



Folsom City Council Staff Report

MEETING DATE:	6/9/2026
AGENDA SECTION:	Consent Calendar
ITEM TITLE:	Resolution No. 11640 – A Resolution Authorizing the City Manager to Execute an Agreement with Verdantas, Inc. for Consulting Services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and Appropriation of Funds
FROM:	Utilities Department

RECOMMENDATION / CITY COUNCIL ACTION

The Utilities Department recommends the City Council pass and adopt Resolution No. 11640 - A Resolution Authorizing the City Manager to Execute an Agreement with Verdantas, Inc. for Consulting Services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and Appropriation of Funds.

BACKGROUND / ISSUE

The Utilities Department identifies water infrastructure rehabilitation and replacement projects through water master plans, ongoing water condition assessment programs, and regulatory changes. The City's Water Master Plan (WMP) was last updated in 2016 and is a key planning tool for water related infrastructure projects and programming for the Department. An important component of the WMP is the development of a Capital Improvement Program (CIP) that shows the need for and timing of any improvements necessary to correct deficiencies in the existing system and provide adequate service at build-out. The recommended projects are included in the City's annual CIP budget and are one component incorporated into the City's rate studies.

The following scope of work will be completed as part of the Water Master Plan and Condition Assessment Program.

- **Data Review and Analysis:** Examine and validate existing water system data to ensure its accuracy and completeness for effective modeling and planning.
- **Hydraulic Model Updates:** Update and recalibrate the hydraulic water model using InfoWater Pro to reflect current conditions and future needs.
- **Demand Analysis:** Update and analyze average day, maximum day, and peak hour water demands, projecting both current and future requirements. This includes the refinement of zone specific diurnal curves.
- **Capital Planning:** Develop a ten-year capital improvement plan, including the preparation of cost estimates and prioritization of projects by fiscal year, to help guide future investments.
- **Condition Assessment:** Establish a robust program to evaluate the integrity and performance of infrastructure assets. Specifically develop a condition assessment approach for the City's transmission mains.
- **CEQA Analysis:** Complete the environmental review in compliance with California Environmental Quality Act requirements.
- **Reporting:** Deliver comprehensive draft and final reports, providing actionable insights for City staff, stakeholders, and the public.

This Resolution will authorize the City Manager to execute an agreement with Verdantas, Inc. for consulting services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and appropriation of funds.

POLICY / RULE

Section 2.36.120 of the Folsom Municipal Code states, in part, that contracts for supplies, equipment, services, and construction with an estimated value of \$77,426 or greater shall be awarded by the City Council.

ANALYSIS

On March 13, 2026, the City issued a Request for Proposal (RFP) to provide consulting services for the preparation of the City's 2026 Water Master Plan and Condition Assessment Program. The City publicly advertised on March 13, 2026 for the Request for Proposal through the Sacramento Bee. Additionally, the RFP was made available on www.virtual-bid.com, www.publicpurchase.com, and the City's website.

On April 16, 2026, Utilities department staff received proposals from Verdantas, Inc. and SRT Consultants. The proposals were reviewed and scored for project understanding, project team staffing, relevant qualifications, scope of work, project approach, and relevant experience. The technical evaluations were scored as shown in Table 1 based on a maximum technical score of 80.

Consultant	UT 1	UT 2	UT 3	UT 4	Average
SRT Consultants	67	67	62	66	65.5
Verdantas, Inc.	68	73	78	69	72.0

Table 1: Consultant Technical Scores without Costs

After reviewing each proposal for project understanding, project team staffing, relevant qualifications, scope of work, project approach, and relevant experience, the proposals were reviewed for project costs. The fee schedules for the scope of work outlined in the request for proposal from each consultant are shown in Table 2.

Consultant	Fee Amount
SRT Consultants	\$362,722.14
Verdantas, Inc.	\$279,196

Table 2: Consultant Project Costs

Verdantas, Inc. was determined to provide the best value to the city based on the fee amount, past municipal project experience involving work of similar scope and their familiarity with the City's water hydraulic model as they developed the current hydraulic model and currently perform updates and maintenance on the hydraulic model. Additionally, Verdantas, Inc. included a sub-consultant, HDR, that has significant experience working on the water treatment plant processes described in the RFP.

Table 3 shows the overall total scores including project costs based on a maximum score of 100.

Consultant	Technical Score (Avg.)	Cost Score	Total Score
SRT Consultants	65.5	15.4	80.9
Verdantas, Inc.	72.0	20.0	92.0

Table 3: Consultant Overall Scoring Including Project Costs

This resolution will authorize the City Manager to execute an agreement with Verdantas, Inc. for consulting services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and appropriation of funds.

FINANCIAL IMPACT

If approved, the agreement with Verdantas, Inc. would be in the amount of \$279,196 with \$193,493 funded through the Water Operating Fund (Fund 520) and \$85,703 funded through the Water Capital Fund (Fund 521). The agreement will require an appropriation of \$85,703 in the Water Capital Fund (Fund 521). Sufficient funds are budgeted and available in the Water Operating Fund (Fund 520) for this agreement. Sufficient funds are available in the Water Capital Fund (Fund 521) for the requested appropriation.

ENVIRONMENTAL REVIEW

Citywide water infrastructure facilities have previously been evaluated at various levels of detail through previous environmental studies associated with the Folsom Plan Area Specific Plan, General Plan and recent amendments to the General Plan.

As part of the scope of work, the project team will prepare an administrative Initial Study (IS) based on State CEQA Guidelines Appendix G that will be the basis of the environmental document to be prepared. They will incorporate the previous environmental analyses from the Folsom Plan Area Specific Plan, General Plan, and recent amendments to the General Plan to determine if the Water Master Plan improvements would create greater or new impacts to the environmental.

The IS will comply with CEQA Guidelines and City standards and is anticipated to support an ND. It will include the project description, regulatory and environmental context, permits, policy consistency, environmental evaluation, mitigation measures, findings of significance, and evidence of public and agency coordination. Baseline conditions will be defined geographically, impacts will be assessed against significance criteria, and sources will be fully cited for a defensible CEQA record.

ATTACHMENTS

1. Resolution No. 11640 - A Resolution Authorizing the City Manager to Execute an Agreement with Verdantas, Inc. for Consulting Services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and Appropriation of Funds
2. Verdantas, Inc. Proposal Scope
3. Verdantas, Inc. Proposal Fee

Submitted,

Marcus Yasutake, Director
UTILITIES DEPARTMENT

Attachment 1

RESOLUTION NO. 11640

A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE AN AGREEMENT WITH VERDANTAS, INC. FOR CONSULTING SERVICES FOR THE 2026 WATER MASTER PLAN AND CONDITION ASSESSMENT PROGRAM FOR \$279,196 WITH \$193,493 ALLOCATED FROM THE WATER OPERATING FUND (FUND 520) AND \$85,703 ALLOCATED FROM THE WATER CAPITAL FUND (FUND 521) AND APPROPRIATION OF FUNDS

WHEREAS, the City of Folsom has identified the 2026 Water Master Plan and Condition Assessment Program as a priority to maintain integrity and operation of the water system; and

WHEREAS, Verdantas, Inc. by reason of their past experience and abilities for performing these types of services are qualified to perform the required consulting services for the project; and

WHEREAS, sufficient funds are budgeted and available in the Water Operating Fund (Fund 520) for \$193,493 for this agreement; and

WHEREAS, sufficient funds are available in the Water Capital Fund (Fund 521) for this agreement and the requested appropriation in the amount of \$85,703; and

WHEREAS, the agreement will be in a form acceptable to the City Attorney:

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Folsom authorizes the City Manager to execute an agreement with Verdantas, Inc. for Consulting Services for the 2026 Water Master Plan and Condition Assessment Program for \$279,196 with \$193,493 allocated from the Water Operating Fund (Fund 520) and \$85,703 allocated from the Water Capital Fund (Fund 521) and Appropriation of Funds

BE IT FURTHER RESOLVED that the Finance Director is authorized to appropriate \$85,703 for this agreement. The appropriation will be made in the Water Capital Fund (Fund 521) for the amount of \$85,703.

PASSED AND ADOPTED this 9th day of June, 2026, by the following roll-call vote:

AYES: Councilmember(s):
NOES: Councilmember(s):
ABSENT: Councilmember(s):
ABSTAIN: Councilmember(s):

Justin Raithel, MAYOR

ATTEST:

Christa Freemantle, CITY CLERK

Attachment 2



April 16, 2026

Proposal to Provide Consulting Services for the 2026 Water Master Plan and Condition Assessment Program

Submitted to



CITY OF
FOLSOM
DISTINCTIVE BY NATURE

Submitted by

verdantas

80 Blue Ravine Road, Suite 280
Folsom, CA 95630

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Appendix A. Sample Agreement Modifications

A. Transmittal Letter

April 16, 2026

City of Folsom

Attention: Marcus Yasutake, Utilities Director
Utilities Department
50 Natoma Street
Folsom, CA 95630

Subject: Response to Request for Proposals for *Consulting Services for the 2026 Water Master Plan and Condition Assessment Program RFP*

Verdantas Inc. (Verdantas) is pleased to provide the City of Folsom (City) with our proposal to develop the City's 2026 Water Master Plan and Condition Assessment Program. Verdantas is an engineering, planning, and science services company made up of more than 2,200 diverse professionals across the country, many coming from strategic acquisitions of well-established firms, including water-industry experts Peterson Brustad Inc. (PBI). Now a part of Verdantas, our team has been supporting City projects since 2005 and has extensive experience working with the City. We are excited about the opportunity to continue working with the City on this project. We are confident that Verdantas will make an exceptional partner for the City of Folsom for the following reasons:

- ▶ **Verdantas completed the City's 2016 Water Master Plan Update.** Having completed the City's 2016 Water Master Plan Update and continuing to support the City with on-call hydraulic modeling needs, Verdantas brings unparalleled institutional knowledge of Folsom's water system and long-term resource needs. That foundation, combined with our proven planning and analytical tools, positions our team to seamlessly support the City's current Water Master Plan and Condition Assessment Program.
- ▶ **Experienced, highly qualified professionals specialized in the water industry are committed to your project.** Karl Brustad, PE, will provide overall quality control for the project. Karl has a background that is specialized in water projects and he has a long history of supporting water planning studies for numerous clients, including water master plans and UWMP's. We are proposing Ashley Smith as the Project Manager for this project. Ashley managed the development of the City's 2016 Water Master Plan and continues supporting the City with on-call hydraulic modeling support services. Ashley has also managed several transmission main condition assessment programs throughout the region. Ashley's extensive experience supporting water planning studies makes her a perfect fit for your project.
- ▶ **Right team, right fit.** We are teaming with **HDR** and **Dudek** on this project. HDR will provide the City with Water Treatment Plant System Analysis while Dudek provides CEQA Support Services. They both bring decades of experience that will help ensure the WTP System Analysis and CEQA Support aspects of the scope of work are done to industry-standard expectations.

FIRM CONTACT INFORMATION



Verdantas – Folsom Office
80 Blue Ravine Road | Suite 280
Folsom, CA 95630
Verdantas – Irvine Office
2600 Michelson Drive | Suite 400
Irvine, CA 92612



Primary Contact:
Ashley Smith, PE
(530) 200-6309 | asmith@verdantas.com
Signing Authority:
Kristen Williams, PG
(949) 681-4273 | kwilliams@verdantas.com

A proven approach gets the job done right. Successful approaches breed successful projects, and we bring proven techniques to every stage of project development. From project management techniques that optimize project performance to good relationships with regulators, we keep the project on-track at every stage, saving our clients time and money in the short term, and delivering lasting value in the long-term. We look forward to the opportunity to work with the City of Folsom and are committed to providing quality service to you and the community you serve. We also acknowledge receipt of Addendum No. 1 issued on April 1, 2026.

Respectfully Submitted,



Kristen Williams, PG
Vice President/Area Lead

B. Introduction

Verdantas Inc. (Verdantas) is a nation-wide company specialized in engineering, planning, and science services to support their clients' sustainability, resiliency, and strategic infrastructure objectives. Verdantas has grown exponentially in the last six years, strategically acquiring firms including **Peterson Brustad Inc. (PBI)**. PBI was originally founded in September 2005 to provide engineering consulting services for the water industry.

We are diversified within the water resources realm and provide planning and design services for water and wastewater system master planning, distribution systems, water and wastewater treatment, water storage and pump station systems, well rehabilitation and new well development, wastewater collection systems, storm water management, integrated water resources management, and flood management support.

Karl Brustad, a founding principal of PBI and now an Assistant Vice President for Verdantas Inc., has more than 30 years of experience in the water industry, and is actively involved in project delivery. He ensures that his clients receive expert attention, high quality products, and outstanding client service. Our team has decades of experience delivering industry leading civil engineering design and consulting services that help our water clients move projects forward in support of our local communities.



As a subconsultant to Verdantas, **HDR** will support **Task 7 – Water Treatment Plant System Analysis** by providing a focused, data driven evaluation of the City of Folsom Water Treatment Plant (WTP) processes and associated infrastructure. Their approach emphasizes capacity verification, reliability, and operational redundancy to ensure the WTP can reliably meet

projected average day, maximum day, and peak hour demands through build out while maintaining regulatory compliance and operational flexibility.



As a subconsultant to Verdantas, **Dudek** will support **Task 10 – CEQA Support** to ensure that the recommended capital improvements resulting from this project are compliant with CEQA requirements. It is anticipated that this project will be an Initial Study Negative Declaration (IS/ND).

History of Repeat Business

The true measure of a firm's quality of service comes in the form of repeat business. More than 80% of legacy PBI's annual services over the last ten years were from repeat clients, who now receive the same level of specialized care and the additional benefits of the larger Verdantas team. In the last twenty years, our team has amassed multiple projects with many of our clients shown in the table to the right. These clients have come to trust us with their water and wastewater infrastructure and water resource projects. Our team has completed over 35 projects with the City of Folsom alone.

# of projects completed	Repeat Clients
75+	California American Water (Cal Am)
35+	City of Folsom
35+	Placer County Water Agency (PCWA)
30+	Sutter Butte Flood Control Agency (SBFCA)
30+	San Joaquin Area Flood Control Agency (SJAFCA)
30+	Calaveras County Water District (CCWD)
20+	Sacramento Suburban Water District (SSWD)
20+	San Joaquin County (SJC)
8	El Dorado Irrigation District (EID)
6	Fair Oaks Water District (District)

Relevant Experience

Verdantas has provided continuous water-related planning and technical services to the City for over two decades, including water master planning, hydraulic model updates, and on-call system modeling support. **Verdantas prepared the City of Folsom's 2016 Water Master Plan Update**, providing comprehensive data review and analysis, development of water demand projections, evaluation of demand management measures, and assessment of population and demographic trends. Our team evaluated system supplies and water supply reliability; updated the City's hydraulic models for existing, intermediate, and build-out conditions; and evaluated the water system relative to current and future demands consistent with the 2015 Urban Water Management Plan. The effort culminated in identification of system improvements and development of a 10-year Capital Improvement Program with cost estimates, along with preparation of the draft and final master plan reports.

In addition to recently completing a model update to the Folsom Plan Area (FPA), our team has been working directly with the City to develop an updated FPA infrastructure phasing plan to better guide on-going development. Because of these prior efforts, we are intimately familiar with the City's water system. **Verdantas' familiarity with the City's hydraulic model is unparalleled, making our team the best choice for a streamlined master plan update.**

In addition, Verdantas has developed numerous water master plans for our clients, which included condition assessments of existing facilities, development of hydraulic models for the evaluations of distribution systems, identification of deficiencies, alternatives analysis and identification of recommended improvements used to support the development of capital improvement programs. The Verdantas team has supported water master plans and hydraulic modeling for both large and small water agencies including: City of Folsom, Calaveras County Water District, Fair Oaks Water District, Kirkwood Meadows Public Utility District, Calaveras Public Utility District, El Dorado Irrigation District, and Placer County Water Agency.



Verdantas has performed several risk-based assessments for neighboring agencies to streamline transmission main condition assessments. This methodology has delivered measurable results for our clients such as the City of Roseville, Fair Oaks Water District, and El Dorado Irrigation District, empowering them to proactively manage risk and extend the service life of their water systems. **Verdantas brings proven expertise, having successfully deployed external EM bracelet scanners for both Fair Oaks Water District and the City of Roseville.** We strategically chose external scanners to eliminate costly shutdowns required for internal scanning, ensuring uninterrupted service while delivering actionable data for informed asset management and risk reduction.

HDR brings 45 years of experience delivering water system planning, design, and implementation projects. Their experience with WTP improvements includes tiered condition assessment of treatment processes, critical equipment, and pipelines; evaluation of treatment alternatives; and development of a phased, implementable roadmap for long-term redundancy and resilience. HDR has done similar facilities plan updates for Placer County Water Agency and the City of Santa Cruz.

C. Scope of Work

A. Overview and Summary

Verdantas understands that the City of Folsom is seeking to develop a comprehensive 2026 Water Master Plan and Condition Assessment Program. Verdantas has a thorough understanding of the City's goals and the critical challenges facing this effort, as outlined below.

Understanding City Objectives

The main objectives for this project include:

- **Data Review and Analysis:** Examine and validate existing water system data to ensure its accuracy and completeness for effective modeling and planning.
- **Hydraulic Model Updates:** The project requires updating and recalibrating the hydraulic water model using InfoWater Pro to reflect current conditions and future needs.
- **Demand Analysis:** A critical component is to update and analyze average day, maximum day, and peak hour water demands, projecting both current and future requirements. This includes the refinement of zone specific diurnal curves.
- **Capital Planning:** The development of a ten-year capital improvement plan, including the preparation of cost estimates and prioritization of projects by fiscal year, will guide future investments.
- **Condition Assessment:** Establishing a robust program to evaluate the integrity and performance of infrastructure assets is essential. Specifically developing a condition assessment approach for the City's transmission mains.
- **CEQA Analysis:** Environmental review and compliance with California Environmental Quality Act requirements are integral to the planning process.
- **Reporting:** Delivery of comprehensive draft and final reports is required, providing actionable insights for City staff, stakeholders, and the public.

Verdantas recognizes that these objectives are designed to ensure the City's water system remains resilient, well-maintained, and responsive to future growth and demand.

Understanding of Project Challenges

Several project challenges have been identified:

- **Budget and Schedule Constraints:** We understand that the City has an anticipated project budget of approximately \$250,000, and that the City expects to maximize value, streamline processes, and maintain transparency regarding costs and hours. The schedule, beginning June 2026 and concluding by March 2027, calls for efficient management and early agreement on planning criteria. Our detailed project management plans have been proven successful in maintaining projects on time and within budget which is further described, herein.
- **Technical Robustness and Stakeholder Engagement:** The plan must be technically robust and actionable. Experience with multi-pressure zone distribution systems and collaboration with City staff are key to achieving consensus and validating project data. Our team has a proven track record of assisting the City's staff with modeling hydraulic challenges that the City faces and has intimate familiarity with the various pressure zones throughout the City's system. We can leverage our familiarity of City's system concerns to collaborate efficiently alongside the City in validating model data.

Addressing Water Vision Vulnerabilities: Building Redundancy in the Treatment Process

The City of Folsom's recently established Water Vision identified a critical vulnerability within the existing water

treatment system related to incomplete treatment process and conveyance redundancy. While the Water Treatment Plant has sufficient nominal capacity to meet projected buildout demands, the Vision notes that only a portion of this capacity is fully redundant and that several single-point-of-failure pipelines exist within and immediately downstream of the plant. Under certain equipment outage or pipeline failure scenarios—particularly during peak demand or concurrent stress conditions—these limitations could result in partial or complete loss of treated water supply, with reliance on storage and emergency interties that may only sustain short-duration impacts. As population growth, climate variability, and operational complexity increase, these redundancy gaps create systemwide risk that must be addressed through a comprehensive, system-level evaluation rather than isolated upgrades.

Verdantas’ team understands that the Water Treatment Plant System Analysis included in this scope is intended to address this vulnerability to advance the Water Vision’s goals for reliability and resiliency. Our team will evaluate treatment process redundancy, filter capacity constraints, and critical plant piping to quantify the maximum sustainable treated water output under credible failure scenarios. We will identify where existing single points of failure limit operational flexibility, assess the consequence and duration of potential outages, and evaluate how these vulnerabilities interact with peak demand, storage availability, and future supply conditions identified in the Water Vision.

Alignment with the 2025 Urban Water Management Plan

Alignment with the City’s forthcoming Urban Water Management Plan is critical. The Water Master Plan’s demand forecasts and planning criteria must be consistent with the latest data and recommendations, supporting sustainable growth and ensuring that all planning documents work in concert.

B. Project Approach

Successful approaches breed successful projects, and we bring proven techniques to every stage of project development. The following sections describe our approach to each of the primary project elements including: water master plan update, hydraulic model update and calibration, WTP system analysis, and transmission main condition assessment.

Baseline Assumptions

Our approach to developing water master plans is to reach a common understanding with our clients on all assumptions and approaches in advance of updating the hydraulic model and developing a draft master plan. The first step is to present the planning/design criteria up front and utilize a workshop meeting to gain concurrence on the criteria prior to analyzing the system as a whole. This not only avoids possible rework but will help keep the project on schedule and on budget. This is a collaborative effort allowing us to provide recommendations, receive feedback from the City and ultimately summarize all critical assumptions and approaches that can be published in a Baseline Assumptions Technical Memorandum and agreed upon in advance of proceeding with model updates.

This has proven to be a very effective way in streamlining the process while avoiding unnecessary rework which allows the project to be completed within a 9-month timeline.

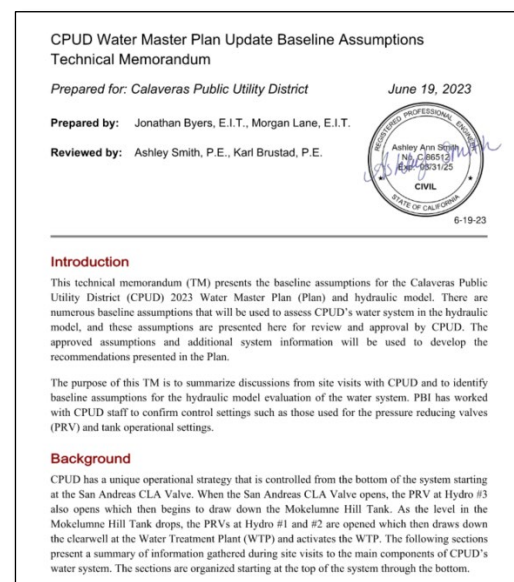


Figure 1. Sample Baseline Assumptions TM

Intimate Familiarity with Existing Hydraulic Model

Because Verdantas recently completed the latest hydraulic model update in February, there is limited need to spend additional time reviewing the existing model. This distinct advantage allows our team to move immediately into demand updates and model calibration, setting us apart from other teams and enabling us to deliver results efficiently. We will work closely with City Staff to leverage our familiarity with system pressure zones to quickly and efficiently validate current operational settings to assist with the model calibration and validation.

Development of Updated Diurnal Curves by Zone

A realistic diurnal curve helps the model mimic field conditions, which is crucial for calibration of extended period simulations. During model calibration, using accurate zone-specific patterns improves the match between simulated and observed pressures/flows in each pressure zone. If incorrect patterns are used, the model might inaccurately predict tank drawdown or pressure drops at peak times. The City's last diurnal curve assessment was performed in 2008 with the initial development of the model.

We will deliver a defensible, implementable solution efficiently by leveraging our intimate familiarity with the City's hydraulic model and our working knowledge of how the system is operated day-to-day—particularly pump station control logic and PRV setpoints/operating modes. ***This familiarity is a key differentiator, enabling faster start-up, fewer calibration iterations, and a shorter path to decision-ready deliverables.*** This reduces ramp-up time, limits avoidable rework, and allows us to focus data requests on the handful of inputs that materially influence diurnal patterns (zone boundary flows, tank levels, interties, and known operational changes).

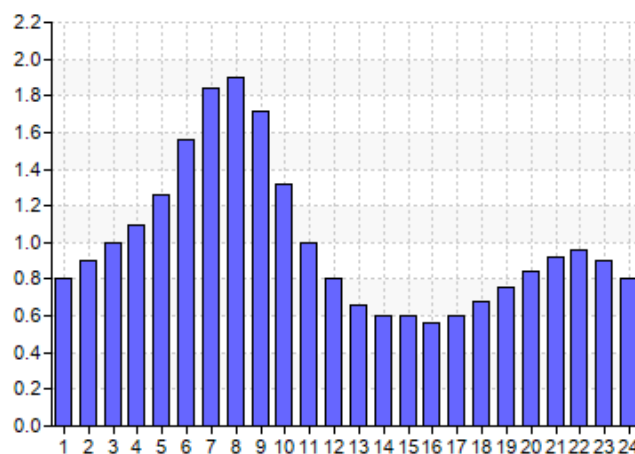


Figure 2. Existing Zone 3 Diurnal Curve

Our approach starts by confirming objectives and success criteria, then validating the current model representation of pump/PRV controls so demand patterns and operational settings are consistent. We will produce initial, zone-specific demand patterns promptly for early extended-period simulations, then refine them through targeted QA/QC (outlier screening, mass-balance verification using storage changes, and cross-comparisons across zones and seasons). Throughout the process, we prioritize close collaboration with City staff, maintaining a “no surprises” cadence with clear checkpoints and thoroughly documented decisions. This ensures that City stakeholders are actively engaged and have full visibility into what was done, why it was done, and how our deep understanding of the City's model and operational parameters helps reduce schedule and delivery risk. By working hand-in-hand with the City, we build trust, foster transparent communication, and ensure that project outcomes align with the City's goals and operational realities. Our diurnal curve development approach is outlined as follows:

- **Align on zones and operations:** Confirm our understanding of key pump/PRV controls (setpoints, schedules, modes) with City Operations staff.
- **Targeted data, right resolution:** Use 15-min to hourly flows, tank levels, pump status, and PRV settings; pull only the key tags/facilities.
- **Data Validation and Transparency:** Mass-balance check (inflow $\pm$ interties – Δ storage); compare each zones diurnal use patterns to known use patterns within each zone.
- **In Model Calibration:** Apply patterns in the City's model and refine using observed pressures/flows as provided by City's Operations staff, accounting for pump/PRV/tank behavior.

Model Calibration and Validation

For calibration of the hydraulic model, initial simulation runs will be made using estimated model parameters to ensure that the existing model results are reasonable and that there are no gross errors. Various calibration runs will then be made in steady-state mode and the model results will be evaluated for consistency with available data and field observations. If results are not reasonable, Verdantas will re-evaluate the adjustment parameters and re-run until a satisfactory match is obtained between modeled and observed values.

After an acceptable set of calibration parameters has been determined, Verdantas will examine the extent to which the set of calibrated values needs to be adjusted to match other steady-state demand simulations. In addition, to further refine the calibration, the calibration parameters will be used for time-varying conditions in an extended period simulation to see if there is reasonable agreement between modeled and observed pressures, flows, and tank water levels.

Depending upon the quality and quantity of available data, Verdantas will validate the model by running test data obtained under different conditions. For the validation, system demands, initial conditions, and operational rules will be adjusted to match the conditions at the time the test data was collected.

It is important to note that a discrepancy found during the calibration process can also mean that the system itself has problems. Possible problems include large leaks, uncharted services, previously undetected errors in the metered consumption, errors in recorded pipe sizes, unknown throttled or closed valves, worn pump impellers, or old construction debris left in pipes.

During the calibration process, it may be determined that additional supplemental data needs are required in order to achieve accurate model calibration or validation. If necessary, Verdantas will identify key locations and areas where additional data is needed and work cooperatively with the City to gather the information. For example, certain valves may need to be checked to ensure that they are not partially closed, or additional pressure readings may be needed in conjunction with tank level and/or flow meter readings. In addition, supplemental fire flow tests will be conducted to ensure model accuracy during peak demand and fire flow conditions.

This level of effort is based upon prior experience and assumes that up to 40 fire flow tests may be needed to support the calibration process. The fire flow tests are assumed to be performed with the assistance of City operations staff and will take up to 3 days in the field with our Staff Engineer. The first two fire flow tests will include the attendance of our Project Manager, Ashley Smith.

Water Treatment Plant System Approach

As a subconsultant to Verdantas, HDR will support the Water Treatment Plant System Analysis by providing a focused, data driven evaluation of the City of Folsom Water Treatment Plant (WTP) processes and associated infrastructure. Our approach emphasizes capacity verification, reliability, and operational redundancy to ensure the WTP can reliably meet projected average day, maximum day, and peak hour demands through build out while maintaining regulatory compliance and operational flexibility.

Data Review and Capacity Basis

We will begin by reviewing available background information provided by the City, including historical production data, process design criteria, operational setpoints, chemical usage records, filter run times, and residuals handling practices. Where available, we will confirm existing unit capacities against current operating constraints and identify any limiting conditions under peak demand or single unit outage scenarios. Capacity assessments will be coordinated with updated demand projections and distribution system analysis to maintain a consistent planning basis across the Water Master Plan.

Process Specific Evaluations

Using established water treatment design standards and best practices, we will systematically evaluate the

following WTP systems:

- **Polymer and Chemical Feed Systems:** Evaluate firm capacity, chemical storage duration, feed rate turndown, and redundancy to support peak treatment requirements and maintenance outages.
- **Pre Treatment and Clarification Processes:** Confirm hydraulic and solids loading capacities relative to raw water quality variability and peak flow conditions.
- **Filter Facilities:** Assess filter hydraulic capacity, filter loading rates, redundancy during backwash cycles, and operational flexibility under maximum day and peak hour conditions.
- **Backwash Systems:** Review backwash supply, storage, pumping, and waste handling capacities to ensure reliable filter operations without constraining plant throughput.
- **Solids Handling Systems:** Evaluate solids thickening, storage, and disposal capacity relative to current and projected solids production rates.
- **Chlorine Contact Facilities:** Verify effective contact time under peak flow and minimum baffling conditions for regulatory compliance.
- **Pump Stations:** Assess firm pumping capacity, redundancy, and operational flexibility to meet system demands and interface with downstream pressure zones.

Reliability and Redundancy Assessment

For each evaluated system, we will consider N 1 reliability, maintenance operational constraints, and critical single points of failure. Improvement needs will be identified where capacity shortfalls, limited redundancy, or aging infrastructure could affect operational resilience or regulatory compliance.

Improvement Identification and Coordination

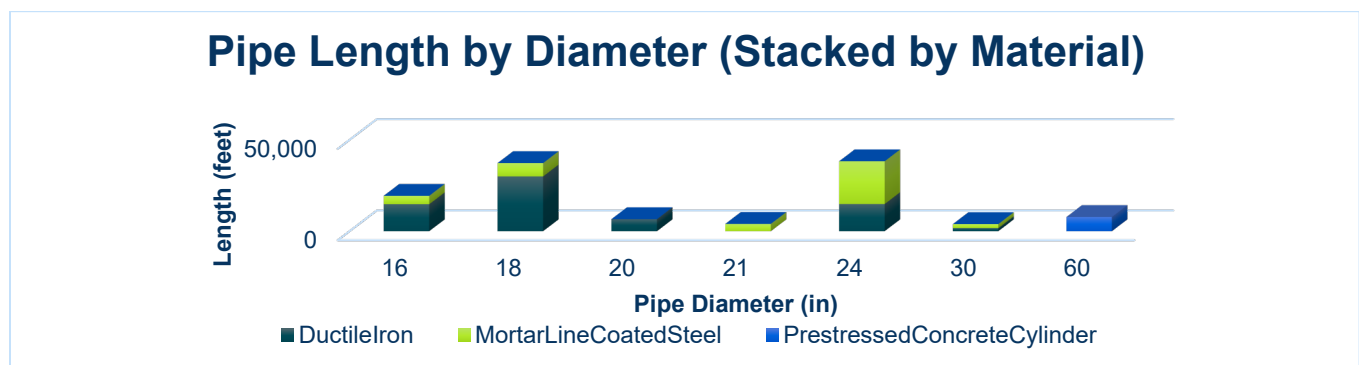
Identified deficiencies will be translated into concept level improvement and expansion projects suitable for inclusion in the City's 10-year Capital Improvement Program (CIP). Our findings and recommendations will be closely coordinated with the water master plan update to ensure consistency with distribution system triggers, demand forecasts, and overall Master Plan phasing. Improvements will be described at a planning level appropriate for future prioritization and cost estimating.

Deliverables

Our work will support development of concise technical memoranda, figures, and tabular summaries that clearly document assumptions, methodologies, and recommended WTP system improvements. These materials will be fully integrated into the Water Master Plan deliverables.

Condition Assessment Program Development Approach

We understand that the City of Folsom would like to develop a condition assessment program for their transmission mains 16in and larger, which total approximately 22 miles. The material types of the City's transmission mains are predominantly mortar lined and coated steel and ductile iron pipe as shown below.



Our approach to developing a condition assessment program of the City of Folsom's transmission mains will utilize

a typical asset management framework to provide recommendations for a replacement program. Condition assessment is one aspect of this process and can be performed in the field, via desktop, or both. AWWA's latest Manual M77: Condition Assessment of Water Mains can be used as a guide to utilities on various practices available for condition assessment. This manual highlights that the higher the degree of inspection is, the higher the cost of the assessment will be.

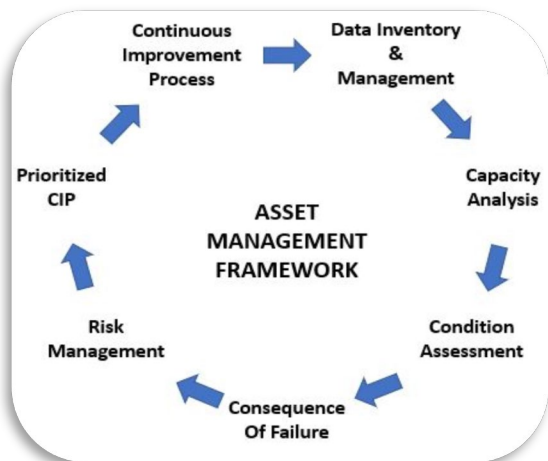


Figure 3. Asset Management Life Cycle

Recognizing the importance of maximizing value and minimizing unnecessary expenditures, we acknowledge that direct field condition assessments of the transmission mains are not included in this scope. Instead, our focus is on developing a robust and actionable program that empowers the City to proactively manage its assets. Deploying advanced technologies across all 22 miles of transmission mains would be cost-prohibitive and inefficient. By crafting a streamlined condition assessment framework, we equip the City to strategically pinpoint the segments and moments when high-impact technologies should be utilized.

Verdantas strongly recommends launching the condition assessment program with a targeted, risk-based desktop evaluation that strategically identifies the highest-risk transmission main segments. ***This approach ensures that investments in advanced and more costly condition assessment technologies are focused where they will have the greatest impact—safeguarding critical infrastructure and optimizing resource allocation.*** This proven methodology has delivered measurable results for our clients such as the City of Roseville, Fair Oaks Water District, and El Dorado Irrigation District, empowering them to proactively manage risk and extend the service life of their water systems.

Verdantas' recommends developing a program that starts with an initial screening of the transmission mains utilizing a risk-based desktop evaluation that is consistent with AWWA-accepted methods. Risk can be expressed as the product of the consequence of failure (COF) and the likelihood of failure (LOF). Likelihood of failure for pipes is associated with various condition factors such as remaining useful life, material, and leak history. Consequence of failure is a measure of the impact on the community and customers of the potable water system in the event that a failure of a transmission main occurs.

$$\text{Risk} = f \left(\text{Consequence of Failure} \times \text{Condition of Asset} \right)$$

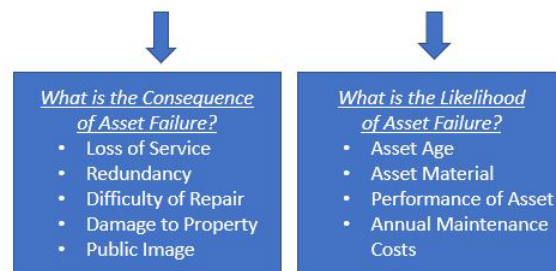
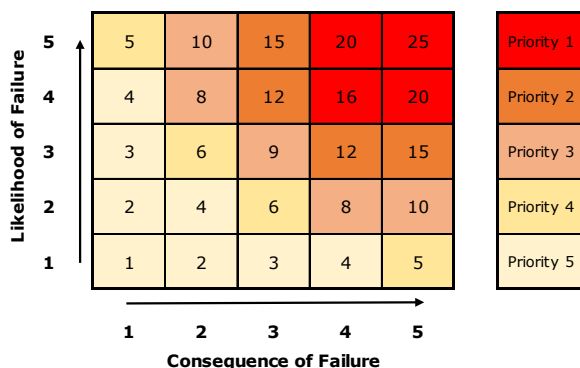
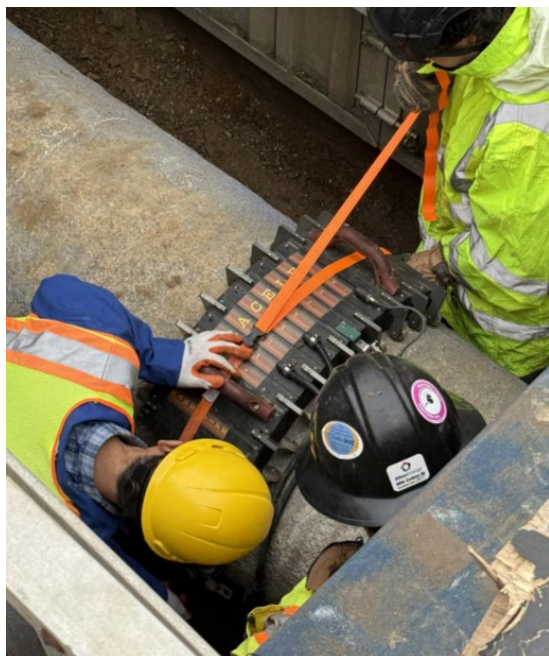


Figure 4. Risk Equation



A customized pipe risk screening tool is recommended to support a desktop evaluation similar to the screening tool that Verdantas has developed for the City of Roseville. The results of the evaluation will identify the risk associated with each transmission main segment. The transmission mains can then be prioritized by highest risk segments. Likelihood and consequence of failure rankings are combined into a matrix which prioritizes assets into risk-based categories. The potential risk scores and priority

categories are shown in the typical risk matrix to the left. ***The resulting prioritized risk matrix would be the primary framework for defining the recommended implementation schedule for advanced technology field investigations.*** Advanced technology field investigations will be reserved for the highest priority segments.



Electromagnetic (EM) inspection is an example of a proven advanced technology that delivers high-resolution results for steel mains by detecting areas of corrosion. Any reduction in the steel's cross-sectional area directly impacts the pipe's overall strength and can contribute to this deterioration. The goal of an electromagnetic scan is to pinpoint areas of wall loss. The industry offers diverse EM assessment tools, including internal and external scanners, each with distinct advantages and disadvantages; our team will provide a comprehensive evaluation to guide the City's technology selection for maximum impact. ***Verdantas brings proven expertise, having successfully deployed external EM bracelet scanners for both Fair Oaks Water District and the City of Roseville.*** We strategically chose external scanners to eliminate costly shutdowns required for internal scanning, ensuring uninterrupted service while delivering actionable data for informed asset management and risk reduction.

Detailed Scope of Work

The detailed scope of work is detailed as follows:

Task #1 – Information and Data Collection

- **Subtask 1.1** - This task includes the development of an information request memorandum to identify any data needs that will support the development of the baseline assumptions memorandum.

Task #2 – 2016 Water Master Plan Review

- **Subtask 2.1** - Verdantas will review the previous 2016 Water Master Plan document. Verdantas developed the previous 2016 Water Master Plan, so review will be minimal.

Task #3 – Water System Description

- **Subtask 3.1** -Verdantas will update the 2016 Water Master Plan and City General Plan, covering new facilities added since 2016. The scope includes: (1) service area description (current and future); (2) water system details (current and future); (3) operating characteristics for pressure zones, pump stations, reservoirs, valves, treatment, and distribution features; and (4) infrastructure maps showing pressure zones, reservoirs, booster pumps, flow control stations, and interties. Verdantas already has the operating characteristics of each pressure zone and will validate current information with City staff as part of the baseline assumptions memorandum.

Task #4 – Water Demand Analysis and Characterization

As part of the Water Demand Analysis and Characterization task, Verdantas will complete the following subtasks:

- **Subtask 4.1** - Identify existing and projected population in five-year increments to build-out using the City's 2025 Draft Urban Water Management Plan figures.
- **Subtask 4.2** - Description and map of existing and projected land-use from the City's most recent General Plan.

- **Subtask 4.3** - Update diurnal curves based on mass balance by zone.
- **Subtask 4.4** - Summarize existing water use by land-use type using data from the City's 2025 Draft Urban Water Management Plan
- **Subtask 4.5** - Summarize future water use through build-out by land-use type using data from the City's 2025 Draft Urban Water Management Plan and make recommendations to update these or modify the land-use categories and include the necessary scope and fee to implement the recommendations.
- **Subtask 4.6** - Include distribution system water loss based on the review of the City's water loss audits submitted to the State.
- **Subtask 4.7** - Analyze the peaking factors for average day demand, maximum day demand, and peak hour demand and update each as needed through build-out.
- **Subtask 4.8** - Summarize water demands by pressure zone through build-out and compare to the information in the 2016 WMP.

Task 4 Deliverables:

- Draft/final Baseline Assumptions Technical Memorandum.

Task 4 Assumptions:

- Diurnal curve development based on data for production, storage, and flow between zones provided by City.
- Flow meters may need to be installed between zones and is assumed to be installed by others.

Task #5 – Hydraulic Model Update

As part of Hydraulic Model Update task, Verdantas will complete the following subtasks:

- **Subtask 5.1** – Describe current hydraulic model.
- **Subtask 5.2** - Describe modifications made to the existing water model.
- **Subtask 5.3** - Verify operational set points for pump stations, reservoir levels, flow control facilities, and pressure zone boundaries.
- **Subtask 5.4** - Add necessary pipelines to include current water distribution network.
- **Subtask 5.5** - Incorporate unit demand factors from Task 4 into updated hydraulic model.
- **Subtask 5.6** - Recommend and implement the necessary actions for the validation and calibration of the hydraulic model, which shall include identifying key locations and City staff involvement to perform the necessary work.

Task 5 Assumptions:

- Software used shall be updated in InfoWater Pro or ArcPro compatible software.

Task #6 – Water Distribution System Analysis

As part of the Water Distribution System Analysis and Characterization task, Verdantas will complete the following subtasks:

- **Subtask 6.1** - Analyze the water distribution system using the calibrated model through build-out in 5-year increments.
- **Subtask 6.2** – Develop system evaluation criteria based on latest performance criteria used for recent hydraulic analysis with the City.
- **Subtask 6.3** - Identify distribution system improvements.

Task 6 Assumptions:

- Existing and buildout scenarios to be run on maximum day plus fire flow and peak hour demand.
- Final Capital Improvement Program (CIP) to be included in the Final Water Master Plan as part of Task 8.

Task #7 – Water Treatment Plant System Analysis (HDR)

Verdantas will identify any water treatment plant system improvements and recommend reliability and redundancy

projects for treatment processes and operations.

- **Subtask 7.1 – Data Review and Site Visits:** HDR will perform a site visit at the City of Folsom WTP. Up to two HDR employees will attend for up to two hours. HDR will review relevant background information provided, including: (1) Existing WTP design criteria and nominal capacities; (2) Historical plant production and operational data; (3) Chemical usage records; (4) Available process flow diagrams and facility descriptions; (5) WTP as-built; (6) Historical raw water and treated water quality data (past five years); and (7) Past or ongoing WTP condition assessment data
- **Subtask 7.2 – Water Treatment Process Capacity Evaluation:** HDR will evaluate planning-level capacity, firm capacity, and operational constraints for the following WTP systems under average day and maximum day demand conditions:
 1. **Polymer Feed System Capacity** – Evaluate feed rate capacity, storage duration, and redundancy.
 2. **Chemical Feed System Capacity** – Assess overall chemical feed and storage capacity for treatment and disinfection processes.
 3. **Pre-Treatment Capacity** – Review hydraulic and solids loading capacity relative to projected flow and raw water quality.
 4. **Filter Capacity** – Evaluate hydraulic loading rates, filter availability during backwash, and redundancy.
 5. **Backwash System Capacity** – Assess backwash supply, storage, pumping, and waste handling capacity.
 6. **Solids Handling Capacity** – Evaluate solids generation rates and handling system capacity.
 7. **Chlorine Contact Tank Capacity** – Review effective contact volume and detention time under peak flow conditions.
 8. **Pump Station Capacity** – Assess firm pumping capacity, redundancy, and ability to meet projected operational demands.
- **Subtask 7.3 – Improvement Identification and Documentation:** HDR will identify planning-level WTP improvement and expansion projects to address capacity, reliability, or redundancy deficiencies based on the agreed-upon target requirements for future WTP capacity. Each improvement will be developed to a conceptual level and a Class 5 cost estimate prepared. HDR will prepare concise technical memo summarizing the findings and recommendations to be incorporated into the Water Master Plan and Capital Improvement Program development.

Task 7 Deliverables:

- Draft and Final technical memo.

Task 7 Assumptions:

- Existing data to be provided by City within 2 (two) weeks of request for information
- The WTP analysis will rely on and incorporate the findings of the prior comprehensive WTP condition assessment, where applicable, to inform planning-level improvement recommendations.
- The system limitation identified will be related to:
 - Single-unit outages (N-1 conditions).
 - Maintenance operational constraints.
 - Critical single points of failure.
- The needed future capacity of the WTP (41 to 50 mgd estimated range) will be provided by the Prime Consultant based on input from HDR and the City.
- All deliverables will be provided in electronic format.

Task #8 – Capital Improvement Program Development

- **Subtask 8.1** - Develop the necessary trigger points for implementation of capital projects. Prioritization will be given to the recommended improvements developed in Task 5 for implementation over the next 10 years by Fiscal Year. Verdantas will include Class 5 construction cost estimates for each project by Fiscal Year.

Task 8 Deliverables:



- CIP including engineer's estimate of probable costs for each project identified.

Task 8 Assumptions:

- Final CIP to be incorporated into the Final Water Master Plan

Task #9 – Condition Assessment Program Development

Verdantas will develop a condition assessment program and recommend a schedule of implementation.

- **Subtask 9.1** - Identify up to three different technologies that can be used to perform condition assessment of the pipelines listed in Table 1.
- **Subtask 9.2** - Identify the pros and cons of each technology.
- **Subtask 9.3** - Identify the infrastructure needs for each of the technologies (i.e. is an insertion point needed).
- **Subtask 9.4** - Identify the costs associated with each technology.
- **Subtask 9.5** - Recommend a condition assessment approach for each of the pipeline segments listed in Table 1, including any recommendations for the necessary inspection and testing of any cathodic protection systems.

Task 9 Deliverables:

- Alternatives analysis for three different advanced assessment technologies.

Task 9 Assumptions:

- Contracting of advanced assessment technologies excluded.

Task #10 – CEQA Support

Dudek will review existing City documents and confirm regulatory requirements and appropriate CEQA determination. We anticipate that the WMP Update will require preparation of an Initial Study/Negative Declaration (IS/ND).

- **Subtask 10.1 – CEQA Compliance Kickoff:** Dudek will attend a virtual kick-off meeting with City staff and Verdantas. The purpose of the kickoff meeting is to: (1) identify relevant background data and technical studies; (2) clearly define the proposed project for the purposes of the environmental analysis; (3) discuss the cumulative scenario; (4) discuss the project schedule and important assumptions for achieving the schedule; (5) identify all anticipated discretionary actions; and (6) familiarize the Dudek team with the issues and concerns that the County determines to be important for analysis in the environmental document. Dudek will submit a Data Needs Request Form and a spreadsheet with questions to support preparation of the technical studies and the Initial Study (IS) analysis.
- **Subtask 10.2 – Project Description:** Dudek will work with City staff and Verdantas to develop the project description that will define the project objectives, include narrative descriptions and figures showing the locations of planned improvements, identify the approximate implementation schedule, and outline design criteria and anticipated construction procedures. Dudek will submit a draft project description electronically and revise the project description based on City comments.
- **Subtask 10.3. AB 52 Support:** Dudek will request a tribal contact list request through the Native American Heritage Commission and cultural resources records request through the North Central Information Center to obtain information on previously recorded cultural resources and investigations within the project area. We anticipate direct costs for the records search to be no more than \$1,700. Dudek will provide limited support to the City in complying with the requirements of AB 52 by providing template letters for notification to Native American tribes regarding the project and assisting the City in responding to any tribal requests for information and/or consultation.
- **Subtask 10.4 – Administrative Draft IS:** Dudek will prepare an Administrative Draft IS evaluating the WMP update and proposed CIP improvements based on the CEQA IS checklist. The IS will comply with CEQA Guidelines and City standards and is anticipated to support an ND. It will include the project description, regulatory and environmental context, permits, policy consistency, environmental evaluation, mitigation measures, findings of significance, and evidence of public and agency coordination. Baseline conditions will be defined geographically, impacts will be assessed against significance criteria, and sources will be fully cited for a defensible CEQA record. Dudek will submit

the Administrative Draft IS electronically in PDF and Word as well as six hard copies for City review.

- **Subtask 10.5 – Public Review IS/ND:** Upon receiving a consolidated set of comments from the City, Dudek will revise the administrative draft IS and submit a screencheck IS/ND in the same format. After addressing any additional minor comments on the screencheck IS/ND, Dudek will prepare the Draft IS/ND for the 30-day public review period. Dudek will provide the IS/ND in PDF format that meets Web Content Accessibility Guidelines 2.1 Level AA for posting on the City’s website. We assume that the City will be responsible for preparing public notices and submitting the notices to the Sacramento County Clerk and State Clearinghouse.
- **Subtask 10.6 – Responses to Comments and Final IS/ND.** Following conclusion of the public review period, Dudek will review all comments received in response to the draft IS/ND and categorize the comments by topic. It is assumed that no more than 20 unique substantive comments from agencies and the public will be received (note that a single comment letter may contain multiple comments). Dudek will prepare responses to the comments in a memo format, addressing the comments by topic (as opposed to numbering each individual comment and responding directly to each as is typically done in an EIR). If necessary, Dudek will also assemble text changes to the Final Initial Study/ND. Dudek will submit the responses and revised IS/ND to the City for review. We assume that a Mitigation Monitoring and Reporting Program will not be needed.
- **Subtask 10.7 – City Council Adoption Support:** Dudek will prepare a staff report to support City Council consideration of IS/ND adoption and draft the City Council Adopting Resolution. Dudek’s budget does not include participation in public hearings.
- **Subtask 10.8 – Tribal Consultations (Optional Task):** At the request of the City, a Dudek Registered Professional Archeologist will assist the City in preparing for and participating in up to nine tribal consultation meetings which are assumed to last no more than 90 minutes each on average.

Task 10 Deliverables:

- Draft and final CEQA project description.
- Draft AB 52 notification letter templates.
- Administrative Draft IS/ND (format as defined above).
- Screencheck and public draft IS/ND (six hard copies, Word and PDF electronic submittals). Public draft IS/ND also submitted in WCAG format.
- Draft and final responses to comments memo and final IS/ND (six hard copies, Word and PDF electronic submittals, PDF submittal in WCAG format).
- Draft and final Staff Report and Adopting Resolution for City Council approval (electronic submittal only; final versions in WCAG format).

Task 10 Assumptions:

- Dudek will attend all meetings and public hearings virtually. The CEQA compliance kickoff meeting will last no more than one hour.
- WMP Update improvements will be limited to those necessary to meet service demands consistent with buildout assumptions under the 2035 General Plan Amendments for Increased Residential Capacity Project Draft SEIR, will occur exclusively within existing right-of-way, and will not occur on any parcels that were not evaluated for sensitive environmental resources under the SEIR.
- There will be no changes to the final CEQA project description throughout the CEQA compliance process.
- No technical studies will be required to support preparation of the IS/ND.
- The City will prepare and distribute all required public notices, conduct public outreach, and manage formal AB 52 consultation unless optional task 10.8 is authorized.
- No more than 20 unique comments will be received on the Public Draft IS/ND.

Task #11 – Draft Report

Verdantas will develop a draft report and submit 6 hard copies, one electronic PDF copy, and one electronic Word copy for City review.

Task 11 Deliverables:

- Draft Document

Task #12 – Final Report

Verdantas will develop a final report and submit 5 hard copies, one electronic Word copy, and one electronic ADA compliant PDF copy to the City.

Task 12 Deliverables:

- Final Document

Task 12 Assumptions:

- Final document will incorporate City comments from one consolidated round of review

Task #13 – Supporting Documentation Provided to City

Verdantas will submit all supporting documentation to the City.

Task 13 Deliverables:

- Source files for water model

Task #14 – Project Management

Verdantas will provide overall project management activities to keep the project on schedule and within budget. Tasks will include meetings, QA/QC, monthly invoicing and progress reporting, schedule updates, and budget management.

- **Subtask 14.1 – General Project Management:** Ashley Smith, project manager, will continuously review the project schedule and budget – if any deviations are identified Ashley will immediately notify the City and develop a corrective action plan to get the project back on schedule and within budget.
- **Subtask 14.2 – Project Meetings:** This task includes regularly scheduled calls to ensure the updated master plan is completed in a timely and efficient manner. This task includes a standing biweekly progress call with Verdantas' project manager and the City's project manager. We will provide an agenda for the biweekly call to keep it efficient and effective. These calls can range from 5 minutes to 30 minutes depending on the topics needing discussion. Our experience has found these standing calls to be very effective in keeping all parties informed and help keep projects on schedule and on budget. This task also includes up to four (4) project meetings.
- **Subtask 14.3 – Quality Assurance/Quality Control:** This task includes all quality assurance/control activities throughout the project. All deliverables will be reviewed and approved by Karl Brustad prior to delivery to the City.
- **Subtask 14.4 – Monthly Invoices and Progress Reports:** This task includes the development of monthly invoices that will be accompanied with monthly progress reports. The monthly invoices will detail hours by staff and include all expenses. The monthly progress reports will summarize the services provided during the month, identify any outstanding issues, include monthly cost by task and identify the remaining budget.

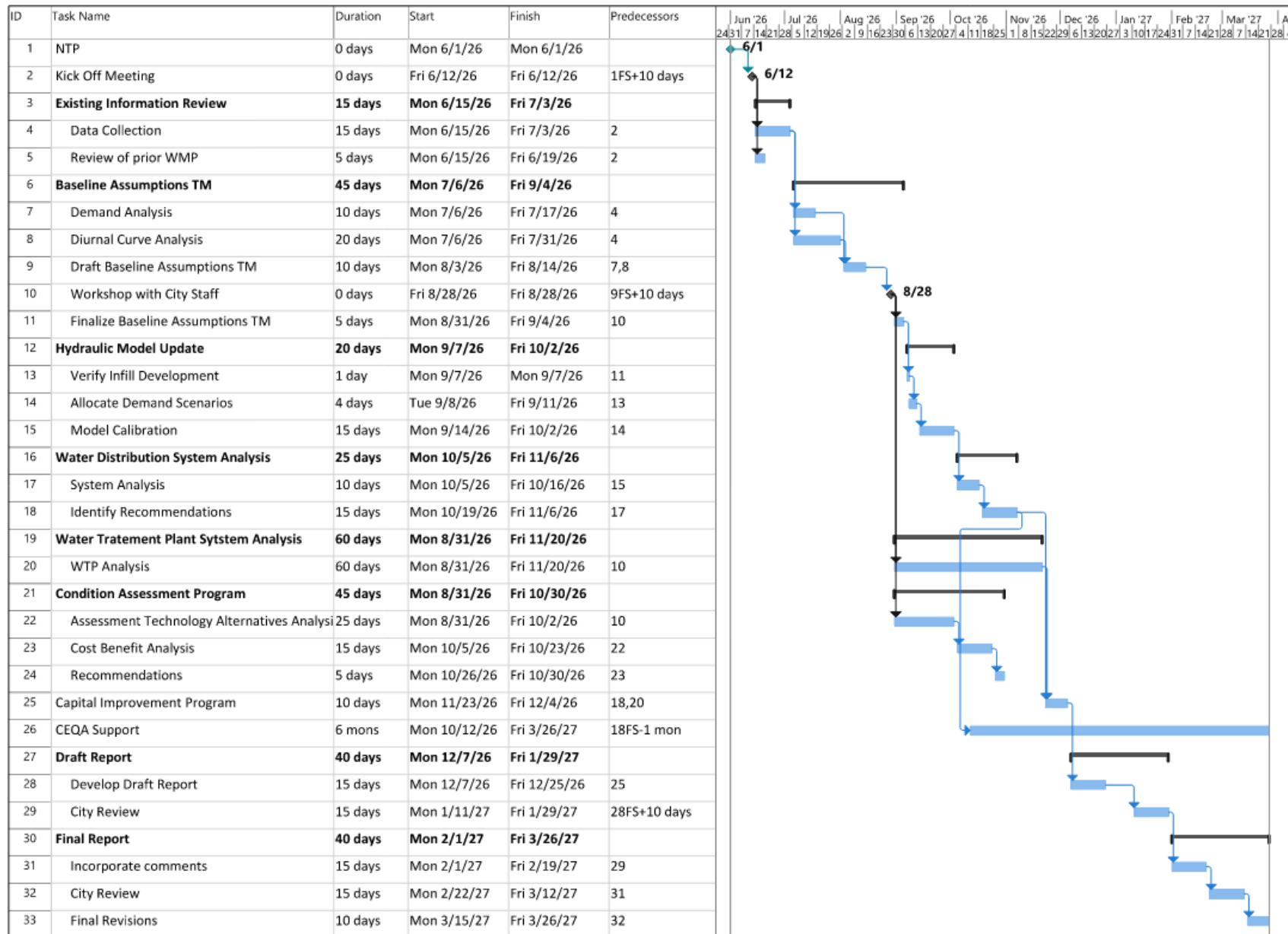
Task 14 Deliverables:

- Meeting agendas (transmitted electronically), monthly invoices and monthly progress reports.

Task 14 Assumptions:

- Project will be completed within 9 months of NTP.
- Up to four (4) project review meetings

C. Project Schedule



D. Project Team

We understand that the City is seeking a qualified candidate to develop a clear, comprehensive, and actionable Water Master Plan that integrates with the City's long-term planning efforts. Our approach to planning studies is to confirm the planning criteria and client expectations up front during the kick-off meeting to gain concurrence with all team members prior to initiating any effort to ensure the utmost efficiency in the performance of the study. This not only avoids possible rework but will help keep the project on schedule and on budget.

Our team includes HDR for Task 7 and Dudek for Task 10, who's efforts are anticipated to be approximately 65% of the total project. In order to manage a team of various members to a common goal, it is important to have a good project management plan. Our project management plan would include cadence calls with our team to ensure that our team is delivering on the City's critical success factors for the project. This plan will also include schedule, budget, and quality control plans as described in the following sections.

Management of Schedule and Budget

We believe that good project management is essential to the success of a project. Our expertise and abilities as project managers have allowed Verdantas to provide specialized project management services for several of our clients' projects and programs.

We believe in keeping all team members informed of the project status, which includes City staff, Verdantas staff, and other project stakeholders. To fulfill this need, we invite several team members to project meetings and send regular project updates to team members periodically via e-mail. We also like to utilize routine conference calls with the City's project manager to provide status updates, address immediate needs, and ultimately keep the project on track and on schedule.

Constant oversight of the project budget and schedule is a proven method to avoiding surprises. We have implemented several project management tools to assist our project managers. Our accounting system provides up-to-date cost reports by task, which compares actual to budgeted costs. We have developed project scheduling templates using Microsoft Project, which track projects through completion. Our project schedules maintain a baseline schedule, so we can track the overall success of the schedule. The project schedule for completion of the project is included on the following page. All major outputs and meetings are included in the schedule. The schedule will be closely managed and monitored to ensure all necessary materials are completed by the date of the public hearing. This has been a proven approach and is expected to facilitate the successful completion of the project within the established 9-month timeframe.

Quality Assurance



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STUDIO**

We will utilize our established and recently updated quality control plan to ensure all deliverables are reviewed by senior staff with relevant experience to ensure the City receives quality deliverables. Karl Brustad will review all deliverables in advance of submitting to the City. We exclusively utilize Blue Beam Studio software to perform quality control reviews. This software will document all comments from senior staff including response from staff on how the comments were addressed. This allows for seamless backcheck by our reviewers to ensure the highest quality deliverables are submitted.

E. Project Hours

Task No.	Task Description	PIC QA/QC Karl Brustad	Project Manager 3: Ashley Smith	Project Engineer I: Laura Hernandez	Staff Engineer 2: Hayden Horan	Admin 2	Dudek	HDR
Task 1 - Information and Data Collection								
1.1	Information and Data Collection		2	6	12			
	Subtotal of Hours for Task 1:	0	2	6	12	0	0	0
Task 2 – 2016 Water Master Plan Review								
2.1	2016 Water Master Plan Review		1	2	4			
	Subtotal of Hours for Task 2	0	1	2	4	0	0	0
Task 3 - Water System Description								
3.1	Water System Description		2	4				
	Subtotal of Hours for Task 3	0	2	4	0	0	0	0
Task 4 - Water Demand Analysis and Characterization								
4.1	Population Projections		1	4	8			
4.2	Existing and Future Land-Use		1	6	12			
4.3	Diurnal Curve Development	4	8	12	24			
4.4	Demand by User Type		1	6	12			
4.5	Buildout Demand		1	4	6			
4.6	Water Loss Description		2	4	6			
4.7	Peaking Factor Analysis	2	4	6	8			
4.8	Demand Projections by Pressure Zone		1	4	8			
	Subtotal of Hours for Task 4	6	19	46	84	0	0	0
Task 5 - Hydraulic Model Update								
5.1	Describe current hydraulic model		1	4	4			
5.2	Describe modifications to existing water model		1	4	4			
5.3	Verify operational set points		1	2	4			
5.4	Add Infill and New Piping		1	4	8			
5.5	Updated Demand Allocation		4	6	8			
5.6	Model Calibration	6	12	16	32			
	Subtotal of Hours for Task 5	6	20	36	60	0	0	0
Task 6 - Water Distribution System Analysis								
6.1	Water Distribution Analysis	1	4	8	12			
6.2	Develop System Evaluation Criteria		2	4	4			
6.3	Identify System Improvements	2	4	6	8			
	Subtotal of Hours for Task 6	3	10	18	24	0	0	0
Task 7 - Water Treatment Plan System Analysis								
7.1	Data Review and Site Visit							34
7.2	Water Treatment Process Capacity Evaluation							76
7.3	Improvement Identification and Documentation							94
	Subtotal of Hours for Task 7	0	0	0	0	0	0	204
Task 8 - Capital Improvement Program Development								
8.1	Development of Capital Improvement Program	2	6	16	32			
	Subtotal of Hours for Task 8	2	6	16	32	0	0	0
Task 9 - Condition Assessment Program Development								
9.1	Identify Assessment Technologies		4	16	8			
9.2	Alternatives Analysis	2	6	16	12			
9.3	Describe Required Infrastructure		6	12	16			
9.4	Cost Benefit Analysis	2	6	12	24			
9.5	Recommended approach	2	4	8	12			
	Subtotal of Hours for Task 9	6	26	64	72	0	0	0
Task 10 - CEQA Support								
10.1	CEQA Compliance Kickoff						5	
10.2	Project Description						27	
10.3	AB 52 Support						13	
10.4	Administrative Draft IS						92	
10.5	Public Review IS/ND						50	
10.6	Responses to Comments and Final IS/ND						56	
10.7	City Council Adoption Support						32	
10.8	Tribal Consultations (Optional Task)						22	
	Subtotal of Hours for Task 10	0	0	0	0	0	297	0
Task 11 - Draft Report								
11.1	Development of Draft Report		8	24	32			
	Subtotal of Hours for Task 11	0	8	24	32	0	0	0
Task 12 - Final Report								
12.1	Development of Final Report		4	12	16			
	Subtotal of Hours for Task 12	0	4	12	16	0	0	0
Task 13 - Supporting Documentation Provided to City								
13.1	Source Document Export		1	2	4			
	Subtotal of Hours for Task 13	0	1	2	4	0	0	0
Task 14 - Project Management								
14.1	General Project Management		18	9				15
14.2	Project Meetings		14	4				10
14.3	QA/QC	12						
14.4	Monthly Invoices and Progress Reports		9			9		
	Subtotal of Hours for Task 14	12	41	13	0	9	0	25
	TOTAL	35	144	248	340	9	297	229

D. Consultant and Sub-Consultant Staff

Verdantas has assembled a team that has the knowledge, experience and dedication to provide the City with the needed 2026 Water Master Plan and Condition Assessment Program Services. Our team was hand-picked to meet the specific needs of your project.

Ashley Smith, PE, will be the project manager for this project. She will be the City's primary point of contact and will oversee all aspects of the project. We have selected Karl Brustad, PE, MBA to provide QA/QC. Our organization chart is shown below followed by the relevant experience of our project team.



Our proposed team is comprised of highly skilled professionals who have overseen projects for the City, and other water agencies, that align with the requested services.



Karl Brustad, PE, MBA | Principal-in-Charge | AVP

EDUCATION: MBA, California State University, Sacramento | BS, Civil Engineering, California State University, Chico

LICENSES: CA – Civil Engineer - # 57869 | Grade IV Water Treatment Operator - #22526

TECHNICAL SPECIALTIES: Water Infrastructure Planning, Design, and Operation. Water/Wastewater Master Planning

Years of Industry Experience: 30

Availability 20%

Karl Brustad has more than 30 years of experience in the planning, design, and construction of water and wastewater master plans, water supply, flood control systems, water distribution, wastewater collection, groundwater supply wells, water storage, water and wastewater pump stations, and water treatment systems. Karl has a deep, long-standing familiarity with the City of Folsom, having supported the City's water and wastewater programs through master planning, on-call engineering, and capital delivery efforts over many years. He spent several years working for a water utility prior to entering the consulting field 25 years ago, where it gave him an understanding of the client's perspective and expectations of consultants. He is intimately familiar with a variety of water and wastewater modeling applications.



Ashley Smith, PE | Project Manager III

EDUCATION: BS Civil and Environmental Engineering; Minor in Sustainability in the Built Environment, University of California, Davis

LICENSES: CA – Civil Engineer - #86512 | Water Treatment Operator, Grade T2 - #42384

TECHNICAL SPECIALTIES: Water Infrastructure Design and Planning, Water Master Planning, Hydraulic Modeling, Auto CAD/Civil 3D Design

Years of Industry Experience: 12

Availability: 25%

Ashley has extensive experience leading and delivering water master planning efforts for public water agencies. She served as project engineer for the **2016 Water Master Plan Update** for the City of Folsom, where she was responsible for data review and analysis, development of water demand projections, evaluation of demand management measures, population and demographic analysis, assessment of system supplies and water supply reliability, and water shortage contingency planning. Her role included

updating and calibrating hydraulic models for existing, intermediate, and build-out conditions; evaluating the water system relative to current and future demands consistent with the 2015 UWMP; identifying system improvements; developing a 10-year Capital Improvement Program with cost estimates; and preparing draft and final master plan reports.



Laura Hernandez Uribe, PE | Project Engineer I

EDUCATION: MS, Engineering Sciences, University of the Pacific, CA. | BS Sciences University of the Pacific, CA - Specialization: Civil Engineering

LICENSES: : CA – Civil Engineer - #98220

TECHNICAL SPECIALTIES: Water Master Planning, Hydraulic Modeling

Years of Industry Experience: 9

Availability: 35%

Laura has worked on a variety of water infrastructure projects including water supply and treatment, water distribution, water storage, and pumping projects. She has experience in planning, modeling, designing, and permitting, as well as providing engineering services during construction for water resource projects. Laura is also proficient in InfoWater Pro, AutoCAD software.



Hayden Horan, EIT | Staff Engineer II

EDUCATION: BS Civil Engineering, California State University, Sacramento, CA

LICENSES: CA - Engineer-In-Training, No. 178955

TECHNICAL SPECIALTIES: Water Master Planning, Hydraulic Modeling

Years of Industry Experience: 2

Availability: 40%

Hayden joined Verdantas in 2023 and specializes in water distribution and metering infrastructure, water treatment, and pump station projects. He has experience modeling, design, cost estimating and construction support services for projects including wells, pipelines, water treatment facilities, and levees. He is proficient in ArcGIS, InfoWater Pro, and AutoCAD software.



Years of Industry Experience: 26

Availability: 30%

Katherine Waugh | CEQA/NEPA Lead

EDUCATION: BS, Environmental Policy Analysis and Planning, University of California, Davis

AFFILIATIONS: Association of Environmental Professionals

TECHNICAL SPECIALTIES: CEQA/NEPA

Katherine Waugh is a senior planner with 26 years' experience with California Environmental Quality Act (CEQA) statutory requirements and environmental documentation procedures. She prepares CEQA documents for a wide range of public and private projects, managing projects effectively and maintaining momentum to meet schedule and budget requirements with attention to detail and a focus on quickly identifying and resolving critical issues. She has provided CEQA services on numerous WTP projects for water districts, cities, and municipalities throughout California.



Years of Industry Experience: 45

Availability: 25%

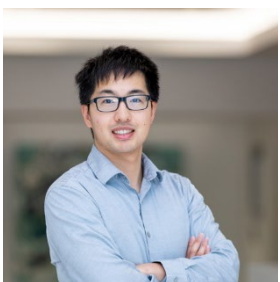
Rich Stratton, PE | HDR Task Manager

EDUCATION: MS & BS Civil Engineering, University of Illinois, Urbana-Champaign

LICENSES: CA – Civil Engineer - #37261

TECHNICAL SPECIALTIES: Water Master Planning, Demand Forecasting, Hydraulic Modeling, Capital Improvement Planning

Rich brings 45 years of experience delivering water system planning, design, and implementation projects. His experience with WTP improvements includes tiered condition assessment of treatment processes, critical equipment, and pipelines; evaluation of treatment alternatives; and development of a phased, implementable roadmap for long-term redundancy and resilience. He offers a deep understanding of regional systems and leads complex master planning efforts that integrate demand forecasting, hydraulic modeling coordination, and capital improvement planning. His portfolio spans treatment facilities, pump stations, pipelines, and storage systems, with involvement in more than 90 water treatment projects as a project manager and senior technical advisor.



Years of Industry Experience: 10

Availability: 30%

Arthur Xu, PE | HDR Project Engineer

EDUCATION: MS & BS Civil and Environmental Engineering, University of California, Davis

LICENSES: CA – Civil Engineer - # 92898

TECHNICAL SPECIALTIES: Technical Analysis & System Evaluation, Hydraulic & Process Modeling

Arthur has 10 years of experience in the water sector, supporting planning and design for municipal and regional water systems throughout Northern California. His work centers on technical analysis and system evaluation, with strengths in hydraulic and process modeling, condition assessment, and infrastructure planning. Specific areas of expertise include ActifloCARB pretreatment, dual-media filters, chemical systems, and solids handling improvements.

E. Consultant Qualifications and References

Previous Experience with Similar Projects

Our team has developed numerous water and wastewater master plans for our clients, which included condition assessments of existing facilities, development of hydraulic models for the evaluations of distribution and collection systems, identification of deficiencies, alternatives analysis and identification of recommended improvements used to support the development of capital improvement programs. Our team has supported water and wastewater master plans and hydraulic modeling for both large and small water Districts and municipalities including City of Folsom, City of Stockton, Calaveras County Water District, Fair Oaks Water District, El Dorado Irrigation District, Calaveras Public Utility District, Kirkwood Meadows Public Utility District and Placer County Water Agency.

Below we have provided project examples and references for similar work.

2016 Water Master Plan Update & 2015 Urban Water Management Plan | City of Folsom

Client Contact: Marcus Yasutake, Director of Utilities
50 Natoma Street, Folsom, CA 95630 | (916) 351-3528

Date of Completion: 2017

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager

- Provided evaluation of the water system relative to current and future water demands consistent with 2015 Urban Water Management Plan.
- Provided data review and analysis, development of updated demand projections, analysis of demand management measures, system supplies, water supply reliability, water shortage contingency planning, and climate change.
- Updated hydraulic models for existing, intermediate, and build out scenarios.
- Identified system improvements and prepared cost estimates and a 10-year Capital Improvement Program.

2023 Recycled Water Master Plan Update and Hydraulic Model | City of Folsom

Client Contact: Marcus Yasutake, Director of Utilities
50 Natoma Street, Folsom, CA 95630 | (916) 351-3528

Date of Completion: 2023

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager

- The City expanded its service area to allow for future development projects in the areas south of Highway 50.
- As the City prepared for significant growth, focus was put on particular areas south of Highway 50.
- The major planned developments south of Highway 50 included the Easton Project and the Folsom Plan Area (FPA).
- Verdantas updated the 2015 Folsom Plan Area (FPA) Non-Potable Water Analysis 2.0 (2015 Analysis) in conjunction with development of a hydraulic model for the non-potable water distribution system.
- The Plan included evaluation and sizing for existing infrastructure and planned backbone infrastructure.

Folsom Plan Area (FPA) On-Call Modeling Support |

City of Folsom

Client Contact: Vaughn Fleischbein, PE, Senior Engineer
50 Natoma Street, Folsom, CA 95630 | (916) 461-6165

Date of Completion: 2018 – Ongoing

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager; Laura Hernandez Uribe, Project Engineer

- Provided on-call hydraulic modeling support for the City of Folsom in support of development review within the Folsom Plan Area (FPA).
- Integrated planned South of Highway 50 FPA developments and existing developments into the City's hydraulic model.
- Redistributed system demands by land-use type to reflect current and future residential and commercial development within the FPA.
- Performed hydraulic model runs to confirm acceptable importation of new infrastructure associated with proposed FPA developments.
- Developed intermediate condition models to simulate temporary operating scenarios prior to construction of planned facilities.
- Incorporated developer-provided data to evaluate both current and ultimate build-out demand conditions within the South of Highway 50 planning area.
- Evaluated potential impacts of FPA development on existing infrastructure north of Highway 50 using updated hydraulic modeling scenarios.
- Supported the City's ongoing development review process through continued updates and maintenance of the FPA hydraulic model.

Tank & Cathodic Protection Inspections | City of Folsom

Client Contact: Vaughn Fleischbein, PE, Senior Engineer
50 Natoma Street, Folsom, CA 95630 | (916) 461-6165

Date of Completion: 2023 – Ongoing

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager; Laura Hernandez Uribe, Project Engineer

- Performed water storage tank inspections as part of the City's ongoing Tank Master Plan, Inspection, Maintenance, and Rehabilitation Program.
- Conducted condition assessments of welded steel water storage reservoirs, including evaluation of overall tank condition to support maintenance and rehabilitation planning.
- Inspected interior and exterior coating systems, documenting observed deficiencies related to corrosion, safety, and long-term performance.
- Evaluated existing cathodic protection (CP) systems associated with City water storage tanks to assess effectiveness and condition.
- Documented inspection findings and deficiencies for use in rehabilitation planning and prioritization of tank repairs, recoating, and CP improvements.

2025 Water Master Plan and Hydraulic Model Update|

Kirkwood Meadows Public Utility District

Client Contact: Erik Christeson, General Manager

Date of Completion: 2025 – Ongoing

33540 Loop Road Kirkwood, CA 95646 | (209) 258-4444

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager; Laura Hernandez Uribe, Project Engineer

- Verdantas is currently developing the original water master plan that includes a detailed 20+ year capital improvement plan (CIP) used to support financial planning and ensure adequate funding for future improvements.
- A hydraulic model was developed using InfoWater Pro to analyze different water supply and demand scenarios throughout the distribution system.
- The Master Plan included an evaluation of the water system's water supply, water demands, water treatment facilities, transmission system, distribution system, and storage facilities.
- The updated WMP will evaluate the materials, ages, and conditions of the existing infrastructure and provide recommendations to assist the District with updates to the risk and resilience assessment and emergency response planning.
- Included the preparation of capital facilities improvements, which included estimated costs and an implementation schedule for a 5-year CIP and a 20-year Asset Management Program.

2023 Water Master Plan Update and 2008 Water Master Plan |

Calaveras Public Utility District (CPUD)

Client Contact: Mathew Roberts, Interim General Manager

Date of Completion: 2023

506 West Saint Charles Street, San Andreas, CA 95249 |

(209) 754-9442

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager

- Verdantas developed the original water master plan that included a detailed 20+ year capital improvement plan (CIP) used to support financial planning and ensure adequate funding for future improvements.
- A hydraulic model was developed using InfoWater Pro to analyze different water supply and demand scenarios throughout the distribution system representing approximately 3,000 rural customers in mountainous terrain.
- The Master Plan included an evaluation of the water system's water supply, water demands, water treatment facilities, transmission system, distribution system, and storage facilities.
- Verdantas prepared an update to the WMP to evaluate the capacity of the existing water system to meet existing and future water demands including fire flow capabilities.
- The updated WMP evaluated the materials, ages, and conditions of the existing infrastructure and provided recommendations to assist the District with updates to the risk and resilience assessment and emergency response planning.
- Included the preparation of capital facilities improvements including estimated costs and implementation schedule for a 5-year CIP and a 20-year Asset Management Program.

On-Call Modeling Support | Fair Oaks Water District (FOWD)

Client Contact: Paul Siebensohn, Water Supply Superintendent Date of Completion: 2015 – Ongoing
10326 Fair Oaks Blvd, Fair Oaks, CA 95628 | (916) 967-5723

Verdantas Team Members: Karl Brustad, PIC; Ashley Smith, Project Manager

- Reviewed background system information to develop an understanding of overall District water system operations.
- Identified and evaluated control settings to confirm consistency with documented system operations.
- Verified hydraulic model calibration using pre-drought fire flow test data provided by FOWD.
- Updated system demands and allocated demand by land use using Sacramento County land-use data and demand factors.
- Verified model results against available field fire flow data to confirm accuracy of updated model conditions.
- Prepared technical memoranda documenting model verification, updated demands, results, and findings.
- Provided recommendations for ongoing maintenance and management of the District's hydraulic model.
- Coordinated modeling activities with Urban Water Management Plan (UWMP) updates and related planning efforts.

City of Folsom Water Treatment Plant Backwash & Recycled Water Capacity Improvements (HDR) | City of Folsom

Client Contact: Kelsie Gugino, Associate Civil Engineer Date of Completion: 2021 – 2025
50 Natoma Street, Folsom, CA 95630 | (916) 461-6166

HDR Team Members: Rich Stratton, Project Manager

HDR provided design, CEQA categorical exemption documentation, and bidding phase services for targeted improvements to the decant pump station and reclamation backwash basin at the water treatment plant to enhance operational reliability, improve backwash water recycling efficiency, and increase system flexibility within the existing footprint. Improvements included installation of three new submersible decant pumps (two duty, one standby) with variable frequency drives providing a peak capacity of approximately 5 million gallons per day, implementation of a new automated control system to maintain a staff-specified discharge rate and eliminate manual throttling, replacement of aging and leaking slide gates at the wet well to improve isolation and reduce water loss, and modifications to the backwash basin piping to allow flow to either basin via new isolation valves, improving redundancy and operational flexibility. The project qualified for a CEQA exemption under the Existing Facilities exemption (Section 15301[b]) as it did not expand treatment capacity but significantly improved the performance, resilience, and long-term optimization of existing infrastructure in support of capital improvement and water reuse goals.

City of Santa Cruz Graham Hill Water Treatment Plan Facilities Plan Update (HDR) | City of Santa Cruz

Client Contact: Matt Zeman, Engineering Associate Date of Completion: 2017 – 2020
212 Locust Street, Santa Cruz, CA 95060 | (831) 420-5030

HDR Team Members: Rich Stratton, Project Manager

As part of the City of Santa Cruz's commitment to long-term water system reliability and regulatory readiness, HDR led a Facilities Plan Update for the 20-MGD Graham Hill Water Treatment Plant to identify and prioritize capital

improvements addressing aging infrastructure, evolving water quality requirements, and climate-driven risks such as drought, wildfire, and seismic events. The effort included a tiered condition assessment of critical treatment, mechanical, electrical, and pipeline assets, combining Tier 1 visual inspections and staff input with Tier 2 advanced diagnostics such as thermography, vibration analysis, and ultrasonic testing. HDR also evaluated treatment and supply alternatives, including pilot testing of advanced technologies, a Distribution System Water Age Assessment, and feasibility analysis of a potential second treatment facility at the Hanson Quarry site to provide added capacity and redundancy. The resulting phased capital improvement roadmap aligns with the City's operational priorities and regulatory obligations, providing a clear, actionable path to modernize the GHWTP and ensure a resilient, reliable water supply.

Placer County Water Agency Foothill Water Treatment Plan Phasing Study (HDR) | Placer County Water Agency

Client Contact: Heather Knutson, PE, Engineering Services Manager Date of Completion: 2024 – 2025
144 Ferguson Road, Auburn, CA 95603 | (530) 823-4951

HDR Team Members: Rich Stratton, Project Manager

HDR developed a five-year phasing plan to address critical infrastructure needs at the 63 MGD Foothill Water Treatment Plant (WTP), supporting long-term system reliability, regulatory compliance, and capital planning. The plan is based on visual inspections of accessible infrastructure and equipment, operational input, and performance data, and provides a prioritized roadmap for targeted improvements.



F. Team Resumes

Karl Brustad, PE, MBA

Associate Vice President/Market Sector Leader
for the West - Water

Firm

Verdantas

Office Location

Folsom, CA

Education

MBA, California State University,
Sacramento

BS, Civil Engineering, California
State University, Chico

Licenses/Certifications

CA – Professional Engineer -
#57869

Grade 4 Water Treatment
Operator, CA No. 22526

Certificate of Advanced Business
Studies; CA State University,
Sacramento

Years of Experience

30 Years of Industry Experience

Karl Brustad has more than 30 years of experience in the planning, design, and construction of water supply, water distribution, water storage, and water treatment systems. His experience includes groundwater and surface water treatment, storage tanks, pumping stations, pipeline distribution and conveyance, wells, master planning, flood control, telemetry, and SCADA. He is intimately familiar with a variety of water and wastewater modeling applications.

Project Experience

2016 Water Master Plan Update and Urban Water Management Plan – City of Folsom

Folsom, CA | 2015 – 2017

Verdantas provided data review and analysis, development of demand projections, analysis of demand management measures, population and demographic analysis, system supplies, water supply reliability, water shortage contingency planning, climate change, and other factors. Updated hydraulic models for existing, intermediate, and build-out scenarios. Evaluated the water system relative to current and future water demands consistent with 2015 Urban Water Management Plan and identified system improvements. Developed 10-year Capital Improvement Program including cost estimates. Prepared draft and final reports.

Recycled Water Master Plan Update and Hydraulic Model – City of Folsom

Folsom, CA | 2020 – 2024

Integrating planned South of Highway 50 FPA and existing developments into the City's hydraulic model and redistributing demand data to new development by land type. The model runs tests to confirm acceptable importation of new infrastructure. An intermediate model was developed to simulate temporary operation conditions prior to the planned improvements being constructed.

On-Call Modeling Support Services

City of Folsom, California

Provide on-call modeling support services to assess proposed developments and provide theoretical fire flow test results in support of developer requests in lieu of the City having to perform field tests.

2020 and 2015 Urban Water Management Plan- Fair Oaks Water District

Fair Oaks, CA | 2016 & 2021

Verdantas completed the 2015 and 2020 UWMP for the Fair Oaks Water District. Provided analysis for the current system and its efficiency and designing a master plan that would be capable of satisfying the demand from the system. Evaluated all aspects of the UWMP sections including water supply and demand for existing and future build-out scenarios, water shortage contingency planning, system supplies, and other factors.





Ashley Smith, PE

Senior Project Manager

Firm

Verdantas

Office Location

Folsom, CA

Education

B.S. Civil and Environmental Engineering with Minor in Sustainability in the Built Environment, UC Davis

Licenses/Certifications

Registered Professional Civil Engineer California No. 86512

Water Treatment Operator, Grade T2 No. 42384

Years of Experience

14 Years of Industry Experience
12 Years at Verdantas

Ashley has over 14 years of experience in water and water resources projects. She has extensive planning experience in water system master plans, capital improvement plans, and cost estimating. She has been the responsible project manager for dozens of water infrastructure projects since she joined Verdantas in 2014.

Project Experience

2016 Water Master Plan Update and 2015 Urban Water Management Plan – City of Folsom

Folsom, CA | 2015 – 2017

Ashley served as the project engineer responsible for data review, demand projections, and analysis of management measures, demographics, supplies, and system reliability. Updated hydraulic models for various scenarios and assessed water systems according to 2015 Urban Water Management Plan, recommending improvements. Developed a 10-year Capital Improvement Program with cost estimates and prepared reports.

Water Master Plan – Kirkwood Meadows Public Utility District Kirkwood, CA. 2024 – 2025

Verdantas developed the District's first integrated Water Master Plan to identify and prioritize improvements to water treatment, storage, and distribution systems and support growth. Hydraulic modeling was performed using InfoWater Pro. Ashley was the project manager.

2023 Water Master Plan Update and 2008 Water Master Plan – Calaveras Public Utility District (CPUD)

San Andreas, CA | 2023 – 2024

Verdantas prepared the original water master plan with a 20+ year capital improvement plan (CIP). Using InfoWater Pro, they modeled scenarios to assess supply and demand for about 3,000 rural customers, evaluating all major system components. The update will review capacity, infrastructure condition, and offer recommendations, costs, and schedules for a 5-year CIP and 20-year Asset Management Program. Ashley served as project manager.

Recycled Water Master Plan Update and Hydraulic Model – City of Folsom

Folsom, CA | 2020 – 2024

The City has expanded its service area south of Highway 50 to include the Easton Project and Folsom Plan Area. Verdantas is updating the 2015 Non-Potable Water Analysis, creating a hydraulic model, and assessing infrastructure. Ashley managed the project.





Laura Hernandez, PE

Project Engineer

Water infrastructure design engineer supporting treatment, distribution, storage, and pumping projects. Experience includes planning, hydraulic modeling, design, and rehabilitation of wells, pipelines, storage, and treatment facilities. Proficient in InfoWater Pro and AutoCAD.

Project Experience

2023 Water Master Plan Update – Calaveras Public Utility District San Andreas, CA | 2023 – 2024

Supported the update of the hydraulic model, evaluated system capacity, fire flows, and long-term infrastructure needs; supported 5-year CIP and 20-year asset management planning.

On-Call Modeling Support Services – City of Folsom Folsom, CA | 2019 – Ongoing

Conducted fire hydrant and distribution system analyses to support the City's South of Highway 50 planning. Modeled fire-flow scenarios and utilized NFPA 291 extrapolation to determine available flow at 20 psi.

Sunset Boulevard Main Replacement Project – Placer County Water District (PCWA) Rocklin, CA | 2023 – Ongoing

Design support of 2,800 LF of water main for Placer County Water Agency, co-authoring the preliminary design report, evaluating alignment and material options, and assisting with design and cost estimation.

Transmission Main Replacement Project – Fair Oaks Water District Fair Oaks, CA | 2024-2025

Design support for approximately 3,400 LF of 24" transmission water main.

Water Master Plan – Kirkwood Meadows Public Utility District Kirkwood, CA | 2024-2025

Assisted with updating the hydraulic model, assessed system capacity, fire flows, and infrastructure needs; contributed to 5-year CIP and 20-year asset management planning.

Firm

Verdantas

Office Location

Folsom, CA

Education

Master's in Engineering Sciences, University of the Pacific, CA.

B.S. Civil Engineering, University of the Pacific, CA.

Licenses/Certifications

CA – Professional Engineer
No. 98220

Years of Experience

9 Years of Industry Experience
2 Years at Verdantas





Hayden Horan, EIT

Staff Engineer

Firm

Verdantas

Office Location

Folsom, CA

Education

B.S. Civil Engineering, California State University, Sacramento, CA

Licenses/Certifications

CA - Engineer-In-Training, No. 178955

Years of Experience

4 Years of Industry Experience
2 Years at Verdantas

Hayden specializes in water infrastructure, water treatment, and pump station projects. He has experience modeling, designing, cost estimating, and restoring water resources including wells, pipelines, water treatment facilities, and levees. He is proficient in ArcGIS, AutoCAD, and InfoWater software.

Project Experience

2023 Water Master Plan Update – Calaveras Public Utility District San Andreas, CA | 2023 – Ongoing

Updated hydraulic model for approximately 3,000 connections; evaluated system capacity, fire flows, and long-term infrastructure needs; supported 5-year CIP and 20-year asset management planning.

Copper Cove Water System Improvements – Calaveras County Water District (CCWD)

San Andreas, CA | 2022 – Ongoing

Design and construction support for Clearwell's, steel tanks with cathodic protection, booster pump stations, control building, and 20-inch transmission main.

Fruitridge Vista Water System 2020 Priority Main Replacement Project – Cal Am

Sacramento, CA | 2020 – Ongoing

Design and construction support for approximately 13,500 LF of front-yard mains, services, and meters; supported DDW variances and field coordination.

Dudley Main Replacement Project – Sacramento Suburban Water District (SSWD)

Sacramento, CA | 2024 – Ongoing

Design of two pipeline segments including approximately 3,450 LF of 16-inch ductile iron pipe and 6,000 LF of 20-inch ductile iron pipe; included cathodic protection, PDR, permitting, and bid assistance.

Irrigation System Renovation Plan Phase 1 – Hallwood Irrigation Company (HIC)

Marysville, CA | 2022 – Ongoing

Condition assessment, deficiency identification, design assistance for approximately 7,700 LF of 42-inch HDPE pipeline, and support for grant research and phased improvement planning.



Rich Stratton, PE

Project Manager



EDUCATION

Master of Science, Civil Engineering, University of Illinois, Urbana-Champaign

Bachelor of Science, Civil Engineering, University of Illinois, Urbana-Champaign

REGISTRATIONS

Professional Engineer - Civil, California, US, No. C-37261

INDUSTRY TENURE

45 years

HDR TENURE

30 years

Rich brings 45 years of experience delivering water system planning, design, and implementation projects, including more than three decades with HDR. Working from the Folsom office, he offers a deep understanding of regional systems and leads complex master planning efforts that integrate demand forecasting, hydraulic modeling coordination, and capital improvement planning. His portfolio spans treatment facilities, pump stations, pipelines, and storage systems, with involvement in more than 90 water treatment projects as a project manager and senior technical advisor. Known for providing clear direction and practical solutions, Rich focuses on developing implementable strategies that enhance system reliability and support long-term performance. Rich is fully available and will remain engaged, providing responsive leadership and hands-on technical oversight throughout project delivery.

RELEVANT PROJECT EXPERIENCE

City of Santa Cruz, Graham Hill Water Treatment Plant Facility Improvements Plan, Santa Cruz, CA

Rich was the project manager for the Graham Hill WTP Facilities Improvements Plan to provide upgrades to reliably produce 20-MGD capacity, including a tiered condition assessment of treatment processes, critical equipment, and pipelines; evaluation of treatment alternatives and a potential second plant; and development of a phased, implementable roadmap for long-term redundancy and resilience.

Placer County Water Agency, Foothill Water Treatment Capacity Expansions and Phasing Plan, Newcastle, CA

Rich served as project manager for final design, bidding, and construction engineering services for WTP capacity expansions, increasing total plant capacity from 58 MGD to 63 MGD. Improvements included Plant No. 1 upgrades, Plant No. 2 expansion with new tube settlers and filter media, controls and SCADA updates, and a phased improvement plan with cost and schedule roadmap to ensure long-term reliability and redundancy.

Coastside County Water District, Nunes Water Treatment Plant Upgrades, Half Moon Bay, CA

As the project manager, Rich provided predesign and design of upgrades to the Nunes WTP, including filter rehabilitation, replacement of flow meters, new filter-to-waste piping and pumping, chemical system upgrades, and electrical and I&C improvements. The project also evaluated adding a new 1-MGD sedimentation basin to provide redundant capacity.

City of Folsom, Water Treatment Plant - Various Improvements Projects, Folsom, CA

Rich was the project manager or the technical lead for various improvements projects at the

WTP including owner's representative engineering services for design-build alternative delivery procurement of a new mechanical dewatering system; design of new dry feed polymer system for the Actiflo system; and pump and piping improvements to the RBW system to allow for basins to be taken out of service for maintenance.

San Jose Water Company, Montevina Water Treatment Plant Improvements Progressive Design-Build, San Jose, CA

As the design manager, Rich was responsible for converting a 30-MGD WTP from direct filtration to polymeric membrane filtration, including structural rehabilitation, pretreatment, disinfection, solids thickening and dewatering, and future fluoridation facilities. The project incorporated innovative, cost-effective solutions such as hydraulic flocculation, energy-efficient flash mixing, repurposing existing filters and clearwells, advanced solids handling, and nanofiltration of CIP waste to minimize offsite disposal.

Nevada Irrigation District, Lake Wildwood Water Treatment Plant Capacity Study and Master Plan, Grass Valley, CA

Rich conducted a capacity and alternatives study for the Lake Wildwood WTP, evaluating demand, water quality, and facility condition to assess plant improvements, expansion options, and a potential pipeline, culminating in a system master plan with prioritized recommendations.

Coastside County Water District, Denniston Water Treatment Plant Treatability Study, Half Moon Bay, CA

Rich supported a treatability study to convert the 1.5-MGD Denniston WTP from direct filtration to conventional treatment, addressing seasonal turbidity spikes exceeding 50 NTU and Bin 2 Cryptosporidium requirements.

Arthur Xu, PE

Project Engineer



EDUCATION

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

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

REGISTRATIONS

Professional Engineer, Civil, CA, No. 92898

INDUSTRY TENURE

10 years

HDR TENURE

10 years

Arthur has 10 years of experience in the water sector, supporting planning and design for municipal and regional water systems throughout Northern California. His work centers on technical analysis and system evaluation, with strengths in hydraulic and process modeling, condition assessment, and infrastructure planning. He has prepared feasibility studies, developed demand projections, and contributed to the design of treatment, pumping, and conveyance facilities, helping translate data into practical, cost-effective solutions. Arthur also brings experience with advanced tools such as CFD modeling and flow optimization, which reinforce his ability to evaluate system performance and identify targeted improvements. His analytical approach supports well-informed decisions and efficient project implementation.

RELEVANT PROJECT EXPERIENCE

West Hills Water Treatment Plan Expansion, Hollister, CA

As project manager, Arthur was responsible for expanding a 4.5-MGD WTP to 6.75 MGD, including new raw water pumps, ActifloCARB pretreatment, dual-media filters, chemical systems, and solids handling improvements. The design included detailed source water quality analysis to address elevated iron, manganese, and TOC.

Placer County Water Agency, Colfax Water Treatment Plant Replacement, Colfax, CA

Arthur was the design manager for a 2-MGD greenfield WTP replacing the Colfax plant, including pretreatment, filtration, clearwells, chemical systems, residuals handling, pumping systems, and a pre-engineered metal building.

Nevada Irrigation District, Lake Wildwood Water Treatment Plant Replacement Alternatives, Grass Valley, CA

Arthur served as project manager for the full replacement of the 4-MGD Lake Wildwood WTP, evaluating conventional, packaged, and alternative treatment technologies.

Coastside County Water District, Nunes Water Treatment Plant Upgrades, Half Moon Bay, CA

Arthur was the project manager for upgrades to the 4.5-MGD Nunes WTP, including rehabilitation of conventional filters, a new plate settler basin for redundancy, chemical addition improvements, valve replacements, and rehabilitation of filter, clearwell, and sedimentation basin structures.

Coastside County Water District, Denniston Water Treatment Plant Treatability Study, Half Moon Bay, CA

Arthur's role as project manager involved a treatability study converting the 1.5-MGD Denniston WTP from direct filtration to conventional

treatment, addressing seasonal turbidity spikes over 50 NTU and Bin 2 Cryptosporidium requirements.

City of Vallejo, Travis Air Force Base Water Treatment Plant Study, Vallejo, CA

Arthur was the project engineer evaluating rehabilitation versus replacement of a 6-MGD WTP, including analysis of treatment alternatives such as pre-ozonation, Actiflo, plate settlers, intermediate ozonation, and GAC filtration.

City of Vallejo, Lakes Water System Water Supply Alternatives Analysis, Vallejo, CA

As the project engineer, Arthur evaluated alternatives to increase the City's Lakes Water System supply by 1 MGD, including treatment options such as GAC filtration, ActifloCARB, and ion exchange, as well as non-treatment alternatives involving pumping, storage, and distribution system improvements.

San Jose Water Company, McLaughlin Station Fluoridation System, San Jose, CA

Arthur was the project engineer for the design, permitting, and construction management for the addition of a fluoridation system (bulk storage in building, chemical feed and dilution, and controls) at the 9-MGD (average) and 17-MGD (peak) McLaughlin Wellfield Station.

San Jose Water Company, Montevina Water Treatment Plant Improvements Progressive Design-Build, San Jose, CA

Arthur provided technical support for progressive design-build conversion of an existing 30-MGD WTP from direct filtration to membrane treatment, including structural rehabilitation, pretreatment, disinfection, residuals handling, dewatering, and future fluoridation facilities.

Katherine Waugh

Katherine Waugh is a senior planner with 26 years' experience with California Environmental Quality Act (CEQA) statutory requirements and environmental documentation procedures. She prepares CEQA documents for a wide range of public and private projects, managing projects effectively and maintaining momentum to meet schedule and budget requirements with attention to detail and a focus on quickly identifying and resolving critical issues.

Project Experience

Sun Valley Watershed Management Plan CEQA Services, Los Angeles County Department of Public Works, California. Project manager for CEQA and CEQA-Plus analysis of the County's implementation of two projects identified in the 2004 Sun Valley Stormwater Management Plan. One would convert a former gravel mine site into a wetlands park, which would provide stormwater detention and treatment, conveyance of the treated stormwater to existing groundwater infiltration basins, and approximately 15 acres of recreational amenities. The other project would construct a storm drain system to collect and convey stormwater to the wetlands park. There is no storm drain system in this area currently, which leads to significant roadway flooding during even low-rain events. Critical project issues included air quality and noise impacts during construction.

West Lake Tahoe Regional Water Treatment Plant, Tahoe City Public Utility District, Placer County, California. Project manager for the preparation of an IS/MND and CEQA-Plus analysis evaluating Tahoe City Public Utility District's replacement of an Interim Surface Water Treatment Plant with a permanent facility involving construction immediately adjacent to Lake Tahoe as well as residential uses, and pipeline installation along State Route 89. Critical project issues included light and noise impacts to adjacent residents and potential impacts to special-status plants and wildlife.

Delta Dams Rodent Burrow Remediation, Department of Water Resources, Contra Costa and Solano Counties, California. Project manager for the preparation of an IS/MND evaluating the California Department of Water Resource's program to remediate rodent burrows at three earthen dams. Critical project issues included potential presence of special-status plants and wildlife and impacts to jurisdictional aquatic resources.

Floriston Water Treatment Plant Upgrade, Floriston Property Owner's Association Nevada County, California. Project manager for the preparation of an IS/MND and CEQA-Plus analysis evaluating upgrades to the existing water treatment plant to comply with state drinking water standards. Critical project issues included potential aesthetic impacts associated with the placement of a water storage tank on a bluff overlooking Interstate 80, impacts to and removal of trees, and vibration impacts to potentially historic structures.

Lake Forest Water Improvement District, Placer County, California. CEQA analyst for a Tahoe City Public Utility District project to acquire the Lake Forest Water Improvement District and replace water service lines to affected residents.



Education

*University of California, Davis
BS, Environmental Policy Analysis and Planning, 1997*

Professional Affiliations

Association of Environmental Professionals

G. Consultant Rate Schedule

VERDANTAS NorCal/OR AREA 2026 STANDARD FOLSOM BILLING RATE



Professional Services	Hourly Rate	Survey	Hourly Rate
Senior Consultant I	\$290.00	Survey Crew - 1 Man (Non-Prevailing)	\$230.00
Senior Consultant II	\$305.00	Survey Crew - 2 Man (Non-Prevailing)	\$320.00
Senior Consultant III	\$345.00	Survey Crew - 1 Man (Prevailing)	\$250.00
Project Manager I	\$230.00	Survey Crew - 2 Man (Prevailing)	\$360.00
Project Manager II	\$250.00		
Project Manager III	\$270.00	Support	Hourly Rate
Staff Engineer/Architect/Surveyor I	\$157.00	Administrative/Technical Editor I	\$95.00
Staff Engineer/Architect/Surveyor II	\$177.00	Administrative/Technical Editor II	\$110.00
Staff Engineer/Architect/Surveyor III	\$187.00	Project Specialist I	\$135.00
Engineer/Architect/Surveyor I	\$200.00	Project Specialist II	\$155.00
Engineer/Architect/Surveyor II	\$210.00	Group Leader	\$195.00
Engineer/Architect/Surveyor III	\$220.00	Technician I	\$125.00
Senior Engineer/Architect/Surveyor I	\$230.00	Technician II	\$135.00
Senior Engineer/Architect/Surveyor II	\$250.00	Technician III	\$160.00
Senior Engineer/Architect/Surveyor III	\$270.00	Senior Technician	\$170.00
		Building/Construction Inspector	\$190.00
CAD/Data Management	Hourly Rate	Resident Engineer	\$230.00
CAD Technician I	\$120.00	Materials/ Soils Tech (Prevailing)	\$190.00
CAD Technician II	\$130.00	Building/Construction Inspector (Prevailing)	\$207.00
CAD Technician III	\$155.00	Lead Inspector (Prevailing)	\$214.00
CAD Technician IV	\$165.00		

Notes

- Standard Billing Rates:** Our standard billing rates are reviewed no less than annually and may be adjusted at those times.
- Proposal Expiration:** Proposals are valid for at least 30 days, subject to change after 30 days; unless otherwise stated in the proposal.
- Prevailing Wages:** Our fees for prevailing wage work are based upon California prevailing wage laws and wage determinations. Unless specifically indicated in our proposal, costs for apprentice are not included. If we are required to have an apprentice on your project, additional fees will be charged. Prevailing wage rates will increase on July 1st of each year.
- Expert Testimony:** Litigation, expert witness, and all other legal and court related appearances will be billed at twice the standard fee schedule rate. There is a minimum eight-hour charge per day and a minimum overall fee of \$2,000.00 per case.
- Higher Hourly Rates:** Certain services, such as emergency/rapid response consulting, may be subject to higher hourly billing rates as agreed upon on a project-specific basis.
- Overtime:** Standard overtime rate is per California Labor Law and is billed at 1.5 or 2 times their hourly billing rate. Overtime rate for non-exempt field personnel working on a Verdantas observed holiday is billed at 2 times their hourly billing rate. Overtime rate for Prevailing wage work is per the California Department of Industrial Relations (DIR) determination and is multiplied at 1.5 to 2 times their hourly billing rate for overtime and double-time, respectively.
- Field Equipment and Supplies:** Field equipment and in-house supplies will be billed at fixed unit prices, subject to periodic updates.
- Subcontractors and Project Expenses:** All project-related expenses are chargeable at cost plus 10% or in accordance with the specific project agreement. Subcontractor charges, costs of rental of specialized equipment, and any other costs not associated with normal overhead are billed at cost plus 10% or in accordance with the specific project agreement.
- Mileage:** The mileage for personal vehicles will be billed at the current United States Internal Revenue Service reimbursement rate.
- Client Disclosures:** Client agrees to provide all information in Client's possession about actual or possible presence of buried utilities and hazardous materials on the project site, prior to fieldwork, and agrees to reimburse Verdantas for all costs related to unanticipated discovery of utilities and/or hazardous materials. Client is also responsible for providing safe and legal access to the project site for all Verdantas field personnel.
- Insurance & Limitation of Liability:** These rates are predicated on standard insurance coverage and a limit of Verdantas' liability equal to our total fees for a given project.
- General Terms and Conditions:** Please refer to the General Terms and Conditions for further details.



**HDR ENGINEERING, INC.
BILLING RATE SCHEDULE
January to December 2026**

**City of Folsom
Water Systems Master Plan**

Principal-in-Charge	\$375 to \$425
Project Manager 4	\$350 to \$425
Project Manager 3	\$300 to \$350
Project Manager 2	\$250 to \$300
Project Manager 1	\$225 to \$250
Engineer 4	\$275 to \$325
Engineer 3	\$225 to \$275
Engineer 2	\$175 to \$225
Engineer 1	\$125 to \$175
Technical Specialist 4	\$375 to \$425
Technical Specialist 3	\$325 to \$375
Technical Specialist 2	\$275 to \$325
Technical Specialist 1	\$225 to \$275
CAD Technician 3	\$225 to \$275
CAD Technician 2	\$175 to \$225
CAD Technician 1	\$125 to \$175
Project Controller	\$150 to \$225
Project Coordinator	\$150 to \$200

HDR will invoice the City by HDR's employee hourly billing rate for services provided. The billing rates cover payroll cost, employee benefits, and HDR overhead and profit. The ranges of hourly billing rates shown are intended to illustrate typical rates for each billing category. HDR rates will escalate rates each calendar year on January 1, by 4.5%.

EXPENSES

In-House Expenses

Vehicle Mileage (per mile)	Current Federal Travel Regulation (FTR)
Ground Transportation (includes Rental Car, Uber, and Train)	at cost
Postage/Overnight Mail	at cost
Copies (black and white)	at cost
Copies (color)	at cost
Bond Plotting (black and white)	at cost
Bond Plotting – (color)	at cost

Please Note: Expenses and subconsultants are charged with a five percent markup.

Appendix A.

Sample Agreement Modifications

Sample Agreement Modifications

Verdantas Inc. would like to submit the following modifications to [Section XII. Indemnification](#), presented within the City's Sample Agreement.

XII. → **Indemnification**

~~Consultant's indemnification and defense obligations under Section XII are intended to comply with, and shall be construed and enforced consistent with the provisions of California Civil Code §2782.8, and therefore, to the fullest extent permitted by law, Consultant agrees to immediately indemnify, defend, and hold harmless the City, its officers, officials, employees, agents, and volunteers from and against any and all claims, losses, liability, or damages that arise out of, pertain to or relate to the negligence, recklessness or willful misconduct of Consultant, its subcontractor, sub-consultants, agents, and employees ("Claims"). Consultant assumes no responsibility to indemnify City for the negligent acts or omissions or willful misconduct of City, its officers, officials, employees, agents, and volunteers. The Consultant's obligation to indemnify applies unless it is finally adjudicated that the liability was caused by the negligence or willful misconduct of an indemnified party. If it is finally adjudicated that liability is caused by the comparative negligence or willful misconduct of an indemnified party, then Consultant's indemnification obligation shall be in proportion to the established comparative fault of Consultant.~~

The duty to defend is a separate and distinct obligation from Consultant's duty to indemnify. ~~Consistent with California Civil Code § 2782.8, Consultant's responsibility for defense costs, if any, shall be limited to those reasonable defense costs that arise out of, pertain to, or relate to the Consultant shall be obligated to defend allegations of Consultant negligence, recklessness or willful misconduct of Consultant, whether Consultant is specifically identified or not in all legal, equitable, administrative, or special proceedings, with counsel approved by the City, the City and its council members, officers, agents and employees, immediately upon tender to Consultant of the Claim in any form or at any stage of an action or proceeding, whether or not liability is established.~~ An allegation or determination that ~~persons~~ other than Consultant are partially responsible for the claim does not relieve Consultant from its separate and distinct obligation to defend under this section, ~~however, in no event shall the cost to defend charged to the design professional exceed the design professional's proportionate percentage of fault.~~ The obligation to defend extends through final judgment, including exhaustion of any appeals. The defense obligation includes an obligation to provide independent defense counsel if Consultant asserts in a cross-claim, counter-claim, third-party complaint or defense (affirmative defense or by reference in the action) that liability is caused in whole or in part by the negligence or willful misconduct of the indemnified party. If it is finally adjudicated that liability was caused by the comparative active negligence or willful misconduct of an indemnified party, Consultant's share of the cost to defend shall not exceed Consultant's proportionate percentage of fault, and Consultant may submit a claim to the City for reimbursement of reasonable attorneys' fees and defense costs in proportion to the established comparative liability of the indemnified party.

Attachment 3



PROPOSAL FEE

April 16, 2026

Proposal to Provide Consulting Services for the 2026 Water Master Plan and Condition Assessment Program

Submitted to



CITY OF
FOLSOM
DISTINCTIVE BY NATURE

Submitted by

verdantas

80 Blue Ravine Road, Suite 280
Folsom, CA 95630

City of Folsom
2026 Water Master Plan and Condition Assessment
Estimated Work Effort and Cost
Verdantas, Inc.

Task No.	Task Description	Principal in Charge & QA/QC	Project Manager 3	Project Engineer 1	Staff Engineer 2	Administrative 2	Verdantas Labor	Total Verdantas Labor (\$)	Dudek (CEQA Services)	HDR (Water Treatment Analysis)	Total Cost (\$)
		2026 Rates	\$ 290.00	\$ 270.00	\$ 200.00	\$ 177.00	\$ 110.00				
Task 1 -	Information and Data Collection										
1.1	Information and Data Collection		2	6	12		20	\$3,864			\$3,864
	Subtotal Task 1	0	2	6	12	0	20	\$3,864	\$0	\$0	\$3,864
Task 2 -	2016 Water Master Plan Review										
2.1	2016 Water Master Plan Review		1	2	4		7	\$1,378			\$1,378
	Subtotal Task 2	0	1	2	4	0	7	\$1,378	\$0	\$0	\$1,378
Task 3 -	Water System Description										
3.1	Water System Description		2	4			6	\$1,340			\$1,340
	Subtotal Task 3	0	2	4	0	0	6	\$1,340	\$0	\$0	\$1,340
Task 4 -	Water Demand Analysis and Characterization										
4.1	Population Projections		1	4	8		13	\$2,486			\$2,486
4.2	Existing and Future Land-Use		1	6	12		19	\$3,594			\$3,594
4.3	Diurnal Curve Development	4	8	12	24		48	\$9,968			\$9,968
4.4	Demand by User Type		1	6	12		19	\$3,594			\$3,594
4.5	Buildout Demand		1	4	6		11	\$2,132			\$2,132
4.6	Water Loss Description		2	4	6		12	\$2,402			\$2,402
4.7	Peaking Factor Analysis	2	4	6	8		20	\$4,276			\$4,276
4.8	Demand Projections by Pressure Zone		1	4	8		13	\$2,486			\$2,486
	Subtotal Task 4	6	19	46	84	0	155	\$30,938	\$0	\$0	\$30,938
Task 5 -	Hydraulic Model Update										
5.1	Describe current hydraulic model		1	4	4		9	\$1,778			\$1,778
5.2	Describe modifications to existing water model		1	4	4		9	\$1,778			\$1,778
5.3	Verify operational set points		1	2	4		7	\$1,378			\$1,378
5.4	Add Infill and New Piping		1	4	8		13	\$2,486			\$2,486
5.5	Updated Demand Allocation		4	6	8		18	\$3,696			\$3,696
5.6	Model Calibration	6	12	16	32		66	\$13,844			\$13,844
	Subtotal Task 5	6	20	36	60	0	122	\$24,960	\$0	\$0	\$24,960
Task 6 -	Water Distribution System Analysis										
6.1	Water Distribution Analysis	1	4	8	12		25	\$5,094			\$5,094
6.2	Develop System Evaluation Criteria		2	4	4		10	\$2,048			\$2,048
6.3	Identify System Improvements	2	4	6	8		20	\$4,276			\$4,276
	Subtotal Task 6	3	10	18	24	0	55	\$11,418	\$0	\$0	\$11,418
Task 7 -	Water Treatment Plan System Analysis										
7.1	Data Review and Site Visit						0	\$0	\$9,942		\$9,942
7.2	Water Treatment Process Capacity Evaluation						0	\$0	\$21,232		\$21,232
7.3	Improvement Identification and Documentation						0	\$0	\$25,747		\$25,747
	Subtotal Task 7	0	0	0	0	0	0	\$0	\$56,921		\$56,921
Task 8 -	Capital Improvement Program Development										
8.1	Development of Capital Improvement Program	2	6	16	32		56	\$11,064			\$11,064
	Subtotal Task 8	2	6	16	32	0	56	\$11,064	\$0	\$0	\$11,064
Task 9 -	Condition Assessment Program Development										
9.1	Identify Assessment Technologies		4	16	8		28	\$5,696			\$5,696
9.2	Alternatives Analysis	2	6	16	12		36	\$7,524			\$7,524
9.3	Describe Required Infrastructure		6	12	16		34	\$6,852			\$6,852
9.4	Cost Benefit Analysis	2	6	12	24		44	\$8,848			\$8,848
9.5	Recommended approach	2	4	8	12		26	\$5,384			\$5,384
	Subtotal Task 9	6	26	64	72	0	168	\$34,304	\$0	\$0	\$34,304
Task 10 -	CEQA Support										
10.1	CEQA Compliance Kickoff						0	\$0	\$1,320		\$1,320
10.2	Project Description						0	\$0	\$4,697		\$4,697
10.3	AB 52 Support						0	\$0	\$4,571		\$4,571
10.4	Admin Draft IS						0	\$0	\$15,739		\$15,739
10.5	Public Review IS/ND						0	\$0	\$8,656		\$8,656
10.6	Responses to Comments and Final IS/ND						0	\$0	\$10,309		\$10,309
10.7	City Council Adoption Support						0	\$0	\$6,001		\$6,001
10.8	Tribal Consultations (Optional Task)						0	\$0	\$4,191		\$4,191
	Subtotal Task 10	0	0	0	0	0	0	\$0	\$55,483	\$0	\$55,483
Task 11 -	Draft Report										
11.1	Development of Draft Report		8	24	32		64	\$12,624			\$12,624
	Subtotal Task 11	0	8	24	32	0	64	\$12,624	\$0	\$0	\$12,624
Task 12 -	Final Report										
12.1	Development of Final Report		4	12	16		32	\$6,312			\$6,312
	Subtotal Task 12	0	4	12	16	0	32	\$6,312	\$0	\$0	\$6,312
Task 13 -	Supporting Documentation Provided to City										
13.1	Source Document Export		1	2	4		7	\$1,378			\$1,378
	Subtotal Task 13	0	1	2	4	0	7	\$1,378	\$0	\$0	\$1,378
Task 14 -	Project Management										
14.1	General Project Management		18	9			27	\$6,660	\$3,054		\$9,714
14.2	Project Meetings		18	9			27	\$6,660	\$3,939		\$10,599
14.3	QA/QC	12					12	\$3,480			\$3,480
14.4	Monthly Invoices and Progress Reports		9			9	18	\$3,420			\$3,420
	Subtotal Task 14	12	45	18	0	9	84	\$20,220	\$0	\$6,992	\$27,212
	COLUMN TOTALS	35	144	248	340	9	776	\$159,800	\$55,483	\$63,913	\$279,196

TOTAL COST WITHOUT OPTIONAL TASKS \$275,005

TOTAL COST WITH OPTIONAL TASKS \$279,196

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and minimize paper use.*



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