SANITARY DISTRICT NO. 5 OF MARIN COUNTY
2001 Paradise Drive
Tiburon, California 94920

AGENDA

Capital Improvement Program Committee Meeting
Wednesday, October 12th, 2022, 4:30 P.M.

CORONA VIRUS (COVID-19) ADVISORY NOTICE

Consistent with Assembly Bill 361 revising Government Code section 54953, and Resolution No. 2021-07 of this Board enacted in accordance therewith, the Meeting will not be physically open to the public and all Board Members and Staff will be teleconferencing into the meeting.

How to Submit Public Comments:
Comments submitted prior to the commencement of the meeting will be presented to the Committee and included in the public record for the meeting.

Public Comments are to be submitted via email to rdohrmann@sani5.org.

In addition, members of the public who are calling-in will have the opportunity to provide public comments by following the steps below:

How to Participate in the Meeting:

Join Zoom Meeting by clicking on the following link:

https://us02web.zoom.us/j/6230620778

Meeting ID: 623 062 0778

or join by phone:

Call in number: (669) 900-9128 **Participant Code: 623 062 0778**

I. Roll Call

II. Public Comments

III. New Business

1. Review and discuss proposals for the CIP Program Review and Occupancy Optimization project.

2. Wet Weather Tank Floor Rehabilitation Project update.

3. Review and discuss NUTE Engineers proposal regarding Cove Road Pump Station MCC and Generator Upgrade Project.

IV. Adjournment

This Committee may be attended by Board Members who do not serve on this committee. In the event that a quorum of the entire Board is present, this Committee shall act as a Committee of the Whole. In either case, any item acted upon by the Committee or the Committee of the Whole will require consideration and action by the full Board of Directors as a prerequisite to its legal enactment. **Accessible public meetings**: *Any member of the public who needs accommodations should email the Office Manager, at rdohrmann@sani5.org, who will use her best efforts to provide as much accessibility as possible while also maintaining public safety.*

SANITARY DISTRICT No. 5 of Marin County

Proposal

Main Plant and Paradise Cove Plant Capital Improvement Project (CIP) Assessment and Occupancy Optimization Evaluation and Recommendations Project

HDR

October 7,
2022

October 5, 2022

Mr. Tony Rubio, District Manager
Sanitary District No. 5 of Marin County
P.O. Box 227 / 2001 Paradise Drive
Tiburon, CA 94920

RE: HDR's Proposal for Main Plant and Paradise Cove Plant Capital Improvement Projects Assessment and Occupancy Optimization Evaluation and Recommendations Project

Dear Mr. Rubio:

HDR is pleased to present our proposal to assist Sanitary District No. 5 of Marin County (District) with preparation of a technical report that includes an evaluation of the scheduled capital improvement projects at the District's Main and Paradise Cove Treatment Plants, and an assessment of staff occupancy optimization at the Main Plant (with recommendations).

HDR brings proven experience with both the District and with past similar capital improvement program project evaluations. Recent projects for the District include the (1) Biosolids Management and Future Biosolids Master Plan; (2) Collection System Master Plan; (3) Alternative Energy Study; (4) Staffing Assessment; and (5) Main Plant Digester Rehabilitation and Cleaning. Similar master planning/capital improvement program project evaluations that were completed by our team include Minden Gardnerville Sanitation District's wastewater treatment plant and Douglas County Lake Tahoe Sewer Authority's wastewater treatment plant.

Mike Falk will serve as your project manager. He will employ the same project management skills used on past projects where he kept the team on schedule and on budget while keeping everyone fully informed as to project status. Mike understands the importance of communication, not only with outside agencies, but also with internal staff at the District. By selecting Mike as your project manager, the District will be assured of responsiveness, accurate cost estimates, budget management, schedule control, and a quality project.

Mike will be supported by a local team with expertise and long-term experience in wastewater treatment plant planning and staffing studies. Arashdeep Singh and Arthur Xu will serve as project engineers and will perform the capital improvement project assessments. Arashdeep recently performed similar capital improvement assessments for Minden Gardnerville Sanitation District's wastewater treatment plant. Arthur brings recent District experience with your collection system and biosolids master plan projects, and updated cost estimates for the City of Livermore's water reclamation plant capital improvement projects. Scott Joslyn will lead the

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T 925.465.2700

occupancy optimization evaluation and recommendations portion of the project. Scott recently completed the staffing assessment for the District, as well as a similar study for the City of San Mateo's wastewater treatment plant. Mallika Ramanathan will provide quality assurance/quality control (QA/QC) review of the technical report. She was involved in both the Minden Gardnerville Sanitation District and Douglas County Lake Tahoe Sewer Authority projects featured in our proposal.

If you require any further information or have any questions regarding this proposal, please feel free to contact Mike at (916) 817-4916 or via email at Mike.Falk@hdrinc.com. We are excited about this opportunity to continue working collaboratively with the District on this project.

Sincerely,
HDR ENGINEERING, INC.

Holly L.L. Kennedy, PE (CA #74682)
Senior Vice President

Michael W. Falk, PE (CA #77787)
Project Manager

MWF:pk/22-10355948

1. Project Team

Successful completion of any project requires technical competence and managerial skills in the assigned personnel, development of a thorough work plan, and understanding of the client's needs. For your project, we have assembled a team of highly qualified and experienced professionals that you know and trust. This team has the right skills whose qualifications and responsibilities are tailored to your project objectives.

Current Composition of HDR's Professional, Technical, and Support Staff

Founded in 1917, HDR has grown to a staff of more than 11,144 employee-owners located in over 200 offices worldwide. Table 1-1 shows the current composition of professional, technical, and support staff company wide. In Northern California, HDR maintains a professional staff of more than 500, of whom more than 100 specialize in water and wastewater engineering.

TABLE 1-1. COMPOSITION OF HDR STAFF

Staff Type	Count
Administrative Support Workers	613
Executive/Senior Level Officials and Managers	40
First/Mid Level Officials and Managers	1,974
Professionals	7,164
Technicians	1,353
Total	**11,144**

Proposed Staff

Figure 1-1 shows the proposed staff for your project. Qualifications, experience, and time commitment of key staff follow this page. Resumes are included in the appendix.

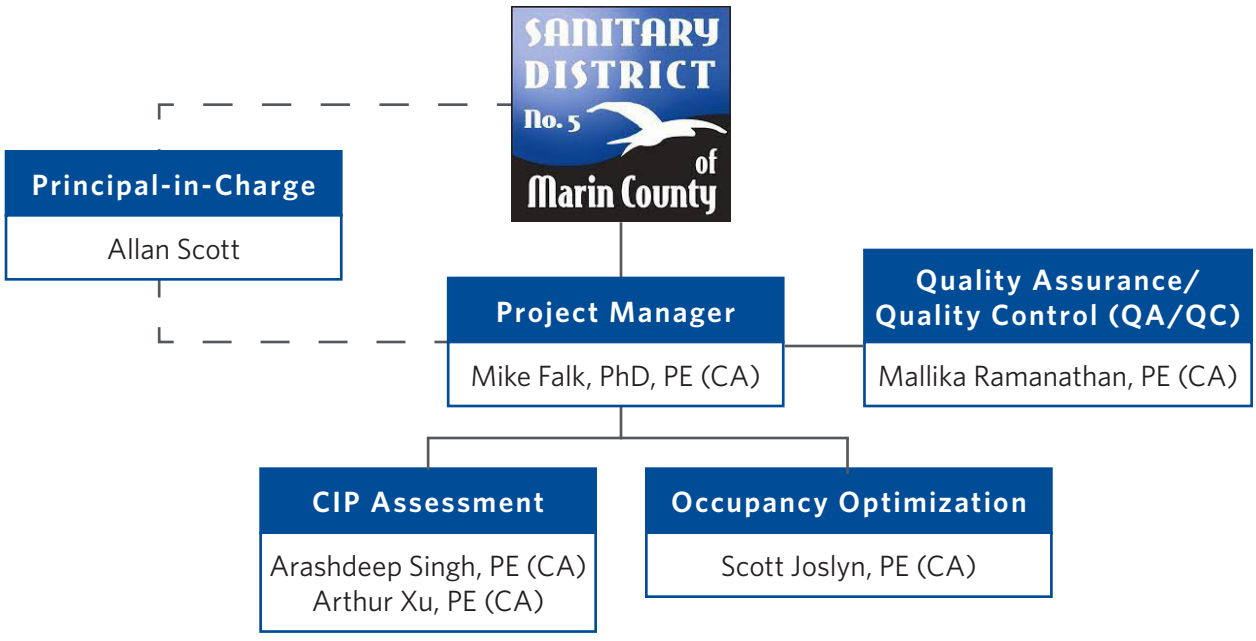


Figure 1-1. Project Team Organization

Mike Falk, PhD, PE (CA)

Project Manager

Related Qualifications and Experience

- More than 14 years of wastewater engineering experience.
- Completed more than 35 wastewater treatment plant projects, which have included facility and master planning, design, and construction services.
- Project manager for design of the District's Main Plant Digester Cleaning and Rehabilitation Project.
- Identified potential projects and estimated costs for capital improvement projects for Douglas County Lake Tahoe Sewer Authority and Minden Gardnerville Sanitation District wastewater treatment plants.

Amount of Project Involvement

- 30 to 40%

"I'd like to acknowledge the HDR team of Mike and Arashdeep who were so instrumental in the successful completion of the treatment plant upgrades project. Without their great work, the project would not have been the "turn-key" success it has been!"

~ Mr. Rob Hopkins, Manager
Douglas County Lake Tahoe Sewer Authority

Mallika Ramanathan, PE (CA)

QA/QC

Related Qualifications and Experience

- More than 27 years of wastewater engineering experience
- Completed more than 50 wastewater treatment plant projects, which have included facility and master planning, design, and construction services.
- Project engineer during preparation of Douglas County Lake Tahoe Sewer Authority's wastewater treatment plant master plan, which included implementation plan and capital improvement program for the recommended improvements.
- Provided QA/QC review of Minden Gardnerville Sanitation District's wastewater treatment plant master plan update, which included construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.

Amount of Project Involvement

- 5%

"Thank you for the problem solving, coordination, great attitude, and for keeping this project moving."

~ Ms. Azalea Mitch
City of San Mateo

Arashdeep Singh, PE (CA)

CIP Assessment and Recommendations

Related Qualifications and Experience

- More than seven years of wastewater engineering experience.
- Project manager/engineer for preparation of Minden Gardnerville Sanitation District's wastewater treatment plant master plan update, which included construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.
- Has a proven track record of providing quality engineering services, being highly responsive, easy to work with, and providing clear and effective communication.

Amount of Project Involvement

- 25 to 35%

"Arashdeep Singh gave a good impression. He picked up on things very quickly and always seem to have the company's best interest in mind. He took care of things in a timely manner."

~ Mr. Ron Tobey
Former City of Pinole Plant Manager (Retired)

Scott Joslyn, PE (CA)

Operations Specialist - Occupancy Optimization Evaluation and Recommendations

Related Qualifications and Experience

- More than 32 years of experience in wastewater treatment plants on more than 35 treatment plant projects.
- Brings a unique owner/operator mindset to his projects due largely to his experience as a municipal operator and wastewater manager.
- Evaluated effective staffing requirements for the District to maintain their current level of service for operations, maintenance, and collections operations and maintenance (O&M).
- Assisting with design of the District's Main Plant Digester Cleaning and Rehabilitation Project.
- Conducted an optimization study for the City of San Mateo's wastewater treatment plant, which included staffing levels.

Amount of Project Involvement

- 10 to 20%

"Thanks again for letting us have Scott supporting us. We cannot say enough good things about the work that he is doing."

~ Ms. Mariana Chavez-Vasquez
City of San Jose

Allan Scott

Principal-in-Charge

Related Qualifications and Experience

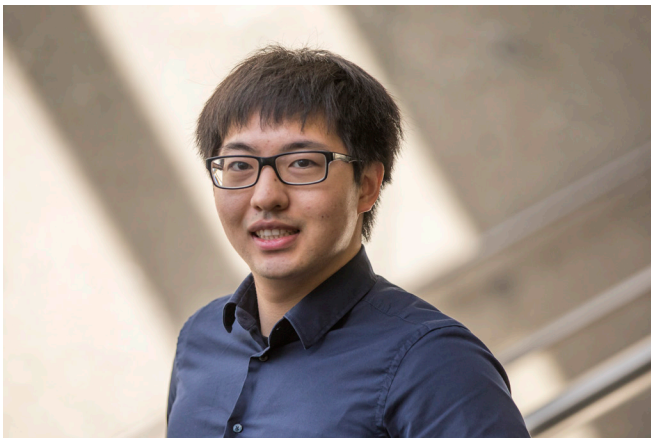
- More than 37 years of experience supporting water and wastewater utilities.
- Very familiar with Sanitary District No 5 of Marin County staff, having served as project manager for the District's collection system master plan and principal-in-charge for the Main Plant Digester Cleaning and Rehabilitation project.
- As principal-in-charge, he will make sure that the necessary HDR resources are available to the HDR project manager to carry out the project. In addition, Allan is available to the District's project manager as a second line of communication to HDR.

Amount of Project Involvement

- 5%

"Allan and his team have proved invaluable as we have put this program together and he has been a key contributor to our success in many ways. They have been very responsive and flexible, and consistently delivered the work promised."

~ Mr. Bradley Rahrer
City and County of Honolulu



Arthur Xu, (CA)

CIP Assessment and Recommendations

Related Qualifications and Experience

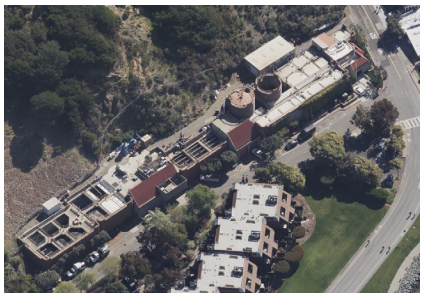
- More than seven years of wastewater engineering experience.
- Assisted with preparation of the District's collection system master plan, which included development of a 15-year capital improvement program for recommended sewer capacity improvements and rehabilitation and replacement, as well as cost for recommended improvements.
- Assisted with preparation of the District's biosolids master plan.
- Reviewed cost estimates (prepared by others) for infrastructure improvements at the City of Livermore's water reclamation plant, and developed revised cost estimates.
- Assisted with preparation of the wastewater treatment plant master plans for the City of Sunnyvale.

Amount of Project Involvement

- 50 to 65%

2. Project Experience & References

Similar projects that HDR has been involved with in the past four years are provided below. These projects include the project descriptions, reference information, value of the work (HDR's fee), project team members involved, and a summary of project involvement.



Sanitary District No. 5 of Marin County | Staffing Evaluation

HDR performed a staffing analysis of current operations to evaluate effective staffing requirements to maintain their current level of service for operations, maintenance, and collections O&M. Staffing evaluations were conducted using three separate methods to assess staffing requirements so that the results, merits, and disadvantages of each method could be considered prior to developing a final conclusion for the staffing assessment.

Reference: Mr. Tony Rubio, District Manager, (415) 435-1501, trubio@sani5.org

Project Team Members: Mike Falk and Scott Joslyn

HDR's Fee: $19,994

Project Dates: January 2021 to March 2022

Minden Gardnerville Sanitation District | Wastewater Treatment Plant Master Plan Update

HDR updated the wastewater treatment plant master plan, which included a condition assessment, update to the wastewater characteristics, description of existing facilities and operations, Envision mass balance model update, priority of rehabilitation projects, construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.

Reference: Mr. Peter Baratti, District Manager, (775) 782-3546, peter@mgsdistrict.org

HDR's Fee: $149,942

Project Team Members: Mike Falk, Arashdeep Singh, and Mallika Ramanathan

Project Dates: July 2021 to October 2022

Douglas County Lake Tahoe Sewer Authority | Wastewater Treatment Plant Master Plan

HDR prepared a wastewater treatment plant master plan that identified needed projects, their costs, and the date when they should be implemented. The master plan included a description of the improvements required to provide the needed treatment capacity, and an implementation plan and capital improvement program for the recommended improvements. HDR completed sewer improvement projects identified in the master plan.

Reference: Mr. Rob Hopkins, General Manager, (775) 588-3558, rhopkins@dcsid.com

Project Team Members: Mike Falk and Mallika Ramanathan

HDR's Fee: $84,008

Project Dates: January 2013 to November 2021

3. Scope of Work and Estimated Cost

Scope of Work/Assumptions

We have prepared the following scope of work and assumptions when developing our estimated cost for the preparation of a technical report that includes the evaluation of the Main Wastewater Treatment Plant's and Paradise Cove Wastewater Treatment Plant's scheduled capital improvement projects and an assessment of staff occupancy optimization at the Main Plant (with recommendations).

Task 1 – Information Review, Staff Interviews, and Plant Tours

The purpose of this task is to compile and review information and documents relevant to the capital improvement program for the Main and Paradise Cove plants to gain a thorough understanding of scheduled projects, estimated costs, current plant asset condition, issues, and future needs of the District.

Subtask 1.1 – Kick-off Meeting

HDR will virtually meet with the District management and operators to introduce the project team, discuss the District's project goals and objectives, and establish lines of communications. The up to one-hour kick-off meeting will focus on getting the remaining issues on the table, discussing potential alternatives and resolutions, preparing a detailed and concise action plan, list of needed information and data, defined schedule, and list of participants with their assignments. Up to three HDR team members will attend the meeting.

Deliverables: Meeting agenda and minutes.

Subtask 1.2 - Document and Data Review

HDR will review the following documents and data provided by the District:

- 10-year Capital Improvement Program List.
- Current budget with 10 year projections.
- District as builds of current break room and office and plant drawings (2014 Carollo).

Subtask 1.3 - Plant Tours and Staff Interviews

HDR will conduct a plant tour at both the Main treatment facility and the Paradise Cove facility with operations staff to get familiar with current state of operations and condition of equipment. HDR will make note of potential capital improvement program projects not already identified in the Districts 10-year capital improvement program (potential projects i.e., recycled water, ultraviolet disinfection, anoxic zone, and nutrient removal).

In addition, HDR will conduct interviews with O&M staff regarding lists of possible capital improvement program projects and current occupancy conditions. Interviews will be conducted with office staff regarding current occupancy conditions. HDR will make note of the needs of staff and perform site review and identify areas for optimization options.

It is assumed the plant tours and staff interviews for both plants will be conducted on the same day. Up to three HDR team members will visit the sites and interview staff. COVID-19 protocols to be followed for the site visit, if still applicable.

Deliverables: To be included in Task 2 deliverable.

Task 2 - Prepare Technical Report Identifying Full List of Potential Projects and Estimated Costs and Options for Improved Facilities Occupancy

HDR will prepare a technical report that will include the following:

- Current uncompleted capital improvement program projects for each plant.

- Future capital improvement program projects for each plant, which will include a summary of the project and its purpose.
- Estimated project cost for each capital improvement program project.
- Anticipated year of completion for each capital improvement program project.
- A section that identifies the current staff occupancy at both facilities, along with recommendations for improvements, associated costs, and anticipated years of completion.

HDR will prepare a draft report for review and comment by District staff. A up to one-hour virtual review meeting will be held to discuss District comments on the draft report, to be attended by up to three HDR team members. A final technical report will be provided and presented to the board of directors. The up to one-hour presentation to the board is assumed to be performed virtually and will be attended by up to three HDR team members.

Deliverables:

- Draft technical report in PDF format for review and comment by District staff.
- Seven bound paper copies and one PDF of the final technical report.
- PowerPoint presentation for the Board of Directors.

Task 3 - Project Administration and Coordination

This task includes project administrative activities associated with project management and monthly billing.

Subtask 3.1 - Project Management

This subtask includes the management activities needed for on-time and on-budget project completion, and to address the District's concerns. A project management plan will be developed to serve as a communication tool for District and HDR staff. Other activities include scheduling of staff and coordinating the quality assurance effort.

This subtask assumes contract/project management will be provided over a three-month period, from October 2022 to December 2022.

Deliverables: Project management plan.

Subtask 3.2 - Monthly Billing

HDR will prepare invoices on a monthly basis. The monthly progress reports will summarize budget and schedule status in measurable terms.

Deliverables: Monthly invoices in PDF format.

Estimated Cost

Table 3-1 on the following page shows the estimated cost to perform the scope of work described above.

TABLE 3.1 - ESTIMATED WORK EFFORT AND COST

Task No.	Task Description	Principal/ QA/QC	Project Manager	Project Engineer	Operations Specialist	CADD Tech	Admin/ Clerical	Total HDR Labor Hours	Total HDR Labor ($)	Total HDR Expenses ($)	Total Cost ($)
Task 1 - Information Review, Staff Interviews, and Equipment Inventory											
1.1	Kick-off Meeting		1	1	1			3	$771		$771
1.2	Document and Data Review		1	2	1			4	$937		$937
1.3.1	Main Plant Tour and Staff Interviews			5	5			10	$2,098	$600	$2,698
1.3.2	Paradise Cove Plant Tour and Staff Interviews			3	3			6	$1,259	$200	$1,459
	Subtotal Task 1	**0**	**2**	**11**	**10**	**0**	**0**	**23**	**$5,065**	**$800**	**$5,865**
Task 2 - Prepare Technical Report Identifying Full List of Potential Projects and Estimated Costs and Options for Improved Facilities Occupancy											
2.1	Draft and Final Technical Report		2	26		6	4	38	$6,215	$225	$6,440
2.2	Review Meeting (Virtual)		1	1	1			3	$771		$771
2.3	Board of Directors Presentation (Virtual)		1	1	1			3	$771		$771
	Subtotal Task 2	**0**	**4**	**28**	**2**	**6**	**4**	**44**	**$7,756**	**$225**	**$7,981**
Task 3 - Project Administration and Coordination											
3.1	Project Management	10	4					14	$4,866		$4,866
3.2	Monthly Billing		2				5	7	$1,258		$1,258
	Subtotal Task 3	**10**	**6**	**0**	**0**	**0**	**5**	**21**	**$6,123**	**$0**	**$6,123**
TOTALS		**10**	**12**	**39**	**12**	**6**	**9**	**88**	**$18,945**	**$1,025**	**$19,970**

Appendix

Resumes

Michael W. Falk, Jr., PhD, PE (CA)

Project Manager

Mike has more than 14 years of water and wastewater engineering experience, with specialized expertise in nutrient removal process design, nutrient regulations, and energy optimization at wastewater treatment facilities. His experience is exceptionally broad with background on master planning, nutrient regulations, process design, energy audits and optimization, plant wide modeling, emerging technologies evaluation, and developing strategies for meeting low level nutrient discharge permits.

SELECT RELEVANT EXPERIENCE

Main Plant Digester Cleaning and Rehabilitation | Sanitary District No. 5 of Marin County, Tiburon, California
Project manager for design of rehabilitation improvements to the secondary and primary digesters, which included lid and pipelines to digester. Both digesters were taken out service to be cleaned and inspected.

Staffing Evaluation | Sanitary District No. 5 of Marin County, Tiburon, California
Project manager for a staffing analysis of current operations to evaluate effective staffing requirements to maintain their current level of service for operations, maintenance, and collections operations and maintenance (O&M).

Wastewater Treatment Plant Master Plan | Douglas County Lake Tahoe Sewer Authority, Zephyr Cove, Nevada
Prepared a wastewater treatment plant master plan that identifies needed projects, their costs, and the date when they should be implemented. The master plan included a statistical analyses update based on historic influent flows and pollutant loads to reflect current condition, description of regulations and regulatory agencies that are involved with the wastewater treatment facilities and potential permit impacts and concerns, description of existing facilities and operations, description of the improvements required to provide the needed treatment capacity, and an implementation plan and capital improvement program for the recommended improvements. Process areas that were evaluated included the aeration systems, influent flow equalization, headworks (including grit removal), chlorine (gas to hypochlorite), and thickener. Hydraulic modeling was performed to evaluate hydraulic loading for each unit process and identify hydraulic concerns (i.e., submerged weirs, submerged flumes, flooded basins). An Envision mass balance model of the wastewater treatment plant was developed to reflect the plant's current configuration and operation.

Wastewater Treatment Plant Master Plan Update | Minden-Gardnerville Sanitation District, Minden, Nevada
Updated the wastewater treatment plant master plan to identify a phased and cost-effective capital improvement program to accommodate planned growth within the district's service area, and replacement of aging equipment within the wastewater treatment plant to improve reliability and maximize plant flexibility.

EDUCATION
Doctor of Philosophy, Civil & Environmental Engineering, University of California Davis, 2009

Master of Science, Environmental Engineering, University of Massachusetts, 2002

Bachelor of Science, Civil Engineering, Virginia Polytechnic Institute and State University, 1999

REGISTRATION
Professional Engineer, Civil, California No. C-77787, 2011

CERTIFICATIONS
Institute for Sustainable Infrastructure (ISI) Envision Sustainability Professional

HDR TENURE
14 Years

INDUSTRY TENURE
14 Years

The master plan focused on the defining the ultimate service area, population, wastewater flows, and pollutant loads that were used to determine the buildout capacity requirements of the wastewater treatment facilities. Project also included hydraulic modeling using Visual Hydraulics to estimate the plant hydraulic profile and energy grade line for the liquid stream, and evaluate hydraulic loading for each unit process and identify hydraulic concerns (i.e., submerged weirs, submerged flumes, flooded basins).

Wastewater Treatment Plant Master Plan Update | Minden Gardnerville Sanitation District, Minden, Nevada
Assisted with update of the wastewater treatment plant master plan, which included a condition assessment, update to the wastewater characteristics, description of existing facilities and operations, Envision mass balance model update, priority of rehabilitation projects, construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.

Facility Plan | Regional San, Elk Grove, California
Led the preparation of the facility plan for the Sacramento Regional Wastewater Treatment Plant.

Water Reclamation Facility Master Plan | City of San Luis Obispo, California
Provided a master plan for upgrades to the water reclamation facility.

Wastewater Treatment Plant Master Plan Program Management Services (CIP 3001) | Napa Sanitation District, Napa, California
Provided program management assistance to assist the district with the management and execution of the Wastewater Treatment Plant Master Plan prepared by others for the Soscol Water Recycling Facility, as well as the development of an affordable, cost-effective capital improvement program that maximizes the use of existing facilities. Served as an extension of district staff throughout the duration of the project. Helped directed and managed project activities and the work being executed by the district's master plan consultants. Assisted the district in presenting findings and recommendations, as well as obtaining feedback/direction from the district's board of directors.

Wastewater Master Plan Update | Camarillo Sanitary District, Camarillo, California
Assisted with preparing a 10-year CIP of treatment plant project using pairwise analysis, costs, budgets, and risk reduction considerations.

Wastewater Treatment Plant Master Plan Update | Delta Diablo, Antioch, California
Assisted with preparation of an update to the wastewater treatment plant master plan to identify a phased and cost-effective capital improvement program to accommodate planned growth within the district's service area, upgrades to meet regulatory changes, replacement of aging equipment within the wastewater treatment plant to improve reliability, and maximize plant flexibility to accommodate the district's future vision.

Flamingo Water Resources Center Expansion Master Plan | Clark County Water Reclamation District, Las Vegas, Nevada
Assisted with preparation of a master plan for an expansion to 184 mgd. The master plan included evaluation of expansion on the West and East Campus sites.

Broken Arrow Wastewater Master Plan | Broken Arrow Municipal Authority, Broken Arrow, Oklahoma
Assisted with preparation of wastewater master plan, which included evaluation of the wastewater treatment capacity and future improvements, and a 5-year and 20-year capital improvements program.

Wastewater Master Plan Update | City of Philadelphia, Pennsylvania
Assisted with update of the wastewater master plan. Identified potential and future near-term (10 years) and long-term (10-20 years) regulatory concerns.

Wastewater Treatment Plan Master Plan | Dublin San Ramon Services District, Dublin, California
Assisted with preparation of wastewater treatment plant master plan.

EDUCATION
Master of Science, Environmental Engineering, University of North Carolina, Chapel Hill, 2000

Bachelor of Science, Civil & Environmental Engineering, Cornell University, 1996

REGISTRATION
Professional Engineer – Civil | California #66364

PROFESSIONAL AFFILIATIONS
California Water Environment Association

Water Environment Federation

HDR TENURE
4 Years

INDUSTRY TENURE
27 Years

Mallika Ramanathan, PE (CA)

Quality Assurance/Quality Control (QA/QC)

Mallika brings more than 27 years of experience in all aspects of wastewater, recycled water, and water projects for the municipal and industrial sectors. Her experience includes planning, permitting, funding, program management, process design, and detailed design. She brings a variety of experience working and leading regional projects with multiple stakeholders and regulatory agencies, developing funding mechanisms, permitting approaches, and reaching consensus with varying stakeholder interests. She has served as project manager leading large project teams for projects ranging in value from $0.5 million to over $120 million.

SELECT RELEVANT EXPERIENCE

Wastewater Treatment Plant Master Plan Update | Minden Gardnerville Sanitation District, Minden, Nevada
Provided quality assurance/quality control (QA/QC) review for update of the wastewater treatment plant master plan, which included a condition assessment, update to the wastewater characteristics, description of existing facilities and operations, Envision mass balance model update, priority of rehabilitation projects, construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.

Wastewater Treatment Plant Master Plan | Douglas County Lake Tahoe Sewer Authority, Zephyr Cove, Nevada
Project engineer during preparation of a wastewater treatment plant master plan that identifies needed projects, their costs, and the date when they should be implemented. The master plan included a statistical analyses update based on historic influent flows and pollutant loads to reflect current condition, description of regulations and regulatory agencies that are involved with the wastewater treatment facilities and potential permit impacts and concerns, description of existing facilities and operations, description of the improvements required to provide the needed treatment capacity, and an implementation plan and capital improvement program (CIP) for the recommended improvements. Process areas that were evaluated included the aeration systems, influent flow equalization, headworks (including grit removal), chlorine (gas to hypochlorite), and thickener. Hydraulic modeling was performed to evaluate hydraulic loading for each unit process and identify hydraulic concerns (i.e., submerged weirs, submerged flumes, flooded basins). An Envision mass balance model of the wastewater treatment plant was developed to reflect the plant's current configuration and operation.

Main Wastewater Treatment Plant Integrated Master Plan | East Bay Municipal Utility District, Oakland, California
Project manager for preparation of a master plan that focuses on nutrient reduction and biosolids management options in the near-term and long-term. The master plan integrated long-term improvements with asset rehabilitation as well as recycled water deliveries. Other project aspects included preparation of a market assessment to confirm the value of recovered nutrients and biosolids, capacity assessment, and satellite treatment for nutrient reduction. The project was completed with the district staff preparing certain components and the consultant team preparing other components.

Sunnyvale Master Plan and Primary Renovations | City of Sunnyvale, California
Provided master planning, site planning, and design standards for primary treatment renovation improvements for the city's 14 mgd water pollution control plant. Treatment processes were evaluated. Preliminary treatment alternatives included conventional bar screens versus micro-screens, redundancy considerations for storm flows, and alternatives for rag removal and processing. Primary treatment alternatives included chemically enhanced primary treatment (CEPT), potential for co-thickening and implications on solids thickening processes, and grit removal options. Secondary treatment alternatives included variations of activated sludge process, such as biological nutrient removal (BNR), activated sludge and tricking filters, utilization of FGR, evaluation of wetlands for polishing, potential for converting the existing AFTs to clarifiers or thickening process for solids, co-thickening of activated sludge with primary sludge and implications on digester operations, configuration of aeration tanks for BNR/activated sludge process, potential for use of membrane bioreactor (MBR) to meet recycle water goals, aeration system needs for various alternatives, control systems concepts for various alternatives, sludge withdrawal systems and influent flow options for flexibility in various modes of operations to enable step feed and internal recycle, and Norcardia/foam control options. Filtration alternatives included dual media, membrane, micro filtration, and potential for reverse osmosis for recycled water production. Disinfection alternatives included modifications to future hypochlorite and bi-sulfite systems, potential for ultraviolet (UV) system addition, ability to meet future California Energy Commission (CEC) regulation, and disinfection bi-products elimination. Solids thickening alternatives included gravity thickeners and dissolved air flotation (DAF). Solids dewatering alternatives included centrifuges and belt filter presses. Gas management systems alternatives included integration of the digester and landfill gas, treatment systems required, provision for gas storage and reliability mechanisms, location/integration of existing gas flares, and gas blending systems. Odor control systems alternatives included centralized system and individual systems for each process/unit. Also developed an Electrical and Combined Heat and Power Plan (ECHP Plan), which identifies the electrical and power systems needed to support the proposed treatment processes.

San Luis Obispo Program Management for Water Reclamation Facility Upgrade | City of San Luis Obispo, California
Provided program management services for upgrades to the city's 5.1 mgd dry weather (22 mgd wet weather) water reclamation facility. Responsible for leading facility plan activities, which included evaluation of secondary treatment upgrades, alternative disinfection technologies, peak flow equalization, tertiary treatment upgrades, and site planning for new facilities.

EDUCATION
Bachelor of Science, Civil Engineering, California State University, Sacramento, 2015

REGISTRATION
Professional Engineer, Civil, California No. 90090

Professional Engineer, Civil, Nevada No. 028379

HDR TENURE
5 Years

INDUSTRY TENURE
7 Years

Arashdeep Singh, PE (CA)

Capital Improvement Project (CIP) Assessment and Recommendations

Arashdeep has more seven years of experience in planning, design, monitoring, and construction of projects in the water/wastewater industry. As an assistant project engineer working with large teams, he has assisted in technical design and construction of treatment plants, pumping stations, and conveyance projects.

Arashdeep has a proven track record of providing quality designs and services, being highly responsive, easy to work with, and providing clear and effective communication. He was the most valuable engineer for the $48 million Pinole/Hercules water pollution control plant upgrade, which has won three industry awards. Testimonials about his superior performance on this project and another award-winning wastewater treatment plant upgrade for the City of Fort Bragg are available upon request.

SELECT RELEVANT EXPERIENCE

Wastewater Treatment Plant Master Plan Update | Minden Gardnerville Sanitation District, Minden, Nevada
Project manager/engineer for update of the wastewater treatment plant master plan, which included a condition assessment, update to the wastewater characteristics, description of existing facilities and operations, Envision mass balance model update, priority of rehabilitation projects, construction cost estimates, implementation plan, and capital improvement program for the recommended improvements.

Fort Bragg Wastewater Treatment Plant Upgrade | City of Fort Bragg, California
Provided predesign services for improvements to upgrade 1 mgd wastewater treatment plant. Predesign efforts included updating the stormwater handling analysis to address the grading that was completed for the perimeter of the existing wastewater treatment plant site to eliminate run-on water from adjacent lands, analyzing the feasibility of what may be necessary (e.g. extra treatment) to reach a Class A biosolids standards for the sludge, evaluating options for providing sufficient dewatering of solids (included centrifuge, screw press, and belt filter press alternatives), and analyzing alternative methods for generating energy at the plant (including wind power or solar on site). The feasibility of a fat, oil, and grease (FOG) receiving station at the treatment plant were investigated. Prepared a design confirmation memorandum, which included and evaluation of the proposed activated sludge system. The analysis included identifying the constraints created by other elements of the treatment process elements affecting the expansion of the activated sludge system, reviewing the hydraulic profile and identifying improvements, determining if lowering the grade(s) of activated sludge units could potentially eliminate pumping as well as cost, analyzing the feasibility of achieving Title 22 water recycling status, and

evaluating the control systems for the new improvements to the wastewater treatment plant for ease of incorporation into a future Supervisory Control and Data Acquisition System (SCADA). Prepared plans, specifications, and cost estimates were prepared for the recommended project, which included replacement of the existing trickling filters and clarifiers with an Aero-Mod SEQUOX activated sludge system, repurposing the clarifiers into emergency/flow equalization and/or storm run-off storage, treatment of on-site stormwater, solids handling, and power requirements.

Davis Wastewater Treatment Plant Secondary and Tertiary Improvements Design-Build | City of Davis, California

The primary objective of the project was to replace the city's outdated oxidation pond process with a modern activated sludge process that was capable of meeting new waste discharge permit requirements that would have gone into effect in October 2017. The secondary treatment improvements required construction of four new aeration tanks, four 75-foot-diameter secondary clarifiers, two return activated sludge (RAS)/waste activated sludge (WAS) pumping stations, a scum pumping station and blower building, tertiary improvements (included new filter building), chemical disinfection building, chlorine contact basin, and effluent pumping station. This project also included construction of new dewatering facility, sludge storage area, cogeneration building, associated piping, and rehabilitation of existing administration building, maintenance building, and laboratory. Finally, this project also included construction of a new plant entrance road and a flood protection levee surrounding the entire wastewater treatment plant.

Pinole-Hercules Water Pollution Control Facility Upgrade | City of Pinole, California

Provided engineering services during construction of $48 million in upgrades at the Pinole/Hercules Water Pollution Control Plant, which were needed to meet new conditions in the renewed NPDES discharge permit that entail the elimination of blending of peak wet weather flows and use of the emergency outfall for peak wet weather flows less than 14.6 mgd. Improvements included influent pumping station, headworks, primary clarifier, aeration basins, three new secondary clarifiers, return activated sludge (RAS)/waste activated sludge (WAS) pumping, disinfection, solids handling, effluent pumping, diesel tank replacement, and electrical facilities. Aeration basin improvements included extension of the existing aeration basins by 90 feet, aeration basin influent piping modifications, and new aeration blowers in the existing blower building. Two activated sludge operational modes were considered: carbonaceous and nitrification. Nitrification mode was selected. This project was extremely complex as upgrades needed to be made to an existing plant on a very small site. The plant had to remain on-line 24/7 without any interruptions. The existing plant did not have redundant treatment facilities, so temporary facilities had to be constructed to allow for the shutdowns. Every single treatment process had to be updated, except for digestion. As a result of tight space restrictions at the project site and the need to keep existing facilities operating during construction, considerable effort was spent with the City of Pinole, design team, construction manager, and contractor to properly phase the construction. Approximately three months were spent to work out the details on this plan and three stages of shutdowns were scheduled. Because of this careful coordination and sequencing, the plant upgrades were successfully completed without any impact to plant operations, safety violations, or permit violations.

Aeration Basin Upgrades | Douglas County Lake Tahoe Sewer Authority, Minden, Nevada

Provided preliminary design, final design, and construction services for aeration system upgrades, which included: (1) replacing existing mechanical aerators with tube-type fine bubble diffusers; (2) rehabilitating, repairing, and coating concrete in the aeration basins to extend their service life; (3) rehabilitating/replacing walkways, guardrails, handrails, and other miscellaneous ferrous metal items in and above the aeration basins; (4) providing a biological nutrient removal (BNR) process, Modified Ludzack-Ettinger (MLE), reduces sludge hauling and increases operation flexibility; (5) extending the concrete influent channel to aeration zone 1 to increase operational flexibility; and (6) providing blowers sized to meet process demands with fine bubble tube-type diffusers. The project was delivered via Construction Manager at Risk (CMAR) method.

EDUCATION
Bachelor of Science, Civil Engineering, California State Polytechnic University, Pomona, 1993

CERTIFICATIONS
Professional Engineer – Civil | California #C60929, 2000

Wastewater Treatment Plant Operator | California #WWTPO V-9204, 2010

Water Treatment Plant Operator | California #WTO T-3 20696, 1996

Water System Operator | California #WDO D-2 15027, 2001

PROFESSIONAL AFFILIATIONS
Water Environment Federation, Sacramento, 1992-Present

INDUSTRY TENURE
32 Years

HDR TENURE
8 Years

D. Scott Joslyn, PE (CA)

Operations Specialist – Occupancy Optimization Evaluation and Recommendations

Scott has more than 32 years of experience in design, process control, startup, and operation of water and wastewater treatment plants. He has participated in many plant startups that required planning, mechanical inspections, and verification of proper operation of equipment and processes. He is also an experienced writer and trainer in technical projects.

Scott's background and experience as a professional civil engineer, certified Grade V wastewater treatment plant operator, and resident engineer, along with his experience on more than 35 treatment plants, makes him a valuable member to any team, whether the project is in the planning, design, construction, or commissioning phase.

Scott brings a unique owner/operator mindset to his projects due largely to his experience as a municipal operator and wastewater manager. This allows him to provide recommendations for shutdown and startup and minimize impacts to plant operations. In addition, his experience as a resident engineer allows him to coordinate plant operational needs, contractor needs, and contractual requirements to help project get finished, startup, and operate more quickly. Startup plans and method of plant operation (MOPO) documents along with formal and informal training for the operators will assist clients with field testing and construction sequencing that considers the maintenance of plant operations.

SELECT RELEVANT EXPERIENCE

Staffing Evaluation | Sanitary District No 5 of Marin County, Tiburon, California
Performed a staffing analysis of current operations to evaluate effective staffing requirements to maintain their current level of service for operations, maintenance, and collections operations and maintenance (O&M).

Main Plant Digester Cleaning and Rehabilitation | Sanitary District No. 5 of Marin County, Tiburon, California
Operations specialist during design of rehabilitation improvements to the secondary and primary digesters, which included lid and pipelines do digester. Both digesters were taken out service to be cleaned and inspected.

Wastewater Treatment Plant Optimization | City of San Mateo, California
Operations specialist for a study to optimize the city's wastewater treatment plant performance. Performance optimization recommendations were developed based on interviews with city staff and performance evaluation and comparison to other agencies. The project included financial and budgetary evaluation, optimization of wastewater system warehouse operations and procedures, optimization of treatment plant and pumping station maintenance, optimization of wastewater operations and maintenance (O&M) data utilization, optimization of standby duty, optimization of chemical and electrical usage at the wastewater treatment facilities, optimization of sludge processing and

disposal, optimization of wastewater treatment plant staffing levels, review of overtime usage, training and succession planning, and preparation of a summary report.

Wastewater Treatment Plant Performance Evaluation | Rancho Murieta Community Services District, Rancho Murieta, California
Operations engineer for performance evaluation of its pond and tertiary wastewater reclamation plant. Interviewed staff and developed written recommendations for improved operations and capital improvements to this facility that included pond treatment and dissolved air flotation (DAF) clarification before disinfection. Also developed caustic addition protocols to maintain plant nitrifications.

Capital Improvement Program Testing, Startup, and Commissioning Services | City of San Jose, California
Program lead manager responsible for overseeing and managing the testing, startup, and commissioning activities across all capital improvement projects in pre-operational, functional, and operational acceptance testing phases. The city's adopted 2021-2025 capital improvement program for the 167 mgd San José-Santa Clara Regional Wastewater Facility includes 20 active projects that are collectively valued at more than $1 billion and will be under construction over the next several years. Projects range in size from $5 million to over $200 million. All of these projects will require testing, startup, and commissioning support for which HDR is currently providing.

$400 Million Nutrient Removal and Wet Weather Flow Management Upgrade and Expansion Construction Manager at Risk (CMAR) | City of San Mateo, California
Operations specialist during design and construction of $400 million in improvements to the San Mateo/Estero Municipal Improvement District (EMID) Wastewater Treatment Plant. Plant improvements included: (1) a new headworks facility; (2) four new covered rectangular primary clarifiers, with primary sludge pumps, scum pumps, and a primary effluent pumping station; (3) influent flow equalization basin (after conversion of the existing aeration basins) and equalization pumping station; (4) BioActiflo for wet weather treatment, consisting of a biological contact tank and high rate clarification process, along with associated mixers, aeration, blowers and pumps; (5) chemical storage and feed facility; (6) biological nutrient removal (BNR) and membrane bioreactor (MBR) treatment facilities, mechanical/electrical building (pumps and blowers), with associated piping; (7) improvements to the existing chlorination and dechlorination facility; (8) below-grade tunnel system where some process equipment are located and where process piping between facilities are located; and (9) odor control for the new headworks and primary clarifiers. Developed annual operations and maintenance (O&M) cost estimates. Developed testing operational sequences to support contractor testing requirements.

Biosolids Management and Future Biosolids Master Plan | Sanitary District No. 5 of Marin County, Tiburon, California
New regulations in California required diversion of significant quantities of organics, including biosolids, from landfill, resulting in a 400 percent increase in needed disposal capacity. Assisted with development of a long-term biosolids management strategy to secure a sustainable pathway for disposing of its biosolids. Options considered include hauling raw solids to a neighboring wastewater treatment plant, forming a partnership with wastewater agencies in Marin County to jointly manage a land application site, and/or constructing and operating a regional compost facility.

EDUCATION
Master of Science, Geological Sciences, University of Nevada, Las Vegas, 1988

Bachelor of Science, Geoscience, State University of New York at Buffalo, 1984

HDR TENURE
4 Years

INDUSTRY TENURE
37 Years

Allan J. Scott
Principal-in-Charge

Allan is an information technology project manager, programmer, and analyst with more than 37 years of experience specializing in information technology, asset management, and geographic information systems (GIS) to support water and wastewater utilities. His experience includes performing analyses, assessments, and implementation of information management systems, and developing strategy and planning documents for gap analysis and system improvement. He has experience providing technologies to support asset management, condition assessment and capital planning, long-range capital forcasting, operations and maintenance (O&M) process improvement and technology implementation. In addition, he has performed a wide range of system development and data management functions, including migration of legacy systems to client/server architecture; design, development, and implementation of new data systems; technical management of information systems; and business management of a corporate service center.

SELECT RELEVANT EXPERIENCE

Collection System Master Plan | Sanitary District No. 5 of Marin County, Tiburon, California
Project manager for preparation of a collection system master plan, which included: (1) evaluation of pumping station trends, level settings, and hour meters and development of recommendation for enhanced efficiencies; (2) evaluation of system performance, identification of areas of concern as it relates to odor control, and development of recommendations; (3) condition assessment of sewer lift stations and force mains, and development of prioritized rehabilitation/replacement recommendations based on sanitary sewer overflow (SSO) reduction followed by inflow and infiltration reduction potential; and (4) development of a 15-year capital improvement program for recommended sewer capacity improvements and rehabilitation and replacement, as well as cost for recommended improvements.

Main Plant Digester Cleaning and Rehabilitation | Sanitary District No. 5 of Marin County, Tiburon, California
Principal-in-charge for design of rehabilitation improvements to the secondary and primary digesters, which included lid and pipelines to digester. Both digesters were taken out service to be cleaned and inspected.

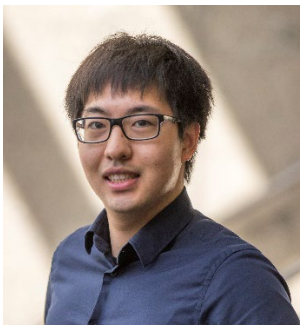
Infrastructure Asset Management Plan Update and Program Support | Ross Valley Sanitary District, San Rafael, California
Project manager for update of the infrastructure asset management plan, a guiding document for scoping and prioritizing future district asset management activities under the Infrastructure Asset Management Program and Inflow and Infiltration (I&I) Reduction Program. Developed a pipe structural reinspection and repair plan to provide a better understanding of pipe defects and their deterioration rates, as well as provide capital planning and future inspection recommendations. Tools and processes were developed to support district staff owned program for performing defect comparison in the future. A report was

prepared that included a schedule for inspection and repairs per the cease and desist order, cost for inspection and repairs, and criteria that identifies whether a Grade 5 Pipeline Assessment and Certification Program (PACP) structural defect has deteriorated upon reinspection. Developed a force main condition assessment plan that ranked the district's force mains to determine where limited inspection budgets should be focused, and evaluated condition assessment technologies to determine which are appropriate for the force main pipelines to be assessed. HDR worked with the selected condition assessment technology vendors and district staff to develop plans for the inspection work and execute the assessment inspection. A condition assessment data results report was prepared after evaluation of the condition assessment work, which included description of the condition assessment technologies implemented, results of the assessments, and recommendations for improvement to the force main pipelines investigated. The manhole assessment included development of a priority manhole rating model in InfoMaster that assigns a risk score to each manhole based on likelihood of failure and consequence of failure factors, and when combined with an inspection condition score based on manhole inspection results, provides a means of prioritizing manholes for rehabilitation, maintenance, and replacement. A rehabilitation logic decision tree and manhole rehabilitation plan was then developed. The project also included a hydraulic model update, preparation of an infiltration and flow (I&I) reduction plan, creek crossing risk assessment, and capital planning integration.

Wastewater Treatment Plant and Field Stations Condition Assessments | South Tahoe Public Utility District, South Lake Tahoe, California
Project manager for structural, electrical, and corrosion condition assessments for the wastewater treatment plant electrical equipment, wastewater treatment plant pipelines, select wastewater treatment plant structures (filter building, blower building, return activated sludge [RAS] pumping station, emergency pumping station, material storage, repair shops, two garages, two maintenance shops), and water and sewer field stations.

Information Technology Asset Management Assessment | Sacramento County Regional Sanitation District (Regional San) and Sacramento Area Sewer District, Sacramento, Sacramento, California
Conducted an evaluation of Regional San's information technology capabilities and practices, and evaluated them against industry asset management best practices. This evaluation included both the Sacramento Regional Wastewater Treatment Plant and sewer infrastructure. A key component was the evaluation of the district's MAXIMO computerized maintenance management system (CMMS) and how the district was using it for enterprise asset management. Conducted meetings and interviews with district management and staff, and identified the current information technology and geographic information system (GIS) practices, processes, and capabilities, then compare these capabilities with the best asset management-related IT practices in the wastewater industry to determine the optimal improvements for the district. Evaluated the MAXIMO system and provided an assessment of its effective use as well as recommendations and improvements to increase the effectiveness of the district's asset management program. This task was part of the overall strategic asset management program focused on evaluating the district's overall management operations compared to best asset management practices and developing a strategic plan for district improvements.

EchoWater Project Asset Management Design Database Development | Sacramento Regional County Sanitation District (Regional San), Elk Grove, California
Developed a data management system that collects and validates asset, parts, operations and maintenance (O&M) data, and equipment specifications and manuals to support the $1.7 billion EchoWater project. EchoWater encompasses the design and construction of major facility upgrades at the 185 mgd Sacramento Regional Wastewater Treatment Plant. Provided technical guidance and management for development of the system and processes.



EDUCATION
Master of Science, Civil and Environmental Engineering, University of California, Davis, 2017

Bachelor of Science, Civil and Environmental Engineering, University of California, Davis, 2016

REGISTRATION
Professional Engineer, Civil, California No. 92898

HDR TENURE
5 Years

INDUSTRY TENURE
7 Years

Jiongcheng (Arthur) Xu, PE (CA)

Capital Improvement Project (CIP) Assessment and Recommendations

Arthur has more than seven years of experience serving as an engineer on a variety of water and wastewater projects. His experience includes water and wastewater treatment design, permitting, pipeline condition assessment, facility planning, and construction management services for public agencies.

Arthur also assisted in the preparation of feasibility studies, construction cost estimate, master plans, technology alternatives analysis, wastewater process modeling, and hydraulics modeling for various Northern California projects.

SELECT RELEVANT EXPERIENCE

Biosolids Management and Future Biosolids Master Plan | Sanitary District No. 5 of Marin County, Tiburon, California
New regulations in California required diversion of significant quantities of organics, including biosolids, from landfill, resulting in a 400 percent increase in needed disposal capacity. Assisted with development of a long-term biosolids management strategy to secure a sustainable pathway for disposing of its biosolids. Options considered include hauling raw solids to a neighboring wastewater treatment plant, forming a partnership with wastewater agencies in Marin County to jointly manage a land application site, and/or constructing and operating a regional compost facility.

Collection System Master Plan | Sanitary District No. 5 of Marin County, Tiburon, California
Assisted with preparation of a collection system master plan, which included: (1) evaluation of pumping station trends, level settings, and hour meters and development of recommendation for enhanced efficiencies; (2) evaluation of system performance, identification of areas of concern as it relates to odor control, and development of recommendations; (3) condition assessment of sewer lift stations and force mains, and development of prioritized rehabilitation/replacement recommendations based on sanitary sewer overflow (SSO) reduction followed by inflow and infiltration reduction potential; and (4) development of a 15-year capital improvement program for recommended sewer capacity improvements and rehabilitation and replacement, as well as cost for recommended improvements.

Water Reclamation Facility Improvements Budget Review | City of Livermore, California
Reviewed conceptual scopes and cost estimates (prepared by others) for infrastructure improvements at the water reclamation plant, and developed revised cost estimates. Infrastructure improvements included ultraviolet (UV) disinfection facility, potential phosphorous recovery system at existing digesters, tertiary filter facility and related reclaimed water distribution facilities, and solids management facilities, including sludge thickening and dewatering facilities.

Sunnyvale Master Plan and Primary Renovations | City of Sunnyvale, California
Assisted with providing master planning, site planning, and design standards for primary treatment renovation improvements for the city's 14 mgd water pollution control plant.

Graham Hill Water Treatment Plant Facilities Plan Update | City of Santa Cruz, California
Assisted with update of the Graham Hill Water Treatment Plant facilities plan to determine the most effective means of implementing improvements to address updated treatment requirements/goals, as well as identify and prioritize the improvement projects for incorporation in the program. A work plan was developed for the execution of the activities associated with the facilities plan update. Treatment alternatives were identified, evaluated, screened, refined, and selected that addressed the city's combined objectives of water treatment and water supply.

Green Valley Water Treatment Plant Expansion Conceptual-Level Assessment and Alternatives Analysis | City of Vallejo, California
Performed a conceptual-level assessment and alternatives analysis of the potential Green Valley Water Treatment Plant expansion, which was needed to guide the city's decisions on its path forward to providing additional treated water capacity to the Lakes System to support future growth in this area. Evaluated two water treatment plant expansion alternatives, and alternative to bring treated water from the Fleming Hills Treatment Plant to the Lakes System to supplement the existing supply. Pipeline improvements (new and existing pipe rehabilitation), booster station requirements, storage requirements, and other system needs to allow for the transmission and integration of water into the Lakes System were considered. The project also included hydraulic analysis of the Lakes System, as well as storage to determine the new storage requirements for the system.

Travis Air Force Base Water Treatment Plant Study | City of Vallejo, California
Completed a study that evaluated the whether to rehabilitate the 7.5 mgd Travis Air Force Base water treatment plant or construct a new 4 mgd water treatment plant. Evaluated existing treatment process capacity to meet current and future drinking water regulations, identified process improvements required to meet regulation, evaluated the useful life of existing equipment and identified in-kind replacement of equipment needed to improve water treatment plant reliability, performed structural and electrical condition assessment, and prepared a summary report with detailed description, design criteria, plan view sketches, process flow schematics, and Class 5 opinion of probable construction cost estimate were provided for each alternative.

Water Reclamation Plan Condition Assessment | City of Livermore, California
Performed a condition assessment of the water reclamation plant. A Tier 1 condition assessment was performed on high priority facilities based on visual observations and staff interviews on past performance and reliability. Tier 1 condition assessment work was performed on the primary treatment, primary effluent wet well, secondary clarification, Secondary Clarifier No. 2 (including associated influent, effluent, and return flow pipelines), manholes, and 10 interceptor manholes. A condition assessment was prepared prior to performing condition assessment field work. For each of the assets, an industry standard 1 to 5 condition rating scale was assigned and an estimated percentage of remaining useful life for the asset was estimated. Tier 1 information collected for each asset included age, material and other physical attributes, visual inspection of condition, operator assessment of performance, previous inspection/condition assessment reports/studies, maintenance records to assess reliability, and use of comparative condition of similar asset types. A report was prepared that summarized the work completed, and described repair and rehabilitation recommendations (included completed condition assessment forms, notes, photographs, nameplate data, and other documentation produced during the assessment). Each of the recommendations included comparisons of repair alternatives or replacement methods based on industry's best standard or common practices. A rough order planning level cost estimate for each recommendation was also be developed based on the level of intervention required such as repair, rehabilitate or replace.

3003 Oak Drive, Suite 500
Walnut Creek, CA 94597
925.465.2700

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We practice increased use of sustainable materials and reduction of material use.

Item #1B

Main Plant and Paradise Cove Plant CIP Assessment and Occupancy Optimization Evaluation and Recommendations Project

Proposal

Sanitary District No. 5 of Marin County

7 October 2022

→ The Power of Commitment

655 Montgomery St, Suite 1010
San Francisco, California 94114
United States
www.ghd.com

October 7, 2022

Mr. Tony Rubio
District Manager
Sanitary District No.5 of Marin County
PO Box 227
Tiburon, CA 94920

RE: Proposal for Main Plant and Paradise Cove Plant CIP Assessment and Occupancy Optimization Evaluation and Recommendations Project

Dear Tony,

GHD Inc (GHD) is pleased to submit our team's proposal to the Sanitary District No. 5 of Marin County (SD5) for the subject project. The team assembled by GHD includes key members with extensive relevant project experience with clients in the Bay Area and proven experience with similar projects across California and the USA.

We welcome the opportunity to bring a high quality and efficient service to SD5.

Wastewater Treatment Master Planning and CIP Planning. GHD has previously delivered a wide range of wastewater treatment master planning and water agency CIP projects in California. Our project references and proposed staff resumes speak to the breadth and depth of knowledge of our staff. Frederick Tack is GHD's Technical Director for Wastewater Treatment in the US West. Frederick brings a crucial blend of detailed technical expertise, practical construction experience and an operational perspective to wastewater treatment projects. Frederick will lead the various technical aspects of the Capital Improvement Plan (CIP). Jill Kjellsson is an experienced civil engineer and CIP planner who brings a multi-disciplinary approach to CIP planning. Having prepared numerous CIP evaluations for water agencies in the past, Jill's involvement in the team will bring together the various SD5 projects into a well-documented plan.

Experienced in the Occupational Assessment of Buildings for Water Agency Treatment Facilities. Kyle Morris is one of GHD's own architects who has experience in occupational assessments of office buildings in the context of treatment facilities for water agencies. Kyle will lead the occupational assessment of SDMC5's facilities and outline the necessary requirements for future augmentations of office/amenity/laboratory spaces, if required.

Strong Local Project Management Helps in Project Success. GHD has been active in delivering wastewater treatment projects in Northern California for over 50 years. 75% of our projects have been delivered for repeat clients. We understand the strength of local project delivery to meeting our client's expectations. For SD5 our local project management team will consist of Mary Martis (QA Manager) who knows the SD5 team and facility as well as Jack Sutton who will be the local project manager. Both are based in our San Francisco office (Jill is located in our Santa Rosa office) and will keep the GHD team on track and provide effective means of communication with SD5.

Local Presence, Global Network This project will be delivered by a local team with access to design and construction cost information from a variety of projects that have been delivered across California, the USA and the globe. GHD has local design and construction management experts with understanding of Bay Area price considerations and trends. This will be imperative in the development of budgetary estimates for potential wastewater treatment CIP projects that are identified during the staff interviews. GHD has the ability to draw on a large range of reference information to provide SD5 with realistic budgetary figures for the CIP plan.

We are confident that our team's proven success on similar projects across the United States, California, and the Bay Area, along with our local presence provides a unique value proposition to SD5. Please feel free to contact Mary with any questions regarding GHD's proposal.

Regards,

Mary Martis
Quality Manager
858-442-1673
Mary.martis@ghd.com

Abhay Hanamsagar
Business Group Leader – US West Water and Wastewater Treatment
949 585-5215
abhay.hanamsagar@ghd.com

We have reviewed and agree to comply with the Marin County Sanitation District No. 5's sample services agreement and insurance requirements.
This proposal is a firm offer for a period of 90 days from the date submitted.

Contents

Appendices

Firm Overview

About GHD

GHD provides planning and engineering, environmental, advisory, digital, and construction services to private and public sector clients. Operating globally and delivering services locally, we offer clients the ability to develop a working relationship with our local staff while having access to our global experience base. Put simply, we work where our clients work, for the betterment of the Communities served by our clients.

90+ years in operation
135+ countries served
200+ offices worldwide
$2.3Ⓑ revenue 2020
5 global markets
10Ⓚ people
50+ service lines

↳ Providing engineering, environmental, advisory, architecture, digital and construction services

Firm Information

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

GHD California Office Locations

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

Committed 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. We can also offer our clients the confidence and peace of mind that comes from the fact that GHD is ranked 28th in the "Top 150 Global Design Firms" by *Engineering News-Record* in 2021.

#08 in Canada firms
#10 in US firms
#06 in water
#06 in sewer/waste
#05 in hazardous waste

↳ We rank #28 in the Top 150 Global Design Firms 2021

Repeat Business

The cornerstone of our business is our client-centered culture and teamwork-based approach known as "One GHD". We are proud of our long tradition of repeat, local government clients. A full 90% of our clients are municipal agencies or government entities, and 75% of our work comes from repeat clients. We believe this illustrates not only our knowledge of specialized engineering disciplines, but also our willingness to listen and respond to individual client needs. Each of our project managers is an advocate for his or her client through the planning, design, permitting, and construction process.

Project Team

GHD Team Structure and Members

Based on our understanding of your project needs, we propose a team structure that spans the anticipated wastewater treatment, CIP planning, and architectural services. The organizational chart below details our proposed team, including disciplinary-based roles tailored to your project. Many of our team members have worked together on other projects and additional staff may be called on if needed/desired.

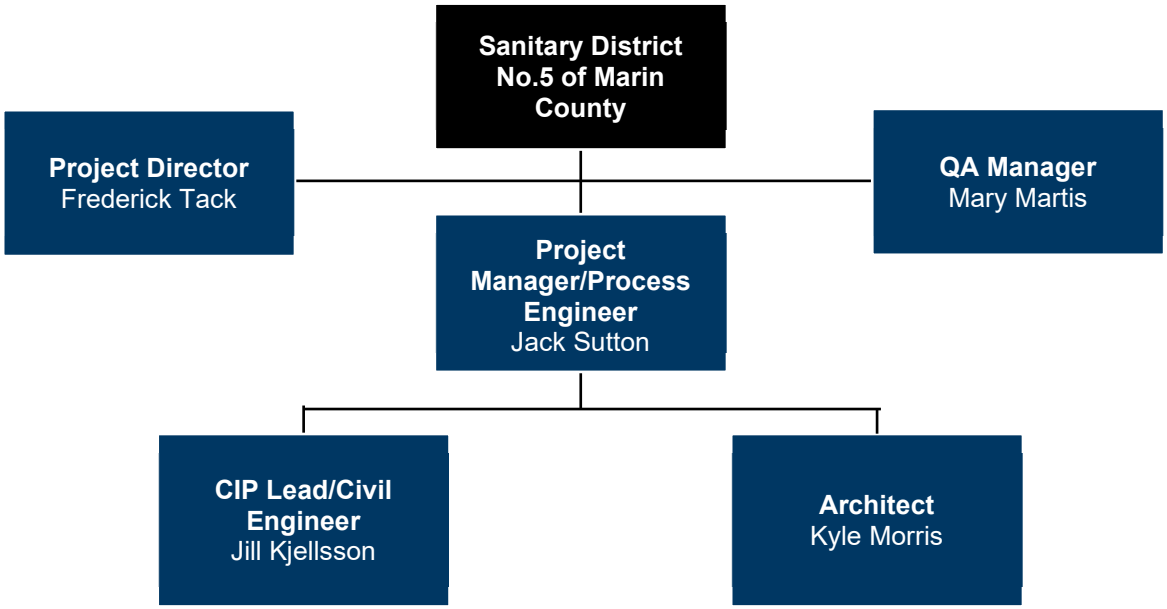
Resumes

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

Continuity of Personnel

We are committed to keeping the same project team we are proposing. Should an unexpected change result in a team member being unavailable to serve SD5 on this project, we are backed with the resources of a global network. No changes will be made to the project team without consent by SD5.

Organizational Chart



Key Personnel

GHD is fully staffed and capable of providing the right services to our clients in a timely fashion. For this contract, we have identified the project team who will serve MCD5 in the following staffing plan. We have also provided full, detailed resumes for key staff only in ***Appendix A***.

Frederick Tack, MS, PE, D.WRE, ENV SP, M.ASCE

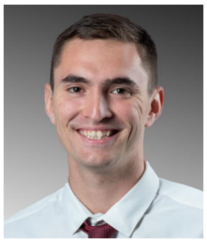
Project Director

Frederick serves as a Technical Director, Project Director, and Associate with GHD and leads a team of engineers, operators, designers, and water professionals in the planning, engineering, operations, management, and compliance of water and wastewater treatment infrastructure across the U.S West. He is a demonstrated professional, having led the development and execution of similar projects, with similar scale and complexity. He is a field to finish, multi discipline professional who has led the design of over 135 projects including 32 water treatment and 37 wastewater treatment facility expansions, optimizations, or rehabilitation, 15 Assessment and CIP development projects. He has sealed over 290 design documents in the past 10-years. Also, as a certified operator, he has led the day-to-day the operations, maintenance, and compliance of public and private water utilities.

Mary Martis, MS, PE

QA Manager

Based in San Francisco with more than 25 years experience in the wastewater industry, Mary brings a unique and local perspective to projects through her experience working as a district engineer supporting the operations of two WWTP's, as as a developer for a national biosolids management company, and as a technology leader for two large equipment manufacturers. Her wastewater treatment plant operations background lends itself to a design eye that considers people movement, how plants can best be navigated, and resources needed to run the critical operation. Mary has a long history of working with agencies to create forward-thinking, creative programs to address complex challenges, and has assisted with the capture of millions of dollars in grant funding to support those projects / programs. Mary's background specifically includes experience working on SD5 projects. During her previous role, Mary served as Project Manager and Technical Lead; helping to develop a long-term biosolids management strategy to secure a sustainable pathway for biosolids disposal as part of SD5 Biosolids Management and Future Biosolids Master Plan.



Jack Sutton

Project Manager/Process Engineer

Jack is based in San Francisco and has over six years' experience within the municipal water and wastewater industry, including consulting experience relating to project management, treatment plant capacity assessments, upgrade strategies, concept and detailed design projects. Jack's experience as a former treatment plant operator provides him with a strong understanding of the challenges faced by water authorities from an operations and maintenance perspective.

Jill Kjellsson, PE, LEED AP BD+C

CIP Lead/Civil Engineer

Jill Kjellsson is a water resources engineer based in Santa Rosa with eight years of post-graduate experience focused on strategic planning projects for stormwater, wastewater, water, and water reuse, including utility master planning, capital improvement project planning, and asset management. She has a strong background in CIP planning and delivery across stormwater, collection system, and wastewater treatment plant projects. She also has experience in developing and executing risk frameworks to prioritize capital project, rehabilitation, and operations and maintenance programs.

Kyle Morris, AIA, NCARB

Senior Architect

Kyle has more than 16 years' experience in architectural design and construction. His experience includes numerous municipal and industrial projects centered around water and wastewater treatment facilities. He has extensive experience with building condition surveys and assessments of existing facilities.

Similar Project Experience and References

GHD has been active in the planning, design, and development of numerous wastewater treatment projects in Northern California for over 50 years. We are a recognized leader in the delivery of multi-discipline master planning and CIP planning projects for water agencies. The map below shows an overview of these type of projects that GHD has delivered in California.

Figure.1 Water Agency Master Planning and CIP Projects

Sensitive to community and agency concerns, we offer strong project management to keep projects on schedule and within budget. GHD's "total project" expertise and service-oriented approach will be vital to the execution of work required for this contract. We are equally adept at large or small project delivery and have extensive experience acting as a trusted advisor to our clients. The projects listed below provide some recent examples (within last four years) and client references of our wastewater treatment and CIP planning experience.

Redway Community Services District WWTW Upgrades Masterplan | Redway, CA, USA

GHD undertook a capacity and condition analysis of the Redway wastewater treatment works. Various upgrade projects were identified to maintain plant compliance and replace assets at the end of their useful life. Potential alternatives were considered and compared through a cost analysis. The outcome of this study was a list of recommended projects/budgets that have since been approved by the State Water Resources Control Board to be advanced to design and construction. GHD was retained to design a new mechanical inlet works with screening and grit removal, upgrade the oxidation ditch aeration, replace miscellaneous clarifier mechanical equipment, construct a new clarifier flow splitter, upgrade sludge pumps, provide larger capacity effluent pumps and provide a greenhouse cover for the sludge beds to enhance drying.

Client: Cody Cox, Redway Community Services District, Water/Wastewater Director, M: 707-923-3101, ccox.rcsd@gmail.com **| Date:** 2021-2022 **| Value**: $415,000

WRP Assessment & CIP Development | Laguna Niguel, CA, USA

GHD undertook an evaluation, condition assessment, planning, and preliminary design of the solids stream processes, including the sludge thickening, digestion, dewatering, and digester gas energy systems at the 3A WRP for Moulton Niguel.

GHD was retained by Moulton Niguel Water District to provide owners and engineering services to support Capital Improvement Project (CIP) planning, scoping, and execution for the 3A WRP CIP Program at the 6-MGD conventional suspended activated sludge facility. The results were used to size the projects and define the delivery methods prior to issuing the Requests for Proposal (RFPs).

Client: David Larsen, Moulton Niguel Water District, Engineering Manager, T: 949-425-3578, dlarsen@mnwd.com **| Date:** 2018-2019 **| Value**: $75,000 (Design only)

Water & Sewer Master Plans Phase 3 | McKinleyville Community Services District, CA, USA

Phase 3 of the Water & Sewer Main Line Rehabilitation Master Plans are separate Master Plans which provide a schedule for implementing replacements, rehabilitation, and upgrades to the McKinleyville Community Service District's (MCSD) water distribution and wastewater collection system main lines and appurtenances for the next 50 years. Phase 3 of the MPs provide a variety of information, including:

- Determination of pipe condition
- Evaluation of prioritization based on risk considering all of the triple bottom line categories
- Updated yearly project cost
- Revised schedule for the first 50 years of main line replacement

GHD developed and applied a Risk Framework to the linear assets in the MCSD water and sewer systems. The framework considers the Probability of Failure and Consequence of Failure and assigns scores to each pipe. Probability of Failure considers the physical mortality failure and uses condition information from physical testing of sample pipes to assign scores. Consequence of Failure considers Triple Bottom Line categories and assigns values to each pipe using geospatial analysis and proximity to various data layers; for example, critical customers and sensitive habitats like rivers and waterbodies. The scores are then used to calculate the Business Risk Exposure scores. The risk scores are used to prioritize the rehabilitation of the system. The updated condition information and risk-based approach to CIP project planning provides MPs that guide MCSD to address the assets in their systems that pose the highest risk first.

Client: Pat Kaspari, MCSD, T: 707-839-3251, pkaspari@mckinleyvillecsd.com **| Date:** 2020-2022 **| Value**: $72.5K (Phase 3 only)

Water Treatment Plant Office Evaluation | Village of Skaneateles and City of Syracuse, NY, USA

Occupational assessment of the existing facilities to determine if a combined treatment plant and pump station facility were feasible. GHD assessed the square footage requirements and spatial needs based on personnel of different groups. GHD also assisted in developing a conceptual design for the renovation and additions to the existing facility to accommodate office requirements.

Client: Joseph Awald, PE, Commissioner of Water, City of Syracuse Dept. of Water, JAwald@syrgov.net **| Date:** 2022 **| Value**: $ 265,000

North WTP Assessment and CIP Development | Gilbert, AZ, USA

GHD was retained to complete a facility-wide condition assessment of the physical infrastructure at the North WTP. GHD undertook the facility-wide condition assessment, including all facility components, from buildings, to structure, piping, mechanical, electrical I&C, process, safety and security, site, and drainage systems at the 45 MGD North WTP. The results were used to develop a matrix of the recommended CIP's.

Client: Jeanne Jensen, CIP Supervisor, Town of Gilbert, T: 480-503-6198**,** Jeanne.jensen@gilbertaz.gov **| Date:** 2018-2019 **| Value**: $ 465,000

Business References

The table below provides a list of client references who can attest to GHD's ability to deliver wastewater treatment master planning and CIP planning projects.

AGENCY	CONTACT	TELEPHONE	EMAIL
Redway Community Services District	Codo Cox	**T** 707-923-3101	**E** ccox.rcsd@gmail.com
Moulton Niguel Water District	David Larsen	**T** 949-425-3578	**E** dlarsen@mnwd.com
McKinleyville Community Services District	Pat Kaspari	**T** 707-839-3251	**E** pkaspari@mckinleyvillecsd.com
City of Syracuse Dept. of Water	Joseph Awald	**T** 315-473-2860	**E** JAwald@syrgov.net
Town of Gilbert	Jeanne Jensen	**T** 480-503-6198	**E** Jeanne.jensen@gilbertaz.gov

Technical Report Estimated Cost

GHD estimate that the effort to complete the scope of work outlined in the RFP will be based on time and materials not to exceed **$32,928**. The table below shows a breakdown of the hours and rates of staff involved in this project.

Main Plant and Paradise Cove Plant CIP Evaluation and Occupancy Evaluation

12594920

Description		Frederick Tack (PD)	Mary Martis (QA Manager)	Jack Sutton (PM/Process Engineer)	Jill Kjellsson (CIP Lead/Civil Engineer)	Kyle Morris (Architect)	Total Hours	Labor Total	Disb. Fee	Total Disb.	Estimated Project Total
		$283	$340	$195	$237	$237					
Task1		***5***	***0***	***24***	***16***	***0***	***45***	***$9,887***	***$593***	***$766***	***$10,653***
Subtask 1.1	Document and data review	0	0	4	4	0	8	$1,728	$104	$104	$1,832
Subtask 1.2	Plant tour and interviews	1	0	12	12	0	25	$5,467	$328	$501	$5,968
Subtask 1.3	Identify other potential WWTP projects and develop Class V budget costs	4	0	8	0	0	12	$2,692	$162	$162	$2,854
Task2		***7***	***4***	***8***	***30***	***16***	***65***	***15803***	***948.18***	***948.18***	***$16,751***
Subtask 2.1	Draft technical CIP report	2	2	2	16	0	22	$5,428	$326	$326	$5,754
Subtask 2.2	Occupancy Assessment	0	0	0	2	16	18	$4,266	$256	$256	$4,522
Subtask 2.3	Final technical report	1	0	2	4	0	7	$1,621	$97	$97	$1,718
Subtask 2.4	Present to board of directors	4	2	4	8	0	18	$4,488	$269	$269	$4,757
Task3		***4***	***2***	***15***	***2***	***0***	***23***	***5211***	***312.66***	***312.66***	***$5,524***
Subtask 3.1	Project Management	2	0	13	0	0	15	$3,101	$186	$186	$3,287
Subtask 3.2	Kick-off Meeting	2	2	2	2	0	8	$2,110	$127	$127	$2,237
	Total Labor Hours	***16***	***6***	***47***	***48***	***16***					
	Estimated Project Total	**$4,528**	**$2,040**	**$9,165**	**$11,376**	**$3,792**	**133**	**$21,014**	**$1,261**	**$1,261**	**$32,928**

Appendix A

Resumes

Frederick Tack MS, PE, D.WRE, ENV SP, M.ASCE

Project Director

Location

Phoenix, AZ

Experience

21 years

Qualifications/Accreditations

- Water Leadership Institute Graduate, Water Environment Federation (WEF)
- Master of Science, Civil, Environmental & Sustainable Engineering, Arizona State University, Tempe, AZ
- Bachelor of Science Engineering, Civil Engineering (Minor: Urban & Environmental Planning), Arizona State University, Tempe, AZ
- Registered Professional Engineer (Civil), AZ #53976, CO #52036; TX #135978
- Board Certified Diplomate, Water Resources Engineer (D.WRE) of the American Academy of Water Resources Engineers #000777
- ADEQ Certified Water and Wastewater Operator (4D, 4T, 4C, 4W), ADEQ # OP032433
- Certified Envision™ Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure, 2016

Key technical skills

- Conventional & Advanced Wastewater Treatment Assessment, Design, and Operations
- Infrastructure Condition Assessment & Rehab
- Wastewater Treatment Facility Master Planning
- Hydraulic Modeling & Analysis
- Asset & Maintenance Management

Memberships

- National Society of Professional Engineers (NSPE); AZ Chapter President-elect
- American Society of Civil Engineers (ASCE); Phoenix Branch Past President 2016 – 2017
- International Concrete Repair Institute (ICRI)
- Society For Maintenance and Reliability Professionals
- WEF, Literature Review Committee

Relevant experience summary

Frederick serves as a Technical Director, Project Director, and Associate with GHD and leads a team of engineers, operators, designers, and water professionals in the planning, engineering, operations, management, and compliance of water and wastewater treatment infrastructure across the U.S West. He is a demonstrated professional, having led the development and execution of similar projects, with similar scale and complexity. He is a field to finish, multi discipline professional who has led the design of over 135 projects including 32 water treatment and 37 wastewater treatment facility expansions, optimizations, or rehabilitation, 15 Assessment and CIP development projects. He has sealed over 290 design documents in the past 10-years. Also, as a certified operator, he has led the day-to-day the operations, maintenance, and compliance of public and private water utilities.

WRP Assessment & CIP Development

Technical Director

Moulton Niguel Water District | Niguel, CA | 2018-19

Served as Technical Lead for the evaluation, condition assessment, planning, and preliminary design of the solids stream processes, including the sludge thickening, digestion, dewatering, and digester gas energy systems at the 3A WRP for Moulten Niguel.

GHD was retained by Moulton Niguel Water District to provide owners and engineering services to support Capital Improvement Project (CIP) planning, scoping, and execution for the 3A WRP CIP Program. At the 6-MGD conventional suspended activated sludge facility The results were used to right-size the projects, defined the delivery methods, phasing and packaging, prior to issuing the Requests for Proposal (RFPs).

SPA-1 Headworks Evaluation & Improvements

Project Director
City of Surprise | Surprise, AZ | 2019-2020

GHD was procured by the City of Surprise, Arizona to complete an evaluation of the headworks at the 18-MGD SPA 1, Water Reclamation Facility (WRF). GHD completed field assessments, hydraulic and screening evaluation, and developed an updated basis of design for the headworks. GHD develop multiple alternatives to correct the deficiencies, included changes to the hydraulics and operational procedures, removing the fine screens, and installing coarse mechanical screens.

OWTP Clarifier Rehabilitation and Improvements

Project Manager, Technical Director
City of Oxnard | Oxnard, CA | 2021 – 2022

GHD lead the evaluation, alternatives development, preliminary, and final design of the rehabilitation and improvements of four primary clarifiers and associated systems at the 31.7-MGD WWTP.

OWTP Coagulation Enhanced Primary Treatment Optimization and Feasibility Study

Project Manager, Technical Director
City of Oxnard | Oxnard, CA | 2021 – 2022

Frederick served as the project manager, responsible for client and GHD resource coordination, project metrics, and performance. As the technical director, he was responsible for directing and validating the technical design approach, methodology, and calculations related to the evaluation and improvement of the existing CEPT.

91st Avenue WWTP Digester Rehabilitation Program

Project Manager, Technical Lead
City of Phoenix | Phoenix, AZ | 2010 – Ongoing

GHD has completed the assessment and prioritization of the last eight digesters to be rehabilitated in the current program and has completed the rehabilitation of four over the past eight years, with four digesters remaining in the program at the 230 MGD WWTP.

Oxnard WWTP Reliability Improvements Peer Review

Project Manager
City of Oxnard | Oxnard, CA | 2020

Served as Project Manager to lead multi-discipline peer review and Owner's Engineering services relating to the Oxnard WWTP Reliability Improvement project, as designed by others through a design-bid-build delivery process. Improvements at the 32-MGD WWTP.

Recycling Plant 1 Digester 6 & 7 Roof Repairs

Technical Lead
Inland Empire Utilities Agency | Ontario, CA | 2017-2020, 2021-2022

Responsible for leading the civil, mechanical, process, and structural assessments for the rehabilitation design for the digester and related appurtenances. This included the development of the plans and specifications for advanced structural and coating rehabilitation, and mechanical systems.

Wastewater Collection CIP Planning Study

Project Director
Cave Creek Water | Cave Creek, AZ | 2020-22

Responsible for the technical vision, delivery and execution of additional mapping and assessment of the wastewater collection system, hydraulic modeling and analysis, and development of a 10-year CIP program.

North WTP Assessment and CIP Development

Project Manager, Technical Director
City of Gilbert | Gilbert, AZ | 2018-2019

Served as Project Manager and Technical Director to scope and direct each task related to a facility-wide condition assessment, including all facility components, from buildings, to structure, piping, mechanical, electrical I&C, process, safety and security, site, and drainage systems at the 45 MGD North WTP. The results were used to develop a matrix of the recommended CIP's.

Three Lift Station Assessment

Project Manager, Technical Director
City of Glendale | Glendale, AZ | 2017-2018

GHD completed the assessment on three lift and determined the prioritization for which infrastructure required immediate attention, and prepared a capital project matrix, including budgetary improvement estimates, durations, and recommended project delivery methods over the next 5 years.

Owner's Engineers Services

Project Manager, Town Engineer
Town of Wickenburg | Wickenburg, AZ | 2018-Ongoing

Serves as the Town Engineer, for the Town of Wickenburg, acting as the faithful agent of the Town, responsible for the oversight and development of program management, and operations and maintenance management, CIP planning and environmental compliance of their WWTPs, and water systems.

Rio Verde Utility Acquisition Due Diligence

Project Manager
EPCOR | Rio Verde, AZ | 2019

GHD was responsible for supporting the due diligence, relating to the acquisition of the a utility, including the preparation of a replacement cost evaluation of water and wastewater systems, review of existing asset information and previous annual reports. This utility was successfully acquired by EPCOR in 2019.

23rd Avenue WWTP Safety Audit

Project Manager
City of Phoenix | Phoenix, AZ | 2018

Responsible for leading a team of engineers, operators, and safety professionals in developing the approach, mapping, and assessment of the 80-acre, 60 MGD facility, including safety assessment for alignment with OSHA 1910 and Water Services Dept. requirements.

Career history

2011 - present	GHD, Technical Director
2009 - 2011	Arizona State University, Designer
2001 - 2009	DZ Engineering, Inc., Designer

Mary Martis PE

US West Biosolids & Organics Lead

Location

San Francisco, CA

Experience

29 years

Qualifications/Accreditations

- MS, Civil & Environmental Engineering, University of Utah, Salt Lake City, UT
- Bachelor of Science, Civil Engineering, University of Utah, Salt Lake City, UT
- Civil Engineer, CA #73150

Key technical skills

- Wastewater Treatment & Resource Recovery
- Biosolids Management Strategy
- Technology Pilots/Demonstration
- Process Design/Troubleshooting

Memberships

- Water Environment Federation
- WEF Residuals & Biosolids
- California Water Environment Association (current CWEA Biosolids Committee Chair)

Relevant experience summary

With nearly 30 years in the wastewater industry, Mary brings a unique perspective to projects through her experience working as a district engineer supporting the operations of two wastewater treatment plants (WWTPs), as a developer for a national biosolids management company, and as a technology leader for two large process equipment manufacturers. Her wastewater treatment plant operations background lends itself to a design eye that considers people movement, how plants can best be navigated, and resources needed to run the critical operation. Mary has a long history of working with agencies to create forward-thinking, creative programs to address complex challenges, and has assisted with the capture of millions of dollars in grant funding to support those projects.

Regional Biosolids Management Facility Feasibility Study

Project Manager
Las Gallinas Valley Sanitary District | San Rafael, CA

Evaluating the District's land assets to determine if its available acreage could support a regional biosolids land application operation or a regional biosolids composting facility. Scope of work includes determining soil capacity of available acreage based on farming grass hay using treated plant effluent for irrigation, and Class B biosolids from multiple agencies as soil amendment.

Biosolids Management Master Plan Update

Technical Lead
Pima County Regional Wastewater Reclamation Department | Tucson, AZ

Updating the 2012 Biosolids Master Plan to include technologies to achieve sustainable long-term sludge processing and residuals management for the County's Tres Rios Water Reclamation Facility (including upgrading to Class A), while considering alternative means of managing solids from the six other WWTPs operated by the County that currently transport their solids to Tres Rios (including constructing a regional thickening facility). Pima County currently sends its biosolids to landfill and is seeking to diversify its biosolids management portfolio to provide a longer-term plan as regulations become increasingly stringent with regards to biosolids land application (i.e., due to PFAS contamination of groundwater). Served as Technical Lead for evaluating regional solutions.

Biosolids Beneficial Use Pilot Project

Project Engineer
Capital Regional District | British Columbia, Canada

Preparing Request for Information (RFI) for industry response to interest in partnering with CRD to pilot technology for the destruction and/or beneficial reuse of biosolids. Land application of any product containing biosolids has been banned in CRD's service area. Assisting CRD in the development of a strategic plan for long term management of its biosolids. Served as

Project Engineer responsible for developing technology pilot program.

City of Camarillo Wastewater Master Plan Update

Project Engineer
City of Camarillo | Camarillo, CA

Updating wastewater collection system and treatment plant master plan. Agency has limited options for biosolids disposal so strategic biosolids management plan is included in the scope of work. Served As Project Engineer leading the development of the biosolids management strategic plan.

City of Livermore Water Reclamation Plant Condition Assessment

Principal-in-Charge, Quality Control (QC) Reviewer
City of Livermore Water Resources Division | Livermore, CA

Performed plant-wide Tier I condition assessment of treatment facilities.

City of Livermore Water Reclamation Plant Electronic Operations and Maintenance Manual

Project Manager
City of Livermore Water Resources Division | Livermore, CA

Developed electronic Operations and Maintenance (O&M) manual for water reclamation facility. In addition, identifying opportunities for process improvement.

Odor Control Feasibility Study

Project Manager
Sewerage Agency of Southern Marin | Mill Valley, CA

Developed preliminary design and construction cost estimate for odor control facilities for primary clarifiers, thickener, as well as potential biosolids drying facility. Also performed conceptual design of low temperature biosolids drying system and developed budgetary construction cost estimate.

Project Manager, Design Engineer, Process Design Lead
City of San José | San José, CA

Served as Design Engineer for a $58 million project to upgrade sixteen (16) 140-foot-diameter secondary clarifiers and 24-inch return activated sludge pipelines, including new electrical and Instrumentation and Control (I&C). Project has advanced from condition assessment, alternatives analyses and preliminary design, through completion of bid documents and is currently under construction. Served as Project Manager and Process Design Lead (clarifiers are being designed to help mitigate serious gas build-up issues).

Biosolids Management and Future Biosolids Master Plan

Project Manager, Technical Lead
Sanitation District No. 5 of Marin County | Tiburon, CA

Developed a long-term biosolids management strategy. New regulations in California requiring diversion of significant quantities of organics (including biosolids) from landfill will result in a 400% increase in needed disposal capacity (e.g., land application). Sanitation District No. 5 desired to develop a long-term biosolids management strategy to secure a sustainable pathway for disposing of its biosolids.

Feasibility Assessment of Upgrading WRP to Granular Activated Sludge (GrAS)

Project Manager
City of Pacifica | Pacifica, CA

Performing alternatives analysis for converting the 20 Mgal/d WRP's existing sequencing batch reactor system to GrAS for the purpose of increasing secondary treatment capacity. Analysis includes evaluating potential impacts of GrAS conversion to plant's auto-thermal thermophilic aerobic digestion and dewatering systems.

Professional Services for O&M Support at the Water Resources Division

Project Manager, Technical Lead
City of Livermore | Livermore, CA

Provided on-call professional services for the City (collection system, stormwater system, and WRP condition assessment; WRP optimization; development of Standard Operating Procedures; development of WRP Rehabilitation and Replacement program; water and recycled water systems evaluation; and source control program).

San Mateo WWTP Upgrade

Quality Assurance / Quality Control (QA/QC) Manager, Design Engineer
City of San Mateo | San Mateo, CA

Served as Design Engineer for $420 million treatment plant upgrade being delivered through construction management at risk. Treatment plant upgrade includes new equalization and headworks facilities, primary clarifiers, contact stabilization (BioActiflo), membrane bioreactors, and chemical feed systems, including disinfection. Served as QA/QC Manager leading a team of 17 company technical experts in reviewing all project deliverables and supporting calculations as part of a comprehensive quality management program. Project is entering 90% design.

Jack Sutton BE (Industrial Chemistry) (Hons1)

Project Manager/Process Engineer

Location

San Francisco, CA, USA

Experience

6 years

Qualifications/Accreditations

- BE (Industrial Chemistry) (Hons1), UNSW
- University Medal, UNSW

Key technical skills

- Infrastructure planning, strategy design and operations
- Treatment plant modelling
- Biosolids process
- Project management

Memberships

- Organizing committee member for California Water Environment Association 2023 Conference.
- Member of the Australian Water Association (AWA) Newcastle Branch Committee

Relevant experience summary

Jack has over six years' experience within the municipal water and wastewater industry, including consulting experience relating to project management, treatment plant capacity assessments, upgrade strategies, concept and detailed design projects. Jack's experience at Sydney Water grounded him with a background in operations. This has provided him with a solid understanding of the challenges faced by water authorities.

Hunter Water Centralized Biosolids Strategy Cost Benefit Analysis

Role: Project Manager / Process Engineer
Client: Hunter Water
Location: Newcastle, NSW, Australia
Project value: $450k (consulting fees)
Date(s): March 2020 – March 2021

Project manager for an interdisciplinary centralized sludge management strategy for Hunter Water. The strategy assessed replacing BAU sludge management of decentralized aerobic digestion at ten WWTWs with a centralized anaerobic/gasification facility (26 dry solid tons of WAS per day) to reduce lifecycle costs and achieve carbon neutrality targets. This project received high client praise and won 'Best Poster' project at the 2022 NSW AWA State Conference. The project involves:

- Master planning to determine loads from WWTWs, septic tankers as well as industrial/agricultural/municipal organic wastes for co-digestion
- Technology shortlisting – anaerobic digestion, thermal hydrolysis, dry digestion, pyrolysis, gasification, were considered
- Site shortlisting considering environmental constraints, truck movements, site redundancy, subsidence/geotechnical issues, renewable energy recovery generation, biosolids application sites
- Development of novel mass and energy balance models for unconventional technologies.
- Adaptive planning framework to develop options resilient to future uncertainties i.e. market volatility, load changes and regulatory changes
- Cost benefit analysis of a number of options compared to the base case of decentralized aerobic digestion.

Redway Community Services District Wastewater Treatment Facilities Upgrades

Role: Design Manager / Process Engineer
Client: Redway Community Services District
Location: Redway, California, United States
Project value: $150k (consulting fees)
Date(s): March 2022 – Ongoing

The existing WWTF was identified to have several deficiencies and assets nearing end of life. GHD is designing a new mechanical inlet works with screening and grit removal, upgrading the oxidation ditch aerator, replacing miscellaneous clarifier mechanical equipment, sludge pumping upgrades, effluent pumping upgrades and adding a greenhouse cover for the sludge beds to enhance drying. Jack is serving as the design manager, coordinating process, civil, structural and electrical disciplines. Jack is undertaking the process/mechanical design (including BioWin process modelling).

Wickenberg South WWTP UV Disinfection Design

Role: Project Engineer
Client: Town of Wickenburg
Location: Wickenberg, Arizona, United States
Project value: $105k (consulting fees)
Date(s): January 2022 – June 2022

Based on population growth projections and demand, the UV system at Wickenburg treatment plant will need to be upsized from 0.8 MGD to 1.3 MGD. Additionally, the plant is experiencing operational issues and would like to replace the UV equipment and configuration based with newer UV technology available on the market. GHD is conducting the design of the new UV disinfection system. Jack was responsible for the process design, designing the effluent pump station, liaising with Trojan to develop the UV disinfection design and is supporting the hydraulic profile development.

Review of Recycled Water and Stormwater Harvesting Systems

Role: Process Engineer / Project Manager
Client: Central Coast Council
Location: Wyong, NSW, Australia
Project value: $55k (consulting fees)
Date(s): October 2019 – January 2020

Jack managed a team of consultants to provide Central Coast Council (CCC) with a comprehensive strategy to prioritize investment for their various recycled water and stormwater harvesting systems. This project received high praise from the client (5/5 survey feedback) The project involved:

– Site audits to investigate condition of assets and operational efficiencies
– Process capacity assessments and data analysis to assess historical quality compliance
– Status of the schemes and cost estimates to maintain s292 approval
– Investigation of future demand through a GIS study and liaising with nearby industrial and commercial entities

Selfs Point Sewage Treatment Plant Concept Design

Role: Process Engineer
Client: TasWater Capital delivery office
Location: Hobart, Tasmania, Australia
Project value: $500k (consulting fees)
Date(s): June 2021 – February 2022

TasWater is seeking to expand the existing Selfs Point STP to accommodate predicted flow from the existing Selfs Point and accommodate flow from the decommissioned Macquarie Point STP. This translated to a major process augmentation at Selfs Point STP (8 ML/d -->24.9 ML/d). Jack was responsible for portions of the design development including:

– Dynamic BioWin modelling and bioreactor/MBR configuration selection and sizing
– Modelling of the impacts of a range of tankered high strength industrial wastes on the process.
– Secondary treatment and aeration system sizing
– Sludge thickening, digestion, biogas, sludge heating and dewatering sizing
– Tankered waste receival facility design
– Development of mass and energy balances
– Development of P&IDs

Stuarts Point Sewage Treatment Options Study, Concept and Reference Design

Role: Project Manager / Process Engineer
Client: Kempsey Shire Council
Location: Kempsey, NSW
Project value: $350k (consulting fees)
Date(s): July 2019 – November 2021

Jack worked with Kempsey Shire Council to prepare options, concept and a reference design for a Greenfield sewage treatment plant at Stuarts Point, involving:

– Determination of current and future population projections in the catchment, including holiday and off-peak periods.
– Development of options including Biowin™ modelling of IDEA, SBR, MBR and MLE processes as well as multiple sludge management options.
– Concept and reference design and design co-ordination of electrical, civil, process, surveying and geotechnical disciplines.

Kurri Kurri Wastewater Treatment Works Upgrade Detailed Design and Construction

Role: Process Engineer
Client: Hunter Water
Location: Newcastle, NSW, Australia
Project value: $1.2M (consulting fees)
Date(s): July 2019 – February 2020

Jack was the process engineer for the detailed design of upgrades at Kurri Kurri WWTW. These upgrades included provision of a third clarifier, new RAS pumps, two bioreactor aeration blowers/associated pipework, a wet weather return pump station and interfacing infrastructure. Specific tasks Jack completed include:

– Basis of design and treatment plant model development
– Process flow diagram, mass balance and P&IDs
– Detailed design of clarifier, secondary aeration and bypass/wet weather control
– Design basis, HAZOP, CHAZOP workshops
– Automatic Control and Monitoring Manual

Jill Kjellsson PE, LEED AP BD+C

Civil Engineer

Location

Santa Rosa, CA

Experience

8 years

Qualifications/Accreditations

- MS, Environmental and Water Resources Engineering, University of Texas, Austin, TX, 2014
- MS, Public Affairs, University of Texas, Austin, TX, 2014
- BS, Environmental Engineering, California Polytechnic State University, San Luis Obispo, CA, 2011
- Civil Engineer, CA #90789
- Leadership in Energy and Environmental Design Accredited Professional (LEED AP) Building Design and Construction (BD+C)

Key Technical Skills

- Strategic Planning
- Utility Master Planning
- Capital Improvement Plan Development
- Asset Management

Memberships

- WateReuse
- American Society of Civil Engineers

Relevant experience summary

Jill Kjellsson is a water resources engineer with eight years of post-graduate experience focused on strategic planning projects for stormwater, wastewater, water, and water reuse, including utility master planning, capital improvement project planning, and asset management. She has experience in developing and executing risk frameworks to prioritize capital project, rehabilitation, and operations and maintenance programs.

Vallejo Flood and Wastewater District Asset Management Program

Water Resources Engineer
Vallejo Flood and Wastewater District | Vallejo, CA

The asset management strategic plan includes development of the asset management framework, levels of service, current state evaluation, risk framework, need identification and prioritization, and Operations and Maintenance (O&M) investment need requirements. Jill supported the project by participating in workshops to determining condition ratings, and finalizing the asset hierarchy, condition ratings, and consequence of failure in conjunction with the new Computerized Maintenance Management Systems (CMMS) implementation.

Pump Station and Conveyance Master Plan

Water Resources Engineer
Monterey One Water | Monterey, CA

This project is a comprehensive physical condition assessment of the pump station and conveyance system assets to identify near-term risks and mitigation strategies, and to support a long-term asset management program that identifies sustainable funding needs. As engineer on the project, Jill worked with M1W to identify desired Levels of Service (LOS), apply the Business Risk Exposure (BRE) framework, and develop a prioritized CIP of recommended near-term projects and a long-term investment profile that includes capital projects, corrective and preventative maintenance, and predicted renewal and replacement investments.

Pure Water Monterey Asset Management Program

Water Resources Engineer
Monterey One Water | Monterey, CA

Monterey One Water, aided by extensive regional collaboration, most notably the Monterey Peninsula Water Management District and Marina Coast Water District, is the lead agency for a significant $100 million integrated water recycling program composed of four

ongoing projects, collectively called the Pure Water Monterey Groundwater Replenishment project. Jill developed asset register hierarchy and populated with assets from the treatment plant building off of the framework developed as part of the Pump Station and Conveyance System Master Plan.

Regional Water Reuse System Master Plan

Engineer
City of Santa Rosa | Santa Rosa, CA

GHD was retained to assist the City in creating a comprehensive and forward-looking master plan for the Regional Water Reuse System that reflects current conditions and drivers, and anticipates potential regulatory changes, to provide a roadmap for future investments. The primary objectives of the master plan are to consolidate information on the Regional Water Reuse System into a single reference document, evaluate alternatives for implementing the identified strategies with the purpose of optimizing operations and maximizing resource recovery, and develop a prioritized CIP of recommended projects with budgetary costs.

City of Berkeley Sewer Master Plan

Water Resources Engineer
City of Berkeley | Berkeley, CA

GHD developed a full system model using advanced hydraulic modeling software InfoWorks ICM and asset management planning tool InfoAsset Planner. Jill worked on the development and implementation of a risk framework to the collection system assets in order to prioritize capital improvement projects and the City's infiltration and inflow reduction program. The risk framework was developed through a series of workshops with the City to identify desired levels of service and business risk exposure thresholds. The risk model leverages a Geographic Information System (GIS) geodatabase with pipe age, material, and diameter; hydraulic model output for existing and future scenarios; and Closed-Circuit Television (CCTV) inspections for data-driven investment decisions.

Napa Sanitation District Asset Management Strategic Plan

Water Resources Engineer
Napa Sanitation District | Napa, CA

The asset management strategic plan provides a roadmap for incrementally adopting recommended tools and practices at a pace that minimally disrupts ongoing operations and provides a formal and transparent basis for making investment decisions. The roadmap is based on findings from an initial gap assessment against ISO 55001:2014 and incorporates recognized best practices in areas where the District wants to improve its approach to managing its physical assets.

MCSD Water and Sewer Master Plans Phase 3

Water Resources Engineer
McKinleyville Community Services District | McKinleyville, CA

Jill served as project engineer for Phase 3 of the water and sewer master plans for the McKinleyville Community Services District (MCSD). Phase 3 effort included collection of soil samples and pipe samples and laboratory testing to assess pipe condition. A risk framework was developed which was applied to all linear assets and a prioritized rehabilitation plan, including planning level opinions of probable cost, was prepared and presented in master plan reports for each system over a 50-year planning horizon.

City of Rohnert Park Sewer Collection System Master Plan

Water Resources Engineer
City of Rohnert Park | Rohnert Park, CA

This project is a comprehensive evaluation of the City's sewer collection system to identify near-term risks, mitigation strategies, and capacity needs, and to support a program that identifies sustainable funding needs for a long-term planning horizon. Work included applying an asset management framework to develop capital improvement projects.

Town of Windsor Collection System Planning

Project Manager, Engineer
Town of Windsor | Windsor, CA

Served as Project Manager and Engineer for Phase 3 of a comprehensive planning effort for the Town's sewer collection system. The third phase involved collaboration with various Town staff for data collection and analysis. The project tasks included gathering land use planning information, development of recommended capital improvement projects, completion of the master plan report document and presentation to Town Council.

Town of Windsor Storm Drainage Master Plan

Project Manager, Engineer
Town of Windsor | Windsor, CA

Served as Project Manager for the second phase of the Storm Drainage Master Plan for the Town of Windsor. Modeling efforts included data collection using cloud-based ArcServer GIS resources and aerial survey data, 2D modeling with DHI MIKE software (combination of MIKE URBAN, 11, and 21), and preparation of a capital improvement program. GHD's efforts increased the accuracy of the models and associated recommendations in the Town's Storm Drain Master Plan, which is used to identify CIP's and avoid future flooding.

Kyle R. Morris AIA, NCARB

Senior Architect

Location

Syracuse, NY USA

Experience

16 years

Qualifications/Accreditations

- BS Architectural Engineering, 2006
- Registered Architect, 2017

Key technical skills

- Building code and life safety analysis
- Construction management and administration
- Building condition evaluation and assessments

Memberships

- American Institute of Architects (AIA)
- National Council of Architectural Registration Boards (NCARB)

Relevant experience summary

Kyle has more than 16 years' experience in architectural design and construction. His experience includes numerous municipal and industrial projects centered around water and waste water treatment facilities. He has extensive experience with building condition surveys and assessments of existing facilities.

Project experience – Water Treatment Facilities

Water Treatment Plant Evaluation

Role: Architect
Client: Village of Skaneateles and the City of Syracuse
Location: Skaneateles, NY USA

Evaluation of the existing facilities to determine if a combined treatment plant and pump station facility were feasible. Determined square footage requirements and spatial needs based on personnel of both groups. Assisted in developing a conceptual design for the renovation and additions to the existing facility to accommodate office requirements.

Danbury Water Treatment Plant Evaluation

Role: Architect
Client: City of Danbury
Location: Danbury, CT, USA

Evaluation of the existing Margerie WTP and West Lake WTP facilities. Existing life safety, accessibility, building envelope, and interior finish conditions were evaluated to develop a report that outlined each recommendation. Opinion of probable cost of construction was provided for each recommendation.

Lake Ontario Water Treatment Plant Improvements

Role: Architect
Client: Onondaga County Water Authority
Location: Oswego, NY, USA

Design of numerous accessibility and life safety improvements required for the facility. The project included an elevator addition to provide handicapped accessibility to the upper floor laboratory and office area.

Auburn Water Filtration Plant Improvements

Role: Architect
Client: City of Auburn Department of Utilities
Location: Auburn, NY, USA

Improvements include accessibility upgrades at the Rapid Sand Filter Building along with renovations to the aging +100-year-old building Slow Sand Filter Building. Renovations recognize the historical nature of the project. The goal is to restore the deteriorated building back to its former prominence. Upgrades to the building envelope and interior conditions were crucial to the performance of the facility.

Batavia Water Treatment Plant Upgrades

Role: Architect
Client: City of Batavia
Location: Batavia, NY, USA

Improvements included brick veneer and masonry repairs, rehabilitation, and replacement to an existing ornate building. Other improvements included were roofing replacement and structural repairs to multiple buildings.

Buffalo Water Treatment Plant Disinfection Conversion

Role: Architect
Client: City of Buffalo
Location: Buffalo, NY, USA

Architectural improvements included decorative stone masonry repairs and cleaning of the historic Colonel Ward Pumping Station. Removable skylight design and roof replacement in the North and South Courtyards areas to maintain building envelope and access to the new chemical storage area below.

Project experience – Waste Water Treatment Facilities

Women's Locker Room Evaluation

Role: Architect
Client: City of Watertown Water Pollution Control Plant
Location: Watertown, NY, USA

Project intent was the evaluation of the existing conditions and determine the feasibility of a women's locker room renovation within the Control Building. Developed a conceptual design based on code requirements and facility personnel needs for the increasing female staff.

Building Condition Assessment

Role: Architect
Client: Town of Cazenovia Water Pollution Control Facility
Location: Cazenovia, NY, USA

Evaluation of the existing conditions at the Cazenovia Water Pollution Control Facility that included seven buildings. We developed an assessment of existing conditions and provided recommendations for improvements based on needs of the plant staff and building code required upgrades. Recommendations included a renovation of the Control Building toilet rooms, laboratory and locker rooms.

Waste Water Treatment Plant Upgrades

Role: Architect
Client: Village of Bath Electric, Gas and Water Systems
Location: Bath, NY, USA

Provided WWTP upgrades to meet the current regulations and requirements. Upgrades include a new Headworks Building, new Membrane Building, Digester Building renovations and Control Building renovations to upgrade process systems, accessibility and building envelope performance. The Control Building renovations included break room, toilet rooms and locker room designs to accommodate the growing staff needs.

Project experience – Municipal

Fire Station & BOM Building Renovation

Role: Architect
Client: City of Batavia
Location: Batavia, NY, USA

Project included the renovation of a shared shower room to private shower and toilet rooms based on an increasing number of female firefighters. The design required communication with the staff and leaders to provide a design that suited all members of the organization.

Career history

2021 - present	GHD, Senior Architect
2016 - 2020	SWBR, Associate, Project Architect
2013 - 2016	Lake Architectural, Architectural Designer & BIM Specialist
2006 - 2012	O'Brien & Gere, Architectural Designer

NUTE ENGINEERING
Civil and Sanitary Consultants

October 11, 2022

Mr. Tony Rubio, District Manager
Sanitary District No. 5
P.O. Box 227
Tiburon, CA 94920

Re: Cove Road Pump Station Rehabilitation Project
Proposal for Engineering Design Services

Dear Tony:

As requested Nute Engineering is pleased to submit the following proposal for design of the Cove Road Pump Station Rehabilitation Project.

BACKGROUND AND PROJECT DESCRIPTION

The existing Cove Road Pump Station serves almost all of the City of Belvedere service area of Sanitary District No. 5. The Cove Road Pump Station was originally constructed in 1961 and reconfigured in 1981 with two dry weather submersible pumps and two wet weather pumps to accommodate both dry and wet weather flows.

The Cove Road Pump Station electrical switchgear and motor control center are exhibiting age related conditions which include difficulty in finding replacement parts. The electrical switch gear will be replaced along with new PG&E secondary service to the meter. The replacement motor control center will have a new programmable logic controller (PLC) which will integrate with the District SCADA system for the treatment plant. In addition, the pumps will be controlled with variable frequency drives. We recommend District Staff continue to work with WorkSmart for their SCADA programming.

The existing natural gas fired generator is located in the existing wood framed building and does not currently have a sound enclosure. The new replacement generator can have its own weather proof sound enclosure and be located outside of the building housing the new switch gear and motor control center. This new generator will also require a new automatic transfer switch within the new switchgear/motor control center to safely transfer electrical power feed to the generator and back to PG&E line service.

The existing pump station site is small, and space is limited. The goal of the project would be to find a location for both a new outdoor enclosed generator and a chemical storage tank within a site that is already constrained from the new force main and flowmeter added recently.

SCOPE OF WORK

A pre-design study will be necessary for the design work to determine if the site needs more space to accommodate both new outdoor generator enclosure and chemical storage tank. The demolition and reconstruction of a smaller wood framed motor control center building, similar to what was constructed at the Mar West Pump Station recently, may be necessary.

Schedule A Services - Design and Preparation of Plans and Specifications

The design and preparation of plans and specifications for the Cove Road Pump Station Rehabilitation Project will consist of the following items of work:

1. Project kickoff meeting with District and Beecher Engineering, Inc.
2. The existing pump station has site space constraints for siting new generator, chemical feed tank and motor control center, and buried force mains. The pre-design study will assess site constraints and verify if existing building should be replaced and downsized. (Based on this site assessment, the optional new building design item below can be implemented or not).
3. Prepare new PG&E service request for new secondary service connection and electrical meter.
4. Prepare design for new electrical meter/main switchboard.
5. Prepare design for new motor control center with new PLC SCADA-ready system..
6. Prepare new generator design for outdoor enclosed generator which operates on natural gas. Gas service sizing will be coordinated with PG&E.
7. Work with odor reduction chemical supplier for tank sizing and siting of new tank and new generator.
8. The planset major motor control center changes will require control panel shutdown and therefore, sewer bypassing during the work. Sewer bypass plan will be designed.
9. Prepare 50% plans, specifications and engineer's estimate for review by District staff (includes new site fence design).
10. Prepare 90% plans, specifications and engineer's estimate for review by District staff.
11. Prepare final pre-design plans, specifications and engineer's estimate.

Schedule B Services - Optional Design Services

1. Design new wood framed building for motor control center enclosure (similar to Mar West Pump Station enclosure structure) and prepare demoliton drawing.

Upon completion of this work, we will furnish three (3) sets of plans and specifications for the project for the approval and adoption by the District Board. Additional sets needed for advertising for bids and for the contractor's use in construction will be furnished to the District at cost.

SERVICES NOT INCLUDED IN THIS PROPOSAL

It is understood that the following services are outside the scope of this proposal and can be provided by Nute Engineering or by others as deemed necessary:

1. Geotechnical engineering and soil contamination investigation services.
2. Potholing of underground utilities.
3. Investigation of potential hazardous wastes in the soil or groundwater.
4. Environmental review or preparation of an environmental impact report of the project.
5. Necessary permit applications and application fees, including new wood framed building approval from City of Belvedere if determined to be required.
6. Legal services in connection with the project.
7. Title searches and appraisals.
8. Acquisition of rights of ways, rights of entries or construction permits.
9. Printing of plans and specifications for bidding purposes and for the Contractor's use.
10. Clerical time to send bid documents out to bidders.
11. Review of shop drawings and submittals and construction management services.
12. On site construction observation services unless specifically authorized.

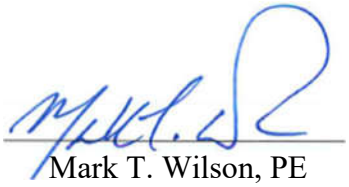
ENGINEERING FEE

We propose to do all the work on a time and materials basis to be billed according to the Schedule of Hourly Rates attached hereto as Attachment A. The estimated labor hours and costs for the work by task and job classification are shown in Attachment B. The following are budgets for the engineering fees for the various schedules outlined above:

Project design and preparation of plans and specifications	$ 83,457
Optional Design Services:	$ 12,034
	$ 95,491

Very truly yours,

NUTE ENGINEERING

By: 
Mark T. Wilson, PE

Attachment A – Hourly Rates
Attachment B – Project Estimating Sheet

907 Mission Avenue | San Rafael, CA 94901 | Phone: 415-453-4480 | Fax: 415-453-0343 | www.nute-engr.com

NUTE ENGINEERING
Civil & Sanitary Consultants

ATTACHMENT A

2022 HOURLY RATE SCHEDULE

OFFICE PERSONNEL	HOURLY RATE
Principal Engineer	$258.00
Senior Engineer	211.00
Office Surveyor	205.00
Engineer III	199.00
Engineer II	191.00
Engineer I	165.00
Field Representative*	181.00
Assistant Engineer II	129.00
Assistant Engineer I	119.00
Engineering Technician II	171.00
Engineering Technician I	151.00
1-Person Survey Crew w/Robotic Total Station	250.00
Office Surveyor	205.00
Senior Designer	188.00
CAD Drafter II	158.00
CAD Drafter I	138.00
Technical Administrative Support	118.00
Clerical	101.00
LITIGATION SERVICES	
Court Appearance/Deposition	372.00

*Field Representative for construction is a Prevailing Wage category as required by the California Department of Industrial Relations.

REIMBURSABLE EXPENSES

Sub-consultants will be charged at 1.10 times cost. Charges for reproductions, blueprinting, outside computer services, rental of special equipment, delivery, express mail, insurance certificates (where client requires to be listed as an additional insured) and meals and lodging will be charged at 1.10 times cost. Mileage and technology charges are included in the hourly rates. Nute Engineering reserves the right to adjust its hourly rate structure for all ongoing contracts.

EFFECTIVE DATE: August 1, 2022

ATTACHMENT B
SANITARY DISTRICT NO. 5 OF MARIN COUNTY
COVE ROAD PUMP STATION REHABILITATION PROJECT
PROPOSAL FOR ENGINEERING SERVICES
PROJECT ESTIMATING SHEET

Description	Rate $/Hr	Senior Engineer $211	Engineer II $191	CAD Drafter II $158	Tech Admin Support $118	Surveyor with RTS $250	*Direct Costs* *Beecher Engineering*	*Direct Cost Markup*	TOTAL
Schedule A Services – Design and Prepare Plans and Specifications									
1. Attend design kickoff meeting		3			1		$880	$88	
2. Prepare pre-design site study - identify site spatial contraints				8		6	$880	$88	
3. Prepare PG&E New Service Application			4	2	2		$3,300	$330	
4. Prepare Pump Station switchgear design		1	2	2			$8,800	$880	
5. Prepare Motor Control Center design with OPLC and Telemetry		1	2	2			$8,800	$880	
6. Prepare new generator design		2	4	6			$8,800	$880	
7. Chemical tank sizing and site locate, and locate generator on-site		2	4	6					
8. Prepare sewage bypass plan for construction period		4	4	8					
9. Prepare 50% Plans, Specifications and Engineer's Estimate		4	4	20	8		$8,800	$880	
10. Prepare 90% Plans, Specifications and Engineer's Estimate		4	4	20	8		$3,740	$374	
11. Prepare Final Plans, Specifications and Engineer's Estimate		4	4	20	2		$4,400	$440	
	Hours	25	32	94	21	6			
	Cost	$5,275	$6,112	$14,852	$2,478	$1,500	$48,400	$4,840	$83,457
Schedule B Services – Optional Design Services									
1. Based on pre-design site study, design new enclosure bldg & (E) bldg demo		14		50	10				
	Hours	14		50	10				
	Cost	$2,954		$7,900	$1,180				$12,034
								Total Cost Schedules A and B	**$95,491**