Engineering, Entitlements, and Construction Supervision for Richardson's Bay Mooring Field

Proposal

Richardson's Bay Regional Agency

31 January 2022

→ **The Power of Commitment**

655 Montgomery Street, Suite 1010
San Francisco, CA 94111
United States
www.ghd.com

January 31, 2022

Steve McGrath, Interim Executive Director
Richardson's Bay Regional Agency
480 Gate 5 Road, Suite 300
Sausalito, CA 94965

RE: Proposal for PS&E, Entitlements, and Construction Supervision for Richardson's Bay Mooring Field

Dear Mr. McGrath,

On behalf of GHD and our proposed team of local subconsultants, we are pleased to submit this proposal in response to the Richardson's Bay Regional Agency's (RBRA) RFP for Design, Engineering, Specifications, Entitlements, Construction Supervision for a temporary 20 Site Mooring Field in Richardson's Bay.

Our team is uniquely qualified for this project. Our direct work experience in monitoring and managing natural resources, developing and implementing effective mooring and anchorage management programs, and obtaining permits and completing environmental review for complex on-the-water projects sets us apart. Our team has a proven track record working with municipalities, coastal management agencies, Harbor Districts, and numerous other stakeholders in the San Francisco Bay region to address complicated coastal and estuarine management issues. In addition to our relevant recent experience, our team offers the following strengths:

- **Experienced, Local Project Manager** – Our Project Manager, Brad Damitz, is a Marin County resident who brings recent and directly applicable experience to the RBRA through his work for NOAA on the Tomales Bay Vessel Management Plan and Mooring Program. Brad will leverage his experience, knowledge, and lessons learned to maintain the accelerated proposed schedule and coordinate the planning and installation of a successful mooring field designed to meet the specific needs of the RBRA.
- **Experience** - GHD has extensive experience with a variety of recreational boating facilities, including boat docks and moorings throughout California, as well as locations around the world. GHD would provide RBRA with a range of technically viable, science-based options for mooring locations and equipment and present an assessment of the costs and benefits of each option.
- **Local Investment** - Our team lives, works, and plays locally. We are familiar with working in the RBRA of Redding and more importantly, we are committed to bringing lasting benefit to our community and to your project.

We, and our team, truly appreciate the opportunity to present this proposal. We are excited about the potential opportunity to collaborate with RBRA on this complex, fast-paced project. With local resources in the Bay Area and San Francisco and a select team of local subconsultants, we are committed to the prompt and successful delivery of this local project.

Best Regards,

Brad Damitz
Project Manager
+1 415 259-5766
Brad.Damitz@me.com

Craig Lewis, PE, SE
Principal-In-Charge *
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Craig.Lewis@ghd.com

(* Individual authorized to contractually bind the firm)

Contents

Appendices

A. Firm Information

About GHD

GHD provides transportation planning and engineering, environmental, advisory, digital, and construction services to private and public sector clients. Operating globally and delivering services locally, we offer clients the ability to develop a working relationship with our local staff while having access to our global experience base. Put simply, we work where our clients work. Our business model is to work internationally and deliver locally.

Firm Information

Established in 1928, GHD is a wholly-owned subsidiary - a privately held international engineering firm owned by our people and operating across five continents. We are one of the world's leading professional services companies operating in the global markets of Transportation, Water, Energy & Resources, Environment, and Property & Buildings. Our people can offer decades of knowledge, as well as a deep understanding of the challenges facing businesses and communities today. We deliver projects with high standards of safety, quality, and ethics across the entire asset value chain. Driven by a client service-led culture, we connect the knowledge, skill, and experience of our people with innovative practices, technical capabilities, and robust systems to create lasting community benefits.

GHD California Office Locations

- Cameron Park
- Concord
- Emeryville
- Eureka
- Fresno
- Irvine
- Long Beach
- Redding
- Roseville
- Sacramento
- San Diego
- San Francisco
- San Luis Obispo
- Santa Rosa

Civil / Survey / Environmental / Recreational Boating Services

We are proud of our long tradition of repeat, local government clients. A full 90% of our clients are municipal agencies or government entities, and 75% of our work is repeat clients. GHD is ranked 28th in design firms by ENR in 2021. Many of GHD's past and current projects include the following recreational boating related services:

- Land / Bathymetric Surveying
- Legal Descriptions / Right of Way
- Wind / Wave / Environmental Loading Determination and Structural Analysis
- Boat Parking Lot Layout and Design
- Boat Launch Ramps and Boarding Float Docks
- ADA Access (Specific to Boating Facilities)
- Coastal / Shoreline / Multi-use Trails
- Landscape Architecture / Wayfinding
- Dock / Pier Piling and Anchorage Design
- Floating Docks and Marinas
- Prefabricated Restrooms
- Waterfront Project Cost Estimate Experience
- Beach / Shoreline / Riverine Restoration
- Shore Protection / Revetments
- Foundations / Ground Improvements
- Site Lighting and Electrical Engineering Services
- Site Mechanical for Restrooms / Boat Wash
- Public Outreach and Interagency Coordination
- Habitat / Impact Assessment and Permitting
- Biological Resources Surveys and Studies
- Environmental Technical Studies
- Aquatic Resources Delineation
- Mitigation and Monitoring Plans
- Marine Construction Experience

Subconsultants

To strategically augment the strength and efficiency of our team, GHD will be joined by coastal management consultant Brad Damitz, who brings relevant experience in mooring and vessel management through his work on the Tomales Bay Vessel Management Plan and Mooring Program. Brad, as a former NOAA employee and throughout his consulting career, has a strong regulatory and permitting background pertaining to coastal management issues and boating. Brad, as a Marin County resident, brings a strong familiarity with Richardson Bay as a frequent visitor either kayaking its waters or walking along the shoreline. He is also very familiar with the shoreline boating facilities through his work on the Marin County Oil Absorbent Exchange Program and has extensive project management experience working on complex and often contentious issues. Other experience includes development and implementation of marine and coastal resource management plans and policies, regulatory and policy analysis and advising, meeting and workshop planning and facilitation services, development of implementation plans and governance structures focused on addressing marine and coastal environmental issues, and CEQA and NEPA environmental analyses.

Contact: Bradley Damitz, Coastal Management Specialist, (415) 259-5766, brad.damitz@me.com

Sean Micallef is a Partner and Chief Ecologist at Zentner Planning and Ecology with almost 25 years of experience in plant and wildlife ecology and surveys, jurisdictional delineations, and special status habitat and species reports. Sean has completed a wide variety of surveys and species assessments for protected species in almost every habitat type within central and northern California and excels in producing quick and sound botanical, wildlife and special status species surveys and permit compliance reports. Each year Sean completes numerous preconstruction surveys for a wide variety of plants and wildlife throughout the region. He has completed daily clearance surveys and biological construction monitoring, worker training, and permit compliance consulting for large and small projects throughout the San Francisco Bay Area. Sean and his team of biologists at Zentner will support the CEQA process by completing an up-to-date special status species and habitat evaluation and an analysis of potential impacts from the installation and maintenance of the proposed mooring field.

Contact: Sean Micallef, Chief Ecologist, (510) 622-8110, seanm@zentner.com

Max Delaney has extensive experience working on projects both within San Francisco Bay and throughout the region. He has worked on both the dredging and permitting teams at the SF Bay Conservation Development Commission (BCDC) and currently works as a resource protection specialist at the NOAA Greater Farallones National Marine Sanctuary (GFNMS) and brings to the team a strong knowledge of the key issues related to project design and review. Max has extensive experience with the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), and has coordinated the writing and review of NEPA documents including environmental assessments, environmental impact statements, and management plans.

Contact: Max Delaney, Resource Protection Specialist, (650) 678-4943, mdelaney13@gmail.com

Sage Tezak, an independent GIS analyst (www.sagegisservices.com), offers a number of valuable contributions to the team, including her familiarity with, and involvement in, the complicated and diverse issues of Richardson Bay. Sage also has a proven track record providing innovative and effective geographic information services along with a strong background in natural resource management. As a frequent visitor to Richardson Bay (for both work and play), Sage brings a unique perspective and working knowledge of the bay from both an on-the-water and shoreline perspective.

Contact: Sage Tezak, GIS Specialist, (415) 699-9617, Sage.Tezak@noaa.gov

B. Project Understanding

We understand the Richardson's Bay Regional Agency (RBRA) is furthering their commitment of protecting and restoring the natural habitat in Richardson Bay. The RBRA adopted an official Transition Plan on June 11, 2020, describing their vision and principals for Richardson Bay. Subsequently, as part of the recent September 20, 2021 settlement agreement with the San Francisco Bay Conservation & Development Commission (BCDC), the RBRA was tasked with removing all marine debris, unoccupied vessels, and vessels occupied by persons who are not able to control the vessels during storm events or vessels that are endangering or threatening to endanger others. Additionally, the RBRA is to prepare a plan with timelines to transition all other vessels off the water within a reasonable period, hence the need for a temporary mooring field with 15 to 20 individual moorings for seaworthy vessels that relocate from the Eelgrass Protection Zone.

The RBRA needs to, first and foremost, select a qualified consultant team with local experience that understands the project environmental and regulatory requirements, as well as the engineering design requirements specific to a mooring field in the project study area. Our team has designed, permitted, and overseen the construction of dozens of recreational boating facilities throughout California and many more globally. Boat moorings have unique design challenges associated with the type of vessel and waterbody they are serving including water depth, extreme tides, wind and wave conditions, seafloor strata, vessel size, maintenance requirements, benthic habitat and ecological considerations. Often times flexibility of design for changing water levels and environmental permittng conditions is needed to be thoughtfully considered in the design of the mooring. Several of our designers are boaters and fishermen themselves and understand the proper function, use and layout of vessel moorings.

The facility improvements need to be designed to the California Building Code, California Division of Boating and Waterways guidelines as well as industry standards such as the Permanent International Association of Navigation Congresses (PIANC) RecCom WG 168: Single Point Yacht Moorings (2020). A key element of the design is determining the appropriate environmental loading from wind, waves, currents, and other environmental factors on the temporary mooring field. Being an international company, GHD also has experience in designing environmental boat moorings with the Ezyrider Mooring System developed in Australia (website: www.ezyridermooring.com).

The Richardson Bay project scope includes the design, permitting and construction management of a 15 to 20 vessel mooring field in a designated anchorage area outside of eelgrass zones. The RFP is requesting the following services for the proposed mooring field project:

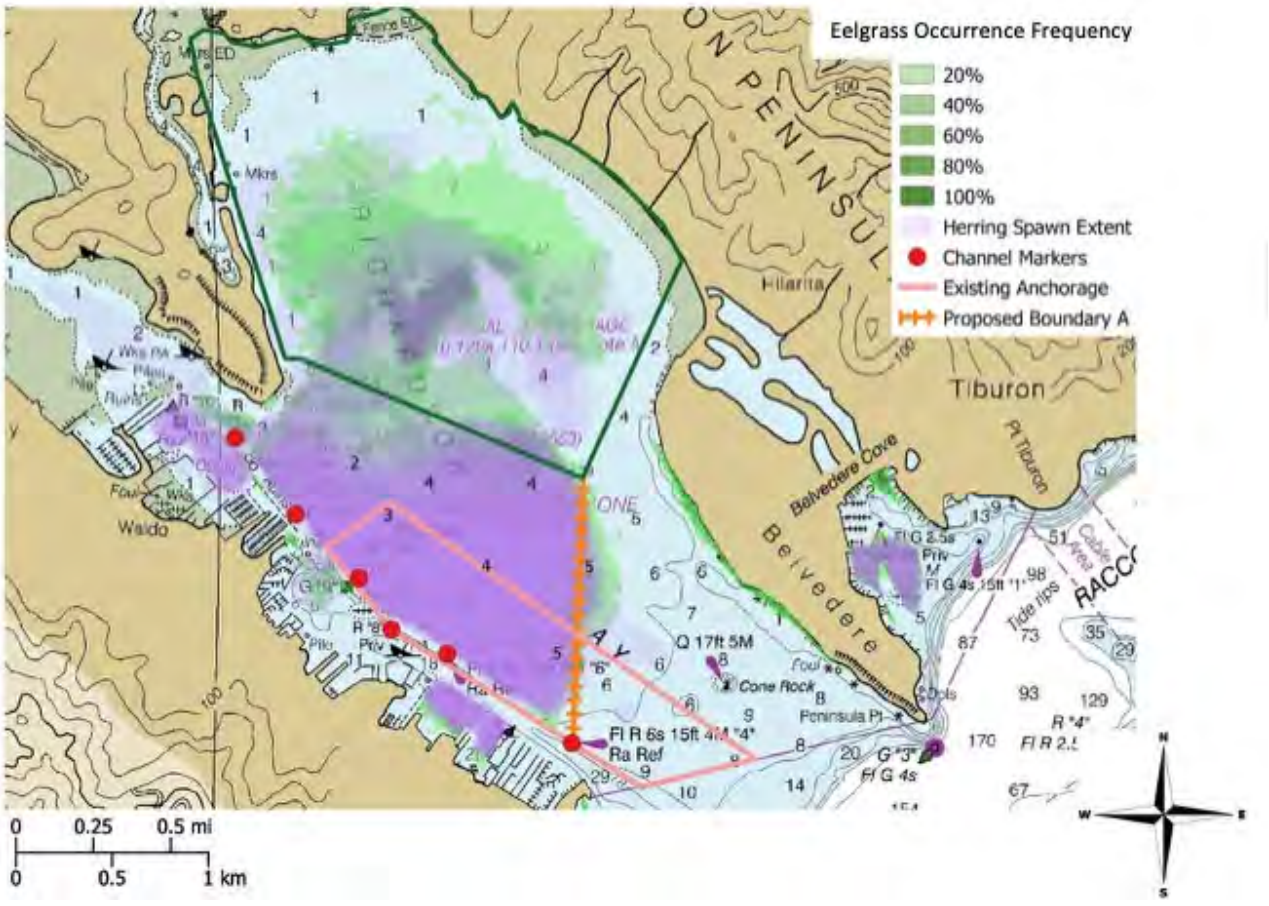
- Prepare technical plans and project description for a mooring field that would accommodate 15-20 vessels within the Anchorage Area, but outside the Eelgrass Protection Zone. The plan should consider vessel sizes, number and type of moorings, mooring specifications, location, spacing and GPS based plan.
- Meet all requirements under CEQA/NEPA for proposed mooring field.
- Obtain all necessary permits and approvals for mooring field installation and maintenance.
- Assist the RBRA with the bid process, contractor selection, and provide construction management services.

C. Scope of Work

Task 1 – Mooring Plan

GHD will review efforts and past studies to date including the recent RBRA Mooring Feasibility and Planning Study and other pertinent documents. The team will present two mooring layout alternatives and three mooring system alternatives to the RBRA, as well as develop a matrix of cost, holding capacity, and environmental footprint of each mooring system type. Our team will then attend and present at two RBRA Board meetings, to be held via Zoom. The RBRA holds board meetings on the 2nd Thursday of each monthand our team anticipates providing alternatives for the March 10, 2022 meeting. The GHD team also anticipates meeting with RBRA and other relevant stakeholders to gain a better understanding of the project, including goals, issues and other concerns related to sucessful development of the project. The preferred mooring type and layout should be decided on in March 2022 to facilitate initiation of the internal draft CEQA documents and production of the 50% design development plans.

During the design development phase, a Basis of Design document will be developed by the team to include the design vessel sizes, swing arch and mooring spacing, wind and wave conditions, tidal influences and current velocities, and other design considerations. Coordinates of each drawing will be provided, and the Mooring Field will be located so as to be outside of the Eelgrass Protection Zone, and inside the approved Anchorage Area.



Task 2 – Environmental

NEPA

NEPA review and analysis would not be required for RBRA, as lead agency since it is a local jurisdiction subject to requirements of CEQA and it is not a federally sponsored project. The review completed by U.S. Army Corps of Engineers during the permitting process will meet NEPA requirements.

CEQA

CEQA review would be required for the proposed action. Since the installation and maintenance of a mooring field does not fit into any of the CEQA Categorical Exemption categories, we anticipate the process to include preparation of either an Initial Study/Negative Declaration (IS-ND) or Initial Study/Mitigated Negative Declaration (IS-MND), depending on the findings of the impact assessment.

Damitz would lead the overall effort to complete environmental review process on behalf of RBRA with support from Max Delaney. Zentner Planning and Ecology would complete a special status habitat and species analysis of the site and prepare the biological impact review. Sage Tezak would assist in developing maps, compiling background information, assessing data and reviewing draft documents.

Preparation of some of the sections of the CEQA document could commence right away upon notice to proceed, however, the development of the Project Description and 50% design plans and specifications would be required before proceeding with the environmental setting and impact analysis content. The CEQA document would analyze potential impacts associated with the proposed project. It is assumed that RBRA would be the CEQA Lead Agency. Existing data from previous RBRA reports and efforts as well as other relevant sources would be used for the preparation of the CEQA document. We will also complete an up-to-date special status species and habitat evaluation and an analysis of potential impacts from the installation and long-term presence of the proposed mooring field. We assume that no additional biological surveys or studies would be required for this effort. RBRA will need to pay a filing fee for the CEQA document. Our team would complete the following environmental review tasks:

- Meet with RBRA staff to discuss scope of the CEQA document and review process.
- Prepare Administrative Draft IS-MND and coordinate review by RBRA staff.
- Prepare Draft IS-MND and Notice of Intent to Adopt a Mitigated Negative Declaration (or Negative Declaration, depending on findings environmental review)
- File CEQA documents at County and with State Clearinghouse (CEQAnet) on behalf of RBRA
- Prepare responses to comments on the IS/MND following 30-day public comment period.
- Prepare a *Mitigation Monitoring and Reporting Program* (MMRP), if a MND is required.
- Coordinate with RBRA staff and/or Board of Directors to adopt the CEQA findings and MMRP.

Task 3 – Entitlements

Permitting

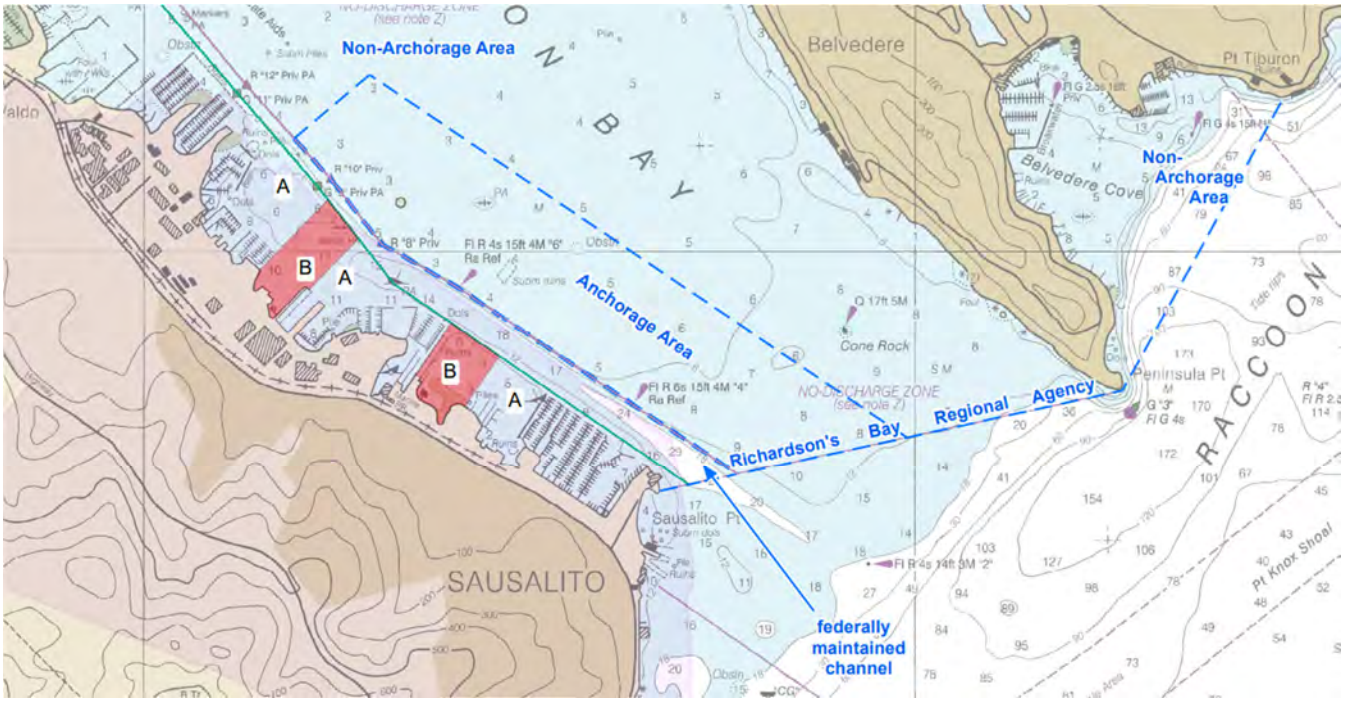
Federal, state and local regulatory authorization will be required prior to installation of a mooring field in Richardson Bay. On behalf of the GHD team, Brad Damitz, with support from Max Delaney, will lead the efforts to conduct the required agency coordination and will identify and apply for necessary permits and approvals. Given the tight timeline for planning, permitting, approval, and installation of the mooring field it will be critical to engage with permitting agency staff right away, even before draft plans and details of the mooring equipment and locations are available. This would allow us to determine the specific timelines and process for permit review/issuance and get the ball rolling on the process.

Federal Entitlements

U.S. Army Corps of Engineers (USACE)

Based on recent inquiries to local permitting staff at the USACE, we have determined that the project will require approval under Section 10 of the Rivers and Harbors Act, which would either be issued under *Nationwide Permit 10 - Mooring Buoys for Non-commercial, single-boat, mooring buoys* (NWP10) or permitted with a *Letter of Permission* (LOP). We have ruled out the need for an Individual Permit from the Corps. We anticipate that approval under the NWP10 would be granted in under 60 days, and the LOP might take slightly longer.

We will prepare the Section 10 of the Rivers and Harbors Act permit application for the proposed project. We will also handle agency coordination and provision of necessary information to help expedite the review/approval process.



National Marine Fisheries Service (NMFS)

NMFS is required to review projects subject to USACE permitting, pursuant to *Section 7 of the Endangered Species Act* (ESA). We anticipate that the proposed mooring buoy field would qualify for coverage under the Corps' 2018 *Not Likely to Adversely Affect* program with NMFS under the category of Buoys, Floats, and Other Devices to Facilitate Mooring of Vessels.

U.S. Coast Guard

Although a permit from the USCG is not a requirement, we would reach out to USCG for an opportunity to provide input on the mooring field location/design. We will also coordinate with USCG Aids to Navigation Program to provide locations of all moorings installed as part of the proposed project.

State Entitlements

San Francisco Regional Water Quality Control Board (RWQCB)

The RWQCB must authorize the project. The type of permit issued by RWQCB will depend on the type of authorization that is issued by USACE. If the project is authorized under NWP10 then the RWQCB would require a *Section 401 Water Quality Certification*. If the Project is authorized under an LOP then the RWQCB would likely require permitting under general *Waste Discharge Requirements*. We will prepare a permit application and coordinate with RWQCB staff to provide necessary information. Permit application will be submitted once the Draft CEQA documents, and 50% engineering plans are completed. In order to meet the tight timeline a decision by RBRA on mooring equipment, locations and total number will be required promptly. RBRA will need to pay a permit application fee (amount TBD) to RWQCB.

California State Lands Commission (CSLC)

For the purpose of this proposal, we assume that the submerged lands in the anchorage area have been granted by CLSC to the County of Marin, and therefore, a CSLC lease is not required.

Local Entitlements

Approval by the County of Marin will be required in the form of a lease or other permitting mechanism. For the purpose of this proposal and based on information in the RFP we are assuming that the RBRA will coordinate with the County to obtain necessary approvals. We do not anticipate any other local approval needed.

Task 4 – Construction

Task 4a: Construction Documents (Plans, Specifications & Engineering)

GHD will build off the efforts in Task 1, as well as past studies including relying on geotechnical data provided by the RBRA for the design of the mooring system.

GHD will provide plans, specifications and an engineer's estimate of probable construction cost at the 50% and 90% levels for RBRA review. After the 50% and 90% packages have been submitted, GHD will meet with the RBRA via Zoom for a formal design review meeting to go over the mooring field configuration and design presented. We will also perform an internal quality control and constructability review of the submittal prior to this meeting with our QC reviewers and incorporate those findings and suggestions in our subsequent plan and specification submittals.

We will prepare these submittals in accordance with RBRA standards and anticipate the following sheets will be needed for the project:

SHEET DESCRIPTION	# OF SHEETS	DRAWING SCALE
Title Sheet / General Notes	**2**	**NTS**
Mooring Specifications	**2**	**NTS**
Existing / Horizontal Control	**2**	**1" = 40'**
Mooring Layout Plan	**2**	**1" = 40'**
Mooring Cross Section	**1**	**1" = 10'**
Mooring System Details	**1**	**TBD**
TOTAL NUMBER OF SHEETS:	**10**	

The 50% submittal is anticipated to be provided with the permit applications. For the permit applications, a detailed project description and anticipated construction schedule will be developed. An outline (or list) of technical specifications will be developed for the 50% submittal, and an engineer's estimate of probable construction cost will be developed for the level of design presented. For the 90% submittal the technical specifications will be developed and presented on the drawings.

Deliverables:

- 50% submittal to include preliminary plans, outline specifications, an engineer's estimate of probable construction cost and construction schedule, a project description to be used for obtaining permits.
- 90% submittal to include detailed plans, technical specifications, an engineer's estimate of probable construction cost and construction schedule, and 50% comment responses / resolution matrix.

After receiving RBRA comments for the 90% submittal, and likely delayed agency comments for the 50% submittal, another formal design review meeting will be held with RBRA to finalize the design. Subsequently, the 100% Final submittal package of plans and specifications, and engineer's estimate of probable construction costs will be developed incorporating final comments from the RBRA and agencies. Final plans and specifications will be stamped and signed by a professional structural engineer specializing in marine construction.

RBRA will provide contract and Division 01 front end specifications, including standard general provisions, instructions and notice to bidders, and any special or federal provisions. GHD will be compiling the final bid package for

distribution incorporating both the front end Division 01 specifications provided by the RBRA. Specifications will be submitted in both Microsoft Word and Adobe .pdf formats.

Drawings for the 100% Final bid document submittal will consist of full-size 22x34 plan sets submitted electronically in both AutoCAD .dwg and Adobe .pdf format.

The Engineer's Estimate of Probable Construction Cost will be provided in Microsoft Excel format, and will include backup and quantity calculations. Estimate will be based on the installer and vendor quotes and recent bid results for similar construction projects if available.

Deliverables:

- 100% Final submittal to include detailed plans, technical specifications, an engineer's estimate of probable construction cost and construction schedule, and 90% comment responses / resolution matrix.
- Assist RBRA with preparing bid package for new mooring field, including bid item schedule.

Task 4b: Bid Support

GHD will provide assistance to the RBRA during the bidding and construction phases of the project to support the technical aspects of the design and any design changes.

This work will include the following:

- Attend one pre-bid meeting and provide answers to contractor and supplier technical questions
- Provide any addenda, drawings, modifications, and clarifications during the bidding period
- Assist the RBRA with submittal reviews, preparation of change orders, and responses to requests for information related to technical design issues encountered

Deliverables:

- Attend one (1) total onsite meeting
- Provide information and coordination as required

Task 4c: Construction Oversight

GHD will provide an as needed engineer during the construction phase of the project. Anticipated work will include the following:

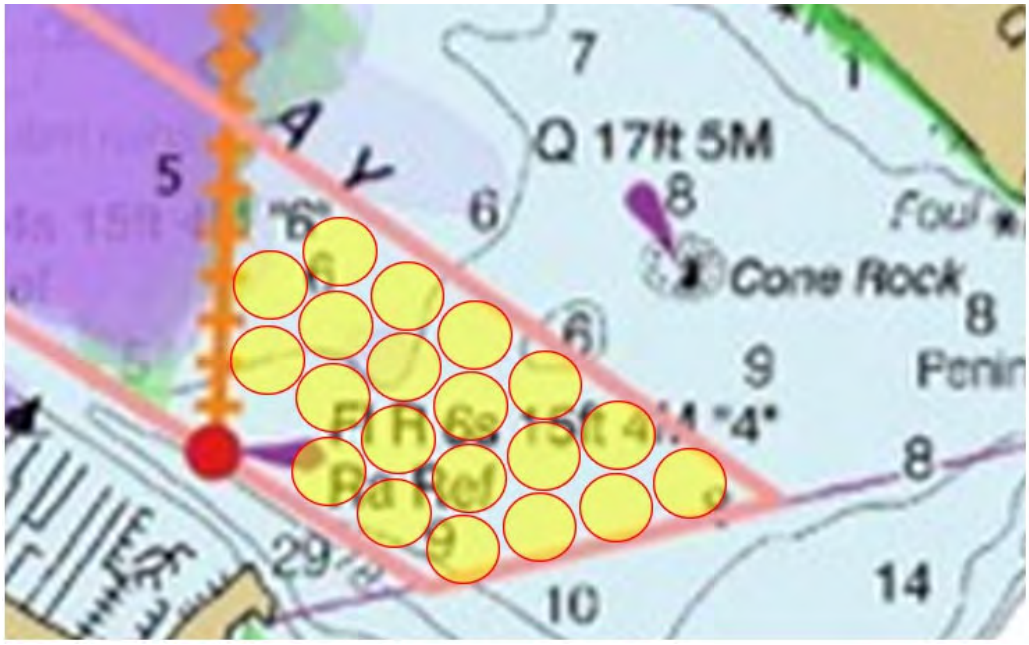
- Attend one pre-construction and up to five (5) meetings onsite concurrent with site visit or inspection
- Assist the RBRA with submittal reviews, preparation of change orders, and responses to requests for information related to technical design issues encountered
- Prepare as-built drawings following construction from mark ups submitted by the contractor and resident engineer. The original designers stamp and signature shall be maintained on the as-built drawings. An "as-built" or "record drawing" stamp shall be added to the drawings.

Deliverables:

- Attend six (6) total onsite meetings / site visits during installation
- Develop "as-built" drawings of temporary mooring field
- Provide information and coordination as required
- Prepare progress

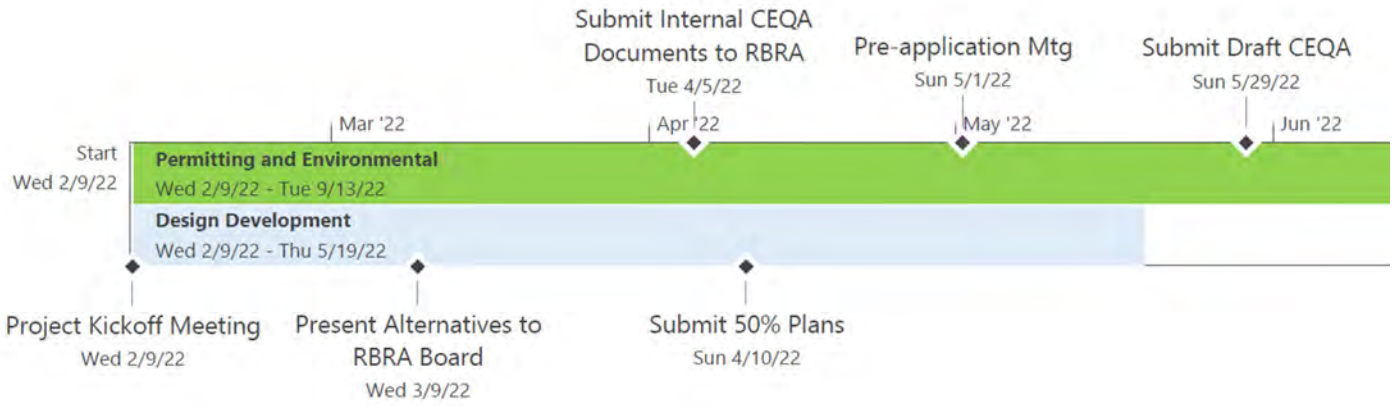
Task 5 – Maintain Schedule

A proposed project schedule in calendar days is included in Appendix B of this proposal. The public outreach, entitlements, and environmental efforts will likely be the controlling factors in maintaining the project schedule as opposed to the engineering design of the proposed mooring field. Effective development and presentation of the anticipated 3 types of mooring systems and 2 mooring field layouts are critical to ultimately building consensus around a preferred alternative. Early adoption of a preferred alternative will facilitate the initiation of the draft CEQA documents and design development drawing submittal and allows other agencies such as the Regional Water Board and US Army Corps of Engineers enough time to review and comment on the project within the timeframe of the settlement agreement with BCDC.

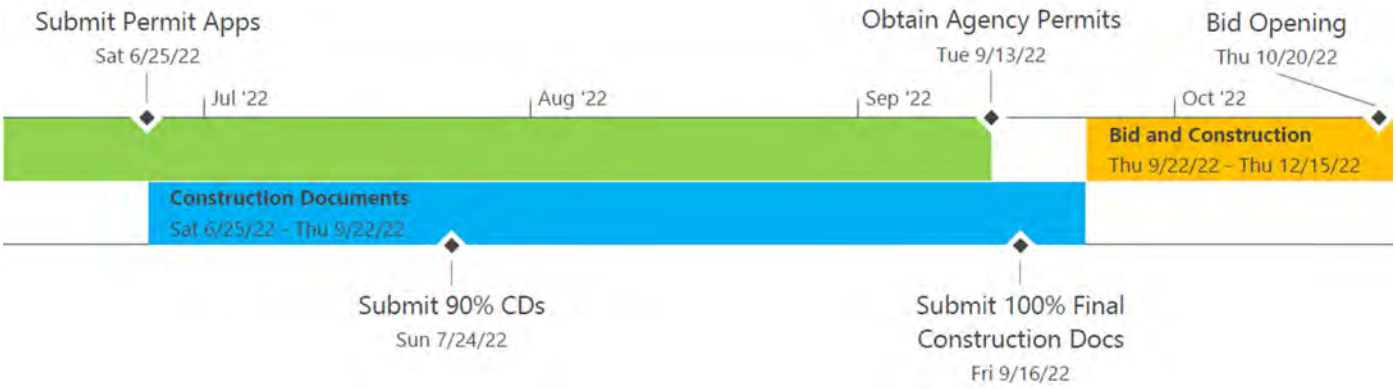


Potential Mooring Field Layout w/ 20 Large Moorings

Once the preferred alternative is established, the 50% level design development plans can be submitted to the RBRA soon after, which can then be reviewed by RBRA as well as utilized in preliminary discussions with agencies and further discussions with stakeholders. The 50% level plans will also be key in establishing the project description and provide precise quantities, depths and locations of the proposed temporary vessel moorings.

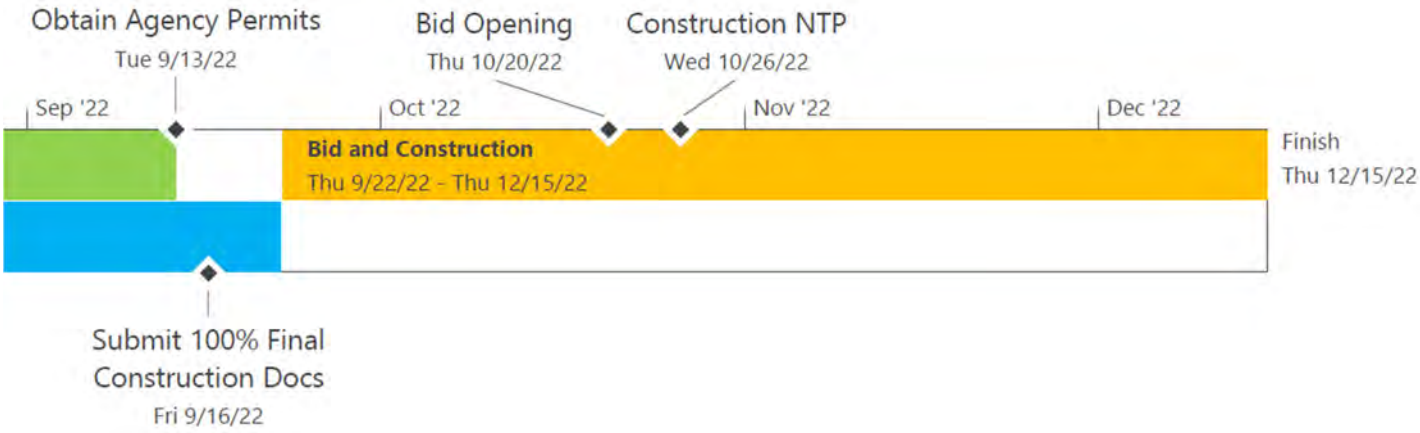


Permitting and environmental efforts most likely being the critical path of the project, will be initiated at the beginning of the project and continue through development of the construction documents (90% and 100% final submittals). Obtaining agency permits prior to finalization of the construction documents and prior to bid advertisement is crucial to maintaining the overall schedule of the project and meeting the December 15, 2022, deadline prescribed in the BCDC settlement agreement.



The anticipated schedule leaves little room for error, especially if the project is incumbered by prolonged agency review, extended public outreach efforts, or challenged externally by lawsuits. Permit staff delays in review are assumed to not be our responsibility, and if special meetings with agencies and/or of the RBRA board outside of the scheduled monthly meeting requiring our team's attendance, additional compensation and leniency regarding the project schedule may be needed.

Our team anticipates that agency permits will need to be fully obtained prior to submittal of the 100% final construction documents needed for the project bid package. We also anticipate that procurement and installation of the 15 to 20 moorings will take place over a period of roughly 2 months weather and supply of materials permitting. One solution to effectively maintaining the overall project schedule may be for the RBRA to pre-purchase and order the mooring equipment prior to installation to eliminate any potential procurement difficulties that may arise. Another advantage of having the mooring equipment be owner supplied is control by the RBRA of the cost and elimination of material markup by the Contractor.



Our team commits to responding to requests for information from permitting agencies within 24 hours and checking in on permit status with all agencies on a weekly basis to help expedite the process. Good coordination among the team and with RBRA while working on various elements of the project concurrently will be key to the success of the project. Assumptions include:

Assumptions include:

- RBRA will Develop policy/code to address issues raised in development and implementation of the moorings
- RBRA will negotiate any necessary lease with the County of Marin
- RBRA will ensure collaboration/communication with stakeholders and interested parties
- No additional studies or surveys are needed for CEQA. CEQA will rely on the most recently collected bathymetric, eelgrass survey data, and existing literature.
- Budget assumes RBRA will pay all CEQA filing fees.

D. Project Team

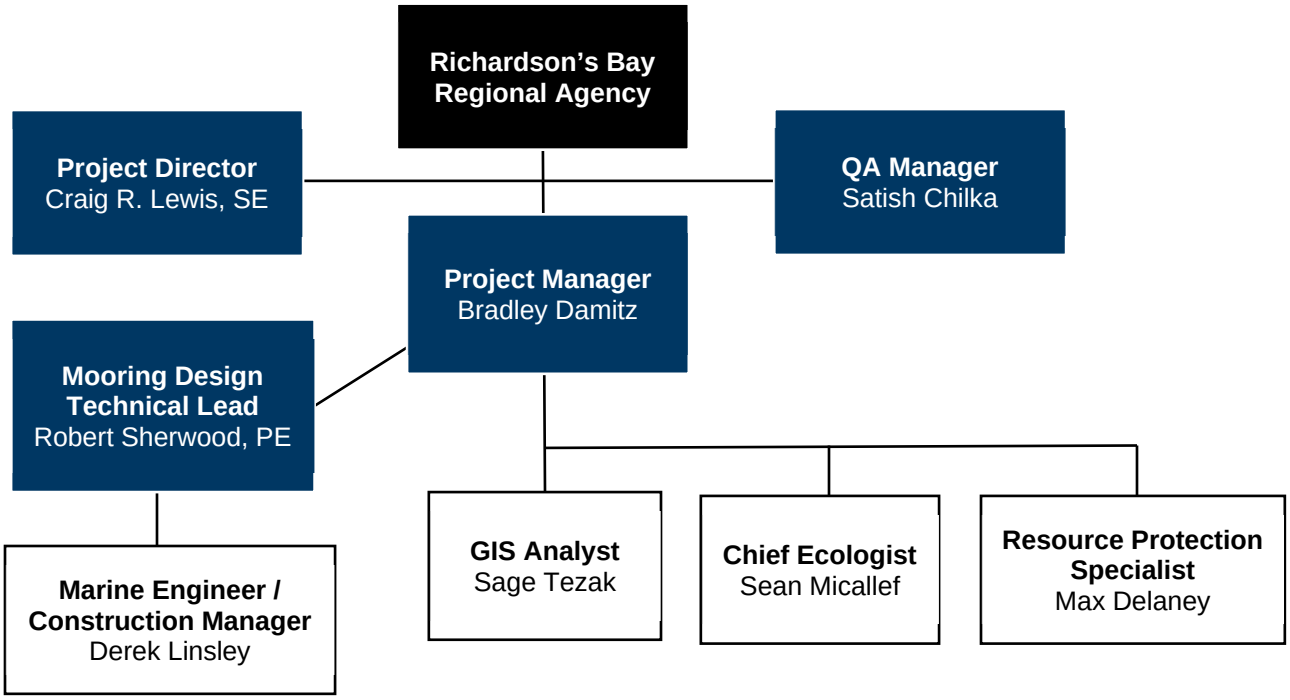
GHD Team Structure and Members

Based on our understanding of project, we propose a team structure that spans the anticipated needed services. The organizational chart below details our proposed team, including disciplinary-based roles tailored to your project. Many of our team members have worked together on other projects and additional staff may be called on if needed/desired. We are committed to keeping the same project team we are proposing. Should an unexpected change result in a team member being unavailable to serve RBRA on this project, we are backed with the resources of a global network. No changes will be made to the project team without consent by RBRA.

Resumes

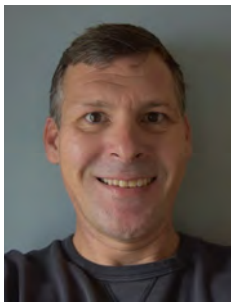
We have also provided full, detailed resumes for all staff on our organizational chart in ***Appendix A***.

Organizational Chart



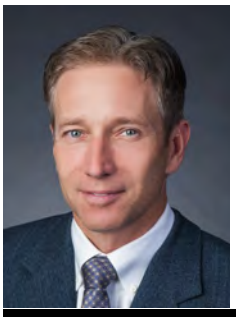
Key Personnel

GHD is fully staffed and capable of providing the right services to the RBRA in a timely fashion. For this contract, we have identified the project team who will serve in the following staffing plan. We have also provided full, detailed resumes for key staff only in ***Appendix A***.



Bradley Damitz
Project Manager / Coastal Management Specialist

Bradley Damitz specializes in providing strategic ocean conservation and marine protected area (MPA) policy guidance and developing creative collaborative strategies and solutions for effective Coastal and Marine Spatial Planning (CMSP) and environmental resource management. Other experience includes development and implementation of MPA and marine and coastal resource management plans and policies, policy analysis and recommendations, identification and pursuance of funding sources (private/public funding, grants, etc.), project and program evaluation, meeting and workshop planning and facilitation services, development of implementation plans and governance structures focused on addressing marine and coastal environmental issues, and media and public relations.



Robert Sherwood, PE
Mooring Design Technical Lead / Waterfront Engineer

Robert (Bob) Sherwood is a civil/waterfront engineer with over 20 years of experience on a wide range of projects, including the design of boat docks and marinas, boat launch ramp facilities, plazas and promenades, bulkheads and shore protection, utilities and landside improvements, harbor dredging and various restoration projects. He has assisted clients with initial planning and feasibility studies including obtaining grants for waterfront facilities, and is typically involved with a project from the planning stages through design and to the end of construction.
Bachelors of Science in Civil Engineering, University of California, Irvine, 1999
Old Dominion University, Coastal Engineering Certificate Program, Norfolk, VA, 2011
Registered Civil Engineer: CA #64351

Craig Lewis, PE, SE
Principal / Project Director / Senior Structural Engineer

Craig Lewis has more than 25 years of experience with the design and analysis of structural elements for infrastructure, coastal and utility systems. He has also performed static and dynamic analyses for various finite element structural programs and has extensive

Satish Chilka, PE, SE
QA/QC Manager / Senior Structural Engineer

Satish Chilka has specialized knowledge in planning, design, analysis, construction document preparation, quality control review, and construction support services for marine engineering. He has been involved in multiple ferry terminal projects in the San Francisco

experience with seismic design. Craig has broad knowledge of many types of structural materials and construction methods, including reinforced concrete and steel. He has direct experience with design details, both new construction and repair/retrofit and has worked with various design codes, including American Institute of Steel Construction (AISC), American Concrete Institute (ACI), Uniform Building Code (UBC), California Building Code (CBC), and Application Programming Interface (API). He has provided repair and retrofit design details for various structural elements including concrete load-bearing piles, bent caps and slabs.

BS, Civil Engineering, University of California, Davis, 1991

Civil Engineer, CA #58706, WA #42655

Structural Engineer, CA #4765, WA #42655

Derek Linsley, PE
Civil Engineer / Senior Construction Engineer

Derek Linsley is a civil engineer with more than eight years of experience in coastal engineering design and marine construction. He has participated in all aspects of coastal projects, from initial conceptual design through execution of work for both small and large projects throughout the Pacific. He has spent significant time in the field on active construction sites as a field engineer performing surveying, diving, and Unmanned Aerial Systems (UAS) operations. Derek also has experience in condition assessments and engineering inspection of existing coastal infrastructure such as seawalls, ocean outfalls, submarine cables, breakwaters, and wharfs.

MS, Ocean and Resources Engineering, University of Hawaii at Manoa, Honolulu, HI, 2015

BS, Civil Engineering, University of California, Los Angeles, CA, 2011

Civil Engineer, CA #87291, HI #18235

Bay Area, providing design and analysis of piers, access ramps, gangways, and also performing hydrodynamic mooring analysis of the landing float and ferry vessels. Other project experience includes hydrodynamic mooring analyses for large crude-carriers, inspections and rehabilitations of pier structures, design and analysis of floating steel caissons (dry dock gates), and offshore wind energy projects. Additionally, Satish has provided checks for float stability per ABS code, material take-off calculations, and hog and sag moment calculations for the concrete floats.

MS, Civil Engineering, University of Southern California, Los Angeles, 2007

BS, Civil Engineering, University of Mumbai, India, 2005

Civil Engineer, CA #80047

Max Delaney
Environmental Resource Protection Specialist / Permit Coordinator

Max Delaney has extensive experience working on projects both within San Francisco Bay and throughout the region. He has worked on both the dredging and permitting teams at the SF Bay Conservation Development Commission (BCDC) and currently works as a resource protection specialist at the NOAA Greater Farallones National Marine Sanctuary (GFNMS) and brings to the team a strong knowledge of the key issues related to project design and review. Max has extensive experience with the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), and has coordinated the writing and review of NEPA documents including environmental assessments, environmental impact statements, and management plans.

B.S. Environmental Science, University of Massachusetts, Amherst, MA

E. Relevant Project Experience

The projects listed here demonstrate the technical capabilities and experience of our project team's work similar to the expected projects.

Key Staff: Brad Damitz

Tomales Bay Mooring Program

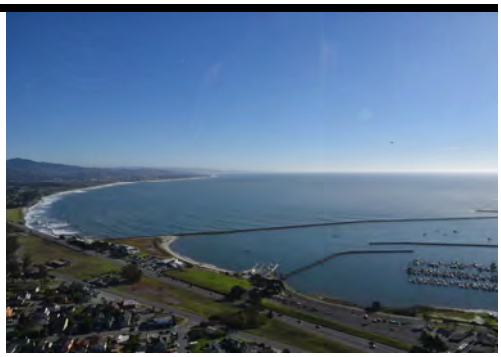
NOAA, Greater Farallones National Marine Sanctuary

Brad Damitz facilitated a collaborative process to develop a comprehensive vessel management and mooring permitting program for Tomales Bay, including coordinating and facilitating both a multi- stakeholder workgroup and a committee of 11 agencies. Currently, Brad collaborates with California State Lands Commission staff to oversee implementation and management of the Tomales Bay Mooring Program (TBMP), including: assessing and updating TBMP Requirements and policies; conducting boater outreach; reviewing and issuing mooring permits; conducting on-the- water mooring surveys and compliance checks, and; tagging and removing unpermitted moorings. Brad also provides permitting support for the Sanctuary and has served as Interim Permitting Coordinator reviewing and administering permits and authorizations for various proposed projects proposed projects within GFNMS and Northern MBNMS.

Surfer's Beach Pilot Restoration Project

San Mateo Harbor District

Brad Damitz is currently the Project Manager for the Surfers Beach Pilot Restoration Project where he oversees all aspects of project planning for this multifaceted harbor dredging and beach restoration project including: the stakeholder collaboration and public outreach process; project design and engineering; environmental review; permitting and agency consultation; biological and physical monitoring design/planning. The project also involves a large eelgrass mitigation effort consistent with the Pillar Point Harbor-Wide Eelgrass Mitigation and Management Plan. He also consults on and obtains funding, permits, and regulatory approvals for other harbor maintenance projects at Pillar Point Harbor, including the West Trail Living Shoreline Project and the boat launch ramp maintenance dredging.



Key Staff: Brad Damitz

Key Staff: Craig Lewis, Bob Sherwood

USS Arizona Memorial Dock and Mooring System Replacement

National Park Service, Pearl Harbor, Honolulu HI

The USS Arizona Memorial commemorates the service of sailors and Marines killed during the attack of December 7, 1941, and is one of the most visited attractions in the state of Hawaii with up to 5,000 people a day. Subsequent to a combined king tide and storm surge event, the anchor block and chain mooring system holding the 20-foot by 105-foot dock began dragging out of position. GHD provided the design for a new mooring system using a series of 12 “helical” piles screwed into the seafloor, with synthetic rope and high-tech elastic bands attached to the dock. Subsequent to securing the dock at the offshore memorial, the onshore dock was also in need of replacement and GHD designed a new replacement dock for the shoreside loading of visitors to the memorial. The new dock is utilizing a strut-mooring system anchored to the shore to minimize environmental impacts to the harbor bottom.

West Harbor Marina Renovation Project

City of San Francisco, CA

The San Francisco Marina Yacht Harbor, West Harbor Renovation Project consists of the redesign of complete renovations for the 325-berth marina. The San Francisco Recreation and Parks Department administers the marina. GHD prepared complete Design-Build RFQ Documents consisting of plans and front end and technical specifications for demolition of existing berths and construction of reconfigured berths in the West Harbor Marina. GHD worked closely with SF Rec Parks and the City throughout the bidding process and qualifications and selection of the Design-Build Team.

Key Features:

- Removal of two existing breakwater segments (moles) and the construction of a 300-foot long concrete floating breakwater and an 185-foot long fixed cantilever sheet pile breakwater;
- New ADA-accessible gangways with security gates;
- Maintenance dredging of approximately 180,000 cubic yards of material;
- Reconstruction of portions of the degraded rip-rap slopes around the interior shorelines;
- Replacement and reconfiguration of security gates, gangways, docks and floating slips to accommodate a target of 325 boats.
- Installation of upgraded electrical, water and data services, a new fire suppression system, and new security lighting service on all docks;
- Renovation of the existing Harbor Office building public restrooms and conversion of 400 square feet of existing office space into tenant showers and restrooms; and the renovation of an existing former Degaussing Station (now vacant) for use as the new Harbor Office;
- Low Impact Design (LID) measures including bio-swales for stormwater management at parking area

Professional Services Sample Agreement

Suggested exceptions to the RBRA Professional Services Sample Agreement are as follows:

- Insurance – GHD carried Professional Liability insurance on a “claims made” basis. We are unable to offer on a “per occurrence” basis.
- Indemnification – this indemnity provision is broader than allowed by Cal Code 2782.8, and we request that the clause be negotiated to comply with that law.
- Standard of care - there are no provisions setting our standard of care. We seek to insert language clarifying the standard against which our work is measured: “Contractor shall perform the services consistent with the level of care, diligence, and skill ordinarily exercised by professional consultants performing the same or similar services under the same or similar circumstances at the same time and geographic location that the services are provided by Contractor. Contractor makes no warranty, express or implied, with respect to the performance of any service under this Agreement. The professional services to be provided by Contractor will be provided in a manner that meets the applicable standard of care.”
- Damages - this contract has no limit on damages. We seek to insert: “Neither Party to this Agreement shall be liable to the other for any consequential, special, indirect, incidental or punitive damages arising from this Agreement. For any damage caused by negligence, including errors, omissions or other acts, any damages based in contract, or in connection with any indemnity obligations of the Parties under this Agreement, or for any other cause of action, neither Party's liability, including that of their employees, agents, directors, officers and subcontractors, shall exceed the value of the services rendered under this Agreement, except as to damage resulting from the gross negligence or willful misconduct of that Party.”

Conflict of Interest

To the best of our knowledge, GHD Inc. does not have any past, present, or future conflicts of interest which would result from performing work under this contract for the RBRA as outlined in the Request for Proposal.

Cost Proposal

The Cost Proposal is submitted separately, with the subject line: ***RBRA Mooring Field Cost Proposal***

Appendix A

Resumes of Key Personnel

BRADLEY S. DAMITZ

869 Estancia Way ♦ San Rafael, CA 94903 ♦ Ph. (415) 259-5766 ♦ e-mail: Brad.Damitz@me.com

PROFESSIONAL EXPERIENCE

COASTAL MANAGEMENT CONSULTANT; San Rafael, CA **2006-PRESENT**

Independent consultant providing strategic environmental and marine/coastal policy guidance and developing collaborative strategies for effective marine and coastal resource conservation and management (see individual project descriptions below). Examples of consulting services include:

- Coastal management planning;
- Permitting and regulatory compliance;
- Develop, advise on, and implement plans, policies, processes and governance structures that address environmental issues and coastal projects;
- Strategic research and regulatory/policy analysis and advising;
- Development and coordination/facilitation of collaborative consensus building processes;
- Stakeholder outreach, and;
- Meeting and workshop planning and facilitation services;

SAN MATEO COUNTY HARBOR DISTRICT (SMCHD) **10/2015—Present**
CONSULTANT; El Granada, CA

- Project Manager for the *Surfers Beach Pilot Restoration Project*—oversee all aspects of project planning for this harbor dredging/beach nourishment project including: stakeholder collaboration and public outreach process; project design and engineering; environmental review; permitting and agency consultation; biological and physical monitoring design/planning.
- Consult on and obtain funding, permits, and regulatory approvals for other harbor maintenance projects at Pillar Point Harbor, including the boat launch ramp maintenance dredging, fishing gear staging, West Trail Living Shoreline, and emergency life ring buoy stations.

NOAA - GREATER FARALLONES NATIONAL MARINE SANCTUARY (GFNMS)
CONSULTANT; San Francisco, CA **7/08—Present**

- Led a collaborative process to develop a vessel management and permitting program for Tomales Bay. Facilitated a multi-stakeholder workgroup and a committee of 11 agencies.
- Coordinate administration of the Tomales Bay Mooring Program in collaboration with State Lands Commission staff. Coordinate/facilitate Tomales Bay Interagency Committee.
- Acted as GFNMS permitting coordinator and reviewed/issued permits for various proposed projects within GFNMS and Northern MBNMS.

SURFRIDER FOUNDATION **7/2012—6/2014**
CONSULTANT

- Provided expert testimony on coastal erosion impacts of a proposed desalination plant intake pipeline in Marina for a CPUC Administrative Court of Law trial involving a proposed California American Water Company desalination plant proposal near Marina, CA.
- Provided recommended alternative locations for placement of infrastructure and recommended mitigation measures for addressing potential coastal impacts from the plants intake system.

GOVERNMENT OF AMERICAN SAMOA **2/07-8/2008**
CONSULTANT

- Project Lead and Author of *Marine Protected Area Network Strategy* document, designed to facilitate, support and enhance the designation and management of no-take MPAs that will protect 20% of the Territory's coral reef ecosystems.

NOAA - MONTEREY BAY NATIONAL MARINE SANCTUARY (MBNMS)
ENVIRONMENTAL POLICY SPECIALIST; Monterey, CA
CONTRACTOR: **4/06—12/2015**
GOVERNMENT (GS 11) POSITION: **1/03—3/17/06**
CONTRACTOR: **1/01—1/03**

- Developed and implemented MBNMS regional resource protection plans, guidelines, and policies on a variety of local resource management issues.
- Facilitated and Coordinated Southern Monterey Bay Coastal Erosion Workgroup—a multidisciplinary stakeholder group comprised of local experts, regulatory agency and local government representatives, conservation interests, and elected officials initiated to develop a regional approach addressing coastal erosion and sea level rise along southern Monterey Bay.
- Responsible for stakeholder outreach and Technical Advisory Committee facilitation for the *Monterey Bay Sea Level Rise Study Vulnerability Assessment*.
- Led stakeholder outreach and Technical Advisory Group for the *Santa Cruz Littoral Cell Regional Sediment Management Plan*. Authored chapters on Regulatory and Permitting and Governance Structure.

WORLD HEALTH ORGANIZATION (WHO) **6/04-8/08**
TEMPORARY ADVISOR; MONTEREY, CA
- Provide expert advice regarding environmental impacts of desalination facilities.
- Assist in the development of an international guidance document entitled *WHO Guidance on Desalination for a Safe Water Supply* (Document provided upon request).
- Co-author of a chapter on conducting Environmental Impact Assessment for desalination projects in 2010 book *Desalination Technology – Health and Environmental Impacts.*

STATE OF CALIFORNIA WATER DESALINATION TASKFORCE **5/03-10/2003**
TASKFORCE MEMBER; MONTEREY, CA
- Provided input regarding environmental impacts to marine ecosystems from desalination facilities, and potential mitigation measures.
- Coordinated with U.S. National Marine Fisheries Service and National Marine Sanctuaries management and staff to present unified NOAA recommendations and talking points.

ADVENTURES BY THE SEA **9/99-1/2001**
KAYAK TOUR GUIDE/NATURALIST; Monterey, CA
- Led kayak tours highlighting ecology and wildlife of Monterey Bay.
- Facilitated Team building exercises for corporate clientele.

MARINE LAB ENVIRONMENTAL EDUCATION PROGRAM **Summer 1999**
INSTRUCTOR; Key Largo, FL
- Educated students and conducted hands-on labs on marine science and environmental conservation concepts.
- Led boat trips and snorkeling excursions to coral reef, sea grass, and mangrove habitats.
- Assisted in water quality research of Florida Bay.

MONTEREY BAY AQUARIUM **9/98—4/2010**
VOLUNTEER GUIDE; Monterey, CA
- Interpreted Exhibits on wide variety of marine life native to Central California.
- Educated guests of all ages and backgrounds on natural history and conservation. Led group tours.

EDUCATION

MIDDLEBURY INSTITUTE OF INTERNATIONAL STUDIES (MIIS) Monterey, CA **May 2000**
Master of Arts in International Environmental Policy (MAIEP)

UNIVERSITY OF RHODE ISLAND (URI) Kingston, RI **May 1995**

Craig Lewis PE, SE

Business Group Leader

Location

San Francisco, CA

Experience

25 years

Qualifications/Accreditations

– BS, Civil Engineering, University of California, Davis, CA, 1991
– Civil Engineer, CA #58706, WA #42655
– Structural Engineer, CA #4765, WA #42655

Relevant experience summary

Craig Lewis has more than 25 years of experience with the design and analysis of structural elements for infrastructure, coastal and utility systems. He has also performed static and dynamic analyses for various finite element structural programs and has extensive experience with seismic design. Craig has broad knowledge of many types of structural materials and construction methods, including reinforced concrete and steel. He has direct experience with design details, both new construction and repair/retrofit and has worked with various design codes, including American Institute of Steel Construction (AISC), American Concrete Institute (ACI), Uniform Building Code (UBC), California Building Code (CBC), and Application Programming Interface (API). He has provided repair and retrofit design details for various structural elements including concrete load-bearing piles, bent caps and slabs. He has conducted several extensive site inspections and field surveys to determine the above and below water condition of marine structures.

Bridges & Structures

Rehoboth Beach Marine Outfall

Lead Structural Engineer
City of Rehoboth Beach | Rehoboth Beach, MD

Served as Lead Structural Engineer for design of 24-inch diameter High Density Polyethylene (HDPE) marine outfall and pile-supported diffuser structure and risers. Work included design of precast concrete counter-buoyancy collars for the pipe and diffuser.

Railroad Avenue Bridge Replacement

Structural Engineer
City of Willits | Willlits, CA

Responsible for the structural and civil PS&E package for the new 30-foot-wide, 64-foot-long, three-span bridge. All calculations and specifications were to Caltrans standards. The bridge is pile-supported with Cast-in-Place (CIP) concrete pile caps and bridge deck.

Camp Creek Road Replacement Bridge

Structural Engineer
Pacific Gas & Electric (PG&E) | Butte County, CA

Under an as-needed engineering services contract with PG&E, provided structural design of a replacement bridge for PG&E's maintenance vehicles at a remote location in eastern Butte County near the Feather River. The Old Bridge was situated approximately 800 feet from the facilities and is the only land access to the facilities; the old bridge provided critical access to approximately three line miles of PG&E electric transmission line and 95 transmission towers; the replacement bridge is designed as a HS25-44 load rated steel girder bridge with metal beam guardrails measuring approximately 14-feet-wide by 40-feet-long using precast concrete blocks and other precast elements for footings that will bear on natural rock.

Orchard Avenue Bridge

Structural Engineer
City of Ukiah | Ukiah, CA

Performed preliminary engineering through construction services for the design of a four-lane, two-span, 85-foot concrete slab bridge; project included approach roadways of 450 feet and 700 feet, storm drainage channel modifications, hydraulic and scour studies, and permit coordination. A significant element in design was the creek capacity and the bridge was designed to be above the 100-year flood elevation; to shorten the

design window, project design team meetings were held every two weeks and the environmental study/approval documents were hand-walked through the process.

Lakeville Street Bridge Replacement

Project Engineer
US Army Corps of Engineers (USACE) | Petaluma, CA

Part of the USACE / Petaluma River Flood Control project; Included a two-span structure with an overall length of 105 feet and a width of 54 feet; bridge was skewed 26 degrees with respect to the river due to the alignment of Lakeville Street; the equal spans were 52 feet 6 inches; the bridge provided for two 12-foot traffic lanes, shoulders, and two six-foot sidewalks. The superstructure is comprised of American Association of State Highway and Transportation Officials (AASHTO) concrete bridge planks with a composite CIP deck, and the bridge planks provided the least depth of superstructure and thus the least disruption to the approach roadways; the deck is supported by two seat-type abutments and one pier wall; the abutments and piers are supported by driven steel tubular piles. The front faces of the abutments double as the channel walls due to the rectangular shape of the channel section in this vicinity. Current Caltrans requirements were used for both vertical and lateral loads for the design of the bridge.

Payran Street Bridge Replacement

Structural Engineer
USACE | Petaluma, CA

Part of the USACE / Petaluma River Flood Control project; included a three-span structure with an overall length of 155 feet and width of 54 feet; center span is 60 feet, and the side spans are 47 feet 6 inches; bridge provided for two 12-foot traffic lanes, shoulders, and two 6-foot sidewalks; the superstructure is comprised of 3-foot-6-inch-deep precast concrete Caltrans I girders with a CIP deck. Driven steel tubular piles support the deck, and the bridge incorporates short approach slabs to reduce settlement and roadway maintenance at the paving joints.

Payran Street and Lakeville Street Bridges

Project Structural Engineer
City of Petaluma | Petaluma, CA

Prepared preliminary designs for two bridges for the City of Petaluma, across the Petaluma River. The Payran Bridge span is 152 feet; the Lakeville span is 95 feet. Both designs use prestressed one-girder sections and composite decks.

Basilone Road Bridge

Structural Engineer
US Marine Corps | Marine Corps Base, Camp Pendleton, CA

As part of the Santa Margarita Flood Control Project, reviewed design of various elements of a 1,300-foot-long pre-stressed, CIP box girder bridge with spans of 50 meters.

Bear Canyon Road Bridge

Structural Engineer
Humboldt County Public Works Department | South Work Eel River, CA

Provided a broad scope of engineering services for the new Bear Canyon Bridge including the bridge and 800-feet of roadway approach improvement; funding was provided by the Federal Highway Administration (FHWA) through Caltrans under the Highway Bridge Replacement and Rehabilitation Program; required Caltrans review and approval, as well as California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) clearance.

Petaluma Mainline Railroad Bridge Replacement

Project Structural Engineer
City of Petaluma | Petaluma, CA

Performed design of various bridge components and prepared cost estimate.

Nicasio Creek Bridge

Project Structural Engineer
County of Marin | Marin County, CA

Served as Project Structural Engineer for widening of a 103-foot-long, three-span, 24-foot-wide highway bridge by 16 feet. The bridge is conventionally reinforced concrete T-beam superstructure with concrete wall abutments and two-column bents skewed at 27 degrees. Widening included design of new columns, footings and partial superstructure connected to the existing, and extensions of bent caps and abutments.

Manengon Bridge

Project Structural Engineer
Ylig River, Guam

Assisted in the design of a single-span structure 83-feet-long by 42-feet-wide, using prestressed AASHTO girders with a composite deck. The bridge cost $500,000; total project cost, including hydraulic improvements and civil works, was $1.65 million.

Alemany Circle On-Ramp / Separation

Structural Engineer
City of San Francisco | San Francisco, CA

Provided analysis in support of retrofits, which included new columns with pile-supported footings and modifications to the steel superstructure and reinforced concrete multi-column bents.

Fifth Avenue Underpass Bridges

Structural Engineer, Quality Assurance / Quality Control (QA/QC)
City of Redwood City | Redwood City, CA

Provided checks of the design calculations for third-party review of three reinforced concrete box girder bridges at a commuter railroad crossing: a two-track prestressed, precast railroad bridge on steel pipe pile foundations; a Cast-in-Place (CIP), prestressed vehicle bridge; and a precast, prestressed pedestrian bridge.

South Tower Fender Retrofit

Project Structural Engineer
City of San Francisco | Golden Gate Bridge, San Francisco, CA

Served as Project Structural Engineer for retrofit of the south tower fender of the Golden Gate Bridge against ship impact and seismic loadings. Work included an analysis for strength evaluation of the fender structure to determine the effects of ship impacts. Retrofit methods and detailed designs were also provided for the concrete fender.

Lacy Murrow Bridge Analysis

Structural Engineer
Guy F. Atkinson Company | Lake Washington, WA | 1991

Prepared a weight take-off for a segment of a proposed floating pontoon bridge and conducted a computer analysis using Earl and Wright's SEADYN program.

Caltrain Corridor Independent Structural Reviews

Independent Review
Caltrain | San Mateo County, CA | 1997-2000

Performed independent analysis and design review of railroad bridge and platform structures for several projects along the Caltrain Corridor, including Ralston Avenue / Grade Separation, Holly Street Grade Separation, Jefferson Avenue Grade Separation, and Menlo Park / Burlingame Station structural inspection.

Rohnert Park Expressway

Structural Review
City of Rohnert Park | Rohnert Park, CA

Performed structural review and seismic analysis of a new 254-foot-long, three-lane, CIP, post-tensioned reinforced concrete bridge adjacent to an existing bridge over US Highway 101 in Sonoma County. The work required Caltrans review and approval.

Silver Avenue Overcrossing

Project Structural Engineer
Caltrans | San Francisco, CA

Conducted seismic retrofit analysis and design of a bridge that carries four lanes of traffic across a freeway on two continuous spans. The superstructure of conventionally reinforced concrete box girders is monolithic with a three-column bent and is supported on steel rocker bearings at the two abutments.

Third Street Undercrossing Seismic Retrofit

Project Structural Engineer
Caltrans | San Francisco, CA

Conducted seismic analysis of a freeway bridge comprising four separate concrete box girder structures; included analysis of various bridge components.

Camp Pendleton 150 mgd Seawater Desalination Plant

Project Structural Engineer
US Marine Corps | Camp Pendleton, CA

Provided structural design and details for the feasibility study conducted for the 14-foot-diameter intake/outlet tunnel structure and 10-foot diameter risers constructed in sandy silty seafloor sediments in 90 feet of water off the Southern California coast. Performed a constructability analysis of the construction sequence and developed cost estimates for the offshore portion of the project.

Walls and Docks

Raley's Dock Replacement

Structural Engineer
City of West Sacramento | Sacramento, CA | 2013-2018

Performed design of steel pipe guide piles, steel pontoon berthing dock and concrete floating docks at the site along the Sacramento River. Design of floating debris boom and dolphins to deflect logs and large objects during high river flows. Project also include access gangway and platforms designed to float at high water levels during river flood periods. Project work also included geotechnical borings in the river and Hydrologic

Engineering Center's-River Analysis System (HEC-RAS) hydraulic analysis of impacts to water level with docks and other structures in the river.

Middle Harbor Steel Sheet Pile Wall

Structural Engineer
USACE | Port of Oakland, CA | $55.4 million (Construction) | 2006-2011

As a part of the overall project to deepen the Port of Oakland's shipping channels to 50 feet in order to accommodate larger vessels, GHD was selected as the prime consultant to design the repository site for approximately six-million cy of dredged material. Provided structural engineering for the analysis and design of a 1,700-foot-long, cantilever steel sheet pile wall to contain the dredged material. GHD added merit to this project by value engineering the original concept for the containment structure. The original concept developed was a rock jetty along the entire face of the containment structure. As part of the project team, interacted with and worked cooperatively with the Technical Advisory Committee to develop the design. The Technical Advisory Committee included USACE, the Port of Oakland, and representatives of several resource agencies, such as National Marine Fisheries Service and US Fish and Wildlife Service, as well as local interest groups, such as the Audobon Society.

Berryessa Creek Flood Control Project

Project Engineer
Santa Clara Valley Water District (SCVWD) | Milpitas, CA

Served as Project Engineer for an alternatives analysis / design for repairs to a levee on the Berryessa Creek and tributaries including Tularcitos Creek and Calara Creek for the SCVWD. The analysis includes HEC-HMS modeling of the watershed and development of an HEC-RAS model for the various alternatives to protect the City of Milpitas from the 100-year flood event. Concept level plans were completed for the flood improvements that including innovative flood walls, maintenance access roads and vegetative banks. A stormwater pump station was also one of the recommended alternatives on Tularcitos Creek.

Bollinger Road Bike Trail Widening

Project Engineer
City of Cupertino | Cupertino, CA

Project involved HEC-RAS modeling and subsequent design of channel improvements to Calabazas Creek, including fish passage and widening of the crossing of Bollinger Road over the creek for bicycle traffic. The project includes a 300-foot-long fish passage that extends approximately 100 feet upstream and downstream of the culvert, consisting of a series of pools and riffles for potential fish habitat. The creek banks were stabilized using bio-engineering methods where possible. The project required close coordination with Santa Clara Valley Water District, the USACE, the California Department of Fish & Game, and the National Marine Fisheries Service.

Lower Mokelumne River Streambed Restoration Project

Project Engineer
Woodbridge Irrigation District | Woodbridge, CA | 2001-2004

Served as Project Engineer for the removal of an existing dam and design of a new 167-foot-long concrete and timber dam and fish ladder and designs for a new concrete and steel (gates) structure and fish ladder.

Aggregate Offloading Facility

Project Manager
Shamrock Materials Inc. | Petaluma, CA

Served as Project Manager for the design of a barge offloading wharf along the Petaluma River in Northern California. Design included layout of a tie-back steel sheet pile wall, design of the wall, design of barge mooring attachments and fendering, and coordination with equipment and material suppliers.

Wilbridge Terminal

Project Engineer
Port of Portland | Portland, OR

Served as Project Engineer for upgrading an existing terminal to receive larger vessels. Work included field investigations, structural analysis, mooring and berthing calculations, and upgrade designs.

Port of San Francisco As-Needed Architectural and Engineering Services Contract

Marine Structural Engineer
Port of San Francisco | San Francisco, CA | 2006 - Ongoing

Served as Marine Structural Engineer for several as-needed task orders, including Structural Assessment of Port Mooring Bollards, Pier 50 Valley Substructure Repair, and Pier 43.5 Promenade Conceptual Design.

Bulk Offloading Terminal Repairs and Upgrades

Project Manager, Technical Quality
C&H Sugar | Crockett, CA

Responsible for condition assessment and structural evaluation of existing concrete wharf at the bulk offloading terminal located on the Carquinez Strait. Above and below water structural condition surveys were conducted in accordance with Marine Oil Terminal

Engineering and Maintenance Standards (MOTEMS). Berthing and mooring analyses were conducted for design cargo vessels. Project included design of a replacement fender system consisting of precast reaction panels, tubular steel compression struts and rubber cone fenders. The new fender system was designed to be installed within the short period available between cargo vessels calling at the dock.

Waterfront Design

Fire Station 35 at Pier 22-1/2

Lead Marine Structural Engineer
City of San Francisco Public Works | San Francisco, CA | 2016 - Ongoing

Led preliminary design for development of a large floating pontoon to support a new fire station operations building at Pier 22-1/2. The team also reviewed environmental and seismic load conditions and developed criteria documents. The project work included design of a pile-supported access pier to support a transfer span from landside to the pontoon without impacting the vulnerable seawall and bulkhead structures.

North Bay Operations and Maintenance Facility, Mare Island

Project Manager
Water Emergency Transit Authority (WETA) | Vallejo, CA | 2013-2016

Managed the design of a new ferry maintenance and passenger facility for WETA. The project included ferry maintenance floats, marine diesel fuel storage and delivery systems, and renovation of an historic brick building, converting it to an administration and maintenance building for WETA.

Brannan Street Wharf Project

Project Manager
Port of San Francisco | San Francisco, CA | 2012-2013

As Project Manager, led the structural assessment and visual condition surveys of existing Pier 36 and marginal wharf structures, along with conceptual engineering design of structural alternatives for new and retrofitted wharf and seawall. Led development of seismic design criteria for new structures and performance based seismic analysis and design of new wharf pile and deck structure. Project included structural analysis and conceptual design of wharf structure components for operational and code prescribed seismic loads, quantity take offs and cost estimates, and design drawings and specifications.

San Francisco Bay Ferry WETA Richmond Ferry Terminal

Project Manager
Richmond, CA | 2015-2018

Responsible for the planning, layout, and preliminary design of a new passenger ferry terminal at Ford Point in Richmond, California. The new terminal consists of a concrete float secured with steel pipe guide piles, large dolphin piles, and an Americans with Disabilities Act (ADA)-compliant access ramp and movable gangway. The project includes electrical, water, data, and a security system for the new terminal. Work included environmental permits and Bay Conservation and Development Commission review.

The terminal was built to meet an essential facility seismic performance standard, meaning it would remain operational following a large seismic event. This first-of-its-kind resilient passenger ferry terminal became operational in 2018.

Berkeley Municipal Pier

Project Manager
City of Berkeley | Berkeley, CA | 2017-2019

Served as Project Manager for inspection, condition assessment and structural evaluation of a 3,000-linear-foot public pier located at the Berkeley shoreline. The work included seismic assessment and development of repair, retrofit, and replacement alternatives.

San Francisco Seawall Earthquake Vulnerability Assessment

Project Manager
Port of San Francisco, CA | 2015-2016

GHD, as part of a Joint Venture, performed an earthquake vulnerability study of the Northern Waterfront Seawall. The project study included performance-based structural analysis and conceptual design of wharf structure components for operational and code prescribed seismic loads. GHD analyzed and ranked criticality of the seawall sections with respect to static and earthquake loads. The study also included flooding vulnerability assessment due to climate change and sea level rise.

Rehoboth Beach Marine Outfall

Lead Structural Engineer
City of Rehoboth Beach | Rehoboth Beach, MD | 2018

Served as Lead Structural Engineer for design of 24-inch diameter High Density Polyethylene (HDPE) marine outfall and pile-supported diffuser structure and risers. Work included design of precast concrete counter-buoyancy collars for the pipe and diffuser.

Surface Transportation Pier and Support Facilities

Project Engineer
US Navy | San Nicolas Island, CA

Served as Project Engineer for the design of a new pier and off-loading facility at San Nicolas Island. Responsible for the design of a movable 280-foot steel bridge ramp. The purpose of the ramp is to be lowered into position so the Navy supply barge can conduct roll on-roll off operations from the fixed pier. Designed the ramp so it could be towed in the open ocean from the fabrication plant to the job site. Also performed non-linear analyses and design of the breasting and mooring dolphin structures and concrete support piles.

Submarine Base Kitsap Design-Build Project

Project Manager
Naval Facilities Engineering Systems Command (NAVFAC) Northwest | Kitsap, WA

Led design team for analysis and design of new 190-foot-long pier structure and 120-foot-long transfer span to service floating pontoon dock for berthing miscellaneous naval vessels and accommodate an 18-foot tidal range. Pier consisted of steel pipe piles, six CIP concrete pile bent caps, and 20 pre-cast concrete channel beams. Transfer span is a steel trussed structure. Design included a reinforced concrete abutment / retaining wall. Project included on-site inspection / survey of floating pontoon internal compartment structure.

Ferry Plaza and Pier 27/29

Structural Engineer
Port of San Francisco | San Francisco, CA

Responsible for seismic analysis and repair to two large piers; designed an innovative lateral-force-resisting repair system to avoid need for new pilings. Work included series of detailed non-linear time-history seismic analyses including non-linear hysteretic response of the soil and batter pile connection.

Oakland Army Base Piers 6, 6 1/2 and 7

Project Engineer
US Army | Oakland, CA

Served as Project Engineer for the study of Pier 7 to determine deficiencies and the modifications and repairs needed to increase berthing capacity and extend gantry crane rails. He evaluated Loma Prieta earthquake damage to decks and piles, Piers 6, 6 ½, and 7; provided technical support for underwater diver inspection; performed finite element analyses of wharfs; and developed repair design.

Naval Construction Battalion Center Wharf Improvements

Structural Engineer
Naval Construction Battalion Center | Port Hueneme, CA

Provided structural design for the replacement of wood piling and fendering systems with plastic-composite systems made from recycled plastic. Performed a full berthing analysis for a range of vessels to determine the design of a fendering system, which would provide the Navy with a facility capable of supporting several classes of ships. Also designed repairs for damaged load-bearing piles supporting the wharves, vessel mooring equipment, and other wharf components.

Pier 40, The Embarcadero, South Beach Marina

Project Manager
San Francisco Redevelopment Agency | San Francisco, CA

Served as Project Manager for the work, which consisted of a visual observation, structural condition assessment and development of repair design alternatives for the substructure and walkway apron around the perimeter of Pier 40. Responsible for the structural condition assessment report, which included a repair alternatives study for the pier substructure.

Maritime Reserve Fleet Administration Pier

Project Structural Engineer
US Department of Transportation's Maritime Administration | Suisun Bay, CA

Served as Project Structural Engineer for the design of this pile-supported concrete pier. Developed structural concepts and systems for the new pier. Performed structural analysis of the pile-soil interaction, seismic analysis of the pier, lateral loads from moored ships and designed the deck structures for HS-20 loading. Developed the structural details for the construction of the project and managed topography and hydrographic surveys of the site.

Osprey Drilling and Production Platform

Structural Analysis
Forcenergy Inc. | Cook Inlet, AK

Performed structural analysis and design of deck truss system and supporting structure for an offshore exploratory drilling platform in 45-foot water depth. Analysis included extensive finite element modeling of the deck structure and support brackets for various environmental loading conditions.

Landscaping

Berth 401 Bulk Liquid Terminal Pipe Rack Infrastructure for Multiple Tenants, Terminal 4

Structural Engineer
Port of Portland | Portland, OR

Served as Structural Engineer for preliminary and final engineering, and a 2B probable cost determination for the proposed new Bulk Liquid Terminal being considered for Berth 401 at the Port of Portland's Terminal 4. Oregon stimulus funds were utilized to design and construct a pipe rack structure throughout Terminal 4 to support tenant product lines from Berth 401 to five tenant sites. Civil and structural design services were provided for the infrastructure piperack system. This berth was previously reviewed by GHD for an existing tenant as a potential unloading facility for methanol. In addition to methanol, other products that may be transferred would be lignite, urea ammonium nitrate, propylene glycol, liquid fertilizers, vegetable oil, palm oil, soybean oil canola oil, other bio-diesel feed stocks, biodiesel, glycerine, and ammonium calcium nitrate by existing and new tenants.

Wilbridge Terminal

Project Engineer
Port of Portland | Portland, OR

Served as Project Engineer for upgrading an existing terminal to receive larger vessels. Work included field investigations, structural analysis, mooring and berthing calculations, and upgrade designs.

Structural Condition Assessment, Municipal Pier at Aquatic Park

Project Manager
San Francisco Department of Public Works | San Francisco, CA

Served as Project Manager for the work which consisted of a visual above and below water observations, material testing, structural condition assessment and preparation of conceptual repair and seismic retrofit designs as part of a conditional evaluation of historical Municipal Pier in San Francisco. The existing deteriorating condition of the pier structure was addressed along with an investigation of the potential cause of the damage. Conceptual damage repairs were developed, and a seismic assessment was performed. Directed the production of the budgetary-level estimates of the construction cost for the damage repairs required were developed along with the seismic retrofit alternatives.

San Francisco West Harbor Marina Renovation

Project Manager
Port of San Francisco | San Francisco, CA

Served as Project Manager for the design of complete renovation for the 325-berth marina. The project consisted of developing a phasing plan for the new berths, berth configuration alternatives, demolition of existing berths and construction of reconfigured berths in the West Harbor. Led the design team for upgrades to the electrical and water dock utilities and installation of new barrier-free access gangways with security gates. Led the Marina Working Group meetings and solicited valuable feedback from the users in order to develop improvements that met the project objectives. Also assisted the City with preparation of the Design-Build RFP Criteria Package and the qualification and selection of the design-build team.

Submarine Base Bangor Electrical Design-Build Project

Structural Engineer
US Navy, Northwest | Bangor, WA

Served as Structural Engineer who developed a detailed analysis and design of floating steel camel structure and associated supporting steel guide pile structure for use in berthing / mooring of Ship, Submersible, Guided Missile, Nuclear (SSGN) class submarines at Marginal Wharf. Detailed analysis and design of steel power boom structure to support SSGN class submarines at marginal wharf.

Ports

Mission Bay Shoreline Protection for Bayfront Park

Structural Engineer
Coast & Harbor Engineering, Port of San Francisco | San Francisco, CA

Developed a shoreline protection design for the Mission Bay Bayfront Park Project for the Port of San Francisco. The project rebuilt approximately 1,500 linear feet of shoreline and slope with a stone revetment with foundation improvements to the seawall. Services included a structural site condition assessment, a hazardous materials assessment, assistance in the preparation of design

Wharf 311 Seismic Study

Project Manager
NAVFAC | Seal Beach, CA

Performed condition survey and seismic evaluation of a concrete wharf and supporting bulkhead. Work included structural assessment and evaluation and developing design concepts for potential strengthening of the Wharf 311 deck and substructure located at the Naval Weapons Station Seal Beach, Seal Beach, California. Performance of the wharf and bulkhead structure was evaluated for Level 1 (50% in 50 years) and Level 2 (10% in 50 years) seismic events in accordance with Unified Facilities Criteria (UFC) criteria.

Pier 8 Repairs and Load Study

Project Manager
NAVFAC | Naval Base San Diego, CA

Led condition survey, corrosion study, life cycle analysis, engineering analysis, finite element structural modeling, and report on the current and future load capacity of the concrete structure located at Pier 8 Naval Base San Diego. Drawings were developed to indicate current and projected load rating for use by crane operators on the pier. All work was performed in accordance with UFC criteria.

Jack London Square Marina Reconstruction

Project Engineer
City of Oakland | Oakland, CA

Served as Project Engineer involved with the design of landside and waterside improvements at Jack London Square. GHD organized and conducted land surveys and bathymetric surveys, as well as utility location and prepared dredging plans for the expansion of marina areas. Responsible for the preparation of plans for installation of new wet and dry utilities to serve the new landside development, and provided structural, mechanical, and electrical design for new buildings, including a new Harbormaster's Building, and performed a review of the concrete floating dock design. GHD prepared the design for a fuel dock and a sewage pump out station. GHD designed wet and dry utilities for the new marinas / boat slips including water, electrical, and communications.

Water

Crocker Water Storage Tank

Lead Structural Engineer
City of Brisbane | Brisbane, CA

Served as Lead Structural Engineer responsible for rehabilitation and strengthening analysis of existing 1.0 mg prestressed concrete tank. The assessment study included review of multiple repair alternatives including ring beams, post-tensioned strands, and shotcrete. Foundation strengthening alternatives were also analyzed and included in the technical feasibility report submitted to the City along with a complete cost estimate.

City of Milpitas Main Sewage Pump Station

Structural Engineer
City of Milpitas | Milpitas, CA

As W&K's Structural Engineer, responsible for the complete structural design of a large buried reinforced concrete wet well, valve vault and maintenance and control buildings for the replacement pump station. Design of the below-grade structures utilized a structural finite element analysis considering lateral earth pressures, surcharges, and seismic loading per ACI 350.3. The new facility handles 31 mgd and is designed to accommodate future residential, commercial, and industrial growth in the City. W&K also designed a grit chamber, new 54-inch Reinforced Concrete Pipe (RCP) gravity mainline, eight-foot-diameter manhole, submersible pump station with valve vault, new control building, and new garage at the existing site on North McCarthy Boulevard.

San Juan Reservoir

Lead Structural Engineer
Stanford University | Stanford, CA

Led the structural engineering team to perform a complete visual observation of the San Juan Reservoir. The reservoir is a partially buried circular water tank consisting of a reinforced concrete slab floor slab, concrete walls and a timber frame built up roof. The investigation included several test pits to determine the extent of the existing concrete reservoir foundation. The inside diameter is 114 feet, and the total height of the reservoir wall is 21 feet. The reservoir walls extend approximately four feet above finish grade. The Reservoir was built around 1900. The files indicate the reservoir wall was raised approximately four feet in 1941 to increase the reservoir capacity to 1.5 mg. The project team performed a diagnostic seismic evaluation using a response spectrum analysis. Subsequently, the structural engineers developed strengthening and retrofit alternatives for the deficient reservoir. Following selection of the preferred concept, complete plans and details were developed for a ring beam and foundation strengthening.

Canyon Heights Water Tank Replacement

Structural Engineer
County of Alameda | Alameda County, CA

Responsible for structural design and construction review of a 500,000-gallon welded steel storage tank on a steep hillside.

Casanova Pump Station Replacement

Structural Engineer
City of San Mateo | San Mataeo, CA

Performed structural design of a wet well in a replacement stormwater pump station on Bay muds. Provided analysis for seismic, hydrostatic, and soil loading. The new pump station is designed on piles to minimize lateral displacement.

Ygnacio Pump Station Upgrade

Structural Engineer
Contra Costa Water District | Contra Costa County, CA

Provided structural design of a new pump can (containment unit) and retaining wall and provided structural analysis and design for the seismic upgrade of an existing maintenance building.

Glen Echo Creek Storm Drainage Improvements

Structural Engineer
Alameda County Public Works Agency | Oakland, CA

Provided structural design of stream bank retaining wall for storm drainage improvements in Downtown Oakland for the Alameda County Public Works Agency.

Glen Park Tank

Structural Engineer
City of Brisbane | Brisbane, CA

Responsible for evaluation of existing tank and foundation design. Coordinated with geotechnical engineer to develop appropriate parameters for design of rehabilitated tank. Designed composite foundation for new tank incorporating cast-in-drilled-hole piles and concrete slab on grade.

Ohlone Tank

Structural Engineer
Alameda County Water District | Alameda County, CA

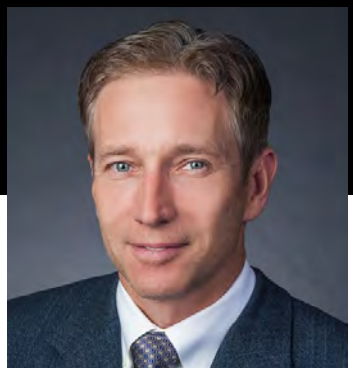
Responsible for structural design of 500,000-gallon welded steel storage tank.

Career history

1994 - present	GHD, Business Group Leader
1991 - 1994	Earl & Wright Consulting Engineers, Associate Engineer

Robert (Bob) Sherwood PE

Civil / Waterfront Engineer



Location

Irvine, CA

Experience

22 years

Qualifications/Accreditations

– BS, Civil Engineering, University of California, Irvine, CA, 1999
– Coastal Engineering Certificate Program, Old Dominion University, Norfolk, VA, 2011
– Civil Engineer, CA #64351

Key technical skills

– Inspection of Marine Structures
– Master Planning and Design
– Recreational Boating Facilities
– Shore Protection and Restoration
– Grant Funding Assistance

Memberships

– American Society of Civil Engineers, Los Angeles, Harbors & Waterways Technical Group, Past Chairperson
– University of California – Irvine, Chapter of Chi Epsilon Past President
– Engineering Honors Society

Relevant experience summary

Bob Sherwood is a civil / waterfront engineer with over 22 years of experience on a wide range of projects, including the design of boat docks and marinas, boat launch ramp facilities, plazas and promenades, bulkheads and shore protection, utilities and landside improvements, and harbor dredging and lake restoration projects. He has also been involved with the inspections of bridges, docks, wharves, and bulkheads both above and below water. He has assisted clients with initial planning and feasibility studies including obtaining grants for waterfront facilities and is typically involved with a project from the planning stages through design and to the end of construction.

United States Ship (USS) Arizona Memorial Dock and Anchoring System Replacement

Project Engineer
Pearl Harbor | Honolulu, HI

The USS Arizona Memorial commemorates the service of sailors and Marines killed during the attack of December 7, 1941 and is one of the most visited attractions in the state of Hawaii with up to 5,000 people a day. Subsequent to a combined king tide and storm surge event, the anchor block and chain mooring system holding the 20-foot by 105-foot dock began dragging out of position. GHD provided the design for a new mooring system that used a series of 12 “helical” piles screwed into the seafloor, with synthetic rope and high-tech elastic bands attached to the dock. Subsequent to securing the dock at the offshore memorial, the onshore dock was also in need of replacement and GHD designed a new replacement dock for the shoreside loading of visitors to the memorial. The new dock is utilizing a strut-mooring system anchored to the shore to minimize environmental impacts to the harbor bottom.

Wagon Wheel Creek Stabilization

Project Manager, Engineer
OCPW and OC Parks | County of Orange , CA

GHD provided professional design and consulting services to the County of Orange for the stabilization of the existing timber wall within Wagon Wheel Creek to prevent future damage to the timber wall and prevent slope failures affecting the adjacent trail and Oso Parkway. The project involved implementing both immediate emergency repairs and long-term repairs for the tiered wall, requiring a hydrological study of the creek and various alternatives for stabilizing the flow within the creek bed to reduce undercutting of the wall. The creek is within the Thomas F. Riley Wilderness Park and the project required review by multiple agencies including the US Army Corps of Engineers, Regional Water Quality Control Board, and California Department

of Fish and Wildlife. The long-term solution for managing creek flow is ultimately a series of engineered rock cascades, and the stabilization of the timber wall is large riprap and sheet piling along the base of the wall.

Carlsbad Beach Access Repairs

Project Manager, Engineer
City of Carlsbad | Carlsbad, CA

Responsible for engineering design services for the beach access stairway and promenade repairs along 3,500 feet of coastline from Pine Avenue to Tamarack Avenue. This project included the repair of the upper pedestrian promenade along Carlsbad Boulevard, the four access stairways from the promenade down to the beach, and the lower promenade and seawall along the base of the bluff. Our team efforts included preliminary engineering tasks, such as reviewing as-built record drawings, previous studies and reports, geotechnical investigation, land and aerial surveys, repair alternatives and associated costs.

Library Park Seawall

Project Engineer
City of Lakeport | Lakeport, CA

Responsible for design of the replacement seawall that was significantly damaged in 2017 when Clear Lake experienced catastrophic flooding that resulted in a Federal Major Disaster Declaration. The project included the replacement of approximately 535 Lineal Feet (LF) of seawall, which supports the adjoining pedestrian promenade. The new steel sheet pile wall seawall was designed to withstand heavy wave action. The promenade was also rebuilt and features a new safety handrail and a new concrete sidewalk.

Marine Science Institute Pier Assessment

Project Engineer
Marine Science Institute | Redwood City, CA

Served as Project Engineer responsible for visually assessing the condition of the 108-foot-long timber pier structural elements, twenty-one timber support piles and various mooring fittings. The pier is used as a platform for teaching marine sciences and to berth the institute's 90-foot, 226-ton research vessel. GHD Subsequently produced an assessment report documenting our observations and findings, and provided recommendations for structural repairs, repair figures, and associated costs to best extend the service life of the pier.

Chevron Oronite Oak Point Plant - Wave Attenuator

Project Engineer
Chevron | Belle Chase, LA

Responsible for layout and performance-based design of a modular wave attenuator and associated anchoring system for the protection of a shoreline remediation project. The wave attenuator system was put out to bid as design-build to allow for multiple manufacturers to bid on the project while meeting the desired wave transmission and other critical performance specifications.

Bay View Bridge Inspection and Repairs - Upper Newport Back Bay Trail

Project Engineer
Orange County Public Works | Orange County, CA

GHD conducted a scour analysis and structural assessment of an 84-foot-long pedestrian bridge on the Bayview Trail at the Upper Newport Bay Nature Reserve. The bridge is supported by two cast-in-place concrete abutments at the creek embankments. There was significant scour observed around the bridge abutments exposing some of the timber support piles and compromising the capacity of the bridge. GHD produced a set of repair drawings to protect and maintain the stability of the abutment and provided construction support.

Channel Reef Marina Assessment

Project Manager, Engineer
County of Orange | Newport Beach, CA

Served as Engineer responsible for the inspection and assessment of the docks and utilities related to the eight-slip recreational marina and long dock for the County of Orange. The in-depth structural assessment of the dock included probing the interior dock structure and producing an evaluation report. This evaluation report included a general narrative of the conditions in addition to tables and graphics of the marina layout, as well as the notes and observations made by the inspection team, a summary/rating of the marina elements, and the anticipated costs of various intermediate and long-term repair options.

Leonardtown Landing Floating Dock

Project Engineer
City of Leonardtown | Leonardtown, MD

Responsible for design of the new municipal public boat dock along the Breton Bay waterfront. Dock amenities included a double-loaded boat slips with intermediate mooring piles, a fire protection system utilizing both fire extinguishers and a dry standpipe system able to draft from the nearby bay, and a future boat pumpout station. This project utilized a design-build process, with final guide pile and dock system calculations reviewed by GHD to ensure they met the project performance specifications

Doolittle Drive Bay Trail Segment

Project Engineer
East Bay Regional Park District | Oakland, CA

Responsible for design of the boat launch ramp, boarding float docks, and a section of the adjacent Bay Trail. The boat launch ramp has the option during bid of being constructed either in the dry behind a sheet pile cofferdam, or in the wet with precast concrete panels.

Orizaba Ave Beach Access Stairway Renovation

Project Manager, Engineer
City of Long Beach | Long Beach, CA

GHD provided professional design and consulting services to the City of Long Beach for the beach access stairway and railing improvements at Orizaba Avenue. A geotechnical investigation, including subsurface borings, was performed on site immediately around the stairway, as well as a topographic survey to pick up key features of the existing stairway for demolition and renovation. GHD then produced a set of stairway renovation drawings for the City that included a staircase and railing demolition plan, plan and profile of the stairway, structural details and sections, and landscape planting and irrigation drawings. An engineer's estimate of probable construction cost was submitted to the City. Elements of the project such as the new stairway concrete, reinforcing steel cover and stainless steel railing are specified for suitability with the marine environment.

*Marina Park**

Project Manager, Engineer
City of Newport Beach | Newport Beach, CA

Serve as Project Manager and Engineer responsible for the waterfront aspects of the Marina Park project which encompassed a 10.5-acre site and involved the new construction of a public park; a 24,000-square-foot Community and Sailing Center building; a 23-slip marina; a reconstructed 19th Street restroom building; a freestanding playground lighthouse feature; themed playground; outdoor fitness circuit; parking lots; and frontage street improvements. Coordination with the landside elements of the project and placement of beach quality sand and dredge material in accordance with the agency permits was key to the success of this project.

*Alamitos Bay Marina**

Project Manager, Engineer of Record
City of Long Beach | Long Beach, CA

This design-build project involved various waterside and landside improvements in seven different yacht basins. Key elements of the project included the replacement of 1,625 boat docks, inspection and rehabilitation of the existing bulkheads, promenade and railing, basin dredging, gangways, utility upgrades, repaving of parking lots, landscaping, and renovation or replacement of 13 restrooms. Additionally, a new 10,500-square-foot eelgrass planting area was constructed to mitigate for disturbing existing eelgrass beds during harbor dredging and keep the project in compliance with the requirements of the various permitting agencies. As the Engineer of Record, responsibilities included coordinating the drawings for all disciplines on the project, field inspections, value engineering, and permitting and construction support.

*Dana Point Boat Launch Facility**

Project Manager, Engineer
County of Orange | Orange County, CA

Responsible for the initial site investigation, conceptual layouts, construction documents, public outreach, and support services from permitting through construction. Improvements included resurfacing the 225-foot-wide boat ramp, building three eight-foot-wide Americans with Disabilities Act (ADA)-accessible boarding float docks, extending the ramp an additional 16 feet, and installing a new trench drain along the top of the ramp to collect and treat boat wash-down water from the parking area. The project low bid result was within 2% of the engineer's estimate, and the $2.5 million project was completed on budget and opened on schedule. The project was funded by a California Department of Boating and Waterways grant.

*Dana Point Harbor Dredging**

Project Manager, Engineer
County of Orange | Orange County, CA

Responsible for construction documents, permitting support, and cost estimates related to the dredging of Dana Point Harbor. The dredging project included the beneficial reuse of sandy material on adjacent beaches both inside and outside of the harbor. Approximately 80,000 cubic yards of dredge material were relocated during the project, which was completed on time and within the estimated budget.

*Dana Point Shipyard**

Project Manager, Engineer
City of Dana Point | Dana Point, CA

In charge of the initial assessment and conceptual layout for the new docks, travelift pier, and landside water quality improvements for the facility. Efforts included construction documents for the waterside portion of the project (including the docks and pier), as well as a hydraulics / hydrological analysis of the landside area to properly size the drainage and filtration systems to meet local water board compliance.

*Cabrillo Way Marina**

Project Engineer
Port of Los Angeles | Los Angeles, CA

Serve as Project Engineer responsible for the promenade and basin perimeter design, dredging plans, and boating facility design oversight for the Cabrillo Way Marina. This marina consists of 700 wet slips and 400

dry storage spaces, with landside areas created for public promenades, park landscaping, yacht clubs, restrooms, marine retail, and parking areas. Also assisted with the utility and drainage design, working closely with the City of Los Angeles to meet their specific design standards for water systems.

*Diamond Valley Lake – East Marina**

Project Manager, Engineer
Metropolitan Water District of Southern California | Riverside County, CA

Served as Engineer responsible for the conceptual layout, construction documents, permitting, and construction support services related to the development of new recreational boating facilities at the East Marina in Diamond Valley Lake. Project elements included an 11-lane boat launch ramp with four ADA-accessible boarding float docks, an entrance road and kiosk, a parking area for 250 cars/boat trailers and 38 regular car stalls, a water quality drainage system, and onshore restroom facilities. Offshore features included a floating wave attenuator, a rental fleet dock, and three floating restrooms. As part of the Phase II development, served as Project Engineer for the extension of the boat launch ramp as the water level in Diamond Valley Lake had dropped in response to local drought conditions.

*Santa Barbara Harbor Boat Launch Facility**

Project Manager, Engineer
City of Santa Barbara, Waterfront Department | Santa Barbara, CA

Responsible for conceptual through final design of improvements made to an existing launch ramp for the Santa Barbara Waterfront Department. This involved reconstruction of a 5,040-square-foot area of the ramp to accommodate non-motorized, human-powered watercraft, such as kayaks, canoes, and sailing dinghies and included a low-profile boarding dock for easy access for these types of vessels. The project was funded through the California Department of Boating and Waterways Boating Trails Grant Program and was completed on time and on budget.

*Lake Cachuma Boat Launch Facility**

Project Manager, Engineer
Santa Barbara County Parks Department | Santa Barbara County, CA

Responsible for conceptual through final design for the reconstruction of a five-lane boat launch ramp and associated boat-trailer parking areas at Lake Cachuma, a popular recreational lake and drinking water reservoir. The project was necessitated by the need to account for higher lake surcharge and drawdown elevations. Design challenges included providing minimal disturbance of native California Oak trees and assuring that oil and other pollutants from nuisance and storm water runoff did not reach the drinking water reservoir through the use of specially designed trench drains, filters, and catch basins. Parking lot access stairways, queuing and traffic control signage and striping, and earth retaining structures were also part of the design. The $2.8 million project was funded through a Boating and Waterways grant and was completed on time and under budget.

*Noyo Inner Harbor Boat Launch Facility**

Project Manager, Engineer
Noyo Harbor District | Fort Bragg, CA

Responsible for the waterside elements of this California State Parks, Division of Boating and Waterways grant funded project. The existing launch ramp surface will be reconstructed and extended using precast reinforced concrete panels. A new concrete apron at the top of ramp and wider more stable boarding float dock will provide better access to the water. The parking lot will be resurfaced and restriped, and a designated ADA and code compliant path of travel to the launch ramp, and informational and directional signage will be provided for boaters. To help keep the project within budget, a prefabricated concrete restroom has been called out in the drawings and specifications. The launch ramp design includes moving the ramp ten feet landward so as not to encroach into the Noyo River navigational channel, as well as protect the end of ramp from excessive scour.

*Port of Hueneme Shore Protection and Waterfront Access**

Project Engineer
Oxnard Harbor District | Port Hueneme, CA

In charge of the construction drawings and cost estimate for the reconstruction of over 3,000 feet of shore protection, as well as development of the adjacent land behind the slope for public access. Landside improvements include a 24-foot-wide maintenance / pedestrian/bicyclist access road, plaza area, lighthouse and turnaround parking areas, and access gates onto the property. Challenges included designing the roadway on sandy fill to account for future settlement, meeting local and fire requirements, and using native plantings to mitigate for the construction while effectively addressing site drainage issues utilizing a vegetated bio-swale running along the roadway.

*San Diego Yacht Club Marina Assessment**

Project Manager, Engineer
San Diego Yacht Club | San Diego, CA

Responsible for the inspection and assessment of the docks and utilities related to the 576-slip marina at the San Diego Yacht Club. The in-depth structural assessment of the dock included probing the interior dock structure and producing an evaluation report. This evaluation report included a general narrative of the conditions in addition to tables and graphics of the marina layout, as well as the notes and observations

made by the inspection team, a summary/rating of the marina elements, and the anticipated costs of various repair options.

*Esprit Marina**

Project Manager, Engineer
Sondermann Ring Partners | Marina del Rey, CA

Responsible for construction documents, permitting, and construction support services for the renovation of the 227-slip Esprit Marina in Marina del Rey. The new marina offers boater amenities, including individual holding tank pumpout connections at the slips; ADA accessible gangways; larger dock boxes; and floating buildings providing restrooms, vending machines, laundry, and boater accommodations.

*Newport Dunes Marina Assessment**

Project Manager, Engineer
City of Newport Beach | Newport Beach, CA

Responsible for the inspection and assessment of the Newport Dunes Marina. The dock assessment was conducted during transfer of ownership of the property and included inspecting the marina guide piles, concrete dock, and adjacent pedestrian bridge. Also completed an evaluation report that included a general narrative of the observed conditions by the inspection team and a summary/rating of the structural elements and anticipated service life remaining.

*Panay Way Marina Assessment**

Project Manager, Engineer
Goldrich & Kest Industries, LLC | Marina del Rey, CA

Responsible for the inspection and assessment of the Holiday / Panay Way Marina. The in-depth structural assessment of the dock included probing the interior dock structure and producing an evaluation report. This evaluation report included a general narrative of the conditions in addition to tables and graphics of the marina layout, as well as the notes and observations made by the inspection team, a summary / rating of the marina elements, and the anticipated costs of various repair options.

*Glorietta Bay Marina, Dock C Inspection**

Project Engineer
City of Coronado | Coronado, CA

Responsible for the inspection and assessment of floating docks and dock utilities for the Dock C portion of Glorietta Bay Marina. The in-depth structural dock assessment included probing the interior dock structure and producing an evaluation report that included a general narrative of the observed conditions, tables and graphics of the marina layout observation notes, and a summary/rating of the marina elements, as well as anticipated costs for various repair and walking surface re-decking options.

*Pier 400 Emergency Access Dock**

Project Manager, Engineer
Port of Los Angeles | Los Angeles, CA

Responsible for the design drawings and construction services associated with an emergency access dock to support operations at the mega-terminal, Pier 400 in the Port of Los Angeles. Project challenges included designing the floating dock for a 200-ton harbor tug, placement of the large concrete guide piles within tolerance on a heavily reveted slope and designing the dock to meet the constraints of the existing working wharf.

*Belmont Memorial Pier Access Improvements**

Project Engineer
City of Long Beach | Long Beach, CA

Responsible for design of the bike trail, parking lot and ADA access improvements, as well grading and drainage for the areas surrounding the entrance to the Belmont Pier. Other project elements included the inspection and recommendations for repairs to the structural elements of the pier, as well as upgrading the utilities and lighting along the pier promenade. Designing an easily accessible elevated bike path from beach level to the top of pier with appropriately sized retaining walls, railings and ADA stairs and ramps were key to the success of this project.

*OXY | THUMS Marine Facilities Rehabilitation**

Project Manager, Engineer
Occidental Petroleum Corporation | Port of Long Beach, CA

In charge of the inspection, design, and construction support for the rehabilitation of the marine facilities related to the transportation of supplies and personnel to and from the four manmade oil islands in Long Beach Harbor, including the crew boat docks and roll-on/roll-off barge landings, shore protection, and bulkheads. Emphasis on safety and responsiveness to the client's requests were essential to supporting OXY|THUMS' needs.

*Sunset Aquatic Marina**

Project Manager, Engineer
Goldrich & Kest Industries, LLC | Huntington Harbor, CA

In charge of layout, construction documents, permitting, and construction support services for a 240-slip marina in Huntington Harbor. Marina improvements included the reconfiguration of several docks to reflect the current trends in boating toward wider and larger boats, incorporating an ADA accessible gangway, and a vessel pumpout station.

*Newport Dunes Maintenance Dredging**

Project Manager, Engineer
Newport Harbor, County of Orange, CA

In charge of construction documents, permitting support, and cost estimates related to the recent dredging of Newport Dunes Marina and adjacent lagoon. Approximately 177,000 cubic yards of material were dredged and transported to the LA-3 offshore disposal site. The project included dredging of material in and around boat slips, navigation channels, and areas adjacent to sensitive habitat.

*Esquimalt Graving Dock Waterlot Remediation – Phase 2**

Quality Assurance / Quality Control (QA/QC) Lead Inspector
Public Works and General Services Canada | Victoria BC, Canada

Involved in the development of drawings and specifications, and ultimately served as Lead Inspector for the demolition of an existing wharf and dredging of contaminated sediment, representing design firm of record for Public Works and General Services Canada.

*Redondo Beach / King Harbor Public Boating Center Concept**

Project Engineer
City of Redondo Beach | Redondo Beach, CA

Responsible for site layout alternatives, conceptual drawings, and cost estimates for a proposed Public Boating Center. Both landside and waterside improvements were considered with the goal of revitalizing the southern portion of King Harbor. Elements of the proposed project included a new two-lane public boat launch ramp, guest docks for large charter / dinner cruise yachts, sail training facility and docks, harbor patrol/emergency vessel docks, fuel dock / vessel pumpout station, basin dredging, and extension of the existing breakwaters. Landside improvements proposed included a boat launch ramp parking area, multi-purpose classrooms, landscaping, and a harbor patrol building. A feasibility study was prepared for the City and follow up presentations made at City Council meetings.

*El Dorado Golf and Beach Resort Shore Protection**

Project Engineer
El Dorado Golf and Beach Resort | Cabo San Lucas, Mexico

Responsible for preparing the shore protection and bulkhead drawings for the expansion of the El Dorado Resort in Cabo San Lucas. Project challenges included designing the bulkhead walls around storm drain headwalls, arroyos, existing subterranean rock formations, and a panoramic golf hole.

*Castaic Lake West Ramp Shoreline Improvements**

Project Manager, Engineer
County of Los Angeles | Los Angeles, CA

Responsible for preparing plans, specifications and estimates for shoreline and improvements to the existing boat launching facilities at the Castaic Lake West Ramp. Work consisted of the restoration of the eroding embankment for the parking lot and protection of the shoreline with rock slope protection and filter fabric. Included in the shore protection was a tracking ramp for access to lifeguard patrol boats, and an ADA accessible ramp for beach access. The work also involved storm drain system modifications to further aid in stabilizing the embankment. The yearly Lake level fluctuations (typically about 60 feet) factored heavily in the design and planning for construction of the Rock Slope Protection (RSP), which had to take place using land-based equipment. The work required close coordination between the design team and the Department of Water Resources, operator of the Lake. Project was funded by the Department of Boating and Waterways.

Docks and Marinas

- Alamitos Bay Marina* | Long Beach, CA
- Esprit Marina* | Marina del Rey, CA
- Cabrillo Way Marina* | POLA/San Pedro, CA
- Sunset Aquatic Marina* | Huntington Harbor, CA
- Marina Park Project* | Newport Beach, CA
- OXY/THUMS – Pier J and Island Crew Docks* | Port of Long Beach, CA
- Pier 400 Emergency Access Dock* | Port of Los Angeles, CA
- Kona Kai Ola Marina* | Honokohau Harbor, HI
- Tahoe City Marina* | Lake Tahoe, CA
- Mandalay Bay & Seabridge Marinas* | Channel Islands Harbor, CA
- Lake Las Vegas Marina* | Henderson, NV

Boat Launch Ramps

- Dana Point Boat Launch Ramp Facility* | Orange County, CA
- Diamond Valley Lake Boat Launch Ramp and Marina* | Riverside County, CA
- Lake Cachuma Boat Launch Facility* | Santa Barbara County, CA
- Santa Barbara Harbor Non-Motorized Launch Facility* (Division of Boating and Waterways Boating Trails Grant)
- Santa Barbara Harbor Westerly Boat Launch Improvements*
- Redondo Beach Boat Launch Facility – Compiled Division of Boating and Waterways Grant Application*
- BC Hydro Various Boat Launch Ramps* | British Columbia, Canada

- Shore Protection
- Port Hueneme Shore Protection and Waterfront Access*
- Cabo Real Shore Protection* | Cabo San Lucas, Mexico
- Castaic Lake Shore Protection* | County of Los Angeles

Dredging

- Dana Point Harbor Dredging* | Orange County, CA
- Newport Dunes Maintenance Dredging* | Newport Beach, CA
- Sunset Harbor Dredging* | Huntington Harbor, CA
- Esquimalt Graving Dock Waterlot Remediation* | Victoria BC, Canada
- Inspection
- San Diego Yacht Club Dock Assessment*
- Glorietta Bay – Dock C Assessment* | Coronado, CA
- Panay Way Marina Assessment* | Marina del Rey, CA
- Belmont Pier Inspection* | Long Beach, CA
- Santa Monica Pier Inspection*
- Seal Beach Pier Inspection*
- Newport Dunes Marina Assessment* | Newport Beach, CA
- Chevron Long Wharf Underwater Inspection* | Richmond, CA
- VOPAK Terminal Long Beach* | Port of Los Angeles, CA
- OXY/THUMS Shore Protection Assessment* | Long Beach Harbor, CA
- Boatyards
- Dana Point Shipyard Docks and Travelift Pier* | Dana Point, CA
- King Harbor Boatyard Facility Study* | Redondo Beach, CA
- Catalina Yacht Anchorage* | Channel Islands Harbor, CA

Military

- Apra Harbor USMC Embark Operations Facility*, Guam
- Small Vessel Beach Access Launch Ramp*; San Nicolas Island, CA

Miscellaneous

- San Gabriel River Trash Boom Pilot Program* | City of Seal Beach, CA
- Belmont Pier Parking Lot and Bike Path* | Long Beach, CA
- Haleiwa Harbor Dock Environmental & Value Engineering Assessment* | Oahu, HI
- OXY/THUMS Barge Ramp Rehabilitation* | Long Beach Harbor, CA
- Pacific Energy Liquid Bulk Terminal – Spill Response Vessel Mooring* | Pier 400 POLA
- San Pedro Waterfront Revitalization* | Port of Los Angeles, CA

**Project completed prior to joining GHD.*

Recognized (Certifications / Trainings)

- Minnesota Commercial Diver Training Center, Engineer / Inspection Diver Certificate, 2006

Career history

2017 - present	GHD, Lead Engineer
2014 - 2016	Anchor QEA
1999 - 2014	Moffatt & Nichol
1992 - 1998	West Marine
1993 - 1999	Dana Point Sailing Events, Dana Point Yacht Club, UC Irvine Recreation Department

Satish Chilka PE

Engineer

Location

Concord, CA

Experience

12 years

Qualifications/Accreditations

– MS, Civil Engineering, University of Southern California, Los Angeles, CA, 2007
– BS, Civil Engineering, University of Mumbai, India, 2005
– Civil Engineer, CA #80047

Key technical skills

– [Enter skill/s]

Memberships

– American Society of Civil Engineers (ASCE)

Relevant experience summary

With 12 years of structural engineering experience, Satish Chilka has specialized knowledge in planning, design, analysis, construction document preparation, quality control review, and construction support services for marine engineering. He has been involved in multiple ferry terminal projects in the San Francisco Bay Area, providing design and analysis of piers, access ramps, gangways, and also performing hydrodynamic mooring analysis of the landing float and ferry vessels. Other project experience includes hydrodynamic mooring analyses for large crude-carriers, inspections and rehabilitations of pier structures, design and analysis of floating steel caissons (dry dock gates), and offshore wind energy projects. Additionally, Satish has provided checks for float stability per ABS code, material take-off calculations, and hog and sag moment calculations for the concrete floats.

New Dock at Raley's Landing

Task Manager, Lead Structural Engineer
Raley's Dock & Rice Mill Pier | City of West Sacramento | West Sacramento, CA | 2019 - 2020

The project consists of improvement to the existing Raley's landing site including replacement of the berthing dock along with new access ramp, floating gangway, floating dock and a debris boom, located on the Sacramento River. Provided the engineering support during the construction phase – reviewing design, shop drawings for contractor-supplied components, such as the concrete berthing dock, aluminum gangway, etc., and responding to Requests for Information (RFI's) in a timely manner to meet the tight schedule.

San Jacinto River Waste Pits

Lead Structural Engineer
International Paper Company | Houston, TX | 2019 - 2020

The project consists of toxic waste cleanup by excavating capped soil adjacent to the San Jacinto River channel. The site is influenced by the water level in the river. Served as Lead Structural Engineer responsible for the design and analysis of the steel sheetpile retaining wall required to shield the site from varying water levels up to over nine feet due to seasonal storms and provide a safe working environment for excavations ranging from 5 - 30 feet below existing grade. Developed the basis of design, performed options analysis to recommend multiple wall sections considering material and installation cost for various excavation depths.

Huntington Beach and Talbert Channel Sheetpile Improvements

Project Engineer
Orange County Public Works | Orange, CA | 2020

Orange County Public Works has tasked the GHD design-build team with the improvement project that includes repair and replacement of channel wall sections. The channel is part of the flood protection system for the community due for recertification by Federal Emergency Management Agency (FEMA) and is located in a high seismic risk zone. Responsible for the design and analysis wall sections. The walls are steel sheetpile retaining walls extending from 8 - 12 feet above mudline. The design requires understanding the various limitations to access the site, the County Right of Way constraint and biological sensitivity of the channel.

Waterfront Facility Repairs

Project Manager, Lead Structural Engineer
C&H Sugar Refinery | Crockett, CA | 2020

The waterfront facility is a historically significant structure that has continued operations since 1906. Under the current ownership, the facility processes around 700,000 tons of sugar annually. The facility consists of a mixed-use dock that allows for berthing of large vessels, hopper system for loading / unloading product and several buildings that are part of the processing operations. GHD performed the site structural assessment for the waterfront facility in 2018. The scope of work includes design of repairs for the pier structure – deck, steel / concrete / timber piles, mooring bollard connections to deck, environmental assessment, and permit applications.

Pier 22.5 North Apron Strengthening and Repairs

Lead Structural Engineer
San Francisco Department of Public Works | San Francisco, CA | 2020

Pier 22.5 is being strengthened and repaired as part of the larger project that will house the first floating Fire Station building in San Francisco. Analyzing the existing condition of the pier structure – timber deck frame supported by concrete piles and designing improvements to strengthen the deck to be utilized for parking fire trucks.

San Francisco Downtown Ferry Terminal Expansion South Basin

Project Engineer
Water Emergency Transportation Authority (WETA) | San Francisco, CA | 2016

The WETA is expanding ferry routes throughout the Bay Area. A key part of the plan is the expansion and improvement of the facilities at the Downtown San Francisco Ferry Terminal. The expansion plan includes new pier – 35,000 square feet of concrete deck supported on approximately 150 steel pipe piles, and two additional berthing facilities in the South Basin. This project is currently under construction. Developed the Basis of Analysis, methodology, and budget for the AQWA analysis. Responsibilities included design and analysis of the new concrete deck and steel pipe piles, hydrodynamic analysis of the two new steel floats (provided by others) held in position by guide piles, and float ferry interaction analyses. The analysis of the pier, both response spectrum and pushover analysis were performed in SAP2000. The hydrodynamic and float ferry interaction analyses were performed using AQWA.

Golden Gate Ferry Terminal Improvements

Project Engineer
Golden Gate Bridge, Highway and Transportation District | San Francisco & Sausalito, CA | 2013 - 2019

The Golden Gate Bridge, Highway and Transportation District is replacing the existing passenger boarding systems at their San Francisco and Sausalito Ferry Terminals. Each site uses a customized concrete float held in position by guide piles designed for site specific environmental (wind, wave and current) load conditions. Responsibilities on this project evolved over the years. Performed hydrodynamic analysis of the concrete floats and float ferry interaction, finite element analysis for designing the concrete float and a steel gangway connecting the landside pier to the float. Also developed design drawings and weight take-off calculations to track the float freeboard and ballast requirement.

Treasure Island Ferry Terminal

Project Engineer
Treasure Island, CA | 2018 - 2019

Using AQWA, analyzed loads generated by various combinations of environmental parameters (wind, waves, and currents) on a ferry landing float. Performed non-linear time history analysis to determine the optimal layout and loads on the float guide piles.

Berthing Barge Mooring Design

Project Engineer
US Navy | Bahrain | 2016

Using AQWA, determined loads generated by and analyzed multi-body floating structures response to various combinations of environmental parameters (wind, waves, current) as part of preliminary design of brow ramp providing barge access.

Dry Dock Capacity Improvement Study

Structural Engineer
Pearl Harbor Naval Shipyard | Pearl Harbor, HI | 2014

Served as Structural Engineer supporting the planning study that examined increasing the Shipyard's dry-docking capacity to allow work on three Virginia-class submarines simultaneously while keeping one dry dock available for emergency docking. Developed multiple variations (size and lifting capacity) of the Buoyancy Assist Modules (BAMS) used to lift/guide submarines into dry dock. He also provided complex finite element analysis using NX-NASTRAN of the BAMS.

Bay Area Rapid Transit (BART) Transbay Tube Seismic Retrofit, Phase 3

Project Engineer
BART | San Francisco, CA | 2014 - 2018

Served as part of the project team to develop a cost-effective solution to seismic vulnerabilities of the Transbay Tube which connects San Francisco and Oakland beneath San Francisco Bay. Provided complex finite element analysis using NX-NASTRAN that informed the development of a retrofit strategy/strengthening design and tested various alternative solutions to arrive at a strategy with a significant cost savings versus extensive soil strengthening around the Tube.

East Span Safety Project, San Francisco Oakland Bay Bridge

Project Engineer
Caltrans | Oakland, CA | 2008 - 2012

Provided construction support during the fabrication of the orthotropic box girder. Responsible for creating design details to resolve fabrication issues including working in Shanghai, China, for six months to aid and assist the on-site fabrication team. Used 3D CAD software and physical scale models to develop the complex bridge details to assist with construction. Also developed construction sequence documents for geometrically complex box-girder segments, and provided shop drawing and quality control reviews for conformance with contract plans.

City of Santa Cruz Sanitation District Sewage Pump Station Concrete Repairs

Project Manager, Engineer
City of Santa Cruz Sanitation District | Santa Cruz, CA | 2017 - 2019

Tasked with construction support during concrete repair and roof waterproofing of the pump station building. Responsibilities included close coordination with the client and the contractor, evaluating change orders, coordinating roof repair warranty with vendors, and tracking work scope to complete the work as scheduled and within budget.

Assessment of Partially versus Fully Coupled Dynamic Analysis of Offshore Wind Turbines

Project Manager, Engineer
National Renewable Energy Laboratory (NREL) | 2017

Tasked with supporting the NREL research study – fully coupled vs. sequentially coupled load analysis of offshore wind turbines supported on monopile and jacket substructure. Performed non-linear time history analyses of the monopile substructure with various combinations of environmental parameters (wave and current) and wind loads from the turbine. The findings of the study were presented by NREL at the American Wind Energy Association (AWEA) Windpower Conference in May 2017.

Cape Wind Offshore Wind Farm

Project Engineer
Cape Wind Associates | New Bedford, MA | 2012 - 2013

Tasked with the analysis and design of the jacket substructure supporting the electrical service platform using EDP. Performed strength, seismic, non-linear time history, and fatigue analyses of the jacket. Also performed API code check for all the joints in the jacket and pile capacity calculations using soil structure interaction software (SPI). Used the stress time history input to perform the pile driving fatigue analysis. Showcased a technical paper on this project at Deep Foundations Conference in October 2015.

Rapid Structural Assessments

Project Engineer, Task Manager
Port of San Francisco | San Francisco, CA | 2017 - 2019

Responsible for the rapid assessments of multiple piers and assigning structural ratings to aid the Port maintenance program. The scope involved coordinating work between the client and subconsultants, above water field inspections, providing structural rating, and reviewing reports.

MOTEMS Audit, Chevron Richmond Long Wharf

Project Engineer
Chevron | Richmond, CA

Tasked with the above water inspection to assist the client with the California State Land Commission MOTEMS Audit. The work involved inspecting concrete and steel piles above water, concrete deck and proposing strengthening retrofit as needed.

Ship Shoal 28A Platform Assessment

Quality Control Engineer
Shell | 2018

Served as Quality Control Engineer for review of the structural analysis of a platform to assess its capacity to handle additional loads associated with a new riser.

Fatigue Analyses of STAR Refinery Jetties

Quality Control Engineer
Izmir Province, Turkey | 2018

Served as Quality Control Engineer for review of the spectral fatigue analysis of the piles supporting a mooring dolphin in 40-meter water depth.

Helideck Assessment

Project Engineer
Shell | USA | 2016

Tasked with the analysis of the existing helideck at the offshore facility to assess the structural capacity and recommend retrofit / alternate design for increasing the capacity to service larger helicopter.

Caisson Replacement, Dry Dock 2, Norfolk Naval Shipyard

Assistant Project Manager, Lead Engineer
Naval Facilities Engineering Systems Command (NAVFAC) | Portsmouth, VA | 2019

Tasked with design and analysis of the new flood-through, steel caisson. Developed the structural basis of design and analysis approach. Responsible for structural design and production of design drawings, coordination between engineers, 3D BIM modelers, HVAC subconsultants and Naval Architect, as part of technical specifications prepared using Ship Work Breakdown Structure format.

Caisson Replacement, Dry Dock 4, Norfolk Naval Shipyard

Assistant Project Manager, Lead Engineer
NAVFAC | Portsmouth, VA | 2018

Tasked with design and analysis of the new flood-through, steel caisson. Developed the structural basis of design and analysis approach. Responsible for structural design and production of design drawings, coordination between engineers, 3D BIM modelers, HVAC subconsultants and Naval Architect, as part of technical specifications prepared using Ship Work Breakdown Structure format.

Caisson Replacement, Dry Dock 1, Norfolk Naval Shipyard

Lead Structural Analyst
NAVFAC | Portsmouth, VA | 2013

Tasked with linear and non-linear finite element structural analysis of a new flood-through, steel caisson using NX-NASTRAN. Developed structural basis of design and analysis approach. Coordinated structural design using the analysis results and production of design drawings as part of technical specifications prepared using Ship Work Breakdown Structure format.

Caisson Replacement, Dry Dock 3, Norfolk Naval Shipyard

Project Engineer
NAVFAC | Portsmouth, VA | 2012

Served as lead structural analyst and was tasked with linear and non-linear finite element structural analysis of a new flood-through, steel caisson using NX-NASTRAN. Developed the structural Basis of Design and Analysis Approach. Also coordinated structural design using the analysis results and production of design drawings as part of technical specifications prepared using Ship Work Breakdown Structure format.

Floating Steel Caissons (Dry Dock Gates) - US Naval Shipyards

Assistant Project Manager, Lead Engineer
NAVFAC | Norfolk, VA; Boston, MA

Involved in multiple projects for the US Naval Shipyards in Norfolk, Boston, and Hawaii. Also provided design expertise in floating steel caissons for the Norfolk Naval Shipyard and Charlestown Naval Shipyard. As Lead Engineer, responsible for the finite element analysis and design calculation for the steel floating caissons using NX-Nastran and SAP2000, coordinating with the multidisciplinary design team, Naval Architect and CAD team to develop design drawings. Also provided weight take-off calculations to track the caisson draft and ballast requirement.

Design-Build: Construct Navy Working Caisson, Dry Dock 1, Charlestown Naval Shipyard

Lead Structural Analyst
NAVFAC | Boston, MA | 2014

Tasked with linear and non-linear finite element structural analysis of a new flood-through, steel caisson using NX-NASTRAN. He developed structural Basis of Design and Analysis Methodology. Coordinated structural design using the analysis results and production of design drawings as part of technical specifications prepared using Ship Work Breakdown Structure format.

Analysis of Liquefied Natural Gas (LNG) Vessel Delivery Options

Project Engineer
Confidential Client | Confidential Project Location 8, West Indies | 2018 - 2019

Tasked with hydrodynamic analysis of environmental conditions impacting interacting vessels (FSU, FSRU) transferring product using AQWA. Performed non-linear time history analysis to determine the loads in the mooring lines and the relative movement of the vessels.

LNG Terminal Development

Project Engineer
Confidential Client | Confidential Project Location 2, West Indies | 2018 - 2019

Tasked with hydrodynamic analysis of environmental conditions impacting interacting vessels (Floating Storage Unit (FSU), Floating Storage and Regasification Unit (FSRU)) transferring product using AQWA. Performed non-linear time history analysis to determine

the loads in the mooring lines and the relative movement of the vessels.

Marine Fuels Terminal Development

Lead Structural Analyst
Wolverine Terminal | Prince Rupert, British Columbia | 2019

Served as Lead Structural Analyst for the hydrodynamic analysis of environmental conditions impacting interacting vessels (Transloading and Lightering Barge) moored to a floating deck structure transferring product to shore, using AQWA. Performed non-linear time history analysis to determine the optimal mooring line arrangement, loads in the mooring lines and the relative movement of the vessels.

Western Canada Floating LNG Concept Development

Project Engineer
Western Canada Floating LNG | Tuck Inlet, Prince Rupert, British Columbia | 2014

Using AQWA, analyzed environmental parameter combinations (wind, waves, and currents) and resulting loads generated to determine their impacts on a side-by-side mooring of a floating LNG barge and Q-flex LNG carrier and thereby assess the feasibility of a side-by-side offloading system that utilizes conventional loading arms. Analyzed non-linear, time history, two-body interaction to determine the relative vessel movement (and loading arms) to the barge.

Existing Work Float Integrity

Project Engineer
Marathon | Mt. Vernon, IN | 2014

Performed finite element analysis using NX-NASTRAN to assess the structural capacity of an existing product barge being converted to a work float. Incorporated structural changes made on site into the analysis model to determine feasibility of future expansion that would increase the loads on the barge.

Hoonah Berthing Facility

Project Engineer
Turnagain Marine Construction | Hoonah, AK | 2015 - 2016

Using AQWA, analyzed loads generated by various combinations of environmental parameters (wind, waves, and currents) on floating structure supporting the landing berth to determine loading conditions on the float and loads transmitted to the mooring / reaction dolphins. The analysis involved non-linear time history analysis of float.

Contra Costa County Flood District Facilities Assessment

Project Manager, Lead Structural Engineer
Contra Costa County Flood District | Contra Costa County, CA | 2019

Served as the Project Manager responsible for client relations, project deliverables on time and within budget. Also served as Lead Structural Engineer tasked with the inspection of flood control structures such as drop structures and retention basins; assessed structural integrity and recommended repairs to aid the District maintenance program.

Contra Costa County Flood District Facilities Assessment

Assistant Project Manager, Lead Structural Engineer
Contra Costa County Flood District | Contra Costa County, CA | 2016 - 2018

Served as Assistant Project Manager responsible for client relations, project deliverables on time and within budget. Also served as Lead Structural Engineer tasked with the inspection of flood control structures, such as concrete channels, drop structures, and retention basins. Assessed structural integrity and recommended repairs to aid the District maintenance program.

Papers Published in Conference Proceedings

- "Cape Wind Offshore Wind Farm – Electrical Service Platform – Substructure Jacket Design", Proceedings of the 40th Annual Conference at Deep Foundations, Oakland, California, October 12-15, 2015 (with I. Maloney and J. Brady)
- “Fully-coupled vs. Sequentially Coupled Loads Analysis for Offshore Wind Turbines”, American Wind Energy Association Windpower 2017 Conference & Exhibition, Anaheim, California, May 22-25, 2017 (with R. Damiani et al.)
- “Seismic Analysis and Design of Ferry Plaza for the Downtown San Francisco Ferry Terminal”, Ports 2019 / 15th Triennial International Conference, Pittsburg, Pennsylvania, September 15-18, 2019 (with A. Bozorgzadeh and J. Brady)

Career history

2019 - present	GHD, Engineer
2008 - 2019	Moffatt & Nichol, Engineer

Derek Linsley PE

Senior Construction Engineer / Project Manager

Location

Concord, CA

Experience

8 years

Qualifications/Accreditations

– MS, Ocean and Resources Engineering, University of Hawaii at Manoa, Honolulu, HI, 2015
– BS, Civil Engineering, University of California, Los Angeles, CA, 2011
– Civil Engineer, CA #87291, HI #18235

Key technical skills

– [Enter skill/s]

Memberships

– American Society of Civil Engineers Coasts, Oceans, Ports, Rivers Institute, Hawaii Chapter, Former Chairperson
– American Academy of Underwater Sciences, Scientific Diver
– Marine Technology Society

Relevant experience summary

Derek Linsley is a civil engineer with more than eight years of experience in coastal engineering design and marine construction. He has participated in all aspects of coastal projects, from initial conceptual design through execution of work for both small and large projects throughout the Pacific. He has spent significant time in the field on active construction sites as a field engineer performing surveying, diving, and Unmanned Aerial Systems (UAS) operations. Derek also has experience in condition assessments and engineering inspection of existing coastal infrastructure such as seawalls, ocean outfalls, submarine cables, breakwaters, and wharfs.

Coastal Engineering

Hawaii Kai Marina Jetty

Project Manager
Hawaii Kai Marina Community Association | Honolulu, HI

The Hawaii Kai Marina Jetty project included the design of a new entrance channel training jetty on the east side of the Hawaii Kai Marina Entrance Channel. The purpose of the jetty was to reduce the rate of sediment accumulation in the Marina entrance channel.

Managed the project through the design and environmental review phases. This included preparation of construction drawings and specifications, environmental assessments, state, federal, and City and County of Honolulu permits, coordination with the State Department of Transportation (DOT) on construction within the State Highway right of way, and environmental compliance. Construction of the project is anticipated to begin in September 2021.

Hana Highway at Kalepa Point Road Repairs

Project Manager, Lead Coastal Engineer
County of Maui, Department of Public Works | Kuapo, Maui, HI

The shore protection structure fronting Hana Highway at Kalepa Point on Maui, Hawaii was damaged in 2014 by Hurricane Iselle. This project included designing a replacement shore protection structure, engineered to withstand anticipated higher sea levels and stronger storms likely to occur in the next 50 years. The project also included redesigning approximately 0.25 miles of highway and design of new corrosion-resistant concrete guardrails.

Served as Project Manager and Lead Coastal Engineer on this project, managing a team of subconsultants including civil, geotechnical, and transportation engineers. Other subconsultants included marine and terrestrial biologists, and cultural and archaeological specialists. Responsible for monitoring wind and ocean conditions at the site to inform subconsultants whether it

was safe to perform work on the exposed coastline. Responsible for the design of the new shore protection structure and development of construction drawings and specifications. Furthermore, produced an environmental assessment for the project for publication in the Hawaii Office of Environmental Quality Control's bi-monthly bulletin.

Royal Hawaiian Groin Replacement

Project Engineer
State of Hawaii Department of Land and Natural Resources (DLNR) | Honolulu, HI

The Royal Hawaiian Groin Replacement Project consisted of a replacement of the 120-year-old Royal Hawaiian Groin with an engineered rock L-head groin. This structure performs the critical function of impounding sand on Waikiki Beach; failure of the structure would result in the rapid erosion of Waikiki Beach.

As the owner's representative, participated in the contractor selection process, performed construction inspections, and answered contractor Requests for Information (RFI's) to ensure project quality and control. Also served as a junior member of the design team and prepared construction drawings for the project. The project won the 2020 Best Special Project award from the American Society of Civil Engineers Hawaii Section.

Petroleum, Oil, and Lubricants Tank Farm Shore Protection

Project Engineer
Black Construction Corporation | Diego Garcia, British Indian Ocean Territories

This project included the design of a new rock revetment and vinyl sheet-pile splash wall fronting the petroleum, oil, and lubricants storage facility on Diego Garcia in the British Indian Ocean Territories. The project was constructed in 2016. Responsible for using numerical wave modelling and wave hindcasting to determine a design wave height for the revetment design. Used the wave information to determine a design armor stone size for the structure and a design cross-section. The cross-section design was incorporated into project construction drawings that were provided to the client.

Eloy S. Inos Peace Park Shore Protection

Project Engineer
Black Construction Corporation | Garapan, Saipan, CNMI

This project included the design of a new concrete armor unit revetment fronting a former dump site. The project was constructed in 2016. Responsible for using numerical wave modelling of a direct typhoon strike on the west side of the island to determine a design wave height and corresponding concrete armor unit size for the structure. Armor unit size led into structure cross-section design, which was incorporated into construction drawings that were provided to the client.

Kuhio Beach Sandbag Groin

Project Engineer
State of Hawaii DLNR | Honolulu, HI

The Kuhio Beach Sandbag Groin Project included installation of an experimental structure intended to retain sand in an area of Kuhio Beach in Honolulu, Hawaii that had experienced severe erosion. As the owner's representative, participated in the contractor selection process, performed construction inspections, and answered contractor RFI's to ensure project quality and control.

Beach Restoration

Waikiki Beach Restoration II

Project Engineer, Engineer-of-Record
State of Hawaii DLNR | Honolulu, HI

The project included the dredging, dewatering, and placement of 22,000 cubic yards of sand in Waikiki as part of a decadal maintenance of Waikiki Beach.

Served as Engineer-of-Record for the project and was responsible for the beach fill design template and construction drawings. Also assisted the State of Hawaii DLNR in the contractor selection process, construction inspections and surveys, and project quality and control.

Condition Assessment & Inspection

US Army Corps of Engineers (USACE) Project Condition Survey Inspections

Project Engineer
USACE | Guam; American Samoa; CNMI; Hawaii

This project included above-water inspections of USACE assets throughout the Pacific. Participated in field inspection of structures including breakwaters, jetties, and groins in Guam, American Samoa, CNMI, and Hawaii.

Hilo Wastewater Treatment Plant (WWTP) Ocean Outfall Inspection

Project Manager, Lead Diver
County of Hawaii Department of Public Works | Honolulu, HI

This project included an underwater inspection of the Hilo WWTP Ocean Outfall using fluorescent dye injection. Served as Project Manager and Lead Diver. The project included coordination with the Department of Public Works to ensure there was sufficient flow through the outfall to conduct the dye injection. Additional coordination with cultural groups, the Federal Aviation

Administration, and the US Coast Guard was required due to the use of fluorescent dye. The findings and recommendations were compiled into an inspection report.

Hawaii Interisland Cable Service Fiber Optic Cable Inspection

Project Manager, Lead Diver
Hawaiian Telcom | Honolulu, HI

This project included an underwater inspection of a marine fiber optic cable that was scheduled to be reactivated by Hawaiian Telcom. The cable was found to be in poor condition, with multiple areas requiring repair and reinforcement. Inspection findings and recommendations were compiled into an inspection report.

Uliga and Delap Wharf Inspections

Project Engineer, Diver
Republic of the Marshall Islands Ports Authority | Majuro, RMI

This project included underwater inspection and non-destructive testing of 4,000 feet of sheet pile wharf the Uliga and Delap on the island of Majuro in the Marshall Islands. Responsible for documenting damage with field notes, measurements, and photographs, and performing non-destructive testing on the sheet pile.

Marine Construction

United States Ship Arizona Memorial Floating Dock Installation

Field Engineer
Hawk Contracting Group | Honolulu, HI

In 2018, the Arizona Memorial was closed when park staff noticed damage to the anchoring system for the boat dock. This project included removal of the damaged anchoring system and installing a new anchoring system consisting of helical anchors drilled to depths of 60-120 feet below the ocean bottom.

Responsible for vessel positioning for helical anchor installation and final positioning of the floating dock. This included operating Real-Time Kinematic Global Positioning System (GPS) survey equipment, coordinating with installation vessel operators, and coordinating with commercial divers on correct tensioning of the 12 Seaflex mooring bands. Dock positioning tolerance was 0.15 feet to allow installation of the bridge between the floating dock and the memorial.

Recognized (Certifications / Trainings)

– Federal Aviation Administration Part 107 Remote Pilot
– US Coast Guard Operator of Uninspected Passenger Vessels
– American Academy of Underwater Sciences (AAUS) Scientific Diver and Diving Safety Officer
– Professional Association of Diving Instructors (PADI) Open Water Scuba Instructor

Presentations

– “Contrasting Beach Dynamics in Abutting Littoral Cells with a Reef Boundary, Kaanapali Beach, Maui, Hawaii” The 113th Annual Meeting of the Cordilleran Section of the Geological Society of America, Honolulu, HI, May 23-25, 2017

Career history

2021 - present	GHD, Senior Construction Engineer / Project Manager
2014 - 2021	Sea Engineering Inc., Ocean Engineer / Scientific Diving Safety Officer
2012 - 2013	Del Amo Construction Inc., Project Engineer / Estimator

ZENTNER
Planning & Ecology

Statement of Qualifications

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www.zentner.com

ZENTNER
Planning & Ecology

Table of Contents

ZENTNER
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Who We Are

Zentner Planning and Ecology is a professional consulting firm specializing in the planning, permitting, and monitoring of projects involving special status habitats and species and other biological resources. Founded in 1986, with headquarters in Oakland, California, we have successfully completed more than 1,000 projects throughout the western United States including wetland delineations, plant and wildlife species surveys and assessments, restoration design and construction, and mitigation bank site analysis and establishment. Our diverse expertise includes the preparation of environmental documents and studies in support of proposed projects requiring California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) reviews.

Over the years, we have established excellent relationships with Federal, State, and local resource agencies and project proponents. We have processed and received permit approvals for simple to complex projects from a variety of agencies including the U.S. Army Corps of Engineers, Regional Water Quality Control Boards, San Francisco Bay Conservation and Development Commission, California Department of Fish and Wildlife, and local county governments. We work closely with clients and regulatory agency staff to craft solutions that meet the goals of the projects and the regulatory requirements.

We are committed to providing our clients with the best service in the profession. The partners at Zentner Planning and Ecology are directly involved in every project and our clients are highly satisfied with the work we do, with more than 70% of our business coming from repeat clients.

Our field studies are conducted by experienced scientists and specialists to ensure data accuracy and objectivity. The Zentner Planning and Ecology team is comprised of senior ecologists who have spent more than a decade working together, which allows us to efficiently assess a wide variety of sites including seasonal wetlands, riparian woodlands, vernal pools, freshwater marshes, estuaries, and man-made ponds.

Off-site restoration and mitigation bank construction at the Shin Kee project in Lodi, California

We have developed specific methodologies that have enhanced our reputation for the highest level of quality and thoroughness. Zentner Planning and Ecology was also the first to complete an Endangered Species Act Section 7 consultation for Sacramento County for the giant garter snake, a large aquatic snake inhabiting small waterways and ditches in the Central Valley. Not only are we known for excellent biological documentation and project management, but our assessments are also written clearly and concisely to eliminate preventable questions during the review stage. Each assessment is reviewed prior to its release by our principals.

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Summary of Services

Biological Consulting

- Biological resource assessments
- Pre-construction surveys, construction monitoring, and mitigation monitoring
- Ecological constraints analyses and due diligence assessments
- Surveying and mapping of wildlife and plant species following U.S. Fish and Wildlife Service and California Department of Fish and Wildlife protocols and other guidelines
- Federal Endangered Species Act section 7 and California Endangered Species Act section 2018 consultations
- Nesting bird surveying and monitoring for California Department of Transportation (Caltrans) Natural Environment Study (NES) and Biological Assessment (BA) documents

Environmental Permitting and Compliance Support

- Environmental support and coordination for NEPA and CEQA compliance
- Independent third-party support to assist federal staff in reviewing applications and preparing environmental documentation under NEPA
- Preparing permit applications and project approvals from Corps of Engineers, U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)
- Preparing permit applications and project approvals from California Coastal Commission, California State Lands Commission, Bay Conservation and Development Commission, California Department of Fish and Wildlife, and State Regional Water Quality Control Board (RWQCB)

Wetlands and Waterways

- Jurisdictional delineation and mapping
- Clean Water Act section 404 (wetland) individual as well as nationwide permitting and section 401 (water quality) certification
- California Department of Fish and Wildlife lake and streambed alteration agreements
- Wetland and riparian restoration

Restoration and Mitigation Banking

- Agency coordination and mitigation planning-California Rapid Assessment Method (CRAM)
- Preparation of habitat restoration and mitigation plans
- Mitigation bank establishment for wetlands and special status species
- Long-term monitoring and maintenance
- Preparation of bank enabling instrument

Ecological Mapping and Design

- Computer Aided Design (CAD)
- Geographic Information System (GIS) - Esri ArcGIS
- Adobe Illustrator, Photoshop and other design products
- Global Positioning Systems (GPS) surveying and mapping applications

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Biological Consulting

Zentner Planning and Ecology has completed a variety of biotic analyses including: plant and wildlife surveys, vegetation mapping, habitat evaluations, and the biologic portions of NEPA and CEQA documents.

We have worked on a diversity of assessments for protected species in almost every habitat type in the west. This work has included numerous protocol-level surveys for listed or other special status species including California red-legged frog, burrowing owl, vernal pool branchiopods (for which we are also certified), giant garter snake, and others. Each year, we conduct dozens of nesting bird surveys, raptor surveys due diligence surveys, and constraints analyses, usually within very short timeframes.

Our surveys and other assessments are thorough and complete and consistent with agency requirements. Because of our knowledge of California ecosystems and the regulatory environment, we can quickly place a team in the field that is both familiar with the resources as well as knowledgeable of the permitting requirements. We have completed construction and mitigation monitoring for a wide variety of habitats including vernal pools, native grasslands, and riparian woodlands; and have then analyzed their progress with a variety of tools.

We tailor our work to fit the needs of the specific project. We can provide a fast turnaround to final report, which is often needed for project commencement. We can complete a general review, where we simply determine the likelihood of any particular species occurring at a site, or a detailed analysis for the presence or absence of a specific animal or plant.

The foundation of Zentner Planning and Ecology was built upon our expertise in conducting biological studies and preparing concise, accurate, and easily understood environmental and planning documents that appeal to both agency staff and the layperson. Because of our experience, our staff is proficient at guiding these documents through the often-frustrating local review processes.

Our senior ecologists are certified to perform special status species surveys for a variety of wildlife, including fairy shrimp and other vernal pool invertebrates.

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Permitting and NEPA / CEQA Support and Coordination

Permitting

Zentner Planning and Ecology has decades of experience in State and Federal permitting. We have experience working with and are familiar with the resource agency districts in the western U.S. and their specific policies and procedures. This experience allows us to anticipate the permit requirements and the likelihood of success of various project scenarios. We have secured some of the largest and most complex Clean Water Act section 404 wetland permits that were approved in both the San Francisco and Sacramento Districts of the Corps of Engineers.

With our experience and history of positive efforts, we can quickly identify significant issues, define the policy and precedent implications, and develop the information necessary to support project approval by the agencies. Zentner Planning and Ecology has experience throughout California's coastal zone, including San Francisco Bay, securing permits and other approvals. We have worked with the Bay Conservation and Development Commission and the California Coastal Commission and their staffs in most policy areas, including wetlands, endangered species, access, water-related industry, park priority lands, and fills. Though processing these permits can be complex, our experience provides us with the ability to develop the strategies needed to attain the required approvals.

We have negotiated California State lands leases for complex projects including temporary and permanent facilities, dredging projects, and other complicated improvements affecting State lands. Perhaps no other environmental permit has become more complicated than Regional Water Quality Control Board permits. We are experts at navigating through the Regional Board's storm water, mitigation, and other regulations. We understand the complex process and agency expectations during the Endangered Species Act section 7 consultations, and their California counterpart, the section 2081 approvals.

The Zentner Planning and Ecology team has direct experience issuing permits as adjunct or on-call staff to public agencies. We work closely with an agency to help communicate issues of concern, both internally and externally, and can coordinate closely with other reviewing agencies to address regulatory requirements; permit conditions; and mitigation, monitoring and conservation strategies. We are experienced in intergovernmental coordination, stakeholder consultations, gathering information for hearings and public noticing requirements, and responding to public comments.

NEPA / CEQA Support and Coordination

The Zentner Planning and Ecology team has extensive knowledge of the CEQA and NEPA regulatory processes and the team has provided NEPA and CEQA support and coordination for dozens of projects throughout the state. Our team can provide documents that integrate seamlessly and support the NEPA and CEQA needs of Federal and State agencies. We have the expertise and experience to anticipate and address potential project elements before they result in project delays.

Our decades of experience in California has allowed us the develop a network of experienced and knowledgeable specialists that we utilize to provide project specific expertise to ensure our NEPA and CEQA documents meet the highest threshold of accuracy and professionalism. Our highly qualified staff and network of experienced and specialized contractors have the knowledge and expertise necessary to complete NEPA and CEQA regulatory process for even the most complex projects.

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Restoration and Mitigation Banking

Ecosystem Restoration and Mitigation

- California Rapid Assessment Method
- Grading plans and planting plans
- Rough and fine grading of restoration areas
- Planting-trees, shrubs and grass plugs
- Native plant salvage and propagation
- Irrigation design and setup

Zentner Planning and Ecology has been involved with mitigation construction for more than two decades. We have completed mitigation plans for almost every habitat type in the West from vernal pools (we prepared the first ever large-scale vernal pool mitigation plan) to riparian systems (our multi-objective flood channel/riparian mitigation designs have been showcased in *Public Works* magazine). Our experience in both designing and constructing mitigation projects sets us apart from those who only design. Our record of successful mitigation projects allows us to incorporate innovative and cost-effective features into mitigation plans.

We grade and survey our own projects to ensure that the restored areas are in conformance with project design and that the micro-topography is accurate. Zentner Planning and Ecology has developed a planting methodology that ensures positive results. We have also designed and built successful mitigation projects even during years of historic drought. The sum of this experience means that we design and build mitigation that will succeed – we know what works.

Our mitigation plans typically contain detailed specifications regarding local plants. Mitigation projects often require salvage of important or locally rare plant material as well as seed collection and propagation of on-site and/or local materials. We have the experience and expertise to quickly determine what plants can be grown from seed, which can be salvaged, and whether certain plants survive better from cuttings than from seed. We have expertise in the art of tule (*Schoenoplectus* sp.) propagation at a large scale and have teamed with Pacific Coast Seed to complete successful seed treatments of *Schoenoplectus* for field application under appropriate site conditions.

Mitigation Banking

- Local entitlements
- Planning surveys and survey reports for Habitat Conservation Plans (HCP)
- Land Management Plans
- Open Space Plans
- Vegetation and Invasive Species Management Plans
- Special Area Management Plans (SAMP)
- Caltrans NESs and BAs

Although setting up a mitigation bank can be a long process, the rewards at the end make it worth the time it takes. Zentner Planning and Ecology has established mitigation banks for both wetlands and listed species. For the City of Eureka and a consortium of landowners, we processed a coastal development permit approval for one of the first wetland mitigation banks on the California coast. We have also worked on banks involving giant garter snake, California red-legged frog, and other species. We have completed work on the biological documents required for bank establishment and then guided these documents through the necessary review processes.

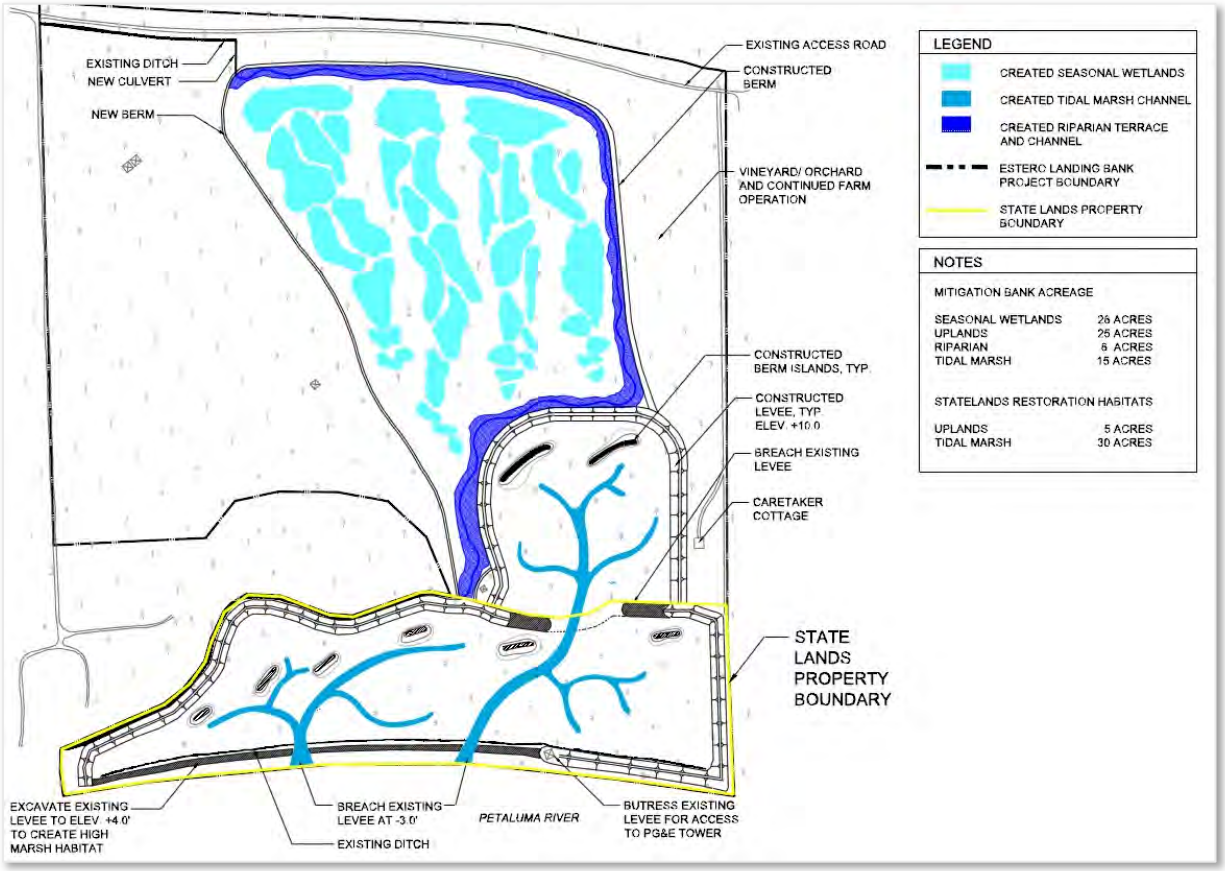
For developing cost estimates for habitat management purposes, we use the Corps of Engineers' Stewardship Calculator. We use this tool to calculate the anticipated costs of all identified management actions over time, as well as to factor in overhead, inflation, and

conservative rates of return on the initial endowment amount.

Establishing a mitigation bank not only includes their long-term management needs, it often involves the need to consider the role of communities during the design and implementation of the plan. We have developed natural habitats within residential subdivisions and other areas of intensive use, which have become important features for neighboring homes, businesses, and others.

Example Project: Mariner's Walk Mitigation Bank

Finding mitigation sites in relatively well-developed areas can be problematic. Uplands with potential for restoration are often earmarked for other development projects, making them cost-prohibitive for mitigation work. At Mariner's Walk in Martinez, Zentner Planning and Ecology worked with staff of the Regional Water Quality Control Board to identify local mitigation sites for an Olson Company project in western Contra Costa County. When no readily available sites were found, we identified a mitigation site in neighboring Solano County across the Carquinez Strait. Although initially reluctant to cross county borders, Regional Water Quality Control Board staff were persuaded by our ecological analysis demonstrating the similarities between the development and mitigation sites, and the project was approved.



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Wetlands and Waterways

Zentner Planning and Ecology has completed hundreds of wetland delineation projects. Our reputation as wetland delineation experts is based on our work on difficult and complex projects as well as expeditious and accurate mapping for less challenging sites. We use GPS, aerial photographs, topographic maps, field surveys and other tools to identify the plant, soil, and hydrological conditions that define the wetland boundaries.

When needed for due diligence or other purposes, we conduct reconnaissance-level wetlands/waters mapping for rapid assessments or for master planning of large areas. In addition to Corps of Engineers' section 404 (wetlands) and section 10 (navigable waters) delineations; we are also experts in the delineation of jurisdictional areas under the San Francisco Bay Conservation and Development Commission and the California Coastal Commission.

We also developed a "Pre-application Screen" analysis almost a decade ago to quickly identify wetland issues for any site and we modified this technique to allow quick yet reliable mapping of large tracts of land.

Once delineations are complete, we work closely with our clients to ensure that the mapping results are understood and portrayed in the most appropriate fashion. We then verify the delineations with the Corps of Engineers or, as required, with State or local agencies.

Representative projects

- A wetland delineation for the City of Fairfield (Solano County) of nearly 3,000 acres in the Peabody-Walters Master Plan Area including a complex of vernal pools and streams intermixed with uplands
- A delineation of the BCDC jurisdiction for Mare Island, Solano County
- Mapping of the Corps of Engineers' section 10 jurisdictional waterways for the Corte Madera Inn, Marin County

Sea Ranch Village (Sonoma County) wetland and buffer were designed by Zentner Planning and Ecology; golf course was designed by Robert Muir Graves

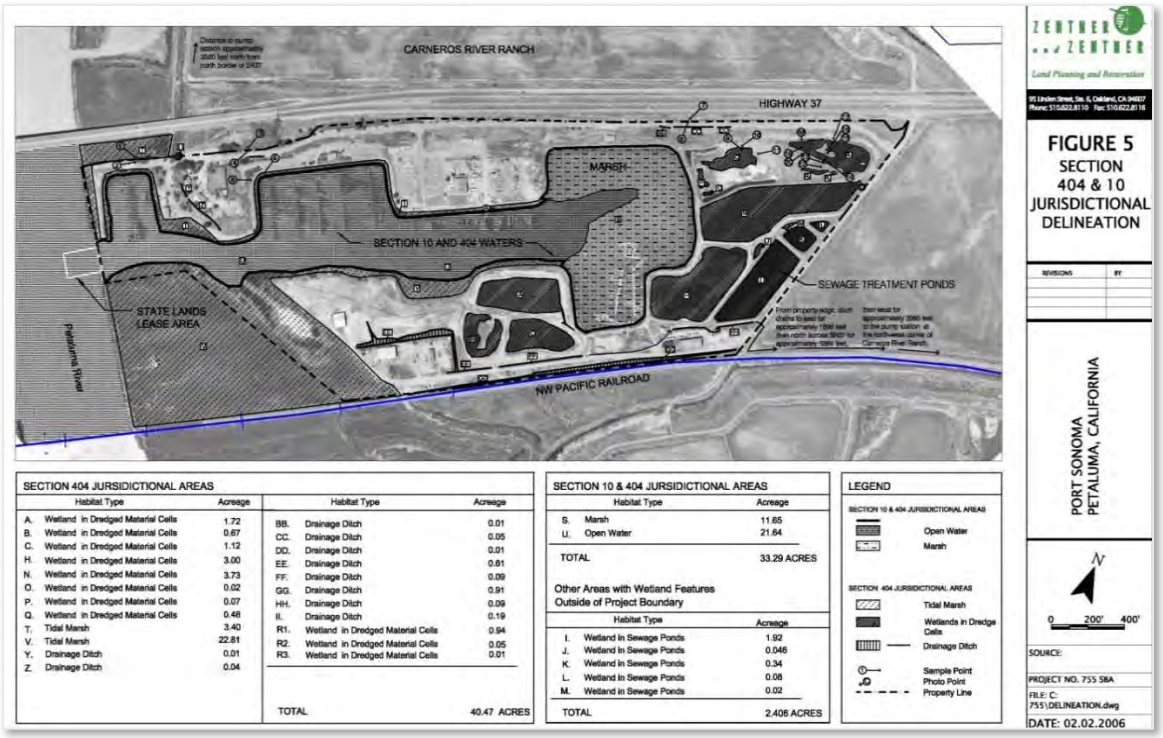
Ecological Mapping and Design

Ecological monitoring covers both construction and post-construction monitoring. We conduct construction monitoring of projects to protect the resources of a specific site, the client, and the contractors working on-site. We do this by ensuring that contractors are well informed and trained regarding site resources, species, and permit conditions, which leads to work being completed smoothly and efficiently, whether for project development or mitigation.

Zentner Planning and Ecology has completed post-construction monitoring and annual monitoring reports for a wide variety of habitats including vernal pools, native grasslands, and riparian woodlands. While monitoring requirements will vary by project and habitat, each year for the past two decades or more, we have typically completed analyses of geomorphology, hydrology, plants and wildlife, endangered species, and many other elements.

Our monitoring reports are consistently praised by our clients and the reviewing agencies for their thoroughness and accuracy.

The ecological designers at Zentner Planning and Ecology come from a mix of ecology, landscape architecture, and design backgrounds. These diverse backgrounds allow us to develop visual appealing and accurate graphics for an array of diverse projects, purposes, and audiences. Our staff is equally at home working with CAD files from engineers and GIS data from local agencies or public data. To provide the most accurate information needed, our wetland delineations are completed using sub-meter accurate GPS units. When needed, the graphics are often rendered in Adobe illustrator or other software to produce the final product for our clients and agency staffs.



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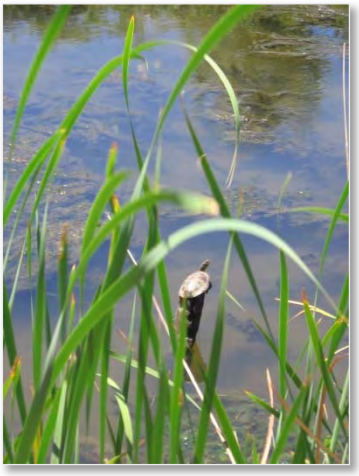

Company Certifications

Zentner Planning and Ecology is certified as a Small Business with the:

- California Department of General Services #1066140
- Port of Oakland
- Contra Costa County
- Valley Transportation Authority (VTA)

Professional Affiliations

- California Botanical Society
- Society for Range Management
- California Native Grasslands Association
- California Native Plant Society
- The Wildlife Society Western Section

Federal and State Certifications

We are approved biological monitors by the U.S. Fish and Wildlife Service for:

- California red-legged frog
- Giant garter snake
- Alameda whipsnake
- Burrowing owl
- California tiger salamander
- Western pond turtle
- Special status bats
- Special status birds
- Special status plants

We are also certified by the U.S. Fish and Wildlife Service to complete vernal pool branchiopod surveys throughout California.

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Representative Project: Shin Kee Marsh Restoration

San Joaquin County, California

Client:
A.G. Spanos Company

Contact:
Karen Garrett; (209) 955-2574

Project Type:
Biological Assessments
Mitigation Plan
Monitoring
RWQCB 401 Water Quality Certification
USFWS & NMFS Section 7 Consultation
Corps of Engineers' Nationwide Permit
Plant Salvage
Plant Propagation

Time Period: 2007-Present

Value of Contract: $280,000

The Shin Kee project consists of the restoration of 126 acres of former farmland to brackish tidal marsh, riparian wetlands, and native-dominated uplands and habitat for the giant garter snake. Zentner Planning and Ecology completed ecological and other studies to design a self-sufficient system at the eastern edge of the Sacramento–San Joaquin River Delta.

This is the largest wetland restoration project in the east Delta, an area that was once the largest freshwater wetland in the United States. Included within the work was a value-engineering analysis that allowed us to reduce costs considerably by using salvaged plant material thereby reducing the use of container grown plants, the extent of irrigation piping, and the grading costs.

Construction began in summer 2008 and planting was completed early spring 2009. Approximately 6,000 trees and shrubs and almost 500,000 native grass and marsh plugs were planted in a heterogeneous landscape that was graded to mimic the natural form. Under the direction of Jeff Glaspy (Emeritus), Zentner Planning and Ecology propagated and planted more than 100,000 superplugs of tule (primarily *Schoenoplectus acutus*) and dozens of acres of treated seed on the project site as habitat for the giant garter snake. Initial monitoring showed that both the tule planting and seeding have been extremely successful.

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Representative Project: Roddy Ranch Biological Surveys

Contra Costa County, California

Client:
Gramercy Capital Corporation

Contact:
Kelley Stough; (310) 435-4215

Project Type:
Biological Assessments
Biologic Section for EIR
Resource Management Plan
Jurisdictional Delineation
Biotic Resources Mitigation Plan
Restoration Plan
Public Meetings

Time Period: 2007-Present

Value of Contract: $298,000

Roddy Ranch is a 2,000-acre ranch in southern Antioch, Contra Costa County. The site includes rolling grasslands, oak woodlands, and chaparral east of Mount Diablo as well as creeks, wetlands, and alkali flat habitats. The complex habitats on the site increased the potential for special status species. Zentner Planning and Ecology was hired to complete biotic assessments of the site's special status habitats and species. Wildlife surveys included protocol-level (breeding and non-breeding) surveys for red-legged frogs and burrowing owls. We were able to identify frogs in many of the site's ponds and wetlands, and at least one burrowing owl. The burrowing owl surveys also led to the observations of several badgers on the project site. We completed two seasons of vernal pool fairy shrimp surveys, botanical surveys, and assessments for San Joaquin kit fox.

Zentner Planning and Ecology incorporated the biological information into the biotic section of the Environmental Impact Report (EIR) documents, followed by meetings with local, State, and Federal agency staff to discuss the project well before the permitting process began. This technique allows for a much smoother course toward obtaining permits. The proposed restoration will incorporate wetlands and species that were identified within the development site into a comprehensive plan to restore the entire valley and link it with existing and proposed open space areas.

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Representative Project: Stanford Native Meadow Restoration

Santa Clara County, California

Client:
Stanford Management Company

Contact:
Bill Plate; (650) 926-0200

Project Type:
Restoration Plan
Local Permitting
Construction Monitoring
Post-Construction Monitoring
Seeding and Planting

Time Period: 2003-2007

Value of Contract: $145,000

Stanford had initiated a native meadow restoration project in fulfillment of an Environmental Impact Report condition, but the project had not met its objectives. Instead, the meadow was dominated by non-native species and there was little evidence of native grasses. Zentner Planning and Ecology was hired to conduct seeding and planting trials while guiding the project through the local planning process. With the results of these trials in hand, the project was allowed to proceed and native grassland planting commenced. We monitored the removal of the previously failed restoration effort as well as the installation of the new meadow. The revised meadow restoration proved successful, leading to the involvement of non-profit and community groups to continue its stewardship into the future. The project was such a success that the Stanford Powwow Planning Committee enlisted our services to restore a native meadow dance circle, a project completed with the students and ultimately by the Powwow participants.

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Representative Clients

A.G. Spanos
Castle Companies
Castlelake L.P.
Catholic Management Services
Cattellus Development Corporation
CEMEX
Central Contra Costa Sanitary District
Chevron Land Co.
Citation Homes
City of Fairfield
City of Fremont
City of Palo Alto
City of Sacramento
City of San Ramon
City of Vallejo
Contra Costa County
Davidon Homes
DR Horton
Edenbridge Homes
Eenhoorn, LLC
GCL Solar Energy, Inc.
Genentech
Granite Construction
Hall Equities Group
Humboldt County
Kiewit Corp.
King and Lyons / ProLogis
KSH Architects
Mission Clay Products
Nova Group, Inc.
Oliver and Company
Pacific Gas and Electric
Port Sonoma Marina
Resources for Community Development
Sacramento County
Santa Clara Valley Transportation Authority
Sea Ranch Village Inc.
Solar Power Partners
Standard Pacific Homes, Inc.
Stanford University
SummerHill Homes
Taylor Morrison
The Dutra Group
Trimark Communities
True Life Companies
Warmington Residential

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Key Personnel

A diversified and knowledgeable staff provides the necessary skills to complete every phase of a project. Our specialists form a close-knit team at Zentner Planning and Ecology. Knowledge and experience are the hallmarks of a good environmental consulting firm.

SEAN MICALLEF
PARTNER / CHIEF ECOLOGIST

Mr. Micallef manages the preparation of biological assessments, including related field work, and conducts surveys for special status wildlife and plants. Sean is certified to complete surveys for, or has experience surveying for California red-legged frogs, giant garter snakes, vernal pool branchiopods, burrowing owls, nesting raptors, and all species of plants. He conducts wetland delineations and prepares Federal, State and local permit approvals for development projects.

JOHN ZENTNER
SENIOR MANAGER / FOUNDER

Mr. Zentner specializes in environmental and land use permitting and entitlements, wetland science, and habitat restoration. He has particular experience in Federal, State and local permitting and regulations, wetland boundary determinations, and mitigation programs. John has managed numerous complex, multi-permit projects, as well as habitat boundary and mitigation plans, and Clean Water Act section 404 permit approvals He has also been called upon as an expert witness in these areas.

BRIAN DAVIS
MANAGING PARTNER

Mr. Davis oversees all financial and business planning activities, including budgeting and invoicing, reporting and monitoring on organizational performance metrics, providing financial oversight and monitoring, administering contracts and agreements, and ensuring insurance requirements are met.

EMILY MATHEWS
BIOLOGIST / PROJECT MANAGER

Ms. Mathews works primarily on permit processing, botanical and wildlife surveys, wetland delineations, and project implementation and management. Emily has a broad range of experiences in natural resource management and project management working in a variety of environmentally sensitive ecosystems. In addition, Ms. Mathews has well-rounded experience with community engagement and providing community-based restoration and education opportunities.

SHELBY DUNN
BIOLOGIST

Mrs. Dunn is an experienced biologist with expertise in biological surveying and research. Shelby has experience monitoring construction and restoration projects in ecologically sensitive habitats and she completes surveys for nesting birds and raptors and roosting bats. As well, she assists with wetland delineations and surveys for a variety of special status plant and wildlife species and she prepares state and federal permit applications for projects affecting wetlands and other special status habitats.

XIN MA
ECOLOGICAL DESIGNER

Ms. Ma is an experienced landscape designer specializing in computer-aided design (CAD). Xin develops construction details, wetland delineations, mitigation and planting plans, and other planning documents. She uses a variety of technical design tools to render drawings and is versed in using geographic information system (GIS), photoshop, illustrator, Sketchup and other design programs.

SEAN MICALLEF

PARTNER/CHIEF ECOLOGIST

PROFESSIONAL SUMMARY

As the Chief Ecologist for Zentner Planning and Ecology, Mr. Micallef manages the preparation of biological assessments, including related field work and completes surveys for special status wildlife and plants. Sean is certified to complete surveys for, or has experience surveying for California red-legged frogs, giant garter snakes, vernal pool branchiopods, burrowing owls, nesting raptors and all species of plants. He also conducts wetland delineations, monitors construction and mitigation projects. Finally, Mr. Micallef prepares Federal, State and local permit approvals for development projects affecting aquatic habitats and special status species.

EDUCATION

San Francisco State University, California,
M.A. in Geography: Natural Resource Management (1998)

University of California, Davis,
B.S. in Environmental Resource Science (1992)

PROFESSIONAL EXPERIENCE

Partner/Chief Ecologist, Zentner Planning and Ecology, Oakland, California (1998 – present).

Biological Science Technician, National Park Service, Grand Canyon National Park, Arizona (1997). Responsible for implementation of resource management vegetation projects. Conducted GPS surveys of disturbed areas and exotic vegetation. Performed site preparation, plant salvage, transplanting, and seed collection as well as propagating and maintaining plants at native nursery. Served as park interpreter and supervisor for local group restoration projects.

GIS Technician, Dames and Moore, San Francisco, California (1995). Performed GIS tasks including digitizing, data input and manipulation to produce cartographic maps of endangered habitats and species.

Revegetation Project Manager, Golden Gate National Recreation Area (1994 – 1995). Planned, coordinated and developed resource management projects in a large urban National Park. Delineated restoration areas and authored revegetation and monitoring plans.

Map Researcher, Pinnacle Data Corporation (1992 – 1993). Read and interpreted parcel and plat maps, surveys and legal descriptions, as well as FEMA flood hazard maps.

LIST OF PUBLICATIONS

Mariner's Cove and Beyond: Observations of Tidal Salt Marsh Construction Techniques, Ecological Restoration, Vol. 19 No. 2, 2001.

The Ecology of Oatgrass: The Champagne of Grasses, Grasslands, Vol. 18, No. 3, 2008.

The Effect of Grazing on the Grassland Vegetation of Mt. Diablo State Park, California. Masters Thesis, 1998.

PROFESSIONAL ACTIVITIES

US Fish and Wildlife Service certification: vernal pool branchiopods.

Member, California Botanical Society

Member, Society for Range Management

Member, California Native Grasslands Association

Member and Research Grant Recipient, California Native Plant Society

MAX DELANEY
Phone: 650.678.4943
Email: mdelaney13@gmail.com

EMPLOYMENT

September 2012 – present
NOAA Greater Farallones National Marine Sanctuary*,* San Francisco, CA
Resource Protection Specialist

- Performing the role of permit coordinator for the Greater Farallones National Marine Sanctuary (GFNMS) including: reviewing projects to ensure consistency with both the National Marine Sanctuary Act (NMSA) and the National Environmental Protection Act (NEPA); completing consultations with other agencies to ensure compliance with applicable environmental laws; developing recommendations and written memos on permits to assist the superintendent and management with permit decisions and/or appeals; and coordinating the issuance of permits, implementation of special conditions, and tracking of project monitoring and reporting
- Coordinating the writing and reviewing of NEPA documents including environmental assessments, environmental impact statements, and management plans for various sanctuary-sponsored projects, such as a programmatic EA for permitted activities related to white sharks, and other projects that may affect sanctuary resources
- Participating in a variety of sediment management-related activities for the outer coast, including coordination with regional sediment management programs and workgroups, including the California Sediment Management Workgroup and the Surfer's Beach Replenishment Committee, co-writing a white paper on the beneficial reuse of dredged material at Surfer's Beach, and assisting with the coordination of the working group and technical advisory committee for the development of the GFNMS coastal regional sediment management report for the Sonoma-Marin coast.
- Developing a variety of tailored communications suited for different audiences, including: conducting outreach by hosting meetings and workshops and giving oral presentations to the public, sanctuary stakeholders, and other agencies about sanctuary regulations, the NMSA, and other sanctuary efforts; providing updates and briefings through written materials, meetings, and presentations to management and sanctuary advisory councils on current permits, sanctuary programs, and other emerging policy issues; and developing reports, briefing memos, and communications plans for NOAA staff for specific sanctuary projects
- Coordinating the sanctuary emergency response program to ensure that GFNMS staff is prepared for environmental emergencies by: communicating staff roles, providing annual in-house trainings, and ensuring that all staff are up-to-date with all necessary certifications, such as Hazwoper and ICS trainings; identifying and tracking equipment, funds, and other NOAA personnel that may be needed for a spill response; and developing and implementing updates to the GFNMS emergency spill response planning documents to ensure that all procedures, sanctuary resource information, agency contact lists, and forms are current
- Responding to emergency incidents in the sanctuary, such as vessel groundings, hazardous material spills, and human activities resulting in wildlife disturbance; coordinating and directing

the removal of grounded or abandoned vessels; coordinating with NOAA Office of Law Enforcement on potential enforcement actions; developing natural resource damage assessments to determine impacts to sanctuary resources; reviewing salvage plans; and providing guidance to on-site staff to ensure proper procedures are performed during a response

- Participating in the *San Francisco Bay Area Contingency Plan (ACP)* response and planning process by attending bi-monthly ACP meetings and participating regularly in drills, exercises, and workshops to maintain relationships with staff from other responder agencies, such as the U.S. Coast Guard (USCG), NOAA Office of Response and Restoration, California Deptartment of Fish and Wildlife's Office of Spill Prevention and Response (OSPR), to both develop and communicate best practices that will maximize protection of sanctuary resources during a response and to improve sanctuary capabilities for emergency response
- Serving in the incident command structure (ICS) as part of the Environmental Unit on both oil pollution events and other environmental emergencies as needed
- Working with sanctuary staff, the GFNMS advisory council, other responder agencies, and stakeholders to develop recommendations on the use of oil dispersants and other technologies to mitigate oil spills in a manner that minimizes impacts to sanctuary resources
- Coordinating an annual GFNMS white shark naturalist training class for white shark educational tour boat operators, naturalists, and shark conservationists, and developing educational content and outreach materials on white shark habitat and conservation for related workshops and events

October 2006 – September 2012
San Francisco Bay Conservation and Development Commission*,* San Francisco, CA
Coastal Program Analyst II

- Performed the role of permit analyst coordinating the review of variety of coastal development, dredging, and environmental restoration projects, with budgets ranging from $25,000 to $25,000,000, including the South Bay Salt Ponds Restoration Project, Tennessee Valley Trail Project, and dredging and sediment management projects throughout San Francisco Bay
- Interfaced with permit applicants, such as private business interests, city planners, public works agencies, and environmental consultants and coordinated with other regulatory agencies, such as the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and state and federal resource agencies, during project planning and design to ensure consistency with the Commission's laws and policies
- Issued emergency response permits and participated in multi-agency coordinated response efforts to develop appropriate permit requirements for dredging projects during and after the *T/V* Cosco Busan oil spill (2007) to help monitor and protect water and sediment quality in San Francisco Bay
- Participated in sediment management and dredging project review, sediment testing data review, permitting, and planning in coordination with other state, local, and federal agencies
- Wrote reports and made oral presentations (monthly or bi-monthly) to the Commission outlining the benefits and impacts of projects, identifying policy issues, and making recommendations to the Commission to assist with their review and approval process

- Reviewed local, state, and federal environmental plans and reports, such as California Environmental Quality Act and NEPA environmental documents, and management plans, and provided comments on the Commission's coastal management program

October 2004 – October 2006
San Francisco Estuary Institute, Oakland, CA
Environmental Analyst I

- Assisted lead scientists with research projects including: field work involving environmental sampling and data collection related to water quality, sediment quality, and contaminants in wildlife throughout the San Francisco Estuary; data management tasks; editing reports; and grant-writing efforts to fund research projects
- Conducted research and literature reviews on topics pertinent to the health of San Francisco Bay to help regulatory agencies, resource managers, non-profit organizations, and the California State Coastal Conservancy identify current management questions, research needs, and data gaps
- Assisted the program manager for the San Francisco Bay Regional Monitoring Program in preparing and editing annual reports and organizing an annual meeting
- Compiled data from a variety of sources, such as land trust groups, the U.S. Army Corps of Engineers, and other regulatory agencies, on wetland restoration projects around San Francisco Bay and assisted in developing a "Wetland Tracker" online geospatial (GIS) database

EDUCATION

University of Massachusetts, Amherst, MA
B.S. Environmental Science

TRAININGS

Heartsaver First Aid CPR and AED Training, San Francisco, CA, September 2014

8-Hour Hazwoper Training, San Francisco, CA, April 2019

24-Hour Hazwoper Training, San Francisco, CA, March 2013

Emergency Response to Oil Spills Training, Benicia, CA, March 5-8, 2013

Incident Command Structure (ICS) Training, San Francisco, CA, Fall 2012 – Spring 2013

- Completed ICS course levels 100, 200, 700, and 800

LANGUAGES

English
Advanced Spanish

Appendix B

Proposed Project Schedule

ID	Task Name	Duration
1	Project Kickoff Meeting	1 day
2	**Permitting and Environmental**	**243 days**
3	Review of Data and Past Studies	30 days
4	Internal Draft IS / MND / CEQA docs	30 days
5	Submit Internal CEQA Documents	1 day
6	RBRA Review	30 days
7	Pre-application Mtg	1 day
8	Develop Draft IS / MND / CEQA /	30 days
9	Submit Draft CEQA	1 day
10	30-day Public Review	30 days
11	Submit Permit Apps	1 day
12	Agency Review / Permit Processing	90 days
13	Obtain Agency Permits	0 days
14	**Design Development**	**111 days**
15	Alternatives Development	30 days
16	Present Alternatives to	1 day
17	Develop 50% Plans (Design	35 days
18	Submit 50% Plans	1 day
19	RBRA Review and Comments Due	30 days
20	Respond to RBRA Review Comments	15 days
21	**Construction Documents**	**100 days**
22	Develop 90% Construction Docs	31 days
23	Submit 90% CDs	1 day
24	RBRA Review of 90% Construction	30 days
25	Develop 100% Final Construction	30 days
26	Submit 100% Final Construction Docs	1 day
27	RBRA Signatures and	7 days
28	**Bid and Construction**	**94 days**
29	Distribute Invite to Bid	1 day
30	Bid Advertisement	30 days
31	Bid Opening	1 day
32	RBRA Bid Review	7 days
33	Construction NTP	1 day
34	Mooring Installation	55 days
35	Mooring Field Installation	1 day