

REQUEST FOR STATEMENT OF QUALIFICATIONS AND PROPOSALS

PLANNING, ENGINEERING AND DESIGN SERVICES
FOR THE COPPER COVE WASTEWATER TREATMENT PLANT
TERTIARY TREATMENT AND UV IMPROVEMENTS
AND FACILITIES PLAN

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Calaveras County Water District
120 Toma Court
San Andreas, CA 95249
• (209) 754-3543 • cawd.org

Submission Deadline: October 26, 2021 / 5:00 PM

INTRODUCTION

The Calaveras County Water District is requesting a statement of qualifications and proposals (RFQ/RFP) from consulting firms for engineering and design services for its Copper Cove Wastewater Treatment Facility (CCWWTF). The District is planning a series of high profile capital improvements and upgrades to its CCWWTF that are critical to continue to reliably serve the community. The 2018 Master Plan outlines the capital improvements at a very high level. The consultant's primary effort for this proposal will be the design of upgrades to the tertiary treatment facility, which the District is seeking grant funding and would like to get this project shovel ready as soon as practicable. Simultaneously, a separate consultant, Wagner & Bonsignore, will be updating plans for enlarging the Pond 6 effluent storage reservoir and resubmit those plans to DSOD for approval. Furthermore, the consultant will prepare a facilities plan to address future phases for upgrades to the secondary biological treatment and other remaining unit operations and processes. The facilities plan should be detailed and comprehensive and provide a preliminary design level of effort that can easily transition into final design. The consultant will be expected to effectively organize and co-manage workflow with District staff and other consulting firms, implement quality controls/assurances, achieve performance parameters (i.e. budget, schedules, milestones, and deadlines), engage staff collaboratively, present and co-lead townhalls and other public meetings, and generally conduct work professionally and productively.

BACKGROUND

The Copper Cove Wastewater Treatment Facility (CCWWTF) is located near the intersection of Kiva Dr. and Little John Rd. in Copperopolis, CA. It was originally constructed in 1970's along with the first residential development of the area surrounding Lake Tulloch. The system currently serves approximately 1,921 sewer connections with an 0.20-mgd Average Dry Weather Flow (ADWF), which is approaching the plant's permitted capacity of 0.23-mgd ADWF. The existing facility consists of a headworks, influent lift station, rotary screen, two earthen secondary treatment basins with surface aerators, a tertiary filter, UV disinfection, and effluent storage reservoir. The treated effluent is used to irrigate the nearby Copper Valley golf course. The most current master plan for the Copper Cove Wastewater System was adopted in June 2018, and a prior version was completed in May 2005. The facility has undergone various improvements throughout its life.

The effluent storage reservoir, Pond 6, was added in 1992 and has a capacity of 205 ac-ft. During 2005 through 2011, the District developed project plans and specifications to raise the dam height and increase reservoir capacity to 442 ac-ft. The current permit allows for an increase to 0.35-mgd ADWF and 0.40 MMF upon adding sufficient effluent storage. This component is critically important in that it allows the District to continue to operate under the existing permit even as the number of sewer connections increases within the service area. The District filed an application with DSOD on February 1, 2007, and plans and specifications for construction were approved by DSOD on April 13, 2011. The plans were previously prepared by Hanson Engineering (now Wagner & Bonsignore). The District chose to not move forward with construction due to financial constraints. After three time extensions expired, DSOD notified the District on December 13, 2018 that its application had been voided and if it is desired to enlarge the dam in the future, to file a new application, pay fees, and resubmit plans and specifications.

The water reclamation facility was added in 1999 and a UV disinfection system in 2006. Tertiary treatment system has a nominal capacity of 1-mgd and consists of a single adsorption clarifier and mixed media gravity filter (Trident Microfloc) unit. Algae blooms in Pond 6 prior to the filter have been challenging to pretreat with chemicals and can effectively cut the capacity in half, although a recently installed ultrasonic algae control system has helped mitigate algae blooms. The tertiary filter is a hydraulic bottleneck that lacks redundancy and does not have sufficient capacity for peak wet weather flows and, thus, secondary undisinfected effluent is often stored in Pond 6. The existing tertiary filter system is typically offline during winter months and only started up for the irrigation season or to prevent Pond 6 from spilling during peak wet weather events. The UV system has a 1.0-mgd capacity and is a Trojan 3000 Plus system in an open concrete channel with 5-banks (4-duty/1-standby) and 24 lamps/bank for a total of 120 lamps. The disinfected Title 22 effluent is then mixed with raw water and conveyed to the nearby Copper Valley Golf Course for irrigation.

The headworks, influent lift station, screen, surface aerators and electrical systems were all replaced in 2008. The existing secondary biological treatment consists of two earthen basins (Ponds 1 and 2) operated in parallel with each basin equipped with four 15-hp surface aerators followed by a settling/polishing pond (Pond 4) with a one 15-hp aerator. The 2005 master plan states that the existing secondary ponds operated in parallel can treat flows up to 0.5-mgd average day maximum monthly (ADMM) flow and 1.0-mgd PWWF, but flows in excess of this value require significant upgrades to aeration, clarification, and solids handling facilities. At 0.5-mgd MMF and 1.0-mgd PWWF, the master plan advises detention times of 9 and 4.5 days, respectively.

The effluent discharge limits for the golf course and LAA are regulated under NPDES and WDR's, respectively. Effluent applied to the LAA has a discharge limit of 10-mg/L Nitrate as Nitrogen, but the LAA is inactive. Since the current point of discharge for irrigating the golf course allows diluted with raw water, it does not result in any compliance issue or violation regarding a nitrogen limit. There is no immediate regulatory mandate for nitrification/de-nitrification, but it is conceivable that the next permit update may change the point of discharge or impose stricter discharge limits on nitrogen. Under a prior version of its permit, the District received a notice of violation for exceeding an ammonia (nitrogen) limit. In 2020, under a settlement agreement with the CVRWQCB related to Administrative Civil Liability Order R5-2019-0504, the District completed a pilot study using the Triplepoint NitrOx + D Lagoon Nitrification and Denitrification Process. The results of this pilot will be made available to the selected consultant.

SUMMARY OBJECTIVES

This project has several interrelated and coordinated objectives that provide an overall strategy and comprehensive solution for the treatment facility.

OBJECTIVE #1: TERTIARY TREATMENT FACILITY IMPROVEMENTS.

The tertiary facility has multiple operational deficiencies and it lacks the capacity and redundancy to effectively treat the secondary effluent and convey it to the golf course. CCWD recently replaced filter media and made other repairs to the facility to temporarily extend its useful life, but replacement and expansion of the facility is an immediate priority. Providing additional Pond 6 capacity will further exacerbate the tertiary facility's operational and capacity limitations. Addressing the overall performance and effectiveness of tertiary treatment, adding hydraulic capacity to meet peak flows, and improving reliability and redundancy must be done in concert with enlarging Pond 6, but the timing of the tertiary facility upgrade must be prioritized. The District recognizes that secondary treatment processes often inform the tertiary process, however, the condition of the existing tertiary filter necessitates prioritization of this component of the facility. Accordingly, the tertiary filter design must be compatible with the existing secondary treatment processes without limiting options for secondary treatment upgrades in the future.

OBJECTIVE #2: LONG-TERM FACILITY PLAN.

Objective #2 is to develop a long-term facility plan for secondary biological treatment, clarification and solids settling, and other unit processes to ensure effective tertiary treatment can be met. The intent of this plan is to take a step further in being more comprehensive and detailed than the previously development 2005 and 2018 master plans and provide detailed guidance and preferred solutions for the next step of design and implementation. Moreover, in consideration of the fact that timing and phasing for each project implementation may not be completed in the ideal order or sequence, effective interim solutions (e.g. DAF units prior to tertiary filters) may need to be contemplated to ensure an effectiveness of the treatment process overall.

OBJECTIVE #3: OTHER ENGINEERING AND CONSULTING SERVICES.

The District may need the consultant's assistance in performing other engineering tasks and providing other professional services relating to improvements to the CCWWTF. Initially, the District may need the consultant's assistance with developing a supplementary set of plans for demolition, removal and relocation of existing utilities and facilities in conflict with raising the dam for the Pond 6 enlargement project. In this case, the consultant would coordinate its work with Wagner & Bonsignore. Further involvement in the Pond 6 project may include developing initial environmental studies, a CEQA document and Section 1600 and 400 permits for potential impacts to State and Federal jurisdictional waters.

Also, in light of the scope and phasing of the CCWWTF upgrades, it may be advantageous to contemplate additional engineering and professional services and continuity of the consultant's work. After completion of the initial scope of work, the District may wish to engage the consultant on additional work assignments for the CCWWTF stemming from the findings of facilities plan and phasing schedule. This continuation of work by the consultant will be considered during the initial selection process and may be included in the scope of work under the initial contract or by subsequent contract amendments.

SCOPE OF WORK

The District is requesting proposals from qualified engineering firms to: 1) design and manage construction of expansion of the tertiary treatment and UV disinfection facilities, 2) prepare a comprehensive facilities plan for the CCWWTF, and 3) provide other engineering and professional services to support other improvements to the CCWWTF. A draft outline of the scope of work is shown below, but the consultant may wish to amend and/or add new tasks.

1. TERTIARY TREATMENT FACILITY IMPROVEMENTS

This project will rehabilitate and expand tertiary facilities to provide reliability and redundancy to treat peak wet weather flows and provide a long term, phased solution for buildout. An alternatives analysis is to be made comparing the existing Trident unit to other filter technologies, evaluate adding dissolved air floatation (DAF) or other pretreatment, evaluate continued use of the open channel UV disinfection system, and selecting a preferred solution. There is limited time in the schedule to conduct a pilot study, but it can be considered if essential to optimizing and sizing a new filter technology. Also, the design must include necessary chemical systems, filter backwash waste recovery and return, ancillary pumps and piping, buildings and structures, and electrical power, controls, SCADA and instrumentation. During design, the consultant must coordinate with Central Valley Regional Water Quality Control Board staff to be sure the proposed improvements will be permitted by the Board and comply with the anticipated discharge limits. CCWD is pursuing funding from the Army Corps of Engineers for this project that may result in the Corps constructing the new facility. In that event, consultation between the design engineer and the Corps would likely be required.

The design services are to include the following tasks:

- a. Project Management, QA/QC, Site Visits, Meetings, Etc.
- b. Pre-Design Report, Alternatives Analysis and Selection of Preferred Technology
- c. File for Amended Operating Permit from Regional Board
- d. Prepared Drawings, Specifications and Project Manual – 50%, 90%, 100% and Final
- e. Electrical, Backup Generator, Automatic Transfer Switch, Motor Controls, SCADA and Instrumentation – 50%, 90%, 100% and Final
- f. Prepare Initial Studies, CEQA and possible NEPA documentation, including applicability of possible exemptions.
- g. Conduct Topographic and Land Survey (if needed)
- h. Bid Period Services – Issue Addenda / Answer RFI's
- i. Engineering services during construction or related consultation with Army Corps of Engineers

2. FACILITIES PLAN

The facilities plan is to be presented as a comprehensive, organized and integrated series of technical memorandums providing a framework for expansion and phasing of future improvements to the CCWWTF. This plan must identify operating parameters, anticipate permit conditions and discharge limits, evaluate alternatives and ultimately result in the selection of a preferred secondary treatment technology and recommended solution for expansion of the plant along with a phasing plan. The District would like an alternatives analysis leading to a clear direction on what treatment technology to implement next. The

2005 and 2018 master plans recommended a “Biolac” type system and oxidation ditch, respectively. The consultant is to advise as to a timeline for phasing and implementation of the expansion improvements based upon several factors including current average flow rates, performance limitations of the existing pond system, and projected service area growth and number of sewer connections. The consultant will prepare a preliminary design including design parameters, and key technical specifications, scaled drawings of the overall facilities layout and site plan and unit operations and process drawings. Lastly, given the significant capital cost and financial component, it is imperative that the consultant provide construction cost estimates for budgetary purposes.

Initially, the facility plan should be advanced to a level of completion necessary to understand the constraints and timeline for making improvements to secondary treatment, solids settling, and clarification processes and how it may alter effluent quality and may inform and influence the decisions and design of the downstream tertiary treatment facilities. Ideally the wastewater treatment train would be evaluated from start (headworks) to end (disposal) looking sequentially at each of the unit processes and operations between.

- a. Summary of Operating Parameters, Design Criteria and Permit Requirements
- b. Alternatives Analysis and Comparative Cost Estimates
- c. Summary of Preferred Project, Cost Estimates and Phasing Sequence
 - Headworks and Screen
 - Secondary Biological Treatment
 - Nitrification/Denitrification
 - Solids Settling/Clarification
 - Tertiary Filtration
 - UV Disinfection
 - Effluent Storage and Disposal
 - Sludge Dewatering and Residuals Handling
- d. Preliminary Design
 - Land/Topographic Survey
 - Hydraulic Profile
 - Site Plan and Yard Piping
 - Plans and Sections for Individual Unit Operations and Processes
 - Key Technical Specifications
 - Budgetary Construction Cost Estimates

3. OTHER ENGINEERING AND CONSULTING SERVICES

The District may need the consultant’s assistance with various other engineering and professional consulting services relating to improvements to the CCWWTF. The consultant will work with the District to establish an initial scope of additional services to be submitted within its proposal.

At this time, the District anticipates needing the consultant’s assistance in developing a set of supplemental utility and facility demolition, removal and relocation plans for the Pond 6 enlargement project. There are numerous existing facilities (effluent pump station, piping, electrical systems and motor controls) and utilities (existing 8” dia., 2,000-ft of sewer force main

and 10” dia., 2,000-ft of raw water transmission pipeline) on the front of the existing dam and around the perimeter of the left and right abutments that will likely need to be removed and relocated prior to expansion of the dam. In that event, the consultant will be needed to prepare a supplemental set of design plans for demolition and removal of the existing facilities and utilities and for those new replacement facilities and relocated utilities. This work effort will need to be coordinated with Wagner & Bonsignore that is independently updating the DSOD plans for the Pond 6 Enlargement. Also, the consultant may be tasked with developing a new environmental document including new initial studies, CEQA document, and any necessary permits for State and Federal jurisdictional waters, streams, and wetlands. There are existing, potential jurisdictional drainages outside the toe of the dam that must be contemplated in the supplemental plans. Potential borrow material sites must be in the initial studies and new CEQA document.

- a. Project Management, QA/QC, Site Visits, Meetings, Etc.
- b. Coordinate work with Wagner & Bonsignore’s on their separate design effort.
- c. Prepare Demolition, Removal and Relocation Plans for Existing Facilities and Utilities on Front of Dam and to Left and Right Abutments – 50%, 90%, 100% and Final
 - Blanket Drain Lift Station
 - Pond 6 Effluent Pump Station
 - Ancillary Piping, Valves and Vaults
 - Electrical System, Backup Generator, Automatic Transfer Switch, Motor Controls, SCADA and Instrumentation
 - Remove and Relocate Existing 8” dia. Sewer Force Main
 - Remove and Relocate Existing 10” dia., Raw Water Pipeline
- d. Conduct Initial Studies and Prepare New CEQA Document for Utility Relocation Plans and (if necessary) develop New Initial Studies and CEQA Document for Full Project including Pond 6 Enlargement, Raising the Dam and Potential Borrow Material Sites
- e. Prepare/Obtain Permits from California Fish & Wildlife (Section 1600) and U.S. Army Corps of Engineers (Section 404/401) for Jurisdictional Waters, Streams or Wetlands
- f. Bid Period Services – Issue Addenda / Answer RFI’s
- g. Engineering Services During Construction

Furthermore, this item allows for additional engineering services and continuity of the consultant’s work on the CCWWTF. After completion of the initial scope of work, the District may wish to engage the consultant on extra work assignments for the CCWWTF stemming from the findings of facilities plan and phasing schedule or to perform other related priority assignments for improvements to the CCWWTF. This may include development of plans, drawings and specifications for construction of other remaining unit operations and processes (e.g. secondary biological treatment, solids settling, clarification, nitrification/denitrification, sludge and biosolids residuals handling, chemical systems, and ancillary piping, pumps and conveyances). This scope may include a variety of consultant and subconsultant services and tasks relating to civil, electrical, mechanical, structural engineering, geotechnical investigations, environmental studies, permitting, cost estimating, pilot studies, assistance with grants, engineering services during construction, project management, and other professional services. Before starting new assignment or extra work, it must be documented by a District approved and executed contact amendment accompanied by a corresponding scope of work, schedule, not to exceed fee and worksheet identifying tasks, hours, and hourly rates.

PROPOSED SCHEDULE

The District would like to move forward with the final design of the tertiary treatment plant improvements and storage facility Pond 6 enlargement with the goal of having those project shovel ready as soon as practicable. The District anticipates the project schedule below.

Milestones	Tentative Deadline
<u>Design and Engineering Services Selection</u>	
Issue RFP	Sept. 16, 2021
Job Walk (Non-Mandatory)	Sept. 30, 2021
Proposal Deadline	Oct. 26, 2021
Board Approval and Contract Award	Nov. 10, 2021
<u>Tertiary Treatment Facilities Improvements</u>	
Preliminary Design	Jan. 2022
50% Design Deliverable	Mar. 2022
Initial Studies and Draft CEQA Document	May 2022
90% Design Deliverable	May 2022
100% Design Deliverable	June 2022
Public Draft CEQA Document (File w/OPR)	July 2022
Final Design Deliverable (Bid Ready)	July 2022
Bid / Award	July - Aug. 2022
Construction	Sept. 2022 – Dec.2023
<u>Facilities Plan / Technical Memo's and Conceptual Plans</u>	
Technical Memo's Draft	Jan. 2022
Technical Memo's Final	Feb. 2022
Conceptual Plans / Drawings – Draft	Mar. 2022
Conceptual Plans / Drawings - Final	July 2022
<u>Supplemental Plans Pond 6 for Removal and Relocation of Existing Utilities and Facilities</u>	
Pre-Design Deliverable	Jan. 2022
50% Design Deliverable	Mar. 2022
Initial Studies and Draft CEQA Document	May 2022
90% Design Deliverable	May 2022
100% Design Deliverable	June 2022
Public Draft CEQA Document (file w/OPR)	July 2022
Final Design (Bid Ready)	July 2022
Bid / Award	July. - Aug. 2022
Construction	Sept. 2022 – Dec. 2023

ADDITIONAL REQUIREMENTS

1. Technical Memorandums: The facilities plan is to be presented as a comprehensive, organized and integrated series of technical memo's. Each memo is to be both a standalone document as well as a section in a larger overall report, with each memo indexed in a master table of contents. The memo's will address general design and operating parameters and permit requirements and then focus on the separate unit operations and processes, such as a) headworks, b) secondary biological treatment, c) nitrification/denitrification, d) solids settling/clarification, e) tertiary treatment, f) UV Disinfection, and g) storage and disposal.
2. Project Drawings: Drawing are to be "to scale" and furnished to the District in ".pdf" file format for reproduction as both 11"x17" (ANSI C) and 22"x34" (ANSI D) paper size. Final drawings are also to be furnished in Autodesk AutoCAD format. Based upon the contractor and District inspector field marked up drawings, the Consultant is to furnish as-built record drawings as .pdf and .dwg in AutoCAD format.
3. Project Manuals: The Consultant is to prepare a separate project manual for each separate contract to be bid for construction (note: Pond 6 enlargement and tertiary filters are two separate bids). The Project Manuals are to include front end documents (bid forms, contract agreement, general conditions, supplementary conditions, etc.), technical specifications, and appendices. The manual's front end documents are to be based on the 2018 edition of the *Engineers Joint Contract Documents Committee Standards* (EJCDC). A copy of the standards will be furnished to the Consultant by the District. The Consultant will edit the EJCDC documents adding any project specific information and State of California contract requirements. Consultant will provide a bid schedule, detailed descriptions for each bid item, alternative bid items, if any, and description of sequence of work. The technical specifications are based upon the Consultant's standards, or if applicable, adapted from District standards.

Environmental Studies: The consultant is to identify environmental related project impacts for compliance with the California Environmental Quality Act (CEQA). The consultant is to conduct biological, cultural resources, and other initial studies. A Mitigated Negative Declaration (MND) is anticipated for this project. Project MND and mitigation, monitoring and reporting plan (MMRP) will be adopted by the District's Board of Directors as lead agency. The MND and MMRP must be submitted to DSOD and also incorporated by the Consultant into the final bid ready construction documents.

CONTENT OF STATEMENT OF QUALIFICATIONS AND PROPOSALS

For any questions, inquiries and matters of coordination regarding this RFQ/RFP please submit by phone (209)754-3181 or e-mail to Kate Jesus at katej@ccwd.org.

1. Statements of qualifications along with initial proposals are to be made on letter size sheets (fold outs are acceptable for charts, etc.) and type size large enough to be easily legible (≥ 10 point). Please limit proposals to thirty pages or less excluding resumes. Deliver one (1) complete electronic copy and (3) complete hard copies of the proposal to:

Calaveras County Water District
120 Toma Court
San Andreas, CA 95249
RFP – Copper Cove Wastewater Treatment Plant
Tertiary Treatment and Storage Improvements
Attn: Kate Jesus

2. The statement of qualifications and proposals are to include at least the following items:
 - a. Cover Letter
 - b. Introduction
 - c. Statement of Qualifications (SOQ), Experience, Project Team and Subconsultants
 - d. Initial Project Understanding and Approach to Work
 - e. Initial Work Plan, Scope of Work and Tasks – Storage, Tertiary and Facilities Plan
 - f. Initial Schedule – Storage, Tertiary and Facilities Plan
 - g. Initial Fee Estimate, provided separately, to include breakdown of costs by hours, hourly rates, and by task, subconsultants (if any), and reimbursables.
 - h. Hourly Rate Schedule, applicable to the initial scope of work

SELECTION PROCESS

The evaluation of all consultant's statements of qualification and initial proposals will be by committee comprised of managers and staff from the District. Each firm's submittal will be reviewed and collectively ranked by the committee according to the responsiveness as follows: Statement of Qualifications and Project Team (50%) and Initial Proposal (50%). The initial proposal will be weighted on project understanding and approach (20%), work plan and schedule (15%), and level of effort and value (15%). For the firm that ranks highest, staff desires to negotiate a final contract price, details of scope of services, contract terms and conditions. Should staff not be able to negotiate a price or other conditions to its satisfaction with the highest ranked firm, it may accordingly negotiate with the next highest ranked firm(s).

DISTRICT NOTICES

1. All consultant firms responding to this solicitation should note the following:
 - a. All work performed for the District, including all documents and computer software files associated with the project(s), will become the property of the Calaveras County Water District. The proposals must indicate if consultant anticipates using software that is proprietary in nature and therefore cannot be legally released to the District.
 - b. The District reserves the right to: 1) reject all proposals, 2) request clarification of any submitted information, 3) not enter into any agreement, 4) cancel this process at any time, 5) amend this process at any time, 6) issue similar RFPs or RFQs in the future, and/or 7) request additional information during the selection process.
 - c. The selected consultant shall perform and complete the project(s) in its entirety based on the initial scope of work and any extra work agreed to by the District and consultant. For any claimed extra work or additional scopes of work requested by the District or must be fully documented in writing, with a defined scope of work and fee agreed upon by both parties and prior to starting the prospective work it must be executed by a specific contract amendment subject to the authorization and approval of the General Manager and, if required by policy, approved by the Board of Directors by resolution.
 - d. All fees are to be time and materials on hourly rates based upon the consultant's and subconsultant's rate schedules submitted with then initial proposal and will remain effective for the duration of the initial scope of work. When addition assignments are added by contract amendment, the consultant may submit an update rate schedule (for a new year and if the consultant has updated its rate schedule for that year) applicable to the specific scope of work item. The markup on subconsultants work is to be a negotiated items between District and consultant and may range from 5% to 10% depending upon the total amount of the sub's fees.
 - e. Any and all costs arising from preparation of this statement of qualifications and proposal and participation in the selection process incurred by any consultant firm shall be borne by the firm without reimbursements by the District.
 - f. Consultant is required to enter into the District's standard Professional Services Agreement (PSA) a copy of which can be furnish upon request prior to submitting your proposal.