RESOLUTION NO. 6749-2026

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SEBASTOPOL APPROVING A TASK ORDER 8 WITH GHD INC. FOR THE SEWER SYSTEM MASTER PLAN UPDATE (CIP#0615-21.01)

WHEREAS, the City of Sebastopol owns and operates a wastewater collection system that requires ongoing planning, maintenance, and capital investment to ensure reliable service and regulatory compliance; and

WHEREAS, the City's Sewer System Master Plan was last completed in 2005 and requires updating to reflect current system conditions, regulatory requirements, and infrastructure priorities; and

WHEREAS, the City has completed condition assessments, inspection programs, and adopted a Sanitary Sewer Management Plan, but does not currently have a consolidated and up-to-date planning document to guide long-term capital investment; and

WHEREAS, the City released a Request for Proposals on December 15, 2025, for engineering services to prepare a Sewer System Master Plan Update, and received two proposals in response; and

WHEREAS, one proposal was determined to be non-responsive to the requirements of the solicitation, and the remaining proposal submitted by GHD Inc. was evaluated by staff based on qualifications, experience, and approach, and further reviewed through a follow-up interview conducted on March 5, 2026; and

WHEREAS, GHD Inc. has demonstrated experience with the City's wastewater system and is qualified to perform the required services, and has proposed an approach that leverages the City's existing data, GIS, and hydraulic modeling tools to efficiently develop an updated and implementable Sewer System Master Plan; and

WHEREAS, the proposed Task Order will update the City's hydraulic model, evaluate system performance, identify deficiencies, and develop a prioritized project list for the Capital Improvement Program to support long-term planning, regulatory compliance, and system reliability; and

WHEREAS, the cost of the Task Order in an amount not to exceed $132,634 has been reviewed by staff and determined to be fair, reasonable, and within the approved Capital Improvement Program budget;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Sebastopol does hereby approve the Task Order with GHD Inc. for preparation of the Sewer System Master Plan Update (CIP#0615-21.01) in an amount not to exceed $132,634, and authorizes the City Manager to execute the Task Order and any related documents necessary to implement the project.

The above and foregoing Resolution was duly passed, approved, and adopted at a meeting of the City Council on the 21st day of April 2026.

I, the undersigned, hereby certify that the foregoing Resolution was duly adopted by the City of Sebastopol City Council by the following vote:

VOTE:
Yes: Councilmembers Hinton, Zollman, Vice Mayor Maurer and Mayor McLewis
No: None
Abstain: Councilmember Carter

Absent: None

APPROVED: Signed by: Jill McLewis 7C6BCED0A8914A1... Mayor Jill McLewis

ATTEST: Signed by: Mary Gourley 44C0774260FE430... Mary Gourley, Interim City Manager/City Clerk, MMC

APPROVED AS TO FORM: Signed by: Alex Mog 66BDB79D572A4EB... Alex Mog, City Attorney

# TASK ORDER 8
# BETWEEN THE
# CITY OF SEBASTOPOL AND GHD INC.
# ENGINEERING SERVICES for
# SEWER SYSTEM MASTER PLAN UPDATE

This Task Order is entered into under the terms and provisions of the On-Call Professional Services Agreement ("Master Agreement") dated July 14, 2025 2025 between the City of Sebastopol and GHD Inc. ("Consultant") for construction management services for the Sewer System Master Plan Update CIP #0615-23.04 ("Project"). The Scope, Fee Estimate and Schedule are summarized below and detailed on the Proposal dated January 15, 2026 and attached as Exhibit A.

## SCOPE

The general scope is to provide professional engineering services for the the Project as detailed in Exhibit A.

## FEE ESTIMATE

Amount of this Task Order is not to exceed **$132,634**. A copy of the Consultant's Fee Estimate is attached to the Proposal in Exhibit A.

## SCHEDULE

This Task Order assignment is for services for the duration of the Project is estimate to last approximately 10 months from the execution of this Task Order and is detailed in Exhibit A.

Prior to incurring any costs in excess of this "Not to Exceed" amount, Consultant shall provide a written request for compensation for extra work, with an estimate of the additional anticipated cost. City assumes no responsibility for compensation of extra work performed by Consultant without prior notification and written approval of the City.

Prior to commencement of work, Consultant shall provide the required insurance and endorsements as amended and in accordance with the Master Agreement.

All other terms and conditions of the Master Agreement are hereby incorporated by reference and made a part of this Contract.

## APPROVED:

**CITY OF SEBASTOPOL**

_____
Mary Gourley
Interim City Manager
mgourley@cityofsebastopol.gov

Date:_____

**GHD**

_____
Matthew Kennedy, PE, TE
Principal Engineer
matt.kennedy@ghd.com

Date:_____

Exhibit A

Proposal for Engineering Services

# → Sewer System Master Plan Update (CIP#0615-21.01)

Submitted to City of Sebastopol

January 15, 2026

**January 15, 2026**

**Toni Bertolero, Public Work Engineer**
**Sebastopol Public Works Department**
**714 Johnson St.**
**Sebastopol, CA 95472**

**RE: Proposal for Engineering Services for Sewer System Master Plan Update- RFP NO: 615-21.01**

**Dear Ms. Toni Bertolero and Evaluation Committee:**

With great pleasure, GHD submits this proposal to the City of Sebastopol for Engineering Services for Sewer System Master Plan Update (SMPU). GHD has been working with the City for many years, providing a wide range of services that have grown our relationship with staff and working knowledge of the City's utility systems. As you will see in our proposal, our previous work designing sewer and water improvement projects for the City, developing the City's Sewer Geographic Information System (GIS) and working with the City's sewer system hydraulic model to evaluate projects will allow us to use these tools efficiently and focus our efforts on the key updates the City needs to the Sewer Master Plan.

We bring a team with years of local relevant history, exceptional familiarity with the City's sewer system, and proven experience in the development and use of GIS, hydraulic models and preparing sewer master plans. We selected several key staff who will play important roles in the delivery of this SMPU.

**Matt Kennedy, PE, TE:** Matt has been the Principal Engineer and primary contact for GHD's On-Call Engineering services contract with the City. He has overseen every project GHD has delivered for the City over the past 10 years, including our on-going City Engineering Services. Matt has been the engineer of record on the City's most recent well treatment and water/sewer main replacement projects and was the project manager for the development of the City's water and sewer GIS. He has also prepared water and sewer master plans and performed hydraulic models for other clients. The City is Matt's top priority and he is committed to collaboration and responsiveness to address any challenges for the SMPU.

**Ann Bechtel, PE:** Ann will serve as the project manager and Will bring more than 20 year experience in infrastructure master planning and prioritizing/maximizing funding for projects and engaging stakeholders on projects similar in nature and scope and leading multi-disciplinary teams and engaging multiple stakeholders.

**Pradeep Nagarajan, PE:** Pradeep has over 20 years of modeling experience leading over 10 modeling teams on projects across North America, contributing innovative solutions for cities like Los Angeles, Vancouver, Fort Myers, Baltimore, and agencies like Miami-Dade.

**Adam Fisher, PE:** Adam Fisher has over 25 years of experience in sewer master planning and modeling, GIS, flow monitoring and Inflow and Infiltration planning, and water distribution system modeling. Adam led the sewer master plans and studies for the Rohnert Park, Windsor, South Cloverdale, and Rio Dell and led the planning element of the master plans for Berkeley, Huntington Beach, Fortuna, Napa Sanitation District, and the Long Beach Water Department. Adam is one of the technical leads for the on-going Los Angeles County Sewer Districts modeling projects.

**Zach Porteous:** Zach has been a key team member on a number of projects for the City related to the original development of the water and sewer GIS, keeping the GIS updated as improvement projects are completed, and coordinating with Cartograph (the City's Computer Maintenance Management System), and with the City of Santa Rosa who hosts the online GIS.

GHD's approach leverages our knowledge of the City's sewer system and 2005 Sewer Master Plan, and our experience using the sewer system hydraulic model and developing the City's sewer GIS. We will develop a complete and relevant SMPU that the City can rely upon for the next 5-10 years as CIP projects are implemented. Our approach is also founded on a collaborative and positive working relationship with the City. We understand the City has a limited budget to make this important update and develop CIP projects to address aging infrastructure and hydraulic requirements. Therefore, our vision for your project is that a coordinated, focused and smooth effort by the right professionals fills in baseline data gaps, establishes levels of service, anticipates growth scenarios, addresses foreseen and unforeseen risks, models projected demands and maintains the affordability of utility service.

We are excited about the opportunity to continue working with the City on this important Sewer Master Plan Update. Our goal is to repeat the success we have had working with the City on the Water Master Plan Update. Should you have any questions, please contact our Project Director Matt Kennedy.

Respectfully submitted,

**Matt Kennedy, PE, TE**
Principal Engineer/Business Group Leader
+1 707-540-3376
Matt.kennedy@ghd.com

# Table of Contents

# 1. About Us

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. As a global company established in 1928, we remain wholly owned by our people. We are 12,000+ diverse and skilled individuals connected by 200 offices, across five continents – Asia, Australia, Europe, North and South America, and the Pacific region. GHD has delivered infrastructure projects ranging from $7 million to over $350 million, including several water projects for the City of Sebastopol. It is this portfolio of experience that has established GHD as a local and global industry leader in the delivery of multi-disciplinary complex projects relating to master planning, hydraulic modeling, technical and design services, business case development, project management, and program development, including supporting performance frameworks, economic and financial modeling, and stakeholder engagement.

## 1.1 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 wellbeing 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 #31 in the "Top 150 Global Design Firms" by Engineering News-Record in 2024***.

**Experience with City**

**GHD's Culture of Commitment**


Over the past 10 years GHD has had the pleasure of supporting the City of Sebastopol (City) in the delivery of numerous water and sewer improvement projects, worked closely with the City engineering, supported public works management, played an important role in Geographic Information System (GIS) development for water and sewer and contributed to stormwater management, design reviews, and many other services. **Staff in our local Santa Rosa office bring both a strong "City-first" execution approach and proficiency with the City's water and sewer systems. We are very familiar with the entire City's water and sewer infrastructure having developed the City's water and sewer GIS, digitized their utility mapping and incorporated historical asset data. We also helped prepare the City's recent update to the Water Supply Contingency Plan and designed numerous water treatment and distribution system improvement projects, including the Well 7 arsenic treatment system, which received ASCE San Francisco Section 2016 Small Project of the Year award.** We can support the City in this Sewer Master Plan Update from our office in Santa Rosa, located only 15 minutes from the City's offices.

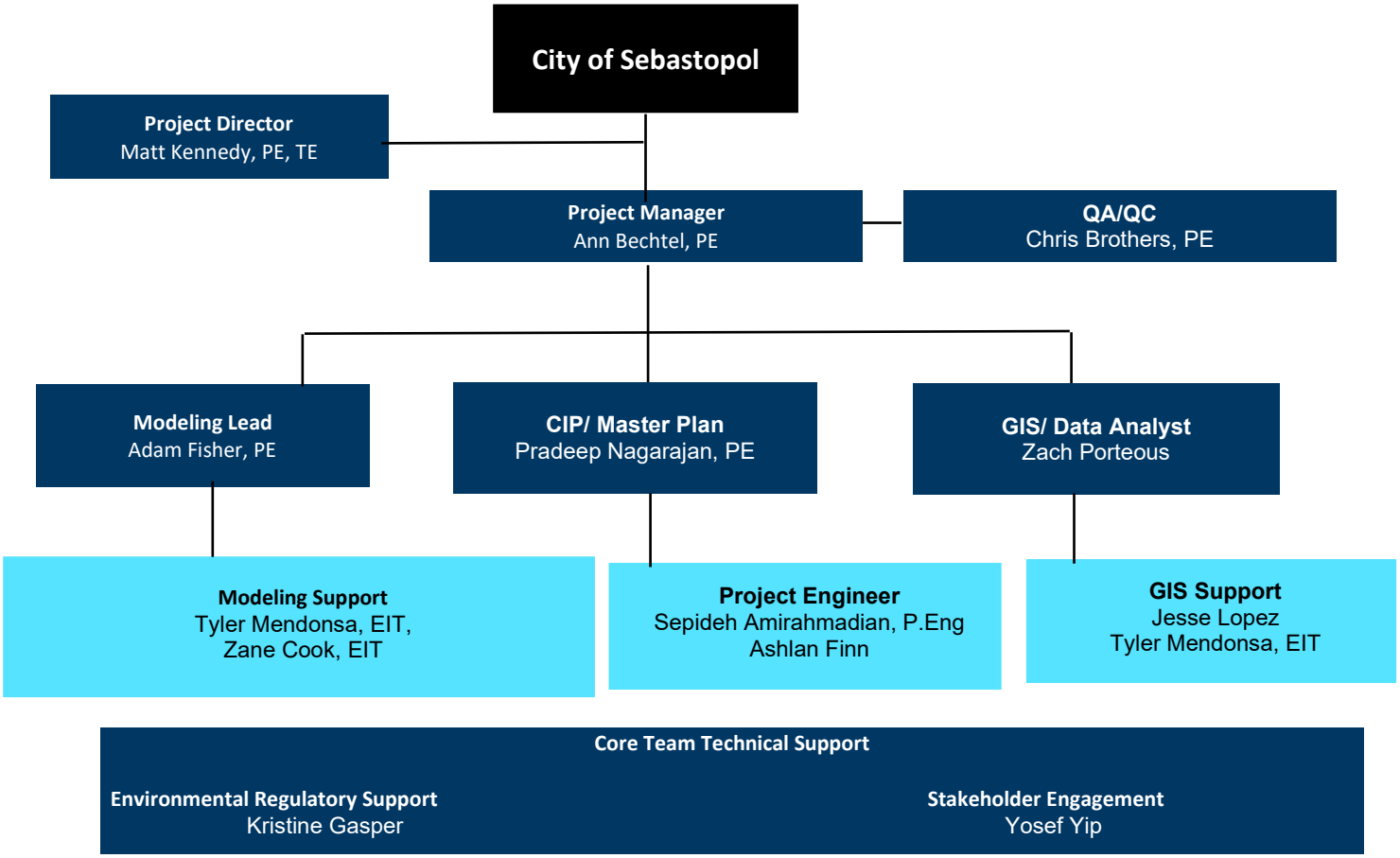
GHD's team for this project has relevant experience in sewer system master planning and hydraulic modeling that covers the holistic spectrum of project goals, including model update, calibration, analysis, system Capacity review, and system optimization. GHD has experience with all major software modelling packages including Bentley SewerCAD, SewerGEMS, Innovyze products (such as InfoWorks ICM), ESRI ArcGIS and other common hydraulic software (EPANET, KYPipe, etc.).

GHD has provided numerous local public clients with similar services of sewer hydraulic model development, updating and calibration services, as well as support for system assessment and capital project planning. Our northern California sewer master plan clients include City of Fortuna, City of Berkeley, City of Fortuna, City of Rohnert Park, Town of Windsor, Napa Sanitation District and City of American Canyon. We have also provided hydraulic model development, calibration, validation, and capital project planning for the Humboldt Community Services District, City of Santa Rosa, and Lawrence Berkeley National Laboratory campus. Our team brings knowledge of construction costs in the Bay Area and northern California, and regularly develop construction estimates that are within the range of bids our clients receive. Our clients and sewer master planning experience extends far beyond the local area including other US states, Canada and Australia.

## 1.2 Organization Chart/Project Team

We have strategically selected our key personnel because of their combination of experience delivering sewer master planning projects for clients in northern California and elsewhere, knowledge of the City's water and sewer system, and local presence. As indicated in the RFP, the City's 2005 Sewer Master Plan is past due for an update, and our team members' expertise is specifically aligned with the scope of work tasks and the City's goals for this update.

The organizational chart shown below details our proposed team, including disciplinary-based roles formed on our understanding of your needs. We carefully selected the team members to provide the City with a diversity of skills, local responsiveness, strong communication, and effective problem-solving.




Our core Project Team will also have the support of over 12,000 staff in 200 offices globally, including over 80 staff in our Santa Rosa office located just 15 minutes from the City's offices.

The GHD team covers the breadth and depth of expertise needed to execute the services outlined in the RFP scope of work. We have also included some adjustments to the City's scope of work, which are described in our Approach and Methodology. Our team of key individuals will be dedicated throughout the project, and no staffing changes will occur without prior approval from the City. We understand the City has a limited budget for this project. This dedicated team approach will reflect project continuity and efficiency in project delivery, which will be critical to meeting your budget. Detailed resumes for everyone on the organizational chart are presented in Appendix B.

# 2. Project Experience

The selected project descriptions in this section provide a glimpse of GHD's experience in providing sewer master plan and related services. The projects presented below are selected based on their similarity to the subject RFP in terms of size and location of the Client municipality, and the services provided. GHD staff has experience understanding the needs and limitations of different municipalities to help make decisions for scope extent, assumptions, and limitations while providing quality cost-effective practical advice and solutions.

| Reference Project- Top 5 Projects<br><br>Project Client Location | InfoWorks ICM (1D/2D) Modeling Experience | Data Collection and Review | Modeling Manual of Accepted Practices and Standards | Model Development/ Calibration/Validation | Extended Period Simulations | Rainfall derived infiltration and inflow Analysis | Flow Monitoring Plan | Spatial Visualization /Automation |
|---|---|---|---|---|---|---|---|---|
| **2023 Sewer Master Plan Update, LBWD, Long Beach, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **Sewer Model Implementation Plan, LACSD, Whittier, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **City of Berkeley Sanitary Sewer Master Plan, City of Berkley, Berkeley, CA** | ● | ● | | ● | ● | ● | ● | ● |
| **Sewer System Master Plan Update, City of Huntington Beach, Huntington Beach, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **NapaSan Collection System Master Plan, NapaSAN, Napa, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **Fort Myers Master Plan & Development of Risk Based Decision Support System (DREAMS), City of Fort Myers, Fort Myers, FL** | ● | ● | | | | | | ● |
| **Subregional Water Resources Recovery facilities (SWRRF) Master Plan** | | | | | | | | |
| **Water and Sewer GIS \| City of Sebastopol, CA** | | ● | | | | | | ● |

## City of Berkely, All-Pipes Model Collection System Master Plans | City of Berkeley, CA

**Project Owner (name and address):** City of Berkeley, Public Works/Engineering, 1947 Center Street, 4th Berkeley, CA 94704

**Reference:** Felix Meneau, Associate Civil Engineer E: FMeneau@berkeleyca.gov T*: 510.981.6399

**Key team member involvement:** Chris Brothers, Adam Fisher

**Overall cost:** Projected: $960k **Completed:** $850k,

**Date**: 2019 -Ongoing

### Type and extent of services provided by GHD

The City of Berkeley (Berkeley) needed to plan for its growing population and other future challenges. To reach this goal, Berkeley retained GHD to develop its Sanitary Sewer Master Plan (Plan) and deliver a dynamic hydraulic model of more than 7,500 pipes. The aim was to create a Plan and model that allowed Berkeley to create an effective capital improvement program (CIP). GHD successfully delivered both the Plan and a dynamic hydraulic model to Berkeley.

To create the model, our team looked at the over 100 flowmeters in the East Bay Municipal Utility Districts (EBMUD) to determine runoff and routing parameters for the wet weather calibration effort. We used this data to depict the inflow and infiltration (I&I) source and its response within Berkeley's system. We also used the inspected condition information to analyze groundwater infiltration and I&I at the parcel level. Once we created the model, our team used Info Asset Planner (Innovyze's ArcGIS-based decision support and asset prioritization system) to organize and analyze model output, closed circuit television, flow monitoring, I&I reconnaissance data, inspection, maintenance, service request, and any pertinent asset condition data to store in one place. GHD is applying its proprietary asset management principles and methods to this data (including risk, rehabilitation, and lifecycle costing) within InfoAsset Planner to generate a phased and prioritized CIP.

## City of Fortuna Sewer System Master Plan and CIP Update | City of Fortuna, CA

**Project Owner (name and address):**
City of Fortuna, P.O. Box 545, Fortuna, CA 95540

**Reference:** Mr. Brendan Byrd, PE, E: bbyrd@ci.fortuna.ca.us T: 707-725-1469.

**Applicability to Services Required by the City:**
− Use of InfoWorks ICM to deliver a calibrated hydraulic model
− Integration of flow monitoring data for accurate wet weather calibration
− Development of risk-based CIP prioritization to minimize sanitary sewer overflow (SSO) risks
− Key team member involvement: Adam Fisher, Chris Brothers

**Key Team Members:** Brett Vivyan, PE

**Date:** 2022-2024

#### Type and Extent of Services Provided by GHD

The City of Fortuna needed to address aging sewer infrastructure, wet weather Capacity issues, and future development needs. To achieve this, Fortuna retained GHD to update its Sewer System Master Plan (SMPU) and deliver a comprehensive hydraulic model of the City's sanitary sewer network. The goal was to create a plan and model that would support an effective 10-year Capital Improvement Program (CIP). GHD successfully delivered both the SMPU and a calibrated hydraulic model to the City.

To build the model, our team used flow monitoring data from the 2018 Sanitary Sewer Evaluation Survey and developed an all-pipes hydraulic model in InfoWorks ICM. We modeled dry and wet weather scenarios, including a scaled 5-year, 24-hour design storm (4.4 inches rainfall), and applied design assumptions for future development, inflow/infiltration (I&I) reduction, and treatment plant capacity constraints. Eight CIP solution scenarios were compared to balance cost, risk, and hydraulic benefit.

## **City of Long Beach, 2023 Sanitary Sewer Master Plan Update |** City of Long Beach, CA


**Project Owner (name and address):** Long Beach Water Department, Long Beach Utilities, 1800 East Wardlow Road, Suburb 1, 90807

**Reference:** Leela Stevens, PE, PMP, Civil Engineer

**O:** 562.570.2333 | **D:** 562.619.8071, **E:** Leela.Stevens@lbwater.org

**Start and End Date:** 2021-2024

**Key Team Members:** Chris Brothers

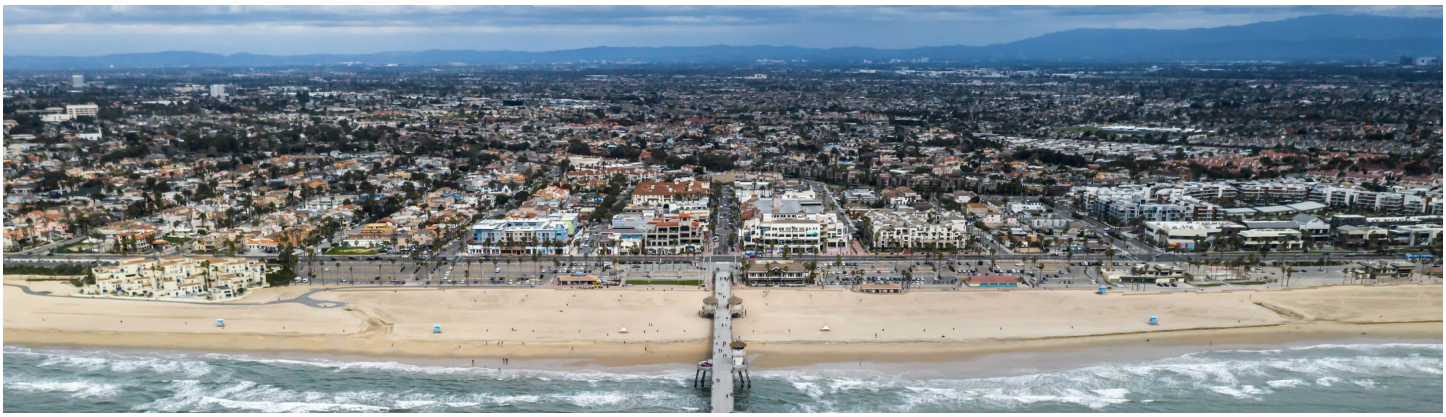
Objective: Sanitary Sewer Master Plan

Description: Long Beach Water Department (LBWD) retained GHD to provide engineering services for the 2021 Sewer Master Plan Update Project.

Outcomes: The purpose of this Project is to update and calibrate LBWD's existing hydraulic model, evaluate the condition and Capacity of the sewer pipelines and sewer lift stations, prioritize the sewer system capital improvement projects for the next ten (10) years, and provide deliverable reports as indicated. GHD's effort will provide the City the following:

- A flexible dynamic hydraulic model that is easy to operate, maintain, and update
- A roadmap for an implementable Capital Improvement Plan (CIP) that meets near and long-term needs
- A living master plan document that articulates the strategies, alternatives, and CIP to address LBWD's needs now and into the future

## **City of Huntington Beach, Sewer System Master Plan Update |** City of Huntington Beach, CA



**Project Owner (name and address):** City of Huntington Beach, 2000 Main Street Huntington Beach, CA 92648

**Reference:** John Poehler, Dputy Director of Public Works

E: John.Poehler@surfCity-hb.org**,** T: 714.5365503

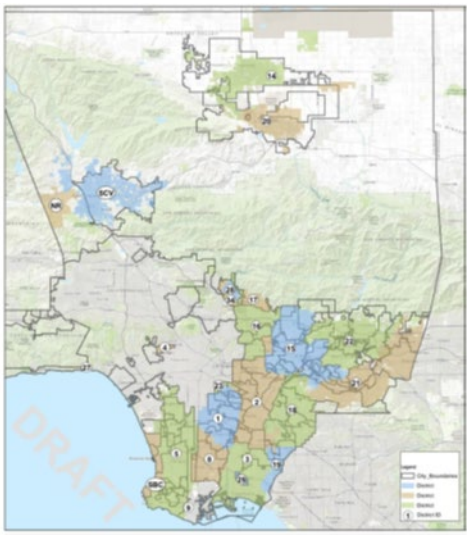
**Applicability to services required by the City:** − Shows that the key project members have worked together to complete a large integrated dynamic model, on time, and under budget, for a system very close in size and characteristics to LACSD

**Key team member involvement:** Chris Brothers, Adam Fisher

**Start and End Date:** 2022-2025

The Sewer Master Plan (SMP) is an essential tool for aligning the City of Huntington Beach's existing sewer system conditions with ongoing operations, rehabilitation, maintenance, and regulatory compliance, including requirements from the 2022 Sewer System Management Plan update and the State Water Resources Control Board Waste Discharge Permit. To guide system needs and investment priorities for the next decade, the City contracted GHD to update its SMP, replacing the previous 2003 plan and covering the City and small tributary areas of neighboring jurisdictions. GHD developed and calibrated an all-pipes dynamic hydraulic model representing 360 miles of sewer, 27 lift stations, and 3 miles of forcemains to evaluate existing and future capacity. Modeling confirmed that the City is largely built out and that future development does not introduce new capacity deficiencies beyond those already present during peak wet-weather conditions. While dry-weather capacity is adequate, several areas experience wet-weather limitations, leading to a prioritized 10-year Capital Improvement Plan that includes 16 gravity sewer capacity-upsize projects and lift station improvements informed by condition assessments and hydraulic modeling. These recommendations form the basis of the updated SMP, which will guide the City's long-term system upgrades, support regulatory compliance, and help prioritize replacement and rehabilitation efforts to maintain a high level of service.

## **City of Los Angeles, Sewer Model Implementation Plan, LACSD, Whittier |** Los Angeles County, CA




**Project Owner (name and address):** Los Angeles County Sanitation Districts (Districts), Joint Administration Office,1955 Workman Mill Road, Whittier, CA 90601

**Reference:** Ziad El Jack, Supervising Engineer - Wastewater Planning

E: ziadeljack@lacsd.org, T: 562.908.4288 ext. 2703

**Start and End Date:** 2023-Ongoing**, Key team member:** Pradeep Nagarajan

**Type and extent of services provided by GHD:**

On December 30, 2021, a sanitary sewer overflow occurred in the Districts' jurisdiction (City of Carson). To prevent future overflows, the Districts engaged GHD to conduct an audit. GHD conducted the audit and recommended, Among other things, the implementation of a sewer model. Our recommendation to implement a sewer model was the basis of this project, which requires creating a sewer model implementation plan (Plan). The Plan will provide the districts with a roadmap for creating a sewer model that serves their needs. The goals of completing the Plan include providing recommended tasks for developing a systemwide sewer model, a timeline for implementing the tasks, and a record of the resources needed for developing and maintaining the sewer model. To develop the system wide sewer model, our team completed the following four (4) tasks:

1. Reviewing the data and providing gap analysis
2. Selecting modeling software
3. Making a pilot study area selection and recommendation
4. Developing the implementation and phasing plan

Because we're developing the Plan before implementing the sewer model, the Districts will be more informed about the effort and cost required to complete the modeling. The Districts can also save time and money because of the Plan—our planning is identifying data gaps and tasks that should be initiated early (e.g. flow monitoring) so that data is available when needed for model development and calibration. The completed Plan will offer a phased approach to developing the sewer model. As part of the initial phase and upon completion of the implementation plan, the Districts then selected GHD to develop and calibrate models that will help the District achieve their goals. The goal of creating the models is to optimize the Districts system Capacity needs and better.

## ***Napa Sanitation District (NapaSan) Collection System Master Plan,*** **Napa, CA**

**Project Owner (name and address):** Los Angeles County Sanitation Districts (Districts), Joint Administration Office,1955 Workman Mill Road, Whittier, CA 90601

**Reference:** Andrew Damron, General Manager,

E: ziadeljack@lacsd.org, T: 707.258.6007

**Start and End Date:** 2018-Ongoing, **Key Team Member:** Chris Brothers

**Description:** Collection System Master Plan Changes in dry-weather flow, construction of I&I projects, intensification of storm events, and changes in growth projections prompted Napa San to consider an updated Collection System Master Plan (CSMP), for 2019, to be completed in two phases (task orders). Napa San's 66-inchTrunk Sewer Rehabilitation Project addressed corrosion and structural issues within one of its most critical assets. The expedition and execution of an updated CSMP provided the key added benefit of guiding NapaSan in determining and validating key design decisions on that project. GHD employed a holistic approach to both phases of this master plan, utilizing InfoWorks Integrated Catchment Modeling (ICM) software in conjunction with GIS-centric asset prioritization software that seamlessly integrated with Napa San's CMMS to deliver a comprehensive solution. A comprehensive evaluation of the sewer collection system identified near-term risks, mitigation strategies, and Capacity needs, and supports a program that identifies sustainable funding needs for a long-term planning horizon. Flow Monitoring and I&I Mitigation Services V&A has been conducting yearly, ongoing flow monitoring and I&I investigation services within Napa San since 2005. In 2019, flow and rainfall monitoring were performed over a period of approximately one month at 23 open channel flow monitoring sites and two rain gauge locations. Sanitary sewer flows were measured at the flow monitoring sites, available sewer Capacity estimated, and analyses pertaining to I&I occurring in the basins upstream from the flow monitoring sites conducted. V&A also performed additional night-time I&I reconnaissance, investigating the collection system for sources of infiltration, finding several "hot spot" high contributing micro-basins. The data supported the detailed calibration of the all-pipes dynamic hydraulic model completed by GHD as part of the 2018- 2020 master planning effort. Project is on-going and has been extended to include additional effort at the client's request. An amendment for extra funds is being submitted.

## Fort Myers Master Plan & Development of Risk Based Decision Support System (DREAMS), City of Fort Myers, Fort Myers, FL

**Project Owner (name and address):** City of Fort Myers, Public Utilities, 2200 Second Street | Fort Myers, FL 33901

**Reference:** Jason Sciandra, City Engineer, E: jsciandra@cityftmyers.com, T*: 239.321.7467

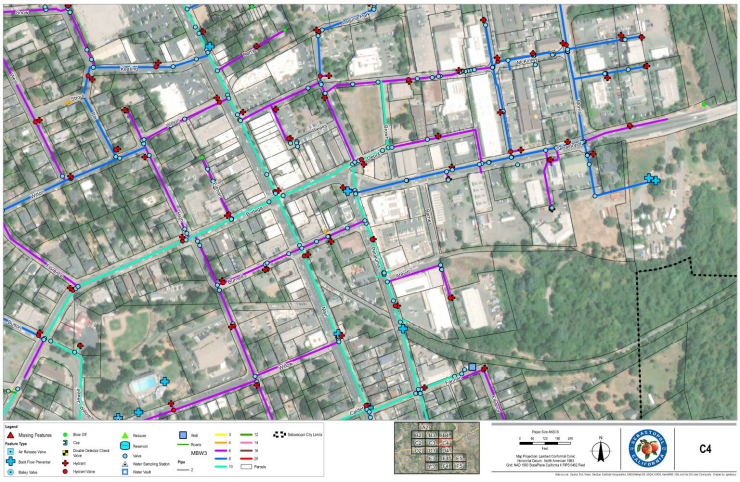
**Start and End Date:** 2023-2025

**Overall cost:** Projected: $695k Completed: $500k (Phase 1)

**Key Team Members:** Pradeep Nagarajan

GHD supported the City of Fort Myers in developing a comprehensive Utility Master Plan and dynamic risk-based modeling framework to address challenges related to growth, aging infrastructure, ecosystem health, and climate change. Our team created the Plan's risk assessment framework, integrated hydraulic and population growth data, and prioritized capital projects across a 20-year horizon. Following the Plan, GHD developed the DREAMS interactive dashboard to provide near real-time updates to the sewer system risk model and later expanded the platform to include the potable water system. This web-based tool allows Fort Myers to visualize projects spatially, evaluate asset risk, and prioritize CIP investments using defensible, data-driven methods that support long-term planning and funding efforts.

## **Water and Sewer GIS** | City of Sebastopol, CA



**Client:** Dante Del Prete, Former Public Works Superintendent (retired) 707.753.1838, Dantedp@att.net

**Start and End Date:** 2020-2021

**Key Team Members:** Matt Kennedy, Zach Porteous, Ann Bechtel

GHD was competitively retained by the City of Sebastopol to a develop comprehensive City-wide GIS of the water and sewer systems. The GIS was developed from the City's legacy water and sewer paper maps, AutoCAD maps, and the water and sewer hydraulic models. Much of the piping system attributes were obtained from the hydraulic models, including size, materials, elevations, and other system details. Other information, including age and more recent system improvements were obtained from the City's AutoCAD mapping, and from development projects that have been implemented since the City's 2005. Following completion of the base GIS, GHD's spatial analyst spent about 2 weeks in the field with Sebastopol staff using a GPS unit to verify the horizontal and vertical locations of the City's various water and sewer assets, like manholes, water valves, and fire hydrants. City staff assisted by measuring the depths of about 10% of the City's sewer manholes to confirm the depths obtained from the City's hydraulic model and mapping were sufficiently accurate. The GIS was coordinated with the City's Cartegraph computer maintenance management system (CMMS), and GHD coordinated with the City of Santa Rosa to host the GIS online so it can be more easily accessible to City staff. GHD also prepared updated water and sewer map books that can be used by staff in the field and have supported updates to the GIS as water and sewer capital projects are completed. The GIS is a valuable tool that the City

# 3. Project Understanding

The City owns and operates the sewer collection system consisting of 30 miles of gravity sewers, 2.7 miles of force mains, and two pump stations. The City is a member agency of the Santa Rosa Subregional Wastewater System, responsible for the conveyance, treatment and disposal of all sewage discharged into the City's sewer system. **Figure 1** shows the City of Sebastopol, the study area.

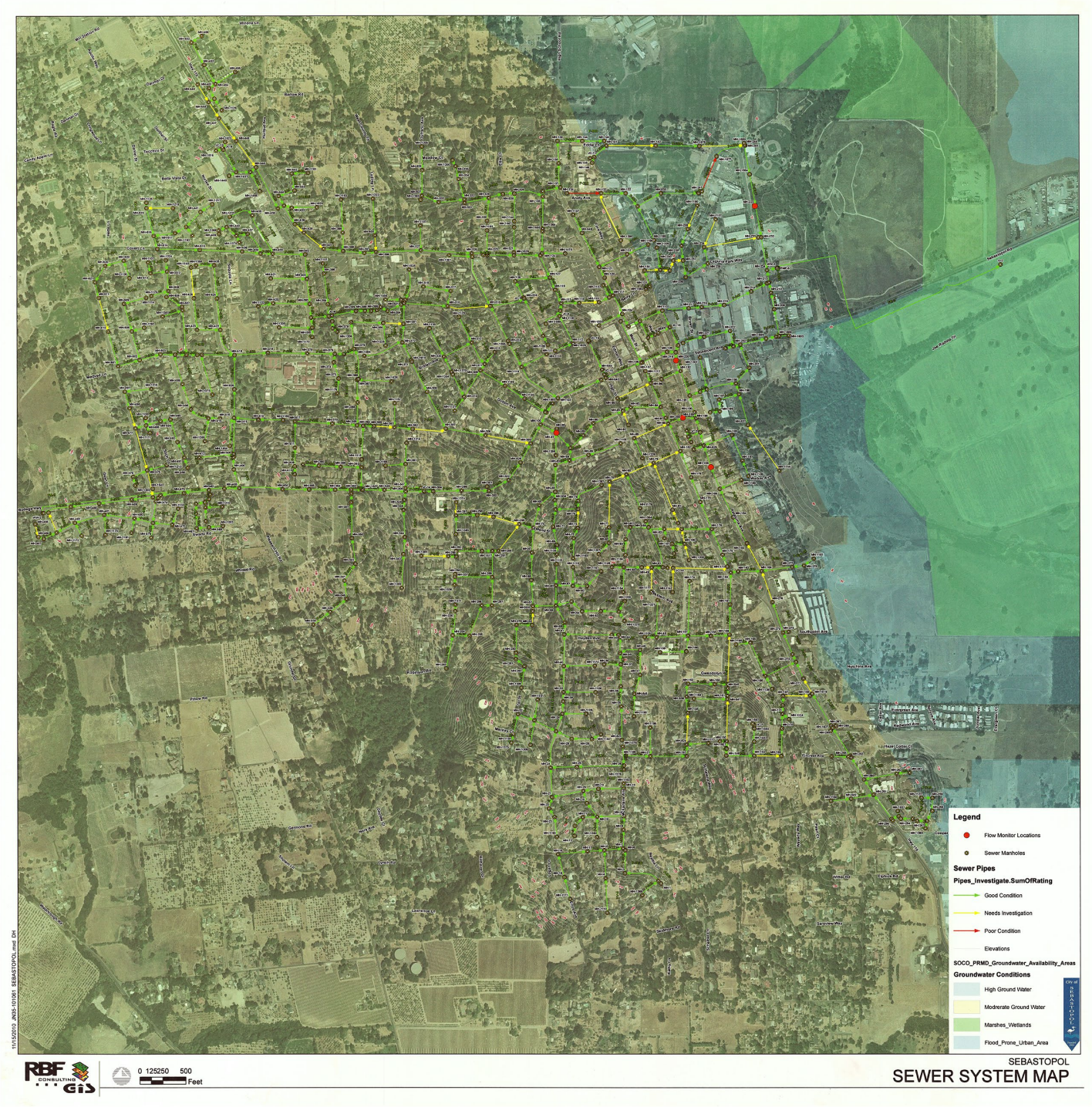
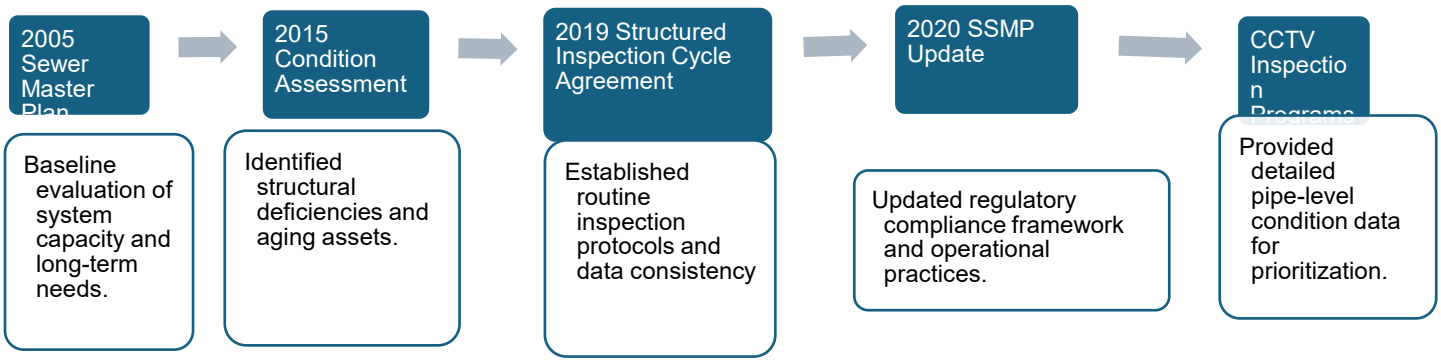



*Figure 1* *The City of Sebastopol, Project Location and Sewer System Map*

The City has recognized the need to update its 2005 Sewer System Master Plan to reflect current system conditions, incorporate recent inspection findings, and support long-term planning for a largely built-out community. Since the last comprehensive update, most sewer system improvements have focused on addressing localized deficiencies, replacing aging and deteriorated pipelines, and supporting limited infill development within the City limits. With little remaining development potential, the emphasis of this update shifts toward ensuring the reliability, resilience, and regulatory compliance of an aging wastewater collection system. Previous studies provide a strong foundation for understanding system performance, identifying

structural deficiencies, and prioritizing rehabilitation needs. These efforts have identified several key challenges, outlined below, and we will work toward addressing each of them throughout this project.

**Previous Studies Informing System Understanding and Key challenges:**




**Key System Challenges Identified:**

| | |
|---|---|
| **Aging Pipelines** | Many assets have exceeded their useful life and show structural deterioration. |
| **FROG Blockages** | Recurring fats, roots, oils, and grease accumulation restricts flow and increases maintenance. |
| **Sanitary Sewer Overflows** | Blockages and structural issues contribute to environmentally significant overflow events. |
| **Evolving Regulatory Requirements** | New mandates require enhanced water-quality monitoring for spill events over 50,000 gallons |

Building on this foundation, the updated Sewer Master Plan will consolidate past findings into a unified, modern planning document that evaluates existing system Capacity, identifies hydraulic constraints, and integrates recent inspection data to support a risk-based approach to asset management. The plan will focus on confirming hydraulic adequacy under existing and future conditions, identifying areas where Capacity improvements may be needed, and developing a prioritized 5- and 10-year Capital Improvement Program that targets the most critical rehabilitation and replacement projects. Leveraging the City's GIS data and recent inspection records will enable a focused and efficient evaluation of aging infrastructure, ensuring that recommended improvements address the highest-risk assets and support long-term system reliability. The updated plan will also strengthen preventive maintenance strategies, enhance public outreach related to FROG reduction, and ensure continued compliance with state and federal regulatory requirements, ultimately providing the City with a clear and actionable roadmap for managing its wastewater infrastructure into the future.

# 4. Approach and Methodology

GHD proposes to employ holistic approach to this masterplan, utilizing advanced GIS based modeling software in conjunction with GIS-based asset prioritization software to deliver a comprehensive solution. GHD will utilize and build up previous hydraulic model, any observed data, GIS Data, I/I analysis and condition assessments. GHD intends to use asset management framework principles to complete the SMP that will include operation and maintenance (O&M) and life-cycle costed capital rehabilitation and replacement to inform the upcoming rate study and produce deliverables that can support decision making and the City's use of the GIS system. In addition, the SMP will involve more complete and comprehensive data inputs to improve the hydraulic model to more accurately determine the most cost-effective balance of I/I reduction and large-scale Capacity/CIP projects. The City may decide to leverage I/I reduction projects to minimize capital expenditures for large Capacity projects. GHD believes that a highly accurately calibrated model is critical to achieving this task.

## 4.1 Project Management and Coordination

### 4.1.1 Internal Coordination and Administration

GHD will provide overall project management, team coordination and coordination with the City. We will manage the budget and develop and track a schedule that completes the project in a timeframe that is acceptable to the City and aligned with the City's budget. This task also includes monthly project reporting, project and contract oversight, QA/QC and senior technical advice over the duration of the project. GHD will provide effective project management throughout the project resulting in a high-quality update of the master plan on time and within budget.

### 4.1.2 Kick-off Meeting

The first step in our delivery process is to conduct a kick-off meeting with the City. This will be an opportunity to establish an agreed framework for the completion of the project and to discuss any key issues and explore areas of improvement that need to be included in the updated sewer master plan. This initial meeting will allow us to confirm our understanding of the scope of work and any specific system constraints as well as:

- Meet the project team.
- Request background studies, previous development plans not already included in the GIS, engineering reports, and discuss and agree with the proposed schedule.
- Develop an understanding of the specific site constraints and opportunities.

We will prepare an agenda for the meeting and distribute minutes following completion of the meeting.

Deliverables:

- Kick-off Meeting Agenda Action Items and Minutes (PDF)

### 4.1.3 Other Project Meetings

During the kick-off meeting we will establish a timeline for monthly progress meetings with the City. These are intended to keep the City informed of the team's progress in updating the master plan document and developing CIP projects. We envision these meetings will be a combination of virtual and in-person given our close proximity to the City's office and will last for 30 minutes each. Minutes with action items and key decisions will be distributed for each meeting. We anticipate (2) additional meetings or workshops before submitting the report: one during model calibration and another following the prioritization of the CIP. Following submittal of the draft updated Sewer Master Plan we propose a review meeting to receive comments from the City and discuss the document, analysis and CIP. This meeting is proposed for up to 2-hours.

We will prepare for and attend one (1) Planning Commission meeting, either virtually or in-person to present the updated Sewer Master Plan and answer questions from the commissioners.

We will prepare for and attend 3 in-person public meetings to present the updated Sewer Master Plan and answer questions from council members, including support of City staff in a resolution to adopt the updated sewer master plan.

Deliverables:

- Meeting Agenda and Minutes (PDF)
- Meeting Presentations and Handouts (PDF)

## 4.2 Data Collection and Review of Existing Documents

We anticipate little need to collect additional data for this project. Most of the data on the City's sewer system resides in the current sewer master plan and in the GIS we created for the City several years ago. The Sewer GIS development included field efforts to verify sewer system assets. This will help us to hit the ground running to develop the model without any time lapse. The City's General Plan will inform the future projects planned for the City that will impact sewer demands. In our role as contract City Engineer, we are aware of more recent development projects that may affect sewer capacities and we plan on using this knowledge in the process of updating the Sewer Master Plan.

## 4.3 Review of Existing Data

The successful creation and application of a hydraulic model entirely hinge on the data that forms its foundation. GHD suggests standardizing data management and using business intelligence tools for efficient data extraction, transformation, and loading into warehouses. Our approach will utilize City's data and application modules/framework as applicable to create a single warehouse with key sewer network datasets and consolidated information from various sources. This streamlined method, though complex, is crucial for effective asset management and ensures accurate, timely modeling, risk analysis, and reporting.

The project begins with a comprehensive review of all existing information related to the wastewater system, that includes but not limited to 2005 Sewer Master Plan, City's GIS Data, 2021 Sewer Main Inspection, 2020 Sanitary Sewer Management, Plan historical plans, population and development projections, intergovernmental agreements, regulatory requirements, and previous studies. The goal is to understand the current system, identify gaps, and establish a baseline for modeling and planning. GHD will collaborate closely with City staff to obtain missing information and confirm assumptions. This review also includes assessing existing regulations.

## 4.4 Data Validation and Gap analysis

Before modeling, all datasets undergo rigorous quality control. GHD performs: Accuracy checks, Completeness and consistency reviews, Identification of missing or invalid data, Cross-referencing with external sources, Automated validation using scripts and statistical tools, GHD team documents data gaps, such as unmapped assets, low-resolution GIS data, missing attributes, or outdated information. A structured data cleansing process ensures the final dataset is reliable, consistent, and suitable for hydraulic modeling and planning.

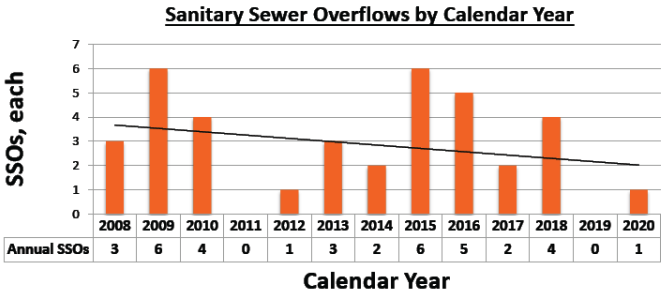
Deliverables:

- Consolidated GIS/ SQL Database.

## 4.5 Field Investigation and Flow Monitoring (Optional)

Field investigation and flow monitoring may be conducted, pending City approval of the associated cost, if the need for additional data is identified to address any identified data gaps.

## 4.6 Inflow/Infiltration (I&I) Reduction Program




The current status of the SSOs within the system has been presented in the City's Sewer System Management Plan (SSMP).

As part of the Sewer Master Plan, the impacts of inflow and infiltration (I&I) will be evaluated and prioritized at both the subcatchment and pipe level to identify the areas contributing most significantly to system stress and sanitary sewer overflows. GHD brings extensive experience developing and implementing I&I reduction programs for major agencies—including LACSD, Miami-Dade, and other large municipal clients—where we have integrated climate change projections, sea-level-rise considerations, and groundwater infiltration dynamics into hydraulic modeling and long-term planning. These same strategies will be incorporated into the City's model to develop a targeted, data-driven I&I reduction program aimed at mitigating excessive wet-weather flows and reducing SSOs across the system. Throughout this process, regulatory requirements and performance measures will be carefully considered to ensure that recommended actions support compliance, improve system reliability, and align with Statewide WDR expectations.

Deliverables: Overall, I & I program standardized, that will be presented in a workshop

## 4.7 Address & Discuss Regulatory Requirements

GHD reviews all applicable federal, territorial, and local regulations that influence wastewater collection, treatment, and planning. This review encompasses environmental compliance obligations, sanitary sewer overflow (SSO) prevention requirements, climate resilience mandates, and reporting responsibilities. These regulatory considerations are incorporated directly into the modeling process, the I&I reduction strategy, and the development of the Capital Improvement Projects.

## 4.8 Hydraulic Modeling Development and Validation

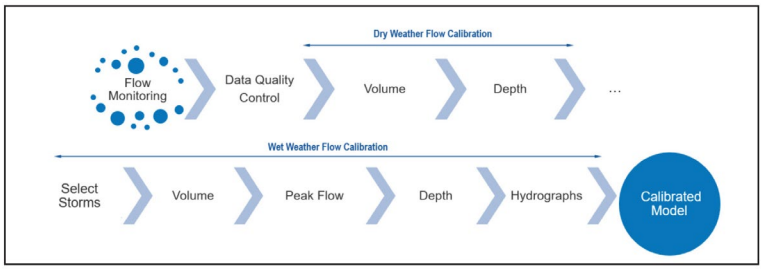
GHD will use the City's existing sewer model, which was originally in SWR format and later converted by GHD to SewerGems. Our intent is not to create a new model or make major revisions to the existing model, which was already calibrated during the 2005 effort. We propose updating the model based on the latest GIS data to reflect existing conditions, and to replace the flow projections in the model with new flow projections based on our review of the population and method adopted from previous master plan as listed below:

- A peaking factor of 3.1 will again be used for dry-weather sewer flows
- Peak hour dry weather flows for large water users using a ratio of water to Sewer use applied to the nearest upstream node.
- Peak hour dry weather flows for other commercial and industrial units were distributed by square footage and applied to the nearest upstream node.
- Peak hour dry weather flows for other residential units was applied to the nearest upstream node.

The model will be updated by importing the relevant GIS components (gravity mains, force mains, pumps and manholes with their features such as elevations, settings, etc.) into the hydraulic model. Our effort is based on our understanding that the sewer GIS accurately represents the existing sewer system. GHD will update the model with the new infrastructure to a level that is considered appropriate by GHD to effectively conduct this master planning study. Before calibration, the model undergoes validation to ensure accuracy. This process includes checking pipe slopes, diameters, and elevations, confirming pump station logic, verifying boundary conditions, and ensuring overall network continuity.

## 4.9 Dry and Wet Weather Model Calibration

The calibration will follow a set of industry standards and our tried-and-true strategy we have employed for similar endeavors. Figure 4.3.1 provides an illustration of the described process.




## 4.10 Dry Weather Model Calibration

The GHD team will begin the calibration process by developing dry weather flow conditions (i.e., "base flow" conditions). Dry weather flow is predominantly comprised of base wastewater flow (BWF), and groundwater infiltration (GWI). Dry weather calibration focuses on matching base wastewater flow and groundwater infiltration based on the availability of data at critical locations such as plants or the pump station. Calibration criteria include:

- Modeled flow within ±10% of measured flow
- Hydrograph timing within one hour

## 4.11 Wet Weather Model Calibration

The model will be calibrated for the selected storm events (Discrete Storms or Continuous Simulations) upon discussion with the city. The storms will be incorporated as a rain on mesh or converted to inflow hydrographs and calibrated to the following industry standards:

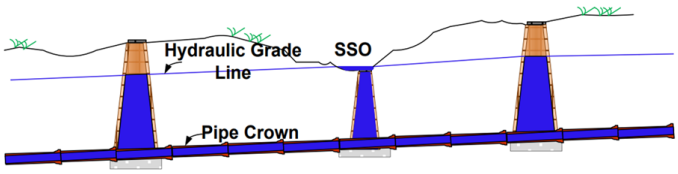
- Visual comparison of the simulated versus observed flow/ data
- Total modeled flow volume within -10% to +20% of metered value per storm.
- Modeled peak flow within -15% to +25% of metered value per storm.

## 4.12 Hydraulic Capacity Analysis

### 4.12.1.1 Perform Capacity Analysis and Improvements

***System Deficiencies/Level of Service:*** Evaluating wastewater system's performance needs clearly defined level of service (LOS) goals and criteria. LOS offers measurable metrics to identify system deficiencies and should align with capacity and condition/aging infrastructure. They also aid stakeholders and decision-makers in assessing benefits versus improvement costs, guiding project development within budget and time constraints through analytical methods. GHD Team will develop target level of service criteria and will collaborate with City and stakeholders to get their approval before proposing improvements

***Hydraulic System Performance Evaluation:*** The depth or elevation to which water rises in the sewer system (the Hydraulic Grade Line [HGL]) was the primary model output to evaluate system performance and simulation acceptance. As shown in Figure below, if the HGL at peak flow was over the pipe crown, the pipe is considered surcharged or if above the manhole rim could result in an SSO.




For 1D network, hydraulic performance will be evaluated by identifying flooded manholes and bottleneck pipes. Bottleneck pipes are pipe sections where existing pipe capacity is lower than that of existing flow entering the pipe. One other common hydraulic criterion that is important to be considered is the Velocity requirements. The required minimum velocity during the daily peak hour flow should exceed 2 fps to avoid sedimentation. The maximum velocity under peak flow conditions should ideally not exceed 10 fps.

***Future Flow Projections:*** GHD will project future design flow conditions based on 5 year and 10 year population, development/re-development and growth information provided by the City and other stakeholders. Per capita wastewater generation rate and peaking factor will be based on the ones already used in the existing conditions model.

***Sewer System Capacity Evaluation (Capital Improvements):*** Once the LOS has been established, GHD will begin performing capacity assessment as part of the overall study process. The capacity assessment performed will be determined in terms of available dry and wet weather flow capacity in the existing gravity sewers, forcemains, and pump stations. GHD will utilize the calibrated model to analyze the impact of increased flows on the system and use this information to inform potential alternatives for system improvements. Separate model scenarios will be developed that incorporate existing conditions, existing conditions using projected flows, and selected alternatives with projected flows.

These flow conditions will be modeled to identify system deficiencies and recommend improvements to achieve LOS. Alternatives will be analyzed to satisfy the following over the entire planning horizon (5 year and 10-year CIP):

- Excessive dry/wet weather flow
- Bottlenecks due to pipe diameter reductions downstream
- Limited capacity of pump stations
- Reverse grade or flat sections of sewer main
- Operational and maintenance issues of the gravity sewers, forcemains, and pump stations

## 4.13 5-Year and 10-Year Sewer System Capital Improvements and Risk Analysis

### 4.13.1 Proposed improvement and Risk analysis

Upon completion of the initial existing conditions model and review with the City, we will move forward with developing alternatives to address deficient infrastructure and future flow conditions for the 5- and 10-year horizons.

Solutions to address any deficiencies identified may include upsizing of sewer lines to improve hydraulic capacity or replacing pipelines beyond their useful service life, replacing pumps and improving pump stations and forcemain modifications and mitigating I & I and any ground water infiltration impacts.

System maps displaying constraints and proposed upgrades will be included as part of the infrastructure upgrade and implementation plan, which will identify and summarize required system upgrades in 5- or 10-year time frames. The plan will detail future model upgrades and enhancements. The draft version of the plan will be provided to the City for review, comment, and approval before it is finalized.

GHD will perform risk analysis on the city's assets by evaluating the likelihood and consequence of failure, that incorporates asset attributes such as age, material, 2021 condition assessment results, and consider regulatory drivers. Based on this evaluation, projects are grouped into different risk categories to help in the prioritization of the CIP.

GHD will also prepare a planning level cost estimate for each CIP project. Project costs will include engineering, construction, services during construction and inspection, and City management. Appropriate contingencies will be included.

### 4.13.2 Prioritize CIP (Risk, Capacity, Cost)

The recommended CIP projects will be prioritized based on risks factors such as age of infrastructure, hydraulic capacity, system redundancy, and the overall cost/ benefit to the long-term performance and resiliency of the sewer system. We will propose and prioritize these projects that align with the City's and stakeholders' objectives for reliable, efficient, and resilient service, while also considering financial feasibility and delivering the greatest value to the community.

– If needed, supplemental monitoring or investigations may be conducted upon City approval to address any identified data gaps. Prioritized CIP Projects for existing and future conditions (5 year and 10 year) (PDF)

## 4.14 Sewer Master Plan Report and Presentation

GHD will base the updated master plan report on the 2005 Sewer Master Plan Report and will update it to reflect the current state of the system, improvements completed since 2005, updates to the model and GIS, and the inclusion of proposed CIP projects with cost estimates. This includes preparing the Draft and Final Sebastopol Sewer System Master Plan, which incorporates the Capital Improvement Plan and the Replacement and Rehabilitation Plan. These documents synthesize all methodologies, analyses, and results developed throughout the project. The draft report compiles the full body of work, including the data review, field investigations, model development and calibration, capacity analysis, I&I strategy, CIP recommendations, and regulatory considerations. All technical memoranda produced under previous tasks serve as the foundation for the master plan.

### 4.14.1 Finalize Sewer Master Plan Report

Following review by the City, stakeholders, and regulatory agencies, GHD incorporates all comments and finalizes the Sewer Master Plan, ensuring that the document reflects consensus, regulatory expectations, and the long-term needs of the wastewater system.

Deliverables:

– Final Sewer System Master Plan Report (PDF)

## 4.15 Final Presentation to Stakeholders on CIP

A final presentation summarizes the recommended CIP, modeling results, and long-term strategy for system improvements. This presentation supports decision-making and funding efforts.

# 5. Fee Estimate

A schedule of hourly rates is provided below. Please note that GHD is discounting our standard rates by 25% as presented below:

| GHD Level | BST10 Code | GHD Name | FY 2026 Std Rate Discounted 25% Rate |
|---|---|---|---|
| A | A001 | Senior Technical Director 1 | $345.00 |
| A | A002 | Senior Technical Director 2 | $322.50 |
| A | A003 | Senior Technical Director 3 | $300.00 |
| A | A004 | Technical Director 1 | $288.75 |
| A | A005 | Technical Director 2 | $273.75 |
| A | A006 | Senior Professional 1 | $255.00 |
| A | A007 | Senior Professional 2 | $236.25 |
| A | A008 | Professional 1 | $228.75 |
| A | A009 | Professional 2 | $198.75 |
| A | A010 | Professional 3 | $183.75 |
| A | A011 | Vacationer / Intern | $172.50 |
| D | D001 | Project Support Manager 1 | $326.25 |
| D | D002 | Project Support Manager 2 | $300.00 |
| D | D003 | Senior Project Support 1 | $277.50 |
| D | D004 | Senior Project Support 2 | $240.00 |
| D | D005 | Project Support 1 | $228.75 |
| D | D006 | Project Support 2 | $213.75 |
| D | D007 | Project Support 3 | $198.75 |
| D | D008 | Project Support 4 | $180.00 |
| D | D009 | Project Support 5 | $157.50 |
| D | D010 | Project Support 6 | $120.00 |

Travel time from the consultant's point of origin to the designated work location will be charged at standard hourly rates.

Rental vehicles required for project-related travel will be reimbursed at the cost incurred. Standard rental options should be selected unless prior written approval is obtained for premium or specialty vehicle.

No markup will be charged for reimbursable expenses.

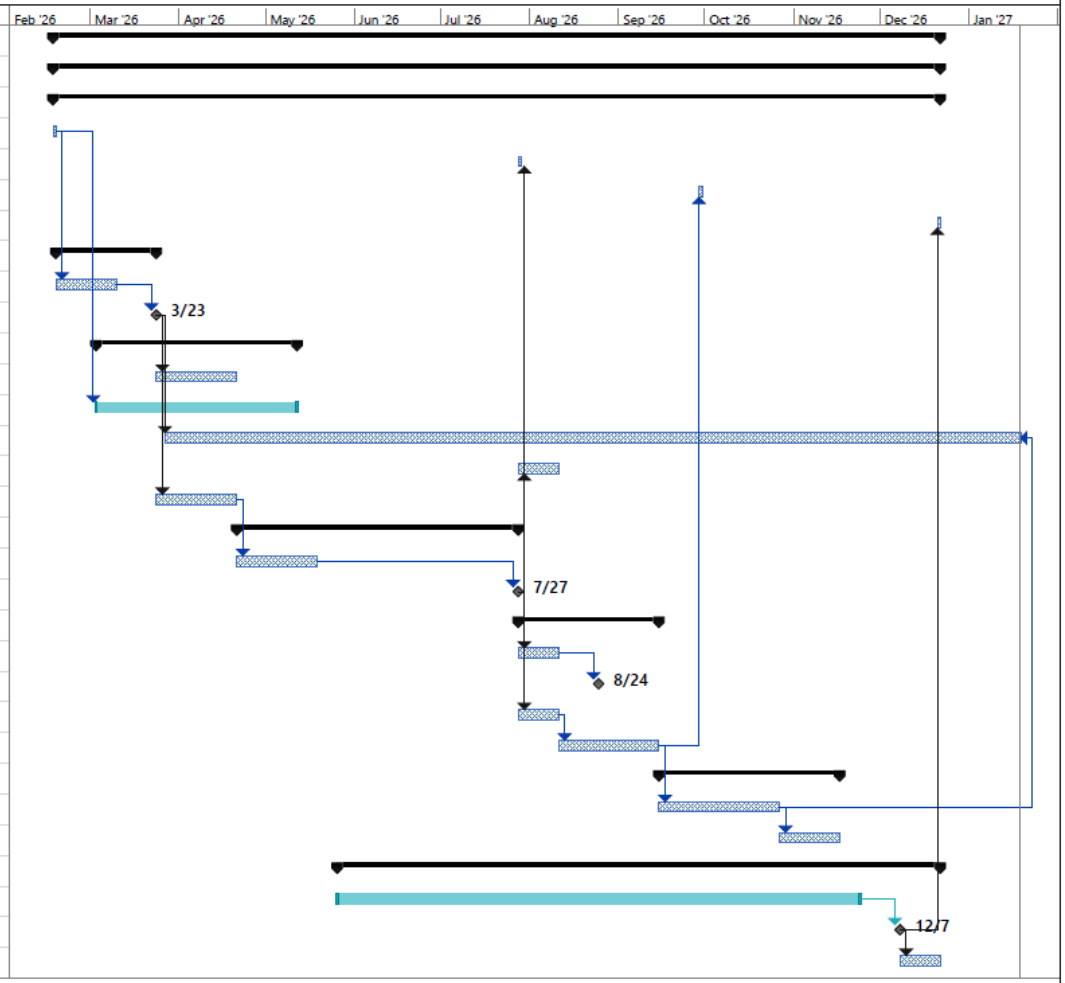
GHD acknowledges that **lodging expenses, meals, airfare, and other travel-related costs will not be charged to the Client**. The only reimbursable travel-related cost will be **vehicle mileage**, which will be invoiced at the standard rate agreed upon in the contract. All other incidental or personal expenses are strictly excluded from billing

# 6. Implementation Schedule

GHD is estimating around 10 months to complete the proposed scope of work.

**Sebastopol Sewer Master Plan Report Update**
**Project Schedule**

| ID | Task Name | Start | Finish |
|---|---|---|---|
| 1 | **Project Management** | Mon 2/16/26 | Mon 12/21/26 |
| 2 | **Internal Coordination and Administration** | Mon 2/16/26 | Mon 12/21/26 |
| 3 | **Project Meetings and Coordination** | Mon 2/16/26 | Mon 12/21/26 |
| 4 | Kick Off meeting | Mon 2/16/26 | Mon 2/16/26 |
| 5 | Public Meeting 1 | Tue 7/28/26 | Tue 7/28/26 |
| 6 | Public Meeting 2 | Tue 9/29/26 | Tue 9/29/26 |
| 7 | Public Meeting 3 | Mon 12/21/26 | Mon 12/21/26 |
| 8 | **Data Collection and Review** | Tue 2/17/26 | Mon 3/23/26 |
| 9 | Review of Existing Data | Tue 2/17/26 | Mon 3/9/26 |
| 10 | Data Validation and Gap Analysis | Tue 3/10/26 | Mon 3/23/26 |
| 11 | **Field Investigations and Flow Monitoring (Optional)** | Tue 3/3/26 | Mon 5/11/26 |
| 12 | Field Survey and Investigations | Tue 3/24/26 | Mon 4/20/26 |
| 13 | Flow Monitoring | Tue 3/3/26 | Mon 5/11/26 |
| 14 | **I&I Reduction Program** | Fri 3/27/26 | Mon 1/18/27 |
| 15 | **Discussion on Regulatory Requirements** | Tue 7/28/26 | Mon 8/10/26 |
| 16 | **Hydraulic Model Development and Validation** | Tue 3/24/26 | Mon 4/20/26 |
| 17 | **Dry and Wet Weather Model Calibration** | Tue 4/21/26 | Mon 7/27/26 |
| 18 | Dry Weather Model Calibration | Tue 4/21/26 | Mon 5/18/26 |
| 19 | Wet Weather Model Calibration | Tue 5/19/26 | Mon 7/27/26 |
| 20 | **Hydraulic Capacity Analysis** | Tue 7/28/26 | Mon 9/14/26 |
| 21 | System Deficiencies/LOS | Tue 7/28/26 | Mon 8/10/26 |
| 22 | Hydraulic System Performance Evaluation | Tue 8/11/26 | Mon 8/24/26 |
| 23 | Future Flow Projections | Tue 7/28/26 | Mon 8/10/26 |
| 24 | Sewer System Capacity Evaluation | Tue 8/11/26 | Mon 9/14/26 |
| 25 | **CIP Planning (5-Yr and 10-yr) & Risk Analysis** | Tue 9/15/26 | Mon 11/16/26 |
| 26 | Proposed Improvements & Risk Analysis | Tue 9/15/26 | Mon 10/26/26 |
| 27 | Prioritize CIP (Risk, Capacity and Cost | Tue 10/27/26 | Mon 11/16/26 |
| 28 | **Sewer Master Plan Report and Presentation** | Tue 5/26/26 | Mon 12/21/26 |
| 29 | Develop Draft Sewer Master Plan Report | Tue 5/26/26 | Mon 11/23/26 |
| 30 | Finalize Sewer Master Plan Report with comments addresse | Tue 11/24/26 | Mon 12/7/26 |
| 31 | Final Presentation to Stakeholders on CIP | Tue 12/8/26 | Mon 12/21/26 |

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Thu 1/15/26

We thank you for the opportunity to develop and submit this scope of work for the City of Sebastopol. Should you have any questions or require additional information, please do not hesitate to contact us. We look forward to collaborating with the City on this exciting opportunity

# Appendix A

## Resumes

A

# Ann Bechtel PE

## Proposed Role: Project Manager
## Location: San Diego, CA

### Qualifications/Accreditations

- BS, Environmental Engineering, San Diego State University, San Diego, CA, 2002
- BS, Ornamental Horticulture, University of Illinois, Champaign, IL, 1998
- Civil Engineer, CA #69329

### Relevant experience summary

Ann Bechtel has over 23 years of experience in program management leading large, complex programs for the California Department of Water Resources (DWR), Federal Emergency Management Agency (FEMA), municipalities and other government agencies. She is a professional engineer with surface water and stormwater management expertise. Her experience includes preparation of stormwater master plans, Hydrologic and Hydraulic (H&H) studies, floodplain studies, compliance with federal, state and regional regulatory requirements, policy development, plan checking, open channel design, detention basin design, alluvial fan delineation, levee risk analysis, building code development, and water quality planning and design projects.

#### *Safe and Affordable Funding for Equity and Resilience (SAFER) Direct Technical Assistance Provider*

Assist small water systems serving disadvantaged communities' infrastructure, management, and consolidation planning. Promote outcome to improve resiliency of water systems, minimize disproportionate environmental burdens on some communities, build/rebuild infrastructure, address water quality issues and consolidation of water systems. Currently, there are 26 water districts throughout the State of California that GHD is providing alternatives analysis and up to 90% plans for system improvement to bring drinking water in compliance with State regulatory requirements.

#### *2045 Strategy for Water, Wastewater, Sewer, and Stormwater*

Served as Project Director for the development of long-term water, wastewater, and stormwater system strategies for infrastructure rehabilitation, replacement, and development using an adaptive pathway planning approach.

#### *Commonwealth Utilities Corporation Energy and Utilities Infrastructure Master Plan*

Serving as project manager to provide a comprehensive analysis and strategic plan for the energy, water and wastewater infrastructure within the CNMI to support Department of Defense initiatives to improve resiliency and increase the level of utility service provided to all customers. GHD is performing a through analyses of utility infrastructure condition and capacity and other recommendation on how to efficient and effectively improve the water, wastewater and power systems to support the needs of the mission and enhance quality of life.

#### *Los Angeles County Sanitation Districts (LACSD) Systemwide Sewer Model Implementation Plan*

Provide oversight to the development and calibration the wastewater collection system hydraulic computer models for three major districts. The enhanced models are built to facilitate LACSD in meeting growing needs and optimizing their systems for capacity requirements. The tasks included developing a Modeling Manual of Accepted Practice and Standards, hydrologic and hydraulic modelling development, model calibration and validation for three districts. The project also requires collaboration of stakeholders.

#### *2020 San Diego Urban Water Management Plan*

Managed the development of a water demand forecast with a method developed to capture the major drivers and influencers of water use and includes coordination with the San Diego County Water Authority. The 2020 Urban Water Management Plan is a mandatory reporting and forecasting document that is submitted to the Department of Water Resources following all required guidelines of the State.

**T** 858.244.6969 | **E** ann.bechtel@ghd.com

# Matt Kennedy PE, TE, ENV SP

## Proposed Role: Project Director
## Location: Santa Rosa, CA

### Qualifications/Accreditations

- MS, Environmental Engineering, University of Massachusetts, Amherst, MA, 2003
- BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 200
- Civil Engineer, CA #68304, OR #83450, NM #23032, HI #18171, GU #1337, CNMI #52
- Traffic Engineer, CA #2385
- Envision Sustainability Professional (ENV SP)

### Relevant experience summary

Matt Kennedy is a principal engineer with 20 years of experience in delivering a wide variety of civil infrastructure projects. Project types include water and recycled water, sewer, drainage, traffic/transportation, buildings, and sustainable site development. He is adept in the management and design of multi-discipline projects with medium to large teams and numerous stakeholders and including construction management. His experience includes a broad range of planning, modeling and analysis capabilities, including utility master planning, hydrologic and hydraulic modeling, water and wastewater process design, traffic and parking studies, and circulation studies. He is also experienced in land surveying and construction management.

***Well #7 Water Treatment System***

Responsible for this well treatment system project for the City of Sebastopol. With the recent revision in the Maximum Contaminant Level (MCL) for arsenic, the City of Sebastopol is required by the State Division of Drinking Water to implement a water treatment system at their existing Well #7, which exceeds the MCL of 10 µg/L. The well is located inside a chlorination and control building on a very small site on which the City maintains an easement. The well typically pumps at a rate of 700-800 gpm using a 100 hp turbine pump. The project included a feasibility study and pilot test with Rapid Small Scale Column Testing using two different types of granular media to identify the most cost-effective adsorption treatment system to address the naturally occurring arsenic concentrations. The testing was conducted at UC Davis. The outcome of the pilot testing determined that Granulated Ferric Oxide provides the greatest treatment capacity. A geotechnical investigation was also completed for new structures.

***Well #6 Water Treatment System***

Responsible for this well treatment system project for the City of Sebastopol. With the recent revision in the MCL for arsenic, the City of Sebastopol is required by the State Division of Drinking Water to implement a water treatment system at their existing Well #6, which exceeds the MCL of 10 µg/L. The well is located inside a chlorination and control building on a relatively small site owned by the City. The well typically pumps at a rate of 1,000 gpm using a 125 hp turbine pump. The project included a feasibility study and on-site pilot test to confirm the effectiveness of the iron co-precipitation process and operational requirements needed to obtain a high efficiency of arsenic removal and evaluate for cost-effective management of waste material.

***City of Fortuna Water System Master Plan***

GHD prepared the current Water System Master Plan for the City of Fortuna in Humboldt County, CA in 2005. For this project, a WaterCAD hydraulic model of the City's entire water system was developed, calibrated, and validated. The system includes five tanks and reservoirs, seven booster pump stations and a well field in eight separate pressure zones. Improvements included construction of new and parallel mains, and installation and replacement of storage facilities.

***Baza Gardens Wastewater Facilities Plan***

Served as Project Engineer for the development of a comprehensive Facilities Plan for a wastewater treatment facility in Guam. The Facilities Plan addresses permitting and regulatory compliance, existing collection system condition and recommended improvements, future wastewater flows including I/I, alternatives for the upgrade or replacement of the existing treatment facility, disposal and reuse options, and project funding and financing. This Facilities Plan was completed in February 2008.

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# Chris Brothers PE

## Proposed Role: QA/QC
## Location: Santa Rosa, CA

### Qualifications/Accreditations

- MS, Civil and Environmental Engineering, Ohio University, Athens, OH, 2001
- Civil Engineer, CA #68725

### Relevant experience summary

Chris Brothers is a technical director at GHD and has 22 years of experience in collection systems master planning and modeling, Geographic Information System (GIS) mapping, database design and analysis, sewer/water/storm asset management, flow monitoring and Inflow and Infiltration (I&I) planning, water distribution system modeling, and environmental site characterization.

***Los Angeles County Sanitation District (LACSD) District's 1 & 2 Model Development and Calibration***

On the heels of a successful Pilot Model delivery for District 8, GHD was contracted to develop full scale hydraulic models for LACSD's District's 1 and 2. Efforts include the analysis of 173 flow monitoring locations in District 2 and 123 flow monitoring locations in District 1, real-time controls for pump operations, hydraulic model analysis, and development of the methodologies for dry- and wet-weather loads and calibration.

***City of Huntington Beach Sewer Master Plan Update***

Served as Lead Hydraulic Modeler and managed a collaborative effort in the build, validation, and calibration of an all-pipes dynamic model for the City using Innovyze's InfoWorks ICM 2023 software. Along with team, calibrated the all-pipes model using 24 temporary flow meters for dry and wet weather flow conditions. Other major ***e***lements of the project include integrating the City model with the Orange County Sanitation District model to create one cohesive and integrated model for more accurate assessment of hydraulic capacity; visual assessment of the 29 sewer lift stations.

***Long Beach Water Department (LBWD)Sanitary Sewer Master Plan Update***

Served as Lead Hydraulic Modeler in expanding the 2013 hydraulic model in Innovyze's InfoSWMM software to include all sewer mains tributary to targeted near-term development areas. Led the effort in calibrating the expanded InfoSWMM model using 60 temporary flow meters for dry weather flow conditions. Other major ***e***lements of the project include visual assessment of the 33 sewer lift stations, evaluation of the system using updated calibrated flows, and software training for staff.

***Sewer System Model, Master Plan, and Capital Improvement Program (CIP) Update, Fortuna***

Served as Technical Lead and managed a collaborative effort in the build, validation, and calibration of an all-pipes dynamic model using Innovyze's InfoWorks ICM 2023 software. Along with the team, is leveraging the model output with targeted condition assessment field data inside the decision support system, InfoAsset Planner, which is being used to validate and formulate solutions that identify and prioritize CIP projects that minimize impact, such as sanitary sewer overflows, I&I, and address future capacity needs.

***City of Berkeley Sanitary Sewer Master Plan***

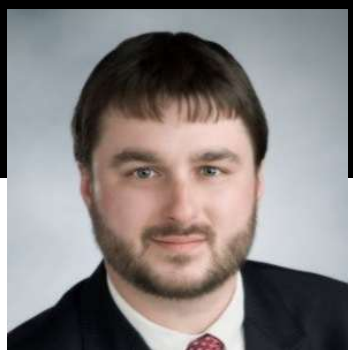
Served as Project Manager and Technical Lead in proposing, building, and delivering an all-pipes (7,500+ pipes) dynamic hydraulic model using Innovyze's InfoWorks ICM 9.5 software. The project team leveraged 100+ East Bay Municipal Utility District (EBMUD) flow meters in determining Real-Time Kinematic (RTK) parameters for the wet weather calibration effort. This allowed a very detailed depiction of I&I source and response within the system.

***Napa Sanitation District (NapaSan) Collection System Master Plan***

Phase 2 builds on Phase 1 work, extending the skeletonized model out to cover all 6,000+ pipes in NapaSan's network. Technical Lead in proposing, building, and delivering in the all-pipes dynamic hydraulic model using Innovyze's ICM 9.5 software. The model provided a detailed look at the entire integrated system and yielded new insight into how the proposed Browns Valley Trunk and West Napa Pump Station upgrade affects the 66-inch Trunk Sewer, as well as the system upstream of the North Napa Siphon.

# Adam Fisher PE

## Proposed Role: Technical Lead, Modelling
## Location: Santa Rosa, CA



### Qualifications/Accreditations

– BS, Civil Engineering, Pennsylvania State University, Centre County, PA, 1993
– Civil Engineer, CA #72482

### Relevant experience summary

Adam Fisher is a professional civil engineer and has 25 years of experience in collection system master planning and modeling, Geographic Information System (GIS) mapping, database design and analysis, flow monitoring and Inflow and Infiltration (I&I) planning, storm water modeling, and water distribution system modeling.

***Los Angeles County Sanitation District (LACSD) Districts 1 and 2 Models***

LACSD consists of 24 independent districts that work cooperatively with one administrative staff. Responsible for constructing Innovyze's InfoWorks ICM 2024 software models for Districts 1 and 2 that will be combined with the recently complete District 8 model. Districts 1 and 2 serve 1.25 million people, cover 77,600 acres and includes 316 miles of sewer, one pumping plants, 213 flow control devices and one wastewater facility.

***City of Huntington Beach Sewer Master Plan Update***

GHD prepared a sewer master plan update for the City. Efforts included analysis of 24 flow monitoring locations to provide comprehensive understanding of collection system flows; hydraulic model analysis; prioritization of Capital Improvement Program (CIP) and Operations and Maintenance (O&M) needs. Modeler for the build, validation, and dry-weather calibration of an all-pipes dynamic model using Innovyze's InfoWorks ICM 2023 software.

***Berkeley Sanitary Sewer Master Plan***

GHD prepared a sewer master plan for the City. Efforts include analysis of flow monitoring and level sensing to provide comprehensive understanding of collection system flows; hydraulic model analysis; development of a risk framework; and asset prioritization using Innovyze InfoAsset Planner to determine risk and prioritization of CIP and O&M needs. Led the geo-spatial development and processing of critical planning data and documentation to establish system-wide flows for the 2020, 2025, and 2040 planning horizons. Organized by city defined user class, translated water billing record data into parcel based diurnal loads over 27,000 parcels, aggregated by critical city user classes. Future scenarios were developed at parcel level based on city input and a variety of planning documents and sources.

***Napa Sanitation Collection System Master Plan***

GHD built an all-pipes dynamic model for the collection system master plan. Led the development and geo-processing of critical planning data and documentation to establish system-wide flows for the existing and future planning horizons. Developed unit flows for the future scenario based on water billing records, flow monitoring and existing land use. The future scenario was developed at parcel level based on city input and a variety of planning documents and sources, including the City of Napa's Existing Conditions Report, the Napa County General Plan, the Downtown Specific Plan, the NapaSan Civic Center Sewer Evaluation, and the American Canyon Sewer Master Plan.

***City of Santa Rosa Sewer System Master Plan***

Prepared a comprehensive update of the City's Sewer System Master Plan. The work included performing statistical analysis on both City water billing data and collection system meter data to arrive at base flows, distribution of flows an Infiltration and Inflow (I&I) and peaking factors. Built GIS based sewer model that integrates data on land use, base flow, I&I, peaking, pipeline size and condition and modeled various Base Condition and various build-out scenarios in order to predict system performance. Developing a listing of system deficiencies and estimating the costs for correction. Worked with City staff to prioritize the list of deficiencies into a long-term CIP with a focus on risk of failure. Provided on-call support to the City and various development interests.

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# Pradeep Nagarajan PE, CFM

## Proposed Role: CIP/Master Planning Lead
## Location: Atlanta, GA

**Qualifications/Accreditations**

– MS, Environmental Engineering, Florida International University, Miami, FL, 2000
– BS, Chemical Engineering, Florida International University, Miami, FL, 1998

**Relevant Experience Summary**

Pradeep's expertise encompasses water resources, stormwater management, master planning, system modelling, and infrastructure design. His extensive background includes utility planning, modelling of water distribution and wastewater collection systems, hydrology, hydraulics, flood risk analysis, and preparation of master plans.

***Los Angeles County Sanitation District (LACSD) Districts System Wide Sewer Model Development and Calibration***

Advisor responsible for overseeing the development, calibration, and validation of 24 Districts within LA County. This project is the result of the implementation plan that included a roadmap to calibrate models for all Districts and make informed decisions. The impetus of this effort was the result of the Sanitary Sewer Overflow (SSO) in the City of Carson that began on December 30, 2021.

***Development of User-Friendly Web-based Interface for Dynamic Risk Modelling/Capital Planning***

Serving as Project Manager overseeing the design and development of user-friendly web interface to implement and update the dynamic risk modelling, and prioritization of capital improvement projects, making it possible for end-users to make informed decisions. Guided the team in the development of both frontend and backend components of the platform, ensuring seamless data flow and integrated features for interactive user experience.

***City of Berkeley Sanitary Sewer Master Plan***

Served as Technical Advisor responsible in overseeing in proposing, building, and delivering an all-pipes (7,500+ pipes) dynamic hydraulic model using Innovyze's InfoWorks ICM 9.5 software. The project team leveraged 100+ East Bay Municipal Utility District flow meters in determining hydrologic parameters for the wet weather calibration effort. This allowed a very detailed depiction of inflow and infiltration source and response within the system.

***City of Cape Coral, Utilities Comprehensive Master Plan Update***

Technical Advisor responsible for overseeing the entire master plan for the City that includes water, wastewater, and irrigation systems. A key objective of the Master Plan is to integrate the City's hydraulic models with the population projections from the Cape Coral Interactive Growth Model (CCIGM), so that the City can model the impact of changes in population and level of service standards on recommended capital improvements.

***Consent Decree Program Management/ Construction Management Consultant – Wastewater Collection and Transmission System - WCTS Hydraulic Modelling***

Served as Program Manager to assist WASD on the Consent Decree (CD) by providing engineering services for the development and calibration of the water distribution and wastewater collection system. Responsible for overseeing the update and calibration of WCTS county-wide wastewater hydraulic model using InfoWorks ICM.

***Hastings-Sunrise Integrated Sewer Drainage Modelling and Servicing Study***

Senior Advisor responsible for overseeing the development and calibration of 1D-2D InfoWorks model to address the challenges of potential flooding, aging infrastructure, and climate change impacts in the Hastings-Sunrise watershed. The watershed covers an area of about 5 square miles in the City of Vancouver. The sewer system in the area consists of both combined and separated sewers. The project will explore the potential of using blue-green systems, pressurized sewers, combined sewer separation, and green infrastructure to manage excess runoff and reduce flood risks.

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# Zach Porteous

## Proposed Role: GIS/Data Analyst
## Location: Seatle, WA

### Qualifications/Accreditations

- BS, Environmental Science and Management (Minor: Computer Science), Humboldt State University, Arcata, CA, 2020
- ArcGIS Desktop Associate 19-001 Certification
- ArcGIS Online Specialty 19-001 Certification
- ArcGIS API for JavaScript Specialty 19-001 Certification
- MIT xPRO Backend JavaScript Development
- Azure Administrator Associate AZ-104

### Relevant experience summary

Zach Porteous is an Environmental Systems Research Institute (ESRI)-certified, GIS professional with experience in network analysis, database modelling, and web programming. He has extensive experience with spatial software packages like the ArcGIS suite of software and QGIS, data collection methods with Global Navigation Satellite System (GNSS) receivers and automated analysis using the python programming language.

***California Department of Water Resources Sustainable Groundwater Management Act Analysis***

GHD was contracted to provide technical assistance to support California Department of Water Resources in developing standardized monitoring methods, as well as a publicly accessible interactive spatial mapping tool to track the effectiveness of the sustainable groundwater management implementation projects. GHD collected and analysed data to identify planned and funded implementation projects, developed a database and interactive mapping tool to interface with the database, and developed standardized monitoring methods to determine the effectiveness of different types of sustainable groundwater management projects. Responsible for making the spatial interactive tool in ArcGIS Online.

***California Department of Water Resources Sustainable Groundwater Management Act Analysis***

DWR needed assistance with the development and implementation of the Small Water Suppliers Water Conservation Program including providing technical assistance for planning and direct install of water conservation measures for small communities. The ultimate project objective was to identify and persuade small communities throughout California to adopt water conservation measures.

***Sebastopol Water and Wastewater Mapping***

The City of Sebastopol engaged GHD to digitize CAD drawings into GIS layers that could be used in their new asset management software, Cartegraph. Created a detailed GIS dataset of water and wastewater systems from CAD documents and PDF copies of as-built drawings; developed large format maps and map books for the City's use in the field and the office; used a RTK GPS unit to capture locations of features stored in the GIS; and integrated ESRI online infrastructure with the Cartegraph Asset Management System.

***Sebastopol Lead Service Line Study***

The City of Sebastopol consulted with GHD to provide an evaluation of the City's lead service lines. GHD used a combination of City provided and openly sourced GIS data to provide an initial high-level evaluation and prioritization of areas that could be used in a more comprehensive field sampling effort.

***Sebastopol Sewer Line Inspection Mapping***

The City of Sebastopol consulted with GHD to provide a schedule, and maps for planning regular CCTV evaluations of their sewer network.

***City of Rio Dell Wastewater Infrastructure Improvements***

Provided field mapping and on-site evaluations of manholes and the pipes within them to support the development of a system wide wastewater infrastructure dataset for the City of Rio Dell. Worked alongside city employees to survey their system and contributed to a growing operational inventory of GIS assets.

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# Tyler Mendonsa

## Proposed Role: Modelling Support Location: Long Beach

### Qualifications/Accreditations

– BS, Civil Engineering, University of California, Los Angeles, CA, 2023

### Relevant experience summary

Tyler Mendonsa is a graduate water resource engineer with experience in hydraulic modelling in both Info works ICM and HEC-RAS. Primarily modeling sewer networks, which involves the development of networks through validation from record drawings and includes analysis of modeled results. He also has experience with multiple projects from California's Safe and Affordable Funding for Equity and Resilience (SAFER) program, which seeks to assist disadvantaged communities with water quality and quantity deficiencies. Additionally, he has worked with communities through direct outreach during different phases of construction for projects.

#### *Los Angeles County Sanitation District (LACSD) District 8 Sewer Model*

**Staff Engineer**
**LACSD | Los Angeles, CA | 7/2023 - 3/2024**

Project involved creation and calibration of a sewer network for both periods of dry and wet weather. Responsible for the validation of the model through record drawings. Development of a flow schematic of the overall system that displays results from the model for different parameters such as depth and flow.

#### *LACSD Districts 1 and 2 Sewer Model*

**Staff Engineer**
**LACSD | Los Angeles, CA | 3/2024 - Present**

This project is a continuation of the District 8 model, as Districts 1 and 2 are both directly upstream of it. Responsible for organization and gathering data for the first stages of creation of the model. Development of a flow schematic showing flow through flow meters and diversion points.

#### *LACSD District 8 Alternatives Analysis*

**Staff Engineer**
**LACSD | Los Angeles, CA | 10/2024 - 2/2025**

Development of spreadsheet for reporting results of an alternatives analysis on District 8. Interactive graphs and data management that were key in reviewing the results from the sewer model.

#### *Huntington Beach Sewer Master Plan*

**Staff Engineer**
**City of Huntington Beach | Huntington Beach, CA | 11/2023 - 5/2024**

This project involves a full sewer model for the city of Huntington Beach. Responsible for the analysis and exporting of model results to ArcGIS to create figures for reports.

### Construction Management

#### *Small Water Supplier Conservation Program*

**Staff Engineer**
**Department of Water Resources | Los Angeles, CA | 6/2024 - 9/2024**

Community outreach and site visits for the installation of water efficient fixtures in residential households.

#### *South Main Street Corridor Improvements*

**Intern**
**City of Santa Ana | Santa Ana, CA | 6/2022 - 9/2022**

Responsible for community outreach to business owners affected by construction. The majority of communication with community members was in Spanish.

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# Sepideh Amir Ahmadian PENG

## Proposed Role: Project Engineer
## Location: Long Beach, CA

### Qualifications/Accreditations

– M.Sc., Civil Engineering, Azad University of Tehran, Tehran, Iran, 2010

### Relevant experience summary

Sepideh Amirahmadian is a dedicated Water Resource Engineer with over seven years of experience in diverse civil projects. Her expertise includes hydrology and hydraulic analyses, drainage infrastructure, planning and design of linear infrastructure, and construction document preparation. Proficient in HEC-RAS, HEC-HMS, and Civil 3D,

Water GESM, Sewer GEMS. Sepideh is known for her attention to detail, and strong ability to manage multiple projects efficiently.

***Commonwealth Utilities Corporation Energy & Utilities Infrastructure Master Plan, MP***

Developed a sanitary sewer hydraulic model for Saipan Island using InfoWorks ICM and ArcGIS Pro, integrating available GIS data, interpolating missing attributes from adjacent system information, and performing model validation and calibration using existing datasets.

***St. Ives and Morningside Trunk Sewer Rehabilitation***

Responsible for preparing drawings and documents for bypass design. The Program includes the Cured-In-Place-Pipe (CIPP) lining of Trunk Sewer by performing trenchless technology to rehabilitate existing pipes, prepared and obtained required permits and approvals, developed project materials, detailed design report and cost estimates. Also Provided contract administration, including change orders and payment certification, cost and schedule control and issuing change orders.

***Sanitary Siphon Replacement and Cleaning, Pickering, ON***

Project includes replacement of 150 m of a Sanitary Sewer siphon. Responsible for assisting with the technical design and preparation of tender documents and assisting with controlling and budgeting of the project.

***Forcemain Replacement, Baby Point, On***

Responsible for coordinating with municipalities and stakeholders to prepare documents and applications to acquire permits for TRCA, RNFP, Toronto Parks and MOE. Participated in design of a 300 mm PVC forcemain to twining the existing forcemain.

***Watermain Rehabilitation Program, Toronto, ON***

Responsible for preparing drawings and documents to acquire permits for municipal authorities for the delivery of CIPP watermain rehabilitation program that consists of structurally lining over 150 kms of existing ductile and cast iron watermains through multiple construction contracts from 2018-2021. Provided contract administration, including change orders and payment certification.

***Coordinated Toronto Water and Transportation Program***

Designer. Responsible for assisting with detailed design report and construction reports and preparing quantity take offs for the Coordinated Toronto Water and Transportation program. The Program included the delivery of over 250 water, sewer, and transportation projects, located throughout the GTA.

***Viva Bus Rapid Transit Expansion*, York Region***

Designer. Responsible for drafting utility relocation plan and profiles using Civil-3D. Preparing plan and profile drawings using Civil-3D Pipe Network for stormwater management.

***Khoda Afarin Irrigation Canal, Iran***

Designer, Coordinator. Performed hydraulic and hydrologic modelling and design of parts of 144 km canal (85 m3/sec capacity, 5.25 m bed width and 5.25 m height) and related structures including: Water surface regulating structures (AMIL, AVIS, AVIO gates), rectangular flume, culverts and couple of side channel spillways and related energy dissipaters. Developing hydrologic model of water supply systems, watershed delineation and floodplain mapping using DEM data by applying WMS and ARC GIS

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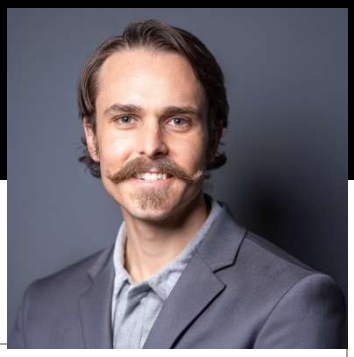
# Ashlan Finn EIT

## Proposed Role: Project Engineer
## Location: Phoenix, AZ



### Qualifications/Accreditations

– BS, Civil Engineering, University of California, Berkeley, CA, 2021

### Relevant experience summary

Ashlan Finn is a dedicated Water Resource Engineer with over three years of experience in diverse civil projects. His expertise includes hydrology and hydraulic analyses, drainage infrastructure, fish passage, low impact development design, and construction document preparation. Proficient in HEC-RAS, HEC-HMS, and Civil 3D, Ashlan is known for his quality of work, attention to detail, and clear communication of complex analyses.

***On-Site Stormwater Mitigation Performance Modelling***

Analyzed the effect of various configurations of onsite above-ground storage tanks on peak stormwater runoff from hypothetical site development scenarios in support of the Christchurch City Council update to stormwater guidelines in the Avon catchment. Developed a hydrologic model using HEC-HMS and performed an iterative analysis to determine the impacts of various mitigation strategies proposed by the client.

***Oak Shores Wastewater Treatment Facility Culvert Repair Project***

During the large storm events in January 2023, a culvert at the Oak Shores Wastewater Treatment Plant failed and resulted in significant erosion of a critical slope near a wastewater treatment pond. GHD performed an alternatives analysis and presented to the County. A preferred alternative was selected and will be designed to 100% design. Assisted with the design alternatives, including leading the design team, performing hydrology and hydraulic calculations, and overseeing plan development. The alternatives were modeled using StormCAD and HEC-RAS.

***Kern River Hydraulic Analysis***

Performed a hydraulic analysis using HEC-RAS to determine the flood impacts of proposed water intake structure improvements just upstream of Kernville Road bridge. Detailed topographic survey was incorporated into an Existing Conditions Model and the proposed obstructions were added. The results were summarized in a technical report.

***Atascadero State Hospital Wastewater Improvement Project***

The Atascadero State Hospital is designing a new wastewater conveyance system from the Atascadero State Hospital to the City of Atascadero's Wastewater Treatment Plant and decommissioning the existing wastewater treatment plant at Atascadero State Hospital. The improvements include a new screening facility, new pump station, and approximately 7,000 feet of new force main.

***Nacimiento Pipeline Repair Project***

Assisted with an alternatives analysis and design for a project to repair the Nacimiento Pipeline, which is one of three main sources of water to the City of San Luis Obispo. During the large storm events in January 2023, a section of the eastern bank of the Salinas River eroded, exposing, and washing away approximately 650 feet of the pipeline, rendering it no longer functional past this location and not able to deliver water to the City of San Luis Obispo. GHD developed an Alternatives Review to evaluate different alternatives for repairing the pipeline and is currently providing the design of the repair, which consists of approximately 4,700 feet of new 18" diameter pipe and horizontal directional drilling under the Salinas River.

***California Men's Colony Wastewater Treatment Plant Plastics Source Analysis***

Assisted as Water Resource Engineer on project to analyze potential sources of plastics in the California Men's Colony Wastewater Treatment Plant effluent into Chorro Creek in response to a Notice of Violation from the RWQCB. Tasks included interviewing representatives of facilities that contribute discharge to the wastewater treatment plant and wastewater treatment plant operators to identify potential sources of plastics in effluent and estimating the amount of plastics discharge. The findings of the analysis were then summarized in a Technical Memorandum.

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# Zane Cook

## Proposed Role: Modelling Support
## Location: Long beach

### Qualifications/Accreditations

– Environmental Resources Engineering, Cal Poly Humboldt, Arcata, CA, 2024

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### Relevant experience summary

As an early-career water resources engineer, Zane Cook has been developing his skills in hydraulic modelling, particularly using PCSWMM, while contributing to storm drain master plans and H&H studies. He has also applied his proficiency in Excel to tasks, such as water demand calculations and treatment system analyses, helping ensure accurate and reliable results. In addition to technical work, Zane has gained valuable experience assisting with writing memos and reports, allowing him to refine my communication and technical writing skills. He is eager to continue learning and growing as part of a team, contributing to meaningful projects that address water resource challenges.

### Hydraulic Modelling, Hydrology and Hydraulics (H&H) Studies, Storm Drain Master Plans, Technical Writing

#### *Crescent City Storm Drain Master Plans*

**Hydraulic Modelling**
**Crescent City | Crescent City, CA | 4/2024 - 9/2025**

Upgrades to the existing storm drain system to mitigate flooding that occurs during the rainy season. Assisted in developing a PCSWMM 2D model of Crescent City's storm drain system. The model was used to developing new routing alternatives to reduce the impacts of flooding within the city limits.

#### *Community Water Centre - Walnut Avenue*

**Water Demands**
**Community Water Centre | Greenfield, CA | 6/2024 - 7/2024**

Provided technical assistance effort to assist in providing long-term access to safe and affordable drinking water. Developed water demand calculations and spreadsheets for two separate groundwater well systems that provide drinking water to the community. These calculations aided in developing alternative designs and analysing the feasibility of connecting the region to the cities water distribution system.

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# Jesse Lopez

## Proposed Role: GIS Support
## Location: Eureka, CA

### Qualifications/Accreditations

- BS, Environmental Management and Protection (Minor: Geospatial Sciences), Humbold CA, 2016
- Advanced Geospatial Certificate, Humboldt State University, Arcata, CA, 2020
- ArcGIS Pro Associate 2101, Certification
- Presenter, Esri User Conference, 2023
- Remote Pilot Certificate (Part 107)

### Relevant experience summary

Jesse Lopez is a Location Intelligence analyst with six years of experience using GIS to support projects in a variety of industries. He enjoys empowering people with spatial data by providing tools and information to solve complex problems. His responsibilities include spatial data analysis, cartographic figure production, field data collection using high accuracy Global Positioning System (GPS) devices, data management, and user training. He has experience transforming data to be used in GIS, managing, and creating content in the ArcGIS Online environment, and telling stories with spatial data through a variety of platforms. Jesse has presented at conferences and webinars discussing projects where he shared environmental and socioeconomic data through Esri Web Experiences.

#### *Commonwealth Utilities Corporation (CUC) Energy & Utilities Infrastructure Master Plan*

The CUC Energy & Utilities Infrastructure Master Plan is a comprehensive initiative led by GHD to modernize and strategically plan the energy, water, and wastewater infrastructure for the CUC in the Northern Mariana Islands. The plan supports both civilian needs and defense-related initiatives under INDOPACOM's Pacific Deterrence Initiative, with a focus on resiliency, service reliability, and long-term sustainability.

#### *Program Management for Commonwealth Utilities Corporation SWIMS*

GHD is working on a multi phased project aimed at enhancing the water system management for the Commonwealth Utilities Corporation. Jesse led a field effort to develop a comprehensive GIS dataset of the water distribution system on the three populated islands in the Northern Mariana Islands. This project involved field verifying asset locations using high-accuracy Global Navigation Satellite System (GNSS) devices to develop a comprehensive GIS dataset. Continues to work with and train the GIS users in the client's organization to maintain the authoritative water distribution GIS dataset that was delivered to the CUC following his field efforts. Also assisting with GIS standards and governance document development.

#### *Fort Bragg Municipal Broadband Utility Project*

GHD provides professional engineering and consulting services to support the City of Fort Bragg in delivering a citywide underground fiber-to-the-premise broadband network. GIS integration within the project team has included field data workflows such as mobile photo scans, GNSS data collection, and Web-GIS data delivery.

#### *Eureka- First Slough Restoration, Eureka, CA*

GHD is supporting permitting efforts and design efforts for a slough restoration project. Jesse assisted in data collection efforts for a wetland delineation and impact analysis. High accuracy data collection methods were used to increase accuracy of data collection in a densely vegetated area. After delineating wetlands with the environmental team, used the proposed design surface for habitat conversion and impact analysis.

#### *Humboldt Bay Sea Level Rise Natural Shoreline Infrastructure, Eureka, CA*

GHD is working with Humboldt County to plan and demonstrate the use of natural ecological systems for sea level rise adaptation and resilience. Assisted with topographic and biological mapping and created a webapp that assisted the botanist in reviewing field data. Also created figures, showing historical, existing, and future scenarios that were used in a public report.

# Kristine Gaspar

## Proposed Role: Environmental Regulatory Support Location: Santa Rosa, CA

### Qualifications/Accreditations

- MPA, Public Administration, California State University, Sonoma, CA, 1995
- BA, Environmental Studies and Planning, California State University, Sonoma, CA, 1992

### Relevant experience summary

Kristine Gaspar's experience includes 30 years of environmental planning, CEQA compliance, resource agency permitting, data research and analysis, and grant writing. Kristine has been involved in environmental analysis on a wide variety of projects from private development to infrastructure projects, including residential, schools, recycled water, and park facilities.

***Central Coast Transfer Station Environmental Impact Report (EIR)***

Served as Quality Control Reviewer for this EIR for a new transfer station just east of Fort Bragg proposed to be constructed on forest lands adjacent to Highway 20. The facility would include an approximate five-acre footprint with a 30,000-square-foot enclosed facility, recycling, two scales and a scale house, a leachfield, a groundwater well, and stormwater detention basins.

***Mendocino Unified School District Water System Reconstruction***

Served as the NEPA and CEQA Project Manager for the review for this water system reconstruction project in unincorporated Mendocino County. The project includes demolition of existing District water storage tanks and construction of replacement tanks, new potable groundwater wells, construction of new water treatment facilities, and reconstruction of existing on-site utilities, access roads, and drainages.

***City of San Jose Department of Public Works, On-Call Environmental Services for Capital Improvement Program (CIP)***

GHD has an on-call environmental services contract with the City of San Jose Public Works to perform a variety of environmental tasks for City capital improvement projects. Serves as the point of contact and Project Manager. Has completed the Coyote Creek Non-Native Vegetation Mapping and construction support services associated with the Sanitary Sewer Crossing at Berryessa Creek projects and is currently assisting with Section 106 Compliance under Caltrans Funding for the San Jose Downtown Bike Project. The Projects are subject to the Santa Clara Valley Habitat Plan.

***North Trunk Sewer IS/MND and Permitting***

Served as Environmental Lead overseeing the IS/MND and CDFW Permitting. The project included abandonment of existing 50+-year-old sanitary sewer trunk pipelines along Paulin Creek and beneath Lomitas Avenue and Mendocino Avenue. GHD designed a new 15-inch diameter sanitary sewer trunk pipeline that was installed in a new alignment within City streets where it is accessible to City maintenance staff. Key environmental issues included three creek crossings, avoidance of trees, and cultural resources. The project was designed to minimize construction impacts to traffic, existing utilities, and the environment.

***Fulton Road Lift Station IS/MND***

This project relocation/construction of a new potable water pumpstation and decommissioning/demolition of an older facility. The Initial Study addressed environmental challenges related to biological and cultural resources and also covered the acquisition of the parcel for the replacement pump station.

***City of Santa Rosa Groundwater Master Plan IS/MND***

The City of Santa Rosa requested an MND be prepared for their Groundwater Master Plan. The purpose of the Master Plan is to manage groundwater resources in the City and develop 8.4 mgd of emergency groundwater capacity for drinking water. This capacity would require 10-20 new emergency wells, but the locations of the wells had not yet been identified. Therefore, the MND evaluated impacts that could occur from wells located anywhere within the City, given certain restrictions on locations near sensitive receptors/resources, such as scenic highways, residences, and streams. and endangered species, crossing federal facilities, land use, and submerged land leases.

**T** 707.236.1539 | **E** kristine.gaspar@ghd.com

# Yosef Yip

## Proposed Role: Stakeholder Engagement
## Location: Los Angeles, CA

### Qualifications/Accreditations

- MUP, Urban Design, City College of New York, 2011
- BES, Urban Planning, University of Waterloo, 2010

### Relevant experience summary

Yosef Yip has more than 15 years of experience in stakeholder and community engagement with a background in urban planning. His community building informs his ability to implement strategic outreach plans, foster trust through equity-focused partnerships with Community-Based Organization (CBO) and enhance public understanding of technical projects.

***Comprehensive Outreach and Education Plan***

As task lead, led the development and implementation of a comprehensive outreach and education plan to build public understanding and support for the County's innovative biosolids management program. Managed the scope of work related to stakeholder engagement, project messaging, and branding. Facilitated workshops with County staff and external partners to define outreach goals, identify key audiences, and develop engagement tactics.

***Energy & Utilities Infrastructure Master Plan***

Served as the lead facilitator for the interagency coordination forums supporting the Commonwealth Utilities Corporation's Energy & Utilities Infrastructure Master Plan for Saipan, Tinian, and Rota. In this role, planned and led multi-agency forums that convened representatives from local, Commonwealth, and federal agencies to collaboratively assess existing utility conditions, discuss resiliency and risk, and examine proposed mitigation measures.

***Strategic Business Development Plan***

Facilitated the delivery of Huntingdon Borough's Strategic Business Development Plan, a comprehensive community development initiative focused on revitalizing the 600 Block of Penn Street and establishing a framework for economic growth. Coordinated task workstreams across project phases and collaborated with multidisciplinary team members to integrate community feedback into actionable recommendations. Created a final Strategic Plan that proposed development concepts and community improvement options that connected recreational opportunities with downtown revitalization goals.

***Los Angeles Sanitation and Environment (LASAN) Clean Water (Wastewater) Capital Improvement Program***

Served as Task Lead for LASAN's Clean Water (Wastewater) Capital Improvement Program, overseeing a team of outreach subconsultants to support the agency's public affairs and community engagement efforts. Led the coordination of public outreach activities across the agency's major outreach programs, including pre-construction planning, construction-phase engagement, and digital communications.

***Los Angeles Sanitation's LASAN's Clean Water (Wastewater) Capital Improvement Program***

Served as Task Lead for LASAN's Clean Water (Wastewater) Capital Improvement Program, overseeing a team of outreach subconsultants to support the agency's public affairs and community engagement efforts. Led the coordination of public outreach activities across the agency's major outreach programs, including pre-construction planning, construction-phase engagement, and digital communications. Developed a key performance metric tracking mechanism to monitor outreach effectiveness and ensure accountability. Also supported the client in consolidating and synthesizing key accomplishments for weekly and monthly reporting to LASAN leadership and the Board. Role included managing deliverables, facilitating stakeholder briefings, supporting media relations, and ensuring timely public notifications for infrastructure milestones.

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**January 15, 2026**

**Toni Bertolero, Public Work Engineer**
**Sebastopol Public Works Department**
**714 Johnson St.**
**Sebastopol, CA 95472**

**RE: Cost Proposal for Engineering Services for Sewer System Master Plan Update- RFP NO: 615-21.01**

**Dear Ms. Toni Bertolero and Evaluation Committee:**

GHD is committed to continuing our positive collaboration with the City of Sebastopol through the Development and Calibration of Sewer System Master Plan Update project.

Supplemental to our technical proposal, please find enclosed our cost proposal which includes a breakdown of cost by task, and includes the team and their rates.

Thank you for the opportunity to submit GHD's qualifications for this exciting project. Please reach out to Ann Bechtel (858) 244-6969, or Ann.Bechtel@ghd.com if you have any questions regarding our submission.

Regards,

GHD Inc.

**Ann Bechtel, PE, TE**
Principal Engineer/Business Group Leader
+1 858-244-6969

Ann.Bechtel@ghd.com

| Description | | Matt Kennedy<br>*Project Director*<br>$345 | Ann Bechtel<br>*Project Manager*<br>$345 | Chris Brothers<br>*QA/QC*<br>$323 | Pradeep Nagarajan<br>*CIP Planner*<br>$323 | Adam Fisher<br>*Modeling Lead*<br>$274 | Ashlan Finn<br>*Project Engineer*<br>$229 | Zach Portreus<br>*GIS/Data Lead*<br>$237 | Jesse Lopez<br>*GIS Support*<br>$237 | Tyler Mendonsa<br>*Modeling/GIS Support*<br>$199 | Zane Cook<br>*Modeling Support*<br>$184 | Sepideh Amirahmadian<br>*Project Engineer*<br>$237 | Yosef Yip<br>*Stakeholder Engagement*<br>$334 | Kristine Gaspar<br>*Regulatory*<br>$289 | Jenni Simpson<br>*Admin*<br>$180 | Total Hours | Labor Total | Estimated Project Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Task1*** | | ***12*** | ***24*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***12*** | ***48*** | ***$14,580*** | ***$14,580*** |
| *Subtask 1.1* | Internal Coordination and Administration | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | $7,620 | $7,620 |
| *Subtask 1.2* | Kick-Off Meeting | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | $1,740 | $1,740 |
| *Subtask 1.3* | Formal Public Meetings | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | $5,220 | $5,220 |
| ***Task2*** | | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***4*** | ***12*** | ***24*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***40*** | ***$8,568*** | ***$8,568*** |
| *Subtask 2.1* | Review of Existing Data | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 20 | $4,284 | $4,284 |
| *Subtask 2.2* | Data Validation and Gap Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 20 | $4,284 | $4,284 |
| ***Task4*** | | ***0*** | ***4*** | ***0*** | ***4*** | ***8*** | ***0*** | ***0*** | ***0*** | ***0*** | ***16*** | ***16*** | ***0*** | ***0*** | ***0*** | ***48*** | ***$11,600*** | ***$11,600*** |
| *Subtask 4.1* | I&I Reduction Program | 0 | 4 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 48 | $11,600 | $11,600 |
| ***Task5*** | | ***1*** | ***2*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***4*** | ***0*** | ***7*** | ***$2,191*** | ***$2,191*** |
| *Subtask 5.1* | Discussion on Regulatory Requirements | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | $2,191 | $2,191 |
| ***Task6*** | | ***0*** | ***0*** | ***0*** | ***0*** | ***8*** | ***0*** | ***4*** | ***8*** | ***12*** | ***12*** | ***12*** | ***0*** | ***0*** | ***0*** | ***56*** | ***$12,476*** | ***$12,476*** |
| *Subtask 6.1* | Hydraulic Model Development & Validation | 0 | 0 | 0 | 0 | 8 | 0 | 4 | 8 | 12 | 12 | 12 | 0 | 0 | 0 | 56 | $12,476 | $12,476 |
| ***Task7*** | | ***0*** | ***4*** | ***4*** | ***0*** | ***28*** | ***0*** | ***8*** | ***16*** | ***24*** | ***24*** | ***24*** | ***0*** | ***0*** | ***0*** | ***132*** | ***$30,912*** | ***$30,912*** |
| *Subtask 7.1* | Dry Weather Model Calibration | 0 | 4 | 4 | 0 | 28 | 0 | 8 | 16 | 24 | 24 | 24 | 0 | 0 | 0 | 132 | $30,912 | $30,912 |
| ***Task8*** | | ***0*** | ***1*** | ***2*** | ***6*** | ***0*** | ***12*** | ***0*** | ***0*** | ***6*** | ***6*** | ***12*** | ***0*** | ***0*** | ***0*** | ***45*** | ***$10,819*** | ***$10,819*** |
| *Subtask 8.1* | System Deficiencies/LOS | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | $1,427 | $1,427 |
| *Subtask 8.2* | Hydraulic System Performance Evaluation | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | $781 | $781 |
| *Subtask 8.3* | Future Flow Projections | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | $916 | $916 |
| *Subtask 8.4* | Sewer System Capacity Evaluation | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 0 | 6 | 6 | 12 | 0 | 0 | 0 | 33 | $7,695 | $7,695 |
| ***Task9*** | | ***2*** | ***4*** | ***4*** | ***8*** | ***0*** | ***16*** | ***0*** | ***0*** | ***0*** | ***0*** | ***12*** | ***0*** | ***0*** | ***8*** | ***54*** | ***$13,894*** | ***$13,894*** |
| *Subtask 9.1* | Proposed Improvements and Risk Analysis | 1 | 2 | 2 | 4 | 0 | 12 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 4 | 31 | $7,863 | $7,863 |
| *Subtask 9.2* | Prioritize CIP (Risk, Capacity and Cost) | 1 | 2 | 2 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 4 | 23 | $6,031 | $6,031 |
| ***Task10*** | | ***2*** | ***6*** | ***4*** | ***4*** | ***4*** | ***0*** | ***0*** | ***0*** | ***18*** | ***18*** | ***40*** | ***10*** | ***0*** | ***8*** | ***114*** | ***27594*** | ***$27,594*** |
| *Subtask 10.1* | Draft Master Plan Report | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 10 | 10 | 24 | 4 | 0 | 4 | 60 | $14,104 | $14,104 |
| *Subtask 10.2* | Final Master Plan Report | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 4 | 4 | 12 | 4 | 0 | 2 | 34 | $8,602 | $8,602 |
| *Subtask 10.3* | Final Presentation to Stakeholders | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 2 | 0 | 2 | 20 | $4,888 | $4,888 |
| | ***Total Labor Hours*** | ***17*** | ***45*** | ***14*** | ***22*** | ***48*** | ***28*** | ***16*** | ***36*** | ***84*** | ***76*** | ***116*** | ***10*** | ***4*** | ***28*** | | | |
| | **Estimated Project Total** | **$5,865** | **$15,525** | **$4,522** | **$7,106** | **$13,152** | **$6,412** | **$3,792** | **$8,532** | **$16,716** | **$13,984** | **$27,492** | **$3,340** | **$1,156** | **$5,040** | **544** | **$132,634** | **$132,634** |

Proposal for Engineering Services

# → Sewer System Master Plan Update (CIP#0615-21.01)

Submitted to City of Sebastopol

January 15, 2026

**January 15, 2026**

**Toni Bertolero, Public Work Engineer**
**Sebastopol Public Works Department**
**714 Johnson St.**
**Sebastopol, CA 95472**

**RE: Proposal for Engineering Services for Sewer System Master Plan Update- RFP NO: 615-21.01**

**Dear Ms. Toni Bertolero and Evaluation Committee:**

With great pleasure, GHD submits this proposal to the City of Sebastopol for Engineering Services for Sewer System Master Plan Update (SMPU). GHD has been working with the City for many years, providing a wide range of services that have grown our relationship with staff and working knowledge of the City's utility systems. As you will see in our proposal, our previous work designing sewer and water improvement projects for the City, developing the City's Sewer Geographic Information System (GIS) and working with the City's sewer system hydraulic model to evaluate projects will allow us to use these tools efficiently and focus our efforts on the key updates the City needs to the Sewer Master Plan.

We bring a team with years of local relevant history, exceptional familiarity with the City's sewer system, and proven experience in the development and use of GIS, hydraulic models and preparing sewer master plans. We selected several key staff who will play important roles in the delivery of this SMPU.

**Matt Kennedy, PE, TE:** Matt has been the Principal Engineer and primary contact for GHD's On-Call Engineering services contract with the City. He has overseen every project GHD has delivered for the City over the past 10 years, including our on-going City Engineering Services. Matt has been the engineer of record on the City's most recent well treatment and water/sewer main replacement projects and was the project manager for the development of the City's water and sewer GIS. He has also prepared water and sewer master plans and performed hydraulic models for other clients. The City is Matt's top priority and he is committed to collaboration and responsiveness to address any challenges for the SMPU.

**Ann Bechtel, PE:** Ann will serve as the project manager and Will bring more than 20 year experience in infrastructure master planning and prioritizing/maximizing funding for projects and engaging stakeholders on projects similar in nature and scope and leading multi-disciplinary teams and engaging multiple stakeholders.

**Pradeep Nagarajan, PE:** Pradeep has over 20 years of modeling experience leading over 10 modeling teams on projects across North America, contributing innovative solutions for cities like Los Angeles, Vancouver, Fort Myers, Baltimore, and agencies like Miami-Dade.

**Adam Fisher, PE:** Adam Fisher has over 25 years of experience in sewer master planning and modeling, GIS, flow monitoring and Inflow and Infiltration planning, and water distribution system modeling. Adam led the sewer master plans and studies for the Rohnert Park, Windsor, South Cloverdale, and Rio Dell and led the planning element of the master plans for Berkeley, Huntington Beach, Fortuna, Napa Sanitation District, and the Long Beach Water Department. Adam is one of the technical leads for the on-going Los Angeles County Sewer Districts modeling projects.

**Zach Porteous:** Zach has been a key team member on a number of projects for the City related to the original development of the water and sewer GIS, keeping the GIS updated as improvement projects are completed, and coordinating with Cartograph (the City's Computer Maintenance Management System), and with the City of Santa Rosa who hosts the online GIS.

GHD's approach leverages our knowledge of the City's sewer system and 2005 Sewer Master Plan, and our experience using the sewer system hydraulic model and developing the City's sewer GIS. We will develop a complete and relevant SMPU that the City can rely upon for the next 5-10 years as CIP projects are implemented. Our approach is also founded on a collaborative and positive working relationship with the City. We understand the City has a limited budget to make this important update and develop CIP projects to address aging infrastructure and hydraulic requirements. Therefore, our vision for your project is that a coordinated, focused and smooth effort by the right professionals fills in baseline data gaps, establishes levels of service, anticipates growth scenarios, addresses foreseen and unforeseen risks, models projected demands and maintains the affordability of utility service.

We are excited about the opportunity to continue working with the City on this important Sewer Master Plan Update. Our goal is to repeat the success we have had working with the City on the Water Master Plan Update. Should you have any questions, please contact our Project Director Matt Kennedy.

Respectfully submitted,

**Matt Kennedy, PE, TE**
Principal Engineer/Business Group Leader
+1 707-540-3376
Matt.kennedy@ghd.com

# Table of Contents

# 1. About Us

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. As a global company established in 1928, we remain wholly owned by our people. We are 12,000+ diverse and skilled individuals connected by 200 offices, across five continents – Asia, Australia, Europe, North and South America, and the Pacific region. GHD has delivered infrastructure projects ranging from $7 million to over $350 million, including several water projects for the City of Sebastopol. It is this portfolio of experience that has established GHD as a local and global industry leader in the delivery of multi-disciplinary complex projects relating to master planning, hydraulic modeling, technical and design services, business case development, project management, and program development, including supporting performance frameworks, economic and financial modeling, and stakeholder engagement.

## 1.1 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 wellbeing 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 #31 in the "Top 150 Global Design Firms" by Engineering News-Record in 2024***.

**Experience with City**

**GHD's Culture of Commitment**


Over the past 10 years GHD has had the pleasure of supporting the City of Sebastopol (City) in the delivery of numerous water and sewer improvement projects, worked closely with the City engineering, supported public works management, played an important role in Geographic Information System (GIS) development for water and sewer and contributed to stormwater management, design reviews, and many other services. **Staff in our local Santa Rosa office bring both a strong "City-first" execution approach and proficiency with the City's water and sewer systems. We are very familiar with the entire City's water and sewer infrastructure having developed the City's water and sewer GIS, digitized their utility mapping and incorporated historical asset data. We also helped prepare the City's recent update to the Water Supply Contingency Plan and designed numerous water treatment and distribution system improvement projects, including the Well 7 arsenic treatment system, which received ASCE San Francisco Section 2016 Small Project of the Year award.** We can support the City in this Sewer Master Plan Update from our office in Santa Rosa, located only 15 minutes from the City's offices.

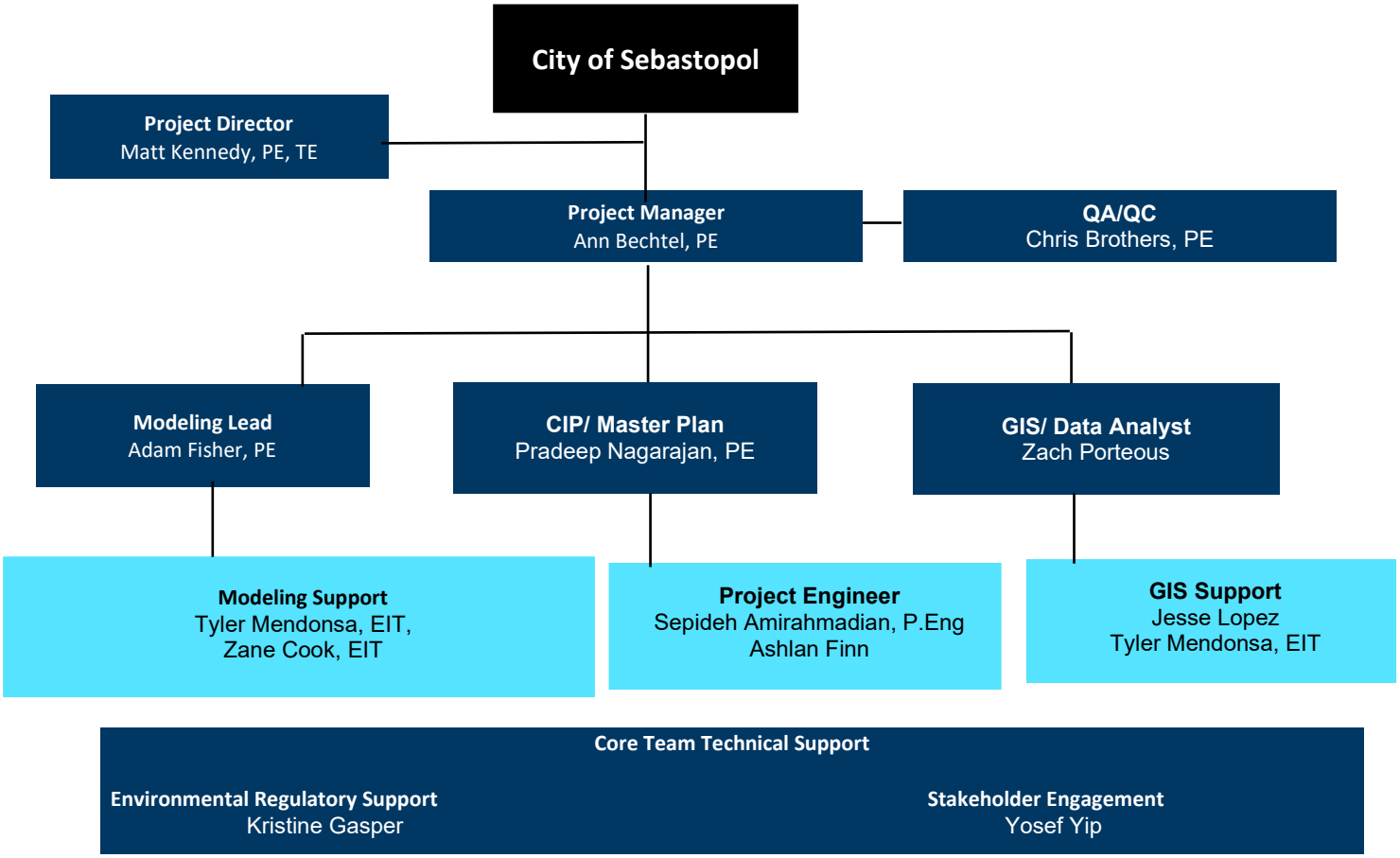
GHD's team for this project has relevant experience in sewer system master planning and hydraulic modeling that covers the holistic spectrum of project goals, including model update, calibration, analysis, system Capacity review, and system optimization. GHD has experience with all major software modelling packages including Bentley SewerCAD, SewerGEMS, Innovyze products (such as InfoWorks ICM), ESRI ArcGIS and other common hydraulic software (EPANET, KYPipe, etc.).

GHD has provided numerous local public clients with similar services of sewer hydraulic model development, updating and calibration services, as well as support for system assessment and capital project planning. Our northern California sewer master plan clients include City of Fortuna, City of Berkeley, City of Fortuna, City of Rohnert Park, Town of Windsor, Napa Sanitation District and City of American Canyon. We have also provided hydraulic model development, calibration, validation, and capital project planning for the Humboldt Community Services District, City of Santa Rosa, and Lawrence Berkeley National Laboratory campus. Our team brings knowledge of construction costs in the Bay Area and northern California, and regularly develop construction estimates that are within the range of bids our clients receive. Our clients and sewer master planning experience extends far beyond the local area including other US states, Canada and Australia.

## 1.2 Organization Chart/Project Team

We have strategically selected our key personnel because of their combination of experience delivering sewer master planning projects for clients in northern California and elsewhere, knowledge of the City's water and sewer system, and local presence. As indicated in the RFP, the City's 2005 Sewer Master Plan is past due for an update, and our team members' expertise is specifically aligned with the scope of work tasks and the City's goals for this update.

The organizational chart shown below details our proposed team, including disciplinary-based roles formed on our understanding of your needs. We carefully selected the team members to provide the City with a diversity of skills, local responsiveness, strong communication, and effective problem-solving.




Our core Project Team will also have the support of over 12,000 staff in 200 offices globally, including over 80 staff in our Santa Rosa office located just 15 minutes from the City's offices.

The GHD team covers the breadth and depth of expertise needed to execute the services outlined in the RFP scope of work. We have also included some adjustments to the City's scope of work, which are described in our Approach and Methodology. Our team of key individuals will be dedicated throughout the project, and no staffing changes will occur without prior approval from the City. We understand the City has a limited budget for this project. This dedicated team approach will reflect project continuity and efficiency in project delivery, which will be critical to meeting your budget. Detailed resumes for everyone on the organizational chart are presented in Appendix B.

# 2. Project Experience

The selected project descriptions in this section provide a glimpse of GHD's experience in providing sewer master plan and related services. The projects presented below are selected based on their similarity to the subject RFP in terms of size and location of the Client municipality, and the services provided. GHD staff has experience understanding the needs and limitations of different municipalities to help make decisions for scope extent, assumptions, and limitations while providing quality cost-effective practical advice and solutions.

| Reference Project- Top 5 Projects<br><br>Project Client Location | InfoWorks ICM (1D/2D) Modeling Experience | Data Collection and Review | Modeling Manual of Accepted Practices and Standards | Model Development/ Calibration/Validation | Extended Period Simulations | Rainfall derived infiltration and inflow Analysis | Flow Monitoring Plan | Spatial Visualization /Automation |
|---|---|---|---|---|---|---|---|---|
| **2023 Sewer Master Plan Update, LBWD, Long Beach, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **Sewer Model Implementation Plan, LACSD, Whittier, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **City of Berkeley Sanitary Sewer Master Plan, City of Berkley, Berkeley, CA** | ● | ● | | ● | ● | ● | ● | ● |
| **Sewer System Master Plan Update, City of Huntington Beach, Huntington Beach, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **NapaSan Collection System Master Plan, NapaSAN, Napa, CA** | ● | ● | ● | ● | ● | ● | ● | ● |
| **Fort Myers Master Plan & Development of Risk Based Decision Support System (DREAMS), City of Fort Myers, Fort Myers, FL** | ● | ● | | | | | | ● |
| **Subregional Water Resources Recovery facilities (SWRRF) Master Plan** | | | | | | | | |
| **Water and Sewer GIS \| City of Sebastopol, CA** | | ● | | | | | | ● |

## City of Berkely, All-Pipes Model Collection System Master Plans | City of Berkeley, CA

**Project Owner (name and address):** City of Berkeley, Public Works/Engineering, 1947 Center Street, 4th Berkeley, CA 94704

**Reference:** Felix Meneau, Associate Civil Engineer E: FMeneau@berkeleyca.gov T*: 510.981.6399

**Key team member involvement:** Chris Brothers, Adam Fisher

**Overall cost:** Projected: $960k **Completed:** $850k,

**Date**: 2019 -Ongoing

### Type and extent of services provided by GHD

The City of Berkeley (Berkeley) needed to plan for its growing population and other future challenges. To reach this goal, Berkeley retained GHD to develop its Sanitary Sewer Master Plan (Plan) and deliver a dynamic hydraulic model of more than 7,500 pipes. The aim was to create a Plan and model that allowed Berkeley to create an effective capital improvement program (CIP). GHD successfully delivered both the Plan and a dynamic hydraulic model to Berkeley.

To create the model, our team looked at the over 100 flowmeters in the East Bay Municipal Utility Districts (EBMUD) to determine runoff and routing parameters for the wet weather calibration effort. We used this data to depict the inflow and infiltration (I&I) source and its response within Berkeley's system. We also used the inspected condition information to analyze groundwater infiltration and I&I at the parcel level. Once we created the model, our team used Info Asset Planner (Innovyze's ArcGIS-based decision support and asset prioritization system) to organize and analyze model output, closed circuit television, flow monitoring, I&I reconnaissance data, inspection, maintenance, service request, and any pertinent asset condition data to store in one place. GHD is applying its proprietary asset management principles and methods to this data (including risk, rehabilitation, and lifecycle costing) within InfoAsset Planner to generate a phased and prioritized CIP.

## City of Fortuna Sewer System Master Plan and CIP Update | City of Fortuna, CA

**Project Owner (name and address):**
City of Fortuna, P.O. Box 545, Fortuna, CA 95540

**Reference:** Mr. Brendan Byrd, PE, E: bbyrd@ci.fortuna.ca.us T: 707-725-1469.

**Applicability to Services Required by the City:**
− Use of InfoWorks ICM to deliver a calibrated hydraulic model
− Integration of flow monitoring data for accurate wet weather calibration
− Development of risk-based CIP prioritization to minimize sanitary sewer overflow (SSO) risks
− Key team member involvement: Adam Fisher, Chris Brothers

**Key Team Members:** Brett Vivyan, PE

**Date:** 2022-2024

#### Type and Extent of Services Provided by GHD

The City of Fortuna needed to address aging sewer infrastructure, wet weather Capacity issues, and future development needs. To achieve this, Fortuna retained GHD to update its Sewer System Master Plan (SMPU) and deliver a comprehensive hydraulic model of the City's sanitary sewer network. The goal was to create a plan and model that would support an effective 10-year Capital Improvement Program (CIP). GHD successfully delivered both the SMPU and a calibrated hydraulic model to the City.

To build the model, our team used flow monitoring data from the 2018 Sanitary Sewer Evaluation Survey and developed an all-pipes hydraulic model in InfoWorks ICM. We modeled dry and wet weather scenarios, including a scaled 5-year, 24-hour design storm (4.4 inches rainfall), and applied design assumptions for future development, inflow/infiltration (I&I) reduction, and treatment plant capacity constraints. Eight CIP solution scenarios were compared to balance cost, risk, and hydraulic benefit.

## **City of Long Beach, 2023 Sanitary Sewer Master Plan Update |** City of Long Beach, CA


**Project Owner (name and address):** Long Beach Water Department, Long Beach Utilities, 1800 East Wardlow Road, Suburb 1, 90807

**Reference:** Leela Stevens, PE, PMP, Civil Engineer

**O:** 562.570.2333 | **D:** 562.619.8071, **E:** Leela.Stevens@lbwater.org

**Start and End Date:** 2021-2024

**Key Team Members:** Chris Brothers

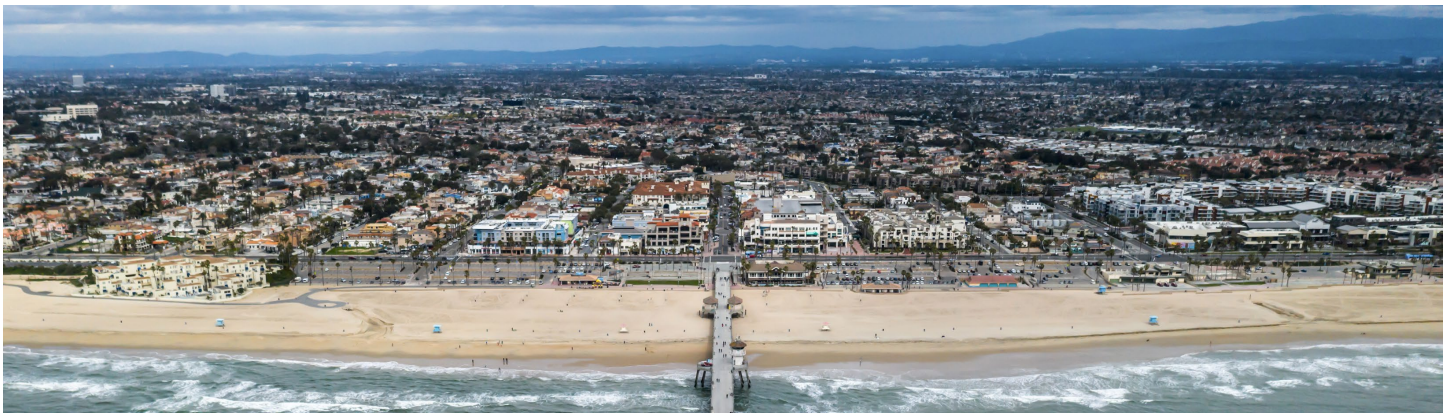
Objective: Sanitary Sewer Master Plan

Description: Long Beach Water Department (LBWD) retained GHD to provide engineering services for the 2021 Sewer Master Plan Update Project.

Outcomes: The purpose of this Project is to update and calibrate LBWD's existing hydraulic model, evaluate the condition and Capacity of the sewer pipelines and sewer lift stations, prioritize the sewer system capital improvement projects for the next ten (10) years, and provide deliverable reports as indicated. GHD's effort will provide the City the following:

- A flexible dynamic hydraulic model that is easy to operate, maintain, and update
- A roadmap for an implementable Capital Improvement Plan (CIP) that meets near and long-term needs
- A living master plan document that articulates the strategies, alternatives, and CIP to address LBWD's needs now and into the future

## **City of Huntington Beach, Sewer System Master Plan Update |** City of Huntington Beach, CA



**Project Owner (name and address):** City of Huntington Beach, 2000 Main Street Huntington Beach, CA 92648

**Reference:** John Poehler, Dputy Director of Public Works

E: John.Poehler@surfCity-hb.org**,** T: 714.5365503

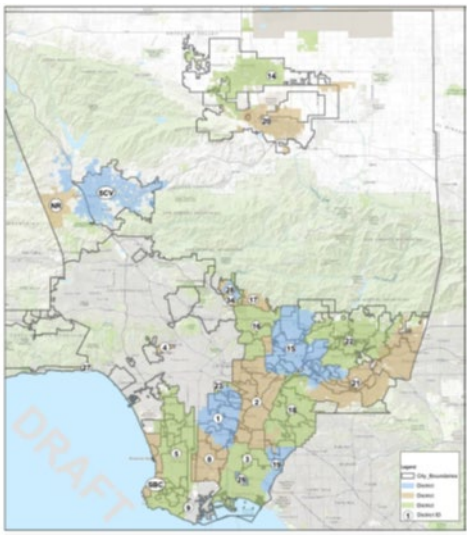
**Applicability to services required by the City:** − Shows that the key project members have worked together to complete a large integrated dynamic model, on time, and under budget, for a system very close in size and characteristics to LACSD

**Key team member involvement:** Chris Brothers, Adam Fisher

**Start and End Date:** 2022-2025

The Sewer Master Plan (SMP) is an essential tool for aligning the City of Huntington Beach's existing sewer system conditions with ongoing operations, rehabilitation, maintenance, and regulatory compliance, including requirements from the 2022 Sewer System Management Plan update and the State Water Resources Control Board Waste Discharge Permit. To guide system needs and investment priorities for the next decade, the City contracted GHD to update its SMP, replacing the previous 2003 plan and covering the City and small tributary areas of neighboring jurisdictions. GHD developed and calibrated an all-pipes dynamic hydraulic model representing 360 miles of sewer, 27 lift stations, and 3 miles of forcemains to evaluate existing and future capacity. Modeling confirmed that the City is largely built out and that future development does not introduce new capacity deficiencies beyond those already present during peak wet-weather conditions. While dry-weather capacity is adequate, several areas experience wet-weather limitations, leading to a prioritized 10-year Capital Improvement Plan that includes 16 gravity sewer capacity-upsize projects and lift station improvements informed by condition assessments and hydraulic modeling. These recommendations form the basis of the updated SMP, which will guide the City's long-term system upgrades, support regulatory compliance, and help prioritize replacement and rehabilitation efforts to maintain a high level of service.

## **City of Los Angeles, Sewer Model Implementation Plan, LACSD, Whittier |** Los Angeles County, CA




**Project Owner (name and address):** Los Angeles County Sanitation Districts (Districts), Joint Administration Office,1955 Workman Mill Road, Whittier, CA 90601

**Reference:** Ziad El Jack, Supervising Engineer - Wastewater Planning

E: ziadeljack@lacsd.org, T: 562.908.4288 ext. 2703

**Start and End Date:** 2023-Ongoing**, Key team member:** Pradeep Nagarajan

**Type and extent of services provided by GHD:**

On December 30, 2021, a sanitary sewer overflow occurred in the Districts' jurisdiction (City of Carson). To prevent future overflows, the Districts engaged GHD to conduct an audit. GHD conducted the audit and recommended, Among other things, the implementation of a sewer model. Our recommendation to implement a sewer model was the basis of this project, which requires creating a sewer model implementation plan (Plan). The Plan will provide the districts with a roadmap for creating a sewer model that serves their needs. The goals of completing the Plan include providing recommended tasks for developing a systemwide sewer model, a timeline for implementing the tasks, and a record of the resources needed for developing and maintaining the sewer model. To develop the system wide sewer model, our team completed the following four (4) tasks:

1. Reviewing the data and providing gap analysis
2. Selecting modeling software
3. Making a pilot study area selection and recommendation
4. Developing the implementation and phasing plan

Because we're developing the Plan before implementing the sewer model, the Districts will be more informed about the effort and cost required to complete the modeling. The Districts can also save time and money because of the Plan—our planning is identifying data gaps and tasks that should be initiated early (e.g. flow monitoring) so that data is available when needed for model development and calibration. The completed Plan will offer a phased approach to developing the sewer model. As part of the initial phase and upon completion of the implementation plan, the Districts then selected GHD to develop and calibrate models that will help the District achieve their goals. The goal of creating the models is to optimize the Districts system Capacity needs and better.

## ***Napa Sanitation District (NapaSan) Collection System Master Plan,*** **Napa, CA**

**Project Owner (name and address):** Los Angeles County Sanitation Districts (Districts), Joint Administration Office,1955 Workman Mill Road, Whittier, CA 90601

**Reference:** Andrew Damron, General Manager,

E: ziadeljack@lacsd.org, T: 707.258.6007

**Start and End Date:** 2018-Ongoing, **Key Team Member:** Chris Brothers

**Description:** Collection System Master Plan Changes in dry-weather flow, construction of I&I projects, intensification of storm events, and changes in growth projections prompted Napa San to consider an updated Collection System Master Plan (CSMP), for 2019, to be completed in two phases (task orders). Napa San's 66-inchTrunk Sewer Rehabilitation Project addressed corrosion and structural issues within one of its most critical assets. The expedition and execution of an updated CSMP provided the key added benefit of guiding NapaSan in determining and validating key design decisions on that project. GHD employed a holistic approach to both phases of this master plan, utilizing InfoWorks Integrated Catchment Modeling (ICM) software in conjunction with GIS-centric asset prioritization software that seamlessly integrated with Napa San's CMMS to deliver a comprehensive solution. A comprehensive evaluation of the sewer collection system identified near-term risks, mitigation strategies, and Capacity needs, and supports a program that identifies sustainable funding needs for a long-term planning horizon. Flow Monitoring and I&I Mitigation Services V&A has been conducting yearly, ongoing flow monitoring and I&I investigation services within Napa San since 2005. In 2019, flow and rainfall monitoring were performed over a period of approximately one month at 23 open channel flow monitoring sites and two rain gauge locations. Sanitary sewer flows were measured at the flow monitoring sites, available sewer Capacity estimated, and analyses pertaining to I&I occurring in the basins upstream from the flow monitoring sites conducted. V&A also performed additional night-time I&I reconnaissance, investigating the collection system for sources of infiltration, finding several "hot spot" high contributing micro-basins. The data supported the detailed calibration of the all-pipes dynamic hydraulic model completed by GHD as part of the 2018- 2020 master planning effort. Project is on-going and has been extended to include additional effort at the client's request. An amendment for extra funds is being submitted.

## Fort Myers Master Plan & Development of Risk Based Decision Support System (DREAMS), City of Fort Myers, Fort Myers, FL

**Project Owner (name and address):** City of Fort Myers, Public Utilities, 2200 Second Street | Fort Myers, FL 33901

**Reference:** Jason Sciandra, City Engineer, E: jsciandra@cityftmyers.com, T*: 239.321.7467

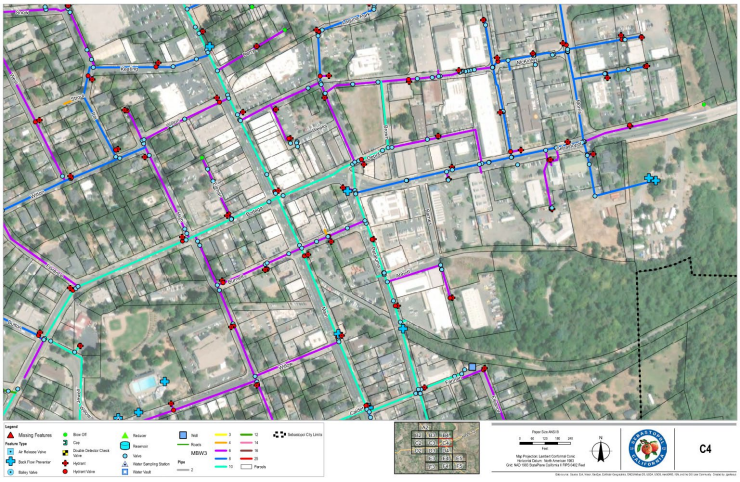
**Start and End Date:** 2023-2025

**Overall cost:** Projected: $695k Completed: $500k (Phase 1)

**Key Team Members:** Pradeep Nagarajan

GHD supported the City of Fort Myers in developing a comprehensive Utility Master Plan and dynamic risk-based modeling framework to address challenges related to growth, aging infrastructure, ecosystem health, and climate change. Our team created the Plan's risk assessment framework, integrated hydraulic and population growth data, and prioritized capital projects across a 20-year horizon. Following the Plan, GHD developed the DREAMS interactive dashboard to provide near real-time updates to the sewer system risk model and later expanded the platform to include the potable water system. This web-based tool allows Fort Myers to visualize projects spatially, evaluate asset risk, and prioritize CIP investments using defensible, data-driven methods that support long-term planning and funding efforts.

## **Water and Sewer GIS** | City of Sebastopol, CA



**Client:** Dante Del Prete, Former Public Works Superintendent (retired) 707.753.1838, Dantedp@att.net

**Start and End Date:** 2020-2021

**Key Team Members:** Matt Kennedy, Zach Porteous, Ann Bechtel

GHD was competitively retained by the City of Sebastopol to a develop comprehensive City-wide GIS of the water and sewer systems. The GIS was developed from the City's legacy water and sewer paper maps, AutoCAD maps, and the water and sewer hydraulic models. Much of the piping system attributes were obtained from the hydraulic models, including size, materials, elevations, and other system details. Other information, including age and more recent system improvements were obtained from the City's AutoCAD mapping, and from development projects that have been implemented since the City's 2005. Following completion of the base GIS, GHD's spatial analyst spent about 2 weeks in the field with Sebastopol staff using a GPS unit to verify the horizontal and vertical locations of the City's various water and sewer assets, like manholes, water valves, and fire hydrants. City staff assisted by measuring the depths of about 10% of the City's sewer manholes to confirm the depths obtained from the City's hydraulic model and mapping were sufficiently accurate. The GIS was coordinated with the City's Cartegraph computer maintenance management system (CMMS), and GHD coordinated with the City of Santa Rosa to host the GIS online so it can be more easily accessible to City staff. GHD also prepared updated water and sewer map books that can be used by staff in the field and have supported updates to the GIS as water and sewer capital projects are completed. The GIS is a valuable tool that the City

# 3. Project Understanding

The City owns and operates the sewer collection system consisting of 30 miles of gravity sewers, 2.7 miles of force mains, and two pump stations. The City is a member agency of the Santa Rosa Subregional Wastewater System, responsible for the conveyance, treatment and disposal of all sewage discharged into the City's sewer system. **Figure 1** shows the City of Sebastopol, the study area.

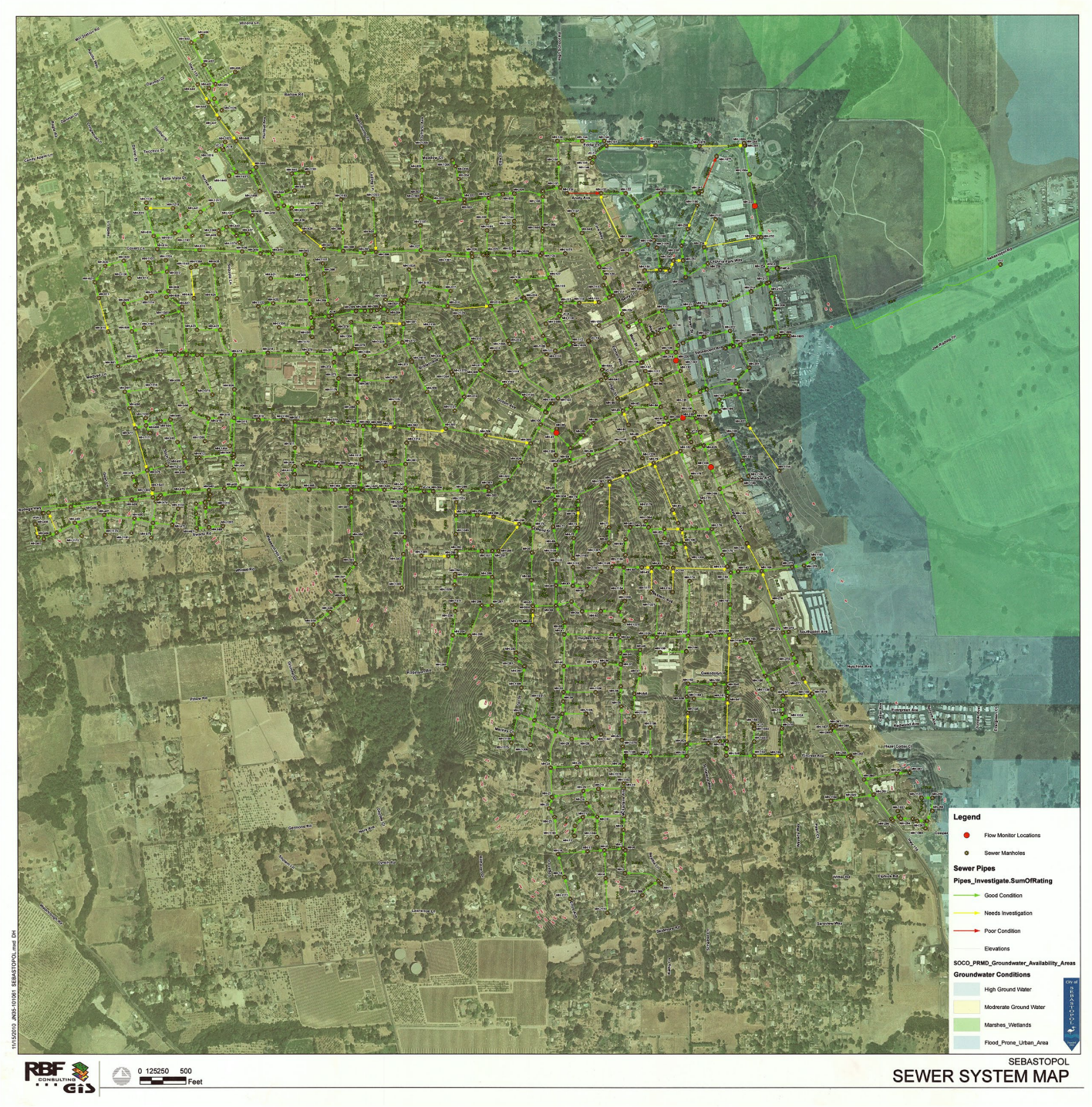
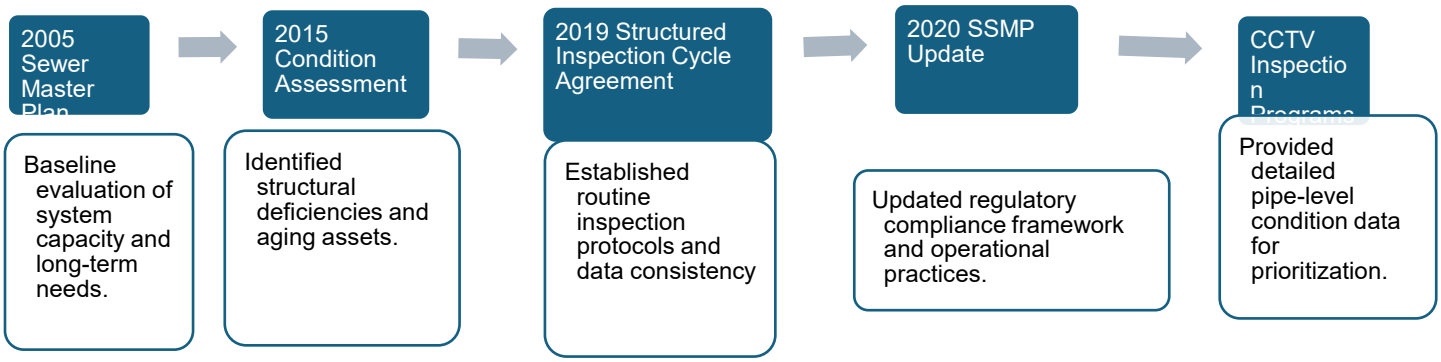



*Figure 1* *The City of Sebastopol, Project Location and Sewer System Map*

The City has recognized the need to update its 2005 Sewer System Master Plan to reflect current system conditions, incorporate recent inspection findings, and support long-term planning for a largely built-out community. Since the last comprehensive update, most sewer system improvements have focused on addressing localized deficiencies, replacing aging and deteriorated pipelines, and supporting limited infill development within the City limits. With little remaining development potential, the emphasis of this update shifts toward ensuring the reliability, resilience, and regulatory compliance of an aging wastewater collection system. Previous studies provide a strong foundation for understanding system performance, identifying

structural deficiencies, and prioritizing rehabilitation needs. These efforts have identified several key challenges, outlined below, and we will work toward addressing each of them throughout this project.

**Previous Studies Informing System Understanding and Key challenges:**




**Key System Challenges Identified:**

| | |
|---|---|
| **Aging Pipelines** | Many assets have exceeded their useful life and show structural deterioration. |
| **FROG Blockages** | Recurring fats, roots, oils, and grease accumulation restricts flow and increases maintenance. |
| **Sanitary Sewer Overflows** | Blockages and structural issues contribute to environmentally significant overflow events. |
| **Evolving Regulatory Requirements** | New mandates require enhanced water-quality monitoring for spill events over 50,000 gallons |

Building on this foundation, the updated Sewer Master Plan will consolidate past findings into a unified, modern planning document that evaluates existing system Capacity, identifies hydraulic constraints, and integrates recent inspection data to support a risk-based approach to asset management. The plan will focus on confirming hydraulic adequacy under existing and future conditions, identifying areas where Capacity improvements may be needed, and developing a prioritized 5- and 10-year Capital Improvement Program that targets the most critical rehabilitation and replacement projects. Leveraging the City's GIS data and recent inspection records will enable a focused and efficient evaluation of aging infrastructure, ensuring that recommended improvements address the highest-risk assets and support long-term system reliability. The updated plan will also strengthen preventive maintenance strategies, enhance public outreach related to FROG reduction, and ensure continued compliance with state and federal regulatory requirements, ultimately providing the City with a clear and actionable roadmap for managing its wastewater infrastructure into the future.

# 4. Approach and Methodology

GHD proposes to employ holistic approach to this masterplan, utilizing advanced GIS based modeling software in conjunction with GIS-based asset prioritization software to deliver a comprehensive solution. GHD will utilize and build up previous hydraulic model, any observed data, GIS Data, I/I analysis and condition assessments. GHD intends to use asset management framework principles to complete the SMP that will include operation and maintenance (O&M) and life-cycle costed capital rehabilitation and replacement to inform the upcoming rate study and produce deliverables that can support decision making and the City's use of the GIS system. In addition, the SMP will involve more complete and comprehensive data inputs to improve the hydraulic model to more accurately determine the most cost-effective balance of I/I reduction and large-scale Capacity/CIP projects. The City may decide to leverage I/I reduction projects to minimize capital expenditures for large Capacity projects. GHD believes that a highly accurately calibrated model is critical to achieving this task.

## 4.1 Project Management and Coordination

### 4.1.1 Internal Coordination and Administration

GHD will provide overall project management, team coordination and coordination with the City. We will manage the budget and develop and track a schedule that completes the project in a timeframe that is acceptable to the City and aligned with the City's budget. This task also includes monthly project reporting, project and contract oversight, QA/QC and senior technical advice over the duration of the project. GHD will provide effective project management throughout the project resulting in a high-quality update of the master plan on time and within budget.

### 4.1.2 Kick-off Meeting

The first step in our delivery process is to conduct a kick-off meeting with the City. This will be an opportunity to establish an agreed framework for the completion of the project and to discuss any key issues and explore areas of improvement that need to be included in the updated sewer master plan. This initial meeting will allow us to confirm our understanding of the scope of work and any specific system constraints as well as:

- Meet the project team.
- Request background studies, previous development plans not already included in the GIS, engineering reports, and discuss and agree with the proposed schedule.
- Develop an understanding of the specific site constraints and opportunities.

We will prepare an agenda for the meeting and distribute minutes following completion of the meeting.

Deliverables:

- Kick-off Meeting Agenda Action Items and Minutes (PDF)

### 4.1.3 Other Project Meetings

During the kick-off meeting we will establish a timeline for monthly progress meetings with the City. These are intended to keep the City informed of the team's progress in updating the master plan document and developing CIP projects. We envision these meetings will be a combination of virtual and in-person given our close proximity to the City's office and will last for 30 minutes each. Minutes with action items and key decisions will be distributed for each meeting. We anticipate (2) additional meetings or workshops before submitting the report: one during model calibration and another following the prioritization of the CIP. Following submittal of the draft updated Sewer Master Plan we propose a review meeting to receive comments from the City and discuss the document, analysis and CIP. This meeting is proposed for up to 2-hours.

We will prepare for and attend one (1) Planning Commission meeting, either virtually or in-person to present the updated Sewer Master Plan and answer questions from the commissioners.

We will prepare for and attend 3 in-person public meetings to present the updated Sewer Master Plan and answer questions from council members, including support of City staff in a resolution to adopt the updated sewer master plan.

Deliverables:

- Meeting Agenda and Minutes (PDF)
- Meeting Presentations and Handouts (PDF)

## 4.2 Data Collection and Review of Existing Documents

We anticipate little need to collect additional data for this project. Most of the data on the City's sewer system resides in the current sewer master plan and in the GIS we created for the City several years ago. The Sewer GIS development included field efforts to verify sewer system assets. This will help us to hit the ground running to develop the model without any time lapse. The City's General Plan will inform the future projects planned for the City that will impact sewer demands. In our role as contract City Engineer, we are aware of more recent development projects that may affect sewer capacities and we plan on using this knowledge in the process of updating the Sewer Master Plan.

## 4.3 Review of Existing Data

The successful creation and application of a hydraulic model entirely hinge on the data that forms its foundation. GHD suggests standardizing data management and using business intelligence tools for efficient data extraction, transformation, and loading into warehouses. Our approach will utilize City's data and application modules/framework as applicable to create a single warehouse with key sewer network datasets and consolidated information from various sources. This streamlined method, though complex, is crucial for effective asset management and ensures accurate, timely modeling, risk analysis, and reporting.

The project begins with a comprehensive review of all existing information related to the wastewater system, that includes but not limited to 2005 Sewer Master Plan, City's GIS Data, 2021 Sewer Main Inspection, 2020 Sanitary Sewer Management, Plan historical plans, population and development projections, intergovernmental agreements, regulatory requirements, and previous studies. The goal is to understand the current system, identify gaps, and establish a baseline for modeling and planning. GHD will collaborate closely with City staff to obtain missing information and confirm assumptions. This review also includes assessing existing regulations.

## 4.4 Data Validation and Gap analysis

Before modeling, all datasets undergo rigorous quality control. GHD performs: Accuracy checks, Completeness and consistency reviews, Identification of missing or invalid data, Cross-referencing with external sources, Automated validation using scripts and statistical tools, GHD team documents data gaps, such as unmapped assets, low-resolution GIS data, missing attributes, or outdated information. A structured data cleansing process ensures the final dataset is reliable, consistent, and suitable for hydraulic modeling and planning.

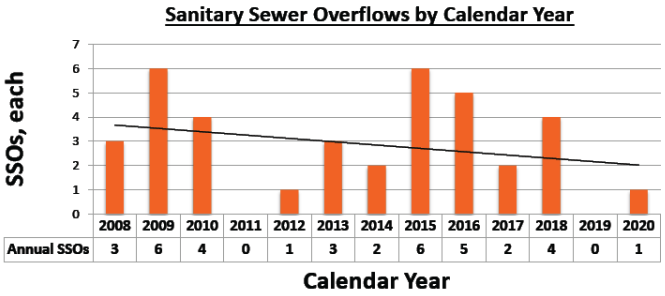
Deliverables:

- Consolidated GIS/ SQL Database.

## 4.5 Field Investigation and Flow Monitoring (Optional)

Field investigation and flow monitoring may be conducted, pending City approval of the associated cost, if the need for additional data is identified to address any identified data gaps.

## 4.6 Inflow/Infiltration (I&I) Reduction Program




The current status of the SSOs within the system has been presented in the City's Sewer System Management Plan (SSMP).

As part of the Sewer Master Plan, the impacts of inflow and infiltration (I&I) will be evaluated and prioritized at both the subcatchment and pipe level to identify the areas contributing most significantly to system stress and sanitary sewer overflows. GHD brings extensive experience developing and implementing I&I reduction programs for major agencies—including LACSD, Miami-Dade, and other large municipal clients—where we have integrated climate change projections, sea-level-rise considerations, and groundwater infiltration dynamics into hydraulic modeling and long-term planning. These same strategies will be incorporated into the City's model to develop a targeted, data-driven I&I reduction program aimed at mitigating excessive wet-weather flows and reducing SSOs across the system. Throughout this process, regulatory requirements and performance measures will be carefully considered to ensure that recommended actions support compliance, improve system reliability, and align with Statewide WDR expectations.

Deliverables: Overall, I & I program standardized, that will be presented in a workshop

## 4.7 Address & Discuss Regulatory Requirements

GHD reviews all applicable federal, territorial, and local regulations that influence wastewater collection, treatment, and planning. This review encompasses environmental compliance obligations, sanitary sewer overflow (SSO) prevention requirements, climate resilience mandates, and reporting responsibilities. These regulatory considerations are incorporated directly into the modeling process, the I&I reduction strategy, and the development of the Capital Improvement Projects.

## 4.8 Hydraulic Modeling Development and Validation

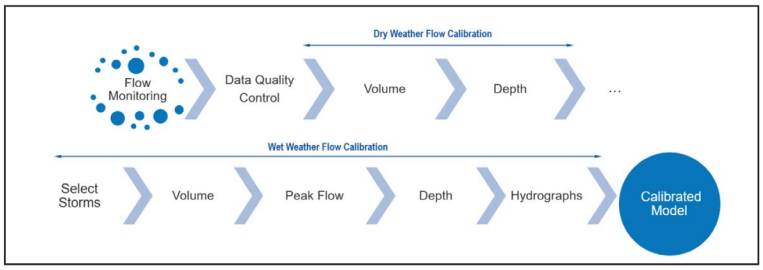
GHD will use the City's existing sewer model, which was originally in SWR format and later converted by GHD to SewerGems. Our intent is not to create a new model or make major revisions to the existing model, which was already calibrated during the 2005 effort. We propose updating the model based on the latest GIS data to reflect existing conditions, and to replace the flow projections in the model with new flow projections based on our review of the population and method adopted from previous master plan as listed below:

- A peaking factor of 3.1 will again be used for dry-weather sewer flows
- Peak hour dry weather flows for large water users using a ratio of water to Sewer use applied to the nearest upstream node.
- Peak hour dry weather flows for other commercial and industrial units were distributed by square footage and applied to the nearest upstream node.
- Peak hour dry weather flows for other residential units was applied to the nearest upstream node.

The model will be updated by importing the relevant GIS components (gravity mains, force mains, pumps and manholes with their features such as elevations, settings, etc.) into the hydraulic model. Our effort is based on our understanding that the sewer GIS accurately represents the existing sewer system. GHD will update the model with the new infrastructure to a level that is considered appropriate by GHD to effectively conduct this master planning study. Before calibration, the model undergoes validation to ensure accuracy. This process includes checking pipe slopes, diameters, and elevations, confirming pump station logic, verifying boundary conditions, and ensuring overall network continuity.

## 4.9 Dry and Wet Weather Model Calibration

The calibration will follow a set of industry standards and our tried-and-true strategy we have employed for similar endeavors. Figure 4.3.1 provides an illustration of the described process.




## 4.10 Dry Weather Model Calibration

The GHD team will begin the calibration process by developing dry weather flow conditions (i.e., "base flow" conditions). Dry weather flow is predominantly comprised of base wastewater flow (BWF), and groundwater infiltration (GWI). Dry weather calibration focuses on matching base wastewater flow and groundwater infiltration based on the availability of data at critical locations such as plants or the pump station. Calibration criteria include:

- Modeled flow within ±10% of measured flow
- Hydrograph timing within one hour

## 4.11 Wet Weather Model Calibration

The model will be calibrated for the selected storm events (Discrete Storms or Continuous Simulations) upon discussion with the city. The storms will be incorporated as a rain on mesh or converted to inflow hydrographs and calibrated to the following industry standards:

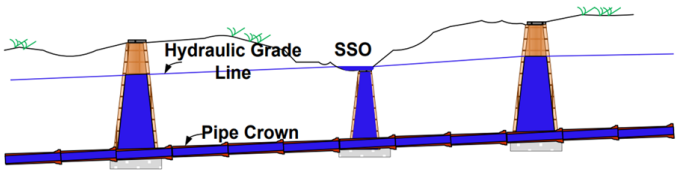
- Visual comparison of the simulated versus observed flow/ data
- Total modeled flow volume within -10% to +20% of metered value per storm.
- Modeled peak flow within -15% to +25% of metered value per storm.

## 4.12 Hydraulic Capacity Analysis

### 4.12.1.1 Perform Capacity Analysis and Improvements

***System Deficiencies/Level of Service:*** Evaluating wastewater system's performance needs clearly defined level of service (LOS) goals and criteria. LOS offers measurable metrics to identify system deficiencies and should align with capacity and condition/aging infrastructure. They also aid stakeholders and decision-makers in assessing benefits versus improvement costs, guiding project development within budget and time constraints through analytical methods. GHD Team will develop target level of service criteria and will collaborate with City and stakeholders to get their approval before proposing improvements

***Hydraulic System Performance Evaluation:*** The depth or elevation to which water rises in the sewer system (the Hydraulic Grade Line [HGL]) was the primary model output to evaluate system performance and simulation acceptance. As shown in Figure below, if the HGL at peak flow was over the pipe crown, the pipe is considered surcharged or if above the manhole rim could result in an SSO.




For 1D network, hydraulic performance will be evaluated by identifying flooded manholes and bottleneck pipes. Bottleneck pipes are pipe sections where existing pipe capacity is lower than that of existing flow entering the pipe. One other common hydraulic criterion that is important to be considered is the Velocity requirements. The required minimum velocity during the daily peak hour flow should exceed 2 fps to avoid sedimentation. The maximum velocity under peak flow conditions should ideally not exceed 10 fps.

***Future Flow Projections:*** GHD will project future design flow conditions based on 5 year and 10 year population, development/re-development and growth information provided by the City and other stakeholders. Per capita wastewater generation rate and peaking factor will be based on the ones already used in the existing conditions model.

***Sewer System Capacity Evaluation (Capital Improvements):*** Once the LOS has been established, GHD will begin performing capacity assessment as part of the overall study process. The capacity assessment performed will be determined in terms of available dry and wet weather flow capacity in the existing gravity sewers, forcemains, and pump stations. GHD will utilize the calibrated model to analyze the impact of increased flows on the system and use this information to inform potential alternatives for system improvements. Separate model scenarios will be developed that incorporate existing conditions, existing conditions using projected flows, and selected alternatives with projected flows.

These flow conditions will be modeled to identify system deficiencies and recommend improvements to achieve LOS. Alternatives will be analyzed to satisfy the following over the entire planning horizon (5 year and 10-year CIP):

- Excessive dry/wet weather flow
- Bottlenecks due to pipe diameter reductions downstream
- Limited capacity of pump stations
- Reverse grade or flat sections of sewer main
- Operational and maintenance issues of the gravity sewers, forcemains, and pump stations

## 4.13 5-Year and 10-Year Sewer System Capital Improvements and Risk Analysis

### 4.13.1 Proposed improvement and Risk analysis

Upon completion of the initial existing conditions model and review with the City, we will move forward with developing alternatives to address deficient infrastructure and future flow conditions for the 5- and 10-year horizons.

Solutions to address any deficiencies identified may include upsizing of sewer lines to improve hydraulic capacity or replacing pipelines beyond their useful service life, replacing pumps and improving pump stations and forcemain modifications and mitigating I & I and any ground water infiltration impacts.

System maps displaying constraints and proposed upgrades will be included as part of the infrastructure upgrade and implementation plan, which will identify and summarize required system upgrades in 5- or 10-year time frames. The plan will detail future model upgrades and enhancements. The draft version of the plan will be provided to the City for review, comment, and approval before it is finalized.

GHD will perform risk analysis on the city's assets by evaluating the likelihood and consequence of failure, that incorporates asset attributes such as age, material, 2021 condition assessment results, and consider regulatory drivers. Based on this evaluation, projects are grouped into different risk categories to help in the prioritization of the CIP.

GHD will also prepare a planning level cost estimate for each CIP project. Project costs will include engineering, construction, services during construction and inspection, and City management. Appropriate contingencies will be included.

### 4.13.2 Prioritize CIP (Risk, Capacity, Cost)

The recommended CIP projects will be prioritized based on risks factors such as age of infrastructure, hydraulic capacity, system redundancy, and the overall cost/ benefit to the long-term performance and resiliency of the sewer system. We will propose and prioritize these projects that align with the City's and stakeholders' objectives for reliable, efficient, and resilient service, while also considering financial feasibility and delivering the greatest value to the community.

– If needed, supplemental monitoring or investigations may be conducted upon City approval to address any identified data gaps. Prioritized CIP Projects for existing and future conditions (5 year and 10 year) (PDF)

## 4.14 Sewer Master Plan Report and Presentation

GHD will base the updated master plan report on the 2005 Sewer Master Plan Report and will update it to reflect the current state of the system, improvements completed since 2005, updates to the model and GIS, and the inclusion of proposed CIP projects with cost estimates. This includes preparing the Draft and Final Sebastopol Sewer System Master Plan, which incorporates the Capital Improvement Plan and the Replacement and Rehabilitation Plan. These documents synthesize all methodologies, analyses, and results developed throughout the project. The draft report compiles the full body of work, including the data review, field investigations, model development and calibration, capacity analysis, I&I strategy, CIP recommendations, and regulatory considerations. All technical memoranda produced under previous tasks serve as the foundation for the master plan.

### 4.14.1 Finalize Sewer Master Plan Report

Following review by the City, stakeholders, and regulatory agencies, GHD incorporates all comments and finalizes the Sewer Master Plan, ensuring that the document reflects consensus, regulatory expectations, and the long-term needs of the wastewater system.

Deliverables:

– Final Sewer System Master Plan Report (PDF)

## 4.15 Final Presentation to Stakeholders on CIP

A final presentation summarizes the recommended CIP, modeling results, and long-term strategy for system improvements. This presentation supports decision-making and funding efforts.

# 5. Fee Estimate

A schedule of hourly rates is provided below. Please note that GHD is discounting our standard rates by 25% as presented below:

| GHD Level | BST10 Code | GHD Name | FY 2026 Std Rate Discounted 25% Rate |
|---|---|---|---|
| A | A001 | Senior Technical Director 1 | $345.00 |
| A | A002 | Senior Technical Director 2 | $322.50 |
| A | A003 | Senior Technical Director 3 | $300.00 |
| A | A004 | Technical Director 1 | $288.75 |
| A | A005 | Technical Director 2 | $273.75 |
| A | A006 | Senior Professional 1 | $255.00 |
| A | A007 | Senior Professional 2 | $236.25 |
| A | A008 | Professional 1 | $228.75 |
| A | A009 | Professional 2 | $198.75 |
| A | A010 | Professional 3 | $183.75 |
| A | A011 | Vacationer / Intern | $172.50 |
| D | D001 | Project Support Manager 1 | $326.25 |
| D | D002 | Project Support Manager 2 | $300.00 |
| D | D003 | Senior Project Support 1 | $277.50 |
| D | D004 | Senior Project Support 2 | $240.00 |
| D | D005 | Project Support 1 | $228.75 |
| D | D006 | Project Support 2 | $213.75 |
| D | D007 | Project Support 3 | $198.75 |
| D | D008 | Project Support 4 | $180.00 |
| D | D009 | Project Support 5 | $157.50 |
| D | D010 | Project Support 6 | $120.00 |

Travel time from the consultant's point of origin to the designated work location will be charged at standard hourly rates.

Rental vehicles required for project-related travel will be reimbursed at the cost incurred. Standard rental options should be selected unless prior written approval is obtained for premium or specialty vehicle.

No markup will be charged for reimbursable expenses.

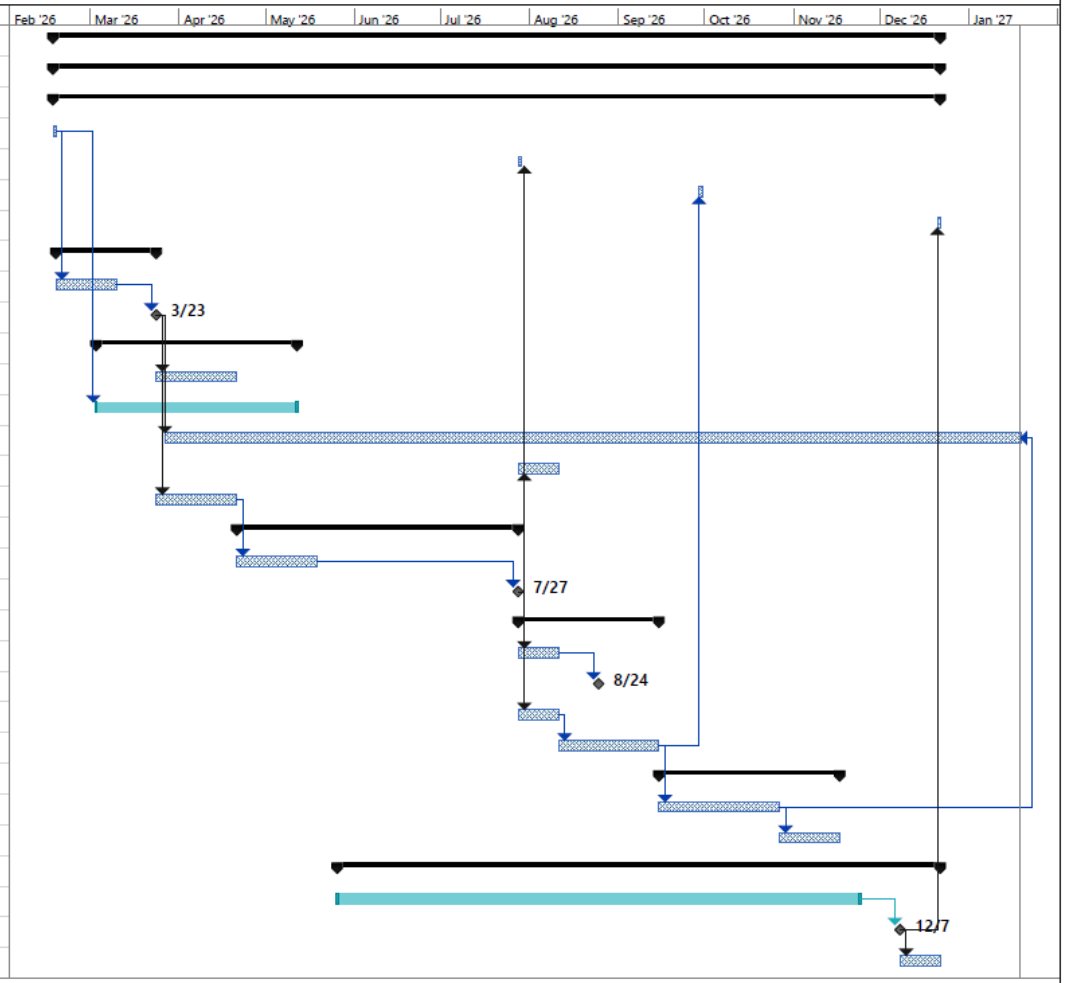
GHD acknowledges that **lodging expenses, meals, airfare, and other travel-related costs will not be charged to the Client**. The only reimbursable travel-related cost will be **vehicle mileage**, which will be invoiced at the standard rate agreed upon in the contract. All other incidental or personal expenses are strictly excluded from billing

# 6. Implementation Schedule

GHD is estimating around 10 months to complete the proposed scope of work.

**Sebastopol Sewer Master Plan Report Update**
**Project Schedule**

| ID | Task Name | Start | Finish |
|---|---|---|---|
| 1 | **Project Management** | Mon 2/16/26 | Mon 12/21/26 |
| 2 | **Internal Coordination and Administration** | Mon 2/16/26 | Mon 12/21/26 |
| 3 | **Project Meetings and Coordination** | Mon 2/16/26 | Mon 12/21/26 |
| 4 | Kick Off meeting | Mon 2/16/26 | Mon 2/16/26 |
| 5 | Public Meeting 1 | Tue 7/28/26 | Tue 7/28/26 |
| 6 | Public Meeting 2 | Tue 9/29/26 | Tue 9/29/26 |
| 7 | Public Meeting 3 | Mon 12/21/26 | Mon 12/21/26 |
| 8 | **Data Collection and Review** | Tue 2/17/26 | Mon 3/23/26 |
| 9 | Review of Existing Data | Tue 2/17/26 | Mon 3/9/26 |
| 10 | Data Validation and Gap Analysis | Tue 3/10/26 | Mon 3/23/26 |
| 11 | **Field Investigations and Flow Monitoring (Optional)** | Tue 3/3/26 | Mon 5/11/26 |
| 12 | Field Survey and Investigations | Tue 3/24/26 | Mon 4/20/26 |
| 13 | Flow Monitoring | Tue 3/3/26 | Mon 5/11/26 |
| 14 | **I&I Reduction Program** | Fri 3/27/26 | Mon 1/18/27 |
| 15 | **Discussion on Regulatory Requirements** | Tue 7/28/26 | Mon 8/10/26 |
| 16 | **Hydraulic Model Development and Validation** | Tue 3/24/26 | Mon 4/20/26 |
| 17 | **Dry and Wet Weather Model Calibration** | Tue 4/21/26 | Mon 7/27/26 |
| 18 | Dry Weather Model Calibration | Tue 4/21/26 | Mon 5/18/26 |
| 19 | Wet Weather Model Calibration | Tue 5/19/26 | Mon 7/27/26 |
| 20 | **Hydraulic Capacity Analysis** | Tue 7/28/26 | Mon 9/14/26 |
| 21 | System Deficiencies/LOS | Tue 7/28/26 | Mon 8/10/26 |
| 22 | Hydraulic System Performance Evaluation | Tue 8/11/26 | Mon 8/24/26 |
| 23 | Future Flow Projections | Tue 7/28/26 | Mon 8/10/26 |
| 24 | Sewer System Capacity Evaluation | Tue 8/11/26 | Mon 9/14/26 |
| 25 | **CIP Planning (5-Yr and 10-yr) & Risk Analysis** | Tue 9/15/26 | Mon 11/16/26 |
| 26 | Proposed Improvements & Risk Analysis | Tue 9/15/26 | Mon 10/26/26 |
| 27 | Prioritize CIP (Risk, Capacity and Cost | Tue 10/27/26 | Mon 11/16/26 |
| 28 | **Sewer Master Plan Report and Presentation** | Tue 5/26/26 | Mon 12/21/26 |
| 29 | Develop Draft Sewer Master Plan Report | Tue 5/26/26 | Mon 11/23/26 |
| 30 | Finalize Sewer Master Plan Report with comments addresse | Tue 11/24/26 | Mon 12/7/26 |
| 31 | Final Presentation to Stakeholders on CIP | Tue 12/8/26 | Mon 12/21/26 |

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Thu 1/15/26

We thank you for the opportunity to develop and submit this scope of work for the City of Sebastopol. Should you have any questions or require additional information, please do not hesitate to contact us. We look forward to collaborating with the City on this exciting opportunity

# Appendix A

## Resumes

A

# Ann Bechtel PE

## Proposed Role: Project Manager
## Location: San Diego, CA

### Qualifications/Accreditations

- BS, Environmental Engineering, San Diego State University, San Diego, CA, 2002
- BS, Ornamental Horticulture, University of Illinois, Champaign, IL, 1998
- Civil Engineer, CA #69329

### Relevant experience summary

Ann Bechtel has over 23 years of experience in program management leading large, complex programs for the California Department of Water Resources (DWR), Federal Emergency Management Agency (FEMA), municipalities and other government agencies. She is a professional engineer with surface water and stormwater management expertise. Her experience includes preparation of stormwater master plans, Hydrologic and Hydraulic (H&H) studies, floodplain studies, compliance with federal, state and regional regulatory requirements, policy development, plan checking, open channel design, detention basin design, alluvial fan delineation, levee risk analysis, building code development, and water quality planning and design projects.

#### *Safe and Affordable Funding for Equity and Resilience (SAFER) Direct Technical Assistance Provider*

Assist small water systems serving disadvantaged communities' infrastructure, management, and consolidation planning. Promote outcome to improve resiliency of water systems, minimize disproportionate environmental burdens on some communities, build/rebuild infrastructure, address water quality issues and consolidation of water systems. Currently, there are 26 water districts throughout the State of California that GHD is providing alternatives analysis and up to 90% plans for system improvement to bring drinking water in compliance with State regulatory requirements.

#### *2045 Strategy for Water, Wastewater, Sewer, and Stormwater*

Served as Project Director for the development of long-term water, wastewater, and stormwater system strategies for infrastructure rehabilitation, replacement, and development using an adaptive pathway planning approach.

#### *Commonwealth Utilities Corporation Energy and Utilities Infrastructure Master Plan*

Serving as project manager to provide a comprehensive analysis and strategic plan for the energy, water and wastewater infrastructure within the CNMI to support Department of Defense initiatives to improve resiliency and increase the level of utility service provided to all customers. GHD is performing a through analyses of utility infrastructure condition and capacity and other recommendation on how to efficient and effectively improve the water, wastewater and power systems to support the needs of the mission and enhance quality of life.

#### *Los Angeles County Sanitation Districts (LACSD) Systemwide Sewer Model Implementation Plan*

Provide oversight to the development and calibration the wastewater collection system hydraulic computer models for three major districts. The enhanced models are built to facilitate LACSD in meeting growing needs and optimizing their systems for capacity requirements. The tasks included developing a Modeling Manual of Accepted Practice and Standards, hydrologic and hydraulic modelling development, model calibration and validation for three districts. The project also requires collaboration of stakeholders.

#### *2020 San Diego Urban Water Management Plan*

Managed the development of a water demand forecast with a method developed to capture the major drivers and influencers of water use and includes coordination with the San Diego County Water Authority. The 2020 Urban Water Management Plan is a mandatory reporting and forecasting document that is submitted to the Department of Water Resources following all required guidelines of the State.

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# Matt Kennedy PE, TE, ENV SP

## Proposed Role: Project Director
## Location: Santa Rosa, CA

### Qualifications/Accreditations

- MS, Environmental Engineering, University of Massachusetts, Amherst, MA, 2003
- BS, Environmental Resources Engineering, Humboldt State University, Arcata, CA, 200
- Civil Engineer, CA #68304, OR #83450, NM #23032, HI #18171, GU #1337, CNMI #52
- Traffic Engineer, CA #2385
- Envision Sustainability Professional (ENV SP)

### Relevant experience summary

Matt Kennedy is a principal engineer with 20 years of experience in delivering a wide variety of civil infrastructure projects. Project types include water and recycled water, sewer, drainage, traffic/transportation, buildings, and sustainable site development. He is adept in the management and design of multi-discipline projects with medium to large teams and numerous stakeholders and including construction management. His experience includes a broad range of planning, modeling and analysis capabilities, including utility master planning, hydrologic and hydraulic modeling, water and wastewater process design, traffic and parking studies, and circulation studies. He is also experienced in land surveying and construction management.

***Well #7 Water Treatment System***

Responsible for this well treatment system project for the City of Sebastopol. With the recent revision in the Maximum Contaminant Level (MCL) for arsenic, the City of Sebastopol is required by the State Division of Drinking Water to implement a water treatment system at their existing Well #7, which exceeds the MCL of 10 µg/L. The well is located inside a chlorination and control building on a very small site on which the City maintains an easement. The well typically pumps at a rate of 700-800 gpm using a 100 hp turbine pump. The project included a feasibility study and pilot test with Rapid Small Scale Column Testing using two different types of granular media to identify the most cost-effective adsorption treatment system to address the naturally occurring arsenic concentrations. The testing was conducted at UC Davis. The outcome of the pilot testing determined that Granulated Ferric Oxide provides the greatest treatment capacity. A geotechnical investigation was also completed for new structures.

***Well #6 Water Treatment System***

Responsible for this well treatment system project for the City of Sebastopol. With the recent revision in the MCL for arsenic, the City of Sebastopol is required by the State Division of Drinking Water to implement a water treatment system at their existing Well #6, which exceeds the MCL of 10 µg/L. The well is located inside a chlorination and control building on a relatively small site owned by the City. The well typically pumps at a rate of 1,000 gpm using a 125 hp turbine pump. The project included a feasibility study and on-site pilot test to confirm the effectiveness of the iron co-precipitation process and operational requirements needed to obtain a high efficiency of arsenic removal and evaluate for cost-effective management of waste material.

***City of Fortuna Water System Master Plan***

GHD prepared the current Water System Master Plan for the City of Fortuna in Humboldt County, CA in 2005. For this project, a WaterCAD hydraulic model of the City's entire water system was developed, calibrated, and validated. The system includes five tanks and reservoirs, seven booster pump stations and a well field in eight separate pressure zones. Improvements included construction of new and parallel mains, and installation and replacement of storage facilities.

***Baza Gardens Wastewater Facilities Plan***

Served as Project Engineer for the development of a comprehensive Facilities Plan for a wastewater treatment facility in Guam. The Facilities Plan addresses permitting and regulatory compliance, existing collection system condition and recommended improvements, future wastewater flows including I/I, alternatives for the upgrade or replacement of the existing treatment facility, disposal and reuse options, and project funding and financing. This Facilities Plan was completed in February 2008.

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# Chris Brothers PE

## Proposed Role: QA/QC
## Location: Santa Rosa, CA

### Qualifications/Accreditations

- MS, Civil and Environmental Engineering, Ohio University, Athens, OH, 2001
- Civil Engineer, CA #68725

### Relevant experience summary

Chris Brothers is a technical director at GHD and has 22 years of experience in collection systems master planning and modeling, Geographic Information System (GIS) mapping, database design and analysis, sewer/water/storm asset management, flow monitoring and Inflow and Infiltration (I&I) planning, water distribution system modeling, and environmental site characterization.

***Los Angeles County Sanitation District (LACSD) District's 1 & 2 Model Development and Calibration***

On the heels of a successful Pilot Model delivery for District 8, GHD was contracted to develop full scale hydraulic models for LACSD's District's 1 and 2. Efforts include the analysis of 173 flow monitoring locations in District 2 and 123 flow monitoring locations in District 1, real-time controls for pump operations, hydraulic model analysis, and development of the methodologies for dry- and wet-weather loads and calibration.

***City of Huntington Beach Sewer Master Plan Update***

Served as Lead Hydraulic Modeler and managed a collaborative effort in the build, validation, and calibration of an all-pipes dynamic model for the City using Innovyze's InfoWorks ICM 2023 software. Along with team, calibrated the all-pipes model using 24 temporary flow meters for dry and wet weather flow conditions. Other major ***e***lements of the project include integrating the City model with the Orange County Sanitation District model to create one cohesive and integrated model for more accurate assessment of hydraulic capacity; visual assessment of the 29 sewer lift stations.

***Long Beach Water Department (LBWD)Sanitary Sewer Master Plan Update***

Served as Lead Hydraulic Modeler in expanding the 2013 hydraulic model in Innovyze's InfoSWMM software to include all sewer mains tributary to targeted near-term development areas. Led the effort in calibrating the expanded InfoSWMM model using 60 temporary flow meters for dry weather flow conditions. Other major ***e***lements of the project include visual assessment of the 33 sewer lift stations, evaluation of the system using updated calibrated flows, and software training for staff.

***Sewer System Model, Master Plan, and Capital Improvement Program (CIP) Update, Fortuna***

Served as Technical Lead and managed a collaborative effort in the build, validation, and calibration of an all-pipes dynamic model using Innovyze's InfoWorks ICM 2023 software. Along with the team, is leveraging the model output with targeted condition assessment field data inside the decision support system, InfoAsset Planner, which is being used to validate and formulate solutions that identify and prioritize CIP projects that minimize impact, such as sanitary sewer overflows, I&I, and address future capacity needs.

***City of Berkeley Sanitary Sewer Master Plan***

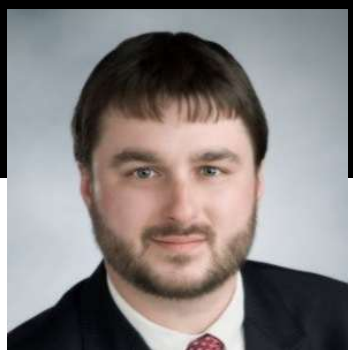
Served as Project Manager and Technical Lead in proposing, building, and delivering an all-pipes (7,500+ pipes) dynamic hydraulic model using Innovyze's InfoWorks ICM 9.5 software. The project team leveraged 100+ East Bay Municipal Utility District (EBMUD) flow meters in determining Real-Time Kinematic (RTK) parameters for the wet weather calibration effort. This allowed a very detailed depiction of I&I source and response within the system.

***Napa Sanitation District (NapaSan) Collection System Master Plan***

Phase 2 builds on Phase 1 work, extending the skeletonized model out to cover all 6,000+ pipes in NapaSan's network. Technical Lead in proposing, building, and delivering in the all-pipes dynamic hydraulic model using Innovyze's ICM 9.5 software. The model provided a detailed look at the entire integrated system and yielded new insight into how the proposed Browns Valley Trunk and West Napa Pump Station upgrade affects the 66-inch Trunk Sewer, as well as the system upstream of the North Napa Siphon.

# Adam Fisher PE

## Proposed Role: Technical Lead, Modelling
## Location: Santa Rosa, CA



### Qualifications/Accreditations

– BS, Civil Engineering, Pennsylvania State University, Centre County, PA, 1993
– Civil Engineer, CA #72482

### Relevant experience summary

Adam Fisher is a professional civil engineer and has 25 years of experience in collection system master planning and modeling, Geographic Information System (GIS) mapping, database design and analysis, flow monitoring and Inflow and Infiltration (I&I) planning, storm water modeling, and water distribution system modeling.

***Los Angeles County Sanitation District (LACSD) Districts 1 and 2 Models***

LACSD consists of 24 independent districts that work cooperatively with one administrative staff. Responsible for constructing Innovyze's InfoWorks ICM 2024 software models for Districts 1 and 2 that will be combined with the recently complete District 8 model. Districts 1 and 2 serve 1.25 million people, cover 77,600 acres and includes 316 miles of sewer, one pumping plants, 213 flow control devices and one wastewater facility.

***City of Huntington Beach Sewer Master Plan Update***

GHD prepared a sewer master plan update for the City. Efforts included analysis of 24 flow monitoring locations to provide comprehensive understanding of collection system flows; hydraulic model analysis; prioritization of Capital Improvement Program (CIP) and Operations and Maintenance (O&M) needs. Modeler for the build, validation, and dry-weather calibration of an all-pipes dynamic model using Innovyze's InfoWorks ICM 2023 software.

***Berkeley Sanitary Sewer Master Plan***

GHD prepared a sewer master plan for the City. Efforts include analysis of flow monitoring and level sensing to provide comprehensive understanding of collection system flows; hydraulic model analysis; development of a risk framework; and asset prioritization using Innovyze InfoAsset Planner to determine risk and prioritization of CIP and O&M needs. Led the geo-spatial development and processing of critical planning data and documentation to establish system-wide flows for the 2020, 2025, and 2040 planning horizons. Organized by city defined user class, translated water billing record data into parcel based diurnal loads over 27,000 parcels, aggregated by critical city user classes. Future scenarios were developed at parcel level based on city input and a variety of planning documents and sources.

***Napa Sanitation Collection System Master Plan***

GHD built an all-pipes dynamic model for the collection system master plan. Led the development and geo-processing of critical planning data and documentation to establish system-wide flows for the existing and future planning horizons. Developed unit flows for the future scenario based on water billing records, flow monitoring and existing land use. The future scenario was developed at parcel level based on city input and a variety of planning documents and sources, including the City of Napa's Existing Conditions Report, the Napa County General Plan, the Downtown Specific Plan, the NapaSan Civic Center Sewer Evaluation, and the American Canyon Sewer Master Plan.

***City of Santa Rosa Sewer System Master Plan***

Prepared a comprehensive update of the City's Sewer System Master Plan. The work included performing statistical analysis on both City water billing data and collection system meter data to arrive at base flows, distribution of flows an Infiltration and Inflow (I&I) and peaking factors. Built GIS based sewer model that integrates data on land use, base flow, I&I, peaking, pipeline size and condition and modeled various Base Condition and various build-out scenarios in order to predict system performance. Developing a listing of system deficiencies and estimating the costs for correction. Worked with City staff to prioritize the list of deficiencies into a long-term CIP with a focus on risk of failure. Provided on-call support to the City and various development interests.

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# Pradeep Nagarajan PE, CFM

## Proposed Role: CIP/Master Planning Lead
## Location: Atlanta, GA

**Qualifications/Accreditations**

– MS, Environmental Engineering, Florida International University, Miami, FL, 2000
– BS, Chemical Engineering, Florida International University, Miami, FL, 1998

**Relevant Experience Summary**

Pradeep's expertise encompasses water resources, stormwater management, master planning, system modelling, and infrastructure design. His extensive background includes utility planning, modelling of water distribution and wastewater collection systems, hydrology, hydraulics, flood risk analysis, and preparation of master plans.

***Los Angeles County Sanitation District (LACSD) Districts System Wide Sewer Model Development and Calibration***

Advisor responsible for overseeing the development, calibration, and validation of 24 Districts within LA County. This project is the result of the implementation plan that included a roadmap to calibrate models for all Districts and make informed decisions. The impetus of this effort was the result of the Sanitary Sewer Overflow (SSO) in the City of Carson that began on December 30, 2021.

***Development of User-Friendly Web-based Interface for Dynamic Risk Modelling/Capital Planning***

Serving as Project Manager overseeing the design and development of user-friendly web interface to implement and update the dynamic risk modelling, and prioritization of capital improvement projects, making it possible for end-users to make informed decisions. Guided the team in the development of both frontend and backend components of the platform, ensuring seamless data flow and integrated features for interactive user experience.

***City of Berkeley Sanitary Sewer Master Plan***

Served as Technical Advisor responsible in overseeing in proposing, building, and delivering an all-pipes (7,500+ pipes) dynamic hydraulic model using Innovyze's InfoWorks ICM 9.5 software. The project team leveraged 100+ East Bay Municipal Utility District flow meters in determining hydrologic parameters for the wet weather calibration effort. This allowed a very detailed depiction of inflow and infiltration source and response within the system.

***City of Cape Coral, Utilities Comprehensive Master Plan Update***

Technical Advisor responsible for overseeing the entire master plan for the City that includes water, wastewater, and irrigation systems. A key objective of the Master Plan is to integrate the City's hydraulic models with the population projections from the Cape Coral Interactive Growth Model (CCIGM), so that the City can model the impact of changes in population and level of service standards on recommended capital improvements.

***Consent Decree Program Management/ Construction Management Consultant – Wastewater Collection and Transmission System - WCTS Hydraulic Modelling***

Served as Program Manager to assist WASD on the Consent Decree (CD) by providing engineering services for the development and calibration of the water distribution and wastewater collection system. Responsible for overseeing the update and calibration of WCTS county-wide wastewater hydraulic model using InfoWorks ICM.

***Hastings-Sunrise Integrated Sewer Drainage Modelling and Servicing Study***

Senior Advisor responsible for overseeing the development and calibration of 1D-2D InfoWorks model to address the challenges of potential flooding, aging infrastructure, and climate change impacts in the Hastings-Sunrise watershed. The watershed covers an area of about 5 square miles in the City of Vancouver. The sewer system in the area consists of both combined and separated sewers. The project will explore the potential of using blue-green systems, pressurized sewers, combined sewer separation, and green infrastructure to manage excess runoff and reduce flood risks.

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# Zach Porteous

## Proposed Role: GIS/Data Analyst
## Location: Seatle, WA

### Qualifications/Accreditations

- BS, Environmental Science and Management (Minor: Computer Science), Humboldt State University, Arcata, CA, 2020
- ArcGIS Desktop Associate 19-001 Certification
- ArcGIS Online Specialty 19-001 Certification
- ArcGIS API for JavaScript Specialty 19-001 Certification
- MIT xPRO Backend JavaScript Development
- Azure Administrator Associate AZ-104

### Relevant experience summary

Zach Porteous is an Environmental Systems Research Institute (ESRI)-certified, GIS professional with experience in network analysis, database modelling, and web programming. He has extensive experience with spatial software packages like the ArcGIS suite of software and QGIS, data collection methods with Global Navigation Satellite System (GNSS) receivers and automated analysis using the python programming language.

***California Department of Water Resources Sustainable Groundwater Management Act Analysis***

GHD was contracted to provide technical assistance to support California Department of Water Resources in developing standardized monitoring methods, as well as a publicly accessible interactive spatial mapping tool to track the effectiveness of the sustainable groundwater management implementation projects. GHD collected and analysed data to identify planned and funded implementation projects, developed a database and interactive mapping tool to interface with the database, and developed standardized monitoring methods to determine the effectiveness of different types of sustainable groundwater management projects. Responsible for making the spatial interactive tool in ArcGIS Online.

***California Department of Water Resources Sustainable Groundwater Management Act Analysis***

DWR needed assistance with the development and implementation of the Small Water Suppliers Water Conservation Program including providing technical assistance for planning and direct install of water conservation measures for small communities. The ultimate project objective was to identify and persuade small communities throughout California to adopt water conservation measures.

***Sebastopol Water and Wastewater Mapping***

The City of Sebastopol engaged GHD to digitize CAD drawings into GIS layers that could be used in their new asset management software, Cartegraph. Created a detailed GIS dataset of water and wastewater systems from CAD documents and PDF copies of as-built drawings; developed large format maps and map books for the City's use in the field and the office; used a RTK GPS unit to capture locations of features stored in the GIS; and integrated ESRI online infrastructure with the Cartegraph Asset Management System.

***Sebastopol Lead Service Line Study***

The City of Sebastopol consulted with GHD to provide an evaluation of the City's lead service lines. GHD used a combination of City provided and openly sourced GIS data to provide an initial high-level evaluation and prioritization of areas that could be used in a more comprehensive field sampling effort.

***Sebastopol Sewer Line Inspection Mapping***

The City of Sebastopol consulted with GHD to provide a schedule, and maps for planning regular CCTV evaluations of their sewer network.

***City of Rio Dell Wastewater Infrastructure Improvements***

Provided field mapping and on-site evaluations of manholes and the pipes within them to support the development of a system wide wastewater infrastructure dataset for the City of Rio Dell. Worked alongside city employees to survey their system and contributed to a growing operational inventory of GIS assets.

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# Tyler Mendonsa

## Proposed Role: Modelling Support Location: Long Beach

### Qualifications/Accreditations

– BS, Civil Engineering, University of California, Los Angeles, CA, 2023

### Relevant experience summary

Tyler Mendonsa is a graduate water resource engineer with experience in hydraulic modelling in both Info works ICM and HEC-RAS. Primarily modeling sewer networks, which involves the development of networks through validation from record drawings and includes analysis of modeled results. He also has experience with multiple projects from California's Safe and Affordable Funding for Equity and Resilience (SAFER) program, which seeks to assist disadvantaged communities with water quality and quantity deficiencies. Additionally, he has worked with communities through direct outreach during different phases of construction for projects.

#### *Los Angeles County Sanitation District (LACSD) District 8 Sewer Model*

**Staff Engineer**
**LACSD | Los Angeles, CA | 7/2023 - 3/2024**

Project involved creation and calibration of a sewer network for both periods of dry and wet weather. Responsible for the validation of the model through record drawings. Development of a flow schematic of the overall system that displays results from the model for different parameters such as depth and flow.

#### *LACSD Districts 1 and 2 Sewer Model*

**Staff Engineer**
**LACSD | Los Angeles, CA | 3/2024 - Present**

This project is a continuation of the District 8 model, as Districts 1 and 2 are both directly upstream of it. Responsible for organization and gathering data for the first stages of creation of the model. Development of a flow schematic showing flow through flow meters and diversion points.

#### *LACSD District 8 Alternatives Analysis*

**Staff Engineer**
**LACSD | Los Angeles, CA | 10/2024 - 2/2025**

Development of spreadsheet for reporting results of an alternatives analysis on District 8. Interactive graphs and data management that were key in reviewing the results from the sewer model.

#### *Huntington Beach Sewer Master Plan*

**Staff Engineer**
**City of Huntington Beach | Huntington Beach, CA | 11/2023 - 5/2024**

This project involves a full sewer model for the city of Huntington Beach. Responsible for the analysis and exporting of model results to ArcGIS to create figures for reports.

### Construction Management

#### *Small Water Supplier Conservation Program*

**Staff Engineer**
**Department of Water Resources | Los Angeles, CA | 6/2024 - 9/2024**

Community outreach and site visits for the installation of water efficient fixtures in residential households.

#### *South Main Street Corridor Improvements*

**Intern**
**City of Santa Ana | Santa Ana, CA | 6/2022 - 9/2022**

Responsible for community outreach to business owners affected by construction. The majority of communication with community members was in Spanish.

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# Sepideh Amir Ahmadian PENG

## Proposed Role: Project Engineer
## Location: Long Beach, CA

### Qualifications/Accreditations

– M.Sc., Civil Engineering, Azad University of Tehran, Tehran, Iran, 2010

### Relevant experience summary

Sepideh Amirahmadian is a dedicated Water Resource Engineer with over seven years of experience in diverse civil projects. Her expertise includes hydrology and hydraulic analyses, drainage infrastructure, planning and design of linear infrastructure, and construction document preparation. Proficient in HEC-RAS, HEC-HMS, and Civil 3D,

Water GESM, Sewer GEMS. Sepideh is known for her attention to detail, and strong ability to manage multiple projects efficiently.

***Commonwealth Utilities Corporation Energy & Utilities Infrastructure Master Plan, MP***

Developed a sanitary sewer hydraulic model for Saipan Island using InfoWorks ICM and ArcGIS Pro, integrating available GIS data, interpolating missing attributes from adjacent system information, and performing model validation and calibration using existing datasets.

***St. Ives and Morningside Trunk Sewer Rehabilitation***

Responsible for preparing drawings and documents for bypass design. The Program includes the Cured-In-Place-Pipe (CIPP) lining of Trunk Sewer by performing trenchless technology to rehabilitate existing pipes, prepared and obtained required permits and approvals, developed project materials, detailed design report and cost estimates. Also Provided contract administration, including change orders and payment certification, cost and schedule control and issuing change orders.

***Sanitary Siphon Replacement and Cleaning, Pickering, ON***

Project includes replacement of 150 m of a Sanitary Sewer siphon. Responsible for assisting with the technical design and preparation of tender documents and assisting with controlling and budgeting of the project.

***Forcemain Replacement, Baby Point, On***

Responsible for coordinating with municipalities and stakeholders to prepare documents and applications to acquire permits for TRCA, RNFP, Toronto Parks and MOE. Participated in design of a 300 mm PVC forcemain to twining the existing forcemain.

***Watermain Rehabilitation Program, Toronto, ON***

Responsible for preparing drawings and documents to acquire permits for municipal authorities for the delivery of CIPP watermain rehabilitation program that consists of structurally lining over 150 kms of existing ductile and cast iron watermains through multiple construction contracts from 2018-2021. Provided contract administration, including change orders and payment certification.

***Coordinated Toronto Water and Transportation Program***

Designer. Responsible for assisting with detailed design report and construction reports and preparing quantity take offs for the Coordinated Toronto Water and Transportation program. The Program included the delivery of over 250 water, sewer, and transportation projects, located throughout the GTA.

***Viva Bus Rapid Transit Expansion*, York Region***

Designer. Responsible for drafting utility relocation plan and profiles using Civil-3D. Preparing plan and profile drawings using Civil-3D Pipe Network for stormwater management.

***Khoda Afarin Irrigation Canal, Iran***

Designer, Coordinator. Performed hydraulic and hydrologic modelling and design of parts of 144 km canal (85 m3/sec capacity, 5.25 m bed width and 5.25 m height) and related structures including: Water surface regulating structures (AMIL, AVIS, AVIO gates), rectangular flume, culverts and couple of side channel spillways and related energy dissipaters. Developing hydrologic model of water supply systems, watershed delineation and floodplain mapping using DEM data by applying WMS and ARC GIS

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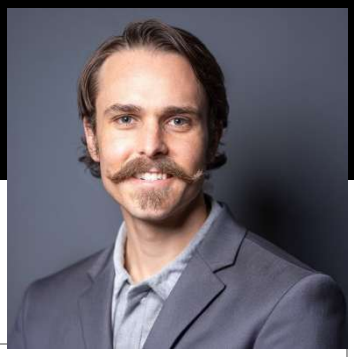
# Ashlan Finn EIT

## Proposed Role: Project Engineer
## Location: Phoenix, AZ



### Qualifications/Accreditations

– BS, Civil Engineering, University of California, Berkeley, CA, 2021

### Relevant experience summary

Ashlan Finn is a dedicated Water Resource Engineer with over three years of experience in diverse civil projects. His expertise includes hydrology and hydraulic analyses, drainage infrastructure, fish passage, low impact development design, and construction document preparation. Proficient in HEC-RAS, HEC-HMS, and Civil 3D, Ashlan is known for his quality of work, attention to detail, and clear communication of complex analyses.

***On-Site Stormwater Mitigation Performance Modelling***

Analyzed the effect of various configurations of onsite above-ground storage tanks on peak stormwater runoff from hypothetical site development scenarios in support of the Christchurch City Council update to stormwater guidelines in the Avon catchment. Developed a hydrologic model using HEC-HMS and performed an iterative analysis to determine the impacts of various mitigation strategies proposed by the client.

***Oak Shores Wastewater Treatment Facility Culvert Repair Project***

During the large storm events in January 2023, a culvert at the Oak Shores Wastewater Treatment Plant failed and resulted in significant erosion of a critical slope near a wastewater treatment pond. GHD performed an alternatives analysis and presented to the County. A preferred alternative was selected and will be designed to 100% design. Assisted with the design alternatives, including leading the design team, performing hydrology and hydraulic calculations, and overseeing plan development. The alternatives were modeled using StormCAD and HEC-RAS.

***Kern River Hydraulic Analysis***

Performed a hydraulic analysis using HEC-RAS to determine the flood impacts of proposed water intake structure improvements just upstream of Kernville Road bridge. Detailed topographic survey was incorporated into an Existing Conditions Model and the proposed obstructions were added. The results were summarized in a technical report.

***Atascadero State Hospital Wastewater Improvement Project***

The Atascadero State Hospital is designing a new wastewater conveyance system from the Atascadero State Hospital to the City of Atascadero's Wastewater Treatment Plant and decommissioning the existing wastewater treatment plant at Atascadero State Hospital. The improvements include a new screening facility, new pump station, and approximately 7,000 feet of new force main.

***Nacimiento Pipeline Repair Project***

Assisted with an alternatives analysis and design for a project to repair the Nacimiento Pipeline, which is one of three main sources of water to the City of San Luis Obispo. During the large storm events in January 2023, a section of the eastern bank of the Salinas River eroded, exposing, and washing away approximately 650 feet of the pipeline, rendering it no longer functional past this location and not able to deliver water to the City of San Luis Obispo. GHD developed an Alternatives Review to evaluate different alternatives for repairing the pipeline and is currently providing the design of the repair, which consists of approximately 4,700 feet of new 18" diameter pipe and horizontal directional drilling under the Salinas River.

***California Men's Colony Wastewater Treatment Plant Plastics Source Analysis***

Assisted as Water Resource Engineer on project to analyze potential sources of plastics in the California Men's Colony Wastewater Treatment Plant effluent into Chorro Creek in response to a Notice of Violation from the RWQCB. Tasks included interviewing representatives of facilities that contribute discharge to the wastewater treatment plant and wastewater treatment plant operators to identify potential sources of plastics in effluent and estimating the amount of plastics discharge. The findings of the analysis were then summarized in a Technical Memorandum.

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# Zane Cook

## Proposed Role: Modelling Support
## Location: Long beach

### Qualifications/Accreditations

– Environmental Resources Engineering, Cal Poly Humboldt, Arcata, CA, 2024

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### Relevant experience summary

As an early-career water resources engineer, Zane Cook has been developing his skills in hydraulic modelling, particularly using PCSWMM, while contributing to storm drain master plans and H&H studies. He has also applied his proficiency in Excel to tasks, such as water demand calculations and treatment system analyses, helping ensure accurate and reliable results. In addition to technical work, Zane has gained valuable experience assisting with writing memos and reports, allowing him to refine my communication and technical writing skills. He is eager to continue learning and growing as part of a team, contributing to meaningful projects that address water resource challenges.

### Hydraulic Modelling, Hydrology and Hydraulics (H&H) Studies, Storm Drain Master Plans, Technical Writing

#### *Crescent City Storm Drain Master Plans*

**Hydraulic Modelling**
**Crescent City | Crescent City, CA | 4/2024 - 9/2025**

Upgrades to the existing storm drain system to mitigate flooding that occurs during the rainy season. Assisted in developing a PCSWMM 2D model of Crescent City's storm drain system. The model was used to developing new routing alternatives to reduce the impacts of flooding within the city limits.

#### *Community Water Centre - Walnut Avenue*

**Water Demands**
**Community Water Centre | Greenfield, CA | 6/2024 - 7/2024**

Provided technical assistance effort to assist in providing long-term access to safe and affordable drinking water. Developed water demand calculations and spreadsheets for two separate groundwater well systems that provide drinking water to the community. These calculations aided in developing alternative designs and analysing the feasibility of connecting the region to the cities water distribution system.

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# Jesse Lopez

## Proposed Role: GIS Support
## Location: Eureka, CA

### Qualifications/Accreditations

- BS, Environmental Management and Protection (Minor: Geospatial Sciences), Humbold CA, 2016
- Advanced Geospatial Certificate, Humboldt State University, Arcata, CA, 2020
- ArcGIS Pro Associate 2101, Certification
- Presenter, Esri User Conference, 2023
- Remote Pilot Certificate (Part 107)

### Relevant experience summary

Jesse Lopez is a Location Intelligence analyst with six years of experience using GIS to support projects in a variety of industries. He enjoys empowering people with spatial data by providing tools and information to solve complex problems. His responsibilities include spatial data analysis, cartographic figure production, field data collection using high accuracy Global Positioning System (GPS) devices, data management, and user training. He has experience transforming data to be used in GIS, managing, and creating content in the ArcGIS Online environment, and telling stories with spatial data through a variety of platforms. Jesse has presented at conferences and webinars discussing projects where he shared environmental and socioeconomic data through Esri Web Experiences.

#### *Commonwealth Utilities Corporation (CUC) Energy & Utilities Infrastructure Master Plan*

The CUC Energy & Utilities Infrastructure Master Plan is a comprehensive initiative led by GHD to modernize and strategically plan the energy, water, and wastewater infrastructure for the CUC in the Northern Mariana Islands. The plan supports both civilian needs and defense-related initiatives under INDOPACOM's Pacific Deterrence Initiative, with a focus on resiliency, service reliability, and long-term sustainability.

#### *Program Management for Commonwealth Utilities Corporation SWIMS*

GHD is working on a multi phased project aimed at enhancing the water system management for the Commonwealth Utilities Corporation. Jesse led a field effort to develop a comprehensive GIS dataset of the water distribution system on the three populated islands in the Northern Mariana Islands. This project involved field verifying asset locations using high-accuracy Global Navigation Satellite System (GNSS) devices to develop a comprehensive GIS dataset. Continues to work with and train the GIS users in the client's organization to maintain the authoritative water distribution GIS dataset that was delivered to the CUC following his field efforts. Also assisting with GIS standards and governance document development.

#### *Fort Bragg Municipal Broadband Utility Project*

GHD provides professional engineering and consulting services to support the City of Fort Bragg in delivering a citywide underground fiber-to-the-premise broadband network. GIS integration within the project team has included field data workflows such as mobile photo scans, GNSS data collection, and Web-GIS data delivery.

#### *Eureka- First Slough Restoration, Eureka, CA*

GHD is supporting permitting efforts and design efforts for a slough restoration project. Jesse assisted in data collection efforts for a wetland delineation and impact analysis. High accuracy data collection methods were used to increase accuracy of data collection in a densely vegetated area. After delineating wetlands with the environmental team, used the proposed design surface for habitat conversion and impact analysis.

#### *Humboldt Bay Sea Level Rise Natural Shoreline Infrastructure, Eureka, CA*

GHD is working with Humboldt County to plan and demonstrate the use of natural ecological systems for sea level rise adaptation and resilience. Assisted with topographic and biological mapping and created a webapp that assisted the botanist in reviewing field data. Also created figures, showing historical, existing, and future scenarios that were used in a public report.

# Kristine Gaspar

## Proposed Role: Environmental Regulatory Support Location: Santa Rosa, CA

### Qualifications/Accreditations

- MPA, Public Administration, California State University, Sonoma, CA, 1995
- BA, Environmental Studies and Planning, California State University, Sonoma, CA, 1992

### Relevant experience summary

Kristine Gaspar's experience includes 30 years of environmental planning, CEQA compliance, resource agency permitting, data research and analysis, and grant writing. Kristine has been involved in environmental analysis on a wide variety of projects from private development to infrastructure projects, including residential, schools, recycled water, and park facilities.

***Central Coast Transfer Station Environmental Impact Report (EIR)***

Served as Quality Control Reviewer for this EIR for a new transfer station just east of Fort Bragg proposed to be constructed on forest lands adjacent to Highway 20. The facility would include an approximate five-acre footprint with a 30,000-square-foot enclosed facility, recycling, two scales and a scale house, a leachfield, a groundwater well, and stormwater detention basins.

***Mendocino Unified School District Water System Reconstruction***

Served as the NEPA and CEQA Project Manager for the review for this water system reconstruction project in unincorporated Mendocino County. The project includes demolition of existing District water storage tanks and construction of replacement tanks, new potable groundwater wells, construction of new water treatment facilities, and reconstruction of existing on-site utilities, access roads, and drainages.

***City of San Jose Department of Public Works, On-Call Environmental Services for Capital Improvement Program (CIP)***

GHD has an on-call environmental services contract with the City of San Jose Public Works to perform a variety of environmental tasks for City capital improvement projects. Serves as the point of contact and Project Manager. Has completed the Coyote Creek Non-Native Vegetation Mapping and construction support services associated with the Sanitary Sewer Crossing at Berryessa Creek projects and is currently assisting with Section 106 Compliance under Caltrans Funding for the San Jose Downtown Bike Project. The Projects are subject to the Santa Clara Valley Habitat Plan.

***North Trunk Sewer IS/MND and Permitting***

Served as Environmental Lead overseeing the IS/MND and CDFW Permitting. The project included abandonment of existing 50+-year-old sanitary sewer trunk pipelines along Paulin Creek and beneath Lomitas Avenue and Mendocino Avenue. GHD designed a new 15-inch diameter sanitary sewer trunk pipeline that was installed in a new alignment within City streets where it is accessible to City maintenance staff. Key environmental issues included three creek crossings, avoidance of trees, and cultural resources. The project was designed to minimize construction impacts to traffic, existing utilities, and the environment.

***Fulton Road Lift Station IS/MND***

This project relocation/construction of a new potable water pumpstation and decommissioning/demolition of an older facility. The Initial Study addressed environmental challenges related to biological and cultural resources and also covered the acquisition of the parcel for the replacement pump station.

***City of Santa Rosa Groundwater Master Plan IS/MND***

The City of Santa Rosa requested an MND be prepared for their Groundwater Master Plan. The purpose of the Master Plan is to manage groundwater resources in the City and develop 8.4 mgd of emergency groundwater capacity for drinking water. This capacity would require 10-20 new emergency wells, but the locations of the wells had not yet been identified. Therefore, the MND evaluated impacts that could occur from wells located anywhere within the City, given certain restrictions on locations near sensitive receptors/resources, such as scenic highways, residences, and streams. and endangered species, crossing federal facilities, land use, and submerged land leases.

**T** 707.236.1539 | **E** kristine.gaspar@ghd.com

# Yosef Yip

## Proposed Role: Stakeholder Engagement
## Location: Los Angeles, CA

### Qualifications/Accreditations

- MUP, Urban Design, City College of New York, 2011
- BES, Urban Planning, University of Waterloo, 2010

### Relevant experience summary

Yosef Yip has more than 15 years of experience in stakeholder and community engagement with a background in urban planning. His community building informs his ability to implement strategic outreach plans, foster trust through equity-focused partnerships with Community-Based Organization (CBO) and enhance public understanding of technical projects.

***Comprehensive Outreach and Education Plan***

As task lead, led the development and implementation of a comprehensive outreach and education plan to build public understanding and support for the County's innovative biosolids management program. Managed the scope of work related to stakeholder engagement, project messaging, and branding. Facilitated workshops with County staff and external partners to define outreach goals, identify key audiences, and develop engagement tactics.

***Energy & Utilities Infrastructure Master Plan***

Served as the lead facilitator for the interagency coordination forums supporting the Commonwealth Utilities Corporation's Energy & Utilities Infrastructure Master Plan for Saipan, Tinian, and Rota. In this role, planned and led multi-agency forums that convened representatives from local, Commonwealth, and federal agencies to collaboratively assess existing utility conditions, discuss resiliency and risk, and examine proposed mitigation measures.

***Strategic Business Development Plan***

Facilitated the delivery of Huntingdon Borough's Strategic Business Development Plan, a comprehensive community development initiative focused on revitalizing the 600 Block of Penn Street and establishing a framework for economic growth. Coordinated task workstreams across project phases and collaborated with multidisciplinary team members to integrate community feedback into actionable recommendations. Created a final Strategic Plan that proposed development concepts and community improvement options that connected recreational opportunities with downtown revitalization goals.

***Los Angeles Sanitation and Environment (LASAN) Clean Water (Wastewater) Capital Improvement Program***

Served as Task Lead for LASAN's Clean Water (Wastewater) Capital Improvement Program, overseeing a team of outreach subconsultants to support the agency's public affairs and community engagement efforts. Led the coordination of public outreach activities across the agency's major outreach programs, including pre-construction planning, construction-phase engagement, and digital communications.

***Los Angeles Sanitation's LASAN's Clean Water (Wastewater) Capital Improvement Program***

Served as Task Lead for LASAN's Clean Water (Wastewater) Capital Improvement Program, overseeing a team of outreach subconsultants to support the agency's public affairs and community engagement efforts. Led the coordination of public outreach activities across the agency's major outreach programs, including pre-construction planning, construction-phase engagement, and digital communications. Developed a key performance metric tracking mechanism to monitor outreach effectiveness and ensure accountability. Also supported the client in consolidating and synthesizing key accomplishments for weekly and monthly reporting to LASAN leadership and the Board. Role included managing deliverables, facilitating stakeholder briefings, supporting media relations, and ensuring timely public notifications for infrastructure milestones.

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**January 15, 2026**

**Toni Bertolero, Public Work Engineer**
**Sebastopol Public Works Department**
**714 Johnson St.**
**Sebastopol, CA 95472**

**RE: Cost Proposal for Engineering Services for Sewer System Master Plan Update- RFP NO: 615-21.01**

**Dear Ms. Toni Bertolero and Evaluation Committee:**

GHD is committed to continuing our positive collaboration with the City of Sebastopol through the Development and Calibration of Sewer System Master Plan Update project.

Supplemental to our technical proposal, please find enclosed our cost proposal which includes a breakdown of cost by task, and includes the team and their rates.

Thank you for the opportunity to submit GHD's qualifications for this exciting project. Please reach out to Ann Bechtel (858) 244-6969, or Ann.Bechtel@ghd.com if you have any questions regarding our submission.

Regards,

GHD Inc.

**Ann Bechtel, PE, TE**
Principal Engineer/Business Group Leader
+1 858-244-6969

Ann.Bechtel@ghd.com

| Description | | Matt Kennedy<br>*Project Director*<br>$345 | Ann Bechtel<br>*Project Manager*<br>$345 | Chris Brothers<br>*QA/QC*<br>$323 | Pradeep Nagarajan<br>*CIP Planner*<br>$323 | Adam Fisher<br>*Modeling Lead*<br>$274 | Ashlan Finn<br>*Project Engineer*<br>$229 | Zach Portreus<br>*GIS/Data Lead*<br>$237 | Jesse Lopez<br>*GIS Support*<br>$237 | Tyler Mendonsa<br>*Modeling/GIS Support*<br>$199 | Zane Cook<br>*Modeling Support*<br>$184 | Sepideh Amirahmadian<br>*Project Engineer*<br>$237 | Yosef Yip<br>*Stakeholder Engagement*<br>$334 | Kristine Gaspar<br>*Regulatory*<br>$289 | Jenni Simpson<br>*Admin*<br>$180 | Total Hours | Labor Total | Estimated Project Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Task1*** | | ***12*** | ***24*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***12*** | ***48*** | ***$14,580*** | ***$14,580*** |
| *Subtask 1.1* | Internal Coordination and Administration | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 24 | $7,620 | $7,620 |
| *Subtask 1.2* | Kick-Off Meeting | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | $1,740 | $1,740 |
| *Subtask 1.3* | Formal Public Meetings | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 18 | $5,220 | $5,220 |
| ***Task2*** | | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***4*** | ***12*** | ***24*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***40*** | ***$8,568*** | ***$8,568*** |
| *Subtask 2.1* | Review of Existing Data | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 20 | $4,284 | $4,284 |
| *Subtask 2.2* | Data Validation and Gap Analysis | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 12 | 0 | 0 | 0 | 0 | 0 | 20 | $4,284 | $4,284 |
| ***Task4*** | | ***0*** | ***4*** | ***0*** | ***4*** | ***8*** | ***0*** | ***0*** | ***0*** | ***0*** | ***16*** | ***16*** | ***0*** | ***0*** | ***0*** | ***48*** | ***$11,600*** | ***$11,600*** |
| *Subtask 4.1* | I&I Reduction Program | 0 | 4 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 48 | $11,600 | $11,600 |
| ***Task5*** | | ***1*** | ***2*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***0*** | ***4*** | ***0*** | ***7*** | ***$2,191*** | ***$2,191*** |
| *Subtask 5.1* | Discussion on Regulatory Requirements | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | $2,191 | $2,191 |
| ***Task6*** | | ***0*** | ***0*** | ***0*** | ***0*** | ***8*** | ***0*** | ***4*** | ***8*** | ***12*** | ***12*** | ***12*** | ***0*** | ***0*** | ***0*** | ***56*** | ***$12,476*** | ***$12,476*** |
| *Subtask 6.1* | Hydraulic Model Development & Validation | 0 | 0 | 0 | 0 | 8 | 0 | 4 | 8 | 12 | 12 | 12 | 0 | 0 | 0 | 56 | $12,476 | $12,476 |
| ***Task7*** | | ***0*** | ***4*** | ***4*** | ***0*** | ***28*** | ***0*** | ***8*** | ***16*** | ***24*** | ***24*** | ***24*** | ***0*** | ***0*** | ***0*** | ***132*** | ***$30,912*** | ***$30,912*** |
| *Subtask 7.1* | Dry Weather Model Calibration | 0 | 4 | 4 | 0 | 28 | 0 | 8 | 16 | 24 | 24 | 24 | 0 | 0 | 0 | 132 | $30,912 | $30,912 |
| ***Task8*** | | ***0*** | ***1*** | ***2*** | ***6*** | ***0*** | ***12*** | ***0*** | ***0*** | ***6*** | ***6*** | ***12*** | ***0*** | ***0*** | ***0*** | ***45*** | ***$10,819*** | ***$10,819*** |
| *Subtask 8.1* | System Deficiencies/LOS | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | $1,427 | $1,427 |
| *Subtask 8.2* | Hydraulic System Performance Evaluation | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | $781 | $781 |
| *Subtask 8.3* | Future Flow Projections | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | $916 | $916 |
| *Subtask 8.4* | Sewer System Capacity Evaluation | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 0 | 6 | 6 | 12 | 0 | 0 | 0 | 33 | $7,695 | $7,695 |
| ***Task9*** | | ***2*** | ***4*** | ***4*** | ***8*** | ***0*** | ***16*** | ***0*** | ***0*** | ***0*** | ***0*** | ***12*** | ***0*** | ***0*** | ***8*** | ***54*** | ***$13,894*** | ***$13,894*** |
| *Subtask 9.1* | Proposed Improvements and Risk Analysis | 1 | 2 | 2 | 4 | 0 | 12 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 4 | 31 | $7,863 | $7,863 |
| *Subtask 9.2* | Prioritize CIP (Risk, Capacity and Cost) | 1 | 2 | 2 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 4 | 23 | $6,031 | $6,031 |
| ***Task10*** | | ***2*** | ***6*** | ***4*** | ***4*** | ***4*** | ***0*** | ***0*** | ***0*** | ***18*** | ***18*** | ***40*** | ***10*** | ***0*** | ***8*** | ***114*** | ***27594*** | ***$27,594*** |
| *Subtask 10.1* | Draft Master Plan Report | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 10 | 10 | 24 | 4 | 0 | 4 | 60 | $14,104 | $14,104 |
| *Subtask 10.2* | Final Master Plan Report | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 4 | 4 | 12 | 4 | 0 | 2 | 34 | $8,602 | $8,602 |
| *Subtask 10.3* | Final Presentation to Stakeholders | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 2 | 0 | 2 | 20 | $4,888 | $4,888 |
| | ***Total Labor Hours*** | ***17*** | ***45*** | ***14*** | ***22*** | ***48*** | ***28*** | ***16*** | ***36*** | ***84*** | ***76*** | ***116*** | ***10*** | ***4*** | ***28*** | | | |
| | **Estimated Project Total** | **$5,865** | **$15,525** | **$4,522** | **$7,106** | **$13,152** | **$6,412** | **$3,792** | **$8,532** | **$16,716** | **$13,984** | **$27,492** | **$3,340** | **$1,156** | **$5,040** | **544** | **$132,634** | **$132,634** |