

San Lorenzo Valley Water District Bear Creek Estates Wastewater Treatment Facility Alternative Analysis



Proposal
August 30, 2019

EST. 1968
**PROVOST &
PRITCHARD**
CONSULTING GROUP
An Employee Owned Company

August 30, 2019

Darren Langfield, District Engineer
San Lorenzo Valley Water District
13060 Highway 9
Boulder Creek, California 95006

**RE: Request for Proposals – Bear Creek Estates Wastewater Treatment Facility
Alternatives Analysis**

Dear Mr. Langfield:

This letter transmits our proposal to prepare an alternatives analysis report for the Bear Creek Estates Wastewater Treatment Facility for the San Lorenzo Valley Water District. Provost & Pritchard Consulting Group is prepared to assist the District in examining the available alternatives for the facility. We have refined our approach to this project based on our experience on similar projects and look forward to providing you with efficient and cost-effective engineering services.

Provost & Pritchard has a long history of providing services to cities and special districts, (including community services districts, public utility districts, and irrigation districts) throughout the California. The attached statement of qualifications highlights our vast experience providing wastewater services similar to those that you are requesting.

In partnering with Provost & Pritchard, the San Lorenzo Valley Water District will have access to:


- **Seasoned Professionals and Staff Resources.** We understand that the District is looking for a consultant that they can count on to provide responsive and timely services. For this reason, Provost & Pritchard's team will be led by Maija Madec, PE. Ms. Madec is an experienced engineer who brings nearly 15 years of wastewater experience to the District. Additionally, Michael Taylor, PE will provide quality control for the report. Mr. Taylor has 35 years of experience providing professional engineering services to clients across the state.
- **Communication is the Key.** Providing timely responses, listening to the District's needs, and delivering efficient and effective solutions is a priority for Provost & Pritchard. Working closely with your staff, we will make sure the complete project meets or exceed your expectations. Provost & Pritchard's commitment to quality and client service will give you a greater level of confidence in achieving a successful project.

If you have any questions, or if you would like any additional information as you review our qualifications, please contact me at:

Maija Madec, PE
Provost & Pritchard Consulting Group
286 W. Cromwell Avenue
Fresno, California 93711
(559) 449-2700
Email: mmadec@ppeng.com

We firmly believe that collaborative efforts lead to the most successful project. We look forward to working with the San Lorenzo Valley Water District through this project.

Respectfully,



Michael Taylor, PE
Principal-in-Charge



Maija Madec, PE
Project Manager

Proposal

San Lorenzo Valley Water District

Bear Creek Estates Wastewater

Treatment Facility Alternative Analysis

Proposal

August 30, 2019

Prepared for:
San Lorenzo Valley Water District
Darren Langfield, District Engineer
13060 Highway 9 • Boulder Creek, California 95006
Telephone: (831) 338-2153 • Email: dlangfield@slvwd.com

Submitted by:
Provost & Pritchard Consulting Group
286 W. Cromwell Avenue • Fresno, California 93711
Telephone: (559) 449-2700 • Fax: (559) 449-2715
Website: www.ppeng.com

Table of Contents

Cover Letter

Project Description and Approach	1
Identification of Prime Consultant	4
Project Organization and Experience of Project Team	5
Experience and Past Performance	7
Firm's Local Experience	9
Exceptions to this RFP	9
Contractual Scope of Services	10
Total Professional Fee and Fee Schedules	12
Appendix A: Resumes	

Project Description and Approach



Project Objectives

The objective of the San Lorenzo Valley Water District (District), Bear Creek Estates Wastewater Treatment Facility Alternatives Analysis (project) is to evaluate options to upgrade or replace the existing wastewater treatment facilities in order to meet the effluent requirements for nitrogen in compliance with the Waste Discharge Requirements (WDRs). A secondary issue with the existing treatment process is the impact of high wet weather flow to the treatment process and the high groundwater level in the leachfield. The recommended treatment process must reliably meet the effluent limits in both dry weather when nitrogen loading is higher, and wet weather when hydraulic loading is higher.

The treatment alternatives will be evaluated based on reliability and economic factors. The recommended alternative will aim to minimize the operational and maintenance costs, including equipment maintenance, chemical usage and operator attention, while providing dependable nitrogen removal. Consideration should also be taken to mitigate the impact of wet weather flow and the impact to groundwater in the leachfield.

Project Approach

Provost & Pritchard will investigate the performance of the existing treatment process to evaluate the potential cause of the insufficient nitrogen removal. Provost & Pritchard will identify modifications and upgrades to the existing treatment process to achieve the water quality objectives and evaluate two other treatment alternatives to assess the most economical and reliable options to achieve the required effluent nitrogen levels.

In order to complete the project, our approach will include four main tasks. The following tasks are described further below:

- Existing System Evaluation
- Analysis of Treatment Alternatives
- Prepare Cost Estimate
- Prepare Alternatives Analysis Report

Provost & Pritchard will also provide overall project management, including internal quality control and quality assurance reviews of project deliverables. The project will include ongoing internal meetings and coordination within the Provost & Pritchard team to ensure we are working toward a common goal and maintain a quality deliverable. The project will also include communication with the District, including an initial site visit and monthly meetings to ensure that the District is aware of the work and considerations being evaluated, and that Provost & Pritchard is informed about the unique circumstances and needs of the District.

Existing System Evaluation

To achieve the project objectives, Provost & Pritchard will investigate the performance of the existing treatment process. We will identify data and information needs and prepare a request to the District. The information request will include the following wastewater and operations data.

- Historical wastewater influent flow and quality characteristics, including dry and wet weather flow records for the last 3 years, influent BOD, TSS, Nitrogen, EC and pH.
- Wastewater characteristics sampled at various process locations, including tanks, trickling filters, effluent lines, and final effluent for BOD, Nitrogen, Alkalinity and pH. (District will sample and pay for the lab cost)
- Operational cycle information for the lift station on Fernwood Drive, including pumping volume per pneumatical discharge cycle, typical pump start/stop frequency at peak hour flows, and operational concerns.
- Influent pump station layout and operational information, including pump model, wet well size, float setting positions and peak flow duration.
- Tank 1 layout and inlet arrangement, solids retaining performance and buildup conditions.
- Recirculation System 1, Gould pump model and performance curve, Stage 1 trickling filter size and media volume, media characteristics, manufacturer recommended loading rates and pump operation timer setting. The condition of P2 pump installation, the model and level setting for the P2 pump, and the operation frequency of the P2 pump. If the P2 pump is not installed, the operation condition of the P1 pump during wet weather flow.
- Recirculation System 2, This system is critical for nitrification. The size of the trickling filter, volume of media and pumping rate and duration are important criteria to determine if the nitrification can proceed sufficiently. The BOD, alkalinity and DO in Tank 2 would be an indication of necessary conditions for the nitrification process.
- Recirculation System 3 is the final polishing and denitrification recirculation process. The pumping rate, trickling filter size and media volume, and the recirculation ratio is needed for the evaluation. The mixing condition in Tank 2 is also important for the denitrification process.

Once obtained, Provost & Pritchard will compile and review the data. There are a number of factors that might affect the nitrification/denitrification process performance. The evaluation will analyze the hydraulic condition,

biological and chemical process to identify the critical factors for the existing process. This evaluation will help to inform the analysis of treatment alternatives.

Analysis of Treatment Alternatives

The potential treatment alternatives will be discussed with the District prior to initiating the evaluation. However, based on our understanding of the system and the objectives of this project, we are proposing evaluation of the following three alternatives.

Alternative 1 Improvements to the Existing Orenco System

With the results of the above system evaluation, an improvement plan will be proposed to modify and upgrade the existing treatment process to achieve the nitrification/denitrification requirements.

Alternative 2 Presby Advanced Environ-Septic (AES) System

The Presby AES system is a proprietary system that incorporates passively vented air supply with fixed film biological process to create an alternating anaerobic/aerobic environment. The system treats the septic tank effluent in AES pipes, which are a high-density polyethylene plastic pipe that is rigid and perforated. A partially wrapped layer of geo-textile fabric, a mat of coarse plastic fibers, and another layer of geo-textile fabric wraps the AES pipe to provide surface area for the growth of biofilm and filtration of small particles. The system is installed in a 2-foot deep specific System Sand bed. The septic effluent is distributed inside the AES pipes and slowly percolates through the three layers of biomat which facilitate large quantities of biological activity to break down the organic matter in the wastewater.

The treated effluent can then be recirculated to the Tank 2 for denitrification. The total nitrogen in the treated effluent will be dependent on the recirculation ratio.

An advantage of the AES system is the passive treatment without additional pumping or other mechanical equipment. The denitrification process requires a recirculation cycle with pumping. Also, with a passive venting system, the AES system is acceptable to be installed under paved surfaces or on top of the existing leachfield.

Additional information on this system may be found at: <http://presbyeco.com/products/advanced-enviro-septic%E2%84%A2-wastewater-treatment-system/>

Alternative 3 Package Treatment Plant

An activated sludge package treatment plant may be a reliable and economical process for the treatment plant. The treatment plant can be designed and manufactured in factory and requires minor on-site construction. The package plant can integrate the anoxic and aerobic reactor as well as a clarifier in one structure. Provost & Pritchard will evaluate the current site to determine the space available and integration of the system.

evaluation and describe the permitting and environmental requirements that may be necessary. We will also consider potential funding sources for the project.

A draft report will be prepared and submitted to the District for review. Once review comments are received a final report will be prepared.

Prepare Cost Estimate

Capital Costs

A preliminary cost estimate will be developed for each alternative evaluated. The cost estimate will include construction costs, including treatment system components, site piping, and disposal system improvements (if any), as well as soft costs, including design and administrative costs, permitting and environmental review costs, as necessary. The cost estimates will be of sufficient detail to aid in the selection of an alternative.

Operational Costs

An estimate of operation and maintenance (O&M) cost will be developed and evaluated for each alternative for the lifecycle cost analysis. The operational cost is critical to the overall cost to the rate payers. The O&M cost typically includes the power and utility cost, operation and maintenance personnel cost, equipment maintenance and replacement parts, solids handling and disposal costs, lab and monitoring costs, and financing and management costs.

Prepare Alternatives Analysis Report

The tasks described above will culminate in the preparation of an alternatives analysis report. The report will include a background description, description of existing facilities and assumptions. It will then include a description of each of the alternatives evaluated, and a comparison of each, weighing the various pros and cons. We will develop a recommended project based on the

Identification of Prime Consultant

Legal Name and Address

Provost and Pritchard Consulting Group
286 W. Cromwell Ave.
Fresno, CA 93711
(559) 449-2700

Legal Form of Company

Provost & Pritchard is a California Corporation.

Provost & Pritchard has operated for more than 50 years and maintains nine office locations throughout California (Fresno, Bakersfield, Visalia, Clovis, Modesto, Los Banos, Chico, Merced and Sacramento).

Key Contact

Maija Madec, PE,
Senior Engineer/Project Manager

Telephone: (559) 449-2700
Email: mmadec@ppeng.com



About the Firm

In 1968, Provost & Pritchard Consulting Group began a tradition of engineering excellence in the San Joaquin Valley. Over the last 50 years, Provost & Pritchard has grown in size, services offered, and geography with nine office locations in throughout California. With nearly 190 employees, our staff is diverse in their specialties, including civil, water and wastewater specialists, hydrogeologists, grant writers, CEQA planners, environmental specialists, land use planners, land surveyors, construction managers and field representatives, and support personnel.

Claims Information

Provost & Pritchard has had no previous filing of bankruptcy nor has had contacts terminated in the last five years.

Project Team

Name	Years of Experience	Role	Professional Registration/ License
Maija Madec, PE	14	Project Manager	Civil Engineer, California #79709
Jerry Teng, PhD, PE	28	Project Engineer	Civil Engineer, California #68783
Michael Taylor, PE	35	Principal-in-Charge/Quality Control	Civil Engineer, California #39961 Civil Engineer, Oregon #18039 Civil Engineer, Arizona #53830

Project Organization and Experience of Project Team

Key Staff

Provost & Pritchard has assembled an experienced and qualified project team to provide services to the District. Our project team has a history of working together on similar projects. One-page resumes for the individuals listed below are included in Appendix A.

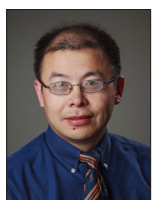
Maija Madec, PE Project Manager

Maija Madec is a senior engineer and project manager at Provost & Pritchard with nearly 15 years of experience in the field of municipal wastewater and water treatment and distribution facility projects. She will serve as the project manager for the Project and will oversee the day-to-day operations of the project phases. Her responsibilities have included working as a project manager, design engineer and report writer, preparing permit applications, coordinating and writing operation and maintenance (O&M) manuals, and providing field construction oversight. In addition, she has experience preparing bid specifications, construction plans and cost estimates for small community water and wastewater projects, as well as coordination with the State Water Resources Control Board, including applying for, securing, and administering projects funded through the SWRCB.



Jerry Teng, PhD, PE Project Engineer

Jerry Teng is an environmental engineer specialized in water and wastewater treatment processes. Dr. Teng's areas of expertise include physical and biological unit operations and processes, industrial source control and salinity studies, water quality and treatment, non-point source pollutant control, bio-solids digestion and disposal, NPDES permit and Waste Discharge Requirement permit applications.



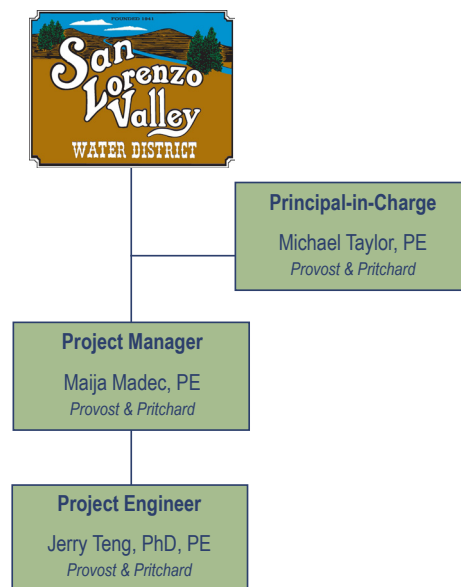
Michael Taylor, PE

Principal-in-Charge/Quality Control

Michael Taylor is a principal engineer at Provost & Pritchard with over 35 years of engineering experience. He will serve as the principal-in-charge for the Project, where he will be responsible for Provost & Pritchard's overall compliance with the agreement and the firm's standards of excellence. In addition, he will provide quality assurance/quality control oversight throughout the project. Mr. Taylor supervises projects related to municipal infrastructure including water treatment and distribution, wastewater collection, treatment and disposal, and storm drainage.



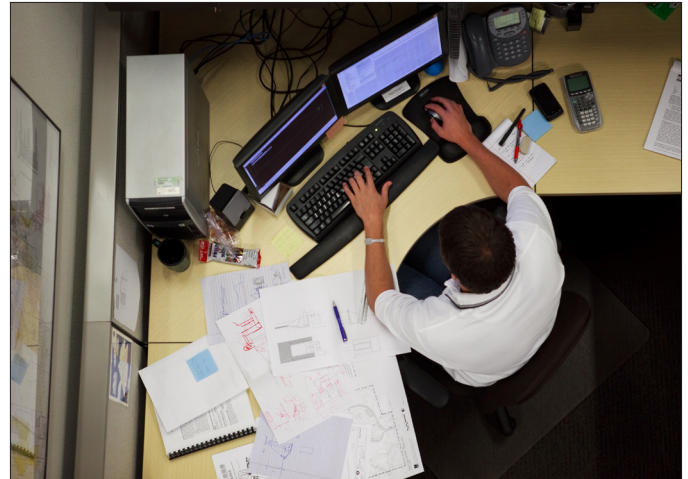
Organization Chart



Project Management Approach

Our approach is generally a reflection of our management principles. The following section discusses the approach Provost & Pritchard will use to meet the District's goals. Each project is unique and will have its own opportunities, challenges and constraints. We generally follow a clear and basic approach as described below:

- Develop an understanding of the project objectives, client needs and preferences, schedule, known issues, constraints, budget and regulatory requirements with frequent communication with the District.
- Know the site, the project elements and goals by conducting the appropriate level of research, and then communicate with District staff, including operators, management and engineers (as appropriate).
- Develop a work plan, schedule and a preliminary report of findings.
- Communicate, review, and discuss the alternatives considered. We will consider the impact of the project alternative on operations time, equipment time, energy efficiency and logistics. We will strive for a cost –effective solution that will fully consider the life cycle costs of the recommended alternative. In a wastewater facility it is especially important to get the feedback and concurrence from the operators who will operate and maintain the facilities for years. Provost & Pritchard will strive to use existing components, where feasible, to save cost and avoid disruption to existing operations.
- Implement QA/QC at appropriate intervals during the project. Check both the “big picture” (Will the project meet its objectives?) and the details (Are there errors or omissions? Is it physically possible to construct the recommended project while keeping the existing facilities in operation?). Provost & Pritchard has developed detailed procedures for QA/QC that are implemented for all projects.
- Communicate and follow-up throughout the process.



Capacity to Perform Work

Provost & Pritchard staff will be available to perform this project during the requested timeframe. We have highly-trained staff with experience in a wide range of disciplines. With integrated computer and telephone systems and video conferencing capabilities between our firm's seven office locations, our project teams are able to function efficiently and effectively as one, allowing the convenient utilization of staff expertise and resources from our other locations, as necessary. This convenience and efficient ability to communicate within our offices allows our project teams to focus on providing quality products for our clients while keeping their projects on schedule and within budget.

Unique Qualifications

Provost & Pritchard serves several small communities in rural areas for their wastewater management needs. Typical obstacles encountered include remoteness for access, sensitive environment, complicated geological and hydrogeological conditions, lack of operation attention, and difficult for emergency response. A successful on-site treatment process should take into consideration of the unique challenges and develop a solution that is reliable, simple to operate, and economically feasible. Provost & Pritchard has worked with many small communities, school camps, commercial camps, hotels, industrial facilities in the Sierra mountains including national parks. Our experience and expertise in such environment are our unique qualifications for this project, as there will be similar conditions in the remoteness and size of facilities.

Experience and Past Performance

Wastewater Treatment and Disposal, Helms Pumped Storage Facility Headquarters

Pacific Gas & Electric, Helms , California

Provost & Pritchard provided engineering services for the improvement of the remote small wastewater system in Helms Pumped Storage Headquarter. The existing 7500 gallon per day (GPD) wastewater system includes a gravitational sewer collection system, a package treatment plant, and an effluent discharge line and spray field. The project included a study/investigation to control sewer system infiltration/inflow, an upgrade to the process control of the package activated sludge treatment process, and upgrade and replacement of the package treatment plant.

Provost and Pritchard also provided engineering service to another wastewater system on the same project site to upgrade a mounded intermittent sand filter (ISF) and leachfield system to an on-site recirculating filter system. This system serves the supporting facilities of the headquarter with an average daily flow of 6300 GPD. After the evaluation of the condition of the mounded ISF as well as the seasonal shallow groundwater condition, P&P recommended treatment of the wastewater with a fixed media recirculation filter, disc filtration, and chlorine disinfection so that it can be disposed with a subsurface drip irrigation system. The system avoided the high cost of mounding and reduced the requirement of groundwater separation, and was permitted by Regional Water Quality Control Board.



Project Owner	Pacific Gas & Electric (PG&E)
Agency Contact	Michael Martin (559) 855-6119
Contract Amounts	Headquarter effluent disposal study \$38,750
	Headquarter Design Phase \$17,500
	Headquarter STP Replacement Construction Cost \$250,000
	Headquarter Construction Support \$22,000
	Supporting Facility Feasibility Phase \$47,270
	Supporting Facility Design Phase \$150,000
	Supporting Facility Construction Cost: \$750,000
Date of Contract	2011
Date of Completion	2017

Experience and Past Performance

Wastewater System Evaluation and Field Investigation, Jack Boyd Outdoor School

Merced County Office of Education, Fish Camp, California,

Provost & Pritchard was retained by Merced County Office of Education to evaluate the wastewater system at Jack L Boyd Outdoor School. The wastewater treatment and disposal system at the school consisted of multiple septic tanks and two separate treatment and disposal fields. The original leachfield system was built over 40 years ago and was no longer used as the primary system. The wastewater mound system was built in 1984 and then partially rebuilt in 1998. It had served as the primary system for the school. The project evaluated the existing hydraulic conductivity of the underlying soil for disposal capacity. The passive AES system treat the septic effluent to secondary effluent quality to reduce the organic loading to underlying soil and improve percolation capacity. Once the system evaluation was completed, Provost & Pritchard provided a conceptual design, an application for County Public Health approval, the design of engineered passive treatment system and soil absorption system upgrade to an existing mound system. The treatment system is designed for a maximum day flow of 4500 GPD.

Project Owner	Merced County Office of Education
Agency Contact	Joe Schoneman (209) 381-6606
Project Budget	\$102,500
Construction Cost	\$870,000
Date of Contract	2017
Date of Completion	2019

Wastewater Treatment Plant System Improvements

Malaga County Water District, Fresno County, California

Provost & Pritchard was responsible for preparing funding applications, design services, construction administration, and funding administration for projects that included a wastewater treatment plant expansion consisting of fine bubble activated sludge, secondary clarifier, safety railing, aerobic digestion, blowers, standby power, blower building, and disposal ponds, in addition to water and sewer main extensions, and borings under existing canals. The wastewater treatment facility has a design capacity of 1.2 million gallons per day.

Provost & Pritchard has been responsible for planning and design of several other improvements to the Malaga County Water District wastewater treatment plant, including tertiary filtration facilities, ultra-violet disinfection system, headworks improvements, effluent flow meters, and sludge bed, as well as associated permitting with the Regional Water Quality Control Board as necessary.

Project Owner	Malaga County Water District
Agency Contact	James Anderson (559) 485-2341
Project Budget	\$10,000 - \$150,000
Project Actual Cost	\$50,000 - \$2,000,000
Date of Contract	2000
Date of Completion	Tertiary Filtration: 2003 UV Disinfection: 2009 Headworks Improvement 2012 Effluent flow Meter and sludge bed: 2013 DAF Equipment Upgrades: 2016

Firm's Local Experience

Provost & Pritchard recently completed a waterline project for the Midpeninsula Regional Open Space District. The project was located in the La Honda Creek Open Space Preserve, which is approximately 30 miles from the District's location.

Exceptions to this RFP

The Provost & Pritchard team has no exceptions to the technical scope and requirements of this RFP and its' attachments.

Contractual Scope of Services

Provost & Pritchard will prepare an analysis for the Bear Creek Estates Wastewater Treatment Facility to evaluate alternatives to comply with the Waste Discharge Requirements. The scope of services to achieve the project objectives will include:

- Existing System Evaluation
 - Identify Needs and Prepare Information Request
 - San Lorenzo Valley Water District to Review/Respond to Information Request
 - Compile and Review Data
 - Summarize Existing Flow and WQ Data
- Analysis of Treatment Alternatives
 - Identify Three Treatment Alternatives to be Evaluated
 - Prepare Cost/Benefit Analysis of Viable Alternatives
 - Prepare Preliminary Process Schematics
 - Prepare Preliminary Site Layouts
- Prepare Cost Estimate
 - Prepare Cost Estimates (include permitting costs if changes to the discharge location are made)
 - Prepare Estimate of Operational Costs
- Prepare Alternatives Analysis Report
 - Prepare Background Description and Assumptions
 - Prepare Description of Alternatives
 - Develop Recommendations
 - Identify Environmental and Permitting Requirements
 - Consider Potential Funding Options for the Recommended Project
 - Draft Alternatives Analysis Technical Memorandum/Report
- Internal Quality Assurance and Quality Control (QA/QC) Review of Alternatives Analysis
- Submit Draft Alternatives Analysis to the District
 - District Review of Alternatives Analysis
- Prepare and Submit Final Alternatives Analysis to the District

The project will include ongoing internal meetings and coordination within the Provost & Pritchard team, and communication with the District, including meetings and up to three site visits.

Deliverables

- Draft Alternatives Analysis
- Final Alternatives Analysis

Project Schedule

Provost & Pritchard will work diligently to completion in order to meet the District's schedule. The schedule on the following page includes assumed timeframes for the District to provide the requested information and review draft documents. These District review periods are beyond our control. Should these review periods take longer than expected, the overall schedule may be impacted.

Proposed Project Schedule

Task	Sept.		October				November				December					
Week of:	9/23	9/30	10/7	10/14	10/21	10/28	11/4	11/11	11/18	11/25	12/2	12/9	12/16	12/23	12/30	1/3
Existing System Evaluation																
Identify Needs and Prepare Information Request																
District Review/Respond to Information Request																
Compile and Review Data																
Summarize Existing Flow and WQ Data																
Analysis of Treatment Alternatives																
Identify Treatment Alternatives																
Prepare Cost/Benefit Analysis of Viable Alternatives																
Prepare Preliminary Process Schematics																
Prepare Preliminary Site Layouts																
Prepare Cost Estimate																
Prepare Cost Estimates (include permitting costs)																
Prepare Estimate of Operational Costs (power, testing, operations, replacement)																
Prepare Alternative Analysis Report																
Prepare Background Description and Assumptions																
Prepare Descriptions of Alternatives																
Develop Recommendations																
Identify Environmental and Permitting Requirements																
Consider Potential Funding Options for the Recommended Project																
Draft Alternatives Analysis Technical Memorandum/ Report																
Internal QA/QC of Alternatives Analysis																
Submit Draft Alternatives Analysis																
District Review of Alternatives Analysis																
Prepare and Submit Final Alternatives Analysis																
Project Meetings and Management																
Project Meetings (Internal)																
Site Visit/Meeting (up to 3 included)																
Project Management																

Total Professional Fee and Fee Schedules

Task	Principal Engineer IV	Senior Engineer III	Senior Engineer III	Assistant Engineer I	Project Admin IV	Total Hours	Mileage	Expenses	Total Fee
	Taylor \$210	Madec \$165	Teng \$165	Brousseau \$95	Sales \$93				
Existing System Evaluation									
Identify Needs and Prepare Information Request	1	1	2	0	1	5			\$798
Compile and Review Data	0	1	2	4	1	8			\$968
Summarize Existing Flow and WQ Data	0	1	2	4	1	8			\$968
Analysis of Treatment Alternatives									
Identify Treatment Alternatives	1	1	2	2	0	6			\$895
Prepare Cost/Benefit Analysis of Viable Alternatives	0	1	8	8	1	18			\$2,338
Prepare Preliminary Process Schematics	1	2	8	16	1	28			\$3,473
Prepare Preliminary Site Layouts	0	1	4	12	1	18			\$2,058
Prepare Cost Estimate									
Prepare Cost Estimates (include permitting costs)	0	0	4	8	0	12			\$1,420
Prepare Estimate of Operational Costs (power, testing, operations, replacement)	0	0	4	4	0	8			\$1,040
Prepare Alternative Analysis Report									
Prepare Background Description and Assumptions	1	2	4	6	1	14			\$1,863
Prepare Descriptions of Alternatives	0	1	4	4	0	9			\$1,205
Develop Recommendations	0	2	4	4	1	11			\$1,463
Identify Environmental and Permitting Requirements	0	1	2	2	0	5			\$685
Consider Potential Funding Options for the Recommended Project	0	2	0	4	1	7			\$803
Draft Alternatives Analysis Technical Memorandum/Report	0	2	8	16	0	26			\$3,170
Internal QA/QC of Alternatives Analysis	4	0	0	0	1	5			\$933
Submit Draft Alternatives Analysis	0	2	2	4	2	10		\$100	\$1,341
Prepare and Submit Final Alternatives Analysis	2	2	6	12	4	26		\$100	\$3,367
Project Meetings and Management									
Project Meetings (Internal)	2	6	6	6	2	22			\$3,156
Site Visit/Meeting (up to 3 included)	8	8	8	0	0	24	440		\$4,613
Project Management	2	12	0	0	2	16			\$2,586
TOTAL HOURS	22	48	80	116	20	286	440		
TOTAL FEE	\$4,620	\$7,920	\$13,200	\$11,020	\$1,860		\$255	\$200	\$39,100

Appendix A: Resumes

Appendix A: Resumes

Maija Madec, PE

Project Engineer

Experience

- ✓ Total Years of Experience: 14
- ✓ Years with Provost & Pritchard: 13

Education

- ✓ B.S. Mechanical Engineering,
California State University, Chico

Licenses/Registrations/Certifications

- ✓ Civil Engineer, California #79709

Affiliations

- ✓ California Water Environment Association (CWEA)
- ✓ Water Environment Federation (WEF)
- ✓ American Society of Civil Engineers (ASCE)
- ✓ Tau Beta Pi Association

Areas of Expertise

- ✓ Project Management
- ✓ Municipal Infrastructure
- ✓ Water and Wastewater Studies
- ✓ Disadvantaged Community Studies
- ✓ Funding Assistance
- ✓ District Operations

Professional Summary

Maija Madec is a senior engineer and project manager at Provost & Pritchard with 14 years of experience in the field of municipal water resources. She has worked on numerous water and wastewater treatment and distribution facility projects. Her responsibilities have included working as a project manager, design engineer and report writer, preparing permit applications, preparing funding applications, coordinating and writing operation and maintenance (O&M) manuals, and providing field construction oversight.

Relevant Experience

Wastewater Treatment Plant Improvements, Riverdale Public Utility District, Fresno County, California, Project Manager – Ms. Madec was responsible for a planning study for the expansion of the existing wastewater treatment plant to increase capacity to 0.325 MGD. The project consists of constructing approximately 1.5 miles of new sewer force main from the community to the Wastewater Treatment Plant site, a new headworks structure, new aerated treatment ponds, and new disposal ponds. Work included preparing a Preliminary Engineering Report, Environmental Documents, Report of Waste Discharge, and correspondence and permitting with the Regional Water Quality Control Board, and design plans and specifications. The RWQCB has issued new Waste Discharge Requirements for the proposed projects, and a construction funding application has been prepared and submitted to the State Water Resources Control Board.

Tulare Lake Basin Disadvantaged Community Water Study, County of Tulare, California, Project Manager – Ms. Madec was the project manager for the Tulare Lake Basin Disadvantaged Community Water Study prepared for the County of Tulare. The goal of the study was to develop an overall plan to address water needs including recommendations for planning, infrastructure, and other water management actions, as well as specific recommendations for regional drinking water treatment facilities, regional wastewater treatment facilities, related infrastructure, project sustainability, and cost-sharing mechanisms. The study was intended to identify projects and programs that will create long-term reliability and regulatory compliance, while optimizing the ongoing O&M and management costs for small water and wastewater systems. As the culmination of the study, recommendations were provided for legislation, funding opportunities, and other support that federal, state, and local agencies can provide to help facilitate this plan.

Jerry Teng, PhD, PE

Project Engineer

Experience

- ✓ Total Years of Experience: 28
- ✓ Years with Provost & Pritchard: 15

Education

- ✓ Ph.D. Civil & Environmental Engineering, Louisiana State University
- ✓ M.S. Environmental Engineering, Saitama University, Japan
- ✓ B.S. Environmental Engineering, Tongji University, Shanghai, China

Licenses/Registrations/Certifications

- ✓ Civil Engineer, California #68783

Affiliations

- ✓ Water Environment Federation – California Water Environment Association, Past President, Central San Joaquin Section

Areas of Expertise

- ✓ Wastewater Treatment
- ✓ Process Design
- ✓ Water Quality & Treatment
- ✓ Bio-Solid Digestion & Disposal

Professional Summary

Jerry Teng is an environmental engineer specialized in water and wastewater treatment processes. Dr. Teng's areas of expertise include physical and biological unit operations and processes, on-site wastewater management, industrial source control and salinity studies, water quality and treatment, bio-solids digestion and disposal, and National Pollutant Discharge Elimination System (NPDES) and waste discharge permit applications.

Relevant Experience

Wawona WWTP Effluent Disposal, Yosemite National Park, California

Project Engineer - Dr. Teng was responsible for the design of a large-scale effluent subsurface distribution and disposal system. The tertiary treated effluent are designed to percolate through drain line trenches when the irrigation demand diminishes in the winter. The project moderates the static water pressure for different disposal zones and provide continuous groundwater level monitoring for operational control.

Advanced Enviro-Septic system upgrade, Jack Boyd Outdoor School, Fish Camp, California, Project Engineer

- Dr. Teng was responsible for the design of a project which included a system evaluation, conceptual design, application for County Public Health approval, design of engineered passive treatment system and soil absorption system upgrade to an existing mound system. The project evaluated the existing hydraulic conductivity of the underlying soil for disposal capacity. The passive AES system treat the septic effluent to secondary effluent quality to reduce the organic loading to underlying soil and improve percolation capacity.

On-site Wastewater Treatment and Disposal, Craneplat Camp Site, Yosemite National Park, California, Project Engineer

- Dr. Teng was responsible for the design of a project which included a conceptual design, application for County Public Health permit, design of engineered passive treatment system and soil absorption system for 5 comfort stations in the camp site. The project evaluated the sensitive cultural resource, wetland resource, groundwater and soil condition to develop a feasible and economical solution to the nature environment of the camp site.

Wastewater Reclamation Facilities, Copper River Ranch, Fresno, California, Project Engineer

- Dr. Teng was responsible for the design of a project which included a conceptual design, application for NPDES permit, Department of Health Service wastewater reclamation permit, design of a 0.75 MGD tertiary treatment processes utilizing a sequencing batch reactor (SBR) system, disk-filter, pump station, disinfection, and dechlorination. (ASCE Project of the Year, CELSOC).

Michael Taylor, PE

Principal-in-Charge

Experience

- ✓ Total Years of Experience: 35
- ✓ Years with Provost & Pritchard: 35

Education

- ✓ M.S. Civil Engineering,
California State University, Fresno
- ✓ B.S. Civil Engineering,
University of California, Davis

Licenses/Registrations/Certifications

- ✓ Civil Engineer, California #39961
- ✓ Civil Engineer, Oregon #18039
- ✓ Civil Engineer, Arizona #53830

Affiliations

- ✓ California Water Environment Association (CWEA)
- ✓ Water Environment Federation (WEF)
- ✓ American Society of Civil Engineers (ASCE)
- ✓ WaterReuse Association
- ✓ American Public Works Association (APWA)

Areas of Expertise

- ✓ Municipal Infrastructure
- ✓ Water/Wastewater Distribution
- ✓ Agricultural Irrigation/Drainage

Professional Summary

Michael Taylor is a principal engineer at Provost & Pritchard with over 35 years of engineering experience. He supervises projects related to municipal infrastructure including water treatment and distribution, wastewater collection treatment and disposal/reclamation, and storm drainage. He has participated in several water conservation projects for agricultural and municipal areas, and has served as project manager on projects funded by various agencies including the U.S. Economic Development Administration (EDA), U.S. Department of Agriculture – Rural Development, California Department of Water Resources (DWR), Department of Corrections, State Water Resources Control Board (SWRCB) – Small Community Grant, Safe Drinking Water State Revolving Fund (SDWSRF), SWRCB Division of Drinking Water, and the Department of Housing and Urban Development (HUD) also known as the Community Development Block Grant (CDBG) program.

Relevant Experience

Wastewater Treatment Plant Upgrade and Expansion, Caruthers Community Services District, Fresno County, California, Project Manager/Design Engineer –

The project included preparation of a preliminary engineering report, design, construction management, and preparation of an O&M manual for a wastewater treatment and disposal facility. The project expanded the facilities to a capacity of 0.28 MGD. Financial assistance for this project was provided by USDA Rural Development. This project included a new headworks, Biolac treatment facility (nitrogen reduction), sludge handling, and disposal. The project included compliance with new waste discharge requirements.

Wastewater Treatment Plant System Improvements, Malaga County Water District, Fresno County, California, Project Manager –

Mr. Taylor was responsible for preparing a funding application, design services, construction administration, and funding administration for an EDA-funded project including wastewater treatment plant expansion (fine bubble activated sludge, secondary clarifier, safety railing, aerobic study digestion, blowers, standby power, blower building, disposal ponds), water and sewer main extensions, and borings under existing canals.

Wastewater Treatment Plant Improvements, Armona Community Services District, Kings County, California, Project Manager –

This project involved funding of expansion of an aerated pond wastewater treatment plant to 0.4 MGD. The project consisted of an evaluation, design engineering, construction management, and funding administration for the expansion. Improvements included new headworks (including grinder and self priming centrifugal pumps) aerated ponds, additional disposal ponds, and a reclamation area.



Fresno • Clovis • Visalia • Bakersfield • Modesto • Los Banos • Chico • Merced • Sacramento
www.ppeng.com • info@ppeng.com