



GDPUD



**NEW BUSINESS
ITEM 7.A.**

**REPORT TO THE BOARD OF DIRECTORS
BOARD MEETING OF JUNE 9, 2020
AGENDA ITEM NO. 7A**



SUBJECT: APPROVE A PROFESSIONAL SERVICES AGREEMENT FOR THE AUBURN LAKE TRAILS COMMUNITY DISPOSAL SYSTEM FEASIBILITY STUDY

PREPARED BY: Adam Brown, Water Resources Manager

APPROVED BY: Jeff Nelson, Interim General Manager

BACKGROUND

A total of 137 homes within the Auburn Lake Trails Wastewater Management Zone (Zone) are connected to the Community Disposal System (CDS); the CDS is designed to serve 139 homes at total build out. The CDS receives septic tank effluent from each residential septic tank via a collection system consisting of approximately 13,300 feet of collector mains that range from 4 to 8 inches in diameter consisting primarily of either PVC, ABS or ACP pipe. There is also a small amount of HDPE pipe where a section of pipe was repaired. The wastewater effluent flows by gravity to a lift station. From the lift station, effluent is pumped to large disposal fields for additional treatment and disposal.

Multiple wastewater disposal areas have been used and continue to be used during the historical operation of the CDS. The original disposal/leach field, located near the current pump station, was abandoned in the late 1980s. A new leach field was constructed on a parcel adjacent to the Cool Hall, and in 2000 four additional leach fields were constructed, totaling approximately 11,600 lineal feet of disposal trench divided into five separate fields. The community leach fields are permitted to receive up to an average of 71,800 gallons of wastewater per day. Once applied to the leach field, the wastewater is treated by conventional leaching methods.

DISCUSSION

A Request for Proposal (RFP) for services associated with preparing a feasibility study (FS) was posted on March 12, 2020. The main objective of the FS is to provide a long-term evaluation of the Zone CDS. While we expected to receive multiple proposals; the District ended up receiving only one proposal from Bennett Engineering Services (Bennett). After reviewing the proposal, staff believe Bennett has the requisite experience to complete the FS that will meet the District's objectives. In addition, Bennett has completed previous projects associated with the CDS including smoke testing and force main break repairs, making them familiar with the District's Zone CDS system and minimizing any learning curve.

The scope of work for this new agreement will include:

- Field Investigation and Data Review;

Approve a Professional Services Agreement for the Auburn Lake Trails Community Disposal System Feasibility Study

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- Alternatives Analysis; and,
- Feasibility Study Final Report

The intent of the FS is to provide the District with a document that will detail the current health of the CDS, provide an analysis of the general life expectancy of the CDS, and provide an evaluation of alternative wastewater disposal technologies that may be applied at the CDS. This FS document will be used for long-term planning purposes and incorporated into the District's Capital Improvement Plan (CIP).

The Bennett proposal is for a total cost not to exceed \$49,025, which will be billed on a time and materials basis. After reviewing Bennett's scope of services and cost proposal, staff believe Bennett's cost proposal to be reasonable. The Professional Services Agreement is included as Attachment A.

FISCAL IMPACT

The CDS Feasibility Study project was included in the *Capital Improvement Plan 2019/2020 to 2023/2024* with planned funding from CDS Reserve (Fund 42) and in *Cost of Service and Rate Design for Auburn Lake Trails Wastewater Management Zone*, dated May 8, 2019. Fund 42 current balance is \$175,282 and will receive a transfer of \$45,000 annually beginning 2019/2020 fiscal year. Following the completion of the project Fund 42 balance is estimated at \$171,257.

CEQA ASSESSMENT

This is not a CEQA project.

RECOMMENDED ACTION

Staff recommends the Board of Directors of the Georgetown Divide Public Utility District adopt the attached Resolution authorizing the General Manager to execute a Professional Services Agreement with Bennett for an amount not to exceed \$49,025 for CDS feasibility study. Resolution 2020-XX is included as Attachment B.

ATTACHMENTS

- A. Professional Services Agreement
- B. Resolution 2020-XX

ITEM 7.A.
ATTACHMENT A
PROFESSIONAL SERVICES AGREEMENT

PROFESSIONAL SERVICES AGREEMENT

THIS PROFESSIONAL SERVICES AGREEMENT (“Agreement”) is made and entered into this 9 day of June 2020, (the “Effective Date”) by and between the Georgetown Divide Public Utilities District, a California Public Utilities District (“District”), and Bennett Engineering Services, Inc, an Engineering Consultant (“Consultant”). District and Consultant may herein be referred to individually as a “Party” and collectively as the “Parties”. There are no other parties to this Agreement.

RECITALS

A. District has determined that consultant services are required to prepare Feasibility Study for Auburn Lake Trails Community Disposal System (the “Project”).

B. Consultant has submitted a proposal to District that includes a scope of proposed consultant services, attached hereto and described more fully in **Exhibit A** (“Services”).

C. Consultant represents that it is qualified, willing and able to provide the Services to District, and that it will perform Services related to the Project according to the rate schedule included in the scope of proposed consultant services attached hereto as **Exhibit B** (the “Rates”).

NOW, THEREFORE, in consideration of the promises and covenants set forth below, the Parties agree as follows:

AGREEMENT

1. Recitals. The recitals set forth above (“Recitals”) are true and correct and are hereby incorporated into and made part of this Agreement by this reference. In the event of any inconsistency between the Recitals and Sections 1 through 20 of this Agreement, Section 1 through 20 shall prevail.

2. Consulting Services. Consultant agrees, during the term of this Agreement, to perform the Services for District in connection with the Project. Any request for services in addition to the Services described in **Exhibit A** will be considered a request for additional consulting services and not compensated unless the Parties otherwise agree in writing. No subcontract shall be awarded or an outside consultant engaged by Consultant unless prior written approval is obtained from District.

3. Compensation. District shall pay Consultant according to the tasks set forth in **Exhibit B**, for a time and materials cost not to exceed **\$49,025**. Consultant agrees to maintain a log of time spent in connection with performing the Services. On a monthly basis, Consultant shall provide District, in reasonable and understandable detail, a description of the services rendered pursuant to the Services and in accordance with the Rates. If the work is satisfactorily completed, District shall pay such invoice within thirty (30) days of its receipt. If District disputes

any portion of any invoice, District shall pay the undisputed portion within the time stated above, and at the same time advise Consultant in writing of the disputed portion.

4. Reimbursement. District shall pay Consultant for reimbursable expenses related to travel, lodging, conference calls, reproduction and other costs incurred related to Consultant's performance of the Services.

5. Term. This Agreement shall become effective on the Effective Date and will continue in effect until the Services provided herein has been completed, unless terminated earlier as provided in Section 6 or 7 below (the "Term").

6. Termination. District may terminate this Agreement prior to the expiration of the Term ("Termination"), without cause or reason, by notifying Consultant in writing of District's desire to terminate this Agreement (the "Termination Notice"). Upon receipt of a Termination Notice, Consultant shall immediately cease performing the Services. Consultant will be entitled to compensation, as of the date Consultant receives the Termination Notice, only for Services actually performed.

7. Termination for Cause. Notwithstanding Section 6 above, this Agreement may be terminated by District for cause based on the loss or suspension of any licenses, permits or registrations required for the continued provision of the Services, or Consultant's malfeasance. Termination of the Agreement for cause as set forth in this Section shall relieve District from compensating Consultant.

8. Confidential Information. Consultant understands and agrees that, in the performance of Services under this Agreement or in the contemplation thereof, Consultant may have access to private or confidential information that may be owned or controlled by District and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to District ("Confidential Information").

Consultant shall not, either during or after the Term, disclose to any third party any Confidential Information without the prior written consent of District. If District gives Consultant written authorization to make any such disclosure, Consultant shall do so only within the limits and to the extent of that authorization. Such authorization does not guarantee that the District will grant any further disclosure of Confidential Information. Consultant may be directed or advised by the District's General Counsel on various matters relating to the performance of the Services on the Project or on other matters pertaining to the Project, and in such event, Consultant agrees that it will treat all communications between itself, its employees and its subcontractors as being communications which are within the attorney-client privilege.

9. Performance by Key Employee. Consultant has represented to District that **Dave Harden, P.E.** will be the person primarily responsible for the performance of the Services and all communications related to the Services. District has entered into this Agreement in reliance on that representation by Consultant.

10. Property of District. The following will be considered and will remain the property of District:

A. Documents. All reports, drawings, graphics, working papers and Confidential Information furnished by District in connection with the Services ("Documents"). Nothing herein shall be interpreted as prohibiting or limiting District's right to assign all or some of District's interests in the Documents.

B. Data. All data collected by Consultant and produced in connection with the Services including, but not limited to, drawings, plans, specifications, models, flow diagrams, visual aids, calculations, and other materials ("Data"). Nothing herein shall be interpreted as prohibiting or limiting District's right to assign all or some of District's interests in the Data.

C. Delivery of Documents and Data. Consultant agrees, at its expense and in a timely manner, to return to District all Documents and Data upon the conclusion of the Term or in the event of Termination.

11. Duties of District. In order to permit Consultant to render the services required hereunder, District shall, at its expense and in a timely manner:

A. Provide such information as Consultant may reasonably require to undertake or perform the Services;

B. Promptly review any and all documents and materials submitted to District by Consultant in order to avoid unreasonable delays in Consultant's performance of the Services; and

C. Promptly notify Consultant of any fault or defect in the performance of Consultant's services hereunder.

12. Representations of Consultant. District relies upon the following representations by Consultant in entering into this Agreement:

A. Qualifications. Consultant represents that it is qualified to perform the Services and that it possesses the necessary licenses, permits and registrations required to perform the Services or will obtain such licenses or permits prior to the time such licenses or permits are required. Consultant represents and warrants to District that Consultant shall, at Consultant's sole cost and expense, keep in effect or obtain at all times during the Term of this Agreement, any licenses, permits, and registrations that are legally required for Consultant to practice Consultant's profession at the time the Services are rendered.

B. Consultant Performance. Consultant represents and warrants that all Services under this Agreement shall be performed in a professional manner and shall conform to the customs and standards of practice observed on similar, successfully completed projects by specialists in the Services to be provided. Consultant shall adhere to accepted professional standards as set forth by relevant professional associations and shall perform all Services required

under this Agreement in a manner consistent with generally accepted professional customs, procedures and standards for such Services. All work or products completed by Consultant shall be completed using the best practices available for the profession and shall be free from any defects. Consultant agrees that, if a Service is not so performed, in addition to all of its obligations under this Agreement and at law, Consultant shall re-perform or replace unsatisfactory Service at no additional expense to District.

13. Compliance with Laws and Standards. Consultant shall insure compliance with all applicable federal, state, and local laws, ordinances, regulations and permits, including but not limited to federal, state, and county safety and health regulations. Consultant shall perform all work according to generally accepted standards within the industry. Consultant shall comply with all ordinances, laws, orders, rules, and regulations, including the administrative policies and guidelines of District pertaining to the work.

14. Independent Contractor; Subcontracting. Consultant will employ, at its own expense, all personnel reasonably necessary to perform the Services. All acts of Consultant, its agents, officers, employees and all others acting on behalf of Consultant relating to this Agreement will be performed as independent contractors. Consultant, its agents and employees will represent and conduct themselves as independent contractors and not as employees of District. Consultant has no authority to bind or incur any obligation on behalf of District. Except as District may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of District in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind District to any obligation whatsoever. Consultant is prohibited from subcontracting this Agreement or any part of it unless such subcontracting is expressly approved by District in writing.

15. Insurance. Consultant and all of Consultant's contractors and subcontractors shall obtain and maintain insurance of the types and in the amounts described in this paragraph and its subparagraphs with carriers reasonably satisfactory to District.

A. General Liability Insurance. Consultant shall maintain occurrence version commercial general liability insurance or an equivalent form with a limit of not less than Two Million Dollars (\$2,000,000) per claim and Two Million Dollars (\$2,000,000) for each occurrence.

B. Workers' Compensation Insurance. Consultant shall carry workers' compensation insurance as required by the State of California under the Labor Code. Consultant shall also carry employer's liability insurance in the amount of One Million Dollars (\$1,000,000.00) per accident, with a One Million Dollar (\$1,000,000.00) policy limit for bodily injury by discase, and a One Million Dollar (\$1,000,000.00) limit for each employee's bodily injury by disease.

C. Errors and Omissions Liability. Consultant shall carry errors and omissions liability insurance in the amount of no less than One Million Dollars (\$1,000,000.00) per occurrence or greater if appropriate for the Consultant's profession. Architects and engineers coverage is to be endorsed to include contractual liability. Any deductibles or self-insured

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retentions must be declared to and approved by the District. At the option of the District, either the insurer shall reduce or eliminate such deductibles or self-insured retentions with respect to the District, elected and appointed councils, commissions, directors, officers, employees, agents, and representatives ("District's Agents"); or the Consultant shall provide a financial guarantee satisfactory to the District guaranteeing payment of losses and related investigations, claims administration and defense expenses.

D. Other Insurance Requirements. Within five (5) days of the Effective Date, Consultant shall provide District with certificates of insurance for all of the policies required under this Agreement ("Certificates"), excluding the required worker's compensation insurance. Such Certificates shall be kept current for the Term of the Agreement and Consultant shall be responsible for providing updated copies and notifying District if a policy is cancelled, suspended, reduced, or voided. With the exception of the worker's compensation insurance, all of the insurance policies required in this Agreement shall: (a) provide that the policy will not be cancelled, allowed to expire, or materially reduced in coverage without at least thirty (30) days' prior written notice to District of such cancellation, expiration, or reduction and each policy shall be endorsed to state such; (b) name District, and District's Agents as additional insureds with respect to liability arising out of Services, work or operations performed by or on behalf of the Consultant; products and completed operations of the Consultant; premises owned, occupied, or used by the Consultant, or automobiles owned, leased, or hired or borrowed by the Consultant. The coverage shall contain no special limitations on the scope of protection afforded to the District; (c) be primary with respect to any insurance or self-insurance programs covering District or District's Agents and any insurance or self-insurance maintained by District or District's Agents shall be in excess of Consultant's insurance and shall not contribute to it; (d) contain standard separation of insured provisions; and (e) state that any failure to comply with reporting or other provisions of the policy including breaches of warranties shall not affect the coverage provided to the District.

16. Indemnification. Consultant hereby agrees to indemnify and hold harmless District, its agents, officers, employees and volunteers, against all liability, obligations, claims, loss, and expense (a) caused or created by Consultant, its subcontractors, or the agents or employees of either, whether negligent or not, pertaining to or related to acts or omissions of Consultant in connection with the Services, or (b) arising out of injuries suffered or allegedly suffered by employees of Consultant or its subcontractors (i) in the course of their employment, (ii) in the performance of work hereunder, or (iii) upon premises owned or controlled by District. Consultant's obligation to defend, indemnify and hold District and its agents, officers, employees and volunteers harmless is not terminated by any requirement in this Agreement for Consultant to procure and maintain a policy of insurance.

17. Consequential Damages. Notwithstanding any other provision of this Agreement, in no event shall District be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, arising out of or in connection with this Agreement or the Services performed in connection with this Agreement.

18. Litigation. In the event that either Party brings an action under this Agreement for the breach or enforcement hereof, or must incur any collection expenses for any amounts due hereunder the prevailing Party in such action shall be entitled to its costs including reasonable attorney's fees, whether or not such action is prosecuted to judgment.

19. Notices. Any notice or communication required hereunder between District or Consultant must be in writing, and may be given either personally, by registered or certified mail (return receipt requested), or by Federal Express, UPS or other similar couriers providing overnight delivery. If personally delivered, a notice shall be deemed to have been given when delivered to the Party to whom it is addressed. Notices given by registered or certified mail shall be deemed to have been given and received on the first to occur of (a) actual receipt by any of the addressees designated below as the party to whom notices are to be sent, (b) on the date delivered as shown on a receipt issued by the courier, or (c) five (5) days after a registered or certified letter containing such notice, properly addressed, with postage prepaid, is deposited in the United States mail. If given by Federal Express or similar courier, a notice or communication shall be deemed to have been given and received on the date delivered as shown on a receipt issued by the courier. Any Party hereto may at any time, by giving ten (10) days written notice to the other Party hereto, designate any other address in substitution of the address to which such notice or communication shall be given. Such notices or communications shall be given to the Parties at the addresses in this paragraph set forth below:

If to District: Georgetown Divide Public Utility District
P.O. Box 4240
6425 Main Street
Georgetown, CA 95634
Attention: General Manager

With courtesy copies to: Churchwell White LLP
1414 K Street, 3rd Floor
Sacramento, California 95814
Attention: Barbara A. Brenner, Esq.

If to Consultant: Bennett Engineering
1082 Sunrise Avenue, Suite 100
Roseville, California 95661
Attention: Dave Harden, P.E.

20. General Provisions.

A. Modification. No alteration, modification, or termination of this Agreement shall be valid unless made in writing and executed by all Parties.

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B. Waiver. The waiver by any Party of a breach of any provision hereof shall be in writing and shall not operate or be construed as a waiver of any other or subsequent breach hereof unless specifically stated in writing.

C. Assignment. No Party shall assign, transfer, or otherwise dispose of this Agreement in whole or in part to any individual, firm, or corporation without the prior written consent of the other Party. Subject to the forgoing provisions, this Agreement shall be binding upon, and inure to the benefit of, the respective successors and assigns of the Parties.

D. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the state of California.

E. Venue. Venue for all legal proceedings shall be in the Superior Court of California for the County of El Dorado.

F. Partial Invalidity. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions shall nevertheless continue in full force without being impaired or invalidated in any way.

G. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall constitute an original and all of which shall be deemed a single agreement.

H. Severability. If any term, covenant, or condition of this Agreement is held by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall remain in effect.

I. Audit. District shall have access at all reasonable times to all reports, contract records, contract documents, contract files, and personnel necessary to audit and verify Consultant's charges to District under this Agreement.

J. Entire Agreement. This Agreement sets forth the entire understanding between the Parties as to the subject matter of this Agreement and merges all prior discussions, negotiations, proposal letters or other promises, whether oral or in writing.

K. Headings Not Controlling. Headings used in this Agreement are for reference purposes only and shall not be considered in construing this Agreement.

L. Time is of the Essence. Time is of the essence in this Agreement for each covenant and term of a condition herein.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the last day and date below written.

DISTRICT:

GEORGETOWN DIVIDE PUBLIC
UTILITIES DISTRICT, a California Public
Utilities District

By: _____
Jeff Nelson, General Manager

Date: _____

Approved as to Form:

Barbara A. Brenner, General Counsel

CONSULTANT:

_____, a

By: _____

Name: _____

Date: _____

EXHIBIT A

Services



PROPOSAL

**BENNETT ENGINEERING SERVICES PROPOSAL FOR THE
GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT**

Auburn Lake Trails Wastewater Management Zone - Community Disposal System Feasibility Study



April 17, 2020

Adam Brown
Water Resources Manager
Georgetown Divide Public Utility District Office
6425 Main Street
Georgetown, CA 95634



Bennett Engineering Services
1082 Sunrise Avenue, Suite 100
Roseville, California 95661

T 916.783.4100
F 916.783.4110
www.ben-en.com

Re: **Auburn Lake Trails Wastewater Management Zone - Community Disposal System Feasibility Study**

Dear Adam and Members of the Selection Committee:

We understand that over the years the Georgetown Divide Public Utility District (GDPUD) has experienced several operational issues with the Auburn Lake Trails Community Disposal System (ALT CDS). The District must strategically plan for the future costs required to continue providing reliable wastewater treatment and disposal. Additionally, the current Waste Discharge Requirements permit is nearly 18 years old, indicating the renewal process could be required soon. That process will require an analysis of the system and may require upgrades to meet new water quality objectives. The District requires a feasibility study to identify alternatives for the system that will provide adequate treatment, be operationally efficient, fit within the existing site, and fall within a reasonable budget the District can manage.

Bennett Engineering Services (BEN|EN) possesses extensive knowledge of the issues and challenges associated with this project. In 2017, BEN|EN assisted the District with an engineering evaluation of the ALT CDS in response to a Notice of Violation received from the Regional Water Quality Control Board for average monthly flows exceeding the maximum permitted flow to the CDS. BEN|EN provided the District with a work plan to reduce infiltration and inflow to the collection system and maintain an average monthly flow rate of less than 71,800 gpd. This in-depth understanding of the project will prove invaluable to the District as we evaluate and propose alternative replacement options for the ALT CDS.

Our proposed project manager, **David Harden, PE**, was project manager for the previous project. Dave has more than 10 years of engineering experience and specializes in land disposal, effluent storage, and conveyance. He has worked on multiple design projects that have required unique approaches to meet strict design criteria. Dave has demonstrated a real commitment to the District by helping GDPUD stay in compliance, developing engineering solutions that work, and respecting budget constraints by delivering cost effective solutions on previous projects.

Dave is supported by a team of highly experienced, licensed engineers and engineering support staff. Key team members have worked together on several wastewater improvement projects and have developed a partnership that enables us to effectively communicate and collaborate throughout the design process. Throughout these projects, the keys to our success included continual communication with the client project manager and among team members, as well as a careful early assessment of the existing conditions. This ensures our time is well spent and resources are used appropriately. Our project team was selected because of our successful partnering history. Subconsultant firms who focus in engineering specialties have a vested interest in providing the best value and service to their clients. Their commitment is demonstrated by their consistent flexibility and responsiveness to our clients and projects. The BEN|EN team consists of the following firms:

- ▶ **Bennett Engineering Services** – Project Management, Civil Engineering
- ▶ **Unico Engineering** – Survey
- ▶ **Geocon Consultants** – Geotechnical Engineering

The following proposal outlines our team's experience and approach to successfully deliver this project for GPUD. This proposal shall remain firm for a 90-day period starting from April 17, 2020. BEN|EN will provide proof of insurance and indemnification as required per the terms of the professional services agreement included in your RFP.

As President of BEN|EN, I have authority to bind the firm/team. Dave will be your first point of contact and is available at any time to provide additional information or answer questions you may have. Dave can be reached at (916) 771-6144 or dharden@ben-en.com.

We are eager to begin this work and deliver a successful project for GDPUD that is on time and within budget. Thank you for your consideration.

Sincerely,
Bennett Engineering Services, Inc.

A handwritten signature in blue ink, appearing to read "Leo Rubio".

Leo Rubio, PE
President

PROJECT TEAM
INFORMATION

BEN|EN

TRUSTED ENGINEERING ADVISORS

BENNETT ENGINEERING SERVICES (BEN|EN)

BEN|EN has assembled a team of experts to support the Georgetown Divide Public Utility District (GDPUD/ District) with the Auburn Lake Trails Wastewater Disposal Zone Community Disposal System Project. BEN|EN understands how important this project is to the District.

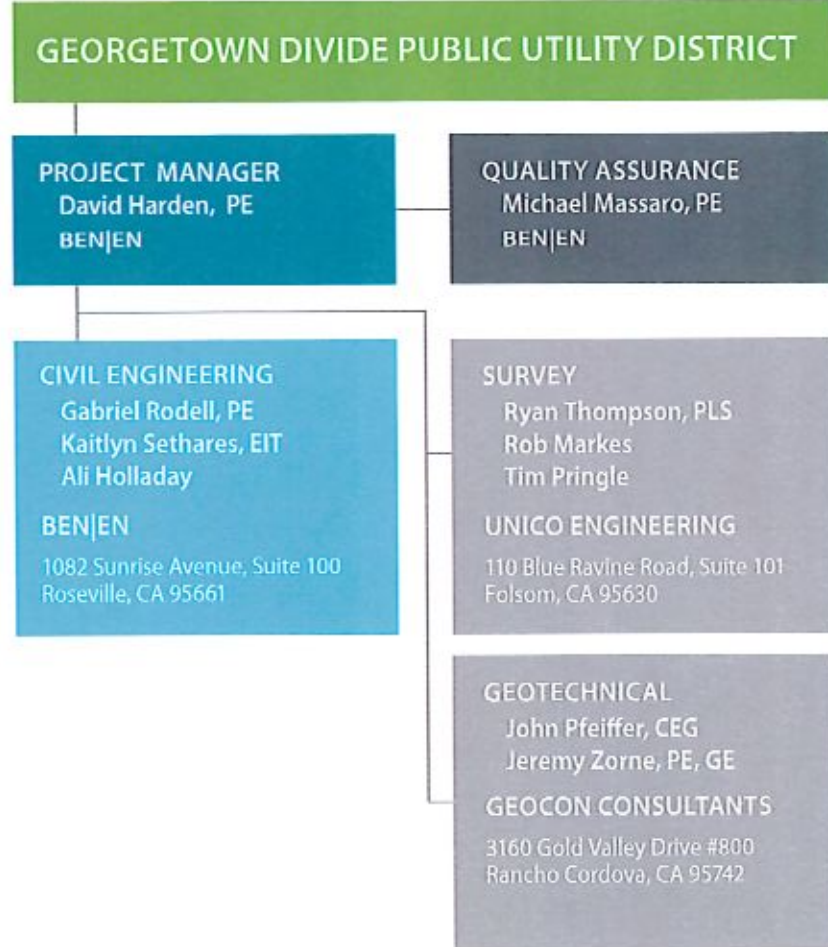
GDPUD is seeking an experienced project manager who is committed, responsive, and will partner with District staff to successfully deliver this very important project. The District requires a project manager who understands how to deliver projects that stay within schedule and within budget and understands the unique needs of the District.

Our team is led by **David Harden, PE** and he will be your first point of contact. Dave has been project manager on multiple projects for GDPUD. Dave will work closely with District staff throughout the project. He is committed to delivering this project on time and on schedule. With Dave, the District will attain a project manager who is highly familiar with the history of this project, having lead the previous project study in 2017. He is supported by a strong staff of engineers and subconsultants with many years of experience in wastewater projects.

BEN|EN takes pride in finding innovative and cost-effective engineering solutions to wastewater, water, drainage, site improvement, roadway, and other important infrastructure projects.

BEN|EN has been providing engineering services since 1995. The firm is led by talented and highly-experienced, licensed professionals. BEN|EN is a California certified Disadvantaged Business Enterprise (DBE), #43459 and Small Business Enterprise (SBE), #52302.

PROJECT ORGANIZATION



Key Staff

DAVID HARDEN, PE | PROJECT MANAGER

David Harden, PE will be project manager for this project. He has more than 10 years of civil engineering experience with wastewater, water, and transportation projects. Dave's past wastewater projects have included a focus on effluent storage, conveyance, and land disposal. As Assistant City Engineer for the City of Gridley, Dave has assisted with sewer pipeline replacements, grant funding applications, and pump station improvements. As a water resource engineer, Dave has worked on multiple design projects that have required a unique approach to meet strict design criteria. Dave excels at producing innovative solutions to challenging projects that meet his clients' needs.

Dave's relevant experience includes the following projects:

- ▶ Engineering Evaluation for the Auburn Lake Trails On Site Wastewater Disposal Zone Community Disposal System – Georgetown Divide Public Utility District
- ▶ Biggs Wastewater Treatment Plant Upgrades – City of Biggs
- ▶ Sewer Alternatives Analysis, Feasibility Report, & Special District Formation – Town of Paradise
- ▶ District Engineer – Markleeville Public Utility District
- ▶ Wastewater Treatment Plant Headworks Improvements – City of Grass Valley

**MICHAEL MASSARO, PE |
QUALITY ASSURANCE**

With more than 20 years of experience, Mike Massaro has managed design teams, subconsultants, budgets, and schedules. His projects have required the production of plans, specifications, cost estimates, public outreach, and coordination for environmental permitting and with utilities. Mike's technical expertise and experience includes sewer, water, and recycled water facilities, including pipelines, pump stations, and interceptors.

Mike has significant planning and design experience with open cut, horizontal directional drilling, tunneling, pipe jacking, and trenchless railroad and light rail crossings.

**GABRIEL RODELL, PE |
PROJECT ENGINEER**

Gabriel Rodell has more than six years of experience in engineering consulting. Gabriel specializes in design and evaluation of sewer collection networks and wastewater treatment facilities. He has coordinated with Regional and State Water Boards for permitting, regulations, and funding. His experience includes design and analysis for wastewater collection systems and wastewater treatment plants, funding assistance through SRF, and negotiations with state and regional water quality control boards for wastewater permits.

“We were very pleased with how things went with Bennett Engineering. They were very responsive and thorough.”

Paul Dietrich, Project Manager
Citrus Heights Water District

“Bennett Engineering has been very responsive to the schedule, and has provided innovative solutions to work around possible delays. As a result, the pump stations were on schedule to meet demands.”

Jim Mulligan, Project Manager
City of Roseville

**KAITLYN SETHARES, EIT |
ASSISTANT ENGINEER**

Kati Sethares has two years of professional civil engineering experience, all with Bennett Engineering Services. Since joining the firm, Kati has assisted with construction document preparation, preparing funding applications for both water and wastewater projects, encroachment permits, and writing technical memorandums. She has performed calculations for and assisted in the design of water and wastewater pipelines, a water storage tank, and a pump station.

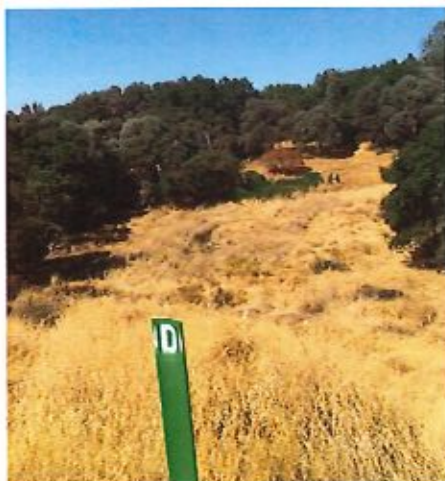
**ALI HOLLADAY |
ASSISTANT ENGINEER**

Ali graduated in 2019 with a Bachelors of Science in Civil Engineering. She has two years of civil engineering experience and worked with BEN|EN for more than a year as an intern before graduating. Since joining the firm, Ali has assisted in preliminary plan sets and cost estimates, prepared exhibits, performed final plan edits, hydraulic calculations, permit compliance and Report of Waste Water Discharge Permits and Anti-Degradation Analysis.

**FULL RESUMES CAN BE FOUND
IN THE APPENDIX.**

Information on Subconsultants can be found in **Section 5 | Subconsultants and Work by Others.**

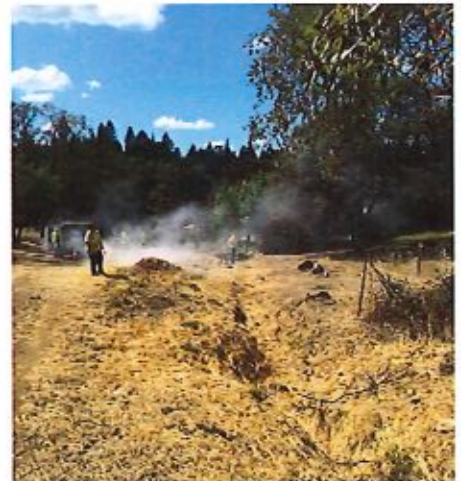
PREVIOUS WORK PERFORMED ON THE ALT CDS



Site Visit - August 2017



Percolation Test - September 2017



Smoke Test - September 2017

PROJECT UNDERSTANDING
AND INNOVATION

BEN|EN

TRUSTED ENGINEERING ADVISORS



UNDERSTANDING

The **BEN|EN** team understands the Georgetown Divide Public Utility District (GDPUD/District) is seeking consultants to perform a feasibility study for improvements to the Auburn Lake Trails (ALT) Community Disposal System (CDS) Wastewater Management Zone (Zone). The CDS provides wastewater disposal for 137 lots (139 at build-out) within the ALT community, with another 855 lots using on-site wastewater disposal systems. All sites within the ALT are regulated under Waste Discharge Requirement (WDR) No. R5-2002-0031 issued by the Regional Water Quality Control Board (RWQCB). The current permit is nearly 18 years old and overdue for renewal per RWQCB standards. The renewal will require a new Report of Waste Discharge and an evaluation of any future improvements the District may be required to complete.

BEN|EN thoroughly understands the ALT CDS system.

The CDS consists of the following:

- ▶ Approximately 13,300 feet of 4- and 8-inch diameter pipe
- ▶ 38 sanitary sewer manholes
- ▶ A lift station and wet well
- ▶ Approximately 2,950 feet of force main
- ▶ 11,600 linear feet of disposal trench

BEN|EN understands the issues and complexities associated with the permit renewal process for facilities operating under a Waste Discharge Requirements permit for land disposal of wastewater. New technologies and treatment methods can potentially be employed by the District to provide additional capacity to the ALT community for wet weather flow conditions and higher quality effluent discharge to the land.

BEN|EN understands that the District is concerned about the aging infrastructure in the disposal area, specifically the system's remaining service life and existing capacity during wet weather events. GDPUD would like additional capacity within the existing site to be considered in the alternatives study. In addition to evaluating newer subsurface disposal systems that provide higher flow capacity and more aggressive treatment, **BEN|EN** will also consider options that may provide the District with a cost effective method to mitigate the high winter flows. One option might be installation of an emergency storage facility to capture high flow events that can be metered into the disposal fields after the peak flows have subsided.

It is understood that the District would also prefer that the ALT CDS eventually maintain its own WDR

instead of having combined requirements. While this is not expected to be resolved under the scope of this project, coordination with the RWQCB for this project will certainly begin the discussion of a separate WDR.

GDPUD has a limited budget for this feasibility study project. As such, the District is receptive to supporting consultant field efforts—such as minor excavation and backfilling for geotechnical investigation—to minimize costs.

Our understanding of how small districts and communities operate gives us the knowledge and flexibility to drive the project to completion in the best interest of the District's short- and long-term ability to service the community.

BEN|EN has completed several projects for GDPUD. The first of those projects was in response to a Notice of Violation issued by the RWQCB regarding the ALT CDS. In 2017, **BEN|EN** assisted the District with percolation testing, smoke testing, flow monitoring, leach field capacity analysis, a water balance analysis, and a comprehensive infiltration and inflow evaluation. As such, **BEN|EN** has extensive knowledge of the ALT's collection, treatment, and disposal systems.

WORK PLAN, SCOPE OF WORK AND SCHEDULE

BEN|EN

TRUSTED ENGINEERING ADVISORS



WORK PLAN (APPROACH)

BEN|EN will provide technical expertise, experience, innovation, and understanding to assist the District by developing rehabilitation and replacement alternatives for the Auburn Lake Trails Community Disposal System (ALT CDS). **BEN|EN** will assess the condition of the system and evaluate options for long-term solutions, thus providing the District with a reliable and sustainable wastewater treatment facility.

BEN|EN's 2017 evaluation and knowledge of the ALT CDS will provide the basis for our condition assessment, providing a running start to the project. We will rapidly deploy our subconsultants to the project site to perform the topographic survey and soil assessment. This work will be essential to create a baseline and will assist with developing alternatives. The disposal fields soil assessment will provide expected longevity of the existing system. It will also establish soil characteristics for potential trench zone rehabilitation and upgrades.

We will apply field investigation data, background review, system knowledge, and input from District Staff to determine possible alternatives for the CDS, including the continued use of

the existing system (a no project alternative). Other alternatives from the analysis may include the following:

- ▶ Rehabilitation and replacement of the existing system
- ▶ New technologies of passive treatment systems
- ▶ Expansion or additions to the existing system
- ▶ New disposal methods, such as irrigation
- ▶ Storage facility for high flow events

The knowledge **BEN|EN** has of the District will ensure that alternatives derived from this approach will be suitable for the site and fit within the parameters of the District's desired outcome for the Study. Our knowledge requires less information transfer and a shorter project schedule, resulting in reduced costs. **BEN|EN** and the District have teamed together on many projects in recent years, including the following:

- ▶ 2018 Treated Water Line Replacement
- ▶ 2018 Canal Reliability Project
- ▶ 2017 GDPUD Auburn Lake Trails On-Site Wastewater Disposal Zone Community Disposal System
- ▶ 2020 GDPUD Parking Lots

In addition, **BEN|EN** has been a resource for the District during times

of need, such as the ALT sewer force main break (and associated spill to surface water) and review of the District's Capital Replacement Project list.

It is our goal to provide the District with the trusted advice required to evaluate the best approach and most cost-effective path forward for the GDPUD ALT CDS. We will explore innovative approaches to reliable solutions.

SCOPE OF WORK

To successfully complete this evaluation and feasibility study, the project team is proposing the following scope of work:

TASK 1. Project Management

Subtask 1.1. Project Administration

Bennett Engineering's (**BEN|EN**'s) Project Manager will submit monthly invoicing to the District and project status updates, as needed. Monthly invoices will include a summary of the work performed by task. **BEN|EN** will manage the project schedule, subconsultant work, project execution, and integrate deliverables.

DELIVERABLES:

- ▶ Status updates
- ▶ Monthly invoices

Subtask 1.2. Project Meetings

BEN|EN will coordinate and attend a project kick-off meeting and up to two (2) submittal review meetings via teleconferencing. The BEN|EN Project Manager will distribute meeting agendas electronically prior to conference calls and will provide meeting minutes after calls.

BEN|EN will summarize and present the study to the Board of Directors after the Feasibility Report has been finalized.

DELIVERABLES:

- ▶ Meeting agendas
- ▶ Meeting minutes

Subtask 1.3. Quality Control

BEN|EN's quality control program will be implemented and conducted by senior BEN|EN staff prior to delivering submittals to GDPUD. Quality Assurance/Quality Control review forms include reviewer name, date of review, review comments, and the resolution of any review comments (back-checking).

TASK 2. Field Investigations and Data Review

Subtask 2.1. Background Research

The BEN|EN team is familiar with the site from site visits in the recent past. As such, we do not anticipate the need to visit the site for preliminary investigation of existing conditions. The team will research and review existing as-builts, studies/evaluations, and other available documents for the project. Due to recent projects with GDPUD, we do not anticipate this to be a significant effort.

Subtask 2.2. Topographic Survey

BEN|EN's subconsultant, UNICO, will facilitate the delivery of an overall aerial survey and color ortho-rectified image for the project survey limits. The survey will contain planimetric and 3D (DTM) surface features at 1-foot contour intervals in an AutoCAD based drawing of approximately 30 acres of the leach line and disposal project area. Project control datum will be derived from the North American Datum (NAD83) coordinate system and an approved El Dorado

County North American Vertical Datum (NAVD88) benchmark, unless otherwise specified.

UNICO will perform supplemental topographic surveying and base mapping. UNICO will utilize the project control to perform supplemental topographic survey of the key design areas. These supplemental areas will minimally include leach and disposal facilities, any exposed manholes, cleanouts, leach lines, lids, and other items visually discovered in the field. To supplement the aerial topographic survey, UNICO will set durable control points within the project limits for utilization of future surveys and construction control.

DELIVERABLES:

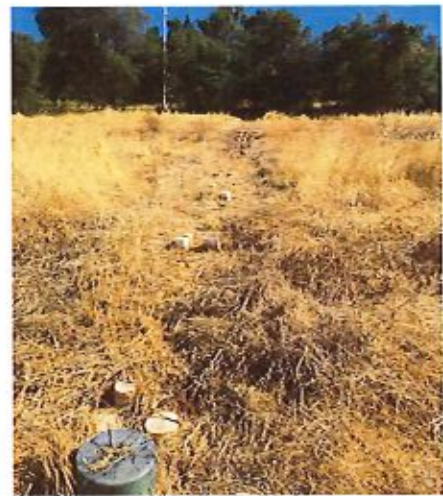
- ▶ AutoCAD base file
- ▶ Point files

Subtask 2.3. Geotechnical Investigation

BEN|EN's subconsultant, Geocon, will review plans, construction documents, site-specific data previously obtained by Geocon, and other available information pertaining to the existing leach fields and perform a limited geologic/geotechnical literature review to aid in evaluating the geologic conditions present at the site. Geocon will perform a site reconnaissance to observe existing conditions and features at the site and to select locations for subsequent subsurface exploration and sampling.

Geocon will observe approximately four to six exploratory test pits excavated by GDPUD in the project area, if applicable. Geocon will perform approximately 20 hand-auger borings within the disposal field trenches to depths of approximately 3 to 4 feet and will obtain representative soil samples from each of the borings (and exploratory test pits, if applicable). Geocon will log the borings (and test pits, if applicable) in accordance with the Unified Soil Classification System. Upon completion, Geocon will backfill the hand-auger borings with the excavated soil (GDPUD to backfill exploratory test pits, if applicable).

Geocon will perform laboratory tests to evaluate pertinent disposal field



soil conditions including soil density, grain size distribution, and organic content. A summary report will then be prepared with conclusions and recommendations. The report will include (but not be limited to) the following:

- ▶ Site plan showing locations of exploratory test pits and borings
- ▶ Description of site geology and logs of subsurface conditions
- ▶ Laboratory results
- ▶ Findings and conclusions regarding existing soil conditions in the CDS disposal field

Geocon will provide geotechnical review/consultation during Feasibility Study preparation.

ASSUMPTIONS:

- ▶ GDPUD will provide staff and equipment for at least one day to assist with the assessment of the leach field and trench soil.
- ▶ Only shallow subsurface investigation will be performed to evaluate soil characterizations for the existing and future land disposal.

DELIVERABLES:

- ▶ Geotechnical investigation report

TASK 3. Alternatives Analysis and Feasibility Study

Subtask 3.1. Condition Evaluation of Existing System

BEN|EN will evaluate the findings from document research and the field investigations in Task 2. A condition

assessment will be performed to determine the life expectancy of the Auburn Lake Trails (ALT) Community Disposal System (CDS) disposal fields. Condition assessment findings will be included in the Alternatives Analysis (Subtask 3.2).

Subtask 3.2. Alternatives Analysis

BEN|EN will prepare a Draft Feasibility Study Report (Report) that includes a project introduction, executive summary, planning area description, project need, condition assessment findings, treatment and disposal flows, and waste discharge requirements. Project alternatives will consider, at a minimum:

- ▶ Construction feasibility
- ▶ Construction cost
- ▶ Operational cost
- ▶ Treatment effectiveness
- ▶ Regional Water Quality Control Board (RWQCB) permit compliance

BEN|EN will provide analysis of up to three (3) construction alternatives to be determined after the field investigations, data review, and discussions with the District. Each alternative considered will include conceptual level design.

BEN|EN will submit the Draft Report to GDPUD for review, comment, and selection of the preferred alternative.

DELIVERABLES:

- ▶ Draft Feasibility Study Report (Word document)

Subtask 3.3. Feasibility Study Report

The Final Report (Subtask 3.3) will include the eliminated alternatives and preferred alternative. It will also include conclusions and recommendations for moving the preferred project forward.

DELIVERABLES:

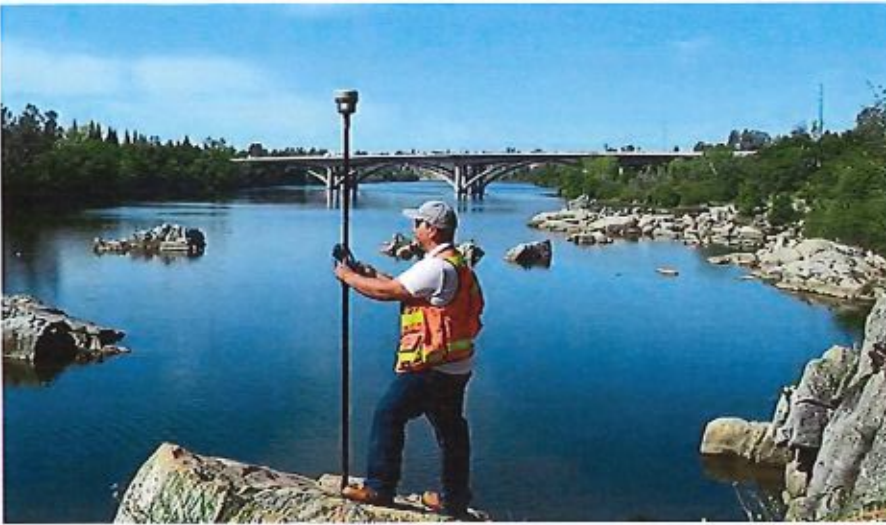
- ▶ Final Feasibility Study Report (PDF)

PROJECT SCHEDULE	
PROJECT MILESTONE	DATES
Executed Agreement	May 15, 2020
Project Kickoff Meeting	May 22, 2020
Geotechnical Investigation	June 1, 2020
Topographic Survey	June 4, 2020
Submit Draft Report (Condition Evaluation and Alternatives Analysis)	July 17, 2020
Submit Final Feasibility Study Report	August 17, 2020

SUBCONTRACTORS AND WORK BY OTHERS

BEN|EN

TRUSTED ENGINEERING ADVISORS



UNICO ENGINEERING | SURVEY

Founded in 2013 and incorporated in 2014, UNICO Engineering is a certified DBE firm that is fully committed to providing high quality construction management, engineering and land surveying services to public and private clients. UNICO serves clients throughout Northern California with a current staff of 42 from their corporate office located in Folsom, California. UNICO measures their success through the success of their clients, their responsiveness, and the quality and value of their work. Understanding their clients' objectives and expectations is top on their priority list. They provide value to their clients by sharing their goal of effectively managing the costs of the projects which they are assigned.

UNICO has performed detailed topographic and boundary surveys for a variety of water and wastewater projects. UNICO understands that the key to a successful water design project is an accurate topographic survey. UNICO works with the design team to fully understand the project details and ultimate goals of the project. Careful consideration is given to critical project details, such as tie in locations, utility conflicts, and safety. UNICO has the unique ability to often foresee future design and construction issues before they arise. Our field personnel are trained to be observant of unusual features such as non-recorded utilities, failing systems, unusual cracking of pavement and

improvements. To address these issues, UNICO will communicate with the design team which may require additional topographic surveying and mapping, researching record as-built or construction drawings, performing measurements to inverts and pipes and coordinating pot-holing activities.

Their survey team has the technology and experience to address any surveying needs including topographic mapping, bathymetric (hydrographic) surveys, ALTA's, boundary surveys, construction staking, easements, aerial surveys, right-of-ways, terrestrial LiDAR scanning. Using the latest in GPS and robotic total station technology, they work efficiently and deliver accurate results. They are experienced in delivering projects that meet local, state and Federal requirements.

Key Staff

RYAN THOMPSON, PLS LAND SURVEYOR

Ryan is an accomplished licensed land surveyor with an all-around skill set from field work to office management. He has a proven ability to carry out all aspects of land surveying from boundary determination, topographic surveying, construction staking, and mapping. Ryan specializes in complex legal and easement preparation. His experience also includes using Global Positioning Systems and conventional robotic instruments and laser levels. Ryan is experienced at delivering projects that require the ABC process and meet Caltrans right-of-way standards. Ryan has 19 years' experience in both



the public and private sector including several years as an Associate Land Surveyor for the County of Sacramento.

ROB MARKES SURVEY MANAGER / PARTY CHIEF

Rob has worked in the survey industry for more than 28 years, rising through the ranks from Chainman to Survey Crew Chief, overseeing field procedures and responsible for all office and field personnel. He is an experienced, Survey Crew Chief, excelling in topographic mapping, construction staking, and boundary surveys. His land surveying expertise includes supervising and performing Global Positioning System surveys, topographic surveys, aerial control surveys, horizontal and vertical control networks, title surveys, boundary surveys, cadastral surveys, geodetic surveys, engineering surveys and construction surveys, plus construction control and staking for a wide range of projects.

TIM PRINGLE SENIOR PARTY CHIEF

Tim has 14 years of land surveying experience. He is an accomplished party chief with a proven ability to carry out all aspects of land surveying from boundary determination, topographic surveys, construction staking and mapping. His depth of experience ranges from private development work, utility mapping, flood plains, roadway and bridges. His experience also includes using Global Positioning Systems, conventional robotic instruments and laser levels.



GEOCON | GEOTECHNICAL

Geocon is a California Corporation established in 1971 as a professional engineering consulting firm providing comprehensive geotechnical engineering, environmental consulting, materials testing and special inspection services for over 48 years. We employ close to 300 technically strong and highly motivated engineers, geologists, environmental scientists, and technicians, located in nine offices throughout California. State-of-the-art geotechnical and materials testing laboratories, inventories of field equipment and instrumentation, comprehensive technical libraries, and advanced data-management systems, support each office.

Geocon Consultants, Inc. is located at 3160 Gold Valley Drive, Suite 800, Rancho Cordova, CA 95742. Our office and laboratory are located less than 13 miles from the City of Roseville. Geocon key personnel are based in our Rancho Cordova office.

Key Staff

JOHN PFEIFFER, CEG SR. ENGINEERING GEOLOGIST

John has provided geologic, hydrogeologic, and environmental expertise on public and private projects in Northern California since 1989. He has conducted numerous soil and groundwater studies for both geotechnical and environmental purposes and is experienced in the design, installation, and evaluation of groundwater monitoring systems

for wastewater treatment facilities. John is also experienced in identifying, assessing, and managing NOA. In association with some projects, he has conducted studies to assess the influence of rivers, tidal fluctuations, and/or municipal well operation on site-specific groundwater conditions. John's expertise includes conducting Phase I and II Environmental Site Assessments (ESAs), geologic background research and reconnaissance in support of slope stability evaluations, and geologic hazard studies

JEREMY ZORNE, PE, GE SR. ENGINEERING GEOLOGIST

Jeremy has 23 years of experience conducting and managing geotechnical and materials testing, as well as special inspection projects throughout California and has been with Geocon for his entire professional career. His diverse project experience includes transportation infrastructure (roadways, bridges, and retaining walls), public buildings, parks and recreation facilities, water/wastewater treatment and distribution facilities, educational facilities, commercial/industrial development, and residential developments. He is currently managing several on-call contracts for various agencies throughout California. He has a well-known reputation for responsive service and his dedication to providing cost-effective, practical solutions for difficult geotechnical challenges.

Full resumes for subconsultant staff are included in the appendix.

GDPUD WORK REQUIREMENTS

The following is a list of information and the efforts required from GDPUD staff in order to complete the CDS Feasibility Study.

- ▶ Flow monitoring data for the last two years
- ▶ Any groundwater level and monitoring data
- ▶ Maintenance records of the facilities
- ▶ Other information the operators might feel is necessary to share
- ▶ A District provided onsite backhoe and operator for one day to assist with the leach field condition assessment

It is assumed that District Staff will provide the listed data and documents within 10 calendar days from the notice to proceed.

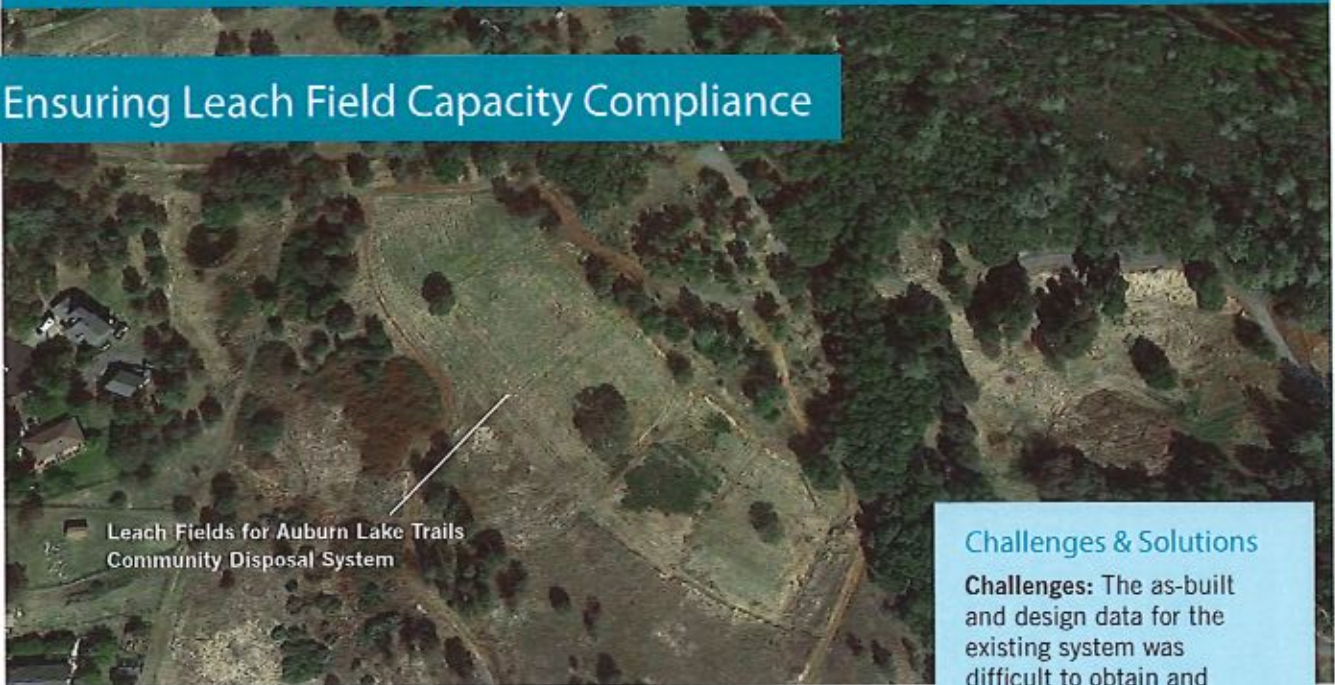
It is assumed the District will provide GDPUD Staff to review report submittals and attend necessary site visits and conference calls.

RELEVANT EXPERIENCE AND REFERENCES

BEN|EN

TRUSTED ENGINEERING ADVISORS

Ensuring Leach Field Capacity Compliance



Leach Fields for Auburn Lake Trails Community Disposal System

RELEVANT EXPERIENCE AND REFERENCES

Challenges & Solutions

Challenges: The as-built and design data for the existing system was difficult to obtain and process due to missing data and documentation. Connections to individual, privately-owned septic tanks made smoke testing of the collections system challenging.

Solutions: In order to properly analyze the capacity of the system **BENIEN** created a new water balance for the disposal system by physically gathering the needed data and researching weather data via the internet. The **BENIEN** team worked closely with District Staff who had experience inspecting the septic systems. We were then able to identify problem areas and develop a inflow and infiltration reduction plan.

CLIENT

- ▶ Georgetown Divide Public Utility District

REFERENCE

- ▶ **Steve Palmer**
Former General Manager
Currently Director of Public Works, Town of Tiburon
530.957.4413

COMPLETED

- ▶ April 2019

CONTRACT FEE

- ▶ \$70,000

KEY STAFF

- ▶ **David Harden, PE**
(Project Manager)
- ▶ Tony Ozanich, PE
- ▶ Gabriel Rodell, PE
- ▶ Carlos Sahagun

SUBCONSULTANTS

- ▶ Total Flow, Inc.
- ▶ Geocon Consultants

SERVICES

- ▶ Inflow and Infiltration Study
- ▶ Leach Field Capacity Report
- ▶ Water Balance Report
- ▶ Work Plan
- ▶ Preliminary Design Report for Disposal Capacity Improvements
- ▶ Investigation of Funding Opportunities

AUBURN LAKE TRAILS COMMUNITY DISPOSAL SYSTEM

During the storm events of early 2017, the Community Disposal System (CDS) in the Auburn Lake Trails on-site wastewater disposal system near Cool, CA exceeded maximum monthly flows and received a Notice of Violation (NOV) from the Regional Water Quality Control Board (RWQCB). **BENIEN** was selected to act as a liaison for Georgetown Divide Public Utility District (GDPUD) to respond to the NOV, evaluate the CDS, and provide GDPUD with a workplan to reduce infiltration and inflow (I/I) to the system.

BENIEN provided the GDPUD with a leach field capacity analysis for a community disposal system, a calibrated water balance, a complete inflow and infiltration study, and a geotechnical evaluation of the leach field soil properties relating to wastewater disposal.



Helping Biggs Achieve Regulatory Compliance



Challenges & Solutions

The WWTP upgrades eliminated costly future plant upgrades thereby keeping utility bills manageable and making the City more competitive in the local economic market by reducing the potential for utility cost uncertainties.

CLIENT

- ▶ City of Biggs

REFERENCE

- ▶ Mark Sorensen
City Administrator
PO Box 307
Biggs, CA 95917
530.868.0100
Mark@biggs-ca.gov

CONTRACT FEE

- ▶ \$7.1 million

DATES

- ▶ 2014

KEY STAFF

- ▶ Orin Bennett, PE
- ▶ David Harden, PE
- ▶ Stacey Lynch, PE
- ▶ Gabriel Rodell, PE

SUBCONSULTANTS

PHASE 1

- ▶ Nex Gen Utility Management
- ▶ Civil Engineering Construction (Civil)
- ▶ ControlPoint (Electrical)
- ▶ Geocon (Geotechnical)

PHASE 2

- ▶ ControlPoint (Electrical)
- ▶ GEI Consultants (Civil)
- ▶ Geocon (Geotechnical)
- ▶ Pace Engineering (Survey)

SERVICES

- ▶ Planning Study
- ▶ Design

WASTEWATER TREATMENT PLANT IMPROVEMENTS

The City of Biggs' Wastewater Treatment Plant was in violation of their NPDES Permit. A Time Schedule Order (TSO) was issued and **BEN|EN** was selected to prepare a revision to a previous study. This Revised Final Study proposed a land disposal alternative to eliminate the surface discharge of wastewater effluent. This alternative involves treatment, seasonal storage, and summertime irrigation of fodder crops.

Subsequently, **BEN|EN** was selected to prepare a design for the facility. Phase 1 consisted of plant upgrades and the rehabilitation of existing facilities to ready the plant while the land acquisition and environmental processes were underway for Phase 2.

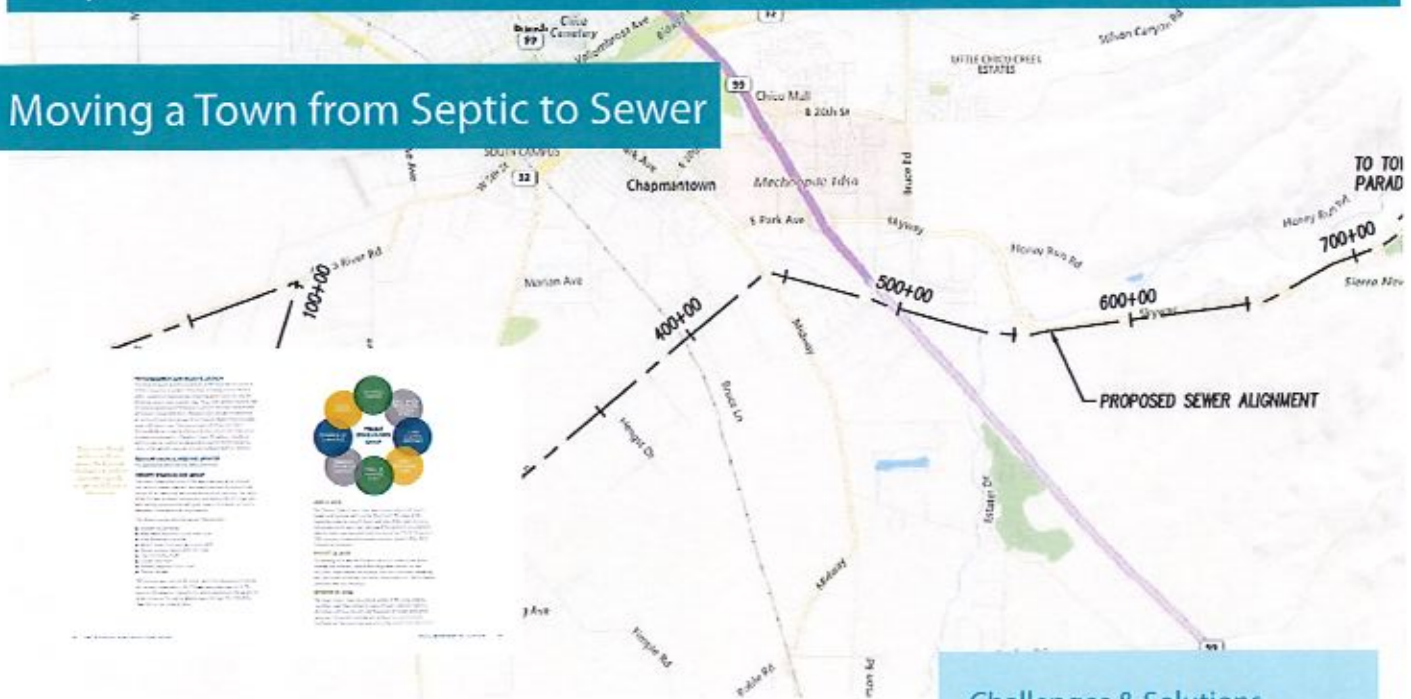
Phase 1 design consisted of a new influent pump station and force main, a new influent screen to remove large debris and plastics, improvements to the rock filters to reduce mosquitoes, improvements to the chlorine distribution system, updated electrical power and controls, and updates to the operations/ laboratory building.

Phase 2 included grading and drainage of the crop fields and storage pond, field irrigation piping design, a pump station to transport water to the storage pond, and updates to the electrical and controls.

The upgrades to the Biggs Wastewater Treatment Plant allows the City to be in compliance with the Waste Discharge Requirements (WDR) Permit and will serve as a stabilizing influence to the community as questions about the longer-term uncertainties of discharge permit requirements will be eliminated. It also provides a positive environmental and economic physical environment resulting from the discharge of cleaner waters and by providing reduced fiscal impacts to lower-income households resulting from expensive treatment plant upgrade requirements in the future.



Moving a Town from Septic to Sewer



CLIENT

- ▶ Town of Paradise

REFERENCE

- ▶ Marc Mattox
Town Engineer / Public Works Director
5555 Skyway
Paradise, CA 95969
530.872.6291 ext. 125
mmattox@townofparadise.com

COMPLETED

- ▶ 2017

CONTRACT FEE

- ▶ \$325,000

KEY STAFF

- ▶ Orin Bennett, PE
- ▶ Michael Massaro, PE
- ▶ Trin Campos, PE
- ▶ Stacey Lynch, PE
- ▶ David Harden, PE
- ▶ Gabriel Rodell, PE

FEATURES

- ▶ Alternatives Analysis
- ▶ Feasibility Report
- ▶ Special District Formation

SERVICES

- ▶ Funding Options Analysis
- ▶ Feasibility Study
- ▶ Public Outreach
- ▶ Special District Formation

SEWER ALTERNATIVES ANALYSIS, FEASIBILITY REPORT, AND SPECIAL DISTRICT FORMATION

After years of constrained business and population growth, this project intends to convert the Town's urban core from septic to a sewer system. The Town selected **BEN|EN** to provide alternatives analysis with conceptual designs, a feasibility report, and special district formation services.

BEN|EN analyzed five alternatives, including a wastewater treatment plant (WWTP) with stream/creek discharge, a WWTP with land application, WWTP with recycled water for beneficial reuse, such as at schools for field and landscaping irrigation, regional conveyance to the City of Chico Wastewater Treatment Plant, or no project.

The terrain in Paradise poses potential issues for wastewater collection and pipeline construction. Located in the Sierra Foothills, Paradise has a mountainous terrain, with steep grades and a considerable amount of rock. Analysis and conceptual design for the sewer system alternatives were needed to address these geologic factors.

Deliverables included a **feasibility report with alternatives analysis, final report for the preferred option with cost estimates for grant and loan funding options, and property assessment.**

Challenges & Solutions

After previous project failures because of stakeholders' concerns over cost, public acceptance is one of the largest challenges in converting the Town from septic to a sewer system. To address these concerns, the Town has scaled down the area to be included in the sewer district and the team has launched an intensive public outreach program with significant stakeholder engagement to address public questions and concerns.



Trusted Engineering Advisors for Markleeville PUD



Challenges & Solutions

The Markleeville PUD faces a number of challenges including: limited resources, an aging infrastructure and strict regulations. As District Engineer, **BEN|EN** provided on-call support as needed, aided the District in seeking funding opportunities, established open communication with regulatory agencies, and developed a maintenance work plan.

CLIENT

- ▶ Markleeville Public Utility District (MPUD)

REFERENCE

- ▶ Nick Hartzell
Board Chair
PO Box 222
Markleeville, CA 95120
530.694.2194
aileenb@yahoo.com

LOCATION

- ▶ Markleeville, CA

DATE COMPLETED

- ▶ Ongoing

KEY STAFF

- ▶ David Harden, PE

SERVICES

- ▶ Reviews Development Plans
- ▶ Directs Capital Improvement Program
- ▶ Regulatory Coordination
- ▶ Consults on Sewer Operations
- ▶ Grant Funding Assistance

MARKLEEVILLE PUD DISTRICT ENGINEER

As District Engineer, Bennett Engineering Services advises the Board of Directors on utility matters including those related to the collection system and reviews project plans and specifications for residential and commercial development projects which pertain to wastewater service provided by the District.

The engineer also leads the development of utility plans and programs, directs engineering planning studies and capital improvements projects and confers with engineering consultants, contractors, and the general public on construction and maintenance problems and procedures. The engineer also coordinates with regulatory officials and oversees sewer maintenance operations.



Repairing an Aging, Outdated System



CLIENT

- ▶ Markleeville Public Utility District (MPUD)

REFERENCE

- ▶ Nick Hartzell
Board Chair
PO Box 222
Markleeville, CA 95120
530.694.2194
aileenb@yahoo.com

LOCATION

- ▶ Markleeville, CA

DATE COMPLETED

- ▶ Ongoing

KEY STAFF

- ▶ David Harden, PE

SERVICES

- ▶ Reviews Development Plans
- ▶ Directs Capital Improvement Program
- ▶ Regulatory Coordination
- ▶ Consults on Sewer Operations
- ▶ Grant Funding Assistance

NEWCASTLE SANITARY DISTRICT SYSTEM REPAIRS

The System Repairs project was a part of a multi-phased contract to assist the Newcastle Sanitary District with needed repairs to its aging, outdated system. Phase 1 included an Infiltration/Inflow (I/I) Study. The I/I Study included an updated detailed system map for NSD; existing records research; reaches of concern based on data records; and interviews with NSD personnel. Field Data was collected using flow measuring devices and video inspection. The report identified NSD deficiencies, issues and recommendations, and priority list of repairs. Phase 2 was the design phase in which repair sites were selected, and construction documents were completed.

BEN|EN managed the bid process and provided construction management services during construction of the system repairs/rehabilitation of existing 6-inch, 8-inch, and 10-inch sanitary sewer, manholes, and appurtenant facilities. Phase 3 involved right-of-way engineering support, NSD annexation, and customer rate increase advisory services.

Challenges & Solutions

Locating and mapping the system from scratch was difficult. Working with an aged system made for interesting findings as construction progressed. We worked closely with NSD, SPMUD, and the contractor in the field to complete the needed repairs in a timely manner and stay within budget. The pipeline required cured-in-place pipe lining (CIPP).



UNICO PROJECT EXPERIENCE

DOWNTOWN WATERLINE AND STREET REPLACEMENT

CLIENT

- ▶ City of Lincoln

REFERENCE

- ▶ Araceli Cazarez
Associate Civil Engineer
600 Sixth Street
Lincoln, CA 95648
916.434.3233
Araceli.Cazarez@lincolnca.gov

DATES OF SERVICE

- ▶ April 2017 - July 2017

KEY PERSONNEL

- ▶ Rob Markes (Survey Manager/Party Chief)
- ▶ Ryan Ming (Land Surveyor)

- ▶ Tim Pringle (Party Chief)
- ▶ Loran Wagener (Drafter)
- ▶ Todd Jordan (Drafter)

PROJECT DESCRIPTION

This project removes and replaces existing waterlines and constructs a new water main on various streets. The project also included replacement of water service connections and full depth reclamation street improvements. UNICO provided land surveying services which included research, horizontal and vertical control, boundary and right of way surveying, a drafted base map of the boundary and right of way, along with topographic surveying and mapping. UNICO coordinated with Placer County and the City of Lincoln to attain the necessary mapping and documentation required for this project.



NEW CEMENT HILL PIPELINE

CLIENT

- ▶ Suisun-Solano Water Authority

REFERENCE

- ▶ James Daniels
District Engineer
810 Vaca Valley Pkwy,
Suite 201
Vacaville, CA 95688
707.421.7320
jdaniels@sidwater.org

DATES OF SERVICE

- ▶ March 2018 - February 2019

KEY PERSONNEL

- ▶ Rob Markes
(Survey Manager/Party Chief)
- ▶ Ryan Thompson, PLS
(Land Surveyor, Party Chief)
- ▶ Ryan Ming (Land Surveyor)
- ▶ Tim Pringle (Party Chief)
- ▶ Tony Perez (Chainman)
- ▶ Todd Jordan (Drafter)

PROJECT DESCRIPTION

This Suisun-Solano Water Authority project provides a second pipeline from the Cement Hill Water Treatment plant to the Tank 2A and 2B sites. The new pipeline will consist of two segments. The southerly segment begins near the existing CHWTP and ends near the northerly right of way line of Clay Bank Road. The northerly segment begins at the southerly segment terminus at the northerly right of way line of Clay Bank Road and ends at the existing Tank 2A site. The overall combined length of the proposed pipeline is approximately 2600 linear feet. UNICO is providing land surveying services including research, horizontal and vertical control, boundary and right of way surveying, a drafted base map of the boundary and right of way, along with design level topographic surveying and mapping. In addition, plats and legal descriptions will be required for temporary construction easements.



GEOCON PROJECT EXPERIENCE

MAHALEE LODGE PROJECT, TWO ROADWAY BRIDGES OVER TOWN DITCH

CLIENT

- ▶ Town of Markleeville

REFERENCE

- ▶ Blaise D'Angelo
Civil Engineer, Blaise Designs
1300 Apache Avenue
South Lake Tahoe, CA 96151
916.434.3233
blaisedesigns@aol.com

DATES OF SERVICE

- ▶ August 2012

KEY PERSONNEL

- ▶ John Pfeiffer, CEG
- ▶ Jeremy Zorne, PE, GE

PROJECT DESCRIPTION

Geocon prepared a foundation report for the proposed roadway bridges (Lodge Entrance and Village Way) over the Town Ditch at the Mahalee Lodge project located in Markleeville. The two roadway bridges are located west of State Route 89 (SR-89) and north of Montgomery Street in the Town of Markleeville. At the project location, the two roadway bridges are part of a larger proposed development (approximately 36 acres) for Mahalee Lodge. Privately owned land surrounds the project site with both undeveloped mountain meadow and wooded mountain slopes. The meadow area includes a designated wetland area and an irrigation ditch locally referred to as the "Town Ditch," which

traverses the project site from west to east. The ditch is approximately 3 feet deep and 5 feet across. The roadway bridges are crossing the Town Ditch at the locations. The purpose of our geotechnical investigation was to evaluate soil and geologic conditions at the bridge sites and to develop foundation recommendations and estimated bearing capacities for the roadway bridges and associated wingwalls.

AUBURN LAKE TRAILS COMMUNITY DISPOSAL SYSTEM

CLIENT

- ▶ Georgetown Divide
Public Utility District
(Subconsultant to Bennett
Engineering Services)

REFERENCE

- ▶ Steve Palmer
Former General Manager
Currently Director of Public
Works, Town of Tiburon
530.957.4413

DATES OF SERVICE

- ▶ January 2018

KEY PERSONNEL

- ▶ John Pfeiffer, CEG
- ▶ Jeremy Zorne, PE, GE

PROJECT DESCRIPTION

Geocon performed percolation testing at the Georgetown Divide Public Utility District's (GDPUD) community disposal system (CDS) in the Auburn Lake Trails development, located near the community of Cool. The facility is an existing community waste

water disposal system consisting of five subsurface disposal fields on an approximately 30-acre site in gently rolling oak woodland terrain. The site is generally bounded by State Route 193 to the south, rural residential properties to the north and west, and undeveloped oak woodlands to the north and east. The purpose of our scope of services was to aid our client in evaluating the existing capacity of the CDS.

APPENDIX: RESUMES



BEN | EN

PROJECT ROLE

Project Manager

PROFESSIONAL REGISTRATION

Civil Engineer, CA 84216

EDUCATION

Bachelor of Science Civil Engineering,
California State University,
Sacramento

PROFESSIONAL AFFILIATIONS

Mountain Counties Water Resources
Association

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dharden@ben-en.com

DAVID P. HARDEN, PE

David Harden, PE, has more than 10 years of civil engineering experience with wastewater, water, and transportation projects. Dave's past wastewater projects have included a focus on effluent storage, conveyance, and land disposal. He also has experience with in-conduit hydro, micro-hydro, large-diameter water pipelines, and concrete tank projects.

As Assistant City Engineer for the City of Gridley, Dave has assisted with sewer pipeline replacements, grant funding applications, pump station improvements, and water line replacements. As a project manager, he provides support to cities and public agencies with public presentations, consultant management, plan review, construction management, and compliance with federal, state, and local policies. As a project engineer, he has experience producing plans, specifications, and cost estimates, alternatives analyses, and feasibility studies.

Dave excels at producing innovative solutions to challenging projects that meet his clients' needs. Some of Dave's most challenging design projects have included: diversion dam intake modifications with fish bypass facilities, and emergency drought relief pump stations with accelerated design/construction periods and severe site constraints.

In addition to his civil engineering experience, Dave previously spent more than 10 years working in construction. His construction management and inspection experience includes: coordination with client staff, pre-construction, construction kickoff and progress meeting scheduling and facilitation, daily inspection, review of shop drawings, review and response to submittals and RFIs, change order processing, review of contractors' schedules and schedules of values, construction phase engineering, and preparation of as-built record drawings.

PROJECT EXPERIENCE

Auburn Lake Trails Community Disposal System, Georgetown Divide Public Utility District. GDPUD required an evaluation of leachfield capacity for the Auburn Lake Trails Community Disposal System after receiving a Notice of Violation for exceeding maximum flows during the months of February and March 2017. An inflow and infiltration (I/I) Study, review of current records, leachfield soil investigation, project management, and correspondence with the Regional Water Quality Control Board (RWQCB) was performed. Additionally, a leachfield capacity and water balance report, was performed. As a Project Manager, responsible for coordination of subconsultants, leachfield capacity analysis and evaluation, I/I study analysis, and acting as liaison for GDPUD to the RWQCB.

Strawberry Pump Station, El Dorado Irrigation District. This project includes design and construction assistance for a new pump station and intake system adjacent to the water treatment plant and existing emergency raw water pump. Responsibilities include project management; facility and alternatives review; and design for the intake system, pump station foundation, and yard piping. As Project Manager, Dave was responsible for delivery of the project deliverables on schedule and within a tight budget, as well and coordination with subconsultants, communication with the client, and development of innovative solutions.

Small Diversion Upgrades: Duncan Creek, North Fork Long Canyon, and South Fork Long Canyon, Placer County Water Agency. These projects were all part of the larger Middle Fork American River Hydroelectric project. In order to attain FERC licensing, modifications to the three diversion dams were done. The modifications were designed to improve operations and maintenance, enhance environmental resources and meet the requirements specified in new environmental programs and measures. They included design of self-cleaning, Coanda-effect screen intake systems along the spillway crests of existing diversion dams to increase efficiency, reduce maintenance, and improve riparian habitat by allowing fish and sediment migration over the dams.

As a Project Engineer, performed analysis of the existing intake structures, including hydraulic analysis of current diversions and flood conditions, prepared the pre-design report and several technical memorandums outlining possible design alternatives to meet requirements of environmental regulatory agencies, and the end user. Assisted with project management, CAD design, and surveying.

Sewer Alternatives Analysis, Feasibility Report, and Special District Formation, Town of Paradise. This project includes alternatives analysis, feasibility report and Special District formation to create the Town's first sewer system. Tasks include public outreach, recommended options, and funding services analysis. As Project Engineer, assisted with public outreach, alternatives analysis, draft feasibility report and funding analysis and options.

Slate Creek Engineering Review, Enel Green Power North America. This engineering review evaluated the feasibility of intake system modification for a four megawatt power generation facility. Several Coanda style screen intake designs were evaluated to provide great diversion capacity to the existing penstock. The designs had to meet intake flow requirements of 100cfs, while providing the required fish passage. As Project Manager and Lead Designer, provided conceptual designs and hydraulic analysis to be included in the feasibility study for modifications to the existing intake system.

Wastewater Treatment Plant Improvements, City of Biggs. Prepared design converting the City's existing Wastewater Treatment Plant (WWTP) from a surface water discharge facility to a land application discharge facility and achieve compliance with RWQCB. Phase 1 consisted of plant upgrades with rehabilitation of existing facilities. Design included a new influent pump station, a new influent screen to remove large debris and plastics, improvements to the rock filters, improvements to the chlorine distribution system, updated electrical power and controls, and updates to the operations/laboratory building. Phase 2 included the acquisition of approximately 150 acres of land for irrigation, grading and drainage improvements to the crop fields and storage pond, field irrigation piping design, a pump station to transport water to the storage pond, and updates to the electrical system and controls. Provided funding acquisition and management through SRF and coordination with RWQCB for changes to the permit. As Project Manager for Phase 2 Improvements, led design team and subconsultant coordination, was responsible for communication with the client and state agencies, and was responsible for project delivery. Responsibilities included pump selection, pipeline alignments, storage pond sizing, and land application disposal field sizing. The project design included concerns for the nearby environmentally sensitive area and protected species habitat.

Wastewater Treatment Plant Headworks Improvements, City of Grass Valley. Equipment selection evaluation and recommendation for treatment plant headworks. Project scope includes analysis of design parameters, recommendation of equipment, plans and specifications for new equipment install, and construction assistance. This project consisted of equipment selection, improvement options analysis and the development of plans and specifications for the replacement of headworks equipment. As Project Manager and Engineer, assessed headworks equipment in need of replacement, researched replacement equipment, provided a feasibility assessment, and assisted the City with the selection process. Managed consultants and the design team to provide plans and specifications for the project, and provided construction assistance by reviewing submittals, making design changes during construction, and project milestone inspections.

On-Call District Engineering Consulting Services, Markleeville Public Utility District. Provision of as-needed general management services for the District. Responsibilities include advising on utility matters related to the collection system, review of plans and specifications for residential and commercial development projects, directing engineering planning studies and capital improvement projects, providing public outreach, and supervision and management of sewer maintenance operations. As District Engineer and interim General Manager, provides engineering oversight and evaluation of the District's wastewater collection and treatment system. Dave is also responsible for the review of proposed new connection and system analysis to ensure the District operates within their permit, manages operations and maintenance, monitoring and reporting for water quality compliance, and reports to the District Board of Directors at quarterly meetings.

Natoma Alley Sewer Rehabilitation, City of Folsom. This project included evaluation and preparation of an alternatives analysis for re-alignment of sewer mains, and preparation of improvement plans for the selected alternative. Provided public outreach to affected neighbors and business owners. As Project Engineer, provided engineering design support and review of plans, specifications, and estimate.

Wastewater Treatment System Improvements Study, City of Isleton. A full-system evaluation of the City's wastewater collection, treatment, and disposal system to identify major deficiencies and develop recommendations for improvements required for compliance with Regional Water Quality Control Board guidelines and regulations. Also included: planning grant management assistance and administration, survey, geotechnical, and hydrogeologic investigations, an inflow/infiltration study, preliminary design and project report, and a construction grant application. Project Manager.



BEN|EN

PROJECT ROLE

Quality Control/Quality Assurance

PROFESSIONAL REGISTRATION

Civil Engineering, CA 64733

Civil Engineering, WA 45753

EDUCATION

Bachelor of Science Civil Engineering,
University of Arizona

Master of Science Environmental
Engineering, University of Arizona

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers

Water Environmental Federation

California Water Environment

Association

American Public Works Association

CONTACT

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mmassaro@ben-en.com

MICHAEL MASSARO, PE

With more than 20 years of experience, Mike Massaro has managed design teams, subconsultants, budgets, and schedules. His projects have required the production of plans, specifications, cost estimates, public outreach, utility coordination and coordination for environmental permitting. As the current City Engineer at the City of Oroville, Mike reviews capital improvement plan projects for streets, sewer, and storm drainage, reviews encroachment permits, provides review and comment on parcel mergers and splits, lot line adjustments, tentative parcel maps, tentative subdivision maps, plan checking on site civil improvements and general conformance with the City of Oroville Municipal Code.

Mike's technical expertise and experience includes water, sewer, and recycled water facilities, including pumping stations, interceptors, and pipelines. The pipelines have included vitrified clay pipe (VCP), reinforced concrete (RCP), polyethylene (HDPE), polyvinyl chloride (PVC), ductile iron pipe (DIP), and have ranged from 8- to 120-inches in diameter and as long as 38,000 feet. Mike has significant planning and design experience with open cut, horizontal directional drilling, tunneling, pipe jacking, and trenchless railroad and light rail crossings. He also provides engineering services during construction, reviewing submittals and requests for information and resolving challenges in the field.

PROJECT EXPERIENCE

Wastewater Treatment System Improvements Study, City of Isleton. A full-system evaluation of the City's wastewater collection, treatment, and disposal system to identify major deficiencies and develop recommendations for improvements required for compliance with Regional Water Quality Control Board guidelines and regulations. Also included: planning grant management assistance and administration, survey, geotechnical, and hydrogeologic investigations, an inflow/infiltration study, preliminary design and project report, and a construction grant application. Provided quality review.

Wastewater Treatment Ponds Closure, City of Marysville. Responsibilities include: project management, RWQCB permit management, data review (including site visits, document research, and geotechnical investigation), preliminary design, SRF application assistance and reporting, producing plans, specifications, and estimate, providing bidding assistance and construction management. Provided quality review.

East Avenue Waterline Replacement, City of Lincoln. Replacement of approximately 4,300 LF of cast iron and asbestos-cement pipe with 8-10" PVC pipe. Project includes fire hydrant replacement, service replacement, storm drain improvements, utility coordination, and construction and bidding assistance. Provided plans, specifications, and estimates (PS&E), utility coordination, potholing, survey, and bidding support. Provided quality review.

New Cement Hill Pipeline, Suisun-Solano Water Authority. This project will provide a second pipeline, consisting of 20-inch diameter PVC, from the Cement Hill Water Treatment Plant (CHWTP) to the site of the existing Tank 2A and future Tank 2B. The scope of work included design for updating the connection to the tank with an above ground manifold, double-ball flexible expansion joint, motor-operated valve, and chlorine sampling points. Tasks include project management, plans, specifications, and estimate, flow meter installation, assistance with acquisition of an encroachment permit for construction within the Putah Canal right-of-way with the US Bureau of Reclamation, assuring environmental compliance, permitting, preparation of a Storm Water Pollution Prevention Plan (SWPPP), public outreach, and design support during construction. As Project Manager, prepared the Preliminary Design Report, performed quality control, coordination of subconsultants, and acting liaison for multiple agencies.

Arcade Creek Crossing, Sacramento Suburban Water District. This project includes installation of new distribution main onto an existing bridge to replace the pipeline currently exposed within the existing creek bed. Tasks include project management,

background research, design services, environmental and permitting services bid services, and engineering services during construction. Project Manager.

Londonberry Drive Creek Crossing Design, California American Water. This project includes replacement of an existing 8-inch diameter steel pipe that was partially exposed within Mark West Creek. Installation of new 12" water main crossing the creek via horizontal directional drilling methods was chosen. Tasks include project management, topographic surveying and mapping, plans, specifications, and estimate, permitting (CEQA, California Department of Fish and Game, and a Sonoma County Riparian Corridor Zoning Permit), Bidding and Construction support. Project Manager.

Wastewater Analyses Related to Land Development Projects, City of Tracy. A three-year contract for review of City design standards and wastewater master plan; wastewater study and plan review; plan checking for sewer; general civil plan review, and entitlement review. As Project Manager, provides evaluation of sewer system hydraulics, evaluation of new development sewer impacts and provides comments back to City Staff to facilitate plan review and conditions for new developments.

3rd Street Relief Sewer Construction Management, City of Sacramento Department of Utilities. Project included a new 42-inch sewer pipeline using an open cut trench. Additional work included the installation of new sewer manholes, modifications to existing drain inlets, and new combined sewer service connections. Reviewed submittals and requests for information regarding sewer hydraulics and bypass pumping requirements. As Engineering Project Manager and subconsultant to Unico Engineering, reviewed submittals and requests for information regarding sewer hydraulics and bypass pumping requirements.

Stirling City Sewer System Rehabilitation Planning Study, Butte County. Project includes assessment of the collection system with a report identifying deficiencies and repairs needed; preliminary engineering; evaluation of rehabilitation and replacement alternatives with cost estimate; income survey; CEQA/NEPA documentation; evaluation of existing rights-of-way and land acquisitions for proper ownership. Project Manager.

2018 Treated Water Line and Canal Reliability, Georgetown Divide Public Utility District. Engineering design, environmental review, permitting, bid documents, engineering estimates, bid support services, and engineering support during construction for the replacement and upgrade of 4-inch water mains. Provided quality review.

Downtown Waterline and Street Replacement, City of Lincoln. Replaced 4,200 LF of existing water mains and provided full-depth roadway replacement on multiple residential streets. Team provided utility

coordination, right-of-way mapping, and drainage design. As Quality Assurance, provided quality control and quality assurance support during design.

Natoma Alley Sewer Rehabilitation, City of Folsom. This project included evaluation and preparation of an alternatives analysis for re-alignment of sewer mains, and preparation of improvement plans for the selected alternative. Provided public outreach to affected neighbors and business owners. As Senior Engineer, provided quality control and quality assurance support during design.

Sewer Mains and Manholes Repair, City of Grass Valley. The team prepared plans, specifications, engineering cost estimates and schedules for the lining and repair of sewer main lines and manholes throughout the City. The evaluation included approximately 10,000 LF of 6-inch, 3,000 LF of 8-inch, and 3,000 LF of 10 to 24-inch sewer main. The plans included trenchless repairs for areas of cracking, and infiltration and open trench construction where required for pipeline sagging or severe joint offsets. As Quality Assurance, performed quality review and assisted with preparation of the specifications.

Sewer Alternatives Analysis, Feasibility Report, and Special District Formation, Town of Paradise. This project includes alternatives analysis, feasibility report and Special District formation to create the Town's first sewer system. Tasks include public outreach, recommended options, and funding services analysis. As Project Manager, led the alternatives development and evaluation and supported public outreach efforts with presentations for stakeholder groups and public workshops, engaging with the public and explaining the project's benefits. Technical duties include feasibility level conveyance and wastewater treatment design and cost estimating.

Wastewater Treatment Plant Improvements, City of Biggs. Prepared design converting the City's existing Wastewater Treatment Plant (WWTP) from a surface water discharge facility to a land application discharge facility and achieve compliance with RWQCB. Phase 1 consisted of plant upgrades with rehabilitation of existing facilities. Design included a new influent pump station, a new influent screen to remove large debris and plastics, improvements to the rock filters, improvements to the chlorine distribution system, updated electrical power and controls, and updates to the operations/laboratory building. Phase 2 included the acquisition of approximately 150 acres of land for irrigation, grading and drainage improvements to the crop fields and storage pond, field irrigation piping design, a pump station to transport water to the storage pond, and updates to the electrical system and controls. Provided funding acquisition and management through SRF and coordination with RWQCB for changes to the permit. As Senior Engineer, provided quality review.



GABRIEL RODELL, PE

BEN|EN

PROJECT ROLE
Project Engineer

PROFESSIONAL REGISTRATION
Civil Engineer, CA 86446

EDUCATION
Bachelor of Science Civil Engineering,
University of California, Davis

PROFESSIONAL AFFILIATIONS
Water For People
Sacramento Area Water Works
Association

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Gabriel Rodell has more than seven years of experience in engineering consulting. His experience includes design and analysis for the following: potable water systems, stormwater systems, wastewater collection systems, wastewater treatment plants, potable water tanks, and potable and raw water pump stations. Gabriel also has experience in groundwater compliance monitoring and reporting, water system operations and resource optimization, water modeling using H2OMap Water, capital improvement plan recommendations, CAD plan and detail work, funding assistance through SRF and Caltrans, district and city engineering services, and negotiations with state and regional water quality control boards for wastewater permits.

Gabriel specializes in design and evaluation of drinking water systems, sewer collection networks, and wastewater treatment facilities. He has coordinated with Regional and State Water Boards for permitting, regulations, and funding. He is familiar with groundwater quality regulations for well systems. He has performed calculations, drafted plans, and designed water pump stations and an effluent wastewater pump station. He has also assisted in evaluations which included alternatives analyses and provided recommendations for water system operations programs, wastewater treatment plant improvements, and sewer system pipe rehabilitation/replacement.

PROJECT EXPERIENCE

Auburn Lake Trails Community Disposal System, Georgetown Divide Public Utility District. GDPUD required an evaluation of leachfield capacity for the Auburn Lake Trails Community Disposal System after receiving a Notice of Violation for exceeding maximum flows during the months of February and March 2017. An inflow and infiltration (I/I) Study, review of current records, leachfield soil investigation, project management, and correspondence with the Regional Water Quality Control Board (RWQCB) was performed. Additionally, a leachfield capacity and water balance report, was performed. As Project Engineer, assisted in providing water balance calculations, performing a leachfield analysis, and summarizing findings to GDPUD and RWQCB.

2018 Treated Water Line and Canal Reliability, Georgetown Divide Public Utility District. Engineering design, environmental review, permitting, bid documents, engineering estimates, bid support services, and engineering support during construction for the replacement and upgrade of 4-inch water mains. As Project Engineer, provided comprehensive review (QA/QC) of plans, specifications, and cost estimate.

Stirling City Sewer System Rehabilitation Planning Study, Butte County. Project includes assessment of the collection system with a report identifying deficiencies and repairs needed; preliminary engineering; evaluation of rehabilitation and replacement alternatives with cost estimate; income survey; CEQA/NEPA documentation; evaluation of existing rights-of-way and land acquisitions for proper ownership. As Assistant Project Manager, assisted in design of sewer system, preparation of project report, coordination with SWRCB for funding, and management of subconsultants (topographic survey, geotechnical investigation, CCTV inspection, smoke testing, income survey, environmental compliance (IS/MND), and rate study).

Wyandotte Creek Channel Analysis, City of Oroville. Evaluation of the hydraulic capacity of the natural creek and lined channel of Wyandotte Creek due to flooding issues within the project limits. Tasks included background research, topographic survey, and preparation of a technical memorandum with exhibits detailing the findings. As Project Manager, collected and reviewed previous studies and mapping, performed hydraulic analysis, reviewed technical memorandum, and managed subconsultants, budget, and schedule.

Wastewater Treatment Ponds Closure, City of Marysville. Responsibilities include: project management, RWQCB permit management, data review (including site visits, document research, and geotechnical investigation), preliminary design, SRF application assistance and reporting, producing plans, specifications, and estimate, providing bidding assistance and construction management. As Project Engineer, assisted in grading design of the wastewater ponds and coordinated with City, survey, and geotechnical subconsultants.

Castle City WDR Compliance, Caritas Acquisitions I, LLC. In April 2017, Castle City Mobile Home Park received a Notice of Violation (NOV) from the Central Valley Regional Water Quality Control Board on their Waste Discharge Requirements (WDR). BENIEN was selected to author a Water Balance Report assessing potential sources of inflows and infiltration, 100-year annual precipitation flow estimates, and assessment of the Wastewater Treatment Facility's (WWTF) capacity to handle projected flows without overflow. Additionally, the pond capacity and overflow event was re-calculated and the WWTF as-builts and monitoring data was analyzed. If the WWTF requires improvements, BENIEN will investigate funding options for Castle City Mobile Home Park.

Newcastle Sewer Master Plan, South Placer Municipal Utility District. The South Placer Municipal Utility District (SPMUD) annexed the Newcastle Sanitary District's (NSD) entire system several years ago. The old NSD system required CCTV work to locate facilities, CAD work to map the system, an evaluation and identification of all the facilities in the system requiring upgrades to meet SPMUD standards, ranking of importance of the repairs, budget level estimates for each repair, and identification of easements needed. A Master Plan Report was prepared to describe the findings of the analysis. As Project Engineer, assisted with the Master Plan, identification of improvements and review of existing data and District standards.

Natoma Alley Sewer Rehabilitation, City of Folsom. This project included evaluation and preparation of an alternatives analysis for re-alignment of sewer mains, and preparation of improvement plans for the selected alternative. Provided public outreach to affected neighbors and business owners. As Project Engineer, responsible for predesign alternative development and plans, specifications, and estimate.

Spray Field Technical Memo, City of St. Helena. The City received a notice of violation from the Regional Water Quality Control Board for excessive discharge from their wastewater treatment facility to the Napa River. The existing irrigation system needed to be rehabilitated and spray head capacities increased. Bennett Engineering Services provided a technical memorandum evaluating the existing layout and planned flow for the spray field irrigation system, prepared plans and specifications, and provided engineering support during construction. As Project Engineer, prepared plans, specifications, and estimate and provided engineering support during construction.

Wastewater Treatment Facilities Evaluation Update, City of St. Helena. This project included review of available planning and evaluation documents and preparation of an updated memorandum for treatment capacity and effluent quality improvements necessary to meet the current projections for flows and loads. Specific discussion items in the memorandum included design flows and loads for current projections within available planning horizon, modifications or improvements to address capacity and effluent quality, algae reduction options, and disinfection system improvement options and recommendations. As Project Engineer, reviewed previous recommendations, performed hydraulic retention time calculations, prepared evaluation figures, and drafted report language.

Sewer Collection System Evaluation and Capital Improvement Program, Kirkwood Meadows Public Utility District. This project included updates and revisions compliant with each system's waste discharge requirements, monitoring and reporting program, and performance of self-audits for each sewer system management plan (SSMP). As Project Engineer, reviewed State Water Resources Control Board requirements of establishing and implementing an SSMP, and produced a comprehensive SSMP for the District. Incorporated analysis of the District's sewer-related operational and management practices into the SSMP.



KAITLYN SETHARES, EIT

BEN|EN

PROJECT ROLE
Staff Engineer

PROFESSIONAL REGISTRATION
Engineer-In-Training, CA 166036

EDUCATION
Bachelor of Science Civil Engineering,
University of Vermont

PROFESSIONAL AFFILIATIONS
American Society of Civil Engineers
Water for People

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Kaitlyn (Kati) Sethares graduated in 2018 with honors from the University of Vermont with a Bachelor of Science in Civil Engineering and a minor in Mathematics. She now has more than one year of professional civil engineering experience, all with Bennett Engineering Services. Since joining the firm, Kati has assisted with construction document preparation, preparing funding applications for both water and wastewater projects, encroachment permits, and writing technical memorandums. She has performed calculations for and assisted in the design of water and wastewater pipelines, a water storage tank, and a pump station. She is technically proficient in AutoCAD, MATLAB, Revit, MicroStation, COMSOL, and GIS.

PROJECT EXPERIENCE

Strawberry Raw Water Pump Station, El Dorado Irrigation District. This project includes design and construction assistance for a new pump station and intake system adjacent to the water treatment plant and existing emergency raw water pump. Responsibilities include project management; facility and alternatives review; and design for the intake system, pump station foundation, and yard piping. As Assistant Engineer, assisted with specification preparation.

Wyandotte Creek Channel Analysis, City of Oroville. Evaluation of the hydraulic capacity of the natural creek and lined channel of Wyandotte Creek due to flooding issues within the project limits. Tasks included background research, topographic survey, and preparation of a technical memorandum with exhibits detailing the findings. As Assistant Engineer, evaluated channel capacity, prepared technical memo with proposed alternatives.

Wastewater Treatment Ponds Closure, City of Marysville. Responsibilities include: project management, RWQCB permit management, data review (including site visits, document research, and geotechnical investigation), preliminary design, SRF application assistance and reporting, producing plans, specifications, and estimate, providing bidding assistance and construction management. As Assistant Engineer, assisted with delivery of plans and estimate and prepared SRF funding application including a technical report and life cycle cost analysis.

Wastewater Treatment Plant Improvements, Phase 2, City of Biggs. The project involved preparation of a design to convert the City's existing Wastewater Treatment Plant (WWTP) from a surface water discharge facility to a land application discharge facility and return the City to compliance with RWQCB. Phase 2 included the acquisition of approximately 150 acres of land for irrigation, grading and drainage improvements to the crop fields and storage pond, field irrigation piping design, a pump station to transport water to the storage pond, and updates to the electrical system and controls. In addition, the team provided funding acquisition and management through the SRF and coordination with RWQCB for the changes to the permit. As Assistant Engineer, assisted with construction document preparation and permit applications for the treatment plant discharge. Compiled information for the Report of Waste Discharge and assisted with plan edits for the final set.

Waterline Replacement Funding Application, City of Gridley. Provided project management and prepared and submitted the funding application package to the DFA Drinking Water State Revolving Fund (DWSRF) to replace approximately 8,980 linear feet of two-inch waterlines with new six-inch waterlines, 37,490 linear feet of six-inch waterlines with new 10-inch waterlines, upgrade 172 water valves, and replace 29 fire hydrants. As Assistant Engineer, assisted with preliminary PS&E and prepared SRF funding application, including project technical report, preliminary schedule, and life cycle cost analysis.

Biggs Water Storage Tank and Pump Station, City of Biggs. This project involved design and SRF funding coordination for the storage tank and pump station project for the City of Biggs. As Assistant Engineer, prepared PS&E, provided utility coordination, prepared calculations for tank size and capacity, pipe sizes, and pump sizing and selection, and prepared SRF funding application, including project technical report and life cycle cost analysis.



ALEXANDRA HOLLADAY

Alexandra (Ali) graduated in 2019 with honors from California State University, Sacramento with a Bachelors of Science in Civil Engineering. She has two years of experience in the industry and has worked with Bennett Engineering Services for more than a year as an intern before graduating. Since joining the firm, Ali has assisted in preliminary plan sets and cost estimates, prepared exhibits, performed final plan edits, hydraulic calculations, permit compliance and Report of Waste Water Discharge Permits, and Anti-Degradation Analysis. She is technically proficient in AutoCAD, Civil3D and can sign in ASL (American Sign Language).

BEN|EN

PROJECT ROLE

Assistant Engineer

EDUCATION

Bachelor of Science Civil Engineering,
California State University
Sacramento

CONTACT

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PROJECT EXPERIENCE

2018 Treated Water Line and Canal Reliability, Georgetown Divide Public Utility District.

Engineering design, environmental review, permitting, bid documents, engineering estimates, bid support services, and engineering support during construction for the replacement and upgrade of 4-inch water mains. As part of the engineering team, assisted with field survey, design of both the canal and pipeline, cost estimates, and bid assistance.

Stirling City Sewer System Rehabilitation Planning Study, Butte County.

Project includes assessment of the collection system with a report identifying deficiencies and repairs needed; preliminary engineering; evaluation of rehabilitation and replacement alternatives with cost estimate; income survey; CEQA/NEPA documentation; evaluation of existing rights-of-way and land acquisitions for proper ownership. As Assistant Engineer, assessed the collection system and provided recommendations for the rehabilitation and preliminary design.

Wastewater Treatment System Improvements Study, City of Isleton.

A full-system evaluation of the City's wastewater collection, treatment, and disposal system to identify major deficiencies and develop recommendations for improvements required for compliance with Regional Water Quality Control Board guidelines and regulations. Also included: planning grant management assistance and administration, survey, geotechnical, and hydrogeologic investigations, an inflow/infiltration study, preliminary design and project report, and a construction grant application. As part of the engineering team, assisted with the Plan of Study and on-going evaluations of the system.

Wyandotte Creek Channel Analysis, City of Oroville.

Evaluation of the hydraulic capacity of the natural creek and lined channel of Wyandotte Creek due to flooding issues within the project limits. Tasks included background research, topographic survey, and preparation of a technical memorandum with exhibits detailing the findings. As part of the engineering team, assisted with the hydraulic modeling and the technical memorandum.

On-Call District Engineering Consulting Services, Markleeville Public Utility District.

Provision of as-needed general management services for the District. Responsibilities include advising on utility matters related to the collection system, review of plans and specifications for residential and commercial development projects, directing engineering planning studies and capital improvement projects, providing public outreach, and supervision and management of sewer maintenance operations. As part of the engineering team, assisted in producing quarterly and annual reports.

Feather River Force Main Planning Grant Assistance, City of Gridley.

Conducted a conditions assessment, feasibility analysis, and assisted with environmental and preliminary design documents to improve/replace the Feather River Sewer Crossing. The feasibility report includes options to replace and/or relocate the force main with an evaluation of the feasibility of different project alternatives, as well as cost estimates. As part of the engineering team, assisted with the funding application process.

Certifications:

Professional Land Surveyor
License 8749

Expertise:

Boundary Determination
Topographic Surveys
Legal Descriptions
Mapping
Field Supervision

Mr. Thompson is an accomplished licensed land surveyor with an all-around skill set from field work to office management. He has a proven ability to carry out all aspects of land surveying from boundary determination, topographic surveying, construction staking and mapping. Mr. Thompson specializes in complex legal and easement preparation. His experience also includes using Global Positioning Systems and conventional robotic instruments and laser levels. Ryan is experienced at delivering projects that require the ABC process and meet Caltrans right of way standards. Mr. Thompson has 19 years' experience in both the public and private sector including several years as an Associate Land Surveyor for the County of Sacramento.

Experience:

GDPUD Highway 193 Project, Georgetown, CA

Land Surveyor/Party Chief. This project relocated an existing 8" water main along State Highway 193 near the intersection with Catbird Hill Lane. Responsible for researching local and State Highway mapping Resolved Caltrans Right of Way along Highway 193. Prepared CAD drawing of topographic survey and boundary. Provided construction staking calculations for water line re-location.

Miller and Blackwelder Dams and Wheatland Gate Bridges, Beale AFB, CA

Land Surveyor. UNICO provided topographic and base mapping services for this project at Beale Air Force Base. The project consisted of the design and repair of Miller Dam, Blackwelder Dam and bridge replacement on Laughlin Road, which were declared unsafe by the U.S. Army Corps of Engineers. UNICO performed topographic and boundary surveys and construction staking.

CalAm Water Hwy 50 Crossing Design, Rancho Cordova, CA

Land Surveyor. The project requires approximately 450 LF of 16-inch main to cross Route 50 via jack-and-bore and approximately 600 LF of 12-inch main will be installed via open cut on the North side of the highway. On the South side of the highway, approximately 300 LF of 12-inch main will be installed via open cut. Responsible mapping and plats and legal descriptions.

Cement Hill Pipeline Project, Suisun, CA

Land Surveyor. This Suisun-Solano Water Authority project provides a second pipeline from the Cement Hill Water Treatment plant to the Tank 2A and 2B sites. The new pipeline will consist of two segments with an overall combined length of the proposed pipeline is approximately 2600 linear feet. Responsible for mapping, records research and boundary survey.

Rob Markes

Survey Manager/Party Chief



Expertise:

Boundary Determination
Topographic Surveys
Legal Descriptions
Mapping
Field Supervision
FEMA Flood Surveys
Construction Staking
Caltrans Requirements
Right of Way Engineering

Mr. Markes has worked in the survey industry for over 28 years, rising through the ranks from Chainman to Survey Crew Chief, overseeing field procedures and responsible for all office and field personnel. He is an experienced, Survey Crew Chief, excelling in topographic mapping, construction staking, and boundary surveys. His land surveying expertise includes supervising and performing Global Positioning System surveys, topographic surveys, aerial control surveys, horizontal and vertical control networks, title surveys, boundary surveys, cadastral surveys, geodetic surveys, engineering surveys and construction surveys, plus construction control and staking for a wide range of projects.

Experience:

GDPUD Highway 193 Project, Georgetown, CA

Survey Manager/Party Chief. This project relocated an existing 8" water main along State Highway 193 near the intersection with Catbird Hill Lane. Responsible for researching local and State Highway mapping. Performed detailed design level topography for roadway and waterline re-alignment. Performed roadway and waterline staking in compliance with Caltrans standards.

CalAm Water Hwy 50 Crossing Design, Rancho Cordova, CA

Survey Manager/Party Chief. The project requires approximately 450 LF of 16-inch main to cross Route 50 via jack-and-bore and approximately 600 LF of 12-inch main will be installed via open cut on the North side of the highway. On the South side of the highway, approximately 300 LF of 12-inch main will be installed via open cut. Survey Manager responsible for project management, records research, agency coordination on quality assurance.

Miller and Blackwelder Dams, Beale AFB, CA

Survey Manager/Party Chief. UNICO provided topographic and base mapping services for this project at Beale Air Force Base. The project consisted of the design and repair of Miller Dam, Blackwelder Dam and bridge replacement on Laughlin Road, which were declared unsafe by the U.S. Army Corps of Engineers. UNICO prepared a report outlining work performed and provided files containing aerial topography.

On-Call Survey for Reclamation District 1000, Sacramento, CA

Survey Manager/Party Chief. Task orders for this project include various topographic and bathymetric surveys of various Reclamation District 1000 facilities. Responsible for contract management, quality control, and field surveys.

Certifications:

OSHA 30 Certified
Confined Space Certified
Hazwoper Certified

Expertise:

Boundary Surveys
Topographic Surveys
Utility Mapping
Caltrans Standards

Mr. Pringle has 14 years of land surveying experience. He is an accomplished party chief with a proven ability to carry out all aspects of land surveying from boundary determination, topographic surveys, construction staking and mapping. His depth of experience ranges from private development work, utility mapping, flood plains, roadway and bridges. His experience also includes using Global Positioning Systems, conventional robotic instruments and laser levels.

Experience:

Natoma Alley Sewer Rehabilitation, Folsom, CA

Party Chief. This project includes the replacement and rehabilitation of portions of sewer systems in the older areas of the City that are encountering ongoing maintenance problems. This project will rehabilitate approximately 4,000 feet of sewer infrastructure along the Persifer and Mormon Alley between Stafford and Coloma. Party Chief responsible for topographic survey of sewer manholes, cleanouts and other key features.

CalAm Water Hwy 50 Crossing Design, Rancho Cordova, CA

Party Chief. The project requires approximately 450 LF of 16-inch main to cross Route 50 via jack-and-bore and approximately 600 LF of 12-inch main will be installed via open cut on the North side of the highway. On the South side of the highway, approximately 300 LF of 12-inch main will be installed via open cut. Party Chief responsible topographic survey.

Cement Hill Pipeline Project, Suisun, CA

Party Chief. This Suisun-Solano Water Authority project provides a second pipeline from the Cement Hill Water Treatment plant to the Tank 2A and 2B sites. The new pipeline will consist of two segments with an overall combined length of the proposed pipeline is approximately 2600 linear feet. Responsible for boundary survey and utility location.

Miller and Blackwelder Dams and Wheatland Gate Bridges, Beale AFB, CA

Party Chief. This project consisted of the design and repair of Miller Dam, Blackwelder Dam and two bridge replacement on Laughlin Road, which were declared unsafe by the U.S. Army Corps of Engineers. Responsible for topographic and base mapping services and construction staking.

Education

- BS: Geology, University of California, Davis

Registrations:

- CA: Professional Geologist, No. 6984
- CA: Certified Engineering Geologist

Certifications

- OSHA: 40-Hour Hazwoper
- OSHA: Refresher Training

Mr. Pfeiffer has provided geologic, hydrogeologic, and environmental expertise on public and private projects in Northern California since 1989. He has conducted numerous soil and groundwater studies for both geotechnical and environmental purposes and is experienced in the design, installation, and evaluation of groundwater monitoring systems for wastewater treatment facilities. Mr. Pfeiffer is also experienced in identifying, assessing, and managing NOA. In association with some projects, he has conducted studies to assess the influence of rivers, tidal fluctuations, and/or municipal well operation on site-specific groundwater conditions. Mr. Pfeiffer's expertise includes conducting Phase I and II Environmental Site Assessments (ESAs), geologic background research and reconnaissance in support of slope stability evaluations, and geologic hazard studies.

Representative Project Experience**CITY OF IONE WASTEWATER TREATMENT PLANT, AMADOR COUNTY, CALIFORNIA**

Mr. Pfeiffer performed a geologic evaluation of proposed wastewater spray disposal field sites, infiltration testing for existing wastewater ponds, and design and installation of a groundwater monitoring well network for a municipal wastewater treatment facility. Work included double-ring infiltration testing for different mapped soil types, subsurface exploration and geologic reconnaissance to characterize and distinguish fill materials, soils, alluvium, and underlying sedimentary rock.

CITY OF PLYMOUTH WASTEWATER TREATMENT PLANT, PLYMOUTH, CALIFORNIA

Mr. Pfeiffer performed design and installation of a groundwater monitoring well network for a municipal wastewater treatment facility that included two wastewater treatment reservoirs in tributary drainages and associated spray disposal fields proximal to Little Indian Creek. Project considerations included highly varied bedrock geology and soil conditions across the facility, as well as influent (background) and effluent groundwater quality associated with the reservoirs and spray fields. The project included installation of wells in the toe of each reservoir dam and in an earthen stormwater diversion embankment, coordination of difficult-access drilling with an all-terrain drill rig, and communications with private land owners for reconnaissance and drilling access. Site evaluation and well designs accounted for existing and anticipated groundwater conditions, nature and depths of fill material, alluvium/colluvium, and bedrock.

CITY OF AUBURN WASTEWATER TREATMENT PLANT, PLACER COUNTY, CALIFORNIA

Mr. Pfeiffer performed design, installation and monitoring of a groundwater monitoring well network for a series of municipal wastewater treatment ponds down slope of PG&E's South Canal and upslope of Auburn Ravine (creek). The project required evaluation of the site's bedrock weathering profile and review of historic documents for determination of original site topography. The work included drilling and geologic logging of borings on and immediately adjacent to the South Canal levee and in the crest and toe of treatment pond embankments. Site-specific well designs accounted not only for existing and anticipated groundwater conditions, but also for nature and depths of fill material, soil and bedrock.

GOLD RUN PIPELINE REPLACEMENT PROJECT – PHASE IV, PLACER COUNTY, CALIFORNIA

Mr. Pfeiffer was the senior project geologist for this award winning project. The Gold Run pipeline runs along a narrow right-of-way at the top edge of a near-vertical bluff between the Union Pacific Railroad (UPRR) tracks and Interstate 80. Due to the deteriorating condition of the buried pipeline, approximately 2,500 feet of pipe needed to be replaced. The project challenge was to design a means of stabilizing the existing bluff and building the replacement pipeline without disrupting water service. Geocon performed a detailed geotechnical and engineering geology evaluation and developed engineering measures to protect the long-term integrity of the replacement pipeline including pipe support piers and a new tieback retaining wall.

AUBURN LAKE TRAILS COMMUNITY DISPOSAL SYSTEM, COOL, CALIFORNIA

Geocon performed percolation testing at the Georgetown Divide Public Utility District's (GDPUD) community disposal system (CDS) in the Auburn Lake Trails development, located near Cool. The facility is an existing community waste water disposal system consisting of five subsurface disposal fields on an approximately 30-acre site in gently rolling oak woodland terrain. The site is generally bounded by State Route 193 to the south, rural residential properties to the north and west, and undeveloped oak woodlands to the north and east. The purpose of our scope of services was to aid our client in evaluating the existing capacity of the CDS. Mr. Pfeiffer performed the percolation testing.

MAHALEE LODGE PROJECT, TWO ROADWAY BRIDGES OVER TOWN DITCH, MARKLEEVILLE, CALIFORNIA

Geocon prepared a foundation report for the proposed roadway bridges (Lodge Entrance and Village Way) over the Town Ditch at the Mahalee Lodge project located in Markleeville. The two roadway bridges are located west of State Route 89 (SR-89) and north of Montgomery Street in the Town of Markleeville. At the project location, the two roadway bridges are part of a larger development (approximately 36 acres) for Mahalee Lodge. Privately owned land surrounds the project site with both undeveloped mountain meadow and wooded mountain slopes. The meadow area includes a designated wetland area and an irrigation ditch locally referred to as the "Town Ditch," which traverses the project site from west to east. The ditch is approximately 3 feet deep and 5 feet across. The roadway bridges are crossing the Town Ditch at the locations. The purpose of our geotechnical investigation was to evaluate soil and geologic conditions at the bridge sites and to develop foundation recommendations and estimated bearing capacities for the roadway bridges and associated wingwalls. Mr. Pfeiffer was the senior geologist.

Education

- MS, Civil Engineering (Geotechnical), California State University, Sacramento
- BS, Civil Engineering, California State University, Sacramento

Registrations

- CA: Geotechnical Engineer, No. 2636
- CA: Professional Engineer, Civil, No. 60936

Mr. Zorne has 23 years of experience conducting and managing geotechnical and materials testing, as well as special inspection projects throughout California and has been with Geocon for his entire professional career. His diverse project experience includes transportation infrastructure (roadways, bridges, and retaining walls), public buildings, parks and recreation facilities, water/wastewater treatment and distribution facilities, educational facilities, commercial/industrial development, and residential developments. He is currently managing several on-call contracts for various agencies throughout California. He has a well-known reputation for responsive service and his dedication to providing cost-effective, practical solutions for difficult geotechnical challenges.

SHERIDAN WWTP UPGRADE AND EXPANSION, PLACER COUNTY, CALIFORNIA - Mr. Zorne served as project manager for a design-level geotechnical investigation for the expansion of the wastewater treatment plant (WWTP) for the community of Sheridan in Placer County. The WWTP expansion included new treatment ponds and headworks facility. The investigation included subsurface exploration, engineering analysis, and report preparation. Mr. Zorne analyzed stability of the proposed embankment berms and provided grading recommendations for the project.

CITY OF COLFAX WASTEWATER TREATMENT PLANT (WWTP) POND 3 SLOPE EVALUATION, COLFAX, CALIFORNIA - In January 2017 the WWTP Pond 3 sustained damage to the southwesterly bank of the pond. The City hired Geocon to perform a geotechnical engineering review related to the WWTP Pond 3 embankment failure. Geocon's scope included geotechnical review, evaluate potential repair options, develop plans and specifications, prepare bid package and bidding assistance, and geotechnical engineering support during construction. The project is currently ongoing and Mr. Zorne is Geocon's project manager.

ARSENIC TREATMENT FACILITIES FOR CITY WELLS 22 & 26, DELANO, KERN COUNTY, CALIFORNIA - Mr. Zorne was the project manager for the geotechnical investigation for two arsenic treatment facilities for Delano City Wells 22 and 26 in Delano, California. The purpose of the arsenic treatment facilities is to provide mitigation of naturally-occurring arsenic in the underlying groundwater that exceeded federal and state standards. Each well was located within large City-owned, fenced in parcels, and included existing facilities such as well heads, chemical feed and storage equipment, pump control valves, piping, and one with waste discharge to an onsite storm drain connection. New facilities included a 480-square-foot building at Well 22 and a 140-square-foot building at Well 26, each for chemical housing, a ground-mounted pressure filter unit, and a 150,000-gallon, aboveground welded steel backwash tank. Geocon provided a geotechnical report presenting the results of our investigation, and included conclusions and recommendations for seismic design criteria, excavation characteristics and stability, materials for fill, groundwater, seepage, and wet soils, permanent cut and fill slopes, grading, foundations (backwash tanks), foundations (buildings and other structures), interior slabs-on-grade, exterior concrete flatwork, and drainage.

DIF 54-FRY ROAD/CSP – SOLANO SEWER, PHASES 1 AND 2, VACAVILLE, CALIFORNIA - Mr. Zorne was the project manager for the geotechnical investigation for this project, consisting of constructing a replacement gravity trunk sewer pipeline extending from the Fry Road crossing of the Union Pacific Railroad tracks to the City of Vacaville's Easterly Wastewater Treatment Plant (EWWTP), and serving the California State Prison – Solano (CSPS) facility and other service connections. The geotechnical investigation was performed on the first two of three phases with approximately 3,700 linear feet of new 48-inch PVC lined reinforced concrete pipe (RCP)/trunk sewer, adjacent to an existing 27-inch line, on Phase 1, and the replacement of approximately 1,500 feet of an existing 27-inch line with new 30-inch diameter pipe, of high strength vitrified clay pipe (VCP). Phase 1 requires a trenchless (bore-and-jack) installation at the UPRR crossing with conventional open-cut construction techniques for installation on Phase 2. Geocon provided a geotechnical investigation report and presented conclusions and recommendations, particularly addressing the geotechnical constraints we



JEREMY ZORNE, PE, GE
PRINCIPAL IN CHARGE/SENIOR ENGINEER

identified that included shallow groundwater, wet soil for use as backfill, unstable trench bottoms and unstable temporary excavations.

CSD-1 TRUNK SEWER, PARKEBRIDGE, SACRAMENTO, CALIFORNIA - Mr. Zorne served as project manager for a design-level geotechnical investigation for a new 2,100 linear-foot sewer trunk main. The alignment crosses under an active RD-1000 Drainage Canal and Interstate 80. Geotechnical challenges included shallow groundwater, variable soil conditions within the proposed trench bottom and difficulties associated with micro-tunnel construction. Geocon's design-level geotechnical report provided design recommendations for lateral earth pressures and microtunneling construction considerations.

CITY OF BRENTWOOD NON-POTABLE WATER DISTRIBUTION – PHASE III, BRENTWOOD, CALIFORNIA - Mr. Zorne was the QA Manager for this project that involved the installation of 2,500 linear feet of 12-inch PVC non-potable water main and 1,200 linear feet of 20-inch PVC potable water main. Geocon performed soil sampling and testing, NDFT on trench backfill, and as-needed laboratory testing during construction. Geocon was retained by the City to perform this project under our current on-call contract. Additional projects have included geotechnical testing and observation during improvements at the City's Wastewater Treatment Plant; geotechnical investigation on portions of Fairview Avenue and Fairview Court to evaluate the compaction characteristics of underground utility backfills that are a suspected cause of settlement; and geotechnical engineering and testing services for roadway improvements along Lone Tree Way and other ancillary streets.

CITY OF STOCKTON, NORTH PERSHING AVENUE SEWER TRUNK LINE REHABILITATION, STOCKTON, CALIFORNIA - Mr. Zorne was the geotechnical QA manager for this project involving the replacement of approximately 4,311-feet of existing 30-inch diameter sewer trunk line along Pershing Avenue from West Swain Road to Venetian Drive. The field exploration program consisted of drilling five small-diameter soil borings to maximum depths of 11 ½ feet at discrete location along the trunk sewer alignment. Our final report included recommendations for soil and excavation characteristics, materials for fill, temporary excavations, temporary shoring, underground utilities, trenchless utility installation, and pavement restoration.

MAHALEE LODGE PROJECT, TWO ROADWAY BRIDGES OVER TOWN DITCH, MARKLEEVILLE, CALIFORNIA

Geocon prepared a foundation report for the proposed roadway bridges (Lodge Entrance and Village Way) over the Town Ditch at the Mahalee Lodge project located in Markleeville. The two roadway bridges are located west of State Route 89 (SR-89) and north of Montgomery Street in the Town of Markleeville. At the project location, the two roadway bridges are part of a larger development (approximately 36 acres) for Mahalee Lodge. Privately owned land surrounds the project site with both undeveloped mountain meadow and wooded mountain slopes. The meadow area includes a designated wetland area and an irrigation ditch locally referred to as the "Town Ditch," which traverses the project site from west to east. The ditch is approximately 3 feet deep and 5 feet across. The roadway bridges are crossing the Town Ditch at the locations. The purpose of our geotechnical investigation was to evaluate soil and geologic conditions at the bridge sites and to develop foundation recommendations and estimated bearing capacities for the roadway bridges and associated wingwalls. Mr. Zorne was the geotechnical QA manager.

AUBURN LAKE TRAILS COMMUNITY DISPOSAL SYSTEM, COOL, CALIFORNIA

Geocon performed percolation testing at the Georgetown Divide Public Utility District's (GDPUD) community disposal system (CDS) in the Auburn Lake Trails development, located near Cool. The facility is an existing community waste water disposal system consisting of five subsurface disposal fields on an approximately 30-acre site in gently rolling oak woodland terrain. The site is generally bounded by State Route 193 to the south, rural residential properties to the north and west, and undeveloped oak woodlands to the north and east. The purpose of our scope of services was to aid our client in evaluating the existing capacity of the CDS. Mr. Zorne was the project manager.

EXHIBIT B

Rates

Fee Estimate

Client: Georgetown Divide Public Utility District
 Consultant: Bennett Engineering Services, Inc
 Project: Auburn Lake Trails Community Disposal System Feasibility Study
 Date: April 9, 2020



Fee Estimate	Project Manager III 191 \$/hr		Engineer V 201 \$/hr		Engineer II 165 \$/hr		Engineer I 150 \$/hr		Labor Compliance Specialist 110 \$/hr		Administrative 80 \$/hr		BENNIEN Subtotal		MISC. EXPENSES	UNICO		Gecon		TOTAL	
	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost		Contract	Contract	Contract	Contract		
Task 1 - Project Management																					
1.1 - Project Administration	4 hrs	\$754	hrs	\$0	hrs	\$0	hrs	\$0	hrs	\$0	hrs	\$480	10 hrs	\$1,244	\$0	\$0	\$0	\$0	\$0	\$1,244	
1.2 - Project Meetings	8 hrs	\$1,128	hrs	\$0	hrs	\$0	3 hrs	\$450	hrs	\$0	hrs	\$0	11 hrs	\$1,578	\$100	\$0	\$0	\$0	\$0	\$2,078	
1.3 - Quality Control	1 hrs	\$165	4 hrs	\$604	hrs	\$0	hrs	\$0	hrs	\$0	hrs	\$0	5 hrs	\$695	\$0	\$0	\$0	\$0	\$0	\$995	
Subtotal	13 hrs	\$9,489	4 hrs	\$804	hrs	\$0	3 hrs	\$450	hrs	\$0	hrs	\$480	26 hrs	\$4,217	\$100	\$0	\$0	\$0	\$0	\$4,317	
Task 2 - Field Investigations and Data Review																					
2.1 - Background Research	2 hrs	\$382	hrs	\$0	1 hrs	\$165	4 hrs	\$600	hrs	\$0	hrs	\$0	7 hrs	\$1,147	\$0	\$0	\$0	\$0	\$0	\$1,147	
2.2 - Topographic Survey	1 hrs	\$191	hrs	\$0	1 hrs	\$165	4 hrs	\$600	1 hrs	\$110	1 hrs	\$80	8 hrs	\$1,205	\$0	\$0	\$0	\$0	\$0	\$1,205	
2.3 - Geotechnical Investigation	6 hrs	\$1,146	hrs	\$0	1 hrs	\$165	2 hrs	\$300	1 hrs	\$110	1 hrs	\$80	11 hrs	\$1,631	\$50	\$0	\$14,817	\$0	\$0	\$15,708	
Subtotal	9 hrs	\$4,719	hrs	\$0	3 hrs	\$495	20 hrs	\$4,500	2 hrs	\$220	2 hrs	\$160	28 hrs	\$4,204	\$90	\$0	\$14,817	\$0	\$0	\$53,916	
Task 3 - Alternative Analysis and Feasibility Study																					
3.1 - Operator Evaluation of Existing System	2 hrs	\$382	hrs	\$0	2 hrs	\$330	10 hrs	\$1,500	hrs	\$0	hrs	\$0	14 hrs	\$2,212	\$0	\$0	\$0	\$0	\$0	\$2,212	
3.2 - Alternatives Analysis	6 hrs	\$1,146	hrs	\$0	4 hrs	\$660	40 hrs	\$6,000	hrs	\$0	hrs	\$0	50 hrs	\$7,500	\$100	\$0	\$0	\$0	\$0	\$7,900	
3.3 - Feasibility Study Report	4 hrs	\$764	hrs	\$0	4 hrs	\$660	21 hrs	\$3,150	hrs	\$0	hrs	\$0	29 hrs	\$4,574	\$200	\$0	\$0	\$0	\$0	\$4,974	
Subtotal	12 hrs	\$2,292	hrs	\$0	10 hrs	\$1,650	71 hrs	\$10,650	hrs	\$0	hrs	\$0	93 hrs	\$14,592	\$300	\$0	\$0	\$0	\$0	\$15,492	
PROJECT TOTAL	34 hrs	\$5,494	4 hrs	\$804	13 hrs	\$2,145	84 hrs	\$12,600	2 hrs	\$220	8 hrs	\$640	145 hrs	\$22,913	\$590	\$10,915	\$14,817	\$0	\$0	\$49,025	

Additional Fee Information

- ▶ This fee estimate is valid for 90 days.
- ▶ This fee estimate contains an abbreviated list of staff classifications and does not restrict BENNIEN to those classifications. The Exchange Rate Schedule with a full list of staff classifications is available upon request.
- ▶ Standard hourly rates do not apply to a demand to perform work during an overtime period. Work required to be performed during an overtime period (as mandated by California law) may be charged at a 50% premium. Work mandated by Prevailing Wage laws may be charged at a 25% premium.
- ▶ Hourly rates include all compensation for wages, salary-related benefits, overhead, general office administration, and profit. Direct project administrative hours will be billed at the rate shown above.
- ▶ Classifications may be added or removed as needed without notice.
- ▶ Changes in the requested scope of work or projected schedule may result in the revision of the proposed fees and amendment to the total contract amount.
- ▶ Rates are subject to change annually effective July 1st.

INITIALS:

ITEM 7.A.
ATTACHMENT B
Resolution 2020-XX

RESOLUTION NO. 2020-XX

OF THE BOARD OF DIRECTORS OF THE
GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT
AUTHORIZING THE GENERAL MANAGER TO EXECUTE A PROFESSIONAL
SERVICES AGREEMENT FOR THE AUBURN LAKE TRAILS COMMUNITY DISPOSAL
SYSTEM FEASIBILITY STUDY WITH BENNET ENGINEERING FOR AN AMOUNT NOT
TO EXCEED \$49,025

WHEREAS, the District issued a Request for Proposal on March 12, 2020, to select a qualified consultant to perform a Feasibility Study for Auburn Lake Trails Wastewater Community Disposal System;

WHEREAS, one bid was received on April 17, 2020, was reviewed by District Staff and met proposal criteria; and

WHEREAS, the contracted cost is not to exceed \$49,025.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE BOARD OF DIRECTORS OF THE GEORGETOWN PUBLIC UTILITY DISTRICT THAT:

1. The professional services contract is awarded to Bennett Engineering; and
2. The General Manager is authorized to execute a professional services contract with Bennett Engineering in the amount not to exceed \$49,025 for the Auburn Lake Trails Community Disposal System Feasibility Study with Bennett Engineering.

PASSED AND ADOPTED by the Board of Directors of the Georgetown Divide Public Utility District at a meeting of said Board held on the 9th day of June 2020, by the following vote:

AYES:

NOES:

ABSENT/ABSTAIN:

Dave Souza, President, Board of Directors
GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT

Attest:

Jeff Nelson, Clerk and Ex officio
Secretary, Board of Directors
GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT

CERTIFICATION

I hereby certify that the foregoing is a full, true and correct copy of Resolution 2020-XX duly and regularly adopted by the Board of Directors of the Georgetown Divide Public Utility District, County of El Dorado, State of California, on this 9th day of June 2020.

Jeff Nelson, Clerk and Ex officio
Secretary, Board of Directors
GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT