented archaeological sites. Tait also coordinated with Native American monitors from Red Tail consulting to make sure that a Native American monitor was on-site during the survey in accordance with DPW's wishes. After the survey was completed, Tait authored a cultural resources technical report that addressed both the project's Section 106 and CEQA obligations.

BILL MITCHELL

Fisheries Biologist

Bill Mitchell is a fisheries biologist with more than 25 years of experience addressing major fisheries issues in California. He has a diverse background in aquatic sciences, with special expertise in salmon and steelhead ecology, fisheries impact assessment, fish population modeling, fish habitat assessment and monitoring, and fish passage evaluations. Bill has extensive experience preparing CEQA and NEPA documents, BAs, and mitigation and monitoring plans for a wide range of water supply, flood control, hydroelectric, and transportation projects.

Bill has special expertise in salmon and steelhead biology, ecology, and conservation and broad experience in fisheries impact assessment and modeling tools. He works collaboratively with project engineers, hydrologists, geomorphologists, and other technical specialists to develop and apply integrated modeling and assessment approaches to assess fisheries impacts and guide mitigation and design for individual and program-level projects. Much of Bill's professional career has focused on the development and application of fisheries assessment tools and monitoring in support of environmental planning, permitting, and regulatory compliance actions in Central Valley and Sierra Nevada rivers. His unique qualifications include more than 20 years of experience leading research and monitoring activities to evaluate the effects of reservoir operations on salmon and steelhead populations in the lower Yuba River.

Key Skills

Design and Implementation of Salmon and Steelhead Monitoring and Research. Bill conducts biological assessments, monitoring, and research of chinook salmon and steelhead populations in support of water management, regulatory compliance, and ecosystem restoration objectives. Since 1990, he has been conducting field monitoring and research of Chinook salmon and steelhead populations in the lower Yuba River to evaluate abundance, growth, habitat use, and life history variability in response to regulated flows. Recent research activities include a jointly funded (CALFED, Anadromous Fish Restoration Program, and Yuba County Water Agency) study of life history variation in Yuba River steelhead based on scale analysis. This study addressed major data gaps related to the effect of regulated flows and water temperatures on growth, condition, and life history expression in wild Central Valley steelhead. In addition, Bill recently completed a four-year monitoring program in the lower Yuba River to evaluate the effectiveness of current flow fluctuation criteria in protecting chinook salmon and steelhead from redd dewatering and fish stranding.

Integrated Modeling and Assessment of Fisheries Impacts and Mitigation Requirements. Bill's recent experience includes development of a floodplain habitat assessment model to quantitatively evaluate the ecological benefits of levee setback projects based on the floodplain habitat relationships of chinook salmon and other native fishes. This model integrates historic hydrologic data, simulated hydraulic conditions (HEC-RAS), and topographic and vegetation maps to quantify habitat suitability indices for the target fish species. He successfully applied the model to evaluate and compare proposed levee setback alternatives and provide design recommendations for the final planning and design phase of the Yuba River Basin Project.

Years of Experience

- Professional start date: MM/YYYY
- ICF start date: MM/YYYY

Education

- PhD, Concentration, School, Year
 - MS, Concentration, School, Year
 - BS, Concentration, School, Year
-

Project Experience

Transportation—Roads, Bridges, and Highways

Healdsburg Avenue Bridge NEPA/CEQA—City of Healdsburg/Omni Means, California

Serves as staff fisheries biologist. Conducted constraints analysis of 15 different conceptual alternatives based on reconnaissance-level cultural, biological resources, visual, and noise surveys. Identified constraints related to the timing and sensitivity of listed fish species and aquatic habitat in the Russian River. Currently leads fisheries technical studies, agency coordination, and preparation of a BA addressing impacts on listed fish species and designated critical habitat.

Doherty Drive, Bon Air Road, and Alexander Avenue Bridges Regulatory Compliance—City of Larkspur/PB Americas, California

Serves as staff fisheries biologist. Prepared NES and BA addressing noise and water quality impacts of proposed bridge construction on listed fish species and designated critical habitat in Corte Madera Creek. Assisting in coordination efforts with the NMFS and USFWS to develop acceptable construction windows and minimization measures to reduce noise-related impacts on listed fish and wildlife species. 2011.

Three Bridges Craig Creek Snorkel Surveys—Caltrans Districts 1, 2, and 3, Tehama County, California

Served as staff fisheries biologist. Conducted snorkel surveys every two weeks in Craig Creek to determine fish species presence, distribution, and abundance in project area according to the snorkel survey protocols in the California Salmonid Stream Habitat Restoration Manual.

Rattlesnake Creek Project—Caltrans, Eureka, California

Served as staff fisheries biologist. Prepared BA addressing effects of highway culvert replacement on listed fish species, designated critical habitat, and essential fish habitat. Assessment focused on the effects of construction and design on critical habitat and passage of steelhead, coho salmon, and Chinook salmon. 2013.

Klamath Grade Raise Project—Caltrans, Eureka, California

Served as staff fisheries biologist. Assisted Caltrans in the design of baseline fisheries studies, impact assessment, and development of mitigation actions supporting federal and state ESA compliance and permitting requirements. Duties include coordination with acoustic engineers to quantify underwater noise levels and develop mitigation strategies to address pile-driving impacts on threatened coho salmon. 2013.

North Coast Coho Programmatic BA—Caltrans Districts 1, 2, and 4, California

Assisted in agency coordination and preparation of an NMFS programmatic BA for Caltrans Districts 1, 2, and 4 to coordinate and streamline authorizations, approvals, and permitting coverage for routine road, bridge, and culvert maintenance activities. Coordination involved multiple regulatory agencies, including the USFWS, CDFW, Corps, NMFS, State Water Board, and RWQCB. 2003.

Contract 43A0306 - On-Call Noise Contract—Caltrans Headquarters – Statewide, California

Provided technical review and updates to the 2007 Caltrans Guidance Manual on the Effects of Sound on Fish. This document provides Caltrans engineers, biologists, and consultants with guidance related to ESA, CESA, and Magnuson-Stevens Fishery Conservation and Management

Act requirements related to in-water pile driving projects. Updated analytical framework and methods for assessing hydroacoustic impacts of pile driving on fish based on evolving research, permitting, and regulatory requirements for in-water pile driving activities. 2014.

Water

Camanche Water Rights Permit Extension EIR—East Bay Municipal Utility District, California

Served as staff fisheries biologist. Conducted CEQA assessment of impacts on special-status and management fish species in the lower Mokelumne River, Sacramento-San Joaquin estuary, and Camanche and Pardee Reservoirs. Assessment methods involved comparative analysis of habitat conditions and fish population responses under historical and simulated project operations and water supply scenarios.

Jackson Creek Beneficial Use Assessment Workplan—City of Jackson/Eco:Logic, Jackson, California

Served as staff fisheries biologist. Designed and implemented a beneficial use assessment study to evaluate effects of proposed reductions in wastewater discharge on aquatic resources in Jackson Creek. Prepared study plan and supervised field data collection in accordance with established EPA and State Water Board bioassessment protocols and study objectives.

Lower Sacramento River Bank Protection Design and Environmental Studies—Corps, Sacramento District/Sacramento Area Flood Control Agency, California

Served as staff fisheries biologist. Worked collaboratively with project engineers in design and assessment of bioengineered streambank protection and levee setbacks for critical erosion sites on the lower Sacramento and American Rivers. Applied quantitative species and habitat assessment methods (HEP, SAM) to evaluate alternative project designs and mitigation requirements for listed fish species.

Ralston Afterbay Sediment Management Project Water Quality and Aquatic Resources Monitoring Program—Placer County Water Agency, California

Served as staff fisheries biologist/project manager. Developed long-term monitoring program to evaluate project effects on water quality, aquatic habitat, and biological communities in the Middle Fork of the American River downstream of the dam. This unique project, which includes reoperation of the dam and placement of sediment in the active flood zone below the dam, seeks to address continued sedimentation of the reservoir, while restoring the natural transport of sediment and associated ecosystem benefits to the reach below the dam. ICF successfully completed four years of baseline monitoring and provided recommendations for future project operations and monitoring.

Lower Butte Creek Project Fish Passage and Entrainment Assessment—Ducks Unlimited, Inc., California

Served as staff fisheries biologist. Assisted multiple water users and regulatory stakeholders to develop a cooperative fisheries restoration plan for lower Butte Creek. Developed impact assessment approach for estimating fish losses at unscreened diversions and used a habitat-based simulation model (EDT) to evaluate the benefits of screening diversions on survival and abundance of Butte Creek spring-run chinook salmon.

Hamilton City Pumping Plant Gradient Restoration Facility—Ayres Associates, California

Served as staff fisheries biologist. Assisted project engineers in design and evaluation of a riverbed gradient restoration facility and associated fish screen and bypass facilities at the Glenn-Colusa

Irrigation District's Hamilton City Pumping Plant on the Sacramento River. Designed fish passage routes based on fish swimming abilities and behavior and evaluated fish passage performance based on "design riffle" concept and two-dimensional hydraulic modeling data.

Floodplain Aquatic Habitat Assessment Model, Yuba River Basin Project—Corps, Sacramento, California

Served as staff fisheries biologist. Developed floodplain habitat assessment model to quantitatively evaluate the ecological benefits of levee setback projects based on the floodplain habitat relationships of chinook salmon and other native fishes. This model integrates historic hydrologic data, simulated hydraulic conditions (HEC-RAS), and topographic and vegetation maps to quantify habitat suitability indices for the target fish species. Successfully applied model to evaluate and compare proposed levee setback alternatives and provide design recommendations for the final planning and design phase of the Yuba River Basin project.

Fisheries

On-Call Fisheries Related Services Master Agreement—Yuba County Water Agency, Marysville, California

Serves as staff fisheries biologist. Directs long-term monitoring and assessment of Chinook salmon and steelhead populations in the lower Yuba River. Monitoring techniques include carcass surveys to estimate annual salmon spawning escapement; trapping of juvenile salmon and steelhead to estimate abundance and migration timing; and snorkeling surveys to monitor abundance and distribution of juvenile salmon and steelhead in relation to flow, water temperature, and other habitat variables. Recent research activities include a study of life history variation in wild steelhead based on scale analysis and a four-year monitoring program to evaluate the effectiveness of current flow fluctuation criteria in protecting chinook salmon and steelhead from redd dewatering and fish stranding.

Habitat Expansion Agreement for Anadromous Fish in Sacramento River—DWR/PG&E, Sacramento, California

Served as staff fisheries biologist. Assisted in the development, evaluation, and review of proposed habitat expansion actions on the lower Yuba River to expand adult holding, spawning, and rearing habitat for spring-run chinook salmon and steelhead. ICF developed the quantitative approach to estimate the contribution of the proposed actions to the habitat expansion agreement population goals. Developed the design concepts for juvenile rearing habitat enhancement actions based on field monitoring of floodplain habitats conducted in association with flow fluctuation and fish stranding studies.

Hatchery and Stocking Program EIR/EIS—CDFW, Sacramento, California

Served as staff fisheries biologist. Assisted in a statewide review and impact assessment of CDFW's trout, salmon, and steelhead hatchery operations and fish stocking activities. This included a review of the operations and fish release practices of the state's 14 trout hatcheries (including the San Joaquin Hatchery) and 10 salmon and steelhead hatcheries located in all of California's major watersheds, from the Klamath River on the north to the Mojave River on the south, and throughout the Central Valley.

Fish Monitoring—Freeport Regional Water Authority, California

Serves as staff fisheries biologist. Prepared and currently implements a fish monitoring program designed to evaluate the effectiveness of a state-of-the art fish screen in protecting listed fish species at the Freeport Regional Water Authority's new water intake facility on the Sacramento

River. The monitoring program includes fish entrainment, impingement, and predator monitoring using a number of fish sampling and underwater observation and imaging techniques (DIDSON).

Klamath River Chinook Salmon Population Modeling—Pacific Coast Federation of Fisherman's Associations, Eureka, California

Served as staff fisheries biologist for D.W. Kelley & Associates. Assisted user groups and fisheries management agencies in the development and application of simulation models to evaluate population responses of Klamath and Trinity River chinook salmon stocks to alternative harvest management strategies. Served as a member of a multiagency technical team consisting of commercial, sport, and tribal fisheries representatives and assisted in developing a spawning escapement policy recommendation for Klamath and Trinity River salmon stocks.

IP Networks - Cottonwood to Eureka Fiber Optic Cable Project—Cottonwood to Eureka, California

Staff Fisheries Biologist. Prepared NEPA technical support documents and a BA for a proposed 120-mile fiber optic cable and associated facilities in northern California between Cottonwood and Eureka, California. The BA/BE addressed the effects of construction, operations, and maintenance activities on threatened coho salmon, Chinook salmon, and steelhead and their designated critical habitat, and Essential Fish Habitat for coho and Chinook salmon. 2011.

Employment History

ICF International. Fisheries Biologist. Sacramento, California. 10/1989–Present.

D.W. Kelley & Associates. Fisheries Biologist. Newcastle, California. 08/1986–08/1989.

SALLY ZEFF, AICP

Project Director

sally.zeff@icf.com 916-231-9543

Sally Zeff has more than 30 years of experience in environmental consulting, management, permitting, mining consulting, and planning consulting; she also has extensive experience serving as a public agency planner. She has strong qualifications in general plans, land use, energy, traffic, housing, agriculture and farmland conservation, mining, and related environmental analyses. Sally is also experienced in preparing documentation for CEQA and NEPA compliance and permitting, related to mixed-use land development, transportation, renewable, fossil, and nuclear energy, agricultural processing and mining. Her urban, regional, and rural planning experience includes general plan work, site analysis, feasibility studies, and mine inspection programs.

Sally has designed and implemented public involvement programs for projects ranging from general plans to environmental impact reports. She has also developed and implemented a variety of visioning exercises, including specific development project alternatives and general plans. Sally's experience includes presentations at public hearings, meetings, and forums; stakeholder and workgroup meetings; and workshops, and she has demonstrated skills in the preparation of public information handouts and displays. Her experience as a public agency planner and city planning director give her specialized insight into handling questions and presentations of opinions by a variety of stakeholders, including project proponents, affected landowners, community activists, and concerned citizens.

Project Experience

City of West Sacramento CEQA

Reference: **David Tilley, Principal Planner**
Public Works and Community Development Department
1110 West Capitol Road
West Sacramento, CA 95691
DAVIDT@cityofwestsacramento.org
(916) 617-4645



Years of Experience

- Professional start date: 1981
- ICF start date: 10/2002

Education

- MUP, Urban Planning, University of Michigan, 1981
- BA, Medieval Studies, Reed College, 1980

Professional Memberships

- American Planning Association (APA)
- Association of Environmental Professionals (AEP)

Certifications/Other

- Certified Planner, American Institute of Certified Planners (AICP), No. 6100

West Sacramento General Plan Update EIR

Served as project director. The City of West Sacramento is proposing to comprehensively update its General Plan for the first time in over a decade. ICF is assisting the City with technical advice on planning and policy issues, CEQA streamlining, and preparation of a program EIR for the General Plan Update and the City's Climate Action Plan. The Draft EIR has been issued for public review.

River Park EIR—City of West Sacramento, California

Served as project manager for an EIR for a project consisting of over 2,400 mixed-density residential units, a 40-acre park, and community open space on approximately 446 acres. Issues include cumulative development in the Southport area of West Sacramento, traffic, wetlands, flooding, and potential effects of riverfront recreational uses.

Yarbrough EIR—City of West Sacramento, California

Served as project director for an EIR for a project consisting of approximately 3,000 residential units and a golf course on 710 acres. Issues include cumulative development in the Southport area of West Sacramento, traffic, flooding, and wetlands.

Contra Costa County Public Works Department CEQA

Reference: **Hillary Heard, Planner**

Contra Costa County

hillary.heard@pw.cccounty.us

(925) 313-2022

255 Glacier Drive

Martinez, CA 94453

Downtown Martinez Jail Demolition Project EIR

Served as project director for this controversial project. ICF is assisting the Contra Costa County Public Works Department and working with the Contra Costa County Department of Conservation and Development (DCD) to demolish the existing Jailhouse building located at 650 Pine Street in Downtown Martinez, in Contra Costa County, California. After demolition, the interim use of the site would be an expansion of the existing 7-space parking lot located to the south of the existing building. A potential future use of the site would be for County administrative functions, but no plans or designs have been prepared and no funding is available for such a future use at this time. ICF performed cultural resources assessment and prepared the EIR for the project. Major issues for the project are related to the historic nature of the building, and substantial public opposition to demolition has occurred.

Costa County West County Detention Facility Expansion Focused EIR

Served as project director. ICF prepared a Focused EIR for the Contra Costa County Public Works Department and the Contra Costa County Sheriff's Department covering a County-initiated project consisting of expansion of the existing West County Detention Facility (WCDF). The proposed project entails the development of approximately 2.3 acres at the WCDF for a high-security detention facility with supporting reentry program facilities, and a mental health treatment facility. The new facility would provide high security housing, and educational and vocational facilities and programs to help prepare inmates for reentry into society. Issues addressed include traffic and visual impacts. ICF assisted the County to complete the CEQA process in an extremely short time frame (7 months) to meet grant application deadlines.

Merced County CEQA (on-call)

Reference: Mark J. Hendrickson, Director
Merced County Community and Economic Development Department
mhendrickson@co.merced.ca.us
(209) 385-7654 X4400
2222 M St. Second Floor
Merced, CA. 95340

John Latorraca Correctional Center (JLCC) Expansion Project Initial Study/Mitigated Negative Declaration—Merced County, California

Served as project director. ICF prepared environmental analysis and documentation for Merced County for the proposed John Latorraca Correctional Center (JLCC) Expansion project. Merced County Public Works Department is working with Merced County Administration and the Merced County Sheriff's Department to construct a new County jail building and remodel adjacent existing jail facilities at the JLCC. ICF worked closely with the County to develop mitigation measures to reduce all project impacts to a less than significant level, allowing the County to prepare a Mitigated Negative Declaration for the project on an expedited schedule.

Gallo Winery Minor Expansion—Merced County, California

Served project director. For Gallo and Merced County, ICF prepared two subsequent Initial Study/Mitigated Negative Declarations for expansions of Gallo's existing winery near Atwater. Issues include traffic air quality, and noise.

Gallo Winery Major Expansion—Merced County, California

Served project director. For Gallo, ICF prepared an Initial Study/Mitigated Negative Declaration for a major expansion of Gallo's existing winery near Atwater. Issues included biological resources, air quality, and noise.

Gallo Winery Livingston Water Innovation and Energy Facility (LWINE) Project—Merced County, California

Served as project director. For Gallo, ICF prepared an Initial Study/Mitigated Negative Declaration for installation of the E. & J. Gallo Winery Livingston Water Innovation and Energy Facility (LWINE) Project. The LWINE facility digests wastewater and pomace to generate biogas and up to 2 megawatts of electricity to offset a portion of the power usage from the utility grid; treats winery wastewater flows to reduce wastewater and contaminant loading on areas designated for land disposal of process wastewater; produces dried fertilizer from biosolids; and recovers heat from internal combustion generation engines. Issues included biological and cultural resources, air quality, and noise. As a follow up to approval of the project by Merced County, ICF assisted Gallo with mitigation implementation, especially with regard to Swainson's hawk habitat impact mitigation.

Hilmar Cheese Manufacturing Facility Expansion—Merced County, California

Served as project director. For Merced County, ICF prepared an Initial Study/Mitigated Negative Declaration in support of the County's action in approving a major expansion to the existing cheese manufacturing and dairy operations including installation of a solar generation facility. Issues included water and stormwater, air quality, and traffic. As a follow up to approval of the project by Merced County, ICF assisted Hilmar Cheese with mitigation implementation, especially with regard to Swainson's hawk habitat impact mitigation.

Hilmar Cheese Manufacturing Facility Minor Expansion—Merced County, California

Served as project director. For Merced County, ICF prepared an Initial Study/Mitigated Negative Declaration in support of the County's action in approving a minor expansion to the existing cheese manufacturing operation. Issues included water quality and stormwater runoff.

Jaxon/Craven Mine Supplemental EIR—Merced County, California

Served as project director. ICF is preparing a Supplemental EIR for expansion of an existing aggregate mining operation located in Merced County. Issues include biological resources, wetlands, and permitting.

Liberty Packing Company Facility Expansion Permitting and CEQA Documentation—Merced County, California

Served as project director. ICF performed biological resources site surveys and air modeling to assist in siting and permitting issues for this project, and prepared an Initial Study/Negative Declaration that was approved quickly and unanimously by the County Planning Commission. The project consisted of a major expansion to a tomato packing and processing plant, including relocation of a rail spur. Issues included hydrology and water quality, biological resources, and consistency with adjacent biological habitat areas.

Wright Solar Park EIR—Merced County, California

Served as project director. ICF is preparing an EIR, and HCP, and assisting the project developer with permitting for this project, which consists of development of a 200-megawatt (MW) solar photovoltaic (PV) power plant located on 2,732 acres of grazing and dry-farmed lands in unincorporated Merced County. The project includes cancellation of the Williamson Act contracts covering portions of the project site. Major issues include biological resources, farmland impacts, and water.

Siskiyou County CEQA (on-call)

Reference: Natalie Reed, Deputy County Counsel
Siskiyou County
nreed@co.siskiyou.ca.us
(530) 842-8100
P.O. Box 659
Yreka, CA 96097

Crystal Geyser EIR—Siskiyou County, California

Served project manager for Siskiyou County. As an extension of County staff, managed application processing and preparation of the environmental documentation for this controversial project. The project consists of reopening and updating a closed water and beverage bottling plant in Mt. Shasta, California. Substantial public interest and controversy surround this project. Issues included AB52 consultation with the local tribe, water quality, traffic, and air quality.

Employment History

ICF International. Project Director. Sacramento, California. 10/2002–Present.

Greystone Environmental Consultants. Senior Environmental Planner and Project Manager. Sacramento, California. 2000–10/2002.

City of Rocklin. Associate Planner. Rocklin, California. 1998–2000.

Lilburn Corporation. Senior Project Manager. Folsom, California. 1995–1997.

The Planning Center. Senior Project Manager. Sacramento, California. 1992–1995.

EIP Associates. Associate. Sacramento, California. 1989–1992.

Town of Los Altos Hills. Planning Director. Los Altos Hills, California. 1988–1989.

Blayney-Dyett. Planner. San Francisco, California. 1986–1988.

City of Fremont. Associate Planner. Fremont, California. 1986–1986.

Ventura County. Associate Planner. Ventura, California. 1982–1986.

Yolo County. Junior Planner. Woodland, California. 1981–1982.

ERIC E. LINK

GIS Analyst

Eric Link specializes in web map development, conservation biology, stormwater management, and field data collection. He has experience in GIS operation and spatial data analyses, as well as assessment modeling. Eric has provided GIS and GPS expertise to organizations including the City of Roseville and the Dry Creek Conservancy and has assisted the City of Roseville's Stormwater Management Program and the Dry Creek Conservancy in developing their internal and mobile GIS capabilities. He has conducted field data acquisition training for a variety of areas, including salmonid assessment and stormwater related work.

Eric is experienced in ESRI ArcGIS Server and ArcGIS Online software platforms. He also is proficient in ESRI Arcpad and Arcpad application builder software, Trimble Terasync and Pathfinder Office software, ESRI ArcGIS 9.x-10x, including Spatial Analyst, Model Builder.

Years of Experience

- Professional start date: 06/2001
 - ICF start date: 03/2008
-

Education

- MS, Conservation Biology, California State University, Sacramento, 2012
 - BS, Ecology, La Sierra University, 2001
 - GIS Certificate, University of California, Riverside, 2003
-

Key Skills

GIS for Conservation Biology. Eric brings a thorough understanding of GIS and how it applies to conservation biology. From GAP analysis to habitat modeling of special-status species, he is aware of the importance that GIS can bring to conservation efforts. Eric's past conservation tasks have included modeling future vineyard expansion to determine focus species for conservation within Northern California, habitat modeling, and reserve design.

Project Experience

Clifton Court Forebay Predator Reduction Electrofishing Study — California Department of Water Resources, Contra Costa County, CA

Served as the Senior GIS Analyst for the study. Efforts included developing a custom data collection system that integrated the latest mobile technology for tracking multiple boat locations, time and location of active electrofishing as well as predator fish captures. Once the data was collected Mr. Link developed a multifaceted predator depletion model based on catch per unit effort in order to identify emerging "cold spot" trends within the Clifton Court Forebay over time.

Feather River West Levee Project Environmental Permitting, Mitigation Monitoring Plan and Construction Phase Implementation and Monitoring, Sutter Butte Flood Control Agency, Sutter and Butte Counties, CA

Lead GIS analyst. Managed all geospatial analyses and oversaw figure development for the conservation strategy, CWA Section 404 individual permit package, EIR, and BA. Produced figures and provided QA/QC support to the project. The Sutter Butte Flood Control Agency is planning the Feather River West Levee Project to address levee deficiencies in the west levee of the Feather River from the Thermalito Afterbay approximately 4 miles north of the Sutter Bypass to meet Federal, state, and local flood protection standards and goals.

Lower Yolo Restoration Project—State and Federal Contractors Water Agency, Yolo County, California

Serving as lead GIS analyst. Work has included supporting regulatory permitting and design, for a 1,672-acre tidal marsh restoration project. Mr. Link applied geospatial analysis for identifying Pre/Post project disturbances. He also created a custom data collection system for the project and provided cartographic support for all permitting, design, cultural and biological resources. Construction is scheduled for summer 2016.

Yolo Flyway Farms Restoration Project—Reynier Fund, LLC, Yolo County, California (Charles Tyson, Owner, 916-716-3900)

Serving as senior GIS lead. Work has included supporting regulatory permitting and CEQA document preparation, and design with geospatial analyses and cartographic documents for a 276-acre tidal marsh restoration project. Mr. Link works closely with project manager to ensure obligations specified in the BO are met by quantifying amount of habitat that is restored or enhanced. Construction is scheduled for summer 2016.

Mira Monte Marsh Restoration Project—Sonoma Marin Area Rail Transit, Novato, California (Bill Gamlen, Chief Engineer, 707-794-3049)

Senior GIS lead. Developed geospatial data and restoration cartographic products for a 12 acre tidal marsh restoration project along San Antonio Creek near Novato, California. The project involved removing a marina and RV storage site and restoring and enhancing historic tidal marsh habitat. The project was constructed in January and February of 2015.

Southern California Edison – Tehachapi Renewable Transmission Project Habitat Restoration Monitoring, Various Counties, California

GIS Manager. Currently manages all data collection, mapping products and analyses for the project. Maintains a project wide database and works closely with Southern California Edison to maintain data integrity and to identify innovative solutions for streamlining geospatial tasks, such as data collection efforts.

Punalu‘u Stream Restoration and Habitat Bank Development— Kamehameha Schools, Oahu County, Hawaii

Senior GIS lead. Served as senior GIS analyst for the stream restoration and habitat bank development. Developed web map applications that were used as decision support tools for the development of the habitat bank. The project team also utilized these web maps as a means for collaboration. Species richness was modeled for the entire island of Oahu within GIS and the results were incorporated into a threatened and endangered species web map that the team then utilized for calculating potential mitigation credits for the habitat bank.

Employment History

ICF International. GIS Analyst. Sacramento, California. 03/2008–Present.

City of Roseville. Environmental Specialist. Roseville, California. 09/2005–03/2008.

Circuit Rider Productions. Restoration Biologist. Petaluma, California. 06/2003–08/2005.

Lovitch Environmental. Field Biologist. Redlands, California. 03/2001–06/2003.

JORDAN MAYOR, PHD

Ecologist

Dr. Jordan Mayor is an ecosystem ecologist with 17 years of experience as a consultant and academic. His areas of expertise include wetland delineations and mitigation monitoring, preparation of Habitat Mitigation and Monitoring Plans (HMMPs), rare plant and vegetative community surveys, preparation of permit compliance documents, field sampling and laboratory analysis. From 2013 – 2015, Dr. Mayor served as a postdoctoral researcher in ecosystem ecology with the Department of Forest Ecology & Management at the Swedish University of Agricultural Sciences in Sweden. In addition, he served as a National Science Foundation international postdoctoral fellow (NSF-IRFP) in tropical biogeochemistry at the Smithsonian Tropical Research Institute in Panama from 2010 – 2012.



Project Experience

Biologist – ICF Jones & Stokes, 2017 – present

Botanist/Wetland Scientist. Jordan Mayor has conducted special status plant species surveys, wetland mitigation monitoring, and vegetation mapping for multiple Caltrans and PG&E projects at several localities and wetland delineations in support of various Caltrans projects in Humboldt and Mendocino counties. **Environmental Permitting Specialist.** Jordan Mayor has contributed to multiple environmental permit reports in support of multiple agencies.

Plant and Ecosystem Ecologist—Natural Resources Service Line, GHD, Inc., Eureka, California, 2015 – 2017

Plant and Ecosystem Ecologist. While employed by Natural Resources Service Line, GHD, Inc., Dr. Mayor provided wetland delineations and mitigation monitoring field work and written reports, produced HMMPs, conducted rare plant and vegetative community surveys involving CNDDDB/CNPS/USFWS database searches and habitat mapping, and served as contributing author to multiple types of permit compliance documents (NEPA/CEQA, Coastal Commission, USACE).

Faculty Lecturer—Humboldt State University, Arcata, California, 2015 – 2016

Faculty Lecturer. As a faculty lecturer in Botany and Plant Ecology at Humboldt State University Department of Biological Sciences, Dr. Mayor taught General Botany and Mycology laboratory sections, as well as Plant Ecology lecture and lab sections (designed from scratch).

Years of Experience

- Professional start date: 2000
- ICF start date: 05/2017

Education

- PhD, Ecosystem Ecology, University of Florida, 2010
- MA, Botany, Humboldt State University, California, 2005
- BS, Biology, Virginia Polytechnic Institute & State University, 1999

Professional Memberships

- Ecological Society of America, 2005 – Present
- Society for Ecological Restoration, 2016 – Present
- American Geophysical Union, Biogeochemistry Section, 2009 – 2012
- Mycological Society of America, 2003 – 2012

Postdoctoral Research Ecologist—Swedish University of Agricultural Sciences, Sweden, 2013 – 2015

Postdoctoral Research Ecologist. Dr. Mayor performed elevational transect sampling at seven treeline regions of the world, coordinated logistics among 14 international researchers, and presented and published results.

National Science Foundation Postdoctoral Research Fellow (NSF-IRFP)—NSF Biogeochemistry & Ecosystem Ecology STRI Laboratory, Panama City, Panama, 2010 – 2012

NSF-IRFP. Dr. Mayor planned and executed research sampling in multiple tropical rainforests. He was responsible for individual control over experimental design, field sampling, and sample processing, as well as presentation and publication of results.

Research Assistant—University of Florida, Gainesville, Florida, 2010

Research Assistant. Dr. Mayor performed field sampling and laboratory analyses based in Fairbanks, Alaska.

Teaching Assistant—University of Florida, Gainesville, Florida, 2005 – 2009

Teaching Assistant. Dr. Mayor served as a teaching assistant for the laboratory sections of Botany and Plant Ecology, as well as for the lecture section of General Ecology.

Research Assistant—University of Florida, Gainesville, Florida, 2006 – 2007

Research Assistant. Dr. Mayor quantified mycorrhizal infection of invasive plants.

Teaching Assistant—The Department of Biology, Humboldt State University, California, 2003 – 2005

Teaching Assistant. Dr. Mayor served as teaching assistant for the laboratory sections of Botany, Mycology, and Plant Taxonomy.

Subcontracting Botanist—Southern Oregon Ecological Inc., Grants Pass, Oregon, 2001 – 2004

Subcontracting Botanist. While employed by Southern Oregon Ecological Inc., Dr. Mayor performed surveying for federally endangered plants and fungi throughout printing BLM forest in California and Oregon (from Portland to Klamath Falls and throughout Klamath range).

Biologist—North State Resources, Redding, California, 2001 – 2002

Biologist. While employed by North State Resources, Dr. Mayor surveyed for rare fungi in montane wilderness areas of northern California.

Biologist—Six Rivers National Forest, California, 2001

Biologist. Dr. Mayor surveyed for plants, lichens, mollusks, and herpetofauna in northern California.

Wildlife Biologist—Leopold Biological and Associates, California, 2001

Wildlife Biologist. While employed by Leopold Biological and Associates, Dr. Mayor surveyed for Northern Spotted Owls and other raptors in northern California.

Watershed Steward—California Conservation Corps and Americorps, Northern California, 2000

Watershed Steward. While employed by the California Conservation Corps and Americorps, Dr. Mayor performed construction of in-stream log structures to promote salmonid habitat. He also performed non-native plant removal.

Publications

Mayor, J.R., N. Sanders, A. Classen, R. Bardgett, J.-C. Clement, A. Fajardo, S. Lavorel, M. Sundqvist, M. Bahn, C. Chisholm, E. Cieraad, Z. Gedelof, K. Grigulis, G. Kudo, D. Oberski, and D. Wardle. Elevation alters ecosystem properties across temperate treelines globally. *Nature*, DOI: 10.1038/nature21027. 2017.

Andersen K., J.R. Mayor, and B.T. Turner. Soil microbes promote plasticity over partitioning of nitrogen among sympatric species in a tropical montane forest. *Ecology*, DOI: 10.1002/ecy.1793.

Mahé, F., D. de Vargas, L. Bass, A. Czech, E. Stamatkis, D. Lara, J. Singer, J. Mayor, S. Bunge, T. Sernaker, I. Siemensmeyer, S. Trautmann, C. Romac, A. Berney, E.A.D. Kozlov, C.V.W. Mitchell, E. Seppey, G. Egge, R. Lentendu, G. Wirth, Trueba, and M. Dunthorn. Soil protists in three Neotropical rainforests are hyperdiverse and dominated by parasites. *Nature Ecology & Evolution*, DOI: 10.1038/s41559-017-0091. 2017.

Wardle, D., D. Metcalf, M/ Jonsson, and J.M. Mayor. Aboveground and belowground responses to nutrient addition across a retrogressive chronosequence. *Journal of Ecology* 104:545-560. 2016.

Mahé, F., J. Mayor, J. Bunge, T. Chi, T. Siemensmeyer, B. Stoeck, T. Wahl, S. Paprotka, Filker, and M. Dunthorn. Comparing high-throughput platforms for sequencing the hyper-variable V4 region in environmental eukaryotic diversity surveys. *Journal of Eukaryotic Microbiology*, 62:338-345. 2015.

Mayor, J.R., M. Bahram, T. Henkel, F. Beugger, K. Pritsch, and L. Tedersoo. Ectomycorrhizal impacts on plant nitrogen nutrition: emerging isotopic patterns, latitudinal variation, and hidden mechanisms. *Ecology Letters*, 18: 96-107. 2015.

Mayor, J.R., E.A.G. Schuur, and M.C. Mack. Decoupled stoichiometric, isotopic, and fungal responses of an ectomycorrhizal black spruce forest to nitrogen and phosphorus additions. *Soil Biology & Biochemistry*, 88:247-256. 2015.

Craine, J.M., T. Baisden, and J.R. Mayor et. al. Convergence of soil nitrogen isotopes across global climate gradients. *Scientific Reports*, 5, DOI: 0.1038/srep08280. 2015,

Tedersoo, L., M. Bahram, and J.R. Mayor et. al. Global diversity and geography of soil fungi. *Science*, 346. DOI: 10.1126/science.1256688. 2014,

Frédéric, M., J.R. Mayor, J. Bunge, J. Chi, T. Siemensmeyer, T. Stoeck, B. Wahl, T. Paprotka, S. Filker, and M. Dunthorn. Comparing high-throughput platforms for sequencing the hypervariable V4 region in environmental eukaryotic diversity surveys. *Journal of Eukaryotic Microbiology*, DOI: 10.1111/jeu.12187. 2014.

Mayor, J.R., S.J. Wright, E.A.G. Schuur, M.E. Brooks, and B.L. Turner. Stable nitrogen isotope patterns of trees and soils altered by long-term nitrogen and phosphorus addition to a lowland tropical rainforest. *Biogeochemistry*, 119:293–306. 2014.

Mayor, J.R., S.J. Wright, and B.L. Turner. Species-specific responses of foliar nutrients to longterm nitrogen and phosphorus additions in a lowland tropical forest. *Journal of Ecology*, 102:36–44. 2014.

Birkebak, J.M., J.R. Mayor, K.M. Ryberg, and P.B. Matheny. A systematic, morphological and ecological overview of the Clavariaceae. *Mycologia*, 105:896-911. 2013.

Mayor, J.R., E.A.G. Schuur, M.C. Mack, T.N. Hollingsworth, and E. Bååth. Nitrogen isotope patterns in Alaskan black spruce reflect organic nitrogen sources and the activity of ectomycorrhizal fungi. *Ecosystems*, 15:819–831. 2012.

Mayor, J.R., E.A.G. Schuur, and T.W. Henkel. Elucidating the nutritional dynamics of fungi using stable isotopes. *Ecology Letters*, 12:171–183. 2009.

Mayor J.R. and C.E. Hicks. Potential impacts of elevated CO₂ on plant interactions, sustained growth, and C cycling in salt marshes. Ch. 11, In: Silliman B.R., Bertness M.D., Strong D., (eds.), *Human Impacts on Salt Marshes: A Global Perspective*. University of California Press. 2009.

Mayor J.R., T. Fulgenzi, T.W. Henkel, and R.E. Halling. *Boletellus piakaii* sp. nov. and a new distribution record for *Boletellus ananas* var. *ananas* from Guyana. *Mycotaxon*, 105:387–398. 2008.

Fulgenzi, T., J.R. Mayor, T.W. Henkel, and R.E. Halling. New species of *Boletellus* from Guyana. *Mycologia*, 100:490–495. 2008.

Mayor, J.R. and T.W. Henkel. Do ectomycorrhizas alter leaf-litter decomposition in monodominant tropical forests of Guyana? *New Phytologist*, 169:579–588. 2006.

Henkel, T.W., J.R. Mayor, and L. Woolley. Mast fruiting and seedling survival of the ectomycorrhizal, monodominant *Dicymbe corymbosa* (Caesalpiniaceae) in Guyana. *New Phytologist*, 167:543–556. 2005.

Submitted Manuscripts

Metcalf, D.B., T.D.G. Hermans, J. Ahlstrand, M. Becker, ...J.R. Mayor,[30 authors]. Identifying gaps and priorities in environmental research across the terrestrial Arctic biome. *Nature Ecology & Evolution*, in review.

Dunthorn, M., H. Kauserud, D. Bass, J.R. Mayor, and F. Mahé. Yeasts dominate soil fungal communities in three Neotropical rainforests. *Proceedings of the Royal Society B*, submitted.

Reviewer

Mayor, Jordan (journal reviewer):

- ▶ *Journal of Applied Ecology*, 2017
- ▶ *Ecosystems*, 2015 – 2016
- ▶ *Fungal Ecology*, 2015
- ▶ *Tree Physiology*, 2015
- ▶ *Global Change Biology*, 2014 – 2015
- ▶ *Journal of Ecology*, 2014 – 2015
- ▶ *Journal of Austral Ecology*, 2014
- ▶ *Functional Ecology*, 2013 – 2016
- ▶ *Soil Biology & Biochemistry*, 2012 – 2013
- ▶ *New Phytologist*, 2009 – 2015
- ▶ *Plant Ecology*, 2012 – 2013
- ▶ *Plant and Soil*, 2012 – 2015
- ▶ *Biotropica*, 2010 – 2014

Mayor, Jordan (reviewer for granting agencies). German Research Foundation. 2013 – 2014

Mayor, Jordan (reviewer for granting agencies). University of Florida Biology Graduate Student Research Awards. 2010.

Training and Lecturing

Mayor, Jordan (invited). Biology Graduate Seminar. Humboldt State University. Arcata, California. January 27, 2015.

Mayor, Jordan (invited). Global Ecology Seminar. Carnegie Institution for Science. Stanford, California. January 20, 2015.

Mayor, Jordan. Ecological Society of America. Baltimore, Maryland. 2015.

Mayor, Jordan (special symposia paper). Ecological Society of America. Sacramento, California. 2014.

Mayor, Jordan (special symposia paper). Association for Tropical Biology & Conservation. Costa Rica. July 2013.

Mayor, Jordan. Grantsmanship Grant Writing Workshop: Awarded Week-long Participant. University of Florida. 2012.

Mayor, Jordan (special symposia paper). Ecological Society of America. Portland, Oregon. 2012.

Mayor, Jordan. STRI 'Bambi' and 'Fellows' Symposia. Panama City, Panama. 2011/2012.

Mayor, Jordan (poster). Stoichiometric flexibility in terrestrial ecosystems under global change. New Phytologist International Symposium. Biosphere 2 in Oracle, Arizona, USA. 2011.

Mayor, Jordan (co-instructor). Microscopy and Mycology Portion of Tropical Forest Ecology Field Course. UNACHI/STRI. Panama. 2011.

Mayor, Jordan (paper). American Geophysical Meeting. San Francisco, California. 2011.

Mayor, Jordan (poster). American Geophysical Meeting. San Francisco, California. 2009.

Mayor, Jordan (paper). Ecological Society of America. Milwaukee, Wisconsin. 2008.

Mayor, Jordan (poster). The Ecology of Ectomycorrhizal Fungi. New Phytologist International Symposium. Montpellier, France. 2008.

Mayor, Jordan (paper). Mycological Society of America. North Carolina. 2008.

Mayor, Jordan (poster). Ecological Society of America. San Jose, California. 2007.

Mayor, Jordan (poster). Association for Tropical Biology & Conservation. Suriname. 2007.

Mayor, Jordan (poster). Soil & Water Sciences Research Forum. University of Florida. 2005.

Mayor, Jordan (special symposia paper). Association for Tropical Biology & Conservation. Miami, Florida. 2004.

Mayor, Jordan (paper). Mycological Society of America. Pennsylvania. 2004.

Mayor, Jordan (paper). Western Mycological Conference. Humboldt State University. California. 2004.

Recognition and Commendations

Awards, Grants, and Fellowships

New Phytologist Travel Grant and Best Poster Award, Arizona, USA. 2011.

NSF-IRFP; \$184,113; STRI postdoctoral fellow. 2010.

NSF-DDIG to J. Mayor and T. Schuur; \$14,884. 2009.

Selected for Boreal Forest Functioning Ph.D. Course in Sweden; travel expenses. 2009.

International Association of GeoChemistry Student Research Grant; \$1,000. 2009.

Forest Fungal Ecology Research Award, Mycological Society of America; \$1,500. 2007.

Selected participant in Tropical Forestry Field Course, Brazil; travel expenses. 2006.

Working Forests in the Tropics Graduate Research Award, UF; \$4,000. 2006.

Botany Graduate Student of the Year, HSU; \$1,000. 2005.

Woolford-Hegy Academic Scholarship, International Rotary Club, California; \$1,000. 2004.

Employment History

ICF. Ecologist. Arcata, California. 05/2017 – Present.

GHD, Inc. Plant and Ecosystem Ecologist, Natural Resources Service Line. Eureka, California. 2015 – 2017.

Humboldt State University, Department of Biological Sciences. Faculty Lecturer in Botany and Plant Ecology. California. 2015 – 2016.

Swedish University of Agricultural Sciences. Postdoctoral Research Ecologist. Sweden. 2013 – 2015.

STRI Laboratory. National Science Foundation Postdoctoral Research Fellow in Soil Biogeochemistry and Ecosystem Ecology. Panama City, Panama. 2010 – 2012.

University of Florida. Research Assistant. Gainesville, Florida. 2010.

University of Florida. Teaching Assistant. Gainesville, Florida. 2005 – 2009.

University of Florida. Research Assistant. Gainesville, Florida. 2006 – 2007.

Humboldt State University, Department of Biology. Teaching Assistant. Arcata, California. 2003 – 2005.

Southern Oregon Ecological Inc. Subcontracting Botanist. Grants Pass, Oregon. 2001 – 2004.

North State Resources. Biologist. Redding, California. 2001 – 2002.

Six Rivers National Forest. Biologist. California. 2001.

Leopold Biological and Associates. Wildlife Biologist. California. 2001.

California Conservation Corps and Americorps. Watershed Steward. Northern California. 2000.

DAVID M. BUEHLER, PE

Project Director, Noise and Vibration Specialist

David Buehler is a board-certified member of the Institute of Noise Control Engineering and has over 30 years of experience working as a consultant in acoustics and vibration. He conducts analysis of noise and vibration associated with transportation, construction, industrial, energy, commercial, recreation, and other projects. His expertise includes field investigations, impact and mitigation assessment, policy development, training, and project management. David has prepared numerous noise studies in the context of CEQA/NEPA documentation. He played a key role in developing criteria and methods used to assess hydroacoustic impacts on protected fish species from in-water pile driving.

Key Skills

Noise Impact and Mitigation Assessment. David has used noise modeling tools such as the FHWA Traffic Noise Model (TNM), FHWA Roadway Noise Construction Model, and Soundplan to evaluate construction noise impacts from a variety of highway, equipment, and construction noise sources.

Noise Training. David developed and implemented a highway noise analysis training program for Caltrans that included multiple training modules covering the fundamentals of traffic noise, noise measurement procedures, noise modeling procedures, Caltrans noise policy, and noise study report preparation. David taught these courses statewide to Caltrans staff and consultants. He has also developed on-demand versions of many of the training courses.

Policy and Guidance Development. David has been extensively involved in the development of Caltrans highway noise policy over the last 15 years. This includes participation in the 2006 and 2011 revisions of the Caltrans Traffic Noise Analysis Protocol. He has also participated in the preparation of several guidance manuals for Caltrans including manuals on construction vibration, hydroacoustic impacts from pile driving on fish, and highway noise analysis.

Project Experience

Missouri River Commercial Dredging EIS—Corps, Kansas City District, MO

Served as noise specialist. Conducted a noise study to evaluate noise impacts associated with expanded dredging on 500 miles of the Missouri River. Evaluated noise impacts associated with on-river dredging operations and related on shore processing activities. Evaluated several alternatives related to various levels of dredging operations and prepared the EIS noise chapter.

California Water Fix – California Department of Water Resources, Sacramento, CA

David provided technical oversight for noise and vibration impact analysis associated with a project to construct a water conveyance system between Sacramento and the San Francisco Bay Delta. Conveyance options to transfer water include a duel bore large diameter underground tunnel pipes, canals, and a mixture of canals and tunnels. The analysis evaluated noise impacts associated with

Years of Experience

- Professional start date: 10/1981
- ICF start date: 06/1990

Education

- BS, Civil Engineering, California State University, Sacramento, 1980

Professional Memberships

- Board Certified Member, Institute of Noise Control Engineering

Certifications

- California Registered Professional Civil Engineer, No. C37936, 1983
- Oregon Registered Professional Acoustical Engineer, No.16834, 1993
- Caltrans Headquarters Legal Division Expert Witness, California, 2007

Honors and Awards

- FHWA 2005 Environmental Excellence Award for Exemplary Achievement in Ecosystems, Habitat, and Wildlife
-

construction operations, pumping equipment associated with operation of facility, and roadway relocation. Vibration impacts associated with construction operations including tunnel boring operations were also evaluated. David also conducted an analysis of hydroacoustic impacts on protected fish species from pile driving in water. Provided oversight for the noise/vibration chapter of the project EIR/EIS.

Statewide On-Call Noise and Earthborne Vibration Analyses and Abatement Studies (Contracts 43A0008, 43A0049, 43A0139, 43A0228, 43A0306, 43A0365)—Caltrans, Statewide California

Served as contract manager and primary technical expert for six consecutive statewide on-call contracts, including more than 100 task orders relating to project-level noise studies, special noise and vibration investigations, training development and deployment, and noise policy development. Played a key role in the 2006 and 2011 revisions to the Caltrans Traffic Noise Analysis Protocol. Developed and deployed a detailed highway noise training program covering noise fundamentals, regulations and policy, noise field studies, traffic noise modeling, and noise study report preparation. Developed a guidance manual addressing transportation- and construction-induced vibration. Provided on-call general assistance to Caltrans headquarters and district staff regarding all aspects of highway-related noise.

U.S. Highway 101 Bridge over Klamath River Underwater Noise Study (Contract No. 03A1573)—Caltrans Districts 1, 2, 3

Served as noise analyst. Caltrans is proposing to make repairs to bridge hinges on the U.S. Highway 101 bridge over the Klamath River. The repairs involve demolition activities on the bridge and pile driving. Developed an analysis method for predicting underwater noise levels associated with bridge demolition activities. Using this method and other established methods for evaluating underwater noise from pile driving, prepared a detailed technical memorandum on potential underwater noise levels generated by the project. Compared predicted noise levels to fish injury thresholds to identify the potential for adverse effects on fish listed under the ESA.

U.S. Highway 101 Pile Driving Noise Study—Transportation Authority of Marin/Jacobs Engineering, Greenbrae, California.

Served as noise analyst. This project involves in-water pile driving associated with widening of U.S. Highway 101 over Corte Madera Creek near Greenbrae. Evaluated construction noise effects on protected fish and bird species. This included conducting an ambient noise survey to characterize baseline noise conditions in the project area. Underwater noise impacts from pile driving were evaluated using methodology and criteria developed by the NMFS. Airborne noise impacts were evaluated using the FHWA Roadway Noise Construction Model.

LINDSAY CHRISTENSEN

Environmental Specialist

lindsay.christensen@icf.com 916-231-7614

Lindsay Christensen is a project manager with a broad background in planning and community development. She specializes in community impact assessments and Section 4(f). Lindsay coordinates communication and information flow between internal team members and clients and assists with document preparation and review. Her responsibilities include field investigations, research and report preparation, client meetings, and managing budgets. Lindsay also has experience with air quality and noise analysis, and large-scale Forest Service content analysis projects, including processing, coding, and responding to public comment letters, quality control, and database management.

Years of Experience

- Professional start date: 03/2005
 - ICF start date: 03/2005
-

Education

- BS, Community and Regional Development, University of California, Davis, 2004
-

Key Skills

Project Management and Coordination. Lindsay coordinates and manages a variety of projects with a focus on transportation and development. She works with clients including governmental agencies (e.g., Caltrans, DWR, Forest Service), as well as private sector entities. Attends public meetings and hearings and provides client support.

Technical Author. Lindsay has 12 years of experience writing a wide range of NEPA and CEQA documents, as well as community impact assessments and Section 4(f) reports. She has researched and written technical reports and chapters in various resource areas, including aesthetics, agriculture, air quality, environmental justice, growth, hazards and hazardous materials, land use, noise, population and housing, public services/utilities, and recreation.

Selected Project Experience

Sacramento to Roseville 3rd Main Track—Capitol Corridor Joint Powers Authority, Sacramento and Placer County, California

Served as project manager responsible for managing internal staff, coordinating with the client and sub consultants, managing budget, and providing a variety of technical reports and an EIR. CCJPA is proposing to expand the number of daily passenger trains operating between the Sacramento Station and downtown Roseville from its current single daily roundtrip (two trains per day) to up to ten roundtrips per day (20 trains per day). Assisted CCJPA with information to include in their staff report and public hearing presentation, including responses to public comment letters and mitigation monitoring and reporting plan. The EIR was certified and unanimously approved.

Reference: Jim Allison, Manager of Planning, Capitol Corridor Joint Powers Authority (CCJPA), JimA@capitolcorridor.org, 510-464-6994

On-Call Environmental Support Services—Caltrans, Sacramento, California

Served as project coordinator. Responsible for providing on-site support to the Caltrans Environmental Division. Tasks include assisting with updates to the Standard Environmental Reference website (SER) and streamlining/managing the process of dealing with internal and external requests to revise the SER. Also provided on-site support for headquarter reviews of air quality and climate change analysis projects.

Reference: Brenda Powell-Jones, Senior Environmental Planner, Caltrans Headquarters, brenda_powell-jones@dot.ca.gov 916-599-4512

SR 20/SR 70 Rehabilitation Community Impact Analysis—Caltrans District 3, Marysville, California

Served as project coordinator. Wrote CIA for the SR 20/SR 70 rehabilitation project. Coordinated site visit, attended client meetings, and conducted internet and telephone research to capture transportation impacts on the City of Marysville, with a focus on economic, emergency response, and access impacts.

Reference: Chris Carroll, Office of Environmental Management, Caltrans District 3, chris.carroll@dot.ca.gov, 530-741-4276

Albion River Bridge and Salmon Creek Bridge Replacement Projects Community Impact Analysis—Caltrans District 1, Mendocino County, California

Responsible for combined CIA for two bridge replacements on Highway 1 in Mendocino County. Attended site visit and client meetings, helped coordinate public meetings focused on community impacts and gathering public input for a locally controversial project.

Reference: Frank Demling, Project Manager, Caltrans District 1, frank.demling@dot.ca.gov, 707-445-6554

Gallo Winery Major Expansions—Merced County, California

Served project manager. For Gallo, ICF prepared both an Initial Study/Mitigated Negative Declaration and a Subsequent IS/MND for various expansions of Gallo's existing winery near Atwater. Issues included biological resources, air quality, and noise. Wrote all generalist sections of the IS/MND, coordinated with internal technical staff, Gallo, and the County, as well as managed budget and schedule. Assisted County staff with information for their staff report and public hearing, including responses to public comments and mitigation monitoring and reporting plan. Both documents were certified and unanimously approved.

Reference: Brian Guererro, Planner III, County of Merced, bguerrero@co.merced.ca.us, 209-385-4578

GARY CLENDENIN, PG

Geology and Soils

Gary Clendenin is a senior project manager with more than 32 years of experience in geology, hydrogeology, and environmental sciences. During the past 27 years, he has been involved in all aspects of environmental consulting, including the planning, design, and execution of soil and groundwater investigations and feasibility studies, assisting clients in managing their environmental liability exposure, and directing soils and geology and hazardous materials analysis on large CEQA and NEPA projects.. Gary's specific areas of expertise include environmental due diligence and liability assessments; hydrogeologic investigations (including groundwater modeling and aquifer testing); remedial investigation/feasibility studies; hazardous waste management, environmental site assessments; engineering evaluations; and oil field environmental assessments, restoration, and redevelopment.

Key Skills

Hydrogeologic Investigations (including Groundwater Modeling and Aquifer Testing). Gary has designed and managed aquifer tests in a variety of hydrostratigraphic environments and has conducted numerous analytical models to predict groundwater flow and chemical transport.

Environmental Due Diligence and Liability Assessments.

Gary has completed several dozen Phase I and All Appropriate Inquiry environmental site assessments throughout the United States. Many of the Phase I assessments were completed on linear transportation projects, some of which were over 100 miles long. Gary has also conducted environmental liability assessment to support merger and acquisition activities between Fortune 500 companies.

Remedial Investigation/Feasibility (RI/RF Studies). Gary has participated in several RI/FS studies as part of Comprehensive Environmental Response, Compensation, and Liability Act activities. This work has included assessment and remedial action activities at solid waste management units and technical support related to potential responsible party (PRP) steering committees.

Environmental Site Assessments. Gary has completed over 100 Phase II environmental site assessments throughout the United States. These site assessments were conducted to investigate potential releases of hazardous materials to the soil and groundwater. He has designed work plans, health and safety plan, quality assurance plans and other documents required to complete these studies. In California, Gary has worked extensively with the Regional Water Quality Control Boards (RWQCB) and Department of Toxic Substances Control, among other county and local regulatory agencies.

CEQA/NEPA. Gary has worked as a geology and soils and hazards and hazardous materials subject matter expert on a number of large scale development projects throughout the US.



Years of Experience

- Professional start date: 05/1984
- ICF start date: 01/1999

Education

- MS, Geology, Ohio University, 1990
- BS, Geology, Marietta College, 1984

Certifications

- Registered Professional Geologist (PG), California, No. 6396, 1995
- Contaminate Hydrology, Oklahoma State University, 1990

Project Experience

Tongue River Railroad Company (TRRC) Environmental Impact Statement (EIS)—Surface Transportation Board (STB), Montana, 05/2012 – 07/2015

Resource Lead. Gary was resource lead for the geology and soils and hazardous materials section of the TRRC EIS. TRRC has filed a revised application with the STB to construct and operate an approximately 83-mile rail line between Miles City, Montana, and two ending points, one near the site of the previously planned Montco mine near Ashland, Montana, and another at the proposed Otter Creek mine in the Otter Creek area east of Ashland, Montana. Several rail line alternatives are under consideration, including the preferred alignment 42-mile Colstrip Alternative. TRRC's new preferred Colstrip Alternative would generally parallel Greenleaf Road (S-447) rather than follow Roe & Cooper Creek. Because the construction and operation of this project has the potential to result in significant environmental impacts, the Board's Office of Environmental Analysis (OEA) has determined that the preparation of an EIS under NEPA.

Walteria Lake Sediment Sampling and Memo—County of Los Angeles Department of Public Works, Torrance, California, 02/2008 – 04/2009

Senior Project Manager/Project Manager. To support a planned dredging program in a Los Angeles County storm water retention basin, Gary managed a field sampling program to determine if sediments basin contained contaminants that might cause the material to be classified as a hazardous waste for disposal purposes. To complete this work, ICF collected representative sediment samples from boats using a specially designed sampling tool.

Permanente Creek Flood Protection Project Clean, Safe Creeks—Santa Clara Valley Water District/Hatch Mott MacDonald, Santa Clara County, California, 09/2010 – 02/2012

Senior Project Manager/Hazmat. Gary reviewed hazardous materials technical studies prepared for an EIR to support improvements to Permanente Creek. This work involved the review of a previously prepared Phase I report, analysis of the findings, and preparation of strategies to mitigate identified potential hazardous materials sites.

Baietan Area Master Plan and Technical Assistance for Habitat Restoration—Skidmore, Owings & Merrill LLP/Developer in China, Guangzhou, China, 02/2010 – 10/2010

Senior Project Manager/Brownfields Expert. Gary was a member of a diverse team of engineers, architects, and planners who developed a sustainable master plan for a neighborhood in Guangzhou, China. Most of the project study area was heavily industrialized and thought to be moderately- to highly-contaminated. He researched and developed a sustainable and green remedial action plan to address likely contamination for the Chinese officials to consider in their redevelopment policies.

Pebble Beach Company Project EIR—Monterey County, California, 08/2010 – 07/2011

Geology and Soils Lead. Gary prepared the geology and soils section of this project, which was the “build out” of Pebble Beach through planned development and preservation of the remaining undeveloped properties. The project included: renovation and expansion of visitor-serving uses; creation of 90 single-family residential lots; road, infrastructure, and trail improvements; and preservation of large undeveloped tracts of forested open space. He reviewed geotechnical reports and conducted geology and soils analysis.

**Westway Bulk Liquids Storage Facility Expansion EIS/SEPA—City of Holquiam, Washington,
02/2014 – 06/2015**

Hazards and Hazardous Materials Lead. Gary led a team of scientists and resource specialist in the preparation of the hazards and hazardous materials sections of environmental document under the purview of the State of Washington's State Environmental Policy Act (SEPA). Currently the Westway facility is used for storage of methanol. The proposed project calls for expansion of the facility to include five additional 200,000-gallon tanks for the storage of crude oil. Team is considering the chemical properties of the existing and proposed materials and their chemical fate and transport if released to the environment.

**Millennium Bulk Terminals Longview EIS/SEPA—Cowlitz County, Longview, Washington,
04/2012 – 11/2014**

Resource Lead. Gary prepared a hazardous materials and water quality analysis to support the Millennium Bulk Terminals – Longview, LLC (MBTL), joint EIS/State Environmental Policy Act (SEPA) report. The terminal was designed to export up to 44 million metric tons of coal annually.

SHANNON HATCHER

Task Lead, Air Quality and Climate Change

Shannon Hatcher is an air quality, climate change, and noise project manager with extensive experience in emissions inventory development, environmental impact analysis, report preparation, and environmental noise monitoring. He manages and prepares air quality, climate change, and noise studies for a variety of transportation, infrastructure, planning, and other development projects. Shannon's lead responsibilities include field investigations, modeling assessments, impact analysis, mitigation strategies and report preparation, and analysis and document peer review and quality assurance/quality control (QA/QC). For this project, Shannon will be responsible for technical oversight and peer review.

Shannon's areas of expertise include point-, area-, and mobile-source air quality impact studies; air quality conformity analyses; air quality dispersion modeling; air quality health risk assessments; air quality permitting support; analyses of air quality regulations; emission inventory development; mitigation strategy identification and quantification; greenhouse gas (GHG) inventory; GHG impact assessment; and training.

Project Experience

Bay-Delta Conservation Plan (BDCP)/California Water Fix Administrative Draft EIR/EIS Environmental Consequences Analysis—California Department of Water Resources (DWR)/HDR Engineering, California, 03/2013 – Present

Senior Air Quality and Climate Change Peer Review. Project includes 16 project alternatives spanning four air districts. The technical analysis includes potential air quality, GHG, and health risks associated with the project, which included removal of materials by trucks and barges. He developed comprehensive mitigation to reduce documented impacts, including a GHG and criteria pollutant offset program administered by DWR. Shannon coordinated with BAAQMD, Sacramento Metropolitan AQMD, Yolo-Solano AQMD, and San Joaquin Valley Air Pollution Control District planning staff develop the construction offset program and protocol, identify and finalize the calculation methodology and offset payment process to meet CEQA mitigation requirements, as well as part of the General Conformity determination prepared for the project to ensure the project meets General Conformity requirements within four separate air districts and three air basins.



Years of Experience

- Professional start date: 12/2000
- ICF start date: 12/2000

Education

- BS, Environmental Science, Oregon State University, Corvallis, Oregon, 2000
- BS, Environmental Health and Safety, Oregon State University, Corvallis, Oregon, 2000

Professional Memberships

- Air and Waste Management Association
- Association of Environmental Professionals

Professional Development

- FHWA Workshop on Project-Level Mobile Source Air Toxics, Federal Highway Administration
- AERMOD Modeling for Permits
- Advanced AERMOD and Practical CalPuff, BEE-Line Software
- EPA Project-Level Training for Quantitative PM Hot-Spot Analyses - EMFAC
- California Air Resources Board Course #296: Health Risk Assessments & Dispersion Modeling

San Francisquito Creek Flood Protection Project—San Francisquito Creek JPA, Menlo Park, California, 12/2009 – 07/2012

Senior Peer Reviewer. Shannon provided senior peer review for the criteria air pollutant and GHG assessment for the development of environmental and regulatory compliance documentation for a flood protection and habitat restoration project on Lower San Francisquito Creek. A key aspect of the project involves assessing the flood protection value of the project to the surrounding communities, including the City of East Palo Alto. The project also evaluates existing habitat, and identifies potential project impacts and habitat restoration opportunities for California clapper rail and salt marsh harvest mouse.

Southport Environmental Interim Preliminary Planning (EIP)—West Sacramento Area Flood Control Agency/HDR Engineering, Sacramento, California, 06/2011 – 10/2015

Senior Peer Reviewer. Shannon provided senior peer review for criteria air pollutant and GHG assessment for a flood risk-reduction project encompassing nearly 6 miles of levee improvements, on this urgently needed and controversial public works project located in the legal Delta. Project analysis included evaluation of emissions associated with barge and dredging activities, as well as movement of materials by trucks and barge. Project design includes extensive habitat restoration, water quality preservation, recreation and public safety elements. Significant milestone included completion of a draft joint NEPA/CEQA document addressing U.S. Army Corps of Engineers (USACE) and Yolo Solano Air Quality Management District (YSAQMD) environmental requirements. He coordinated with YSAQMD planning staff to develop the construction offset program and protocol, identify and finalize the calculation methodology and offset payment process as part of the General Conformity determination prepared for the project to ensure the project meets General Conformity requirements.

River Islands EIS at Lathrop—USACE, Sacramento District, Lathrop, California, 01/2009 – 01/2016

Senior Peer Reviewer. Shannon prepared criteria pollutant analysis and GHG inventory for a large-scale mixed-use development that would provide 11,000 homes and 5 million sf of commercial uses, along with water-oriented recreational amenities and preserved open space. He drafted air quality EIR section and technical reports for both the air quality and climate change analyses. Project analysis included evaluation of emissions associated with barge and dredging activities, as well as movement of materials by trucks and barge. The River Islands site includes 4,905 acres of agricultural land, open space, and flood protection levees located on the Stewart Tract and Paradise Cut within the Lathrop city limits (southern Sacramento-San Joaquin Delta). Development is proposed to include residential districts, an employment center and town center, golf courses, dock facilities, a central lake and other water features; and preservation, restoration, and creation of terrestrial and aquatic habitat.

Mission Rock (Seawall Lot 337/Pier 48) EIR—Seawall 337 Associates LLC, Inc., San Francisco, California, 06/2013 – Current

Senior Peer Reviewer. Shannon provided senior peer review for criteria air pollutant and greenhouse gas assessment. The Mission Rock project involves development of approximately 3.6 million square feet in the China Basin area of the City, immediately south of AT&T Park. A portion of the project site is currently vacant, consisting of a surface parking lot that primarily serves AT&T Park. The project would result in 11 new city blocks on approximately 23 acres. The project would reuse and rehabilitation of the existing Pier 48 for a variety of uses, including brewery, restaurant and retail. The analysis included quantification of construction and operational emissions with the CalEEMod emissions model for comparison to BAAQMD thresholds of significance, as well as a HRA of construction and operational health risks with the AERMOD dispersion model.

BRENDAN BELBY, PH

Geomorphology, Hydrology

Brendan Belby is a certified Professional Hydrologist with expertise in fluvial geomorphology and surface water hydrology. His emphasis is investigation of human impacts on hydrologic, hydraulic, and sediment processes in riverine environments. He excels at applying the latest research in geomorphic analysis, sediment transport processes, and hydrodynamic modeling to provide novel, concrete solutions based on quantitative reasoning. Brendan's experience includes work on projects evaluating the impacts of dams and diversions on hydrologic processes and sediment deliveries to regulated reaches. He implements channel assessment, stream gaging, sediment transport measurement, and numerical modeling to determine channel maintenance flow requirements. Brendan uses GIS to analyze air photo, LiDAR, and other data to evaluate historic land use changes, identify key geomorphic processes, and identify the opportunities and constraints of restoration alternative designs. Brendan has extensive experience applying field data with modeling to predict geomorphic response under various management scenarios and to develop restoration and fish passage designs.

Project Experience

Grays Harbor Navigation Improvement Project SEIS— U.S. Army Corps of Engineers, Grays Harbor, Washington

Served as lead geomorphologist. The U.S. Army Corps of Engineers proposed to deepen the federal navigation deep-draft channel in Grays Harbor. In 2013, evaluated the potential effects of channel deepening on the sediment transport processes in the estuary. Evaluated if channel deepening would: affect sediment transport dynamics by altering the placement location and/or magnitude of dredged material; affect Whitcomb Flats morphology; alter the processes of side slope erosion of the navigation channel; enhance ship wake erosion; or change salt wedge dynamics. Authored the geomorphology section of the SIES. 2013.

Lower Missouri River Third-Party EIS Dredging Impact Assessment—Corps, Kansas City District, Missouri

Served as hydraulics and sediment transport lead. Developed a sediment budget for a 500-mile reach of the Lower Missouri River (LMOR) to help determine sustainable in-channel dredging levels. The rate of riverbed degradation has accelerated in recent years, resulting in high costs for municipalities to repair damaged infrastructure and diminished ecological habitat. Since the

Years of Experience

- Professional start date: 12/1996
- ICF start date: 05/2012

Education

- MS, Fluvial Geomorphology, University of Illinois, 2001
- BA (Phi Beta Kappa), Physical Geography, Augustana College, 1998

Professional Memberships

- American Geophysical Union, 2000-Present
- American Institute of Hydrology, 2012-Present

Certifications

- Professional Hydrologist, American Institute of Hydrology, No. 12-H-4008

Professional Development

- Hydrologic Modeling with HEC-HMS (5 day course), Davis, California, 2015
 - Modeling Bridges and Culverts with HEC-RAS (3 day course), WEST Consultants, Seattle, Washington, 2014
 - 2D Hydrodynamic Flow & Transport with SMS (4 day course), Orlando, Florida, 2008
 - Introduction to Engineered Log Jam Technology and Applications for Erosion Control and Fish Habitat (5 day course), La Push, Washington, 2006
 - Stream Restoration Design: Application of Geomorphology and Sediment Transport (5 day course), Utah State University, 2005
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Corps is responsible for issuing permits to the mining companies, the Corps initiated an EIS to determine the effect of dredging on channel stability. Developed and implemented the study plan to create a sediment budget for the Lower Missouri River so dredging levels could be analyzed in context with the river's sediment supply. Analyzed historic hydrologic and sediment measurement records for the LMOR and then performed hydraulic and sediment transport modeling to calculate bed material loads at multiple locations on the river. Helped develop a detailed geomorphic assessment of the river to identify trends in channel form adjustments and to link the adjustments with alteration of natural processes on the river. Used his results to develop a sediment budget, determine the relative impact of dredging on channel instability in relation to other channel modifications, and to make recommendations to the Corps on sustainable dredging volumes in different river reaches. Authored the Technical Appendix for the Final EIS document that describes the technical analyses he performed and results he obtained that were used to help develop new annual dredging levels. 2010–2011.

Lower Columbia River, Bradwood Landing—NorthStar Natural Gas, Oregon and Washington

Served as geomorphologist. Performed a study to determine the expected geomorphic impact on the lower Columbia River due to the proposed Bradwood Landing liquefied natural gas (LNG) terminal at river mile 38.5. Conducted an extensive literature review of lower Columbia River hydrology, sedimentology, geomorphology, channel navigation, and human impacts to the estuary. Conducted new studies to calculate shoreline erosion rates over the past century and evaluated how increased navigation of the river from LNG carriers would affect shoreline erosion and channel morphology. Additionally, evaluated 2D hydrodynamic modeling results of predicted bed change due to construction of the LNG terminal. Analyzed the model results in relation to broader geomorphic processes to determine how the project would alter sediment supply and transport processes and channel stability. Authored a report that described the geomorphic trend of the lower Columbia River and how the proposed project would affect existing river processes. 2009–2010.

Russian River Aggregate Resource Management (ARM) Plan—Sonoma County Permit and Resource Management Department, Sonoma County, California

Served as geomorphologist. Sonoma County issues permits to mining companies that specify the volume, timing, and methods of permissible gravel extraction on the Russian River. Helped prepare the County's annual ARM Plan monitoring reports for 2002-2005. Analyzed hydrologic records to determine hydrographs and flow duration curves for dry to wet water years, evaluated cross-section and thalweg surveys, and reviewed mining activity to assess the impact of in-channel gravel mining on geomorphic channel stability and flow conveyance. Calculated sediment replenishment rates to determine whether the volume of sediment deposited by the river post-mining is in balance with the amount of sediment naturally eroded and mined from the river. Co-authored the annual monitoring reports that outlined the study analyses, results, and recommendations. 2002–2005.

Middle Fork American River Watershed—Placer County Water Agency (PCWA), California

Served as geomorphologist. Performed analyses in support of PCWA's FERC relicensing studies for operations in the Middle Fork American River watershed. Conducted a study to quantify the amount of spawning gravel that has been trapped in reservoirs behind PCWA

dams. Compared pre-dam surveyed site topography with a recent elevation surface to determine changes in reservoir sediment volumes. Conducted topographic bathymetry surveys, field mapped substrate composition in the reservoirs, and measured the grain size distribution of sediment test pits dug with excavators to quantify the percentage of the trapped sediment within the spawning gravel size range. Used the results to estimate a sediment budget of the annual rate of spawning gravel trapped behind dams and to provide an indication of how much gravel augmentation may be necessary. Additionally, used historic and future simulated streamflow hydrographs to conduct an incipient motion study to determine the flows required to mobilize spawning gravels in several watershed streams and used the results of 2D hydraulic modeling to calculate how much flow must be released from reservoirs to satisfy stakeholder requests for gravel mobilization and healthy spawning habitat. Also surveyed channel and floodplain topography, sampled fish spawning substrate, and made V^* measurements of sand accumulations in pools. 2006–2011.

Toklat River Gravel Extraction Process—National Park Service, Denali National Park, Alaska

Served as geomorphologist. Undertook an analysis of the Toklat River near Mile 53 on Park Road in Denali National Park. The wide braid plains of the river's branches were severely constricted due to causeway construction in the 1930s on Park Road. Additionally, the NPS extracts gravel from the Toklat River biannually to obtain aggregate for maintenance needs. Recent riverbank erosion is threatening park infrastructure, including a rest area and maintenance yard. Worked with a team to determine how the causeway and in-channel gravel mining are related to changes in the braided channel dynamics, channel migration, and the recent bank erosion. Conducted a site investigation and authored the site assessment report. Also attended a workshop in 2012 at Denali National Park and assisted with presenting findings and recommendations on potential site configuration changes and future gravel mining methods and quantities that could be implemented to alleviate chronic bank erosion. 2011–2012.

Geomorphic Assessment of the North Fork of the Feather River—PG&E, Lake Almanor, California

Served as geomorphologist. Assisted with a FERC relicensing study of how flow regulation affects the geomorphic condition of the upper North Fork of the Feather River downstream of Lake Almanor. Characterized the type and amount of sediment supplied to the channel, conducted an inventory of in-stream large woody debris and described its geomorphic function, and performed stream classification. 2001.

JENNIFER STOCK, PLA

Landscape Architect/Visual Resources

Jennifer Stock brings expertise in visual analysis with a background in habitat restoration/mitigation planning and design. She has prepared visual resources and shade/shadow analyses for Proponents Environmental Assessments (PEAs), Environmental Assessments (EAs), Initial Studies (ISs), Environmental Impact Statements (EISs), and Environmental Impact Reports (EIRs).

Jennifer Stock provides thorough visual/aesthetic impact analysis on a wide range of projects across varied visual landscapes, and she is well-versed in working with Federal Highway Administration (FHWA), U.S.D.A. Forest Service (Forest Service), and U.S. Bureau of Land Management (BLM) visual assessment methodologies. Her visual resource assessment services include expert analysis for NEPA and CEQA environmental compliance and evaluation of photo-realistic simulations and GIS viewshed mapping. Thorough analysis is provided for simple to contentious projects at the programmatic and project levels. Project experience includes roadway and railway projects; wind and solar renewable energy projects; residential, educational, and commercial development projects; transmission line, pipeline, and sewage outfall projects; recreational and multi-use projects; and mining and dredging projects. Project experience ranges throughout California, the Pacific Northwest, Montana, and Alaska.

Project Experience

Reuse of the Mare Island Dredged Material Disposal Ponds EIR/EIS—City of Vallejo, California

Visual Resource Specialist. Conducted and prepared the aesthetics resource analysis of the area that could be affected by the proposed dredge reuse facility, including residential, recreational, open space, industrial, and military land uses. The analysis included determining impacts and designing mitigation measures to reduce impacts and improve post-project visual aesthetics. A nighttime analysis also was prepared to determine the effects of nighttime off-loading operations on Sandy Beach residents, located across Mare Island Strait. Coordinated and worked with Environmental Vision for production of visual simulations and the nighttime analysis. Prepared report graphics, using AutoCAD, for the aesthetics analysis and reports for other resources. Provided additional project coordination help for the project manager and coordinator.

Visual and Aesthetic Impact Analysis Missouri River Commercial Dredging EIS—U.S. Army Corps of Engineers (Corps), Kansas

Visual Resource Specialist. Prepared visual and aesthetic resources analysis of the area that could be affected by the proposed commercial dredging project and its alternatives. The analysis included evaluation of existing conditions using Google Earth/Maps and available photos and proposed

Years of Experience

- Professional start date: 07/1999
- ICF start date: 07/1999

Education

- BLA, Landscape Architecture, Pennsylvania State University, University Park, 1999

Professional Memberships

- American Society of Landscape Architects
- California Native Plant Society, Sacramento Valley Chapter, President (2008–2010)

Licenses

- Professional Landscape Architect, California, No. 5155
- Professional Landscape Architect, Oregon, No. 608
- Professional Landscape Architect, Utah, No. 6293357-5301
- Professional Landscape Architect, Washington, No. 1030

Training

- Visual Resources Management, BLM
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alternatives, research of relevant policies pertaining to visual resources in the program area, and determination of adverse effects from the proposed project and mitigation measures to reduce effects and improve post-project visual aesthetics.

Suisun Marsh Habitat Management EIS/EIR—California Department of Fish and Wildlife (CDFW), Solano County, California

Visual Resource Specialist. Conducted and prepared the visual resource analysis of the area that could be affected by the proposed habitat restoration and management activities, including recreational and open space land uses. The analysis included determining impacts and suggesting design measures to be incorporated into the project description to reduce impacts and improve post-project visual aesthetics.

FHWA Visual Impact Assessment Guidelines (VIA) for Highway Projects Update—FHWA, Washington, DC

Technical Lead/Co-Author. ICF, teamed with Avenue Design Partners (Craig Churchward), worked with FHWA to update their guidance document that serves as the primary resource explaining key concepts and methodologies for performing VIAs for federally funded highway transportation projects to meet NEPA compliance.

Atlantic Region Wind Energy Development: Recreation and Tourism Economic Baseline Development—U.S. Department of the Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, Herndon, Virginia

Visual Resource Specialist. Aided in locating relevant research data for the economic baseline synthesis report that identifies sources of information to help BOEMRE develop a methodology to analyze/determine visual/aesthetic impacts to coastal recreation and tourism from installing offshore wind turbines. Provided peer review of the visual/aesthetic sections of the report.

Aesthetic Impact Analysis for Clearwater Program Master Facilities Plan EIR/EIS—Sanitation Districts of Los Angeles County, Los Angeles, California

Visual Resource Specialist. Conducted and prepared an aesthetic impact analysis of the areas that could be affected by proposed program and project elements and alternatives, including coastal areas. The analysis included photo documentation of the project site, research of relevant policies pertaining to visual resources in the project area, working with the project team to determine photo simulation locations, evaluation of photo simulations, and determination of impacts from the proposed project and mitigation measures to reduce impacts and improve post-project visual aesthetics.

Delta Wetlands Project Place of Use EIR—Western Development and Storage, Contra Costa and San Joaquin Counties, California

Visual Resource Specialist. Updated the recreation and aesthetics resource analysis of the area that could be affected by the proposed storage project within the Delta. The analysis included an update of the existing and regulatory settings and determination of any new impacts from the proposed project.

Visual Impact Assessment for 197/199 Safe STAA Access Project—Caltrans, Del Norte County, California

Visual Resource Specialist. Conducted and prepared a visual impact assessment of the areas that could be affected by proposed road improvements, which include increasing curve radii, shoulder widening, and one bridge realignment, at two locations along US 197 and five locations along US

199. The project area is primarily coast redwood and Douglas-fir forests on mountainous terrain that parallels the Smith and Middle Fork Smith Rivers. Portions of the project are on county and Six Rivers National Forest lands, alongside federally and state designated recreational rivers under the Wild and Scenic Rivers Act. In addition, US 199 within the Smith River National Recreation Area is designated as the Smith River Scenic Byway. Land uses include open space forest lands, recreational, and residential uses. The analysis included determination of impacts from the proposed project and mitigation measures to reduce impacts and improve post-project visual aesthetics.

Petersburg Pines Fuel Reduction EA/DN/DONSI—Forest Service, Klamath National Forest, Salmon/Scott River Ranger District, Fort Jones, California

Visual Resource Specialist. Prepared visual resources specialist report section for the document. Analysis evaluated areas of forest land receiving prescribed timber thinning treatments that would be visible to the public and could be affected by proposed project alternatives. The analysis included photo documentation of the public vantages and determination of adverse effects from the proposed project alternatives and mitigation measures to reduce effects and improve program visual aesthetics.

California Waterfix (formerly, Bay Delta Conservation Plan) EIR/EIS—California Department of Water Resources, Reclamation, U.S. Fish and Wildlife Service, and National Marine Fisheries Service, Sacramento, California

Visual Resource Specialist. Conducted and prepared the visual resource analysis of the area that could be affected by the proposed conservation plan that includes water intake and transport facilities in the Delta. The analysis included preliminary mapping to evaluate potential key observation points prior to a site visit, 3-day site visit to photograph and document key observation points, evaluation of photographs of existing conditions and proposed alternatives, preparation of photo simulations to help evaluate project impacts, research of relevant policies pertaining to visual resources in the project area, and determination of impacts from the proposed project and mitigation measures to reduce impacts and improve post-project visual aesthetics. Responded to agency and public comment on the Public DEIR/DEIS. Also prepared the Supplemental EIR/EIS, in addition to responding to agency and public comment on the SEIR/SEIS.

LINDSAY TEUNIS

Restoration Ecologist

Lindsay Teunis is a restoration ecologist and project manager with more than 10 years of professional experience in the design, management, and implementation of restoration projects throughout southern California coastal environments. Her work has focused on salt marsh, eelgrass, riverine and sage scrub ecosystems. She supports her clients in obtaining permits for project implementation and has established positive working relationships with agency staff. Her relationships often facilitate creative solutions across multiple agencies, municipalities, and other critical groups with vested interests in the project's success. Lindsay specializes in functional habitat assessments such as Hydrogeomorphic Method (HGM) and California Rapid Assessment Method (CRAM) and is one of the lead CRAM trainers in Southern California. In 2012 Lindsay was invited to join the State's Level 2 Committee and participate in the ongoing development and implementation of CRAM.

Lindsay often supports her clients in obtaining the necessary permits for project implementation and has established positive working relationships with many agency staff members. Her relationships often facilitate creative solutions across multiple agencies, municipalities, and other critical groups with vested interests in the project's success. Over the last six years, Lindsay has worked toward becoming one of the lead CRAM trainers in southern California, and has lead focused trainings for the U.S. Army Corps of Engineers (Corps) Los Angeles District Regulatory Group and Caltrans, in addition to two to three public courses each year. Her commitment to the training program and her interest in participating in the ongoing development of the methodology lead to an invitation in 2012 to join the State's Level 2 Committee, a subcommittee of the California Wetland Monitoring Workgroup (CWMW) that oversees the development and implementation of rapid assessment methods in California.

Lindsay conducts vegetation surveys and construction monitoring, and participates in various wildlife and botanical surveys throughout southern California. She holds numerous SCUBA and diving safety certifications, including rescue diver, advanced oxygen first aid, and on-site neurological assessment for divers. Lindsay's scientific diving experience includes fish, invertebrate (such as California spiny lobster), and algae surveys along the California coast in various intertidal and subtidal habitats. She is a certified surveyor for the invasive algal species *Caulerpa* spp., and is currently a volunteer diver for Reef Check, which is scientifically monitoring the rocky reefs throughout California.

Years of Experience

- Professional start date: 6/2003
- ICF start date: 10/2014

Education

- MS, Biology (focus in Marine Biology), San Diego State University, 2005
- BS, Biology (emphasis in Ecology), San Diego State University, 2002

Professional Memberships

- State's Level 2 Committee Member, California
- Association of Environmental Professionals (AEP)
- Society of Wetland Scientists (SWS), West Coast Chapter

Certifications and Permits

- U.S. Fish and Wildlife Service (USFWS) 10(a)(1)(A) Endangered Species Permit to conduct presence/absence surveys for listed vernal pool branchiopods, No. TE-820658-4
 - California Department of Fish and Wildlife (CDFW) General Collectors Permit, No. SC-9597, expires 12/2016
 - CDFW/National Oceanic and Atmospheric Administration (NOAA) Certified *Caulerpa* Surveyor, expired
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Project Experience

San Diego Bay Eelgrass Monitoring and Research Project—Unified Port of San Diego, San Diego, California

While employed by AECOM, served as marine ecologist. Through SDSU, assisted in the design and implementation of a group research project focused on the preservation and restoration of eelgrass beds in San Diego Bay. This project included graduate thesis work, which focused on determining the site-specific relative influences of eelgrass habitat structure on the macro-epifaunal community and individual species-specific responses. Additional research included ongoing mapping of reference eelgrass beds throughout San Diego Bay and quantification of habitat structure and invertebrate/fish species diversity and richness. A series of group experiments were conducted, including investigating the effects of harvesting eelgrass beds to comply with California's mitigation policy, determining the influence of habitat structure and predation on the recruitment of fish, and evaluating eelgrass transplant survival throughout the bay. Work was performed prior to joining this firm.

Termino Avenue Drain Project—Los Angeles County Department of Public Works (LACDPW), Long Beach, California

While employed by AECOM, served as marine ecologist. The LACDPW proposed to construct the Termino Avenue Drain project to alleviate flooding along its proposed alignment in the City of Long Beach. Eelgrass (*Zostera marina*) will be impacted by construction of the cofferdam and outlet structure and may be further impacted by the operation of the drain. Led a team of marine biologists in conducting pre- and post-construction eelgrass surveys (using SCUBA) for the proposed Termino Avenue Drain project, which will impact existing eelgrass (*Zostera marina*) populations. In addition, a post-construction presence/absence survey was conducted for invasive algae (*Caulerpa taxifolia* and other *Caulerpa* species illegal in California). Following construction (May 2011), the team implemented the eelgrass restoration plan, including identification of potential restoration sites, site setup, and the harvesting and planting of eelgrass at two locations in Alamitos Bay. Since restoration, AECOM has been conducting the required 5-year monitoring, which included surveys of reference eelgrass beds and the restoration sites to document any changes in areal extent, percent cover, and shoot density, and allow for assessment of restoration success and identification of adaptive management measures.

West Mission Bay Drive Bridge Project—City of San Diego, San Diego County, California

While employed at AECOM, served as marine ecologist. The City of San Diego is proposing to improve the Mission Bay Drive Bridge (Bridge No. 57C-0023) crossing of the San Diego River to a six-lane primary arterial by removing the existing four-lane bridge and replacing it with a new structure. Ms. Teunis led a team of eelgrass and caulerpa surveyors in the completion of a baseline survey within the impact footprint and a buffer. She also prepared a bio resources memo, conducted marine mammal surveys during geotec boring activities, provided senior review of the jurisdictional delineation, and evaluated essential fish habitat. 2008–2011.

Bangor Explosive Handling Wharf #2 Mitigation Restoration Project—Naval Facilities Engineering Command (NAVFAC) Atlantic Division, Naval Base Kitsap Bangor, Quilcene Bay and Big Beef Creek Estuary, Hood Canal, Washington

While employed at AECOM, served as Lead Biologist. Provided mitigation support services to NAVFAC Atlantic to evaluate two potential mitigation sites for impacts associated with construction activities on Naval Base Kitsap Bangor, Washington. As part of the evaluation of the Big Beef Creek Estuary, developed a robust monitoring protocol for nearshore habitats including eelgrass, oyster beds, and unvegetated habitat. The habitat assessment was intended to provide an overview of

nearshore habitats onsite and to evaluate the potential effect of restoration activities on the habitat and associated fauna. If this site is selected, this sampling protocol can be used as a pre- and post-construction assessment tool to document project success and identify adaptive management measures. In June 2011, led a team of marine ecologists, SCUBA divers, and geographic information systems (GIS) specialists in sampling the Big Beef Estuary. Survey work included side scan sonar mapping followed by diver and visual verification of mapped areas. Once mapping was complete a stratified random sample of each habitat type was conducted using SCUBA. Sampling included habitat structure, fish observations, macro invertebrates, epibenthic fauna, and benthic fauna. The results of this nearshore assessment were analyzed and included in a Rapid Ecological Assessment that was used to evaluate the mitigation potential of Big Beef Creek Estuary.

Coronado Bay Bridge Retrofit Mitigation and Monitoring Program—Caltrans, Coronado, California

While employed by AECOM, served as marine ecologist. Participated in an eelgrass mitigation and monitoring program under the Coronado Bay Bridge. Responsibilities included pre-planting surveys surrounding impacted bridge pilings, harvesting and planting eelgrass to account for losses caused by the bridge retrofitting, and ongoing underwater monitoring of the transplanted eelgrass bundles and natural eelgrass beds (reference beds). Responsible for processing benthic samples, which included the identification and quantification of marine invertebrates and small fish. In addition, preserved and cataloged all collected species and compiled a San Diego Bay species reference book that included a species description, key identifying features, habitat preferences, locations, and photographs.

Publications

- Sirota (Teunis), L.M. and K.A. Hovel. Simulated eelgrass (*Zostera marina*) structural complexity: Relative effects of shoot length, shoot density, and surface area on epifaunal community composition in San Diego Bay, California, USA. *Marine Ecology Progress Series*. 326:115–131. 2005.
- Sirota, L.M. and J.W. Martin. Rediscovery of the Laomediid Shrimp *Naushonia macginitiei* (Glassell 1938) (*Crustacea: Decapoda: Thalassinidea: Laomediidae*) from off Southern California. *Bulletin of the Southern California Academy of Sciences*. 104:3, 146–151. 2005.

ELLEN UNSWORTH, ELS

Geology, Soils, Seismicity, Paleontology Specialist

Ellen Unsworth is a senior writer and project coordinator and manager. As a writer, she works primarily on geology, mineral resource, and paleontology sections for National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) documents and on Caltrans-specific documents required for transportation projects affecting paleontological resources. As a coordinator and manager, Ellen works on a variety of water-related projects to ensure that deliverables meet client needs and deadlines and regulatory requirements.

Project Experience

Conservation Planning

Placer County Conservation Plan (PCCP) EIR/EIS—Placer County, California, 05/2016 – 12/2016

Geological Resources Specialist. Ellen prepared the paleontological resources and minerals EIR/EIS analyses for the Placer County's HCP/Natural Communities Conservation Plan (NCCP) that covers the western third of the county on more than 270,000 acres.

Butte Regional Conservation Plan (BRCP) EIS/EIR—Butte Council of Governments (BCAG), Butte County, California, 05/2013 – 05/2014

Geological Resources Specialist. Ellen prepared the geology, soils, and minerals EIS/EIR analyses that evaluated the impacts associated with issuing endangered species permits and implementing the joint HCP/NCCP for western Butte County.

Energy and Fuels

Program Environmental Impact Report (EIR) for the Altamont Pass Wind Resources Area—Alameda County Community Development Agency, California, 05/2013 – 09/2014

Geological Resources Specialist. Ellen evaluated potential paleontologic, geologic, seismic, and soil-related impacts associated with repowering of the Alameda County portion of the Altamont Pass Wind Resources Area, including two individual wind energy repowering projects. Issues analyzed included sensitive paleontological resources, strong ground shaking, landsliding, liquefaction, accelerated runoff and erosion, and expansive soils.

Hatchet Ridge Wind Project Administrative Draft EIR—Shasta County Department of Resource Management, California, 2007

Geological Resources Specialist. Ellen prepared a geology and soils impact analysis and mitigation for wind project constructed in steep terrain in a volcanically active region. Issues analyzed included accelerated runoff and erosion, strong ground shaking, ridge top shatter, and volcanic hazards.

Years of Experience

- Professional start date: 11/1999
- ICF start date: 11/1999

Education

- MS, Interdisciplinary Studies (Geology, Biology, and Technical Communication), Boise State University, Idaho, 1997
- BA, Geology, California State University, Sacramento, 1989

Certifications

- Editor in the Life Sciences (certified by the Board of Editors in the Life Sciences)
 - Danish Certificate in Language Proficiency
-

Water and Wastewater

Bay-Delta Conservation Plan (BDCP) Draft EIR/EIS—California Department of Water Resources (DWR), Sacramento, California, 09/2011 – 09/2014

Paleontological Resources Specialist. Ellen prepared paleontology chapter of EIR/EIS analyzing impacts related to construction of water conveyance features in paleontologically sensitive units. Her work included analysis of depth and extent of excavation in relation to paleontological sensitivity of geologic units.

Feather River West Levee Project Supplemental EIR—Sutter Butte Flood Control Agency, California, 07/2011 – 01/2014

Geological Resources Specialist. Ellen evaluated potential geologic, seismic, soil-related, and mineral resource impacts associated with construction of flood protection modifications along the Feather River. Issues included strong ground shaking, expansive soils, and loss of mineral resources.

Transportation—Roads, Bridges, and Highways

Eagle Ridge Access Road Repair Project Initial Study/Mitigated Negative Declaration (IS/MND)—Pacific Gas and Electric Company (PG&E), California, 08/2016 – 07/2017

Geological Resources Specialist. Ellen evaluated potential geologic, seismic, soil-related, and paleontological resources impacts associated with repair of a PG&E access road in Alameda County.

Parks, Trails, and Open Space

Sports Park and Recreation Center, Draft EIR—City of Lake Forest, California, 09/2009 – 02/2010

Geological Resources Specialist. Ellen prepared three geology-related chapters of EIR for construction of a sports complex: geology and soils, mineral resources, and paleontological resources. Issues analyzed included strong ground shaking, liquefaction, landsliding, soil erosion, expansive soils, loss of significant mineral resources, and loss of paleontological resources.

Development and Redevelopment

Stanislaus County General Plan and Airport Land Use Compatibility Plan Update Draft Program EIR—Stanislaus County, California, 12/2014 – 05/2015

Geological Resources Specialist. Ellen evaluated potential geologic, seismic, soils, mineral resource, and paleontological resources impacts associated with the County of Stanislaus's general plan update. Issues included strong ground shaking, landsliding, liquefaction, and paleontological resources. She prepared a generalized paleontological sensitivity map of the county and recommended a new policy to protect paleontological resources.

General Plan EIR 2006—City of Goleta, California, 2006

Geological Resources Specialist. Ellen evaluated potential geologic, seismic, and soil-related impacts associated with the City of Goleta's general plan update. Issues included surface ground rupture, strong ground shaking, landsliding, exposure to radon, and expansive soils.



HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT



P.O. BOX 1030
Eureka, California 95502
(707) 443-0801
(707) 443-0800 fax

Date Filed September 25, 2017

General Information	For Commission Use
1.) Name & Address of Developer, Project Sponsor and Legal Owner City of Eureka, 531 K Street, Eureka, CA, 95501	A. Application No. <u>2017-03</u> Application Type: Franchise <input type="checkbox"/> Permit <input type="checkbox"/> Lease <input type="checkbox"/>
2.) Address of Project and Assessor's block, lot and Parcel Number: APNs: 302-181-031, and 002; 302-181-040, and 305-181-005; 302-181-039; 302-181-030, 305-181-003, 305-141-002	B. Date Received by Harbor District
	C. Date Accepted for filing by BOC
3.) Name, Address and Telephone No. of Person to be contacted concerning this Project: Aldaron Laird, Trinity Associates 980 7 th Street, Arcata, CA 95521 707-825-8770 riverplanner@sbcglobal.net	D. Date of Public Notice
	E. Date of Acceptance EIR or Negative Declaration
	F. Date of Public Notice
	G. Date of Public Hearings
4.) Attach list of names and addresses of all adjoining property owners	H. Date of Approval
5.) List and Describe any other related Permits & Other Public Approvals required for this Project, including those required by City, Regional, State & Federal Agencies. CDFW Streambed Alteration Agreement, NRQWQCB Water Quality Certification, General Construction Permit, and Waste Discharge Waiver, Coastal Commission Coastal Dev. Permit, USACE Individual Permit, NOAA Section 7 consultation, City of Eureka	Disapproval _____ Conditional _____ Approval _____
6.) Existing Zoning District: Natural Resources, Coastal Agricultural, Public	I. Expiration Date
7.) Proposed Use of Site (Title of Project for which this form is filed): Elk River Estuary Enhancement and Waterfront Trail Extension Project	Comments

Please see attached Project Description.

Answer all questions completely on a separate sheet of paper. If the question does not apply to your project, so indicate by marking N.A. If you have questions, please contact the Harbor District Office.

Project Description

8. Site Size

113.9 acres

9. Square Footage

4,961,484 sq. feet

10. Number of floors of construction

None.

11. Amount of off-street parking provided

Area 1 will utilize the existing parking lot at the end of Pound Road based on the City's existing agreements with CalTrans. A new parking lot will be constructed at the end of Tooby Road to access Area 2 and will include approximately ten new parking spaces.

12. Attach plans

See attached.

13. Proposed scheduling

Implementation to begin in Summer 2018, continuing through Fall 2018 until complete or impeded by rains/permit constraint dates.

14. Associated projects

CalTrout is currently working to explore the feasibility of developing an estuary restoration project upstream of this project, in the CDFW Elk River Wildlife Refuge. The project remains uncertain and designs have not yet been developed.

Conceptual level designs and constraint analysis have been completed for the areas due south of this project near the PGE power plant, King Salmon, and Buhne Slough. A project proponent is needed to be able to move those concepts forward.

15. Anticipated incremental development

None

16. If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household size expected.

N/A; not residential.

17. If commercial, indicate the type, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities

N/A; not commercial.

18. If industrial, indicate type, estimated employment per shift, and loading facilities.

N/A; not industrial.

19. If institutional, indicate the major function, estimated employment per shift, estimated occupancy, loading facilities, and community benefits to be derived from the project.

N/A; not institutional.

20. If the project involves a variance, conditional use or recognizing application, state this and indicate clearly why the application is required.

The project is a Principally Permitted Use.

Are the following items applicable to the project or its effects? Answer yes or no.
Discuss all items answered yes.

21. Change in existing features of any bays, tidelands, beaches, lakes or hills, or substantial alteration of ground contours.

Yes. In Area 1 (north bank of Elk River) project will entirely remove a large tide gate structure and replace/upgrade three additional tide gates, in addition to extending the tidal channel network. In Area 2, a new tidal channel network will be constructed. The project also includes construction of a tidal ridge and elevated trail network, with viewing platforms.

22. Change in scenic views or vistas from existing residential areas or public lands or roads.

Yes. A short-term construction footprint will be visible from Highway 101, Tooby Road, and Pound Road. Long-term, the vista will improve, replacing an impacted vista with a restored, natural wetland condition. Bird and wildlife use, including recreational viewing opportunities, will increase.

23. Change in pattern, scale or character of general area of project.

Yes. The character of the general area will improve and be restored. The project will become a desirable area to visit, improved from its current dilapidated condition.

24. Significant amounts of solid waste or litter.

No. (Solid waste disposal associated with the proposed project is evaluated in the CEQA document.)

25. Change in dust, ash, smoke, fumes or odors in vicinity.

No. (Air quality impacts associated with the proposed project are evaluated in the CEQA document.)

26. Change in ocean, bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.

Yes. Improved. A full tidal cycle will be restored to the project area, improving estuary area and quality. Short-term water quality impacts are expected during construction; however, over the long-term, the project will significantly improve water quality.

27. Substantial change in existing noise or vibration levels in the vicinity.

A. During Construction

Yes. During construction, heavy equipment will be operating, causing some noise. Noise is not expected to be excessive. (Noise impacts associated with the proposed project are evaluated in the CEQA document.)

B. During Project Utilization

No. All recreation and use will be restricted to non-motorized use only, except for emergency and easement access.

28. Site on filled land or on slope of 10% or more.

No.

29. Use of disposal or potentially hazardous materials, such as toxic substances, flammable or explosives.

No.

30. Substantial change in demand for municipal services (police, fire, water, sewage, etc.)

No. (All demands on public services are extensively evaluated in the CEQA document.)

31. Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc.).

No.

31. Relationship to larger project or series of projects.

Unofficially linked projects as mentioned above: (1) CalTrout is currently working to develop an estuary restoration project upstream of this project, in the CDFW Elk River Wildlife Refuge. The project remains uncertain and designs have not yet been developed. (2) Conceptual level designs and constraint analysis have been completed for the areas due south of this project near the PGE power plant, King Salmon, and Buhne Slough. A project proponent is needed to be able to move those concepts forward.

ENVIRONMENTAL SETTING:

33. Describe the project site as it exists before the project including information on topography, soil stability, plants and animals, and any cultural, historical, or scenic aspects. Describe any existing structures on the site and the use of the structures. Attach photographs of the site. Snapshots or polaroid photos will be accepted.

Please see the Environmental Setting section of the attached Project Description.

34. Describe the surrounding properties, including information on plants and animals and any cultural, historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc.) intensity of land use (one-family, apartment houses, shops, department stores, etc.) and the scale of development (height, frontage, set-back, rear yard, etc.) Attach photographs of the vicinity. Snapshots or polaroid photos will be accepted.

Please see the Project Location and Zoning and Land Use Designation sections of the attached Project Description.

-----Questions 35; 36 and 39 MUST BE ANSWERED!-----

35. How will the proposed use or activity promote the public health, safety, comfort, and convenience?

Improving non-motorized recreational use of the project area will promote increased foot traffic and act as a deterrent for unwanted uses (e.g, homeless camps). The project will provide ADA accessible trail and wildlife viewing opportunities.

36. How is the requested grant, permit, franchise, lease, right, or privilege required by the public convenience and necessity?

The project area is a rare environmental setting and one of the only places where an estuary can be built in Humboldt Bay to improve habitat for salmonids and other fisheries resources upon which the local economy depends. Restoring the Elk River estuary is an essential step toward restoring the local fishery for many species.

37. Financial statement:
A. Estimated cost of the project. \$2 million to \$2.5 million

B. How will the project be financed. Grants from state and federal agencies will be the primary funding source.

The City of Eureka will pursue public funding from a variety of state and federal agencies to implement this project.

38. Describe fully directions necessary to arrive at project site.

Take Highway 101 to the Pine Hill Road. Upon exiting, head west. To reach Area 1, turn north on Pound Road. To reach Area 2, exit Highway 101 onto Tooby Road.

39. Will the Applicant agree that as a condition of the permit being issued to Applicant, to indemnify and hold harmless the Humboldt Bay, Harbor Recreation and Conservation District from any and all claims, demands, or liabilities for attorneys' fees obtained from or against demands for attorney's fees, costs of suit, and costs of administrative records made against District by any and all third parties as a result of third party environmental actions against District arising out of the subject matter of this application and permit, including, but not limited to, attorney's fees, costs of suit, and costs of administrative records obtained by or awarded to third parties pursuant to the California Code of Civil Procedure Section 1021.5 or any other applicable local, state, or federal laws, whether such attorneys' fees, costs of suit, and costs of administrative records are direct or indirect, or incurred in the compromise, attempted compromise, trial, appeal, or arbitration of claims for attorneys' fees and costs of administrative records in connection with the subject matter of this application and permit?


Yes.

NOTE

The District hereby advises the Applicant that, under California Public Resources Code Section 21089, the District when a lead agency under the Environmental Quality Act of 1970, as amended, pertaining to an Environmental Impact Report (EIR) or a Negative Declaration may charge and collect from the Applicant a reasonable fee in order to recover the estimated costs incurred by the District in preparing an Environmental Impact Report (EIR) or Negative Declaration for the project and the procedures necessary to comply with the provisions of the public resources code on the Applicants project. In the event your project contains an analysis of issues pertaining to the Environmental Quality Act of 1970, as amended, for which District staff is not competent to independently review, or District requires the same in preparation of an Environmental Impact Report (EIR) or Negative Declaration for the project, the District may retain a reviewing consultant to evaluate the content of the Administrative-Draft EIR and Final EIR or Negative Declaration with respect to these issues. The cost of such reviewing consultant services shall be borne by the Applicant.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Dated: 9/2/17


For City of BURBANK
Miss Slattery

List of Adjoining Property Owners

South Gate Developers, LLC
PO Box 1069
Durham, CA 95938

Robert and Kathryn Figas
115 Redmond Road
Eureka, CA 95503

Steve Danielson
PO Box 3598
Eureka, CA 95502

NCRA
419 Talmage Road, Suite M
Ukiah, CA 95482

CalTrans, District 1
1656 Union Street
Eureka, CA 95501

Humboldt County Department of Public Works
1106 2nd Street
Eureka, CA 95501

CDFW
Elk River Wildlife Refuge
619 2nd Street
Eureka, CA 95501

Jim Hoff
3831 Turtle Creek Boulevard, #20C
Dallas, TX 75219
(707) 443-2045

City of Eureka

Project Description and Environmental Setting

Elk River Estuary/Inter-Tidal Wetlands Enhancement and Coastal Access Project



City of Eureka

Elk River Estuary/Inter-Tidal Wetlands Enhancement and Coastal Access Project

Project Description and Environmental Setting

Prepared for
City of Eureka
531 K Street
Eureka, CA 95501

August 2017

Contents

List of Figures	vi
List of Tables.....	viii
List of Appendices.....	ix
Project Title	1
Project Applicant	1
Project Location	1
General Plan Land Use Designation & Zoning	1
Project Overview.....	2
Project Goals and Objectives.....	7
Description of Proposed Actions: Area 1 North of Elk River	10
Summary of Proposed Actions: Area 1	16
Description of Proposed Actions: Area 2 South of Elk River	26
Summary of Proposed Actions: Area 2.....	33
Approvals Required	38
Environmental Setting.....	40
References.....	49

List of Figures

Figure 1. Map of project areas 1 and 2, including assessor parcels.	2
Figure 2. Overview of the estuary and wetland development plan, showing new tidal channels as well as locations of causeways, viewing platforms, trail extensions, and the non-motorized boat ramp.	3
Figure 3. Elk River Estuary Enhancement and Waterfront Trail Extension project area (USCS 1858).	4
Figure 4. Agricultural and transportation developments in the Elk River Estuary Enhancement and Waterfront Trail Extension project area (H.Co. 1939).	5
Figure 5. Existing broad habitat categories mapped in Areas 1 and 2 (McBain Assoc. 2016).	6
Figure 6. Overview of the estuary and wetland enhancement showing post-development wetlands, open channels, and riparian habitats.	8
Figure 7. Anticipated post-construction 30% design topography showing intertidal channels with Eelgrass habitat and surrounding wetlands.	9
Figure 8. Existing conditions of the Elk River Estuary Enhancement Project, Area 1.....	11
Figure 9. Existing dike and tide gates on right bank of Elk River in Area 1, that will be removed.	12
Figure 10. Location of the three existing 18 in culverts on the northern boundary of Area 1.....	12
Figure 11. Spartina dominated salt marsh and fill from Highway 101 looking west in Area 1.....	14
Figure 12. Location of Area 1 Spartina flood experiment. Red dots indicate location of Humboldt Bay Owl's Clover. Green dots indicate location of Lyngebye's Sedge. Both are sensitive plant species (Sheet C-14).	14
Figure 13. Overview of Area 1 design elements. Excerpted from Appendix A (30% project designs). (References to C-14 and C-15 refer to other pages with this design set.....	16
Figure 14. Construction yard and staging area located in the northwest corner of Area 1.	17
Figure 15. Area 1 dewatering schematic showing planned dewatering set up near Pound Road.	19
Figure 16. Area 1 and Area 2 dewatering schematic showing planned dewatering set up near the main Elk River tide gates (Area 1) and channel development activities in Area 2.19	
Figure 17. Area 1 grading schematic showing location of primary cut and fill activities and focal design features	21
Figure 18. Conceptual Waterfront Trail extension cross section showing trail width, slope ration, and fill elevation relative to the existing railroad grade (Appendix A, Sheet C-11.....	22
Figure 19. Conceptual diagram of elevated causeway and viewing platform (Appendix A, Sheet C-17).	22
Figure 20. Cross sectional view of typical elevated causeway and viewing platform, to be constructed in Area 1 (Appendix A, Sheet C-17).	23
Figure 21. Detailed drawing of helical cap detail that will be used to install and elevated causeway and viewing platforms (Appendix A, Sheet C-17).....	23

Figure 22. Typical cross section showing height of railings on elevated causeway and viewing platform, designed to meet City Building Code and ADA regulation requirements.....	24
Figure 23. The Area 1 boat ramp will use a concrete slab or a similar material (Appendix A, Sheet C-16).....	25
Figure 24. Area 1 boat ramp specifications showing location, dimensions, cross sectional view, and materials (Sheet C-16).	25
Figure 25. Proposed Elk River Estuary Enhancement Project Area 2.	27
Figure 26. Project Area 1 grazed pasture and Aleutian goose habitat.	28
Figure 27. The existing railroad grade after the 2015-2016 king tides and storm surge erosion, showing fill of Area 2 wetlands.	29
Figure 28. Potential tidal inundation during MHHW 5.6 ft (dark blue shading) and tidal expansion during MMMW 7.7 ft (NAVD 88) (light blue shading) beyond Area 2 to the south.	30
Figure 29. Historic Elk River inter-tidal channel sinuosity examples (1939 aerial photography Humboldt County).	31
Figure 30. Typical cross section of living shoreline/tidal ridge parallel to Highway 101 in Area 2. Dark grey hatching (left) indicates Caltrans Highway 101 road prism. Light hatching (right) indicates living shoreline fill.	32
Figure 31. Overview of Area 2 design elements, northern end (Appendix A, Sheet 12A).	34
Figure 32. Overview of Area 2 design elements, southern end (Appendix A, Sheet 12B).....	35
Figure 33. Location and dimensions of Area 2 staging area at the end of Tooby Road, which will become the new trail head parking lot and access point at the end of construction. ...	36
Figure 34. Existing surface topography for Area 1 and Area 2.	41
Figure 35. Existing hydrology within Area 1 and Area 2, showing the mainstem Elk River, limited tidal channels restricted by the Area 1 tide gates, and linear inboard ditches.	42
Figure 36. Existing vegetation types mapped in Areas 1 and 2.....	43
Figure 37. Existing biological land habitats, or “biohabitats,” mapped in Areas 1 and 2. Biohabitats are further defined in Appendix B.	45
Figure 38. Site location map of CDFW water quality and fisheries sampling sites in the lower Elk River watershed. Figure from CDFW.	47

List of Tables

Table 1. Existing conditions broad habitat categories based on vegetation cover types were delineated for Areas 1 and 2. Categories were defined by vegetation and approximate elevation (NAVD 88): wetland habitats occur below 9 ft, riparian habitat occurs between 8 and 10 ft, and upland habitat above 10 ft.	5
Table 2. Change in acres of pre- and post-project Eelgrass, wetlands (saltwater, brackish water, and freshwater), and riparian, open water, as well as pre- and post-project acres of upland habitat and road/trail networks.	9

List of Appendices

Appendix A	30% project designs
Appendix B	Constraints analysis and conceptual design analysis
Appendix C	Vegetation survey report
Appendix D	Elevation summary for vegetation
Appendix E	Soil and geotechnical survey results
Appendix F	Hydrology evaluation
Appendix G	Results of nine-quadrangle search for special status species
Appendix H	Synthesis of existing fisheries data and potential fisheries impacts assessment
Appendix I	Conceptual design modeling support technical memorandum
Appendix J	Greenhouse gas modeling methods

Project Title

Elk River Estuary/Inter-Tidal Wetlands Enhancement and Coastal Access Project (project)

Project Applicant

City of Eureka

Project Location

The project is bound by U.S. Highway 101 and Humboldt County's Tooby Road on the east and the North Coast Railroad Authority/Northwestern Pacific railroad (NCRA) on the west. The City's Waterfront Trail, waste water treatment facility, and private properties border the project on the north. The southern project boundary is bordered by private property.

This project contains two distinct areas located on the north bank (Area 1 approximately 25 acres) and south bank (Area 2 approximately 89 acres) of the Elk River (Figure 1). Nearly all the property within the project area is owned by the City of Eureka and NCRA, with the exception of a small (1.3 acre) private parcel parallel to the south bank of Elk River that the City is attempting to acquire. The entire project encompasses approximately 114 acres. The project area is within the United States Geological Survey (USGS) Eureka quadrangle in Township 4 north, Range 1 west, Section 04 (coordinates are provided for the center point of Area 1).

General Plan Land Use Designation & Zoning

Area 1: City property (APN 302-181-031, and 002), north of Elk River, has a Land Use designation and Zoning of Natural Resources (NR)

Area 2: City property (APN 302-181-040, and 305-181-005), a private parcel (APN 302-181-039), south of Elk River, have a Land Use designation of Agricultural and Zoning of Coastal Agriculture (AC).(Figure 1).



Figure 1. Map of project areas 1 and 2, including assessor parcels.

Project Overview

The City of Eureka proposes to restore and enhance estuary and inter-tidal wetland habitats on approximately 114 acres adjacent to Elk River. The project would enhance and restore approximately: 78 acres of salt marsh, 13 acres of riparian habitat, and 13 acres of inter-tidal channels, which may provide nearly ten acres of valuable Eelgrass (*Zostera marina*) habitat (Figure 2).

The City also proposes to enhance public access to Elk River and Humboldt Bay with an approximately 1 mile extension of its Class 1 ADA Waterfront Trail, and the construction of a non-motorized boat launch, several causeways and viewing platforms, and a trail head parking area off Tooby Road. The project may also create approximately 2.8 miles of navigable channels connected to Elk River Slough.

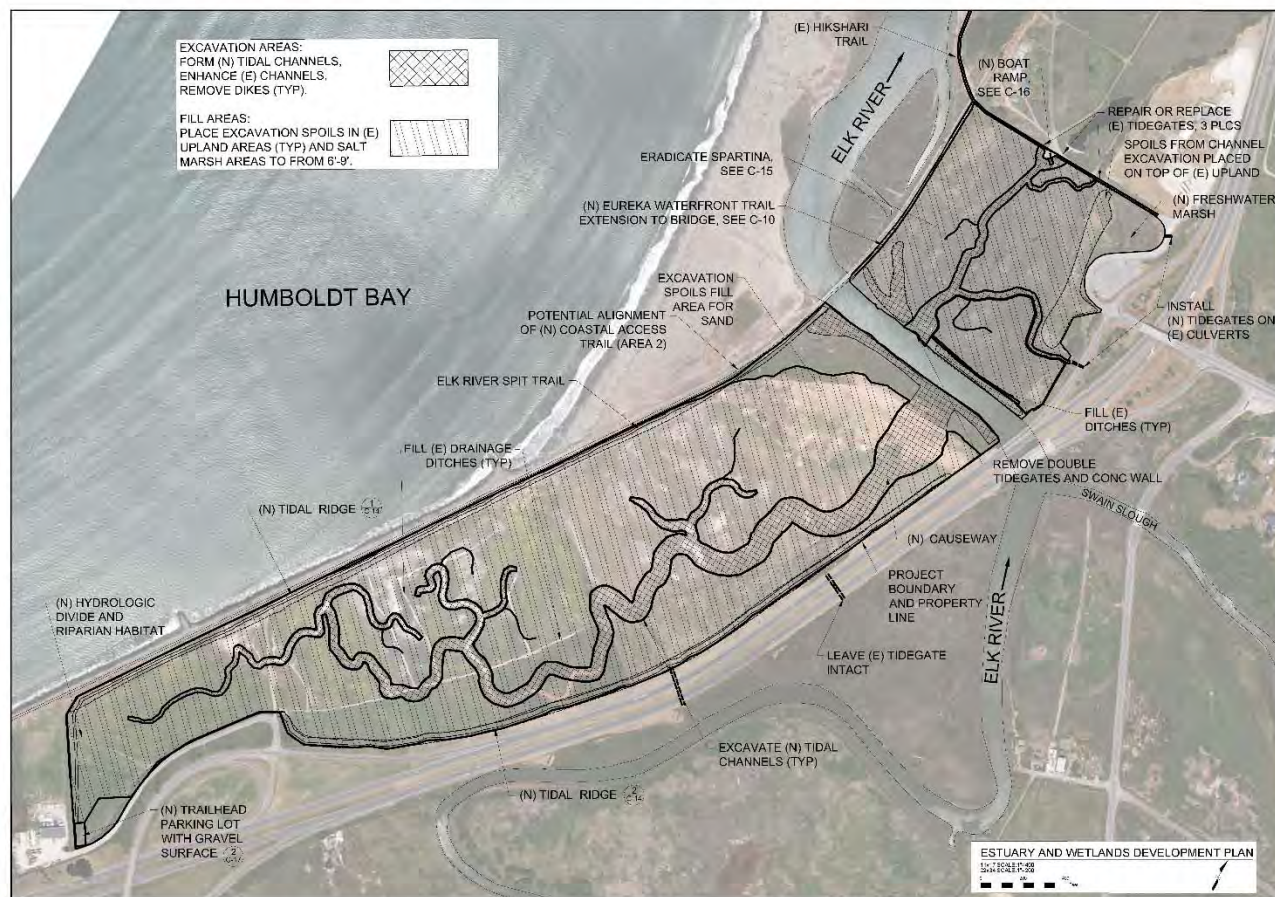


Figure 2. Overview of the estuary and wetland development plan, showing new tidal channels as well as locations of causeways, viewing platforms, trail extensions, and the non-motorized boat ramp.

The project is in the Elk River Slough complex, which historically included inter-tidal channels, salt marsh, windblown sand deposits, and riparian forest. The 1858 U.S. Coast Survey map (Figure 3) shows historic mudflats at the mouth of Elk River and along the entire project area shoreline. On the right bank of Elk River (Area 1), a salt marsh and inter-tidal channel complex were present. On the left bank of Elk River (Area 2), over wash from Humboldt Bay channels drained through salt marsh to Elk River, and a wind-blown sand upland ridge and sand spit dominated the left bank. A transportation corridor (trail) traversed a minor topographic/hydrologic divide between Elk River and Buhne Slough to the south.



Figure 3. Elk River Estuary Enhancement and Waterfront Trail Extension project area (USCS 1858).

Ultimately, the project area was diked off from Elk River Slough and drained to support agricultural development (Figure 4). The construction of the Northwestern Pacific Railroad (NWP) would also separate the project area from Humboldt Bay. The project area also became segmented with the construction of the Bucksport and Elk River Railroad grade in Area 1 and Highway 101. Over time, a sea wall was constructed to protect the NWP railroad from storm surges and waves and, secondarily, to protect the project area and other important infrastructure, such as the Humboldt Community Services District 's (HCSD) sewer line and Highway 101.

Elk River Slough is a tidal waterway, and the inter-tidal tributary channels behind tide gates in Area 1 and inboard ditch in Area 2 have a muted tide cycle. The broad habitat types mapped for existing conditions in the project area include open water, wetlands (salt, brackish, and freshwater), riparian, and upland (Table 1, Figure 5) (McBain Assoc. 2016).



Figure 4. Agricultural and transportation developments in the Elk River Estuary Enhancement and Waterfront Trail Extension project area (H.Co. 1939).

Table 1. Existing conditions broad habitat categories based on vegetation cover types were delineated for Areas 1 and 2. Categories were defined by vegetation and approximate elevation (NAVD 88): wetland habitats occur below 9 ft, riparian habitat occurs between 8 and 10 ft, and upland habitat above 10 ft.

Broad Habitat Types	Area 1 (ac.)	Area 2 (ac.)	Total Acres
Open Water	0.8	0.4	1.2
Salt Marsh	17.1	3.7	20.8
Seasonal Wetlands	1.3	68.9	70.2
Freshwater Wetlands	0.0	0.7	0.7
Riparian	0.0	0.2	0.2
Upland (Pasture, Coastal Scrub, road, and others)	5.8	15.0	20.8
<i>Total</i>	<i>25.0</i>	<i>88.9</i>	<i>113.9</i>

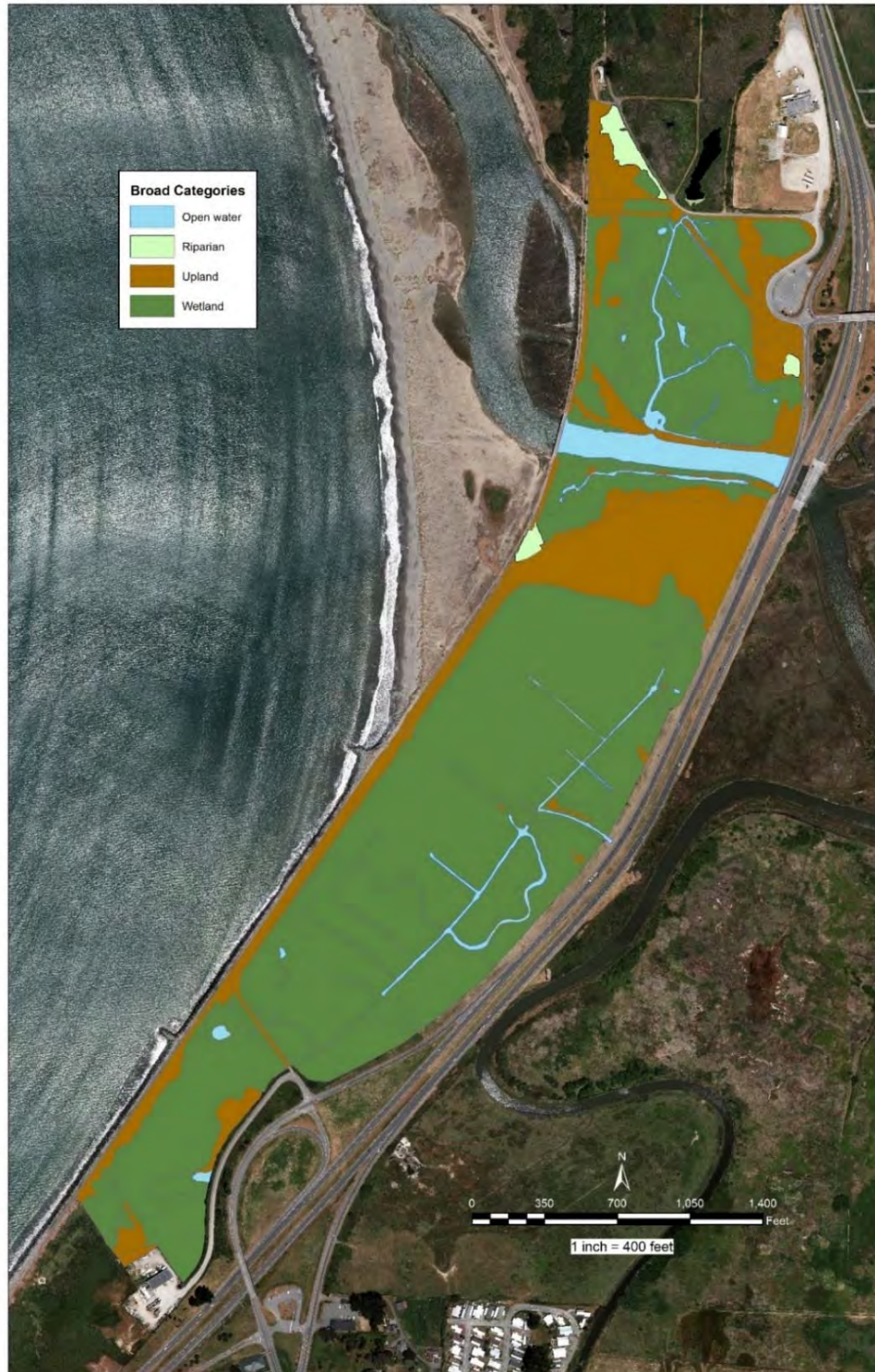


Figure 5. Existing broad habitat categories mapped in Areas 1 and 2 (McBain Assoc. 2016).

The project has multiple phases. Phase I of the project included preparing site assessments (topographic, hydrologic, vegetative, infrastructure, and cultural resources) and developing a constraint analysis. A collaborative stakeholder process was employed to review site constraints and conceptual design alternatives. Design review meetings were held seeking input and design concurrence with funding and regulatory agencies, including the State Coastal Conservancy (SCC), California Department of Fish and Wildlife (CDFW), the North Coast Regional Water Quality Control Board (NCWQCB), the California Coastal Commission (CCC), U.S. Army Corps of Engineers (USACE), the US. Fish and Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS). Modeling and engineering designs (30%) have been developed, and were utilized to describe the proposed actions that are the subject of this Initial Study (Appendix A). The City will issue a Notice of Intent to Adopt, and send the draft Initial Study and Mitigated Negative Declaration (MND) to the State Clearinghouse and release the document to the public for comment. The City's Planning Commission will hold a public hearing to receive comments and adopt findings for the MND. Permit applications are being prepared and will be submitted to the appropriate agencies when the City issues its Notice of Determination, at the completion of Phase I. Phase II will develop final engineering designs and a construction cost estimate. Construction and monitoring would occur in Phase III.

Project Goals and Objectives

The goals of the proposed project are to restore and enhance the estuary and inter-tidal habitats on Elk River (Figure 6), and to increase public access to Elk River Spit, Elk River, and Humboldt Bay. The project area currently consists of pasture, coastal scrub, degraded seasonal wetlands dominated by pasture grasses, and salt marsh dominated by invasive *Spartina* (*Spartina densiflora*), lacking key ecosystem processes such as tidal exchange. The project will restore a functioning tidal marsh complex with native vegetation and a network of tidal channels to allow for full tidal exchange with Elk River. This will require the conversion of some degraded seasonal freshwater and brackish wetlands, currently used for livestock grazing, to inter-tidal wetlands (salt marsh) and tidal channels (open water, Eelgrass habitat, and mud flat). The project may establish up to 9.7 acres of new Eelgrass habitat, defined as open water 2 ft and lower (NAVD 88) (Table 2).

Project objectives include:

- Enhance existing salt marsh resiliency to sea level rise.
- Enhance and expand hydrologic connectivity through tide gate and dike removal, expansion of existing inter-tidal/estuary channels, and construction of new inter-tidal/estuary channels.
- Increase the tidal prism volume in the Elk River estuary, to assist with sediment routing in lower Elk River.
- Expand inter-tidal channel network with appropriate depths to provide Eelgrass habitat.
- Create salt marsh plains with a range of surface elevations to support low and high salt marsh species.
- Increase listed salmonid (Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*Oncorhynchus kisutch*), and Steelhead Trout (*Oncorhynchus mykiss*)) habitat quality and quantity in the Elk River estuary.
- Increase inter-tidal, brackish, and freshwater habitats for other important aquatic species including but not limited to Eelgrass, Olympia Oyster (*Ostrea lurida*), Dungeness Crab (*Metacarcinus magister*), Longfin Smelt (*Spirinus thaleichthys*), Tidewater Goby (*Eucyclogobius newberryi*), Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*), Lyngbye's sedge (*Carex lyngbyei*), and Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*).

- Remove invasive *Spartina* vegetation from salt marsh habitat.
- Create living shorelines (tidal ridges) as an alternative to hardened shorelines to help protect vital infrastructure such as Highway 101, Waterfront Trail, railroad grade, and underground sewer transmission line.
- Create and enhance riparian habitat.
- Create a non-motorized boat launch to provide access to Elk River Slough and Humboldt Bay.
- Extend the City's Waterfront Trail south through Area 1 and Area 2 to increase public access and recreation opportunities on Elk River estuary/spit and Humboldt Bay. The trail expansion will encourage an appreciation of the environment and the socio-cultural history of the area by providing opportunities for nature study, including up-close views of local vegetation/habitats, long-range views of Elk River Spit/Elk River/Humboldt Bay, and interpretive signs that include information regarding local habitats and cultural/historical sites.
- Continue to provide emergency access to underground and above ground utilities (Humboldt Community Services District (HCSD) and Pacific Gas & Electric (PG&E)).

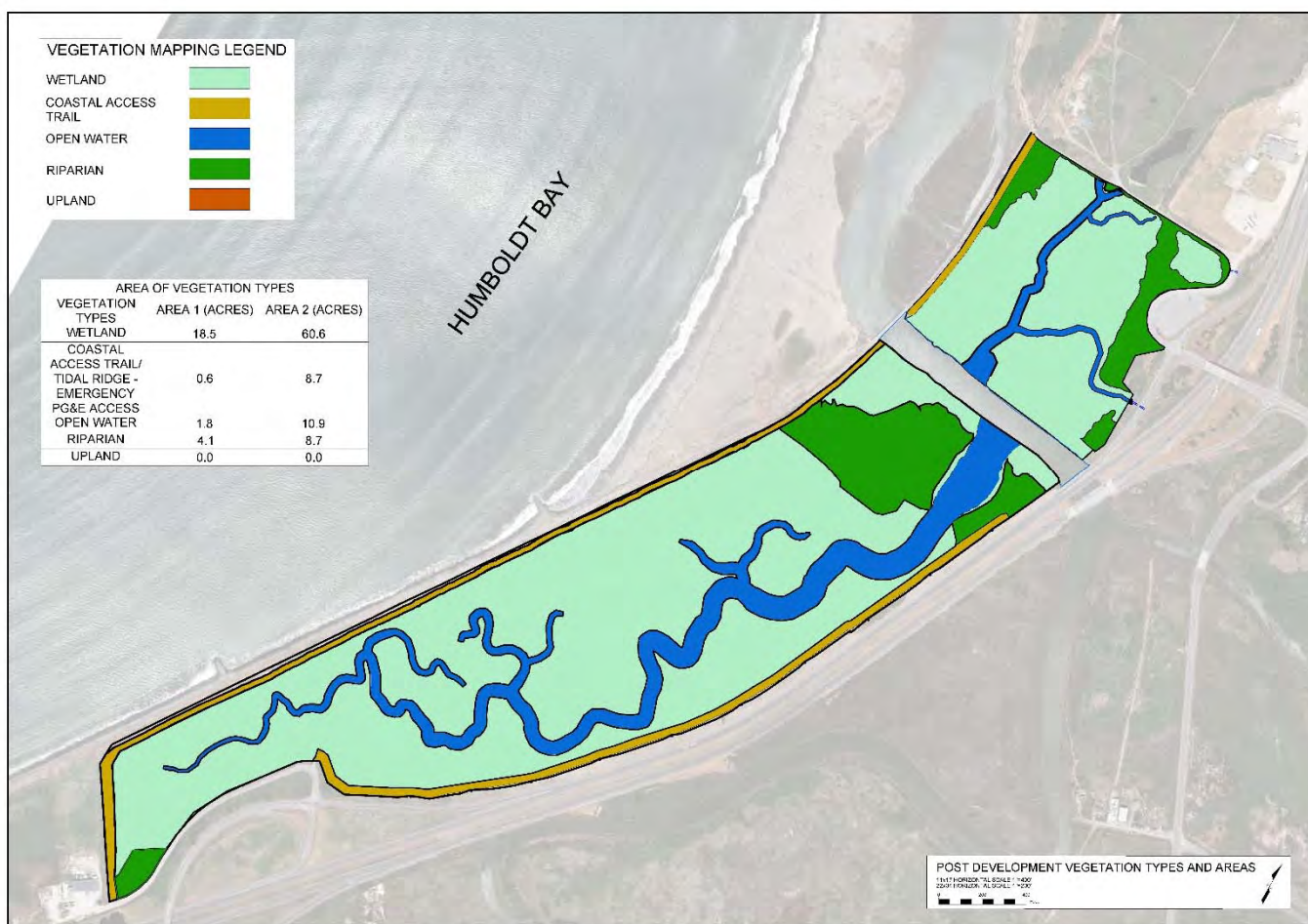


Figure 6. Overview of the estuary and wetland enhancement showing post-development wetlands, open channels, and riparian habitats.

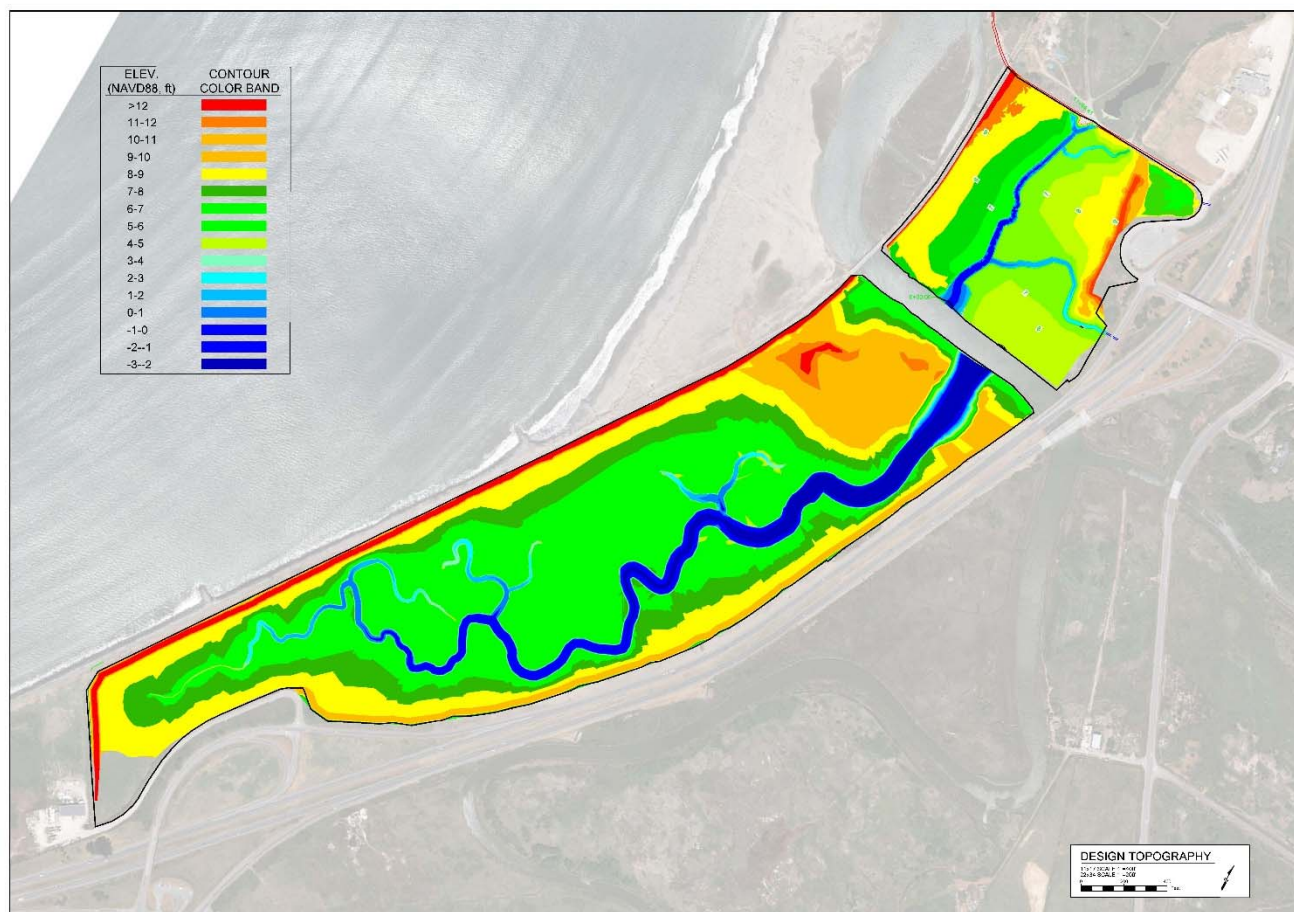


Figure 7. Anticipated post-construction 30% design topography showing intertidal channels with Eelgrass habitat and surrounding wetlands.

Table 2. *Change in acres of pre- and post-project Eelgrass, wetlands (saltwater, brackish water, and freshwater), and riparian, open water, as well as pre- and post-project acres of upland habitat and road/trail networks.*

Area 1	Pre	Post	Change	Area 2	Pre	Post	Change
Eelgrass	0	1.3	1.3	Eelgrass	0	8.4	8.4
Open Waters	0.8	0.5	-0.3	Open Waters	0.4	2.5	2.1
Wetlands	18.4	18.5	0.1	Wetlands	73.3	60.6	-12.7
Freshwater	0	0.7	0.7	Freshwater	0.7	0	-0.7
Brackish Marsh/Pasture	1.3	0	-1.3	Brackish Marsh/Pasture	68.9	0	-68.9
Salt Marsh	17.1	17.8	0.7	Salt Marsh	3.7	60.6	56.9
Riparian	0	4.1	4.1	Riparian	0.2	8.7	8.5
Upland	5.8	0	-5.8	Upland	13.8	0	-13.8
Road/Trail	0	0.6	0.6	Road/Trail*	1.2	8.7	7.5

*1.2 acres of Ranch Road is converted to trail.