January 2022

RICHARDSON'S BAY REGIONAL AGENCY

ANCHOR QEA

Design, Engineering, Specifications, Entitlements, Construction Supervision for a 20 Site Mooring Field in Richardson's Bay

Submitted by Anchor QEA
In Association with Coastal Policy Solutions

33 New Montgomery Street, Suite 1210
San Francisco, California 94105
(415) 230-0862

January 31, 2022

Steve McGrath
Richardson's Bay Regional Agency
3501 Civic Center Drive, Room 308
San Rafael, California 94903

Re: Statement of Qualifications for Design, Engineering, Specifications, Entitlements, and Construction Supervision for a 20 Site Mooring Field in Richardson's Bay

Dear Mr. McGrath:

On behalf of the Anchor QEA, LLC, team, I am pleased to submit the attached proposal for the Design, Engineering, Specifications, Entitlements, and Construction Supervision of a 20 Site Mooring Field in Richardson's Bay (the project). The project draws on our core services of environmental compliance and regulatory permitting, structural engineering, and construction support, and our extensive local experience working in the San Francisco Bay—specifically in Marin County.

Unparallel Expertise in Local Waterfront Engineering and Permitting. Anchor QEA specializes in delivering engineering, science, and regulatory compliance solutions for shoreline development and restoration projects. Local to Marin County, we provide this support to the Golden Gate Bridge Highway and Transportation District, Marin County Flood Control and Water Conservation District, National Park Service, marinas, and waterfront homeowners. Our team includes one subconsultant, Coastal Policy Solutions, who brings unique insight regarding the Richardson's Bay Regional Agency's (RBRA's) experience working with agencies and stakeholders.

Experienced Project Manager with Strong Agency Relationships. As your proposed project manager, I have proven success in overseeing technical teams to prepare engineering deliverables, complete California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) compliance, obtain regulatory permits, and support construction for shoreline projects. From more than 13 years of experience working in the region and facilitating the San Francisco Bay Long-Term Management Strategy for dredging and dredged sediment management, I have strong relationships with Bay Area federal and state regulatory agency staff.

Our proposal succinctly lays out our team's approach to completing the four tasks outlined in the Request for Proposals (RFP). We have carefully reviewed the RFP and the supporting materials to gain a solid understanding of the project history and purpose, and we are confident that we can achieve RBRA's needs so that construction can be completed by the end of 2022. There are no conflicts of interest that will limit our ability to provide the requested services to RBRA.

Please contact me with any questions at (415) 361-5153 or kchamberlin@anchorqea.com. Thank you, and we look forward to hearing from you soon.

Sincerely,

Katie Chamberlin

Project Manager/Principal Planner
Anchor QEA, LLC

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UNDERSTANDING OF KEY ISSUES

We understand that RBRA's Board of Directors approved the Final Eelgrass Protection and Management Plan (EPMP) in August 2021, which designated an Eelgrass Protection Zone (EPZ) in Richardson's Bay, where anchoring will no longer be allowed. RBRA entered into a Settlement Agreement with the San Francisco Bay Conservation and Development Commission (BCDC) in August 2021, requiring that by December 15, 2022, between 15 and 20 moorings be installed in an Anchorage Area in Richardson's Bay for use by vessels relocating from the EPZ and enrolled in the Safe and Seaworthy program.

In-water construction in the Bay Area is a complex landscape that the Anchor QEA team has successfully navigated many times. With our regulatory compliance expertise, extensive engineering qualifications, local presence and knowledge, and effective project management and communication skills, we are prepared to address the key issues facing the project and to complete design, permitting, and construction support for the project by December 15, 2022.

Strategic Approach to Regulatory Requirements

Anchor QEA is well-versed in **preparing CEQA/NEPA documentation for public agencies** in the Bay Area. Our team's project manager, Katie Chamberlin, led the development of the Alcatraz Ferry Embarkation Environmental Impact Statement (EIS), has managed the development of more than 30 CEQA documents for waterfront projects undertaken by the Port of Stockton, and has overseen the development of numerous other environmental documents for Northern California shoreline projects. She and other Anchor QEA planners regularly obtain **federal and state regulatory permits for in-water construction** projects. Based on this experience, keys to successful completion of the project include gaining teamwide consensus on the project description early on.

Extensive Engineering Qualifications

Our waterfront engineers have developed **construction documents** and provide **construction oversight** for numerous waterfront structures, marinas, and vessel moorings. Our structural engineers work in concert with our geotechnical and coastal engineers to determine the applicable environmental loads, apply them to the various design vessels, and make recommendations to facility owners on the vessel sizes that maximize the use of the water space and provide options that **balance cost and longevity of an installation**.

Local Presence and Experience

Our team is based in San Francisco, California, and has an **in-depth understanding of the regulatory, biological, and community issues** that play into shoreline management decisions in the Bay Area. Our San Francisco staff have developed **trusted relationships with local regulatory agencies**, including staff from the U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), San Francisco Bay Regional Water Quality Control Board (RWQCB), and BCDC. Our partner Coastal Policy Solutions brings a wealth of **experience working in Richardson's Bay** and is currently working with RBRA to implement the EPMP.

Project Management and Effective Communication

Successful completion of the required project tasks hinges on active project management, careful execution of tasks simultaneously, and structured team communications. We are confident that we **can meet the December 2022 project completion date**. The cornerstone will be working interactively with RBRA as soon as we receive Notice to Proceed. Anchor QEA will **actively manage the project schedule**, conduct regular **coordination meetings** with task leads and RBRA, work with the project team to **solidify the project description** early on so that regulatory compliance documents can proceed with confidence, and thoroughly review all documents to ensure they meet Anchor QEA's **high standards for quality**. We will coordinate closely with agency staff to **keep permits moving** during that phase.

QUALIFICATIONS AND EXPERIENCE

Anchor QEA is an environmental and engineering company that specializes in delivering engineering and regulatory compliance solutions for waterfront development, maintenance, and restoration projects. We provide a full range of services to support harbor maintenance, pile driving, marina redevelopment, dredging, and other types of in-water construction projects throughout the San Francisco Bay Area.

Anchor QEA Relevant Qualifications

- More than 20 years of regional experience
- Obtained permits and led CEQA/NEPA compliance for over 80 waterfront projects in the San Francisco Bay Area
- Facilitator of the multiagency San Francisco Bay Long-Term Management Strategy program
- Several Anchor QEA planners are former federal and state regulatory agency staff

Anchor QEA's engineers and designers have prepared structural, geotechnical, and civil engineering support on numerous waterfront facilities, including vessel berthing facilities throughout the San Francisco Bay Area. Our engineers have designed docks and other mooring facilities to avoid impacts to eelgrass beds. Anchor QEA staff is well-versed in the latest permit agency requirements and design standards, including the American Society of Civil Engineers' (ASCE's) *MOP 50 – Planning and Design Guidelines for Small Craft Harbors*; *Marinas and Small Craft Harbors* by Bruce Tobiasson, which is the authoritative text on harbor design; and California's own building code and Division of Boating and Waterways design guidelines. Coastal Policy Solutions has expertise in interpreting and implementing policies included within the California Eelgrass Mitigation Policies (CEMP) and its implementing guidelines and will ensure project compliance with CEMP.

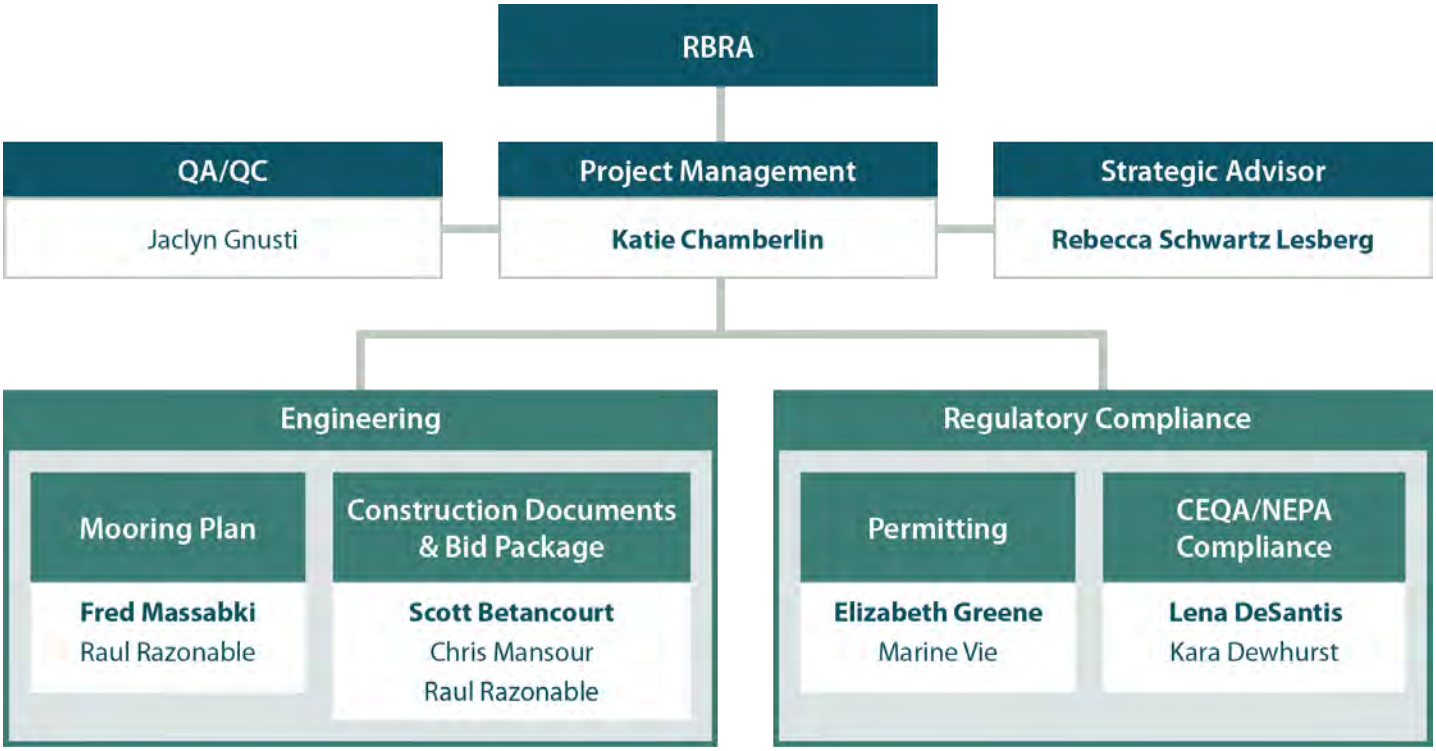
Anchor QEA's planners and biologists provide comprehensive and strategic regulatory permitting and federal and state environmental planning services for shoreline and water resources projects throughout California. Anchor QEA and Coastal Policy Solutions staff are experts in the following:

- Navigating federal and state regulatory permitting processes and successfully obtaining permits with reasonable conditions
- Completing Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act consultations
- Negotiating mitigation requirements with regulatory and resource protection agencies, including ensuring compliance with CEMP guidelines
- Preparing all types of CEQA/NEPA compliance documentation, from categorical exemptions/exclusions to Environmental Impact Reports (EIRs) or EISs
- Conducting supporting technical studies and investigative analyses to support CEQA/NEPA processes
- Facilitating public and agency outreach efforts

Anchor QEA works alongside our client partners to prepare and shepherd construction documents, including the plans, specifications, and calculations from preliminary design through the plan check process, and we prepare a final package of complete plans and specifications ready for Invitation to Bid. Once a contractor is awarded and under contract, the design engineer and other team members continue to provide construction oversight services such review of contractor shop drawing submittals, responses to requests for information, and site visits to verify that the work is being performed in accordance with the construction documents.

Our Project Team

Our team will be led by Katie Chamberlin, a principal environmental planner with Anchor QEA based in San Francisco. She is an accomplished project manager and leader in environmental review and permitting throughout Northern California. Katie will be supported by key and support staff from Anchor QEA as well as Coastal Policy Solutions' Rebecca Schwartz Lesberg. The organizational chart below presents Anchor QEA's team for completing project tasks. Following the organization chart are descriptions of relevant experience for key staff; resumes for all staff are included as Attachment 1.



Note:
Bold indicates key staff

Leading with Experience

Katie Chamberlin
Project Manager

Katie has almost 20 years' experience managing multidisciplinary teams, successfully completing state and federal regulatory permitting processes, preparing complex NEPA and CEQA documents, leading agency and stakeholder outreach efforts, and managing environmental programs for clients. She has successfully completed NEPA/CEQA documents for the National Park Service (NPS), USACE, California State Parks, City and County of San Francisco, Ports of Stockton and San Francisco, and numerous other public agencies in California. From more than a decade of experience leading permitting efforts in the Bay Area and management of the San Francisco Bay Long-Term Management Strategy program, Katie has developed strong, trusted relationships with local USACE, USFWS, NMFS, RWQCB, California Department of Fish and Wildlife (CDFW), and BCDC staff.

Education: MMA, Marine Affairs; BA, International Studies

Benefit to the Project: Katie is an enthusiastic and driven project manager committed to delivering quality documents within budget and on schedule. Her in-depth knowledge of regulatory requirements and processes directly results in faster agency processing of permits. She will manage the Anchor QEA team to ensure that the project meets RBRA's needs, meets Settlement Agreement requirements, and is completed within budget.

Rebecca Schwartz Lesberg
Strategic Advisor

Rebecca brings more than 10 years of experience working in environmental conservation throughout California. As the president and founder of Coastal Policy Solutions, she works with government and nonprofit partners to solve complex conservation problems. She is an expert on conservation efforts in Richardson's Bay. Rebecca has worked closely with RBRA and its partners since 2017 on eelgrass and other environmental issues in the bay. Since 2020, Rebecca has worked under contract with RBRA to develop and implement the agency's EPMP. These efforts included stakeholder engagement sessions that formed the basis of the EPMP, spatial analysis to develop the EPZ, and the design and implementation of associated habitat and wildlife monitoring. She has also overseen many conservation programs and habitat restoration projects, including the Sonoma Salt Marsh Enhancement Project and ReWild Mission Bay.

Education: MS, Marine Science; BA, Biology

Benefit to the Project: Rebecca will leverage her experience working with RBRA on eelgrass, habitat, and wildlife issues to provide strategic advisory support to Anchor QEA in executing the project.

Fred Massabki, PE
Engineering – Mooring Plan

Fred's focus is on waterfront planning, design, and construction projects. His 16 years of experience includes designing waterfront structures such as recreational marinas and mooring fields, working directly with local government and private sector clients. Fred has managed construction document development, including complex interdisciplinary coordination and preparation of plans, specifications, construction cost estimates, and project schedules. His waterfront project experience includes bid and construction phase support services.

Education: MS, Civil Engineering; BS, Mechanical Engineering

Benefit to the Project: Fred will bring his knowledge of different mooring systems and marine design to develop mooring field options and work with RBRA to select a preferred alternative.

Scott Betancourt, PE, SE

Engineering – Construction Documents and Bid Package

Scott is a California registered structural and civil engineer with more than 32 years of experience in structural analysis and design of marinas and vessel mooring facilities. His experience includes design of floating wood and concrete docks, support and guide piles, bulkheads, coastal piers, and mooring anchors. He has performed structural engineering on the Alma Schooner dock project, Larkspur ferry terminal, and Clayton Village wave attenuator. Scott has performed assessments and prepared engineering analyses and designs for retrofitting more than 1,000 existing structures to provide additional loading capacity and seismic resistance.

Education: BS, Civil Engineering

Benefit to the Project: Scott's extensive experience in assessing wave and wind loads on vessels and designing vessel berthing and anchorage facilities will be instrumental in completing the project's construction documents.

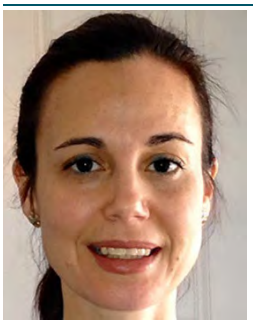
Elizabeth Greene

Permitting Lead

Elizabeth is a senior managing biologist with 20 years' experience in regulatory permitting and compliance, ESA documentation, biological field studies and analyses, and permitting strategy. Her experience has focused extensively on the evaluation of project impacts on aquatic resources, evaluation and development of mitigation activities, and clearly communicating findings to regulatory and public audiences.

Education: MS, Marine Resource Management; BA, Biology

Benefit to the Project: Elizabeth will leverage her in-depth expertise on fisheries and Essential Fish Habitat issues to prepare fully compliant permitting materials for the project, resulting in efficient and predictable permitting time frames and requirements.



Lena DeSantis

CEQA/NEPA Compliance Lead

Lena is an environmental planner with almost 22 years' experience in environmental science and policy. She is an expert in NEPA and CEQA compliance, as well as in Clean Water Act and Clean Air Act compliance. Prior to joining Anchor QEA, Lena managed the CEQA Program at the Port of Los Angeles. In that role, she received the Career Service Award from the City of Los Angeles for successfully managing the Berth 136-147 (TraPac) Marine Terminal EIS/EIR. Lena has also led CEQA/NEPA documentation for the Port of Stockton, Contra Costa County, City and County of San Francisco, NPS, USACE, California Department of Toxic Substances Control, and City of Newport Beach, among other agencies.

Education: MS, Environmental Health Science; BA, Biology

Benefit to the Project: Lena's NEPA, CEQA, and strategic environmental compliance experience uniquely qualify her to assist Katie with overseeing the project's CEQA or NEPA documentation requirements.

Project Experience

The following pages showcase select experience of the Anchor QEA team that is relevant to the project.

Newport Harbor West Anchorage Study, City of Newport Beach

Anchor QEA was tasked by the City of Newport Beach to assess the viability of creating a new mooring field, to be referred to as the Newport Harbor West Anchorage, in the triangular water space bounded by Lido Isle, Lido Village, and the famed Mariners' Mile. The purpose of the mooring field is to provide anchorage for large vessels that can navigate the 200-foot-wide and 20-foot-deep Newport Harbor Main Navigation Channel but could not otherwise berth at existing dock facilities. The water space in question has historically been used as an oversized turning basin. Anchor QEA determined the design diameter of the turning basin based on industry standards and concluded that a new 3.3-acre mooring field could safely be created within the water space, accommodating large vessels up to 250 feet in length with up to 40-foot beams and up to 14-foot drafts. This new West Anchorage would maintain safe back-up distance charter vessels in the 100- to 140-foot range currently berthed along Lido Village and Mariners' Mile, provide a 500-foot-diameter turning basin, maintain the 200-foot-wide main navigation channel, and provide an additional 200-foot-wide auxiliary deep-water channel. The results of the study have been submitted to the District office of the U.S. Coast Guard (USCG).

Richardson's Bay Eelgrass Protection and Management Plan Development and Implementation, Richardson's Bay Regional Agency

Coastal Policy Solutions was hired by RBRA in 2020 to implement the eelgrass-focused sections of their newly adopted Transition Plan covering Richardson's Bay. Coastal Policy Solutions facilitated a series of stakeholder engagement sessions that formed the basis for developing RBRA's EPMP, conducted the plan's policy analysis of relevent regulatory documents, and designed the plan's spatial analysis to understand impacts to eelgrass and Pacific herring. The RBRA Board of Directors adopted the EPMP in August 2021. This plan designated the EPZ in Richardson's Bay, where anchoring would no longer be permitted to prevent damage to eelgrass from anchor scour. Coastal Policy Solutions is currently contracted to implement the EPMP through funding from the California Ocean Protection Council. EPMP implementation includes coordinating with state and federal entities on behalf of RBRA to update required rules and regulations to promulgate the EPZ through to Bay users, conducting outreach and education to improve community knowledge of and compliance with updated regulations, and leading habitat and wildlife monitoring. In addition, Coastal Policy Solutions is contracted to complete the habitat and wildlife monitoring components of RBRA's National Oceanic and Atmospheric Administration Marine Debris grant. Coastal Policy Solutions also works with RBRA to identify, target, and apply for grant funding to support active eelgrass restoration and advises RBRA on matters related to habitat and wildlife management in Richardson's Bay.

Greenwood Bay Homeowners Association Fishing Pier and Pedestrian Bridge Repair Regulatory Permitting, Greenwood Bay Homeowner's Association

Anchor QEA led federal and state regulatory permitting efforts for repairs to an existing public fishing pier and pedestrian bridge in Richardson's Bay in Tiburon. The piles supporting the existing structures were failing, and repair was required to remain structural integrity. Both the fishing pier and pedestrian bridge are important public access elements for the adjacent community, so the homeowner's association was under pressure to obtain permits and complete the repairs as soon as possible. Anchor QEA worked with the homeowner's association's engineers to prepare a complete project description and prepare all permit application materials. We coordinated closely with regulatory agencies to quickly address any questions. The agencies, including Marin County, considered this maintenance project to be CEQA-exempt. Permits from the BCDC, CDFW, RWQCB, and USACE were successfully obtained in just 6 months, which allowed for the repairs to be completed in 2021, and public access has since been restored.

Marin County Structure Elevation Project, Greenbrae Boardwalk Homeowners

Anchor QEA led federal and state regulatory permitting efforts for a Federal Emergency Management Agency (FEMA) grant-funded effort involving elevating the foundations of five flood-prone residential homes along Greenbrae Boardwalk on the San Francisco Bay near Corte Madera. Under existing conditions, the homes flood during high tides. The grant funding was awarded for the homeowners to raise the elevation of their foundations to above the highest flood elevations. Anchor QEA worked with the homeowners' engineers to prepare a complete project description and prepare all permit application materials. We coordinated closely with regulatory agencies to quickly address any questions to ensure that permits were received in 2021 to support construction commencing in 2022 in accordance with the grant requirements. The agencies, including Marin County, considered this maintenance project to be CEQA-exempt. Permits from the CDFW, RWQCB, and USACE were successfully obtained in just five months, and construction is planned for 2022.

San Francisco Police Department Marine Unit Dock Replacement Dock Permitting, Port of San Francisco

Anchor QEA led efforts to amend federal and state regulatory permits previously issued for replacement of the San Francisco Police Department's Marine Unit dock. Prior permits assumed construction would occur in the standard in-water work window for the San Francisco Bay (which spans from June to November annually), but grant funding required that project construction be complete by June 1, prior to the window and necessitating permit modifications. Anchor QEA worked closely with the USACE, NMFS, USFWS, RWQCB, and BCDC to secure permit amendments that allowed the Port to complete construction in accordance with the grant requirements. Construction was successfully completed in 2021.

Clayton Resiliency and Economic Development Projects, Village of Clayton

The Village of Clayton, located along the shore of the St. Lawrence River in New York state, sustained significant damages to public infrastructure due to unprecedented high water events in 2017 and high winds and wave action during a major storm event that occurred in 2019. The Village secured grant funding to complete structural repairs and improvements at the following locations: the Clayton Riverwalk, the Mary Street Boat Launch, the Village Dock at the Veterans Memorial Monument, and the Thousand Islands Regional Dock at Frink Park. Anchor QEA performed wave modeling and supported the design of Mary Street Boat Launch and Village Street Dock Improvements. We evaluated wave conditions, overtopping, and hydrodynamic and ice loads for structural repairs and improvements. Anchor QEA designed a wave attenuator system to reduce wave energy along the Village Dock. Due to 40-foot-deep water at the site, the wave attenuator is anchored to the river bottom using a Seaflex hawser mooring system and concrete anchor blocks. We evaluated the use of heavy chain anchors and helical anchors, but we determined that the chain rode (horizontal length) would interfere with navigation, and helical anchors were not feasible because the bottom is a thin layer of mud underlain by bedrock.

Alcatraz Ferry Embarkation NEPA and CEQA Reviews and Regulatory Permitting, National Park Service and Golden Gate National Parks Conservancy

Anchor QEA managed NPS's effort to identify, design, and evaluate a new embarkation site for principal ferry service between the San Francisco waterfront and Alcatraz Island. Anchor QEA worked closely with NPS staff to develop conceptual and schematic architectural, landscape, and marine structural designs for six locations along the northern San Francisco waterfront initially under consideration for the primary embarkation site. These designs were used as the basis for the project's NEPA public scoping efforts, and all required extensive in-water work. Anchor QEA prepared the EIS and managed public involvement efforts, including scoping meetings and public hearings. We led ESA and Magnuson-Stevens Fishery Conservation and Management Act consultations and manage compliance with other federal requirements to complete NEPA. After the preferred embarkation site was identified in the Final EIS and Record of Decision as Pier 31½, Anchor QEA went on to prepare the Initial Study/Mitigated Negative Declaration (IS/MND) with the City and County of San Francisco (on behalf of the Port of San Francisco) as the CEQA lead agency. We also obtained all required state and federal regulatory permits for the in-water construction elements of the project, including permits from the USACE, RWQCB, and BCDC. Katie Chamberlin managed development of the EIS and the IS/MND for the City and County of San Francisco, and Lena DeSantis provided senior technical review of the documents.

CEQA/NEPA and Environmental Permitting On-Call, Port of Stockton

Anchor QEA leads CEQA/NEPA compliance, regulatory permitting, and mitigation negotiation for Port and Port tenant development and maintenance projects. We develop strategic environmental compliance approaches and have managed more than 30 CEQA documents, including categorical exemptions, IS/MNDs, EIRs, and joint CEQA/NEPA documents for the Port. Anchor QEA and its subconsultants have completed numerous technical studies, including for biological and cultural resources; stormwater compliance; quantitative traffic, air quality, and noise evaluations; and sediment sampling and characterization efforts for projects at the Port. In 2017, we obtained the first regulatory approvals that allowed annual maintenance dredging to be conducted over a 5-month window (as compared to the historical 4-month window); since that time, all Port permits reflect this expanded work window, increasing the in-water construction time by 25% compared to past requirements. Our in-depth experience and relationships with regulators allow us to efficiently obtain permits for Port projects (for example, a new police dock was permitted in just 3 months).

Hydraulic Study of the Realignment of Lower Coyote Creek into Bothin Marsh, Marin County Department of Public Works

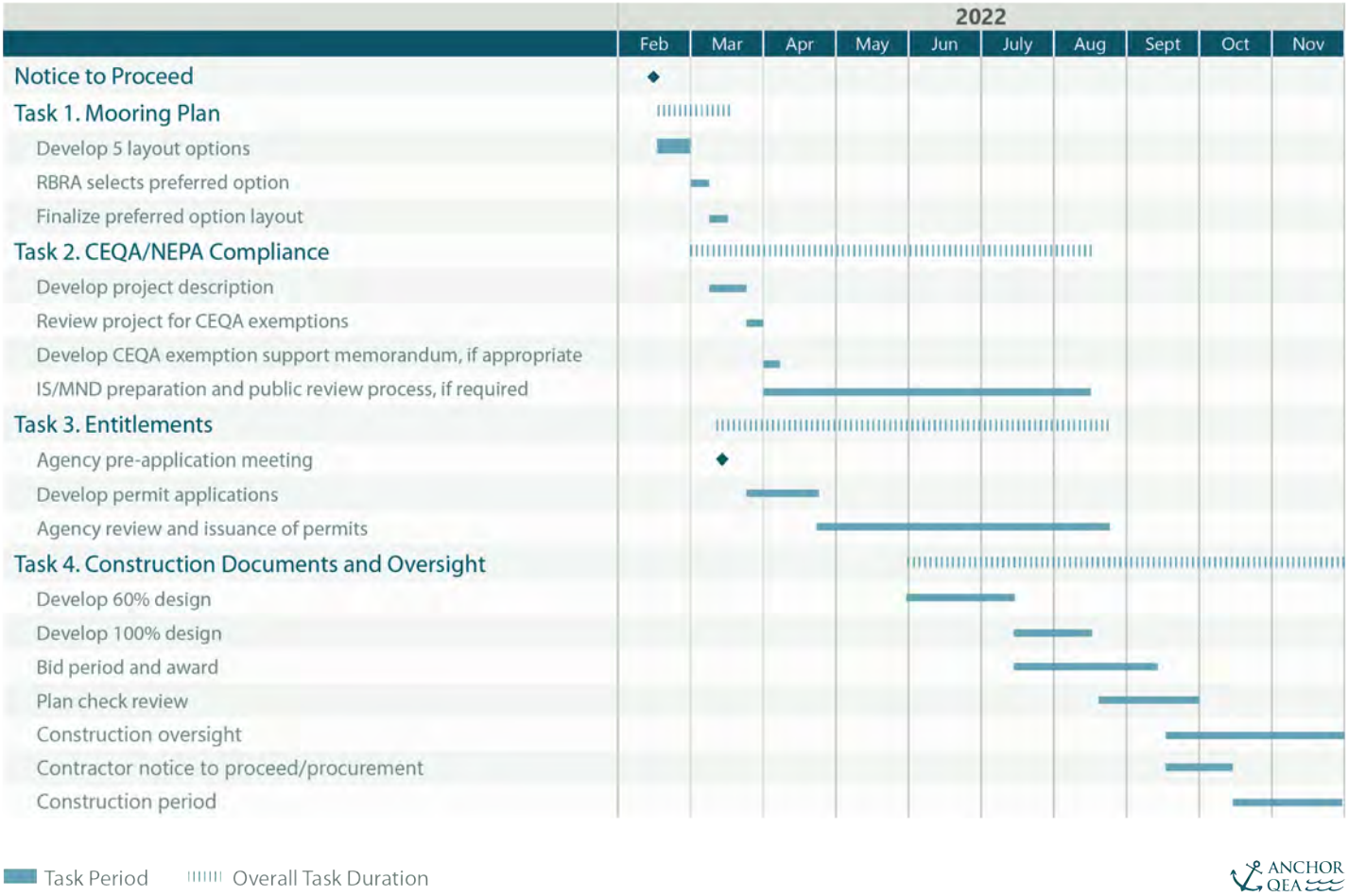
Bothin Marsh and the adjacent infrastructure—including the Mill Valley-Sausalito Bay Trail and portions of California State Route 1—are currently subject to regular flooding during high tides. This area is highly vulnerable to the impacts of sea level rise and there is concern that the existing marsh habit may be entirely lost due to sea level rise. The goal of this study was to evaluate whether the realignment of Lower Coyote Creek through Bothin Marsh would increase marsh resilience to sea level without increasing flood risk. This work included updating the hydrologic model for Coyote Creek, developing three realignment scenarios, conducting analysis of realignment scenarios, and applying a 3D hydrodynamic and sediment transport model to evaluate sediment transport in Coyote Creek and sediment exchange between Bothin Marsh and Richardson Bay under tidal conditions. Key elements of this project included developing an alternative that minimized the effect of the downstream channel realignment on upstream water levels during floods, conducting a detailed assessment of the effect of the channel realignment on peak water levels during high flows, and understanding the effect of the realignment sediment routing through Coyote Creek and on sediment deposition in Bothin Marsh.

Experience with Eco-Moorings

Anchor QEA has assisted the City of Long Beach with restoration of Colorado Lagoon since 2013. The lagoon provides 0.4 acres of eelgrass habitat. Recently, Anchor QEA oversaw the design, planning, and installation of six eco-moorings in the lagoon to provide anchoring for six small floating barges supporting seasonal Christmas tree displays within the lagoon. The Christmas tree floats have square footprints with very light frames on which lights are strung in the shape of a cone, giving the appearance of Christmas trees at night. Prior to the use of eco-moorings, the City used concrete anchor blocks to anchor the floats in place, but the anchor blocks would damage the bottom habitat by crushing the eelgrass within the footprint and dragging the anchor chains along the bottom of the lagoon. The use of eco-moorings was identified as an acceptable solution to involved regulatory agencies and the City because they would minimize the damage to the sensitive bottom habitat and still maintain the functionality of the anchorage within the lagoon. The City successfully contracted with a local contractor to supply and install the eco-mooring anchors in 2017, and they have been functioning exactly as planned since that time.

PROPOSED APPROACH

This section presents the Anchor QEA team's proposed schedule for and approach to completing the four tasks identified in the RFP.



1 Development of Mooring Plan

Objective: *Collect data to prepare the mooring plan for the project*

An approximately 60-acre area has been identified in Richardson's Bay for vessel anchorage based on analysis of eelgrass bed locations, water depths, wave heights, and proximity to dinghy landings. An area of this size should be more than sufficient for mooring 20 vessels with lengths ranging from 35 to 50 feet. The portions of the Anchorage Area closer to dinghy docks in Sausalito and farther away from the confluence with the San Francisco Bay would be preferred for access and shelter reasons, respectively. Therefore, Anchor QEA will analyze and provide recommendations of the vessel sizes and mix for the Anchorage Area.

We will then review the different types of anchor systems described in the RBRA Mooring Feasibility and Planning Study (RBRA Mooring Study) as well as real-world analysis presented in a 2014 study prepared by the Gold Coast Waterways Authority. Different types of anchors and moorings, namely chain and elastics hawsers like Seaflex, require different spacing and present varying impacts to the layout and bay bottom. In addition to single, double, and triple point bottom anchors, the vessels can

have single (bow) or double (bow and stern) moorings. The latter allows for less vessel movement, which reduces the area needed per boat. However, double moorings may not be appropriate here based on prevailing wind and other weather conditions. This will be included in our analysis. Other products on the market attempt to further constrain movement and even increase the number of vessels that are moored in the typical space for one boat. We propose to take what was presented in the RBRA Mooring Study and further analyze these alternative mooring methods to determine which option or combination of options achieves the dual goal of providing moorage for 20 vessels while protecting the bay bottom habitat and the EPZ. We will work collaboratively with Coastal Policy Solutions to develop mooring program concepts.

This analysis will include layout exhibits showing the extent of the moorings in up to five options in the Anchorage Area. Anchor QEA engineers and designers will also provide mooring mixes to show the size and quantity of vessels for each option. The goal is to provide moorings for 20 vessels meeting the desired mooring mix that is as compact of an area as possible. Rough-order-magnitude costs will be prepared for each option. We will submit these options to RBRA for preliminary review. To increase community support, we recommend RBRA consider presenting and obtaining public feedback on the mooring program options at a Board of Directors meeting, after which we will meet with RBRA staff to identify their preferred option. The preferred option will then be presented to the Board of Directors for approval. Once the preferred option is selected, we will prepare a revised exhibit of the preferred option per RBRA's comments and develop a GPS-based plan of the option.

Assumptions

This task assumes the following:

- Anchor QEA will rely on the 2019 bathymetric survey of Richardson's Bay performed in conjunction with an eelgrass survey. Based on the analysis of historical water depth change in the RBRA Mooring Feasibility and Planning Study, we do not expect that significant erosion or accretion of sediment would have occurred in the time since the bathymetric survey was performed, and therefore, impact to the design of the mooring system is not anticipated.
- We will prepare exhibits and rough-order-magnitude costs for up to five mooring field layouts in the designated Anchorage Area. We will prepare a revised exhibit of the preferred option per RBRA's comments and develop a GPS-based plan of the option.
- Anchor QEA will participate in two Board of Directors meetings for the project.

2 CEQA/NEPA Compliance

Objective: *Determine the CEQA/NEPA compliance requirements for the project and prepare documentation to obtain compliance*

Compliance with CEQA is required for all projects undertaken by or subject to approval by a local or state agency in California. Because RBRA is a public agency, compliance with CEQA is required. In order to determine the appropriate type of CEQA document, the Anchor QEA team will complete the steps following steps:

Project Description. Using the information generated in Task 1, we will prepare a project description for the project. The description of proposed construction activities and operational changes to occur at a given project site is referred to as the "project description" and is a critical part of the environmental review and permitting process, specifically because agency permitting decisions are made in light of project purpose and need statements and project descriptions. We will work with Coastal Policy Solutions to ensure the project description is incorporative of relevant context on project history and other RBRA initiatives underway in Richardson's Bay.

Project Description Requirements

- Include information reflective of an approximately 30% level of design; less detail may suffice if there is a general understanding of construction elements
- Describe construction activities, equipment, timing, and phasing
- Describe how the project will operate post-construction (e.g., maintenance needs)
- Include environmental impact avoidance and minimization best management practices

CEQA Exemptions. Using the project description, we will compare the project to the CEQA categorical exemptions listed in Article 19 of the CEQA Guidelines. Based on a preliminary understanding of the project, we believe that it may be exempt from CEQA in accordance with CEQA Guidelines Section 15301 and/or 15304. If the project meets the criteria for a CEQA categorical exemption, we will prepare a CEQA exemption support memorandum to describe the type of CEQA exemption(s) relevant to the project; the project description; a discussion of the project's environmental impacts in accordance with the requirements noted in the CEQA exemption; and a discussion of the project's impacts relative to the exceptions to all categorical exemptions (CEQA Guidelines Section 15300.2). We will prepare a draft version of the CEQA exemption support memorandum and exemption form for review by RBRA, revise the documents in response to comments received, and prepare final versions for filing with the State Clearinghouse and Marin County Clerk.

IS/MND. If the project is determined not to be exempt from CEQA, then preparation of an IS/MND is required. In that case, Anchor QEA will prepare an IS/MND inclusive of the following sections:

- Introduction, including information on the CEQA review process and on responsible and trustee agencies
- Project Description, including information on the project location, objectives, construction details, and operational conditions
- Environmental Checklist, including evaluations of potential impacts related to the following CEQA resources areas: aesthetics, agriculture and forestry resources, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, tribal cultural resources, utilities and service systems, and wildfire. This section would describe the existing setting, potential impacts, and mitigation measures (if needed) that could be implemented to reduce the project's potential impacts on the environment.

We will prepare an administrative draft version of the Draft IS/MND for review by RBRA, revise the document in response to comments received, and prepare a final version of the Draft IS/MND for public review. Once complete, Anchor QEA will provide the Draft IS/MND to the State Clearinghouse, Marin County Clerk, CEQA responsible and trustee agencies, and RBRA's CEQA distribution list. After addressing public comments on the Draft IS/MND, we will prepare an administrative draft version of the Final IS/MND for review by RBRA, revise the document in response to comments received, and prepare a final version of the Final IS/MND. Anchor QEA will prepare the Mitigation Monitoring and Reporting Program for RBRA's use and prepare the Notice of Determination for signature by RBRA. We will also be available to file the Notice of Determination with the State Clearinghouse and Marin County Clerk. We have assumed that RBRA will pay all CEQA permit filing fees.

If the IS/MND indicates that the project will result in significant environmental impacts after incorporating mitigation measures, preparation of an EIR is required. Significant residual impacts are not expected as a result of the project in that it is located away from sensitive habitat, so long-term mooring in the Anchorage Area represents an improvement in habitat protection as compared to existing conditions, in-water construction will presumably occur during the approved in-water work window (June 1 through November 30 annually), and the construction duration is expected to be relatively short and thereby avoid significant transportation, air quality, or recreational impacts.

Public Meetings. Anchor QEA and Coastal Policy Solutions will be available to attend two RBRA Board meetings either associated with the CEQA process or for other reasons deemed appropriate by RBRA.

NEPA. The project is subject to USACE permitting, but as described under Task 3, it is expected to be permitted under a Nationwide Permit. Therefore, we do not expect that the USACE would prepare project-specific NEPA documentation for the project due to the expected permitting requirements. We also expect the project to be subject to a USCG permit as outlined under Task 3; however, USCG typically considers moorings like this to be categorically excluded activities under NEPA. Unless another federal agency is involved in funding the project, the Anchor QEA team does not expect the preparation of NEPA documentation to be required.

Assumptions

This task assumes the following:

- Anchor QEA will develop draft and final versions of the project description for use in Tasks 2 and 3.
- We expect the project may be exempt from CEQA in accordance with CEQA Guidelines Section 15301 and/or 15304. Assuming it is, draft and final versions of a CEQA exemption support memorandum and supporting documentation will be prepared.
- If the project is not CEQA-exempt, the Anchor QEA team will prepare an IS/MND. Draft and final versions of the Draft IS/MND, Final IS/MND, and supporting documentation will be prepared. No quantitative technical analyses are assumed to be required to support the IS/MND. Because an IS/MND is not expected to be required, costs associated with the IS/MND are provided separate to those of the base costs for Task 2.
- RBRA will pay any CEQA filing fees.
- The project will not require preparation of NEPA documentation.

3 Entitlements

Objective: *Prepare complete applications for required federal and state permits and obtain necessary permits for the project*

We expect the following with regard to project permits and approvals:

- The project is likely to require a Nationwide Permit 9 (for structures, buoys, floats, and other devices placed within anchorage or fleeting areas to facilitate moorage of vessels where such areas have been established for that purpose) from the USACE. Nationwide permits are general permits issued by the USACE on a national basis that are designed to streamline permitting for projects with minimal impact to aquatic resources. Projects with larger aquatic resources impacts require Individual Permits, which we do not expect will be required for this project.
- The project may be covered under existing programmatic ESA Section 7 consultations between the USACE and the Services (NMFS and USFWS), a streamlined consultation process. Projects with the potential to adversely affect endangered species require formal ESA Section 7 consultation for which the Services issue a Biological Opinion, which we do not expect will be required for this project.
- If the USACE issues Nationwide Permit 9 for the project, it is expected that the San Francisco Bay RWQCB will cover the project under the 2021 State Water Board General Order for the USACE's Nationwide Permits (Order No. WQ 2021-0048-DWQ). Obtaining coverage under General Orders are another streamlined permitting process. Projects with potential to impact water quality require issuance of a 401 Water Quality Certification, which we do not expect to be required for the project.
- The project is likely to require a Private Aids to Navigation Permit from the USCG. This is a relatively straightforward process focused largely on the characteristics of the proposed moorings. Requirements for the buoys, dayboards, and lights will be provided by local USCG District office, and the design will be prepared in Task 4.
- Based on a review of available information, it appears that the tidelands in the Anchorage Area may be owned by Marin County, but this will need to be confirmed after project kick-off. If the tidelands in the Anchorage Area are owned by the California State Lands Commission (CSLC), the project may require a tidelands lease or amendment to an existing lease.
- The project is not expected to require a permit from BCDC unless RBRA desires to continue use of the mooring field past October 15, 2026. The Settlement Agreement allows for 15 to 20 moorings to be installed and used up until that time, and RBRA does not expect to make a decision on the long-term use of the mooring field until mid-2025 at the earliest.
- The project is not expected to require permits from CDFW, including a Streambed Alteration Agreement and Incidental Take Permit. Richardson's Bay is not a lake or stream and is not subject to CDFW jurisdiction under Section 1600 of the California Fish and Game Code. The project is not expected to result in the take of any state endangered species, and therefore incidental take coverage will not be needed.

To simplify permitting, we recommend that the project comply with the in-water work window, meaning construction must start after June 1, 2022, and end by November 30, 2022. Complying with the in-water work window will streamline the agency approval process, resulting in faster turnaround times for permits. Because the project will need to secure permits in approximately 5 months, Anchor QEA recommends conducting a pre-application meeting with agency staff so that they are

aware of the project timing and details early on and so that the appropriate permitting pathways can be confirmed by agency staff.

After the pre-application meeting, Anchor QEA will prepare permit applications. The permit application package will consist of the completed versions of the most recent agency application forms, a supplemental document common to all applications that provides additional information on the project purpose, construction details, and how water quality impacts will be avoided during construction. We will also prepare a Biological Assessment for the USACE's use in ESA Section 7 consultations as part of the permit application package. We will submit draft versions of the permit application packages to RBRA for review, revise the documents in response to comments received, and prepare a final versions for agency submittal.

After submittal of permit applications to agencies, Anchor QEA will remain in close contact with all involved agency staff, checking in on a weekly basis on review progress. If there are any questions, we will recommend a conference call versus emails or letters to expedite information exchange. These steps, in addition to the pre-application meeting, window compliance, submitting applications with the necessary information to be considered complete, and treating agency staff with respect, have worked well for us in securing permits with reasonable conditions under tight time frames. We will follow the process that we have seen success with so often for this project.

Assumptions

This task assumes the following:

- We will prepare draft and final versions of the permit application packages, including completed forms for the USACE, RWQCB, and USCG and the Biological Assessment.
- Because a CSLC lease is not expected to be required, costs associated with a CSLC lease application and coordination with CSLC are provided separate to those of the base costs for Task 3.
- Anchor QEA will participate in one pre-application agency meeting and up to five additional agency meetings for the project.
- RBRA will pay all permit application and issuance fees.

4 Construction Documents and Oversight

Objective: *Develop construction documents and bid package, issue an Invitation to Bid for the provision and installation of moorings, and provide construction oversight.*

Anchor QEA will prepare a 60% design level package upon initial review by the permitting agencies of the preferred mooring field layout and proposed mooring system. The design effort for the 60% design consists of structural engineering to determine the governing load generated by environmental forces on the vessels. We will evaluate wind, wave, and current forces on the vessels and determine the load that should be used to design the embedded anchors and mooring lines. Typically, wind loads govern, but given the exposure of the site and prior wave modeling, wave loads might come into play, depending on the design storm event. The 60% design package will consist of plans, draft specifications, and a more detailed cost estimate from the one provided in Task 1 for the preferred option. This package will be submitted to RBRA for review and comment. Anchor QEA will meet with RBRA to discuss the design package and RBRA's comments.

At the end of the 60% design, the structural calculations are typically close to completion. However, the details and specifications still require further refinement before submission to the local building department jurisdiction. To meet the construction schedule, Anchor QEA will move onto 100% design upon submitting the 60% design deliverable to RBRA. We will address RBRA's comments on the 60% design level package and incorporate those revisions into a stamped and signed 100% design level package consisting of plans, final technical specifications, bid form, structural calculations, and an updated estimate of construction costs. This will be submitted to RBRA for review as well as to the local jurisdiction performing the building plan check review. Although we would typically prepare the bid package and support RBRA with issuance of an Invitation to Bid upon receipt of a permitted package, we would recommend that Invitation to Bid be

performed prior to receipt of building permits and possibly prior to finishing the 100% design level package to meet the construction schedule.

Upon issuance of Notice to Proceed by RBRA, the Anchor QEA team will participate in a pre-construction meeting to discuss critical project elements such as project staging plan, schedule, agency notifications, turbidity curtains, and expectations. Our team will provide construction oversight and support by reviewing and responding to shop drawing and product data submittals, responding to requests for information, and evaluating changes in field conditions. Although not acting as the daily on-site construction manager in accordance with California law, Anchor QEA will monitor construction progress and adherence to the construction documents by attending construction progress meetings and performing as-needed site visits. We will prepare a punch list based on visible buoys and other markers and a review of a dive survey video. As-built plans with the installed locations of all mooring anchors and navigation markers will be prepared based on the contractor redlines and final survey for submittal to RBRA and USCG.

Assumptions

This task assumes the following:

- For the Anchorage Area, the wave modeling performed by Our Coast Our Future show 1-year maximum wave heights of up to 2 feet and 20-year maximum wave heights of between 2 and 4 feet.
- Anchor QEA will use wind design wind velocity and calculated uniform load based on ASCE 7.
- No geotechnical investigation or assessment is proposed for this scope of work. Anchor QEA requests that any geotechnical studies performed for the adjacent Sausalito Yacht Harbor or Pelican Yacht Harbor be provided for review for bottom substrate information.
- The Anchorage Area location appears to be outside of the City of Sausalito's jurisdiction but overlapping both the County of Marin and the City of Belvedere. Ideally, only a single jurisdiction would review the plan check set. A determination will need to be made regarding which jurisdiction will perform the building review.
- The contractor will provide a dive video showing the installed anchors for Anchor QEA's review.
- RBRA will pay all plan check fees.

ADDITIONAL REQUIRED INFORMATION

Professional Services Sample Agreement Review

The Anchor QEA team's comments on RBRA's Professional Services Sample Agreement are detailed below. Requested deletions are ~~stricken~~; additions are underlined, and general comments are *italicized*.

6. INSURANCE:
Errors and Omissions, Professional Liability or Malpractice Insurance.
Contractor may be required to carry errors and omissions, professional liability or malpractice insurance.

All policies shall remain in force through the life of this Contract and (except Professional Liability and Pollution Contractor's Pollution Liability) shall be payable on a "per occurrence" basis unless Agency specifically consents to a "claims made" basis.

10. LICENSING AND PERMITS: *Anchor QEA requests clarification that RBRA would be responsible for permit application and CEQA filing fees as dictated by the corresponding cost proposal assumptions.*

11. BOOKS OF RECORD AND AUDIT PROVISION:
Any audit may be conducted on Contractor's premises or, at Agency's option, Contractor shall provide all books and records within ~~a maximum of~~ fifteen (15) business days upon receipt of written notice from Agency, or other time as mutually agreed to by the parties. Contractor shall refund any monies erroneously charged.

12. WORK PRODUCT/PRE-EXISTING WORK PRODUCT OF CONTRACTOR:
To the extent Contractor incorporates into the work product any pre-existing work product owned by Contractor, Agency hereby acknowledges and agrees that ownership of such work product shall not be transferred to the Agency. Rather Contractor hereby grants the Agency a non-exclusive, royalty-free right to use, publish, reproduce, copy and make derivative use of the work product in perpetuity and may grant others grant others limited rights to use the work product.

Any reuse or modification of such documents without prior written approval or adaption by Contractor will be at the Agency's sole risk and without liability or legal exposure to the Contractor.

Notwithstanding anything in this Agreement to the contrary, any numerical model codes, software, methodology, logic, details, design elements and/or processes, developed by or owned by Contractor prior to, independent of, or in connection with the work performed under this Agreement, shall remain in Contractor's sole ownership.

13. TERMINATION:

A. The Contractor shall be excused for underperformance or failure to perform services herein if such performance of services is inadvisable, impractical, or prevented by acts of God, riot, fire, flood, acts of war, insurrection, accident, order of any court, strikes, labor disputes, pandemics, epidemics, or other forces over which the Contractor has no control. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform.

19. INDEMNIFICATION:
Contractor agrees to indemnify, ~~defend,~~ and hold Agency, its employees, officers, and agents, harmless from any and all liabilities including, but not limited to, litigation costs and reasonable attorney's fees arising from any and all claims and losses to anyone who may be injured or damaged by reason of Contractor's negligence, recklessness or willful misconduct in the performance of this Contract.

Appendix A: Resumes

Katie Chamberlin

Principal Planner

Katie Chamberlin has more than 19 years of experience specializing in local, state, and federal environmental compliance for waterfront development, sediment management, and restoration projects. She has managed complex Environmental Impact Statements (EISs) and Environmental Impact Reports (EIRs) for Northern California projects undertaken by the National Park Service (NPS), U.S. Army Corps of Engineers (USACE), and the Port of Stockton, among others. She has significant experience in developing permitting and mitigation strategies and obtaining state and federal regulatory permits for development and maintenance projects undertaken by marinas, ports, and water resource managers throughout California. Katie formerly worked as a Federal Project Manager for the Washington State Department of Ecology, where she reviewed projects for compliance with Section 401 of the Clean Water Act.

Education

MMA, Marine Affairs, University of Washington, 2004

BA, International Studies, University of Washington, 2002

Project Experience

Alcatraz Ferry Embarkation EIS and IS/MND

National Park Service and Port of San Francisco
San Francisco, California

Katie led the NPS's National Environmental Policy Act review, early public and agency scoping, and public outreach for this effort to evaluate and identify a new embarkation site for principal ferry service between the northern San Francisco waterfront and Alcatraz Island. She managed both the Draft EIS and Final EIS, which was released in January 2017 and identified the preferred alternative's location at Pier 31½ along the Embarcadero. Katie went on to lead the California Environmental Quality Act (CEQA) review for the Port of San Francisco's issuance of a 50-year lease to the NPS for construction and operation of the site at Pier 31½. The Initial Study/Mitigated Negative Declaration (IS/MND) for this project was successfully completed in early 2018, and federal and state regulatory permits were obtained soon thereafter.

Greenwood Bay Homeowners Association Fishing Pier and Pedestrian Bridge Repair Regulatory Permitting

Greenwood Bay Homeowners Association
Tiburon, California

Ms. Chamberlin led regulatory permitting efforts for repairs to a public fishing pier and pedestrian bridge in Richardson's Bay. The piles supporting the existing structures were failing, and repair was required to remain structural integrity. She prepared permit application materials for the project that supported the agencies considering the maintenance project to be CEQA-exempt. Permits from San Francisco Bay Conservation and Development Commission (BCDC), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and USACE were successfully obtained in just 6 months, allowing the repairs to be completed in 2021.

Marin County Structure Elevation Project

Greenbrae Boardwalk Homeowners
Greenbrae, California

Ms. Chamberlin led permitting efforts for a Federal Emergency Management Agency (FEMA) grant-funded effort involving elevating the foundations of five flood-prone residential homes along Greenbrae Boardwalk on the San Francisco Bay near Corte Madera. She prepared permit application materials and coordinated closely

Project Experience

	with CDFW, RWQCB, and USACE to secure all permits in just 5 months. Construction is planned for 2022.
On-Call CEQA and Permitting Services *Port of Stockton* *Stockton, California*	Since 2013, Ms. Chamberlin has been the program manager overseeing the preparation and successful completion of CEQA documentation, regulatory permitting, negotiation of mitigation requirements, and other environmental services for the Port of Stockton. In this role, she has overseen the development of more than 40 CEQA documents and permitting efforts for the Port, including securing federal and state permits for a new police dock in just 3 months and obtaining regulatory approval to conduct annual maintenance dredging and other in-water work over a 5-month window (as compared to the historical 4-month window). She is directly responsible for the work prepared by more than 30 people from five firms and works closely with Port environmental staff on compliance strategies.
Contra Costa Water District Mallard Slough Intake Channel Maintenance Dredging Regulatory Permitting *Contra Costa Water District* *Contra Costa County, California*	Ms. Chamberlin led the federal and state regulatory permitting updates required for the Contra Costa Water District's maintenance dredging of the Mallard Slough Intake Channel. Permits for the maintenance dredging effort were initially obtained in 2010, but dredging did not take place at that time. The USACE and RWQCB permits required amendments in 2021 to account for changes in the design. She led outreach efforts with both agencies and provided the information needed to obtain an amended 401 Water Quality Certification, amended prior U.S. Fish and Wildlife Service (USFWS) Biological Opinion, and amended Section 404 Permit. Dredging was successfully completed in 2021.
San Francisco Bay to Stockton Navigation Improvements *U.S. Army Corps of Engineers* *San Francisco Bay Area, California*	Ms. Chamberlin co-managed preparation of the joint EIS/EIR for the San Francisco Bay to Stockton Navigation Improvement Study. The EIS/EIR programmatically assessed a multipurpose program involving channel deepening and ecosystem restoration between the Bay and the Port of Stockton. She oversaw staff from more than five firms in developing the Draft EIS/EIR and supporting technical analyses. The Draft EIS/EIR was placed on hold due to funding issues. Working under a separate contract with the Port, she led the non-federal sponsor group's efforts to evaluate the benefits of making the program multipurpose and the impacts of the first phase of the program on topics including sensitive species, habitat, and salinity.
San Francisco Police Department Marine Unit Dock Replacement Dock Permitting *Port of San Francisco* *San Francisco, California*	Ms. Chamberlin led efforts to amend federal and state regulatory permits previously issued for replacement of the San Francisco Police Department's Marine Unit dock. Prior permits assumed construction would occur in the standard in-water work window (June to November), but grant funding required that project construction be complete by June 1, necessitating permit modifications. She worked closely with USACE, National Marine Fisheries Service (NMFS), USFWS, RWQCB, and BCDC to secure permit amendments that allowed the Port to complete construction in accordannce with the grant requirements.

Rebecca Schwartz Lesberg

rebecca@coastalpolicysolutions.com
310-433-8410

PROFILE

I work at the intersection of science and policy to protect California's sensitive habitats and natural resources, understand the ecology of wildlife and their environment, and integrate habitat restoration with community engagement and landscape-scale conservation planning.

RELEVANT WORK EXPERIENCE

Coastal Policy Solutions; San Francisco Bay Area (2017-present)
President/Founder

- Consulting firm focused on protecting California's habitats and natural resources for future generations by working with government and non-profit partners to solve complex conservation problems
- Current and Past Clients include:
    - **Richardson's Bay Regional Agency (2020-present)**: Project lead for developing and implementing the Agency's Eelgrass Management Plan
    - **San Francisco Bay Joint Venture (2020-2021):** Lead writer for policy-related content in the SFBJV's Implementation Plan Revision
    - **Audubon CA (2017):** Coastal Policy Specialist on work to improve conditions for eelgrass, herring, and waterbirds in San Francisco Bay

National Audubon Society; Tiburon, CA (2017-2020)
San Francisco Bay Program Director

- Oversaw conservation program to advance protections for priority habitat in Richardson's Bay through negotiations with diverse stakeholders (law enforcement, elected officials, vulnerable community members) to reduce damage from illegally anchored/moored vessels
- Developed spatial analysis identifying overlap between socially vulnerable communities, sea level rise, and priority bird habitat to inform future conservation actions
- Supervised program staff, community volunteers, and project contractors for implementation of large scale land management and habitat restoration efforts at Aramburu Island Enhancement Project and Sonoma Creek Salt Marsh Enhancement Project
- Managed operational, program, and project budgets, including purchasing, invoicing, contracting; identified and pursued funding opportunities through state, federal, and foundation grant programs; developed communications materials for internal and external partners

San Diego Audubon Society; San Diego, CA (2012-2017)
Director of Conservation (2016-2017)

- Led all aspects of ReWild Mission Bay, an effort to protect and restore wetland habitat in partnership with CA Coastal Conservancy and US Fish and Wildlife Service, including stakeholder engagement, land management plan development, legal analyses, and contractor oversight
- Oversaw the chapter's environmental policy efforts, focused on natural resources management and coastal land use to protect Southern California wildlife
- Implemented habitat restoration program, including supervision of staff and community science volunteers in conducting invasive control, native plant revegetation, and predator monitoring

- Directed conservation communications needs, including writing feature articles for the chapter's monthly newsletter, creating content for social media, and press relations

Conservation Program Manager (2012-2016)

- Adaptively managed coastal dune and salt marsh habitat in support of federally-listed endangered sea/shorebirds through community based restoration (>2,500 volunteer hours/year)
- Coordinated with Education Staff in planning and implementing education programs focused on ecological principles and outdoor education in backcountry and canyon habitats
- Created "Conservation Team Leaders" volunteer program (recruitment, field protocol development, training) to increase on-the-ground capacity, coordinated restoration events with >150 attendees, and expanded program from 30 to over 600 volunteers in under three years

AMEC Foster Wheeler Environmental Consulting; San Diego, CA (2012) - *Field Biologist*

- Conducted protocol surveys of federally-endangered Quino checkerspot butterfly (*Euphydryas editha quino*), including identifying co-occurring species in eastern San Diego County

UC San Diego Outback Adventures; San Diego, CA (2010-2012) - *Lead Facilitator*

- Designed outdoor education and leadership programs for corporate, college, and youth groups consisting of 5-100 participants, including ropes course and "alpine tower" initiatives

EDUCATION

Master of Science in Marine Science — University of San Diego

Thesis: Historical ecology of the San Diego sport fishery- Catch composition, species trends, and fishing effort from 1959-2011
GPA: 3.92

Bachelor of Science — University of California, San Diego

Major: Ecology, Behavior, and Evolution (Biology); Minor: Environmental Studies
Honors: Provost Honors (2004, 2007)

SELECT AWARDS & ASSOCIATIONS

Grant Funding - Served as lead or co-lead in securing over $2.5 million in conservation funding (grants, donations, etc) since 2010. Funders include National Oceanic and Atmospheric Administration, California Ocean Protection Council, CA State Coastal Conservancy, Marin Community Foundation, San Diego Association of Governments, and more

President's Volunteer Service Award, 2014 - Awarded by U.S. President Barack Obama for efforts leading volunteers in the protection of San Diego's wildlife

Vallejo Watershed Alliance- Alliance partner (2021-present)

UC Santa Cruz Seymour Marine Discovery Center - Advisory Board member (2021-present)

San Francisco Bay Restoration Authority- Citizen's Advisory Committee (2019-present)

San Francisco Bay Joint Venture Management Board- Currently serve as Vice Chair of the Management Board and Chair of the Policy Committee (2017-present)

San Diego Audubon - Wetlands Working Group founding member (2017-present)

PADI- Advanced SCUBA diver

FOOSH Improv Comedy Team- Board Member (2005-2008), Alumni Member (present)

Fred Massabki, PE, PMP

Lead Engineer

Fred Massabki has more than 16 years of experience as a project engineer and manager with more than 13 years supporting public agencies with waterfront facility and structure design and associated infrastructure. His experience includes design for waterfront facilities and marine structures, including recreational marinas and mooring fields. He has assumed lead roles on several projects working directly with clients, local governments, and various project permitting agencies. Fred has assisted clients with obtaining entitlement permits and is typically involved with projects from concept planning through construction. He is currently working on projects for the Bay Area Council; Golden Gate Bridge, Highway and Transportation District; and County of San Mateo and has worked on various projects for the National Park Service in the San Francisco Bay Area.

Education

MS, Civil Engineering, University of California, Los Angeles, 2004

BS, Mechanical Engineering, University of Virginia, 2003

Licenses/Certifications

Civil Engineer (PE), California, No. 70423

Project Management Professional (PMP), Project Management Institute, No. 1936952, 2016

Project Experience

Alma Dock Replacement

National Park Service
San Francisco, California

Fred was the lead marine engineer for the replacement of the dock facilities used to berth the *Alma*, an 1891 National Historic Landmark scow schooner located at the San Francisco Maritime National Historical Park. He led the design of and prepared the specifications for the 80-foot-long by 16-foot-wide concrete floating dock and associated guide piles and vessel access system. Fred also prepared the government estimates of construction costs and is providing assistance during bid and construction.

Newport Harbor West Anchorage Study

City of Newport Beach
Newport Beach, California

Fred performed a viability assessment to create a new mooring field in a portion of Newport Harbor that historically has been used as an oversized turning basin. He determined the design diameter of the turning basin based on industry standards and concluded that a new 3.3-acre mooring field could safely be created within the water space. This new West Anchorage would maintain safe back-up distances for adjacent docks, provide a 500-foot-diameter turning basin, and maintain the 200-foot-wide main navigation channel. The results of the study have been submitted to the District office of the U.S. Coast Guard for further review and approval.

Larkspur Ferry Terminal Berth and Channel Maintenance Dredging Design, Pile Design and Permit Support Services

Golden Gate Bridge, Highway and Transportation District
San Francisco, California

Fred is the lead waterfront engineer managing the design of repairs to existing piles and the addition of new berthing piles in support of a maintenance dredging project. His responsibilities include management of the pile inspection subconsultant and coordination with the geotechnical team, dredging project manager, and client. He is preparing the technical specifications for the repairs and new piles.

Project Experience

Klamath Pier 9 Mooring Project
Bay Area Council, Inc.
San Francisco, California

Fred is the lead waterfront engineer providing design support and management for the relocation of the historic *Klamath* steamboat ferry vessel to its new home in San Francisco, where it will serve as the Bay Area Council's office. Fred's responsibilities have included coordination with other engineers employed by the Bay Area Council, coordination with the contractor, and management of the design of vessel support piles and vessel retrofit measures to support installation of the vessel-mounted pile guides.

Clayton Resiliency and Economic Development Projects
Village of Clayton
Clayton, New York

Fred is leading the waterfront design effort to install a new river bottom anchored, floating wave attenuator. This project is part of multiple projects at multiple locations to repair storm damages and provide shoreline protection to help mitigate future storm-generated high water-, wind-, and wave-induced damage. His role has included working with the structural and coastal engineers to evaluate potential attenuator anchoring methods to determine the best choice based on site conditions that include a 40-foot water depth and river bottom soil conditions (thin layer of mud over bedrock). Anchorage evaluation included heavy chain anchors, helical anchors, and a Seaflex hawser mooring system and concrete anchor blocks. Actual design involves engineering and construction document preparation for the Seaflex system. Fred prepared the wave attenuator and anchoring system specifications and prepared wind load calculations for a replacement pier.

Marina del Rey Harbor Public Safety Dock Replacement
County of Los Angeles
Marina del Rey, California

Fred was the lead marine engineer to replace the 1960s-era undersized waterside facilities supporting the Los Angeles County Sheriff and Fire Department Lifeguard Division marine safety operations. New facilities include floating docks with on-dock buildings and storage enclosures and berthing space for 14 vessels.

Scott Betancourt, PE, SE

Structural Engineer

Scott Betancourt is a California-registered structural and civil engineer with more than 32 years of experience in structural analysis and design of marinas and vessel mooring facilities. His experience includes design of floating wood and concrete docks, support and guide piles, bulkheads, coastal piers, and mooring anchors. He has performed structural engineering on the Alma Schooner dock project, Larkspur ferry terminal, and Clayton Village wave attenuator. Scott has performed assessments and prepared engineering analyses and designs for retrofitting more than 1,000 existing structures to provide additional loading capacity and seismic resistance.

Education

BS, Civil Engineering, San Jose State University, 1987

Licenses/Certifications

Civil Engineer (PE), California, No. 50024; Nevada, No. 16204, Arizona, No. 41361

Structural Engineer (SE), California, No. 4296

Project Experience

Alma Dock Replacement

National Park Service
San Francisco, California

Scott was the structural engineer for removal of existing and replacement of dock facilities used to berth the *Alma*, an 1891 National Historic Landmark scow schooner located at the San Francisco Maritime National Historical Park. He prepared calculations and design for new 18-inch diameter steel guide piles with 22-inch-diameter high-density polyethylene (HDPE) sleeves and fendering for a pile-supported, 80-foot-long by 16-foot-wide concrete floating dock.

Larkspur Ferry Terminal Berth and Channel Maintenance Dredging Design, Pile Design and Permit Support Services

Golden Gate Bridge, Highway and Transportation District
San Francisco, California

Scott is the engineer of record providing structural engineering analysis and design for design of new berthing piles at the Larkspur ferry terminal. His responsibilities include determining the pile design criteria based on structural loading requirements and geotechnical conditions and preparing the pile-related design package for the project.

Klamath Pier 9 Mooring Project

Bay Area Council, Inc.
San Francisco, California

Scott is the structural engineer providing engineering analysis and design to support the relocation of the historic *Klamath* steamboat ferry vessel to its new home in San Francisco, where it will serve as the Bay Area Council's office. Scott's responsibilities have included design of vessel mooring piles, pile guides, and vessel retrofit measures to support installation of the vessel-mounted pile guides.

Clayton Resiliency and Economic Development Projects

Village of Clayton
Clayton, New York

Scott is providing structural engineering analysis and design and installation of a new river bottom anchored, floating wave attenuator. This project is part of multiple projects at multiple locations in the Village of Clayton to repair storm damage and provide shoreline protection to help mitigate future storm-generated high water-, wind-, and wave-induced damage. His role has included evaluation of potential attenuator anchoring methods to determine the best choice based on site conditions that

Project Experience

include a 40-foot water depth and river bottom soil conditions (thin layer of mud over bedrock). Anchorage evaluation included heavy chain anchors, helical anchors, and a Seaflex hawser mooring system and concrete anchor blocks. Actual design involves engineering and construction document preparation for the Seaflex system.

Channel Road Marina

Lido Peninsula Company
Newport Beach, California

Scott was the structural engineer for the complete replacement of an existing 50-year-old marina with a new modern facility. His role included preparation of calculations and design for new concrete guide piles for the dock system and a concrete gangway platform abutment.

Elizabeth Greene

Senior Managing Scientist

Elizabeth Greene has 21 years of experience as a scientist with a strong emphasis in California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) compliance, regulatory permitting, and working in coordination with engineering design teams to develop projects from concept-level through to construction. She has extensive experience working on shoreline infrastructure projects along the entire West Coast. For these projects, she has helped clients in Washington, Oregon, and California develop strategies to address regulatory requirements associated with infrastructure and cleanup projects. Her responsibilities include strategy development and implementation of permitting and planning activities, biological field studies and analyses, preparation of biological assessments, management and implementation of sediment and water quality field sampling, and monitoring activities during construction.

Her project experience has focused extensively on the evaluation of impacts on aquatic resources, evaluation and development of mitigation activities, complex field sampling and monitoring activities, data evaluation and interpretation, report writing, and coordination with regulatory agency personnel. She has managed dozens of permitting and environmental compliance projects in Oregon, Washington, and California.

Education

MS, Marine Resource Management, Oregon State University, 2001

BA, Biology, Colby College, 1994

Certifications

OSHA HAZWOPER 40-hour certified

Memberships

American Fisheries Society

Salmonid Restoration Federation

Project Experience

Port of Stockton CEQA/NEPA and Environmental Permitting On-Call

Port of Stockton
Stockton, California

Elizabeth is the biological resources lead for CEQA/NEPA and endangered species act compliance lead for a variety of projects for the Port of Stockton, including infrastructure repair and replacement and development of dredge material placement sites projects. She is responsible for developing strategic approaches for the project and and overseeing the development of CEQA/NEPA documents and biological assessments. Typically, these projects have aggressive schedules that require creative solutions to environmental compliance and permitting.

Redwoods Rising Ecosystem Restoration Projects Joint NEPA/CEQA Review

Redwoods Rising
Humboldt and Del Norte Counties, California

Elizabeth was the co-project manager for two permitting and planning projects, and she was responsible for coordinating with Redwoods Rising and developing the planning and permitting documents for environmental compliance. Under the umbrella of Redwoods Rising, the California Department of Parks and Recreation (CDPR) and National Park Service (NPS) proposed to conduct restoration efforts through vegetation management, forest restoration, aquatic restoration, and road removal activities. On behalf of CDPR and NPS, Elizabeth led the preparation of a joint

Project Experience

	CEQA/NEPA document, achieved compliance within 12 months, and obtained permits for the projects on schedule.
Little Venice Island Dredged Material Placement and Habitat Restoration Project *Port of Stockton* *Stockton, California*	Elizabeth is the project manager for the design, permitting, and construction of this dredged material placement site and habitat restoration project. As the non-federal sponsor for the U.S. Army Corps of Engineer's (USACE's) operations and mainenance program, the Port of Stockton is required to identify, permit, prepare, and maintain new dredged material placement sites for use as part of the program.The Port identified Little Venice Island as a potential in-water placement site. The project has dual goals to provide a dedicated dredged material placement site that can be used for an extended period of time and to restore subsided island habitat so that the project is self-mitigating.
Harbor Island East Basin Sediment Remediation Project Environmental Compliance *Lockheed Martin Corporation* *San Diego, California*	Elizabeth leads the environmental compliance component of the Harbor Island East Basin Sediment Remediation Project. In this role she coordinated with the CEQA lead agency who prepared the environmental impact report (EIR) to provide information necessary to complete the EIR. She is currently the lead for obtaining permits from the San Diego Unified Port District, U.S. Army Corps of Engineers (USACE) Los Angeles District, and the San Diego Regional Water Quality Control Board. As permits are obtained, she is also responsible for compiling, organizing, and tracking permit conditions and managing compliance field teams.
Chehalis River Basin Flood Damage Reduction Project NEPA Environmental Impact Statement *USACE Portland District* *Chehalis Basin, Washington*	Elizabeth is the Fisheries Lead for NEPA compliance for this project, working for the USACE. She is responsible for coordinating and directing the fisheries modelers, developing the Aquatic Species and Habitat Discipline Report, and preparing the Aquatic Species and Habitat sections of the Environmental Impact Statement. The proposed action is to construct a flood retention facility with a temporary reservoir near the town of Pe Ell, Lewis County, Washington.
Crescent City Harbor DMMP and Environmental Assessment *USACE San Francisco District* *San Francisco, California*	This project consisted of preparing and updating the Dredged Material Management Plan (DMMP) and Environmental Assessment for Crescent City Harbor. The goal of the DMMP was to outline a viable 20-year plan for dredging and dredged material disposal for navigation dredging. Elizabeth reviewed draft documents and participated in public outreach meetings with USACE in Crescent City.
Environmental Compliance for the San Diego Shipyards Sediment Remediation Project *NASSCO* *San Diego, California*	Elizabeth managed the environmental compliance component of the San Diego Shipyards Sediment Remediation Project. Her role was to compile, organize, and track more than 400 permit conditions that applied to all phases of construction (i.e., pre-construction, during construction, and post-construction) and to manage compliance field teams. Key components of the environmental compliance program included avian, eelgrass, water quality, and sediment quality monitoring activities.

Lena DeSantis

Senior Managing Planner

Lena DeSantis is a senior managing environmental planner with more than 20 years of experience in applied environmental science and policy, with a focus on sustainability planning and permitting in the port and transportation sectors. She is well versed in the National Environmental Policy Act (NEPA) and state equivalencies such as the California Environmental Quality Act (CEQA); the Clean Water Act; and various state permitting procedures, including California, New York, and New Jersey. She has successfully managed complex NEPA/CEQA documents and has secured federal and state permits for a variety of waterfront development, remediation, and habitat restoration projects.

Prior to joining Anchor QEA, Lena was the Sustainability Initiatives Manager at the Port Authority of New York and New Jersey and worked with numerous federal and state agencies on Port Authority planning and regional land use projects. At the Port of Los Angeles, Lena led the group responsible for environmental project reviews and permitting. She led environmental analyses for multiple terminal development projects to support more than $1 billion of new sustainable port development. In both positions, she coordinated and led numerous public outreach initiatives to educate and gain consensus on a wide array of waterfront development planning issues, along with regulatory agencies, including the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency, and the National Marine Fisheries Service.

Education

MS, Environmental Health Science, University of California, Los Angeles (UCLA), 2002

BA, Biology, Wesleyan University, 1998

Marine Resource Management, School for Field Studies, 1996

Memberships and Training

Transportation Research Board Marine Environmental Committee, Member 2006 to 2018, Friend 2019 to present

Peconic Estuary Partnership, Technical Advisory Committee, Member

Project Experience

Port of Stockton Environmental Program

Port of Stockton
Stockton, California

Lena has provided environmental regulatory support to the Port of Stockton since 2015 on a variety of port development projects. Projects include environmental assessments and permitting for a variety of Port tenants, including a new on dock rail distribution system, new dredged material placement sites, a liquid bulk terminal expansion, various wharf redevelopment projects, and new distribution center.

San Francisco Bay to Stockton Navigation Improvement Study EIR/EIS

Port of Stockton
Stockton, California

Lena provided air and climate change support for the CEQA analysis to support to manage preparation of the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the San Francisco Bay to Stockton Navigation Improvement Study. The study involved phased deepening of the John F. Baldwin and Stockton Deep Water Ship Channels throughout the San Francisco Bay and Sacramento-San Joaquin Delta.

Project Experience

Alcatraz Ferry Embarkation EIS and Alcatraz Ferry Embarkation EIS and IS/MND

National Park Service
San Francisco, California

Lena provided NEPA support for the National Park Service's (NPS's) effort to design, evaluate, and identify a new embarkation site for principal ferry service between the northern San Francisco waterfront and Alcatraz Island, as well as CEQA support for the Port of San Francisco's lease to NPS to operate the embarkation facility. Lena managed the development of several technical sections of the EIS, including air quality and traffic, and managed these sections in the Initial Study/Mitigated Negative Declaration (IS/MND).

Redwoods Rising Ecosystem Restoration Projects Environmental Assessment

Redwoods Rising
Humboldt and Del Norte Counties, California

Redwoods Rising is a multi-stakeholder initiative focused on restoring forest and aquatic ecosystems throughout the Redwood National and State Parks in Humboldt and Del Norte counties, California. Lena provided noise, air quality, climate change, and traffic analysis to support joint NEPA/CEQA environmental documents (IS/MNDs and Environmental Assessments [EAs]) for restoration in the Greater Mill Creek and Greater Prairie Creek watersheds. Both projects involve vegetation management through forest restoration and tree plantings, road removal, and aquatic restoration.

Newport Harbor Deepening EIR/EA

City of Newport Beach
Newport Beach, California

Lena managed the CEQA and NEPA analysis to support and manage preparation of the EIR for dredging and construction of a confined aquatic disposal (CAD) facility in Newport Harbor. The project also includes development of an EA to support USACE dredging and extensive public coordination and outreach.

Baltimore Harbor CAD Planning Project Environmental Assessment

Maryland Environmental Services
Baltimore, Maryland

Lena led the development of an EA to support a pilot CAD site to help manage dredged materials in Baltimore Harbor. State regulations restrict the placement of any dredged material into the Chesapeake Bay's open waters, and material is currently placed in confined dredged material containment facilities, which are close to capacity. The EA studied an alternative strategy to facilitate agency coordination and permitting.

Port of Los Angles Environmental Program

Port of Los Angeles
San Pedro, California

As the Program Supervisor, Lena oversaw 15 major development projects integrating economic growth with sustainability and environmental issues, including air quality, health risk assessments, water quality, life-cycle analyses, transportation, land use and zoning, and socioeconomics. Lena coordinated with federal and state regulatory agencies involved in permitting and the CEQA/NEPA process. Examples of this work include the Berths 97-107 [China Shipping] Container Terminal EIS/EIR, which analyzed full development of container terminal with on-dock dock rail; the Channel Deepening Supplemental EIS/EIR, which deepened the Port's main channel and developed several fill areas for later Port development; and the San Pedro Waterfront EIS/EIR, which provided both project-specific and programmatic assessments of a master waterfront redevelopment plan.

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