Proposal for

Planning, Engineering and Design for the Water Storage Reliability Project

Hidden Valley Lake Community Services District

July 1, 2022

→ The Power of Commitment

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1. | Cover Letter

GHD
Physical Office Address
2235 Mercury Way, Suite 150
Santa Rosa, California 95407 USA
www.ghd.com

July 1, 2022

Proposal No. 12556063

Hidden Valley Lake Community Services District
19400 Hartmann Road
Hidden Valley Lake, CA 95467
Attn: Alyssa Gordon

RE: Planning, Engineering and Design for the Water Storage Reliability Project

Dear Ms. Gordon and Selection Committee,

With the Hidden Valley Lake Community Services District (District) Water Storage Reliability Project, the District is taking critical steps to ensure the operability and functionality of its water system by replacing an existing water tank with two new tanks. This project will deliver significant benefits to the District, its staff, and the community by creating a resilient water system that meets long-term District needs and provides better operational efficiency and resiliency. At GHD Inc. (GHD), our mission is "Together with our clients, to create lasting community benefits". This lasting community benefit is at the core of what this project is about for the residents of the District.

GHD and our team have the experience, expertise, and commitment to deliver a successful project, having worked on similar projects locally to replace and build storage tanks for the Big Rock Community Services District, Mendocino Unified School District, and County of Sonoma. GHD is pleased to submit this proposal for Planning, Engineering and Design for the District's Water Storage Reliability Project.

The GHD Team has a long history working with the District and understands your system, your community, and your needs. We bring:

- **The project management experience to get the project built and meet the grant compliance needs of your funding sources.** Our Project Manager, Michelle Davidson, has assisted numerous agencies in designing and implementing infrastructure projects that required compliance with complex and often multiple grant sources/requirements. She will be supported by Rebecca Crow, PE, who has helped local agencies obtain more than $110 Million in grant funding over the last 10 years.
- **The demonstrated experience of bringing concepts into reality.** At GHD, we have an experienced team that knows how to bring together the different disciplines, both internally and externally, to get things built. Our Project Manager is accustomed to working with our discipline leads on similar projects, such as Big Rock Community Services District and similar projects on the North Coast.

GHD Inc.
2235 Mercury Way, Suite 150
Santa Rosa, CA 95407 USA
T: 707.523.1010

- **A dedicated Project Manager who provides the District with a small firm feel but the technical resources to get the project built successfully.** A cornerstone of GHD's project management philosophy is dedication to client satisfaction. This approach is foundational to how we will deliver the District's project. Michelle is focused on open, frequent communication with the District and will be supported by our team of experts who have more than 230 year of technical experience delivering successful projects.
- **Our in-house management and professional technical staff with multidisciplinary backgrounds limits the need for subconsultant involvement.** We have the staff and ability to support project environmental, permitting, civil, electrical, structural and mechanical design needs as well as bid and construction phase support services.

We have studied the project carefully and reviewed all the materials included with the RFP. We have coordinated our proposed approach with our local subconsultant partners and performed market research to identify the best tank options to meet the County's requirements for this project.

We believe our tank design expertise, our experience working on similar projects and our familiarity with your standards from past projects and project requirements provides the District with a local consultant team uniquely qualified to deliver this project.

This proposal is firm for 90 days from the date of this proposal. GHD has the ability to perform successfully under the terms of the District's Professional Services Agreement, giving consideration to such matters as integrity, public policy compliance, record of past performance, and financial and technical resources (2 CFR 200.318(h)).

On behalf of GHD, thank you for this opportunity. We look forward to working with the District on this important project.

Sincerely,

Michelle Davidson

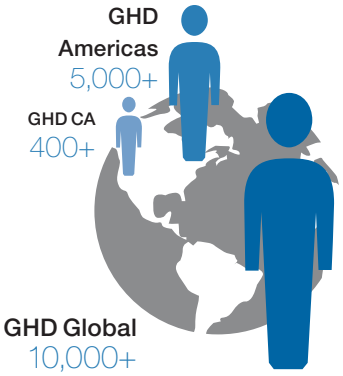
Michelle Davidson
Project Manager
+1.707.267.2255
Michelle.Davidson@ghd.com

Anne Lynch

Anne Lynch, PE *(Binding Signatory)*
Project Director
+1.916.245.4214
Anne.Lynch@ghd.com

2. | Experience and Project Examples

About GHD



GHD is one of the world's leading engineering, architecture, and environmental consulting companies. Established in 1928, GHD is employee-owned and employs 10,000+ staff across five continents and serves clients in the global markets of water, environment, energy and resources, property and buildings, and transportation. We have more than 4,000+ North American staff and have provided services to special districts and municipalities throughout California. GHD has more than 400 staff and professionals in California, with local offices in Santa Rosa, Sacramento, Concord, and San Francisco.

GHD ranks #28 in ENR Top 150 Global Design Firms in 2021

- **10 in International design firms US**
- **#06 in water**
- **#06 in sewer/waste**
- **#05 in hazardous waste**

135+ countries served
200+ offices worldwide
10k people
50+ service lines

The cornerstone of GHD's business is our client-service culture. A full 90 percent of our clients are municipal agencies or government entities, and approximately 75 percent of our work comes from repeat clients. This track record illustrates our in-depth knowledge of specialized engineering services and speaks to our clients' confidence in our ability to deliver a project from planning through implementation and monitoring. GHD believes in working with our clients to create lasting community benefit. We accomplish this by drawing on our global network of technical expertise across an array of disciplines including engineers, architects, planners, scientists, project managers, stakeholder engagement specialists, and economists. Bringing teams of experts together enable us to deliver sustainable outcomes for our clients and communities as well as use innovative forward-looking approaches to project delivery. Our team's structure is aimed at providing clients with the best talent to solve challenges through a connected and collaborative local team bolstered by these global resources.

GHD is committed to the success of all your projects and has the ability and capacity to perform the identified services. This will be achieved with GHD staff, along with hand-picked local subconsultants chosen specifically for their expertise and knowledge in their respective field.

Our Commitment to You

GHD is dedicated to understanding and helping our clients achieve their goals. We are committed to sustainable development, safety, and innovation. We care for the well-being of our people, assist communities in need and conduct business in an ethical and environmentally responsible manner.

The GHD Sustainability Policy provides strategic direction for how we integrate social, economic, and environmental issues into core business practices.

A member of the World Business Council for Sustainable Development, GHD operates under a Practice Quality Management System, ISO 9001:2015.

Project References

For decades, GHD has provided comprehensive water management planning and design services both locally and abroad. We have provided sample project experience similar in nature to your project focusing on our small system tank and water system experience.

Water Storage Tank Stabilization Project

Hiouchi, CA

Client
Big Rock Community Services District
105 Dunklee Lane
Hiouchi, CA 95531

Reference
Craig Bradford
T 801.686.2969
E craigsbradford@gmail.com

Project Relevance
FEMA Hazard Mitigation funded water tank project with matching funds from DWR, which was designed to meet California seismic standards and DWR Funds. Project included all phases of design, CEQA, permitting, funding support, and construction management.

Project Team Members
Michelle Davidson, Rebecca Crow, Brian Crowell, Luke Halonen, Rick Guggiana, Steve McHaney

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s and was composed of water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. Although BRCSD maintained the infrastructure, some elements essentially reached the end of their useful life and other elements became obsolete as technology and design standards changed. For example, the existing redwood tank did not meet modern seismic design standards putting it as risk for failure if a significant earthquake occurred. BRSCD also was facing significant cost implications from maintenance requirements of the aging infrastructure. To address these issues, BRCSD undertook to not only replace the tank, but to engage in community-based hazard mitigation and disaster response planning.

GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve site access, and make improvements to the system's SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. This project also included the development of a new emergency communications equipment and antennae tower at the existing tank site. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Recycled Water System Project

Mendocino, CA

Client
Mendocino Unified School District
44141 Little Lake Road
Mendocino, CA 95460

Reference
Jason Morse
T 707.937.5868
E jmorse@mcn.org

Project Relevance
State funded water tank project to prepare design plans for a new 250,000 gallon bolted stainless steel tank, including all phases of design, CEQA, permitting, funding support, and construction phase support.

Project Team Members
Rebecca Crow, Brian Crowell, Ryan Crawford, Richard Maddock, Luke Halonen, Rick Guggiana, Erick Osorno

GHD applied for and obtained a Clean Water State Revolving Fund (SRF) grant to undertake the necessary studies and prepare a design to address requirements and recommendations for an expansion of the Mendocino Unified School District's (MUSD) recycled water system as outlined in the State Water Resources Control Board (SWRCB) Title 22 Code of Regulations related to the expanded use of Recycled Water at its facilities.

GHD has prepared a Title 22 Engineering Report presenting a recycled water feasibility study and engineering analysis that evaluates the feasibility of expanding use of recycled water from the Mendocino City Community Service District (MCCSD) Waste Water Treatment Plant (WWTP) to offset MUSD's existing potable water use and provide additional fire water storage and supply. This recycled water feasibility study developed alternatives and recommended a project that expands recycled water storage capacity, identifies water reuse locations within the study area, performs a hydraulic analysis of all project alternatives, and addresses financial and funding needs.

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Leachate & Potable Water Storage Tanks Replacement Project

Sonoma County, CA

Client
County of Sonoma, Transportation and Public Works – Integrated Waste
2300 County Center Drive, Suite B100
Santa Rosa, CA 95403

Reference
Olivia Guevara
T 707.889.0668
E Olivia.Guevara@sonoma-county.org

Project Relevance
County-funded tank project that includes multidisciplinary design for nine (9) 200,000-gallon bolted stainless steel tanks on reinforced concrete foundations at each of six (6) County sites. Project also includes construction phase and construction management services.

Project Team Members
Holly Cinkutis, Luke Halonen, Rick Guggiana, Erick Osorno

The County of Sonoma owns various closed landfill sites, including the Guerneville, Roblar and Sonoma Closed Landfills. These sites each have a leachate collection and recovery system (LCRS) including collection sumps, transfer pumps (to transfer from the sumps to the storage tanks), and above ground epoxy-coated storage tanks. The leachate is consequently hauled to the Laguna Sub-regional Wastewater Treatment Plant for treatment and disposal.

The Leachate and Potable Water Storage Tank Replacement Project includes the design of two (2) 200,000-gallon bolted stainless steel tanks on reinforced concrete foundations at each of three County closed landfills: Roblar Closed Landfill, Sonoma Closed Landfill, and Guerneville Closed Landfill. The project also includes the design of three (3) 200,000-gallon bolted stainless steel potable water tanks at each of three sites, that will replace three (3) existing 100,000-gallon redwood tanks within the Fitch Mountain Water System (FMWS): Madrone Tank, Hilltop Tank and Del Rio Tanks. The FMWS is a pneumatic pressure system supplying potable water to the three pressure zones of Del Rio, Hilltop, and Madrone. Russian River Utility (RRU) operates the water system, and the County owns it. The project will be separated into two (2) bid packages, Leachate Tank Replacement Project, and the Water Tank Replacement Project. The goals of the project(s) are to increase leachate storage capacity and potable water storage capacity respectively.

The designs include all ancillary piping, electrical, and control systems necessary to integrate the new tanks into the existing LCRS and FMWS and the County plans to publicly bid the projects in the Spring of 2023.

3. | Project Team Information

Our Key Personnel have been carefully selected to meet the project requirements of experience and work approach to achieve the District's vision. Our **Project Manager**, **Michelle Davidson**, will lead the contract management efforts, serving as the District's main point-of-contact. She has served in similar roles on projects with Big Rock Community Services District, as well as other regional agencies such as Smith River Community Services District, Redway Community Services District, Humboldt County, Resource Conservation District, City of Eureka, and City of Rio Dell. Our **Project Director**, **Anne Lynch**, **PE**, will support the Project Manager with needed resources and understands the District's commitment to its rate payers, as well as expectations of the engineering, operations, maintenance, and field engineering departments.

Provided below are summary bios of our key staff, with full resumes for all our project team members provided in the **Appendix** section of this proposal.

Key Project Team Summary Bios

Michelle Davidson | Project Manager | GHD

- *BS, Civil Engineering, California State University, Chico, CA, 2014*
- *Quality Control Manager Training, US Army Corps of Engineers*
- *Occupational Safety and Health Administration (OSHA) 10-Hour Training*

Michelle has more than eight years of experience in project management, engineering design, construction management and inspection, regulatory permitting coordination, bid package development, contracting, and project funding. Her experience includes a variety of water, sewer, and civil site design projects including tanks, piping, treatment plants, pump stations, and civil site work that includes ADA improvements, often working on municipal projects. She regularly works with multi-disciplinary teams, and interacts with owner representatives, regulators, and key stakeholders to provide cost-effective designs that meet the needs of the community. Michelle recently led the BRCSD Water Tank Replacement Project construction support services.

Anne Lynch, PE | Project Director | GHD

- *BS, Civil Engineering (Cum Laude), Auburn University, Auburn, AL, 1996*
- *BA, Philosophy, University of Oklahoma, Norman, OK, 1992*
- *Civil Engineer, CA #64453*

Anne leads GHD's Water West IWM Business Group and is the North American Service Line Lead for IWM. She has more than 26 years of experience in water resources management, particularly focused on water supply, water reuse, flood management, CIP development, investment and funding strategies, and brine management projects and planning studies. Anne is a leader in managing complex project teams to meet tight deadlines, as well as managing projects where coordination and approval are required from local, state, and federal agencies. She has assisted with the development of a number of significant reports published by the California Department of Water Resources Programs over the past 10 years, including the California Water Plan (Updates 2013 and 2018), Stakeholder Perspectives — Recommendations for Sustaining and Strengthening Integrated Regional Water Management (IRWM), California's Flood Future Report, and 2017 Central Valley Flood Protection Plan (CVFPP) Update. Anne understands the recycled water landscape in California, having led some of the premier water recycling planning studies developed in conjunction with the US Bureau of Reclamation. She has experience working with design teams to develop infrastructure project across California. For example, she has worked with small agencies across the state as part of the Safe and Affordable Funding for Equity and Resilience (SAFER) Program to deliver more than 20 water infrastructure projects from consolidation studies to infrastructure design. These design projects range from extensions of existing conveyance systems, retrofit of existing wells, pumps, and tanks, to replacement of conveyance systems, tanks, pumps, wells and associated appurtenances. Anne is currently working with Michelle on a number of generator replacement projects throughout northern California.

Key Project Team Summary Bios

Steve McHaney, PE | QA/QC | GHD

- *BS, Environmental Resources Engineering (Minor: Computer Information Systems), Humboldt State University, Arcata, CA, 1986*
- *Civil Engineer, CA #47590, GU #1250, CNMI, HI, WA, OR, ID*
- *Safety Assessment Program (SAP) Volunteer*

Steve has more than 35 years of municipal engineering experience with a specialization in municipal infrastructure engineering. He has served as the consulting City Engineer or District Engineer for over ten entities over the past thirty years. Steve has particular expertise in the siting, permitting, design, and construction oversight for water storage reservoirs for bolted and welded steel. He has designed painted steel, glass fused steel, and stainless steel tanks for municipal service. The tank design phase has included extensive site evaluation, geotechnical investigations, retaining wall design, and grading design as well as site piping, and booster pumping systems. Steve's extensive expertise with water tanks will be instrumental to the team to finalize an effective site and tank design and he will provide review of all design documents.

Ryan Crawford, PG, QSD | Technical Director | GHD

- *MS, Geology, Humboldt State University, Arcata, CA, 2007*
- *BS, Geology, Humboldt State University, Arcata, CA, 2003*
- *Professional Geologist, CA #8764*

Ryan is from the Pacific Northwest with local, regional, and international hydrogeologic, and civil infrastructure experience dating back to 1998, from Alaska to South America and Guam. His strong background in design approach, construction oversight, aquifer hydraulic analysis & testing, together with water geochemistry & quality has been successfully utilized by small and large governments, water districts, agencies, and municipalities to solve complex water supply/quality/storage problems. Ryan has contributed to diverse teams of engineers in designing storage and conveyance systems, water supply wells, and preparing groundwater basin sustainability plans and models and performing aquifer storage and recovery testing.

Holly Cinkutis, PE, LEED AP | Civil Design Lead | GHD

- *BS, Agricultural & Biological Engineering (Minor: Environmental Engineering), Pennsylvania State University, Centre County, PA, 2006*
- *Civil Engineer, CA #77541, PA #079263*
- *Leadership in Energy and Environmental Design Accredited Professional (LEED AP), 2009*
- *Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer*
- *Drinking Water Treatment Operator (T2), CA #44264*
- *Drinking Water Distribution Operator (D2), CA #53106*

Holly is a licensed civil engineer with more than 16 years of experience in the municipal, public works, and land development sectors of the civil engineering industry. Her experience began as a project engineer and progressed to project manager and acting engineer for multiple water and wastewater service providers and public works entities. As a project manager at GHD, Holly is responsible for managing project design teams which requires coordinating across multiple disciplines to deliver water and wastewater capital improvement designs within budget and schedule. Her water sector experience includes distribution system design, pump and booster system design and selection, well head development and improvements, and tank & treatment system design. Holly was the design engineer on the Leachate & Potable Water Storage Tanks Replacement Project.

Rebecca Crow, PE | Funding Compliance Lead | GHD

- *BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 1997*
- *Civil Engineer, CA #69994*

Rebecca has 25 years of experience in a broad range of environmental management, civil, and planning services: water and wastewater planning, water recycling, watershed and water quality modeling, regulatory compliance, funding assistance, and grant and contract management. She is adept at preparing applications for state and federal grant and loan programs and has secured over $15M in grant funds for communities in Humboldt and Del Norte counties alone, including assisting with several Community Development Block Grant (CDBG) grant funded projects and $10.9M in Hazard Mitigation Grant Program (HMGP) grants, which have notably included over $2.2M for the Big Rock Community Services District's (CSD) Steel Water Tank Replacement Project and over $5M for the McKinleyville CSD's 4.5-MG Water Reservoir.

Key Project Team Summary Bios

Brian Crowell, PE, SE | Structural Engineering Lead | GHD

- *MS, Structural Engineering, Stanford University, Stanford, CA, 2001*
- *BS, Civil Engineering, University of California, Irvine, CA, 2000*
- *Civil Engineer, CA #65326*
- *Structural Engineer, CA #5216*
- *California Emergency Management Agency (CALEMA) Safety Assessment Program*

Brian has more than 21 years of structural engineering evaluation and design experience with concrete tanks and structures, new building construction and retrofits, retaining walls, wharves and piers, equipment anchorage, timber structures, and steel buildings throughout Northern California. He serves as one of GHD's senior structural designers with direct experience in design details, both for new construction and repair/retrofit, complying with all applicable design codes and standards. Brian has assisted in the structural evaluation and replacement of water infrastructure (tanks, treatment and water quality facilities, pumps, etc.) for such local entities as the Humboldt Bay Municipal Water District, College of the Redwoods, the Northern Humboldt Union High School District, and CalWater.

Rick Guggiana, EE, LEED AP, CDT | Electrical Engineering Lead | GHD

- *BS, Electrical Engineering Technology, California State Polytechnic University, Pomona, CA, 1983*
- *Electrical Engineer, CA #15580, AZ #34069, CO #34471, IL #062-053426, TX #86009, WA #36259*
- *Leadership in Energy and Environmental Design Accredited Professional (LEED AP), US Green Building Council*
- *Construction Documents Technologist (CDT), Construction Specifications Institute*

Rick is a licensed electrical engineer with more than 34 years of experience in the electrical, controls, and instrumentation fields, for federal, military, municipal, and private industrial clients. He has extensive experience with water treatment, storage, and pumping systems, wastewater collection and treatment systems, pumping controls, SCADA systems, low and medium-voltage power generation, microgrids, and waterfront electrical distribution. Rick has led large-scale coordination and arc flash studies, desk-top radio path modeling, photometric analyses, forensic studies, feasibility studies, condition assessments, construction cost estimates, and engineering services during construction. He has also written design-build Requests for Proposal (RFP's) and has served as the client's representative, as well has served as the lead electrical engineer on contractor-led design-build teams. Rick was involved in the design and construction management of a 115 kV substation project, which won a merit award from the Consulting Engineers and Land Surveyors of California (CELSOC).

Richard Maddock, PLS | Senior Surveyor - Lot Line Adjustment | GHD

- *General Courses, Land Surveying and Business Management, Solano Community College, Fairfield, CA, 1985-1989*
- *Professional Land Surveyor, CA #8131*

Richard is a California-registered professional land surveyor with over 30 years of experience in all aspects of land surveying. He is an experienced Party Chief working on projects varying from winery construction staking to subdivisions. With the budget and timeline in mind, Richard delivers a superior product for the client. In the field, he will be the Party Chief of the primary survey crew. Being the Party Chief will provide him with first-hand knowledge of the site, the condition of the existing monuments and other important information critical to producing accurate survey performance areas.

Luke Halonen, PE | Project Engineer | GHD

- *BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 2014*
- *Civil Engineer, CA #89080*

Luke is a licensed civil engineer with more than eight years of experience in delivering a variety of civil infrastructure projects. His professional area of focus is hydraulic design of linear infrastructure, including design of associated site improvements. Project types include water transmission, distribution, storage, and booster pump stations, stormwater conveyance and Low Impact Development (LID) stormwater treatment systems, and sanitary sewer collection systems including lift stations, associated project site design and grading, and pedestrian and bicycle facilities. Projects involve planning, environmental compliance, design, permitting, and construction. Roles on project include project manager, project engineer, construction manager, discipline lead, and technical reviewer. His experience also includes a broad range of planning, hydraulic modeling, and analysis capabilities.

Key Project Team Summary Bios

Chris Richards, PE | Electrical Project Engineer | GHD

- *BS, Electrical Engineering, California Polytechnic State University, San Luis Obispo, CA, 2002*
- *Electrical Engineer, CA #17660*
- *Construction Documents Technologist, Construction Specifications Institute*

Chris has 19 years of experience in the design and implementation of electrical systems. His design experience includes medium- and low-voltage design for municipal, industrial, and commercial power, power generation, standby and emergency power, photovoltaic generation and battery storage, water and wastewater power and control systems, SCADA system applications, control and server rooms, lighting, telecommunications, security, fire alarm systems, power and lighting system analysis and modeling, arc flash and coordination studies, Leadership in Energy and Environmental Design (LEED®) credit-driven design and documentation, and California Title 24 lighting efficiency and lighting control measures.

Erick Osorno, EE | Electrical Project Engineer | GHD

- *BS, Electrical Engineering, California State University, Fresno, CA, 2019*
- *Electrical Engineer, CA #23831*

Erick is a licensed electrical engineer with experience in site and building power systems, lighting and lighting controls, medium voltage distribution, Supervisory Control and data Acquisition (SCADA) systems and instrumentation for water tank instillations, photovoltaic design, generator power systems, motor controls, pump controls, development of construction cost estimates, load calculations, and drafting of construction documents. Erick is an excellent communicator with good team management skills. His background includes a wide spectrum of clients from commercial to industrial to government.

SUBCONSULTANT

Crawford & Associates, Inc. (Crawford) was founded August 14, 2012, by Benjamin Crawford. What started as a one-person firm in a small 300 sq. ft. office in Midtown Sacramento has grown into a 30-person, 5-office firm. In 2016, Crawford acquired Taber Consultants, one of the nation's oldest Geotechnical Engineering companies. The principals of both firms bring significant Geotechnical Engineering experience on a wide variety of projects throughout Northern California. Crawford has experience working with various oversight agencies including FEMA, FHWA, Cal OES, Counties, Cities, Caltrans, Building Departments, Regional Water Quality Control Boards, DWR, USACE, DSA, UPRR, CA Fish and Wildlife, Water and Irrigation Districts, Utilities and Environmental Health Departments.

Benjamin Crawford, PE, GE | Geotechnical Engineer | Crawford & Associates

- *BS, Civil Engineering, California Polytechnic State University, San Luis Obispo, 2002*
- *Civil Engineer, CA C68457*
- *Geotechnical Engineer, CA GE2861*

Ben is the Founder and President of Crawford & Associates, Inc. He has managed complex projects including bridges, roadways, pavement rehabilitation, water and wastewater, parks, and trails. Ben's experience includes providing geotechnical recommendations for water, wastewater, storm drainage, and pipeline projects, including associated ancillary structures, foundations, and pavement/flatwork. Previous projects include reinforced concrete pipelines, large-diameter pipelines, work within wetlands and waterways, open-cut and trenchless pipelines, and projects within areas of high seismicity.

Chris Trumbull, PE, GE, D. GE | Geotechnical Engineer | Crawford & Associates

- *MS, Civil Engineering, Geotechnical Emphasis, San Jose State University, 1995*
- *BS, Civil Engineering, San Jose State University, 1989*
- *Civil Engineer, CA 53710*
- *Geotechnical Engineer, CA 2492*

Chris specializes in civil, geotechnical, and environmental consulting and project management services for a variety of clients throughout California and the western US. He also manages large and complex geotechnical projects including transportation, public works, flood control, hydropower, essential facilities, military, correctional, power, industrial, ports, and other markets. Due to his past experience, Chris provides state-of-the-art quality assurance/quality control on his projects and stresses client communication as the most important factor in creating successful projects.

Organization Chart

The organization chart below details our proposed team, including disciplinary-based roles based on our understanding of your project needs. The team members shown on the organizational chart are committed to the District's project and additional staff may be called upon, if needed.

PROJECT DIRECTOR
Anne Lynch, PE

PROJECT MANAGER
Michelle Davidson

QA / QC
Steve McHaney, PE

TECHNICAL DIRECTOR
Ryan Crawford, PG, QSD

CIVIL DESIGN LEAD
Holly Cinkutis, PE, LEED AP

FUNDING COMPLIANCE LEAD
Rebecca Crow, PE

STRUCTURAL ENGINEERING LEAD
Brian Crowell, PE, SE

ELECTRICAL ENGINEERING LEAD
Rick Guggiana, EE, LEED AP, CDT

SENIOR SURVEYOR - LOT LINE ADJUSTMENT
Richard Maddock, PLS

PROJECT ENGINEER
Luke Halonen, PE

ELECTRICAL PROJECT ENGINEERS
Chris Richards, PE
Erick Osorno, EE

GEOTECHNICAL ENGINEERS
CRAWFORD & ASSOCIATES
Benjamin Crawford, PE, GE
Chris Trumbull, PE, GE, D. GE

CERTIFICATIONS & REGISTRATIONS LEGEND

CDT:	*Construction Documents Technologist*	***LEED AP:***	*Leadership in Energy and Environmental Design Accredited Professional*	***PLS:***	*Professional Land Surveyor*
D. GE:	*Diplomate, Geotechnical Engineering*			***QSD:***	*Qualified SWPPP Developer*
EE:	*Electrical Engineer*	***PE:***	*Professional Engineer*	***SE:***	*Structural Engineer*
GE:	*Geotechnical Engineer*	***PG:***	*Professional Geologist*		

4. | Project Understanding and Approach to Work

Background and History

Hidden Valley Lake was originated and developed by the USA Land Corporation from the late 1960s until 1972. During that time, a dam was constructed across Coyote Creek creating the 102-acre Hidden Valley Lake. The Hidden Valley Lake Community Service District (District) was formed on July 10, 1984, as an independent special district serving the Hidden Valley Lake Community in southern Lake County, California, which encompasses 1,860 acres of territory. The District staff provides municipal water to approximately 2,300 homes and 20 businesses, and sewer services to approximately 1,600 within its three-square-mile service area. The District has 7 water storage tanks and 4 wells, which provide water to the residents in Hidden Valley Lake. The District also has an agricultural well that supplies water to Putah Creek during the summer months to mimic the natural surface water flow. A sewer reclamation plant, located on Grange Road, provides reclaimed water to the Hidden Valley Lake golf course.

Project Overview

GHD has reviewed the District's RFP for the design of two (2) new 44.5-foot diameter, 250,000-gallon bolted steel water tanks to obtain an understanding of the project needs. The District's Project includes the design of two (2) new 44.5-foot diameter, 250,000-gallon bolted steel water tanks that will replace the District's existing redwood 150,000-gallon Unit 9 Tank. The preliminary plans prepared by Coastland Engineering indicate the installation of the new tanks will require site work to include a cut of up to 12 feet, installation of a paved 15-foot-wide access road, retaining wall(s) and fencing.

The work consists of the design and preparation of bid documents for construction including, utility potholing, geotechnical investigation, utility easement identification, preparation of a Stormwater Pollution Prevention Plan (SWPPP), and preparation of Plans, Specifications, and construction cost estimates at 35%, 65%, 95% and Final completion stages, that may require civil, structural, electrical, and mechanical discipline designs. The work included with this project also includes bid phase support, response to bidder's request for information (RFI), addenda preparation, bid review and recommendation of contract award

Challenges and GHD Approach

We have studied the project and identified several key project challenges and have developed effective approaches to address the challenges to simplify project implementation, improve project performance, and reduce costs and improve funding utilization, as summarized below:

Project Permitting

Projects require compliance with the California Environmental Quality Act (CEQA) and depending on the circumstances other local, state, and federal permits may be required. For this project environmental planners previously conducted biological and cultural investigations, CEQA environmental documentation for the project was completed in 2021, and a Notice of Exemption was filed with the State. Based on the previous work completed, no further environmental permitting is anticipated nor included in this scope.

GHD has extensive experience interpreting government codes and working with regulatory agencies. In terms of local grading and building permits for the project, the project is exempt. Based on California Government Code Section 53091(d) and (e), water projects by local agencies are exempt from zoning and building ordinances. The District qualifies as a local agency and hence the proposed project is exempt from zoning and building ordinances. Therefore, no local building department permitting is required and no grading permit is required.

Materials Selection for Better Performance

When GHD designs a project, we consider not only the initial performance and construction cost, but also the long-term performance and maintenance requirements & costs. Standard steel water tanks require periodic recoating/repainting. While painted tanks are commonly chosen in this size range for potable water storage, there are several alternative tank materials such as glass-fused-to-steel and stainless steel, that have long term performance and reduced maintenance benefits.

While the capital cost can be higher, the long- term operation and maintenance costs are less due to enhanced corrosion resistance and the elimination of the need for periodic repainting. We recently completed a life cycle cost analysis and subsequent design that included a 100,000-gallon stainless steel

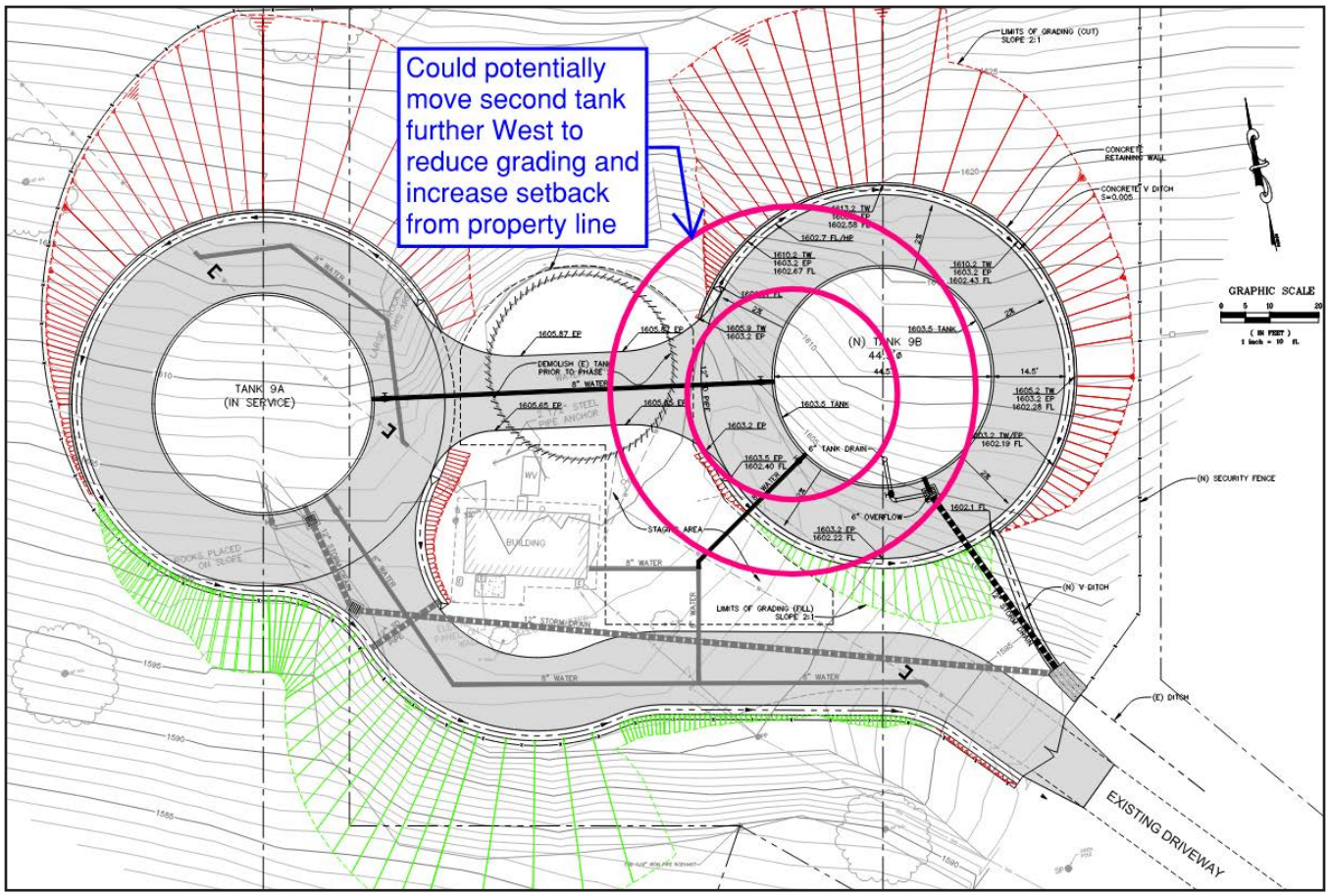


Figure 1 *GHD's alternative approach to potentially reduce grading requirements*

tank for the North Marin Water District Old Ranch Road Tank #2 Project in Marin County, California. This project illustrates how we have successfully demonstrated to project funders the value of considering alternative tank materials. With the District's consent, we will further consider alternative tank materials during our preliminary design and summarize our recommendation in the Basis of Design Report. At GHD, part of creating lasting community benefit is reviewing options so that we recommend the optimal long-term performing option.

Site Layout and Grading

GHD has reviewed the preliminary site layout prepared for the project and have identified an alternative approach that could potentially reduce the grading requirements. Site grading could potentially be reduced by moving the tanks closer together as shown in **Figure 1** above. This could be accomplished by the sequencing of construction and construction of the westerly tank first, followed by the demolition of the existing tank, and finally the construction of the easterly tank. This configuration would also pull the grading back from the property lines reducing the amount of grading necessary. This concept will be further considered with the District and summarized in the Basis of Design Report.

The conceptual layout of the tanks also identified the potential need for small retaining walls along the back sides of the tanks. Our initial field evaluation of the tank site suggests the soils are quite stable and capable of relatively steep cut slopes. Our approach is to consider the potential for steeper slopes and soil stabilization as part of the geotechnical analysis and the potential to eliminate the need for retaining walls given the actual soil conditions. If grading can be reduced and the retaining walls eliminated, construction costs could be reduced significantly and will be summarized in the geotechnical report and the basis of design report. At GHD we have the technical expertise to understand where there are opportunities to maximize budgets through innovative solutions.

Cost Control and Approach to Bidding

The recent economic environment has been characterized by increased material costs and higher inflation. There are also many construction projects out to bid so there has been less competition further

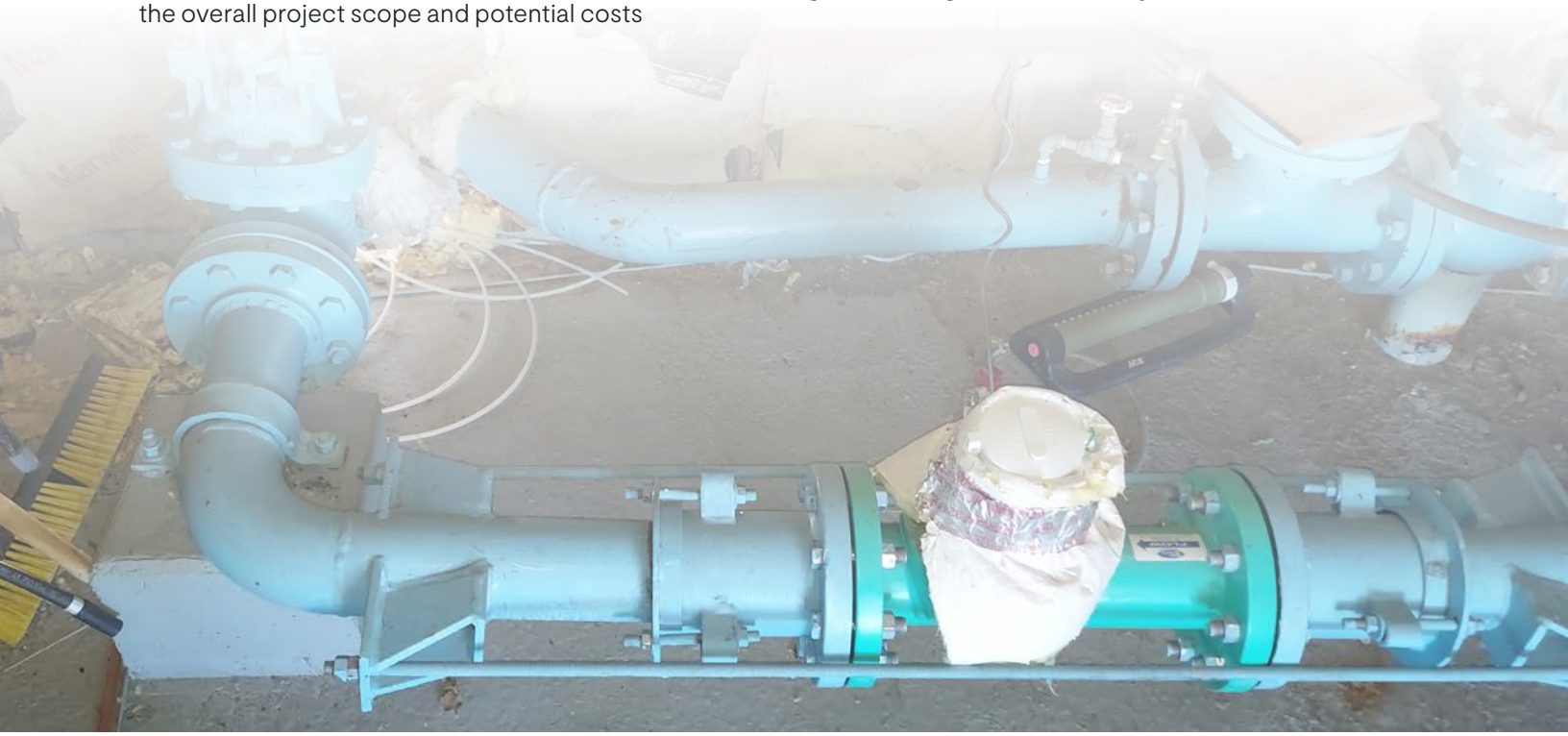
driving prices up. As a result, GHD employs a multi-pronged approach to cost control and bidding. The first step is to use Value Engineering to identify opportunities to reduce construction costs while still delivering desired project performance. Our approach to site grading discussed in the previous section is an example of a potential Value Engineering approach. Our design team is also experienced in construction inspection and management and in working with contractors on simplifying design elements to reduce contractor effort and hence to reduce their bids. This hands-on field experience is employed in developing construction sequencing and constraints, and in the selection of materials, designing piping assemblies, and detailing of other construction requirements.

We also employ a thoughtful approach to developing the bid strategy and often include a base bid project with additive bid items. This approach allows the owner to award the essential base bid project and add additional items as budget allows. For example, for the Storage Reliability Project, one bidding option is to include the site grading and main piping and one tank as the project base bid and identify the second tank as an additive bid item. This would allow the District to respond to an adverse economic climate and deliver the essential elements of the project under a constrained funding situation while facilitating the simple installation of the second tank when funds were secured. This thoughtful approach to bidding is another way we help get thing built.

Furthermore, we feel it is important to reevaluate the overall project scope and potential costs given the current economic environment and what the conditions may be like at the time of bidding. Throughout the project, we will review if different or additional funding is available. Our team has the experience, in working with funding agencies to identify if additional funds are likely required and to pursue those funds.

Funding Management

GHD has a long working relationship with the Department of Water Resources (DWR) and FEMA who are funding the project. We are currently working with DWR through the local Integrated Regional Water Management Plan Group and with FEMA HMGP funds administered through CalOES. GHD has leveraged these funding sources for several recent water tank projects in Northern California. The use of both state and federal funding will require close attention to project accounting, procurement requirements, and environmental compliance. GHD is familiar with these processes and demands, having recently completed a similar water tank replacement project using the same funding sources. Our Project Manager, Michelle Davidson, and our Funding Compliance Lead, Rebecca Crow, PE, are available to assist the District to identify the potential need for additional funds and to work with these funding agencies to pursue additional project funds so they may be available as needed at the time of bidding. At GHD, we understand the funding and grant compliance requirements having helped northern California agencies obtain more than $110 million in grant funding over the last 10 years.



5. | Scope of Work

Task 1 – Project Management and Coordination

This task includes project administration, coordination, kick-off and review meetings and quality control. The subtasks outlined below are to illustrate the work that occurs within project management, these individual activities will not be billed separately.

Internal Coordination and Administration

- Budget and schedule tracking
- Provide project and contract oversight

Project Meetings

- ***Project Initiation/Kick-off Meeting:*** GHD will plan and facilitate one project kick-off meeting via Microsoft Teams with representatives from the District, and the GHD team. GHD will prepare a draft agenda and attendee list in advance for confirmation with the District and a suitable meeting time will be selected. During this meeting it is anticipated that the overall scope and objectives will be reviewed, existing background information will be discussed, information needs will be covered, and the overall project schedule will be reviewed. Overall findings and action items will be summarized in meeting minutes along with a project member contact list which will be distributed to attendees.
- ***Standing Recurring Meetings:*** GHD will facilitate monthly coordination calls with the project team and District via Microsoft Teams. The standing meeting will be used for coordination, as well as progress and schedule updates. Meeting agendas will be prepared as needed based on the topics pertinent at the stage of the design process. It is anticipated that up to ten (10) meetings may be required. These meeting will typically be followed with email confirmation of decisions and action items.
- ***Project Review Meetings:*** GHD will schedule one project review meeting via Microsoft Teams to review the following deliverables:
  - Basis of Design Technical Memo
  - 35% Plans, Specifications, and Estimate
  - 65% Plans, Specifications, and Estimate
  - 95% Plans, Specifications, and Estimate
  - Final Plans, Specifications, and Estimate

Deliverables:

- Preparation of meeting agendas, notes, and as-needed progress reports
- Monthly invoice, progress report and schedule update

Constructability Review and QA/QC:

- GHD will complete QA/QC and constructability review by senior civil engineer and construction inspector prior to development of final plans, specifications and estimate. No separate deliverable will be provided as part of constructability review and QA/QC, but rather the comments from these reviews will be incorporated into the final design deliverables.

Assumptions:

- Up to eleven (11) virtual meetings have been budgeted for this task

Task 2 – Additional Background Information Review

During our review of available information, discussions during the kickoff meeting, and discussions with District staff, additional background information may be identified as needed to complete the design. We will request this information be provided to GHD for review and incorporation into the design process. Of particular interest is information on existing District infrastructure that the new tank will interface to.

Deliverables:

- None

Task 3 – Geotechnical Investigation

GHD's geotechnical subconsultant, **Crawford & Associates, Inc.** (Crawford), will perform a geotechnical investigation at the site to evaluate site geologic conditions and provide geotechnical criteria and recommendations for use in project planning, design, and construction.

Based on the geologic map and the site visit by GHD's Geologist, the site is expected to be underlain by Quaternary volcanic flow rocks, which should be strong and provide adequate bearing for the tanks and stable cut slopes. The rock is also expected to be resistant during excavation however, excavatability will be analyzed.

To generate the geotechnical parameters for earthwork, assumed shallow foundations, excavatability, and seismic design parameters, Crawford will complete two test pits and two seismic refraction lines and prepare a geotechnical report for the proposed tanks. A detailed scope of services and deliverables is provided below.

Task 3.1 - Coordination and field preparation

- Coordinate with the design team and discuss the project design needs, goals, and schedule
- Visit the site to mark the test pit locations for USA North 811
- Discuss proposed test pit locations with GHD and District staff, based on their understanding of on-site utilities and access conditions

Task 3.2 - Subsurface Exploration

To assess the subsurface soil and groundwater conditions one test pit and one seismic refraction line at each of the proposed tank locations will be completed. The test pits will be excavated with a rubber-tired backhoe to a depth of 10 to 15 feet unless refusal is encountered. Our Engineer/Geologist will log the soil and rock materials in the test pits, perform rebound hammer measurements on the rock to estimate strength, and obtain bulk samples for laboratory testing. Visual soil and rock classification will be performed on all samples.

The two seismic lines will be performed across the cut section of each tank to further define the depth to rock and acoustic velocities that can be correlated to help determine the excavatability/rippability potential.

Task 3.3 - Laboratory Testing

The following laboratory tests will be performed, as appropriate, on representative soil samples obtained from the test pits:

- Moisture content
- Grainsize analysis
- Unconfined compressive strength of rock
- Plasticity Index
- R-value
- Corrosivity

Task 3.4 - Engineering Evaluation and Analysis

An engineering analysis will be performed to determine geotechnical design parameters and provide recommendations for:

- Rippability
- Allowable bearing capacity, lateral resistance, and foundation settlement
- Seismic design parameters
- Pavement section design

Task 3.5 - Geotechnical report

Crawford will prepare a Geotechnical Report for the proposed improvements which will include the following:

- Scope of services
- Site and project description
- Field exploration
- Site geology
- Subsurface soil and groundwater conditions
- Corrosivity
- Rippability

- Allowable bearing capacities, passive and frictional resistance, and settlement estimates for the proposed tank
- Seismic design Parameters
- Pavements
- Earthwork recommendations (subgrade preparation, cut/fill considerations, engineered fill, compaction, trench backfill, temporary slopes/shoring, etc.)
- Limitations
- Site plan with test pit locations, geologic map, and fault map
- Test pit logs or table, and laboratory test results

Deliverables:

- Draft and Final Geotechnical Report

Task 4 – Potholing

Under this Task, GHD will coordinate with a subcontractor to provide vacuum excavation utility location (potholing) services for the existing utilities GHD deems necessary to further investigate to complete the design. Not all existing utilities will require pot holing. Target utilities within the tank site will be exposed using vacuum excavation. The utilities to be investigated will be identified on a site plan. Measurements will be taken from the top of the utility. It is assumed that the potholes will be backfilled and compacted with the existing material removed. The subcontractor will provide all equipment, personnel and supplies necessary to perform utility location services utilizing air/vacuum, dust-controlled soil extraction methods.

Deliverables:

- The subcontractor will prepare a table that indicates the utility reference number, description of the utility including size and material where ascertainable and depth to top of the utility. This information will be transferred to the design plans.

Assumptions:

- Potholes will be backfilled and compacted with the existing material removed and all work will be completed in one (1) day by subcontractor with GHD oversight.

Task 5 – Base Mapping and Utility Easement Procurement

GHD will prepare base mapping for developing the design plans using existing survey by Coastland Engineering, aerial photos, and utility location information garnered from potholing and field investigations. GHD will use existing County Road mapping and right of way information as well as County parcel map and property boundary information. Temporary construction easements may be necessary. GHD will prepare typical temporary construction easement documents for each affected parcel and the District will be responsible to obtain property owner acceptance.

Additionally, GHD will produce a legal description for the tank site. The description will be based on the Subdivision Map entitled "HIDDEN VALLEY LAKE UNIT No. 9" filed in Book 11 of Subdivision Maps at Page 55 through 14, Lake County Records, the sketch provided by the client, and a field survey.

Deliverables:

- Temporary construction easement documentation
- Tank site legal description

Assumptions:

- The boundary monuments set for the subdivision at the centerline of road are existing and in good condition and the client will provide a title report.

Task 6 – Basis of Design Technical Memorandum

GHD will prepare a brief basis of design technical memorandum (BOD TM) describing the project, project requirements, and design basis for major project elements. It is anticipated that the basis of design technical memorandum will include the following which shall be adjusted as warranted:

- Project description and goals
- Standards and references
- Existing background information; utility locations, size and material
- Geotechnical Investigation; summary and impacts on project design
- Site conceptual layout
- Easement procurement
- Permitting
- Basis of design for materials and methods of construction
- Preliminary Engineer's Opinion of Probable Construction Costs (Cost Estimate)

The basis of design technical memorandum will be reviewed with the District through a Microsoft Teams meeting. Comments will be gathered on the draft memo and a final memo will be provided to serve as the basis for the preparation of the bid ready plans and specifications.

Deliverables:

- Basis of Design Report (Draft and Final) in electronic format

Task 7 – Engineering Design & Bid Document Preparation

GHD will prepare bid ready construction design drawings and technical specifications necessary to issue the project for bidding and construction. Project drawings will be "to scale".

We will develop technical specifications incorporating project-specific requirements. We will rely on District and County standard specifications where possible and develop additional specifications for the project to describe the construction requirements.

The District will be responsible for routing the documents for review by appropriate parties and will review comments, rectify any conflicting comments, and will compile one set of comments for GHD to address. Comments at the 35%, 65%, and 95% stage will be incorporated into the next submittal. The 100% final documents will be ready for bidding. The submittals will be reviewed with the District during a Microsoft Teams meeting.

Overall, the design plans are anticipated to include the following types of sheets:

- Cover Sheet
- General Civil Notes
- Horizontal Control Plan
- Existing Site Conditions
- Site Demolition Plan
- Site Improvement Plan
- Site Utility Plans
- Civil Construction Details
- Water Tank Plans
- General Structural Notes
- Retaining Wall Plans (if necessary)
- Structural Construction Details
- General Electrical Notes
- Electrical Site Improvement Plan

And any other sheets GHD deems necessary to convey the design intent.

The drawings listed above are intended to convey the general nature of the types of drawings that will be utilized to convey the design intent. GHD may alter the sheets to fit the design requirements. GHD will design the project using English Standard units in AutoCAD. The 100% Final construction documents will be stamped and signed by a California Registered Professional Engineer.

All deliverable documents listed below will be provided as electronic PDFs and up to six hard copies for each of the above documents as requested. Hard copy drawings will be provided in 11x17 format. Final design drawings can also be provided as AutoCAD files.

Task 7.1 - Preliminary Design (35% Design)

Deliverables:

- 35% Preliminary Design Plans
- 35% Technical Specifications Table of Contents
- 35% Opinion of Probable Construction Cost

Task 7.2 - Design Development (65% Design)

Deliverables:

- 65% Design Plans
- 65% Technical Specifications
- 65% Opinion of Probable Construction Cost

Task 7.3 - Construction Documents (95% PS&E)

Deliverables:

- 95% Design Plans
- 95% Technical Specifications
- 95% Opinion of Probable Construction Cost

Task 7.4 - Final Design (100% PS&E)

Deliverables:

- Final Design Plans
- Final Technical Specifications Package
- Final Opinion of Probable Construction Cost

Assumptions:

- The District will be responsible for preparation of front-end contract documents, bid forms, and other documents for bidding, only the technical specifications, the bid schedule, and measurement and payment section, will be prepared by GHD as part of this task.
- All deliverables will be in electronic format.

Task 8 – SWPPP Development

Construction of this project will likely require a Storm Water Pollution Prevention Plan (SWPPP). GHD will prepare a project specific SWPPP and all required permit registration documents (PRDs) to initiate the waste discharge permit process Notice of Intent (NOI) using the States Storm Water Multiple Application and Report Tracking System (SMARTS). The SWPPP will be prepared by a Qualified SWPPP Developer (QSD) and will comply with the requirements of the State's storm water General Construction Permit (GCP). The PRDs will include risk assessments of the project site, which will determine the appropriate SWPPP implementation method, and site maps showing details and placement of all BMPs for erosion and sediment control.

Deliverables:

- SWPPP in electronic format

Assumptions:

- The client will be the Legally Responsible Person (LRP) and create the project account on SMARTS.
- The client will add GHD to the SMARTS account as a data entry entity and GHD will post the SWPPP and PRDs to the SMARTS account and assist in completing the required information for the NOI for the project.
- This task's scope will not include assistance for the SWPPP implementation or Notice of Termination.

Task 9 – Bid Phase Services

This task is to perform Construction Bid and Award Phase Services, including the solicitation of construction contract bids and award of contract. The subtasks outlined below are to illustrate the work that occurs under bid period services and these individual activities will not be billed separately.

Task 9.1 - Advertisement for Bid and Submission of Bid Documents to the Builders Exchange

GHD will prepare the advertisement for bid for publication and will provide it to the District that will be responsible for advertising it in the local paper and paying for the costs. GHD will also provide electronic copies of the bid documents to the Builder's Exchange. Contractors shall be responsible for printing their own copies of the documents if they wish to have hard copies.

Task 9.2 - Prebid Walkthrough

GHD will prepare an agenda for the prebid walk through and conduct the walkthrough with interested contractors to review the site and the project requirements. It is assumed that the construction inspector and the construction manager will be present as well. An attendance list will be compiled during the meeting. Questions raised during the walk through will be responded to via a formal addendum which will include the attendance list following the walkthrough.

Task 9.3 - Prepare Addenda

GHD will respond to technical inquiries during bidding via written addenda. This scope is based upon the preparation of up to five (5) written addenda related to interpretations of the Bid Documents. The addenda will be provided to the Builder's Exchange. Changes in the intent of the design requiring redesign work are not included in this scope.

Task 9.4 - Construction Contractor Bidding and Award

GHD will participate in attend one virtual or in-person bid opening at the District, assist the District with the evaluation of the bids, and will prepare the award recommendation memorandum.

Deliverables:

- Bid Advertisement to be published in local newspapers
- Electronic documents
- Notice of Award
- Contract Documents
- Notice to Proceed
- Award Recommendation Memorandum

Assumptions:

- District to pay any publishing and advertising fees directly
- All deliverables to be provided in electronic format

Optional Construction Inspection and Management Services

GHD has the qualifications and experienced personnel available to provide a range of construction inspection and management services to see this project through Final Completion. The following scope is an example of how GHD approaches the construction of a project to allow the District to understand GHD's qualifications and approach to providing construction services. GHD can work with the District on the specific scope that may be desired for the construction phase of this project, with special attention to what may be required by the funding agency. We are happy to discuss these optional services with the District.

Scope of Work

Task 1 – Project Management

Task 1.1 - Provide Management of GHD CM Services

GHD project management will include preparation and maintenance of budgets and schedules for CM GHD services, instructions to the GHD Team, preparation of field safety instructions, and routine progress reporting.

Task 2 – Contract Management

GHD's Construction Management Team (CMT) will act as an extension/adjunct of District staff. The CMT will coordinate with the District to discuss project details, review schedules, provide drafts for review and produce final documentation ready for District signature. The CMT will provide periodic updates, coordinate meetings and telephone calls, promptly transcribe meeting notes, and distribute.

The CMT will perform the following services:

Task 2.1 – Provide Project Coordination

Coordinate with District staff to discuss and address issues with the project. This will be accomplished by daily/weekly email updates of the activities that preceded the work accomplished in the time period with issues that occurred. The weekly update will be more in depth by providing a 2-3 week look ahead on the schedule and will contain an ongoing list of outstanding critical issues.

The CMT will coordinate with the various businesses and residences in the vicinity of the project.

Task 2.2 – Prepare and Conduct Pre-Construction Meeting

The pre-construction meeting will include the District, the design team, utility companies, contractor, and major subcontractors. The CM will prepare the agenda and meeting minutes. Prior to the Pre-Construction Meeting, the CM will prepare a draft contact list including GHD staff, District staff, contractor, and others as appropriate. Contact information will be identified for key personnel from each agency to be contacted in the event of an emergency. The list will be updated, finalized, and distributed to all participants after the meeting, as well as to the police and fire departments.

Task 2.3 – Conduct and Document Project Meetings

Conduct weekly progress meetings and other special technical meetings throughout the project. The CM will prepare the agenda, describing key issues, schedule status, and potential change orders, and distribute notes to meeting participants.

Task 2.4 – Review Contractors Construction Schedule

Review the Contractor's project schedule for conformance with the specifications and for reasonableness of activity durations and sequence. The CM will perform the following activities:

- Coordinate review comments by the District and the design team and transmit review comments to the contractor.
- Meet with the contractor to discuss and clarify any significant issues. Review revised schedules. Review work progress as compared to the as-planned schedule and notify contractor of schedule slippage.
- Review schedule to determine impact of the weather and change orders on the construction schedule. Review contractor's updates of the construction schedule that incorporates actual progress, weather delays, and change order impacts.

Task 2.5 – Maintain Project Records

Maintain project records, including daily logs, weekly report of working days, inspection reports, compliance testing results, photos, measurement of quantities, schedules, submittals, RFIs, RFCs, PCOs, change orders, month pay requests, issues, and correspondence. Project records will be maintained in organized manner for quick reference. The project records are a combination of the web-based management system and our daily detailed field reports.

Task 2.6 – Review and Evaluate Monthly Progress Payments

Review and evaluate monthly progress payment requests submitted by the Contractor, negotiate differences over payment, and recommend payment to District. Quantity vouchers will be checked and signed independently by the CM to monitor quantities paid against estimated quantities. CM will monitor certified payrolls.

Task 2.7 – Prepare Monthly Progress Reports

CM will prepare and submit to the District a monthly progress report, which will include a construction progress summary, construction cash flow and payments, and summary logs for proposed change orders (PCOs).

Task 2.8 – Respond to Requests for Information (RFIs) and Issue Requests for Clarifications (RFCs)

Coordinate, evaluate, and manage the process of responding to RFIs and issuing RFCs. This effort includes receiving the RFI from the Contractor or transmitting the RFC to the Contractor, logging into the system, transmitting them to the design team for response, coordinating with the design team on field status, tracking progress, reviewing responses, and transmitting responses to the Contractor.

Task 2.9 – Prepare Change Orders

Coordinate and manage the change order process, including logging, reviewing them in conjunction with design team and the District, assisting with determination of changed conditions and scope definition as needed, developing independent cost estimates, assisting with negotiation, and incorporating change orders into the construction contract.

Task 2.10 – Coordinate Submittal and Shop Drawing Review Process

Coordinate the submittal and shop drawing review process, including logging submittals from the Contractor, transmitting to design team for response, coordinating with design team on field status, tracking progress, reviewing responses, and transmitting responses to the Contractor. Incomplete submittals will be returned to the contractor prior to being submitted to the design team.

Construction Manager and inspectors will also review submittals of shop drawings, materials, test reports, and manufacturer cut-sheets to understand installation requirements and identify potential issues.

Task 2.11 – Monitor Permit Compliance

Monitor contractor compliance with construction permits, traffic and pedestrian control plans, and environmental compliance. CM will coordinate with the design team and Inspector/Observer for compliance and will recommend a course of action to the District if required measures are not being met by the Contractor.

Task 2.12 – Monitor Construction Record Drawings

CM will require the contractor to maintain construction record drawings in coordination with the progress pay request.

Task 2.13 – Perform Claims Management

Analyze potential claims for additional compensation submitted during the construction period and make recommendations to the District for resolution. Coordinate and monitor claims response preparation, logging and tracking status. The Construction Manager will monitor and assist in mitigating any potential project claim, support in defending any construction claims will be negotiated as an extra service.

Task 3 – Provide Field Inspection/ Observation

Provide an on-site construction inspector/observer to monitor the contractor's work for compliance with the contract documents, submittals, RFIs, change orders, traffic and pedestrian control plan, public outreach plan, environmental compliance, including SWPPP requirements. Contractor's certified payrolls will be checked and documented by the inspector. Construction inspector will be on site full time during most operations and will overlap during the day as necessary to coordinate with the design team and District staff. Daily effort is assumed to be 9 hours per day.

Task 3.1 – Prepare Photograph or Video Documentation

Document initial site conditions prior to contractor's commencement of construction using either still photographs or video and will provide additional photos of construction progress periodically throughout construction.

Task 3.2 – Document Field Changes to the Drawings and Specifications

Document field changes to the contract documents on a real-time basis during the progress of construction.

Task 3.3 – Prepare Daily Observation Reports

The Inspector/Observer will prepare daily observation reports. Reports will include employee names and labor classification, equipment identification, hours that were work and equipment utilized, weather conditions, and issues, observations, and significant conversations between the inspector and the contractor and public. The report will be a combination of web-based data and written. The daily reports will have photographs and material tags.

Task 3.4 – Coordinate Materials Testing

Coordinate with the materials testing laboratory performing quality assurance testing in accordance with the contract documents.

Task 3.5 – Develop Punch List

Develop a preliminary punch list for the project and maintain a running punch list through the course of the project. The CMT will schedule the District and design team to conduct final completion inspections and issue final punch lists.

Task 3.6 – Compile Final Records

Provide the District with a complete set of project records of the project, indexed and filed, and a listing of warranties provided under the project including the items covered and the warranty duration. The documentation will be all in electronic format.

Task 3.7 – Prepare Final Pay Estimates

Prepare the final pay estimate and balancing change orders, prepare the Notice of Completion, and coordinate retention release at the conclusion of construction.

Task 4 – Public Outreach

Services related to public outreach during construction will be provided as needed. Effective communication with the public is paramount to minimizing disruptions and impacts from construction. The following subtasks could be performed as part of the public outreach effort:

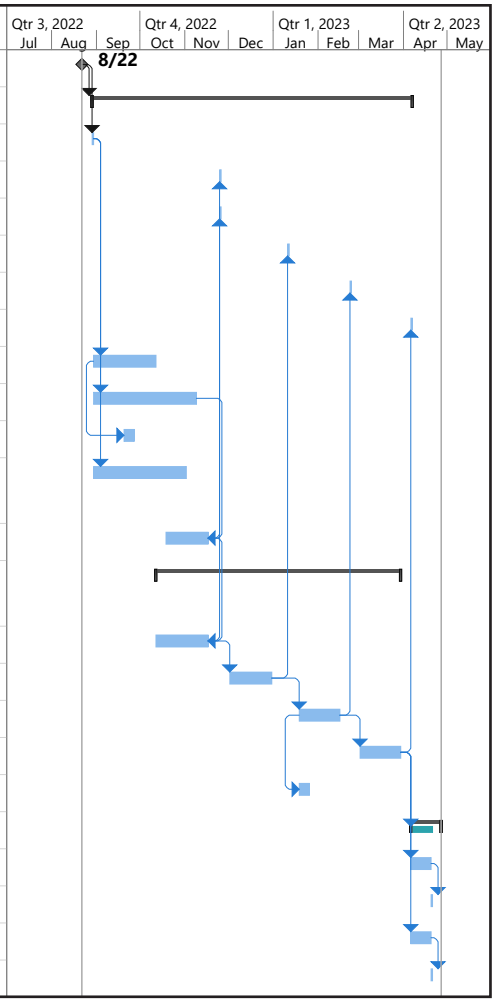
- Public Outreach Plan
- Public Information and Contact Points
- Attend Public Meetings

6. | Amount of Effort Anticipated for Each Task

TASK DESCRIPTION		TOTAL HOURS
1 Task 1: Project Management and Coordination		**134**
Subtask 1.1	*Project Management and Coordination*	*134*
2 Task 2: Additional Background Information Review		**18**
Subtask 2.1	*Additional Background Information Review*	*18*
3 Task 3: Geotechnical Investigation		**10**
Subtask 3.1	*Geotechnical Investigation*	*10*
4 Task 4: Potholing		**12**
Subtask 4.1	*Potholing*	*12*
5 Task 5: Base Mapping and Utility Easement Procurement		**56**
Subtask 5.1	*Base Mapping and Utility Easement Procurement*	*56*
6 Task 6: Basis of Design Technical Memorandum		**54**
Subtask 6.1	*Basis of Design Technical Memorandum*	*54*
7 Task 7: Engineering Design and Bid Dosument Preparation		**767**
Subtask 7.1	*Preliminary Design (30% Design)*	*213*
Subtask 7.2	*Design Development (65% Design)*	*193*
Subtask 7.3	*Construction Documents (95% PS&E)*	*183*
Subtask 7.4	*Final Design (100% PS&E)*	*178*
8 Task 8: SWPPP Development		**28**
Subtask 8.1	*SWPPP Development*	*28*
9 Task 9: Bid Phase Services		**258**
Subtask 9.1	*Advertisement*	*24*
Subtask 9.2	*Prebid*	*38*
Subtask 9.3	*Prepare Addenda*	*158*
Subtask 9.4	*Construction Contractor Bidding and Award*	*38*
	Total Labor Hours	**1,337**

7. | Project Schedule

ID	Task Name	Start	Finish
1	**GHD NTP**	Mon 8/22/22	Mon 8/22/22
2	**Task 1. Project Management & Coordination**	**Mon 8/29/22**	**Thu 4/6/23**
3	1.1 Project Initiation- Kickoff Meeting	Mon 8/29/22	Mon 8/29/22
4	1.2 Review Meeting-Basis of Design Tech Memo	Fri 11/25/22	Fri 11/25/22
5	1.3 Review Meeting-35%	Fri 11/25/22	Fri 11/25/22
6	1.4 Review Meeting-65%	Wed 1/11/23	Wed 1/11/23
7	1.5 Review Meeting-95%	Thu 2/23/23	Thu 2/23/23
8	1.6 Review Meeting-Final	Thu 4/6/23	Thu 4/6/23
9	**Task 2. Additional Background Information Review**	Tue 8/30/22	Tue 10/11/22
10	**Task 3. Geotechnical Investigation**	Tue 8/30/22	Tue 11/8/22
11	**Task 4. Potholing**	Tue 9/20/22	Mon 9/26/22
12	**Task 5. Base Mapping & Utility Easement Procurement**	Tue 8/30/22	Tue 11/1/22
13	**Task 6. Basis of Design Technical Memorandum**	Wed 10/19/22	Wed 11/16/22
14	**Task 7. Engineering Design & Bid Document Preparation**	**Wed 10/12/22**	**Wed 3/29/23**
15	7.1. Preliminary Design 35%	Wed 10/12/22	Wed 11/16/22
16	7.2. Design Development 65%	Fri 12/2/22	Fri 12/30/22
17	7.3. Construction Documents 95%	Thu 1/19/23	Wed 2/15/23
18	7.4. Final Design 100%	Thu 3/2/23	Wed 3/29/23
19	**Task 8. SWPPP Development**	Thu 1/19/23	Wed 1/25/23
20	**Task 9. Bid Period Services**	**Thu 4/6/23**	**Wed 4/26/23**
21	9.1. Advertisement for Bid	Thu 4/6/23	Wed 4/19/23
22	9.2. Prebid Walkthrough	Thu 4/20/23	Thu 4/20/23
23	9.3. Addenda	Thu 4/6/23	Wed 4/19/23
24	9.4. Construction Contractor Bidding & Award	Thu 4/20/23	Thu 4/20/23



8. | Fee Proposal

As a requirement of the District's RFP, we have delivered our Fee Schedule in a separate sealed envelope to the District Office.

A APPENDIX: Key Staff Resumes

Michelle Davidson

Project Manager

Location

Eureka, CA

Experience

8 years

Qualifications/Accreditations

- BS, Civil Engineering, California State University, Chico, CA, 2014
- Quality Control Manager Training, US Army Corps of Engineers
- Occupational Safety and Health Administration (OSHA) 10-Hour Training

Memberships

- American Society of Civil Engineers (ASCE), North Coast Branch, Director, Past President
- ASCE, North Coast Branch Younger Member Group, Past President

Relevant Experience Summary

Michelle has over eight years of experience in project management, engineering design, construction management and inspection, regulatory permitting coordination, bid package development, contracting, and project funding. Her experience includes a variety of water, sewer, and civil site design projects including tanks, piping, treatment plants, pump stations, and civil site work that includes ADA improvements, often working on municipal projects. She regularly works with multi-disciplinary teams, and interacts with owner representatives, regulators, and key stakeholders to provide cost-effective designs that meet the needs of the community.

Project Experience

Water Tank Replacement Project

Role: Construction Manager
Client: Big Rock Community Services District
Location: Hiouchi, CA

This project included the replacement of a 100,000-gallon redwood water tank with a 200,000-gallon bolted steel tank. The project boundary had naturally occurred asbestos, and so ensured that the contractors complied with the asbestos dust mitigation plan. The project also included improvements to the access road to the tank, the installation of a soil nail retaining wall, installation of a new pump house, and site drainage improvements.

Jedediah Way Road Improvements Project

Role: Project Manager / Construction Manager
Client: Big Rock Community Services District
Location: Hiouchi, CA

This project included the rehabilitation of a main access road to a water tank site. Work included topographic surveying, geotechnical investigations, environmental permitting, design and bid package development, bid period services, construction management, grant management, and project closeout including the development of as-built drawings. The project also included regular coordination with the general public impacted by construction.

West Texas Utility Replacement Project

Role: Project Manager
Client: City of Fairfield
Location: Fairfield, CA

Served as Project Manager for the relocation of over a half-mile of the City's water main and the installation of a new 12-inch reliver trunk sewer. Work included utility company investigation, potholing, geotechnical investigation, surveying, development of basis of design document, preparation of bid ready plans and specifications, bid period services, office engineering support during construction, and project closeout.

College of the Redwoods, Soil Reuse at White Slough Project

Role: Project Manager
Client: College of the Redwoods
Location: Eureka, CA

Developed engineering design and bid package for a soil reuse project to move approximately 50,000 cubic yards of soil from a college campus to a nearby restoration site. Project entailed site surveying, site design to accommodate changes in soil quantity, including stormwater and drainage changes to accommodate new site grading, bidding, coordination with restoration site staff, college campus activities and staff, and construction management during construction.

Water Tank Design and Construction Project

Role: Project Engineer
Client: College of the Redwoods
Location: Eureka, CA

Developed design documents for two new 300,000-gallon welded steel water tanks to supply the campus. The project included emergency on site diesel power generation. Work included site surveying, geotechnical analysis, and site design to provide the campus with a new water storage and delivery system., including emergency power. The new tanks replaced two obsolete redwood tanks. The design of the new system included site grading, a fire booster pumping station, standby power, electrical and controls

integration. Was engaged in the overall bidding, and construction management as well.

Physical Education Building & Field House Project

Role: Civil Project Engineer
Client: College of the Redwoods
Location: Eureka, CA

Served as Civil Project Engineer in support of architectural conceptual design of new Physical Education (PE) and Field House buildings. The PE building is adjacent to the Creative Arts Complex and the Field House will be at the site of the previously demolished stadium adjacent to the athletic field. The design included an ADA path of travel that was developed from the Field House to the PE building and from the PE building to the main parking lot. A replacement baseball field layout was developed at the old PE building site to utilize excess soil generated from the new creative arts, PE, and Field House sites. The overall water, wastewater, drainage, gas, electrical, and telecommunications utilities were designed for the new buildings along with site landscaping.

Creative Arts Buildings Project

Role: Civil Project Engineer
Client: College of the Redwoods
Location: Eureka, CA

Served as Civil Project Engineer for design in support of architectural design of four new buildings in the creative arts complex. The engineering site design included careful analysis of existing grades to accommodate a new fire road, ADA parking, ADA walkways, buildings, and a courtyard. The design also included full site utility design, including drainage, potable water, wastewater, electrical, and gas. The creative arts complex design was integrated into the conceptual plan for a future Academy of the Redwoods facility and a new PE building. Regularly coordinated with other disciplines.

Rio Dell Water System Upgrades and Tank Replacement Project

Role: Staff Engineer
Client: City of Rio Dell
Location: Rio Dell, CA

Worked on the evaluation and upgrade of portions of the Rio Dell Water System. Rio Dell historically used redwood tanks which were leaking and were not seismically stabilized. The work included replacement of a 250,000-gallon redwood tank with a new 500,000-gallon steel tank and replacement of a 100,000-redwood tank with a 100,000-gallon stee tank. Work included land acquisition, site development, Mechanically Stabilized Earth (MSE) wall design, yard piping, and tank circulation and chlorine booster system.

Water Distribution and Storage System Evaluation Project

Role: Staff Engineer
Client: Smith River Community Services District
Location: Smith River, CA

The Smith River CSD has eight aging redwood storage tanks within several pressure zones serving the diverse district. These tanks were leaking and were not up to current seismic standards. Worked with District staff to identify system deficiencies and future needs. Capital improvement projects were identified to improve system reliability through hazard mitigation projects. Worked with the team to develop concepts for replacement of tanks, upgrading pump stations, providing standby power, and improving the Supervisory Control and Data Acquisition (SCADA) system for emergency response.

Water System Emergency Generator Project

Role: Project Manager
Client: Smith River Community Services District
Location: Smith River, CA

Serves as Project Manager on Proposition 1-funded project to provide a combination of permanently mounted generators and mobile generators at the main control building and well site and four of the high priority pump stations where no emergency power currently exists. Provided permit development, grant administration support, and design. Is currently providing bid period services, and will provide construction inspection and administration, project performance monitoring plan, and project closeout.

Water Distribution and Storage System Evaluation and Upgrade Design Project

Role: Project Engineer
Client: Redway Community Services District
Location: Imperial, CA

The Redway CSD is a small district in rural California which needed upgrading of its water supply treatment, and storage systems. Worked with District staff and the project team to evaluate storage options including bolted and welded steel tanks to replace the existing failing storage system. Ultimately a modular approach was selected so that the District could add tanks to the system as funding for expansion became available. The plan also included replacement of the water supply line, improvements to the treatment system, upgrades to yard piping, and improvements to the monitoring and control system.

Elk River Wastewater Treatment Plant Secondary Clarifier Repair Project

Role: Construction Inspector
Client: City of Eureka
Location: Eureka, CA

Performed construction inspection on a $1,021,500 project. The project entailed repairing two secondary clarifiers, including the replacement of the bridge assembly, installation of a new drive unit, hazardous material abatement, recoating of some of the features, installation of a new fiberglass flocculate skirt, and improvements to the electrical features. The project required special coordination to ensure that there was always one clarifier in service and that the project was done before the heavy winter rain.

Elk River Treatment Plant Odor Control Tower Repair Project

Role: Construction Inspector
Client: City of Eureka
Location: Eureka, CA

Served as Construction Inspector for the repair of the odor control tower. Repairs included hazardous material abatement in a confined space, concrete crack, snap tie, and spall repair, installation of new Fiberglass Reinforced Plastics (FRB) beams and tower recoating.

Anne Lynch PE

Project Director

Location

Sacramento, CA

Experience

26 years

Qualifications/Accreditations

– BS, Civil Engineering (Cum Laude), Auburn University, Auburn, AL, 1996

– BA, Philosophy, University of Oklahoma, Norman, OK, 1992

– Civil Engineer, CA #64453

Relevant Experience Summary

Anne leads GHD's Water West IWM Business Group and is the North American Service Line Lead for IWM. She has more than 26 years of experience in water resources management, particularly focused on water supply, water reuse, flood management, CIP development, investment and funding strategies, and brine management projects and planning studies. She is a leader in managing complex project teams to meet tight deadlines, as well as managing projects where coordination and approval is required from local, state, and federal agencies. Anne brings experience working with water management agencies in all 58 counties in California, including diverse experience in flood, water resources, and IWM. She understands the recycled water landscape in California, having led some of the premier water recycling planning studies developed in conjunction with the US Bureau of Reclamation. Anne also has assisted with the development of a number of significant reports published by the California Department of Water Resources Programs over the past 10 years, including the California Water Plan (Updates 2013 and 2018), Stakeholder Perspectives — Recommendations for Sustaining and Strengthening Integrated Regional Water Management (IRWM), California's Flood Future Report, and 2017 Central Valley Flood Protection Plan (CVFPP) Update. Anne helped develop the initial draft of the Delta Plan and was the author of the water resources paper that supports the Delta Plan.

Project Experience

Hidden Valley Lake Community Services District SCADA Master Plan Project

Role: Project Director
Client: Hidden Valley Lake Community Services District
Location: Lake County, CA

Serves as Project Director for the development of the hydrogeological assessment and source water exploration, which included an assessment of the existing facilities and development of recommendation, as well as operational and performance requirements.

Hydrogeological Assessment & Source Water Supply Exploration Project

Role: Project Director
Client: Lake Berryessa Resort Improvement District
Location: Lake County, CA

Serves as Project Director for the development of a geophysical assessment, which included shallow alluvium and bedrock exploratory drilling and sampling.

Eel River Valley Groundwater Sustainability Plan and Monitoring Well Installation Project

Role: Quality Assurance/Quality Control, Senior Advisor
Client: Humboldt County Department of Public Works
Location: Eureka, CA

Serves as Senior Advisor to the project manager and QA/QC on groundwater sustainability plan development.

Sustainable Groundwater Management Project Analysis and Monitoring Protocol Development Project

Role: Project Manager
Client: California Department of Water Resources
Location: Sacramento, CA

Serves as Project Manager responsible for collecting and analyzing data to develop standardized monitoring methods for use in determining the efficacy of sustainable groundwater management projects. Efficacy of project outcomes is based upon which types of projects provided the most benefits, cost beneficial results, and addressed the sustainability indicators.

Water Conservation and Water Loss Program Support Project

Role: Senior Advisor
Client: Solano County Water Agency
Location: Solano County, CA

Serves as Senior Advisor providing ongoing program support.

Corte Madera Sewer Master Plan Project

Role: Project Director
Client: Town of Corte Madera
Location: Corte Madera, CA

Serves as Project Director for the development of the Corte Madera Sewer Master Plan, which included inspection of pipelines and a condition assessment of its collection system to comply with a 2020 settlement agreement.

Stormwater Compliance, Permit Compliance, and Municipal Separate Storm Sewer System (MS4) Permit Inspection Field Support Project

Role: Project Director
Client: City of Carson
Location: Carson, CA

Serves as Project Director for development of a facility inspection program designed to meet the requirements of the Los Angeles County National Pollutant Discharge Elimination System (NPDES) MS4 Permit around stormwater mobilization of contaminants. The work included MS4 permit compliance inspection field support which included developing a IPAD based inspection tool, training of field staff, and support for stormwater compliance permitting.

Modjeska and La Palma Stormwater Capture System Reporting and Monitoring Project

Role: Project Director
Client: City of Anaheim
Location: Anaheim, CA

Served as Project Director for the monitoring of efficacy of trash and debris removal from the stormwater, as well as quantification of dry weather and stormwater flows entering the systems, for groundwater infiltration at Modjeska Park and Huckleberry Basin at La Palma and Richfield Road site.

City of Dana Point Stormwater Feasibility Studies Project

Role: Project Director
Client: City of Dana Point
Location: Dana Point, CA

Served as Project Director for the preparation of individual stormwater drainage feasibility studies at four locations within the City. These locations have been prone to flooding and/or drainage issues within the public right of way and into private properties. Task included preparing existing conditions analysis in 1D and 2D models, providing multiple alternative analysis, and estimating costs for each alternative.

La Palma Avenue and Richfield Road Storm Drain Improvement Project

Role: Project Director
Client: City of Anaheim
Location: Anaheim, CA

Served as Project Director for a storm drain system extension project. The project included grant funding requirements, including schedule, budget, and project costs. The primary objective of the project was stormwater capture and groundwater recharge. GHD was tasked to provide hydrology and hydraulic calculations to show annual capture of stormwater runoff. Also included in the scope is final design of the storm drain extension into the ground water recharge basin, and the design of a pre-treatment system that includes a full capture alternative. A secondary objective of the project was to alleviate flooding within the intersection of La Palma Avenue and Richfield Road.

Sustainable Groundwater Management Program Project

Role: Senior Advisor
Client: California Department of Water Resources
Location: Sacramento, CA

Served as Senior Advisor assisting with development of compliance management tools for use by DWR on the Sustainable Groundwater Management Act Program.

Lower Peter's Canyon Regional Park Reservoir Restroom and Rest Area Project

Role: Project Director
Client: OC Parks and OC Flood Control
Location: Irvine, CA

Serves as Project Director for replacement of potable restroom facilities with permanent restroom building which required horizontal drilling through a permanent flood control weir. Project provides enhanced pedestrian experience at two trailheads and access for emergency vehicles to trail.

Integrated Resources Plan Project

Role: Project Engineer
Client: City of Los Angeles, Bureau of Sanitation
Location: Los Angeles, CA

Responsible for evaluating recycled water opportunities and developing the recycled water planning section of the Integrated Resources Plan for the City of Los Angeles. The plan is a planning program that considers the relationships between wastewater, recycled water, stormwater, and potable water sources to identify capital improvement projects to meet Year 2020 water needs.

Big Bear Area Regional Wastewater Agency Brine Management Study Project

Role: Project Manager
Client: Big Bear Area Regional Wastewater Agency
Location: Big Bear, CA

Served as Project Manager for the Big Bear Area Regional Wastewater Agency Brine Management Study, which was a comprehensive investigation of brine disposal alternatives for a proposed indirect potable recycled water project utilizing reverse osmosis technology.

Urban Water Management Plan Project

Role: Project Engineer
Client: City of Redlands
Location: Redlands, CA

Responsible for the preparation of the 2000 Urban Water Management Plan, including data collection, analysis, report preparation, and coordination with Department of Water Resources. Data collection and analysis involved the evaluation of water production records, city water conservation programs, future water demands, current and future water supplies, non-potable water uses, feasibility of wastewater recycling, and drought emergency plan.

Steve McHaney PE

QA / QC

Location

Eureka, CA

Experience

35 years

Qualifications/Accreditations

- BS, Environmental Resources Engineering (Minor: Computer Information Systems), Humboldt State University, Arcata, CA, 1986
- Civil Engineer, CA #47590, GU #1250, CNMI, HI, WA, OR, ID
- Safety Assessment Program (SAP) Volunteer

Memberships

- American Society of Civil Engineers
- California Water Environmental Association
- National Water Supply Improvement Association
- Water Environment Federation
- International Association on Water Quality, Specialty Group on Wetlands
- American Water Resources Association
- WateReuse Association

Relevant Experience Summary

Steve has over 35 years of municipal engineering experience with motor vehicle, pedestrian, and bicycle transportation, site design and drainage, site utility design, and watershed and wetlands restoration design. Steve has served as City Engineer for both City of Trinidad and City of Rio Dell for more than 15 years providing transportation and utility evaluation and design, as well as planning and environmental compliance services. Steve has also been engaged on the Bay Trail and Eureka Trails projects providing technical input and quality control review

Project Experience

Water Storage Tank Stabilization Project

Role: Task Manager
Client: Big Rock Community Services District
Location: Hiouchi, CA

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s with water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to completely replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve access, and make improvements to the overall SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. The tank site is also the location for new emergency communications equipment and antennae tower. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Redwood National Park Water Treatment and Tank Design Project

Role: Project Manager
Client: Redwood National Park
Location: Orick, CA

Responsible for the condition assessment of the existing water storage tank for the park and determined it did not meet modern design standards and needed to be replaced. Working with the park, designed a new 100,000-gallon steel tank along with a new treatment and pumping facility. The new equipment was integrated into the existing site infrastructure. Worked with the local park staff, as well as staff in Sacramento to comply with state standards and to create plans and specifications for bidding. In addition, GHD provided bidding, construction, and startup assistance.

Irrigation Management Plan Project

Role: Task Manager
Client: Sonoma Valley County Sanitation District
Location: Sonoma County, CA

Responsible for the development of an irrigation management plan and worker education and training program for the irrigation systems for the storage and reuse system. A combination of pasture and vineyards were irrigated and developed a management plan based on the soil types and conditions, groundwater characteristics, weather patterns, crop type, and operational requirements. In addition, developed training programs in both English and Spanish including printed materials and videos that were used to train irrigation workers in the proper management of irrigation water and the crops being produced.

Susanville Treatment, Storage, and Effluent Disposal Irrigation System Design Project

Role: Project Manager
Client: Susanville Sanitary District
Location: Susanville, CA

Oversaw this $22 million treatment, storage, and irrigation project for CDCR's California Correctional Facility. The project included an upgraded treatment system, 1,200-acre feet of storage, two main pump stations, hydropneumatic tanks and surge control systems, distribution mains and headers, irrigation networks and percolation beds, and runoff control and recirculation systems. The design of this project was integrated into the development of the agronomic technical analysis that was completed during the predesign phase and the annual cropping and management plan and groundwater management plan developed for the ongoing operation.

Maxwell Community Services District Treatment, Storage, and Effluent Disposal System Design Project

Role: Project Manager
Client: Maxwell Community Services District
Location: Maxwell, CA

Responsible for the design of a new treatment, storage, and effluent disposal system for the Maxwell Community Services District. Led the effort to develop the project facilities plan, investigate and select land area for irrigation and percolation, land acquisition and permitting. Then the project proceeded to the design phase – led the effort to complete the plans and specifications and the project management plan for the project. The design includes a treatment system, pump station, transmission mains, a seasonal storage pond, and irrigation networks using either recycled water or surface water as the irrigation source.

Water Balance and Effluent Land Application Design Project

Role: Project Manager
Client: California Department of Corrections and Rehabilitation
Location: Tehachapi, CA

Oversaw the development of a year-round recycled water storage and effluent management system design for the correctional facility at Tehachapi. The project included the development of a detailed water balance model factoring in weather and cropping patterns as well as effluent production rates. The system included conveying water to two private irrigation districts, as well as irrigation of alfalfa crops at the correctional facility site and use of percolation beds.

College of the Redwoods Creative Arts Complex Site Civil Design Project

Role: Project Manager
Client: College of the Redwoods
Location: Eureka, CA

GHD provided engineering design supporting the architectural design of four new buildings in the creative arts complex. The engineering site design required careful analysis of existing grades to accommodate a new fire road, ADA parking, ADA walkways, buildings, and a courtyard. GHD provided full site utility design, including electrical, gas, drainage, potable water, and wastewater. GHD also designed a rainwater catchment system and landscaping plan. The creative arts complex design was integrated into the conceptual plan for a future Academy of the Redwoods facility and a new Physical Education (PE) building. The project is currently in the final review and approval process with DSA.

City of Trinidad Luffenholtz Creek Road Crossing Storm Damage Repair and Water Intake Repair Project

Role: Project Manager, Civil Engineer
Client: City of Trinidad
Location: Trinidad, CA

A FEMA and Cal OES declared disaster event brought significant debris down Luffenholtz Creek, which plugged the road undercrossing and damaged the road prism, regional drainage culverts, and the water intake system for the potable water treatment plant. Oversaw emergency debris removal efforts and then developed an approved scope of work with the disaster funders and prepared design plans and completed permitting. Also oversaw the construction of repairs to the creek, stormwater culverts, and water plant intake system.

Guam International Airport and Harbor Infrastructure Improvements Master Planning Project

Role: Technical Lead
Client: Guam International Airport and Harbor
Location: Guam

The international airport and port work hand in hand to transport goods to the island of Guam, as well as housing a series of industrial tenants. Evaluation and master planning included conducting an inventory of industrial tenant facilities including potable water, wastewater, and stormwater system requirements to support existing and potential future tenants. Master plan layouts and cost estimates were completed along with economic forecasting. Critical road, and utility infrastructure were then designed to provide the first phase of expansion.

Napa County Steele Canyon Road FEMA Disaster Repairs Project

Role: Civil Engineer
Client: County of Napa
Location: Napa County, CA

Steele Canyon Road is a main access road to a portion of Napa County and was damaged in a FEMA declared disaster event. There were two major areas of disaster damage where significant slipouts occurred and reduced the road to one lane. Working within the FEMA Damage Survey Report (DSR) scope, led the design team to complete field investigations, surveying, geotechnical analysis, design, and construction support. In addition, although the bulk of the permitting was complete, a special study was required to evaluate for the presence of the Elderberry Beetle, as well as to address the potential impact on oak trees during construction. The slipouts were repaired with site-specific approaches, one with drilled piles and lagging and a second with a subdrain system and embankment fill. Also provided construction assistance, and post construction document support.

Ryan Crawford PG, QSD

Technical Director

Location

Santa Rosa, CA

Experience

23 years

Qualifications/Accreditations

– MS, Geology, Humboldt State University, Arcata, CA, 2007

– BS, Geology, Humboldt State University, Arcata, CA, 2003

– Professional Geologist, CA #8764

– Qualified SWPPP Developer (QSD)

Relevant Experience Summary

Ryan is from the Pacific Northwest with local, regional, and international hydrogeologic experience dating back to 1998, from Alaska to South America and Guam. His strong background in groundwater basin characterization, monitoring, domestic and municipal well design, construction oversight, aquifer hydraulic analysis, and testing, together with water geochemistry/quality has been successfully utilized by small and large governments, water districts, agencies, and municipalities to solve complex water supply and quality problems. His focus on surface and groundwater quality and supply and mass balance issues in Northern and Central California has yielded a wide range of project experience from stormwater characterization / treatment / regulatory compliance and permitting (Municipal Separate Storm Sewer System (MS4's)), groundwater exploration and well design, new well construction, old well rehabilitation, to large- and small-scale tertiary treated water for injection well arrays. Ryan has contributed to diverse teams of hydrogeologists and engineers in designing water supply wells, injection wells, and performing; aquifer storage and recovery testing; analysis for interference with water supply treatment options, and saltwater intrusion monitoring and mitigation.

Project Experience

Recycled Water System Project

Role: Project Geologist
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Well Field Analysis Source Capacity Projects

Role: Project Geologist
Client: Hidden Valley Lake Community Services District
Location: Lake County, CA

Provided key technical hydrogeological management for the District in developing several complex pump tests and responses to California Department of Public Health Drinking Water Division requirements for well field capacity testing and reporting. Work for the District included analysis of water extraction data from specific capture zones, loss of production, pumping interference and influence, and geochemical analysis with regards to water quality and blending options.

Eel River Valley Groundwater Sustainability Plan (GSP) Project

Role: Senior Hydrogeologist
Client: Humboldt County Groundwater Sustainability Agency
Location: Eureka, CA

Currently serving as the geology / hydrogeology technical lead for the analysis and preparation of the current Draft GSP, Hydrogeological Conceptual Model and Aquifer Parameters Technical Memorandums, helping develop the sustainability management criteria and analysis, leading the groundwater storage estimates and approach, and was a key player in the groundwater-surface water model construction considerations.

Subsurface Geotechnical / Geophysical and Hydrogeological Investigation Project

Role: Project Hydrogeologist
Client: City of Trinidad
Location: Trinidad, CA

Led the geotechnical investigation which included subsurface exploration and geophysical field studies within the project area for the development of a site conceptual model. Collected and evaluated the geotechnical and geophysical data, developed conclusions and recommendations for the stormwater system design without negatively affecting the function of the existing On-Site Wastewater Treatment Systems (septic systems), water supply inputs or impacting coastal bluff stability. This study determined existing groundwater flow patterns, potential stormwater injection zones and physical properties of the aquifer including groundwater flow regime, groundwater flow boundary conditions, subsurface bedrock topography, aquifer thickness, existing groundwater mounding, permeability, and hydraulic conductivity.

Holly Cinkutis PE, LEED AP

Civil Design Lead

Location

Eureka, CA

Experience

16 years

Qualifications/Accreditations

- BS, Agricultural & Biological Engineering (Minor: Environmental Engineering), Pennsylvania State University, Centre County, PA, 2006
- Civil Engineer, CA #77541, PA #079263
- Leadership in Energy and Environmental Design Accredited Professional (LEED AP), 2009
- Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer
- Drinking Water Treatment Operator (T2), CA #44264
- Drinking Water Distribution Operator (D2), CA #53106

Memberships

- California Water Environmental Association
- American Water Works Association, California-Nevada Chapter- Pipeline & Tank Committee Secretary

Relevant Experience Summary

Holly is a licensed civil engineer with more than 16 years of experience in the municipal, public works, and land development sectors of the civil engineering industry. Her experience began as a project engineer and progressed to project manager and acting engineer for multiple water and wastewater service providers and public works entities. As a project manager at GHD, Holly is responsible for managing project design teams which requires coordinating across multiple disciplines to deliver designs within budget and schedule. Holly's experience ranges from working with stakeholders in planning for future capital improvement projects to project implementation and final completion

Project Experience

Leachate and Potable Water Storage Tank Replacement Project

Role: Senior Engineer
Client: County of Sonoma
Location: Sonoma County, CA

The project, located in Sonoma County, California, includes the design of six 200,000-gallon stainless steel landfill leachate storage tanks at three different landfill sites, as well as the design of three 200,000-gallon stainless steel potable water storage tanks at three different sites in Healdsburg. The project includes site grading, demolition of the existing tanks, site restoration and instrumentation and electrical design. The project will allow for additional storage of landfill leachate which will reduce hauling costs as well as the replacement of three deficient redwood water tanks. The project will be publicly bid in 2022.

Wes Tank Water Main Replacement Project

Role: Project Manager
Client: Resort Improvement District #1
Location: Whitehorn, CA

The project, located in beautiful Shelter Cove, California, includes the installation of approximately 1,000 linear feet of eight-inch Ductile Iron Pipe (DIP) water main on an extremely steep slope. Design of steep slope anchors and vertical thrust blocking to secure the pressurized main was required. The project will be implemented by Resort Improvement utilities staff in Spring 2021 and will provide redundancy to their distribution system.

Duncan Hill Treated Water Improvements Project

Role: Senior Engineer
Client: Placer County Water Authority
Location: Placer County, CA

The project, located in Placer County, California, includes the design of approximately 1.5 miles of new 12-inch water main to connect the Auburn Treated Water system to the Foothill Treated Water system. The project will allow for water service to be provided to residents along the proposed alignment that do not have potable water service presently and experience issues with unreliable water quantity and quality from their existing wells. The project includes the design of two pressure reducing stations, navigation of a creek crossing, a steep hill alignment and coordination with Pacific Gas & Electric (PG&E) and Federal Energy Regulatory Commission (FERC) in regards to the crossing of a Pennstock. The project will be publicly bid in 2022.

Rebecca Crow PE

Funding Compliance Lead

Location

Eureka, CA

Experience

25 years

Qualifications/Accreditations

– BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 1997

– Civil Engineer, CA #69994

Memberships

– Rotary Club of Arcata Sunrise

– Society of Women Engineers

Relevant Experience Summary

Rebecca has 25 years of experience in a broad range of environmental management and planning services: water and wastewater planning, water recycling, watershed and water quality modelling, groundwater management, regulatory compliance, funding assistance, and grant and contract management. She has assisted numerous communities in the evaluation of cost impacts from projects, as well as the evaluation of economic and qualitative benefits resulting from project implementation. Rebecca has experience using both state and federal economic models in support of funding program development and has secured over $100 million dollars in grant funds for communities across the US. She has experience working with regulatory agencies on permit compliance for water, wastewater, recycled water, groundwater, and stormwater systems and understands the economic impacts project decisions can make on long- and short-term permit requirements.

Project Experience

Water Storage Tank Stabilization Project

Role: Project Manager
Client: Big Rock Community Services District
Location: Hiouchi, CA

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s with water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to completely replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve access, and make improvements to the overall SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. The tank site is also the location for new emergency communications equipment and antennae tower. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Recycled Water System Project

Role: Funding and Compliance Coordinator
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Luffenholtz Creek Source Water Protection Project

Role: Project Manager
Client: City of Trinidad
Location: Trinidad, CA

Led this sediment reduction project from initial grant application submittal through project completion. The project was constructed on private property for the benefit of the City's water system. Project included construction of two new roads with extensive excavation, grading, and subgrade development, development of a quarry, installation of two pre-manufactured bridges, and installation of numerous erosion and sediment control Best Management Practices (BMP's). Obtained $1.7 million Prop 50 grant from the State Water Resources Control Board (SWRCP) division of water to complete the project.

Technical Assistance for North Coast Region Disadvantaged Communities Water and Wastewater Providers

Role: Project Manager
Client: North Coast Region Disadvantaged Communities Water and Wastewater Providers
Location: Humboldt County, CA

Contributed professional assistance to project designed to provide transferable tools, training, and demonstration projects addressing the needs and building the capacity of small, economically disadvantaged water and wastewater system providers. Project involved coordination with state and federal funders, non-profit resources assistance agencies, and facilitation of training seminars.

Brian Crowell PE, SE

Structural Engineering Lead

Location

Eureka, CA

Experience

21 years

Qualifications/Accreditations

- MS, Structural Engineering, Stanford University, Stanford, CA, 2001
- BS, Civil Engineering, University of California, Irvine, CA, 2000
- Civil Engineer, CA #65326
- Structural Engineer, CA #5216
- California Emergency Management Agency (CALEMA) Safety Assessment Program

Relevant Experience Summary

Brian has over 21 years of structural engineering evaluation and design experience with new building construction and retrofits, retaining walls, wharves and piers, equipment anchorage, concrete tanks and structures, timber structures, retaining walls, and steel buildings throughout Northern California, serving as one of GHD's senior structural designers. In this role, he interacts with owner representatives, architects, and regulators while collaborating with the design team to provide cost-effective, detailed structural designs

Project Experience

Water Storage Tank Stabilization Project

Role: Senior Structural Engineer
Client: Big Rock Community Services District
Location: Hiouchi, CA

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s with water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to completely replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve access, and make improvements to the overall SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. The tank site is also the location for new emergency communications equipment and antennae tower. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Recycled Water System Project

Role: Senior Structural Engineer
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

McKinleyville Community Services District Generator Replacement Project

Role: Senior Structural Engineer
Client: McKinleyville Community Services District
Location: McKinleyville, CA

Served as Senior Structural Engineer for design of existing building modifications and equipment anchorage for two new generators servicing the entire collection system.

College of the Redwoods Wastewater Treatment and Disposal System Project

Role: Senior Structural Engineer
Client: College of the Redwoods
Location: Eureka, CA

Served as Senior Structural Engineer for design for new underground septic system including reinforced concrete tanks, and new CMU maintenance building.

College of the Redwoods Creative Arts Buildings Project

Role: Structural Engineering Supervisor
Client: College of the Redwoods
Location: Eureka, CA

Served as Structural Engineering Supervisor for detailed structural design for five new single-story wood framed classroom buildings. Responsible for plywood shear wall lateral design with premanufactured wood truss roof assemblies, as well as plan development and 3D modeling in Revit. Was reviewed and approved by the Division of the State Architect (DSA).

Rick Guggiana, EE, LEED AP, CDT

Electrical Engineering Lead

Location

Santa Rosa, CA

Experience

34 years

Qualifications/Accreditations

– BS, Electrical Engineering Technology, California State Polytechnic University, Pomona, CA 1993

– Electrical Engineer, CA #15580, AZ #34069, CO #34471, IL #062-053426, TX #86009, WA #36259

– Leadership in Energy and Environmental Design Accredited Professional (LEED AP), US Green Building Council

– Construction Documents Technologist (CDT), Construction Specifications Institute

Memberships

– Institute of Electrical and Electronics Engineers (IEEE)

Relevant Experience Summary

Rick is a licensed electrical engineer with over 34 years of experience in the electrical, controls, and instrumentation fields, for federal, military, municipal, and private industrial clients. He has extensive experience with water treatment, storage, and pumping systems, wastewater collection and treatment systems, pumping controls, SCADA systems, low and medium-voltage power generation, microgrids, and waterfront electrical distribution. Rick has led large-scale coordination and arc flash studies, desk-top radio path modeling, photometric analyses, forensic studies, feasibility studies, condition assessments, construction cost estimates, and engineering services during construction. He has also written design-build Requests for Proposal (RFP's) and has served as the client's representative, as well has served as the lead electrical engineer on contractor-led design-build teams. Rick was involved in the design and construction management of a 115 kV substation project, which won a merit award from the Consulting Engineers and Land Surveyors of California (CELSOC).

Project Experience

Recycled Water System Project

Role: Electrical Engineer
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Water Storage Tank Stabilization Project

Role: Electrical Engineer
Client: Big Rock Community Services District
Location: Hiouchi, CA

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s with water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to completely replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve access, and make improvements to the overall SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. The tank site is also the location for new emergency communications equipment and antennae tower. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Leachate and Potable Water Storage Tank Replacement Project

Role: Electrical Engineer
Client: County of Sonoma
Location: Sonoma County, CA

The project, located in Sonoma County, California, includes the design of six 200,000-gallon stainless steel landfill leachate storage tanks at three different landfill sites, as well as the design of three 200,000-gallon stainless steel potable water storage tanks at three different sites in Healdsburg. The project includes site grading, demolition of the existing tanks, site restoration and instrumentation and electrical design. The project will allow for additional storage of landfill leachate which will reduce hauling costs as well as the replacement of three deficient redwood water tanks. The project will be publicly bid in 2022.

Richard Maddock PLS

Senior Surveyor - Lot Line Adjustment

Location

Santa Rosa, CA

Experience

30 years

Qualifications/Accreditations

– General Courses, Land Surveying and Business Management, Solano Community College, Fairfield, CA, 1985-1989

– Professional Land Surveyor, CA #8131

Relevant Experience Summary

Richard is a California-registered professional land surveyor. He has over 30 years of experience in all aspects of land surveying. He is an experienced party chief working on projects varying from winery construction staking to subdivisions. With the budget and timeline in mind, Richard delivers a superior product for the client. In the field, he will be the Party Chief of the primary survey crew. Being the Party Chief will provide him with first-hand knowledge of the site, the condition of the existing monuments and other important information critical to producing accurate survey performance areas.

Project Experience

Recycled Water System Project

Role: Land Surveyor
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

North Marin Water District Recycled Water Expansion Project

Role: Project Manager, Land Surveyor
Client: North Marin Water District
Location: Marin County, CA

Served as Land Surveyor and Project Manager for surveying, right of way mapping, and field survey of the alignment to expand the North Service Area of their Recycled Water project.

Nathensen Creek Drainage Study Project

Role: Land Surveyor
Client: City of Sonoma
Location: Sonoma, CA

Provided survey for this project using Lieca GPS and Lieca 1203 Total Station to map the creek cross sections and uplands for the drainage study for the City of Sonoma.

One Bay Area Grant Project: 5039 (023) Safe Routes to School, Phase 2 Project

Role: Land Surveyor
Client: City of Cloverdale
Location: Cloverdale, CA

This is a federally funded project that includes pedestrian pathway and sidewalk gap closures, ADA curb ramps, restriping for Class II bike lanes, including green markings. The project included preparation of legal plats and descriptions for new sidewalk easements for the project, coordinating with the City's right of way agent for acquisition of real property rights and assistance with the right of way certification for the project. In addition, GHD prepared the NEPA technical studies for the project for the project NEPA document and prepared the request for authorization and PS&E submittal for construction spending authorization.

Redwood Creek Drainage Study Project

Role: Land Surveyor
Client: County of Napa
Location: Napa, CA

Provided survey for this project using Lieca GPS and Lieca 1203 Total Station to map the creek cross sections and uplands for the drainage study for the County of Napa.

Lake Berryessa Resort Improvement District Wastewater Treatment Plant Water Balance Evaluation Project

Role: Senior Land Surveyor
Client: Lake Berryessa Resort Improvement District
Location: Napa, CA

GHD utilized two drones simultaneously to acquire aerial imagery and LiDAR data. GSP was used to set control points for the project. GHD also used a remote-controlled boat with sonar to determine the depths of the treated wastewater ponds.

Luke Halonen PE

Project Engineer

Location

Eureka, CA

Experience

8 years

Qualifications/Accreditations

– BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 2014

– Civil Engineer, CA #89080

Relevant Experience Summary

Luke is a licensed civil engineer with over eight years of experience in delivering a variety of civil infrastructure projects. His professional area of focus is hydraulic design of linear infrastructure, including design of associated site improvements. Project types include water transmission, distribution, storage, and booster pump stations, stormwater conveyance and Low Impact Development (LID) stormwater treatment systems, and sanitary sewer collection systems including lift stations, associated project site design and grading, and pedestrian and bicycle facilities. Projects involve planning, environmental compliance, design, permitting, and construction. Roles on project include project manager, project engineer, construction manager, discipline lead, and technical reviewer. His experience also includes a broad range of planning, hydraulic modeling, and analysis capabilities

Project Experience

Water Storage Tank Stabilization Project

Role: Project Engineer
Client: Big Rock Community Services District
Location: Hiouchi, CA

Big Rock Community Services District's (BRCSD) water system was originally built in the 1960s with water supply from the Smith River, a pump station that filled a 100,000-gallon redwood tank, and a distribution system. GHD worked with BRCSD and a series of funding agencies to develop an overall funding package to completely replace the redwood tank, replace a booster pump station, relocate a generator, stabilize the tank site, improve access, and make improvements to the overall SCADA and electrical systems. Under a Master Services Agreement, GHD provided the engineering design, bidding services, construction phase services, and construction management services for this project. The tank site is also the location for new emergency communications equipment and antennae tower. The design, permitting, and bidding for this project was completed in 2018 and construction was completed in Spring 2019.

Recycled Water System Project

Role: Project Engineer
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Leachate and Potable Water Storage Tank Replacement Project

Role: Project Engineer
Client: County of Sonoma
Location: Sonoma County, CA

The project, located in Sonoma County, California, includes the design of six 200,000-gallon stainless steel landfill leachate storage tanks at three different landfill sites, as well as the design of three 200,000-gallon stainless steel potable water storage tanks at three different sites in Healdsburg. The project includes site grading, demolition of the existing tanks, site restoration and instrumentation and electrical design. The project will allow for additional storage of landfill leachate which will reduce hauling costs as well as the replacement of three deficient redwood water tanks. The project will be publicly bid in 2022.

Drinking Water Infrastructure Improvement Project

Role: Project Engineer, Engineer of Record
Client: City of Rio Dell
Location: Rio Dell, CA

Project includes replacement of aging water distribution system components, and replacement of failing 250,000-gallon redwood water storage tank with a new 500,000-gallon bolted steel water storage tank. Prepared a preliminary engineering report for the grant planning application under the Drinking Water State Revolving Fund that identified the history and condition of the existing infrastructure, and the need and basis for replacement of select infrastructure system components.

Chris Richards PE

Electrical Project Engineer

Location

Santa Rosa, CA

Experience

19 years

Qualifications/Accreditations

- BS, Electrical Engineering, California Polytechnic State University, San Luis Obispo, CA, 2002
- Electrical Engineer, CA #17660
- Construction Documents Technologist, Construction Specifications Institute

Memberships

- Building Industry Consulting Services International (BICSI) Telecommunications Association

Relevant Experience Summary

Chris has 19 years of experience in the design and implementation of electrical systems. His design experience includes medium- and low-voltage design for industrial, educational, laboratory, commercial, and residential power, power generation, photovoltaic generation, cleanroom applications, data and server rooms, lighting, telecommunications, security, audio / visual, and fire alarm systems, power and lighting system analysis and modeling, arc flash and coordination studies, Leadership in Energy and Environmental Design (LEED®) credit-driven design and documentation, and California Title 24 lighting efficiency and lighting control measures.

Project Experience

District Maintenance Building Project

Role: Staff Electrical Engineer
Client: Hidden Valley Lake Community Services District
Location: Lake County, CA

Served as Staff Electrical Engineer for this prefabricated maintenance building including 9,000 square feet of office space and maintenance bays.

204 Concourse Boulevard Tenant Improvement Project

Role: Electrical Engineer
Client: Sonoma County Water Agency
Location: Santa Rosa, CA

Served as Electrical Engineer for the Water Agency's tenant improvement at 204 Concourse Boulevard. The building consisted of approximately 25,000 square feet of mixed-use space, including modifications to create private office space, open office workstations, conference rooms, shops, server and SCADA rooms, a small shop and parts inventory space, and miscellaneous service and support spaces.

Service Center Relocation at 2025 Aviation Boulevard Project

Role: Electrical Engineer
Client: Sonoma County Water Agency
Location: Santa Rosa, CA

Served as Electrical Engineer for the Water Agency's project at their Airport-Larkfield-Wikiup Treatment Plant to renovate portions of the existing 6,600-square-foot building and to add a new 5,000-square-foot service center building complete with space for offices, storage, labs, and two large service bays for vehicle maintenance. The electrical engineering design scope included medium voltage distribution, and low voltage normal and standby power distribution for each building. Signal systems included data, voice, security, fire alarm, and Closed-Circuit Television (CCTV), with associated racks and infrastructure. Interior and exterior lighting systems included "intelligent" daylighting, dimming, local area controls, and egress lighting. All lighting was designed to meet or exceed CA Title 24 requirements.

Vallejo Grid Pump Projects

Role: Staff Electrical Engineer
Client: City of Vallejo
Location: Vallejo, CA

Served as Staff Electrical Engineer for this project. Replaced three natural gas driven water pumps for the City with three pumps driven by VFD's.

Carson City Federal Building Project

Role: Electrical Engineer
Client: City of Carson City
Location: Carson City, NV

GHD, as a subconsultant designed various projects to reduce the amount of energy and water used for this facility which is comprised of three stories and is primarily used as office space. Tenants of the building include the Bureau of Land Management and Indian Affairs and the Department of the Interior. The scope of work included design of a new 10-kW roof mounted, grid connected PV array, provide a new solar domestic hot water system, retrofit existing interior lighting system and existing parking lot lighting system and replace existing ceiling registers.

Erick Osorno EE

Electrical Project Engineer

Location

Santa Rosa, CA

Experience

2 years

Qualifications/Accreditations

– BS, Electrical Engineering, California State University, Fresno, CA, 2019

– Electrical Engineer, CA #23831

Relevant Experience Summary

Erick is an electrical engineer with two years of experience in electrical system design, lighting and lighting controls design, photometric analysis, motor controls, pump controls, construction cost estimates, load calculations, and drafting of construction documents. Erick is an excellent communicator with good team management skills. His background includes clients, from commercial to industrial to government.

Project Experience

Recycled Water System Project

Role: Electrical Project Engineer
Client: Mendocino Unified School District
Location: Mendocino, CA

GHD is preparing the design of the recommended project, which includes a new 250,000-gallon bolted stainless steel water tank, over 9,000 feet of new mains, 15 fire hydrants, and new irrigation services. GHD is also preparing the CEQA IS/MND in support of the recommended project. The new tank will include all the standard appurtenances in stainless steel, as well as stainless steel exterior and interior ladders and hand railings meeting OSHA requirements. A new telemetry and SCADA system will also be provided.

Leachate and Potable Water Storage Tank Replacement Project

Role: Electrical Project Engineer
Client: County of Sonoma
Location: Sonoma County, CA

The project includes the design of six 200,000-gallon stainless steel landfill leachate storage tanks at three different landfill sites, as well as the design of three 200,000-gallon stainless steel potable water storage tanks at three different sites in Healdsburg. The project includes site grading, demolition of the existing tanks, site restoration and instrumentation and electrical design. The project will allow for additional storage of landfill leachate which will reduce hauling costs as well as the replacement of three deficient redwood water tanks. The project will be publicly bid in 2022.

County of Marin Old Ranch Road Tank No. 2 Project

Role: Electrical Project Engineer
Client: County of Marin
Location: Novato, CA

Served as Electrical Designer for the design of a new water tank installation. Design included providing solar power for tank instrumentation. Provide calculations for solar array and batteries. Drafted design drawings using AutoCAD, which included site plans details and schedules.

Concow Elementary School Water Treatment System Project

Role: Electrical Project Engineer
Client: County of Butte
Location: Paradise, CA

Served as Electrical Designer for the design of a new water treatment system and well improvements. Design included providing power to new well pump, general power to a new building that housed new filter system, chemical metering instrumentation, addition of new controls, panel, feeder sizing, breaker sizes and grounding requirements to meet local and state electrical codes. Developed control diagrams and drafted AutoCAD drawings of electrical plans and panel schedule.

New Domestic Water System and Well Improvements Project

Role: Electrical Project Engineer
Client: San Pablo Bay National Wildlife Refuge
Location: Sears Point, CA

Served as Electrical Designer for the design of a new domestic water system and well improvements. Design included providing power to new well pump, general power to a new building that housed new filter system, addition of new panel, feeder sizing, breaker sizes and grounding requirements to meet local and state electrical codes. Drafted Auto CAD drawings of electrical plans and panel schedule.

Benjamin D. Crawford, PE, GE

Principal Geotechnical Engineer

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Ben Crawford is the Founder and President of Crawford & Associates, Inc. He has managed complex projects including bridges, roadways, pavement rehabilitation, water and wastewater, parks, and trails. Ben's experience includes providing geotechnical recommendations for water, wastewater, storm drainage, and pipeline projects, including associated ancillary structures, foundations, and pavement/flatwork. Previous projects include reinforced concrete pipelines, large-diameter pipelines, work within wetlands and waterways, open-cut and trenchless pipelines, and projects within areas of high seismicity.

EDUCATION

B.S. Civil Engineering, California Polytechnic State University, San Luis Obispo, 2002

REGISTRATIONS

Civil Engineer, CA C68457

Geotechnical Engineer, CA GE2861

ORGANIZATIONS

- Geoprofessional Business Association
- American Public Works Association
- Modesto Engineers Club
- American Council of Engineering Companies
- County Engineers Association of California

EXPERIENCE

At Crawford: 9 years

Total: 19 years

LOCATION

Sacramento, CA

REPRESENTATIVE PROJECTS

Atherton Tank and Pump Station, Manteca, San Joaquin County, CA

Principal Geotechnical Engineer. The project consisted of three new booster pumps and a 90-foot diameter steel water storage tank. Performed detailed settlement calculations and determined that an over excavation and recompaction of the near surface loose sands would be required. Provided foundation recommendations for a reinforced concrete mat foundation and perimeter ring foundation. In 2013, the City of Manteca upgraded the project to include a 150 ft. diameter, 33 ft. tall, 3.6-million-gallon steel water tank founded on a perimeter ring foundation; a dedicated booster pump station, piping and standby on-site electrical generation. The project has been completed utilizing **design/build** delivery. Crawford & Associates completed the design/build process and worked with the City, Design Team and Contractor to update our recommendations during construction.

Brentwood Non-Potable Water Storage Tank and Pump Station, Brentwood, Contra Costa County, CA

Project includes a 3 million gallon prestressed concrete storage tank at the wastewater treatment facility. The tank will be about 25 feet in height and 170 feet in diameter. The tank will be used to store non-potable water (NPW) for the NPW distribution system. Improvements also include a new pump station, ancillary piping, and a small service structure to house and service equipment. Prepared a Geotechnical Report, which included a review of available geologic and seismic maps; drilling, logging, and sampling; laboratory testing; and geotechnical engineering calculations and analysis to develop recommendations. Recommendations were provided for dewatering, grading, foundation design parameters, utility trenches, and pavement recommendations.

Well 17 Project for Linda County Water District, Marysville, Yuba County, CA

Principal-In-Charge. Provided foundation recommendations for structures at two sites. The Well 17 site includes a below ground sump station, mist eliminator structure, and chemical & electrical control facility supported on concrete mat foundations; 25-foot diameter steel backwash tank on a shallow perimeter ring foundation; and ancillary structures/tanks including brine and fuel tanks, generator, pressurized filters, and transformer supported on shallow spread footings/concrete mat foundations. The Storage Tank Site includes an approx. 1-million-gallon, 100-foot diameter steel storage tank on perimeter ring foundations, interior column spread footings, a booster pump station supported on a concrete basin/vault, and booster pump ancillary piping and equipment. The project will also include approximate 1,000 linear feet of open cut water pipeline connecting the Well 17 and Storage Tank Site. Used SETTLE 3D Version 3.0 software to evaluate immediate and consolidation settlement for both the storage basin tank and pump station. Grading, pavement, and utility trench recommendations were also provided.

College of the Redwoods Water Tank Replacement, Humboldt County, CA

Ben was the Principal-In-Charge and prepared a Geotechnical Report, which included review of surface and subsurface conditions, geotechnical conclusions, and design recommendations. The project will replace two redwood tanks with welded steel tanks in the same locations. Provided recommendations for grading, concrete ringwall footings for the tank foundations, and utility trenches.

Christopher Trumbull, PE, GE, D. GE

Senior Project Manager

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

Chris specializes in civil, geotechnical, and environmental consulting and project management services for a variety of clients throughout California and the western US. Chris also manages large and complex geotechnical projects, including transportation, public works, flood control, hydropower, essential facilities, military, correctional, power, industrial, ports, and other markets. Due to his past experience, he provides state-of-the-art quality assurance / quality control on his projects and stresses client communication as the most important factor in creating successful projects.

EDUCATION

Masters in Civil Engineering, Geotechnical Emphasis, San Jose State University, 1995

BS Civil Engineering, San Jose State University, 1989

REGISTRATIONS

Civil Engineer, CA 53710

Geotechnical Engineer, CA 2492

ORGANIZATIONS

- Member, American Society of Civil Engineers
- GeoInstitute
- Academy of Geo-Professionals
- Association of State Dam Safety Officials

EXPERIENCE

At Crawford: 2 years

Total: 34 years

LOCATION

Sacramento, CA

REPRESENTATIVE PROJECTS

Douglas Tank No. 1, City of Rio Dell, Rio Dell, CA

Senior Geotechnical Engineer responsible for leading the geotechnical team for this water tank project, which consists of constructing a new 500,000 gallon (minimum) water storage tank to replace the existing wooden tank. The proposed structure will be either a welded or bolted steel tank, approximately 50 feet in diameter and 40 feet high. A geotechnical investigation including subsurface exploration, laboratory testing, and slope stability and bearing capacity analyses was performed. Conclusions for earthwork and tank foundations were presented in a summary report.

Sunset Water Treatment Plant Improvements, Placer County Water Agency, Rocklin, CA

Senior Geotechnical Engineer responsible for the geotechnical investigation for this project. Improvements may include new filter backwash recovery system and decommissioning and demolition of the existing system, new settling tanks with site safety and security lighting, sludge drying beds, improved instrumentation, new control panel, fence relocation, as well as the replacement, abandonment, or removal of existing structures, equipment, and piping. Work included subsurface exploration, testing and analysis of soil and rock samples collected during geotechnical drilling operations, development of geotechnical criteria, and preparation of the geotechnical investigation report that summarized findings, conclusions, and recommendations for design and construction of improvements.

Mount Madonna Water Tank Replacement Project, Santa Clara County Parks, Santa Clara County, CA

Senior Geotechnical Engineer responsible for the geotechnical investigation for this public project, which consisted of the reconditioning of an existing 100,000 gallon welded steel water tank and the construction of a new 100,000 gallon welded steel water tank adjacent to existing facilities within Mount Madonna County Park. Work included subsurface exploration, testing and analysis of soil and rock samples collected during geotechnical drilling operations, development of geotechnical criteria, and preparation of the geotechnical investigation report that summarized findings, conclusions, and recommendations for tank foundations, earthwork, trench backfill, and seismic design.

County of Sacramento Airport System, Sacramento International Airport Domestic Water Connection Project, WM Lyles, Sacramento, CA

Senior Geotechnical Engineer responsible for leading the geotechnical investigation for this 3.5-mile pipeline and water tanks project. The pipeline was installed primarily by open cut methods with some trenchless crossings at roadways, I-5, and canals. Two 110-foot diameter (1.4 million gallon) tanks with a booster station were constructed for storage and, due to the soft soil conditions, they were supported on a driven pile foundation system. The project also included a building for the booster station and asphalt paving. Soft clays and high groundwater were the primary concerns.

400,000-Gallon Water Tank, Fieldbrook, CA

To increase capacity, the District planned a second 400,000-gallon water tank adjacent to the existing tank. Two borings were drilled and laboratory testing was completed to evaluate the site for corrosivity, liquefaction, and tank foundations. A geotechnical report was prepared that included conclusions and recommendations for earthwork and tank foundation design.