

File ID: 2024-01900

12/10/2024

Supplemental Agreement: Sacramento River Water Treatment Plant Expansion
[Published for 10-Day Review on 11/27/2024]

File ID: 2024-01900

Location: Citywide

Recommendation: Pass a **Motion** authorizing the City Manager, or the City Manager’s designee, to execute Supplemental Agreement No. 5 to City Agreement 2019-1369 with Carollo Engineers, Inc. for the Phase 1 Environmental Review and Permitting activities towards future augmentation and resiliency improvements of the Sacramento River Water Treatment Plant (SRWTP) and E.A. Fairbairn Water Treatment Plant (FWTP), for an amount not-to-exceed \$9,201,182, bringing the agreement’s total not-to-exceed amount to \$14,842,592.

Contact: Megan Thomas, Project Manager, (916) 808-1729, methomas@cityofsacramento.org; Michelle Carrey, Supervising Engineer, (916) 808-1438, mcarrey@cityofsacramento.org; Sherill Huun, Engineering & Water Resources Division Manager, (916) 808-1455, shuun@cityofsacramento.org; Pravani Vandeyar, Director of Utilities, (916) 808-3765, pvandeyar@cityofsacramento.org; Department of Utilities

Presenter: None

Attachments:

- 1-Description/Analysis
- 2-Supplemental Agreement

Description/Analysis

Issue Detail: Staff recommends Council approve Supplemental Agreement No. 5 with Carollo Engineers, Inc. to develop a Basis of Design for plant expansion at SRWTP and plant modifications at FWTP, prepare a final environmental impact report that includes build-out work for both treatment plants, develop planning documents to support policy approaches, and provide bench-scale testing to confirm ozone design criteria. These additions and modifications to the Agreement will help further the City’s goal in securing additional surface water supply to meet future demands.

Policy Considerations: The proposed supplemental agreement exceeds the City Manager’s approval authority, requiring Council approval, per City Code 3.04.020. This project is also consistent

with the 2040 General Plan PFS-2.2 to protect and maintain critical infrastructure, PFS-3.5 to ensure sufficient water treatment capacity, PFS-3.10 to foster efficient expansion of facilities and infrastructure to adequately meet projected needs, and the overall goals of PFS-4, which is for a reliable supply of high-quality water that meets projected needs within the city's place of use. The Sacramento City Code Section 4.04.020 and Council Rules of Procedure (Chapter 7, Section E.2.d) mandate that unless waived by a 2/3 vote of the City Council, all labor agreements, and all agreements greater than \$1,000,000 shall be made available to the public at least ten (10) days prior to council action. This item was published for 10-day review on November 27, 2024, in compliance with the City Code.

Economic Impacts: None.

Environmental Considerations: Approval of the proposed Supplemental Agreement is an administrative action that would not result in direct or indirect effects on the environment. It is not a project under the California Environmental Quality Act (CEQA), and no CEQA review is required. See CEQA Guidelines sections 15378(b)(5); 15060(c)(3). The purpose of the action is to complete CEQA review. Appropriate evaluation and documentation of the environmental effects of the improvements that are the subject of the agreement as required by CEQA will be completed prior to project approval.

Sustainability: The proposed amendment to the contract is consistent with the 2040 General Plan PFS-4.2 to maintain water supply sustainability and PFS-4.3 to explore and advance options for surface water supply to meet potable supply demand as it addresses the resiliency needs of the water treatment plants.

Commission/Committee Action: Not applicable.

Rationale for Recommendation: The availability of surface water treatment capacity for existing and future customer demand is forecasted to reach its limits by 2039 at which time new water supply capacity would be needed. These forecasts consider city growth estimated in the 2040 General Plan, conservation performance, sustainable groundwater management activities, likely wholesale contracts and various rules governing water diversions from the rivers. The 2023 Water Master Plan also outlined the necessary steps to secure additional water supply by creating additional treatment capacity at SRWTP and making modifications to FWTP. The current amendment is necessary to move towards realizing these goals and meeting future water supply demands for the City.

Financial Considerations: The original not-to-exceed amount of the City Agreement 2019-1369 was \$3,459,940. Supplemental Agreement No. 1 was for an additional \$1,403,400, Supplemental Agreement No. 2 was for an additional \$278,340, Supplemental Agreement No. 3 was for \$499,730, bringing the agreement not-to-exceed amount to \$5,641,410. Supplemental Agreement No. 4 was executed to extend the contract. This proposed Supplemental Agreement No. 5, in the amount of

\$9,201,182, will bring the new agreement not-to-exceed amount to \$14,842,592. Sufficient funds are available in the Water+ Program (Z14190100) to execute the agreement.

There are no General Funds allocated or planned for this project.

Local Business Enterprise (LBE): Carollo Engineers, Inc. is an LBE.

Background: On June 25, 2013, City Council approved the selection of Carollo Engineers for a multi-phase effort to evaluate options for adding water treatment capacity to meet the City's future water needs. The Council awarded a project to Carollo Engineers for the initial phase, which was limited to initial assessment and alternatives selection, but also described an intent to return to City Council for approval of preliminary design activities following completion of the alternative selection (2013-00417).

The alternatives analysis was completed in February 2018 and included a preliminary schedule recommending that the City budget approximately 15 years to accomplish the full range of activities needed to expand surface water supplies. These include permitting, CEQA, design, public outreach, funding plans, construction, and startup activities.

On July 23, 2019, Council awarded Carollo Engineers, Inc. a contract to complete the Phase 1 Environmental Review and Permitting activities towards future expansion of the Sacramento River Water Treatment Plant which represented a continuation into the next phase of project development.

In May 2021, Council approved the Supplemental Agreement No. 1 that incorporated the following additions to the contract:

- Incorporating the replacement of existing aging facilities at SRWTP that will be at the end of their useful life during the initial project construction;
- Evaluating improvements at the existing Sacramento River intake needed to reduce sediment build-up within the structure;
- Incorporating improvements needed at FWTP to provide 100-MGD of reliable treatment capacity and 120-MGD hydraulic treatment capacity;
- Conversion from gaseous chlorine as the primary disinfectant to a sodium hypochlorite-based disinfectant at SRWTP and FWTP for a more reliable chemical supply with reduced risk impacts with regards to safety; and,
- Incorporating a conceptual design for ozone treatment at both SRWTP and FWTP for current and future capacities to address water quality objectives.

In February 2022, Council approved the Supplemental Agreement No. 2 that incorporated the following additions to the contract:

- Evaluating how drought and higher temperatures in both the American River and Sacramento River could impact treatment operations;
- Incorporating pre-treatment lime addition needed at FWTP during spring conditions when water quality of the American River changes the most; and,
- Evaluating ozone needs at FWTP based on current and projected treatment capacities, and placement within the treatment process for optimal benefit.

These improvements supported the need for the resiliency of SRWTP and FWTP and ensured similar water quality could be produced from both treatment plants, for a more robust and sustainable drinking water system.

In May 2023, Council approved the Supplemental Agreement No. 3 that incorporated the following additions to the contract:

- Addressing the resiliency and impacts of a new intake within Sacramento River with additional sand movement modeling and testing under various river conditions;
- Verifying river diversion impacts under each phase of proposed improvements; and
- Assessing a tee-screen intake concept.

This type of long-evolving contractual relationship is standard for large-scale water infrastructure projects. Major projects in this sector often require extensive planning, permitting, and environmental review over multiple phases and years. This supplemental agreement aligns with the scope anticipated in the original procurement as it included provisions for environmental assessments that would be refined and completed over the project timeline. This supplemental agreement facilitates the completion of the final environmental documentation, which was initially scoped within the 2013 solicitation, making it a continuation of the original contract objective. The design phase for the proposed improvements would be completed under new contracts after a rigorous Request for Proposal process.

CONTRACT ROUTING SHEET

Contract Cover/Routing Form: Must Accompany ALL Contracts; however, it is NOT part of the contract.

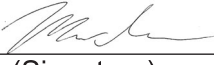

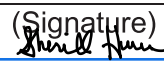
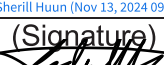


General Information (Required)

Original Contract # (supplements only): 2019-1369 Supplement/Addendum #: 5
 Assessor's Parcel Number(s): _____
 Contract Effective Date: 7/23/2019 Contract Expiration Date (if applicable): 12/31/2025
 \$ Amount (Not to Exceed): \$14,842,592 Adjusted \$ Amount (+/-): \$9,201,182
 Other Party: Carollo Engineers, Inc.
 Project Title: Sacramento River Water Treatment Plant Expansion CEQA & Permitting
 Project #: Z14190102 Bid/RFQ/RFP #: Q13141311010
 City Council Approval: YES if YES, Council File ID#: 2024-01900

Contract Processing Contacts

Department: Utilities Project Manager: Megan Thomas ^{MT}
 Contract Coordinator: Jamie McKinley Email: jmckinley@cityofsacramento.org

Department Review and Routing

Construction Mgmt:  11/12/2024
 (Signature) (Date)
Supervisor:  _____
 (Signature) (Date)
Division Manager:  _____
 (Signature) (Date)
 Sherill Huun (Nov 13, 2024 09:26 PST)
Other:   
 (Signature) (Date)
 Gabriel (Nov 12, 2024 07:57 PST) Pravani Vandeyar (Nov 13, 2024 16:20 PST)
 Fiscal: O&M: Director of Utilities:

Special Instruction/Comments (i.e. recording requested, other agency signatures required, etc.)

Recording Requested **Other Party Signature Required**

-----FOR CLERK & IT DEPARTMENTS ONLY – DO NOT WRITE BELOW THIS LINE-----

SUPPLEMENTAL AGREEMENT

Project Title and Job Number: Sacramento River Water Treatment Plant Expansion CEQA & Permitting **Date:** 10/23/2024
Purchase Order #: 0000053381 **Supplemental Agreement No.:** 5

The City of Sacramento ("City") and Carollo Engineers, Inc. ("Contractor"), as parties to that certain Professional Services Agreement designated as Agreement Number C2019-1369, including any and all prior supplemental agreements modifying the agreement (the agreement and supplemental agreements are hereafter collectively referred to as the "Agreement"), hereby supplement and modify the Agreement as follows:

1. The scope of Services specified in Exhibit A of the Agreement is amended as follows:

The Scope of Services is amended as set forth in Attachment 1 to Exhibit A, attached hereto and incorporated herein. Payment for these services shall be in accordance with Attachment 2 to Exhibit A, is attached hereto and incorporated herein. The sunset date of this agreement is extended to December 31, 2026.

2. In consideration of the additional and/or revised services described in section 1, above, the maximum not-to-exceed amount that is specified in Exhibit B of the Agreement for payment of Contractor's fees and expenses, is increased by \$9,201,182, and the Agreement's maximum not-to-exceed amount is amended as follows:

Agreement's original not-to-exceed amount:	<u>\$3,459,940</u>
Net change by previous supplemental agreements:	<u>\$2,181,470</u>
Not-to-exceed amount prior to this supplemental agreement:	<u>\$5,641,410</u>
Increase by this supplemental agreement:	<u>\$9,201,182</u>
New not-to exceed amount including all supplemental agreements:	<u>\$14,842,592</u>

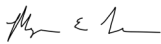
3. Contractor agrees that the amount of increase or decrease in the not-to-exceed amount specified in section 2, above, shall constitute full compensation for the additional and/or revised services specified in section 1, above, and shall fully compensate Contractor for any and all direct and indirect costs that may be incurred by Contractor in connection with such additional and/or revised services, including costs associated with any changes and/or delays in work schedules or in the performance of other services or work by Contractor.

4. Contractor warrants and represents that the person or persons executing this supplemental agreement on behalf of Contractor has or have been duly authorized by Contractor to sign this supplemental agreement and bind Contractor to the terms hereof.

5. Except as specifically revised herein, all terms and conditions of the Agreement shall remain in full force and effect, and Contractor shall perform all of the services, duties, obligations, and conditions required under the Agreement, as supplemented and modified by this supplemental agreement.

Approval Recommended By:

Approved As To Form By:



Project Manager

City Attorney

Approved By:


Thomas Gillio, Nov 13, 2024 11:49 PST

Contractor

Attested To By:

Approved By:

City of Sacramento

City Clerk

Contract: #2019-1369
Project Name: Sacramento River WTP Expansion CEQA and Permitting
Project No.: Z14190102
Department: Department of Utilities (DOU)
Division: Engineering and Water Resources

Attachment 1 to Exhibit A AMENDMENT TO SCOPE OF SERVICES

CITY OF SACRAMENTO DEPARTMENT OF UTILITIES
(CITY)

AND
CAROLLO ENGINEERS, INC.
(CONTRACTOR)

FINAL ENVIRONMENTAL IMPACT REPORT & BASIS OF DESIGN REPORT
(PROJECT)

OVERVIEW

The following tasks included in this Amendment address additions and modifications to the original Agreement project tasks. The work described herein builds from the Conceptual Design phase (10% design definition) and consists of several projects. Major elements of work include the following:

1. Develop Basis of Design Report (BODR) for work related to plant expansion at the Sacramento River Water Treatment Plant (SRWTP) and plant modifications at the Fairbairn Water Treatment Plant (FWTP) as advanced in the Conceptual Design phase.
2. Prepare a Final Environmental Impact Report that includes build-out work at both SRWTP and FWTP, and corresponding public outreach support.
3. Develop planning documents to codify policy approaches to the following areas for Water+:
 - a. Packaging, Scheduling, and Financing
 - b. Sustainability
 - c. Alternative Energy
 - d. Outreach
 - e. Historical Facilities
4. Provide bench-scale testing to confirm ozone design criteria that will be used for sizing and space needs discussed in the BODR. Testing will be conducted to confirm ozone demand and decay curves for settled water from SRWTP and FWTP. Three rounds of testing will be conducted across the year to capture a range of water qualities.

PURPOSE

CONTRACTOR's scope of services, completion time, and compensation shall be amended as set forth herein. Amended services shall generally be described as additional engineering services for the items outlined previously and detailed in

the sections below. Revisions to the Professional Services Agreement tasks are included in this amendment as described below and will incorporate into the base scope of services.

Tasks and responsibilities shall be as follows, unless otherwise explicitly called out in the subsequent sections below:

- Survey of water surface elevations will not be performed during this effort. It is assumed that hydraulic profiles in record drawings are correct. Additional survey of hydraulic conditions may be performed by the CITY or during detailed design of water treatment elements included in future agreements.
- Detailed design and bid phase services (other than that specified herein) and engineering services during construction are anticipated to be included in future agreements based on the results of the basis of design development herein.
- Funding opportunities (e.g., bond, Build America, Buy America - BABA, Water Infrastructure Finance and Innovation - WIFIA, State Revolving Fund - SRF) will be evaluated.
- Power system testing is outside the scope of this task. Security design services are not part of this scope of work.
- Energy compliance and Title 24 forms are not part of this scope of work.
- CITY will coordinate any necessary local Building Department, Fire Department and Air Quality Management District (AQMD) reviews and permits and pay any associated fees.
- Deliverables will be in digital format only, except for Environment Impact Reports.
- CITY shall compile all review comments into a single set and make a good faith effort to adjudicate conflicting comments among reviewers prior to delivering comments to CONTRACTOR.
- CITY shall arrange for access to and make all provisions for CONTRACTOR to enter upon public and private property as required for CONTRACTOR to perform services hereunder.
- CITY shall furnish CONTRACTOR available studies, reports, and other data pertinent to CONTRACTOR's services; obtain or authorize CONTRACTOR to obtain or provide additional reports and data as required; furnish to CONTRACTOR services of others required for the performance of CONTRACTOR's services hereunder, and CONTRACTOR shall be entitled to use and rely upon all such information and services provided by CITY or others in performing CONTRACTOR's services under this Agreement. This information should also remain CITY's documentation and shall not be shared with others unless authorized by the CITY.
- CONTRACTOR is not responsible for damage or delay in performance caused by events beyond the reasonable control of CONTRACTOR. In the event CONTRACTOR's services are suspended, delayed or interrupted for the convenience of the CITY or delays occur beyond the reasonable control of CONTRACTOR, an equitable adjustment in CONTRACTOR's time of performance and cost of CONTRACTOR's personnel shall be made.
- CONTRACTOR makes no warranty that the CITY's actual project costs, financial aspects, economic feasibility, schedules, and/or quantities or quality realized will not vary from CONTRACTOR's opinions, analyses, projections, or estimates.
- Services to be performed by CONTRACTOR are intended solely for the benefit of the CITY. No person or entity not a signatory to this Agreement shall be entitled to rely on CONTRACTOR's performance of its services hereunder, and no right to assert a claim against CONTRACTOR by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of the CONTRACTOR's services hereunder.

Task 15 - Project Management, Meetings, and Workshops

The purpose of this task is to continue to maintain effective project management and communication for the Project. A kick-off meeting at the start of the Project will be used to review Project goals, set up lines of communication, and begin the task of data collection. Various project meetings are included as part of this task and detailed in sections below and the fee breakdown table. A 16-month schedule has been used as the basis for project management activities. Monthly progress reports will be submitted and include work completed to date, upcoming work, invoicing and an updated schedule.

Deliverables: (PDF)

- Progress Meeting Agenda and Minutes (weekly) for the Design Elements

Assumptions:

- The existing PMP addresses the type of services (predesign) being provided under this Project.

Task 16 – Basis of Design for SRWTP Master Plan and FWTP Master Plan

Task 16.1 – Basis of Design Report (SRWTP)

CONTRACTOR will develop a Basis of Design Report (BODR) for SRWTP. This report will serve as the basis for the next phase of work, final design. Other reports that will be used to supplement the BODR include the Packaging, Scheduling, and Financing Plan, Sustainability Plan, Alternative Energy Plan, Outreach Plan, and Historical Facilities Plan. The BODR for SRWTP will serve, either in part or whole, to support the Environmental Impact Report. Project scheduling will be developed based on executing the work in three major steps: resiliency work, expansion (first phase), and buildout (final phase)

During this task, CONTRACTOR will use existing plant records (e.g., drawings and operating data, site visits and discussion with CITY staff) to better characterize the existing state of the facilities. Design meetings will be conducted with CITY staff to review findings and proposed layouts. Layouts from the Conceptual Design Phase will be used as the basis from which to finalize criteria and layouts for the BODR. The BODR will serve as the basis for the final design phase of work for each proposed upgrade or facility. Specific topics that will be included in the BODR include the following:

- Description of work
 - Existing facilities and proposed changes
 - Description of work for each design discipline
- Description of process equipment
 - Manufacturers
 - Design criteria
 - Layout (revision based on comments to Conceptual Layouts) – Sketchup Model
 - Operational considerations
 - Resiliency
 - Capacity of proposed modifications and ability to expand
- Description of non-process areas
 - Area or workspace needs
 - Ingress, egress, and typical foot traffic flow
 - Separation needs (e.g., noise, dust)
 - Overall site security requirements and modifications
- Design considerations
 - Geotechnical findings

- Hazardous materials findings
- Electrical one-line diagram
- Instrument P&Is for major equipment
- Network block diagram
- BODR-level global control narrative of process modifications
- List of drawings and technical specifications
- Permits
 - Review of permits required for major phases of work (resiliency, expansion, and buildout) and documentation/steps required to acquire permits.
 - Department of Drinking Water: Amended Operating Permit
 - Sacramento Metropolitan Air Quality Management District: backup power generators, ozone generators and ozone destruct units
 - Sacramento County Emergency Management District: for installed or produced treatment chemicals (sodium hypochlorite, liquid oxygen, etc.)
 - Environmental permits identified in the Environmental Impact Report (EIR).
 - Assist with materials/exhibits necessary for internal review within CITY departments (e.g., stormwater connection).
- Construction considerations
 - Schedule and sequencing with existing and proposed facilities
 - Identification of critical milestones for coordination with plant operations or other projects
 - Opinion of probable construction cost

Meetings: (in person)

- BODR development workshops (15)
- BODR review (1)

Deliverables:

- Meeting agenda and minutes (PDF)
- Draft BODR (PDF, up to 10 hard copies)
- Final BODR (PDF, up to 10 hard copies)

Assumptions:

- All properties within the project boundary will be acquired by CITY to accommodate proposed facilities. Removal of existing above grade structures and associated necessary environmental remediation will be performed outside of this scope of work. Below grade wells and septic systems that have been decommissioned in place by the CITY, will be listed for removal in the BODR. This includes properties along the northern boundary and in the southeast corner.
- Maintenance or rehabilitation of historic facilities is not part of this task.
- Internal department review (e.g., stormwater tie-in) will be initiated by CITY.
- Architectural treatments for facilities outside of WTPs fence lines is not included in this task. The plan to address how to approach public facing elements is included in the Outreach Plan.

BASIS OF DESIGN SCOPE – SRWTP			
FACILITY NAME (AREA NO.)	DESCRIPTION OF WORK ⁽¹⁾		
	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
Filter Waste Washwater Lagoons (15)	<ul style="list-style-type: none"> Replaces existing lagoons. Develop alternate layout to reduce impact of proposed lagoons with Kinder Morgan pipeline (to the east) . 	<ul style="list-style-type: none"> High-rate settling plates and return pumps. 	<ul style="list-style-type: none"> Concrete basins, equipment slabs, and sun canopies. (no building).
Gravity Thickeners (18)	<ul style="list-style-type: none"> Located adjacent to existing thickeners. 	<ul style="list-style-type: none"> Similar equipment (circular rake) and layout as existing thickeners. 	<ul style="list-style-type: none"> Concrete basins with pumping station (concrete structure) with several interior levels/floors.
Dewatering Building No. 2 (19)	<ul style="list-style-type: none"> Located adjacent to existing Dewatering Building. 	<ul style="list-style-type: none"> Similar equipment (centrifuge) and layout as existing dewatering facility. 	<ul style="list-style-type: none"> Concrete basins with pumping station (concrete structure) with several interior levels/floors.
Intake No. 1 (21)	<ul style="list-style-type: none"> Slurry conveyance piping from intake to SRWTP (existing sludge lagoons) via open trench west and east of I-5 with jack and bore under I-5. Repair work to rotunda at entrance gate to Intake No. 1 which has settled. 	<ul style="list-style-type: none"> Pump for slurry conveyance 	<ul style="list-style-type: none"> Removable baffle walls between North/ Central/ South portions of intake bay.
Intake No. 2 (21)	<ul style="list-style-type: none"> Located between existing intake and original intake, along river bank. Conveyance piping from intake to SRWTP via open trench west and east of I-5 with jack and bore under I-5. 	<ul style="list-style-type: none"> Similar equipment (vertical turbine pumps) as existing intake. 	<ul style="list-style-type: none"> Concrete structure with multiple levels/floors. Architectural style will need to integrate with surrounding area/buildings.

BASIS OF DESIGN SCOPE – SRWTP

BASIS OF DESIGN SCOPE – SRWTP			
FACILITY NAME (AREA NO.)	DESCRIPTION OF WORK ⁽¹⁾		
	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
Grit Basins (30)	<ul style="list-style-type: none"> Located west of existing Grit Basin. 	<ul style="list-style-type: none"> Similar equipment (chain and flight) and layout as existing grit basin. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building).
Intake Mixing & Flash Mix (35)	<ul style="list-style-type: none"> Located west of new Grit Basins 	<ul style="list-style-type: none"> Similar equipment (pumps) and layout as existing chemical mix. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building).
Floc-Sed Basins (43)	<ul style="list-style-type: none"> Replaces existing floc-sed basins. 	<ul style="list-style-type: none"> Similar equipment to existing (mixers, chain and flight) and addition of high-rate settling plates. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building).
Ozone Contactors (46)	<ul style="list-style-type: none"> Located in same area as existing sed basins. 	<ul style="list-style-type: none"> New process/equipment (ozone mixing).⁽³⁾ 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building).
Ozone Buildings (47)	<ul style="list-style-type: none"> Located in same area as existing sed basins. 	<ul style="list-style-type: none"> New process/equipment (ozone generation). 	<ul style="list-style-type: none"> CMU block building (single-story) with several rooms (ozone generation, electrical-1, electrical-2, control, HVAC, thiosulfate storage, office, and restroom).
Filters 17-24 (53)	<ul style="list-style-type: none"> Located west of existing filters. 	<ul style="list-style-type: none"> Similar equipment (filters) and layout as existing filters. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs with CMU building (cover). Plant control facility (control room and wet lab) integrated as third floor on west wing of filters.
Filters 25-32 (54)	<ul style="list-style-type: none"> Located west of Filters 25-32. 	<ul style="list-style-type: none"> Similar equipment (filters) and layout as existing filters. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs with CMU building (cover).
Res. No. 1 (62)	<ul style="list-style-type: none"> Replaces existing reservoir. Develop alternative with small pump station close-coupled to this reservoir. 	<ul style="list-style-type: none"> Similar layout (flat bottom, baffles) as existing reservoir. Fully ballasted to support empty 'operation' during period of high-groundwater. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building)

BASIS OF DESIGN SCOPE – SRWTP

DESCRIPTION OF WORK ⁽¹⁾			
FACILITY NAME (AREA NO.)	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
Res. No. 2 (63)	<ul style="list-style-type: none"> Replaces existing reservoir. 	<ul style="list-style-type: none"> Similar layout (flat bottom, baffles) as existing reservoir. Fully ballasted to support empty 'operation' during period of high-groundwater. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building)
CT No. 2 (64)	<ul style="list-style-type: none"> Located in same area as existing reservoir (No. 2). 	<ul style="list-style-type: none"> Similar layout (flat bottom, baffles) as existing CT basin and proposed Res. No. 2. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building)
High-Service Pump Station No. 2 (72)	<ul style="list-style-type: none"> Located north of existing high-service pump station⁽⁴⁾. 	<ul style="list-style-type: none"> Similar equipment (pumps) and layout as existing pump station. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs with CMU building (cover).
Chem Bldg South (80)	<ul style="list-style-type: none"> Located south of Floc-Sed Train No. 1 	<ul style="list-style-type: none"> Similar equipment (metering pumps) as existing chemical area. 	<ul style="list-style-type: none"> CMU building or pre-fabricated steel building. Several rooms (chemical feed, storage)
Chem Bulk Storage & Feed North (82)	<ul style="list-style-type: none"> Reuse existing building with additions as needed for additional equipment (e.g., hypochlorite and lime). 	<ul style="list-style-type: none"> Evaluate two options including locating metering pumps inside existing chlorine storage room (Option 1) and locating metering pumps outside adjacent to bulk storage tanks (Option 2). Bulk storage tanks would be located under sun canopy, east of existing chlorine storage room. Additional work includes replacement of fluoride system and improvements to lime system in other rooms of the existing building. 	<ul style="list-style-type: none"> Modifications as needed to support new equipment.

BASIS OF DESIGN SCOPE – SRWTP

BASIS OF DESIGN SCOPE – SRWTP			
FACILITY NAME (AREA NO.)	DESCRIPTION OF WORK ⁽¹⁾		
	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
		<ul style="list-style-type: none"> Existing chlorine gas scrubber system and HVAC currently being replaced by CITY (as separate project). Scrubber will be removed when the majority of wells no longer use chlorine gas. 	
Chem Bulk Storage & Feed South (83)	<ul style="list-style-type: none"> Located south of Floc-Sed Train No. 2 	<ul style="list-style-type: none"> Similar equipment (storage tanks) as existing chemical storage. 	<ul style="list-style-type: none"> Concrete slab with sun canopy. (no building)
Elec & Instr Bldg (93)	<ul style="list-style-type: none"> Located east of proposed Maintenance Bldg. 	<ul style="list-style-type: none"> No process equipment. 	<ul style="list-style-type: none"> Areas of use: storage (mechanical), storage and work floor (electrical), storage and work area (instrumentation), storage and work area (landscaping), offices (staff and managers), conference rooms/training, kitchen, lockers, and support areas (janitorial, restrooms, stairwells, etc.). Multiple levels/floors. CMU block construction.
Maintenance Bldg (94)	<ul style="list-style-type: none"> Located along west side of the site adjacent to Bercut Dr. Relocation of utilities (storm, sewer, water and electrical). One of west entrances to the site removed to make room for future Electrical Building 2. 	<ul style="list-style-type: none"> Coordinate existing furnishings/work equipment with new furnishings/work equipment. Provide network connections (conduit and wiring/cable) for plant SCADA for future workstations. Primary use of space would be for 	<ul style="list-style-type: none"> Three (3) layouts/options for CITY to select one for final design. Three floors (basement, at grade and top/mezzanine) to include storage, work space, office and common areas (kitchen, restroom, showers and training rooms). Exterior wall along Bercut Dr. to serve as building wall and security

BASIS OF DESIGN SCOPE – SRWTP

DESCRIPTION OF WORK ⁽¹⁾			
FACILITY NAME (AREA NO.)	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
		maintenance staff and equipment/material storage. <ul style="list-style-type: none"> • Provide bridge crane to assist in moving equipment/materials. 	wall with architectural style to blend in with the area. No doors or windows on west wall fronting Bercut Dr. <ul style="list-style-type: none"> • Ambient / natural light provided for basement. • Elevator provided to move personnel and small equipment between floors. • Large floor opening at 1st floor provided to move equipment/materials between first floor and basement.
Plant Electrical Substation Bldg 2 (98)	<ul style="list-style-type: none"> • Located north of new Maintenance Bldg. 	<ul style="list-style-type: none"> • Similar equipment (electrical) and layout as existing electrical substation building. 	<ul style="list-style-type: none"> • CMU block construction. • Two levels levels/floors.
Yard (Buried Utilities)	<p><u>Stormwater system modifications</u></p> <ul style="list-style-type: none"> • Abandonment of existing 30-inch outfall with cap for potential reuse by future conduits/utilities. • Installation of new line onsite to connect with offsite 60-inch stormwater line near Bercut Dr & Telegrapher Avenue and routed to Sump 163. • Additional facilities may include equalization basin (site detention) and pumping (due to increased future flows). • Allow for access manhole and instrumentation to monitor water quality. • Alignment and profiles coordinated with other structures and process lines. <p><u>Water, sewer and electrical</u></p> <ul style="list-style-type: none"> • Alignment and profiles coordinated with other structures and process lines. 		

BASIS OF DESIGN SCOPE – SRWTP

FACILITY NAME (AREA NO.)	DESCRIPTION OF WORK ⁽¹⁾		
	Civil	Process Mechanical / Equipment	Architectural / Structural ⁽²⁾
Historical Facilities (existing)	<ul style="list-style-type: none"> Refer to Historical Facilities Plan (Task 16.7) for details. 		
<p>Notes:</p> <ul style="list-style-type: none"> (1) General descriptions do not include details about phasing and temporary facilities to support sequencing of work while WTP remains online. (2) No conditioned work spaces or restrooms are included unless explicitly noted. (3) Air quality permit related to ozone destruct off-gas is assumed based on ambient ozone limits established by Sacramento Metropolitan Air Quality Management District. (4) Work related to off-site finished water piping/transmission lines are not included in this work. 			

Task 16.2 – Basis of Design Report (FWTP)

CONTRACTOR will perform the same services for FWTP as listed in Task 16.1 but with the following changes:

Meetings: (in person)

- BODR development workshops (7)
- BODR review (1)

Deliverables:

- Meeting agenda and minutes (PDF)
- Draft BODR (PDF, up to 10 hard copies)
- Final BODR (PDF, up to 10 hard copies)

Assumptions:

- Maintenance or rehabilitation of FWTP intake is not part of this work.
- CITY determination of pumping operations and needs (e.g., number of standby pumps and finished water flows) for estimating electrical load.

BASIS OF DESIGN SCOPE – FWTP

FACILITY NAME (AREA NO.)	DESCRIPTION OF WORK ⁽¹⁾		
	Civil ⁽²⁾	Process Mechanical / Equipment	Architectural / Structural ⁽³⁾
Floc-Sed Basin No. 2 (42)	<ul style="list-style-type: none"> Replaces Floc-Sed Basin No. 2. 	<ul style="list-style-type: none"> Similar equipment (mixers, chain and flight) as existing basins. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs. (no building)
Ozone (47)	<ul style="list-style-type: none"> Located in same area as existing Floc-Sed Basin No. 1. 	<ul style="list-style-type: none"> New process/equipment (ozone generation and mixing). 	<ul style="list-style-type: none"> Ozone Bldg: CMU block building (single-story) with several rooms (ozone generation, electrical-1, electrical-2, control, HVAC, thiosulfate storage, office, and restroom. Ozone Contactor: Concrete basins and equipment slabs. (no building)
Intermediate Pump Station (48)	<ul style="list-style-type: none"> Located south of new ozone facility 	<ul style="list-style-type: none"> Similar equipment (pumps) and layout as existing pump stations. 	<ul style="list-style-type: none"> CMU block building with multiple levels (bottom / basin, pump floor and mezzanine). Several rooms (pump room, electrical room, and mechanical room).
Filters (No. 5-8) (52)	<ul style="list-style-type: none"> Replaces existing filters. (No. 1-8) 	<ul style="list-style-type: none"> Similar equipment (filters) and layout as existing filters. 	<ul style="list-style-type: none"> Concrete basins and equipment slabs with CMU building (cover).
Backwash Supply Booster Pumps (65)	<ul style="list-style-type: none"> Located east of existing backwash supply tank/tower. 	<ul style="list-style-type: none"> Similar equipment (pumps) as existing pump stations. 	<ul style="list-style-type: none"> Concrete equipment slabs and sun canopies. (no building).
Electrical Switchgear Bldg and Substation (67)	<ul style="list-style-type: none"> Both facilities located southeast of new filters, near site entrance. Entrance gate shifting south along driveway. Relocate buried utilities (e.g., transmission mains) to minimize conflicts and improve 	<ul style="list-style-type: none"> Electrical equipment in new Switchgear Bldg will be similar to existing (e.g., 4 kV gear). New substation equipment will be similar to existing (e.g., 69 to 4 kV transformers). 	<ul style="list-style-type: none"> CMU block construction. Two levels / floors for Electrical Switchgear Building. Several rooms (electrical equipment, control equipment, batteries, mechanical, and cable / tray routing).

	access/maintenance.		
Lime Slurry Improvements (83)	<ul style="list-style-type: none"> • Located south of backwash supply tank/tower. 	<ul style="list-style-type: none"> • Replacement of process equipment (lime). 	<ul style="list-style-type: none"> • Concrete equipment slabs and sun canopies. (no building)
Hypochlorite Bldg (84)	<ul style="list-style-type: none"> • Evaluate two options including locating bulk storage tanks and metering pumps near existing lime silo that will be demolished (Option 1) and equipment north of the filter washwater basins (Option 2). Equipment will be located under sun canopy. • Existing equipment in chlorine storage and feed rooms would be demolished. Where possible, interior walls will be removed to open up the area for storage. 		
Maintenance Storage Building (93)	<ul style="list-style-type: none"> • Existing building removed. • New building to serve the same function/use located north of existing Filter Wash Water Sludge Lagoons. 	<ul style="list-style-type: none"> • Storage area 	<ul style="list-style-type: none"> • CMU block or pre-fabricated steel building. • Single story. • No offices or restrooms.
Maintenance Storage Building 2 (94)	<ul style="list-style-type: none"> • Located in same area as existing Floc-Sed Basin No. 1 and north of proposed Ozone Building. 	<ul style="list-style-type: none"> • Storage area 	<ul style="list-style-type: none"> • CMU block or pre-fabricated steel building. • Single story. • No offices or restrooms.
Notes: <ul style="list-style-type: none"> (1) General descriptions do not include details about phasing and temporary facilities to support sequencing of work while facility remains online. (2) Yard piping and conduit modifications (size, alignment and profile) will be coordinated with structures and other buried utilities. (3) No conditioned workspaces or restrooms are included unless explicitly noted. 			

Task 16.3 – Packaging, Scheduling, and Financing Plan

Following the development of the construction cost estimates in the BODR the CONTRACTOR shall conduct a general contractor outreach and bid market analysis to assess market competition for a range of project sizes and types. This information will be used to support the division of the elements within the BODR into separate bid packages during detailed design development.

The CONTRACTOR will then work with CITY to update the overall Water+ program construction schedule based on the recommended construction package sizes. A package-level, cost-loaded schedule of the Water+ program will then be developed for presentation to CITY for internal funding consideration. Modifications to Water+ program schedule will then be implemented to align with the CITY’s anticipated approach to funding. The funding approach outlined by the CITY will be captured and combined with the updated program schedule.

The CONTRACTOR will review funding opportunities outside the CITY’s internal funding process. Options to be reviewed will include funding via SRF, WIFIA, and BABA. CONTRACTOR will collect information from the CITY and corresponding funding agency to summarize the details.

The results of work for this task will be codified in the Packaging, Scheduling, and Financing Plan Technical Memorandum. This task does not include CONTRACTOR cost of service or rate study efforts.

Meetings: (virtual)

- Progress Update
- Draft Packaging, Scheduling, and Financing Plan review

Deliverables:

- Draft Packaging, Scheduling, and Financing Plan (PDF, up to 10 hard copies)
- Final Packaging, Scheduling, and Financing Plan (PDF, up to 10 hard copies)

Assumptions:

- CITY will provide bid results from recent public works projects.
- CITY will assist in funding details for internally financed projects and provide contacts for outside agencies.
- No financial analysis will be conducted with regards to external funding options.
- Plan will be an appendix in respective BODR.

Task 16.4 – Sustainability Plan

CONTRACTOR will develop a report for both SRWTP and FWTP that reviews sustainability options and final selected options for implementation into final design. The Leadership in Energy and Environmental Design (LEED) program will be used to develop and score sustainability concepts for new buildings. The Envision program will be used to develop and score sustainability concepts for individual projects. Early during the project, a sustainable kick-off meeting will be conducted to summarize the overall approach of the two programs and detail how scores are developed and impacted by the layout, materials, and equipment selected. Once the BODR is developed for SRWTP and FWTP, a preliminary scoring for LEED and Envision will be developed. In areas that are lacking project definition scoring will be estimated based on facilities of similar function and layout. Additionally, a brief discussion on potential changes to the preliminary design and impacts on the scoring will be provided to understand how future changes during design could impact the

scores. The results of the sustainability work will be integrated as a supporting document in the BODR.

Sustainability concepts and options for LEED certification will be developed based on the type of building and its primary use/function. Most of the proposed new facilities at SRWTP and FWTP have a primary use centered around meeting drinking water regulations and usually being a non-occupiable space. Support facilities such as administration and maintenance have more latitude for integrating sustainability concepts to aid in LEED certification. Buildings at SRWTP that will be reviewed for LEED certification include the Chemical Building South (80), Electrical & Instrumentation Building (93), and Maintenance Building (94).

A discussion will be provided to detail the considerations of a “certified” facility compared to a facility designed to LEED or Envision requirements. Details will include general costs (order of magnitude) at the design, construction and operating level and impacts on project schedule. A detailed cost evaluation between non certified project, certified project and design to LEED (or Envision) project will not be conducted.

Envision certification will be reviewed for the final facility master plan at build-out conditions for SRWTP and FWTP rather than piecemeal for each successive construction project. After completion of each construction project, the Envision scoring will be documented and used as the basis for the next project. Any future changes to the facility master plan or advent of new scoring categories within Envision should be reviewed for impacts on the scoring and final certification.

Meetings: (in person)

- Sustainability kick-off workshop (SRWTP & FWTP)
- Workshops for SRWTP (2-LEED, 1-Envision)
- Workshops for FWTP (2-LEED, 1-Envision)
- Draft SRWTP Sustainability Master Plan review
- Draft FWTP Sustainability Master Plan review

Deliverables:

- Meeting agenda and minutes (PDF)
- Draft SRWTP Sustainability Report (PDF, up to 10 hard copies)
- Final SRWTP Sustainability Report (PDF, up to 10 hard copies)
- Draft FWTP Sustainability Report (PDF, up to 10 hard copies)
- Final FWTP Sustainability Report (PDF, up to 10 hard copies)

Assumptions:

- If CITY decides to increase the LEED or Envision certification level after the preliminary scoring, then building or project will need to go back to the predesign phase to properly scope and define the project. There should be no advancement in final design if the certification level or goals are changed.
- LEED or Envision development will prioritize facility treatment, operating and maintenance needs over non-process needs.
- Plan will be an appendix in respective BODR.

Task 16.5 – Alternative Energy Plan

CONTRACTOR, in close coordination with CITY, will analyze energy storage technologies at the SRWTP and FWTP by:

- Identifying suitable technologies for energy storage.
- Developing criteria to analyze suitability of technologies for a microgrid application.
- Analyzing operating constraints, physical size requirements, and potential risks of each technology.
- Developing conceptual site layouts at SRWTP and FWTP if technologies appear feasible at the desktop level evaluation.

Based on the analysis the CITY's desired approach for energy generation, storage, or management will be codified within the Alternative Energy Plan. This Plan will then be used to guide subsequent phases of work.

Meetings: (virtual)

- Progress Update
- Draft Alternative Energy Plan review

Deliverables:

- Draft Alternative Energy Plan (PDF, up to 10 hard copies)
- Final Alternative Energy Plan (PDF, up to 10 hard copies)

Assumptions:

- CITY will provide bid results from recent public works projects
- Plan will be an appendix to the SRWTP BODR.
- Project element(s) selected for implementation from this plan by the CITY may require a CEQA amendment.

Task 16.6 – Public Outreach Plan

CONTRACTOR, in close coordination with CITY, will continue existing public outreach efforts on behalf of the Water+ Program. The following is intended to guide future engagement on the work-to-date and current Program description.

CONTRACTOR, building off current outreach efforts, will develop a Public Outreach Plan to guide Water+ communications as it enters public-facing design and construction activities. This plan may include strategies to highlight the benefits and impacts of Water+, as well as community feedback on design of program components. These efforts are crucial to help keep the Sacramento community well-informed, engaged, and supportive of the efforts to enhance the CITY's water supply resiliency and infrastructure.

The plan will outline a framework for engaging with the community, disseminating information about the program's goals, and gathering feedback on proposed improvements. While specific outreach activities will be defined in detail during the planning process, the scope may include:

- Community engagement and feedback mechanisms
- Information dissemination strategies
- Stakeholder involvement plans
- Public meeting and workshop outlines

- Collateral development and methods of soliciting feedback

The development of this plan will be guided by a thorough understanding of the community's needs, concerns, and interests regarding the Water+ program and its impact on the CITY's water supply and infrastructure.

Meetings: (virtual)

- Workshops for plan development (3)
- Draft Public Outreach Plan review (1)

Deliverables:

- Meeting agenda and minutes (PDF)
- Draft Public Outreach Master Plan (PDF, up to 10 hard copies)
- Final Public Outreach Master Plan (PDF, up to 10 hard copies)

Task 16.7 – Historical Facilities Plan

In parallel with the Public Outreach Plan, the CONTRACTOR will develop the Historical Facilities Plan for SRWTP. There are multiple historical facilities in close proximity to planned project activities. The CONTRACTOR, in close coordination with CITY, will develop a guiding document for the Water+ program that outlines the CITY's desired approach to these facilities. The approach will define if the anticipated construction activities are limited to protect and monitor these historic structures, or if improvements to these structures are desired. To support the decision-making process, two conceptual plan layouts of both the High Lift Pump Station and Head House, will be developed for useable office/meeting space. If improvements are desired, the level and extent of improvements will be discussed with CITY stakeholders (including the City Preservation Commission and Planning and Design Commission) along with the CITY's method of implementing these improvements (outside of the Project or inside of the Project by amendment). These decisions will then be codified within the Historical Facilities Plan.

Meetings: (virtual)

- Progress Update
- Draft Historical Facilities Plan review

Deliverables:

- Draft Historical Facilities Plan (PDF, up to 10 hard copies)
- Final Historical Facilities Plan (PDF, up to 10 hard copies)

Assumptions:

- Scope does not include condition assessment activities.
- Plan will be an appendix to the SRWTP BODR.

Task 16.8 – Engineering Support Services

CONTRACTOR will perform the services listed under this task to support the BODR and subsequent final design. Work under this task includes the following:

- Geotechnical investigation
 - Existing geotech reports provided by CITY will be reviewed.
 - SRWTP (plant site): Conduct field exploration (qty=18 boreholes; approximately 70 to 100 feet in depth) and laboratory analysis to provide recommendations to support civil and structural design efforts. While many of the existing buildings are pile supported, evaluate the feasibility of mat or buried footing foundations based on the site-specific borings.
 - SRWTP (Intake No. 3 and pipe conveyance): Conduct six (6) borings (approximately 65 to 95 ft in depth) in the Sacramento River and twenty (20) borings (approximately 45 to 75 ft in depth) along pipe alignment from intake to plant. Provide geotechnical recommendations related to cofferdam design, pump station foundation, levee crossing, sending and receiving pit construction for crossing under I-5 and excavation support/shoring of pipeline.
 - SRWTP (existing Intake drive access): Conduct three (3) borings to a depth of 100 ft. Provide geotechnical recommendations for repairing the access drive and mitigate against future settlement between the access drive and main plaza/rotunda.
 - FWTP (plant site): Conduct field exploration (qty=7 boreholes; approximately 70' to 100' in depth) and laboratory analysis to provide recommendations to support civil and structural design efforts. Develop two (2) foundation options for each structure.
 - Corrosivity: Two (2) samples from each area (SRWTP, SRWTP conveyance, FWTP) will be analyzed for resistivity, pH, chloride and sulfate content with levels of corrosivity determined based on industry standards (e.g., ACI, Caltrans).
- Survey
 - Four (4) interior rooms of the existing SRWTP Chemical Building will be surveyed as a 3D image (e.g., LiDAR). This model will be used to develop computer aid design (CAD) background/model needed to develop the design drawings.
 - Topographic survey will be conducted around the area of the proposed new facilities at SRWTP and FWTP to provide an as-built basemap for the area and establish project control.
 - An aerial survey will be conducted for the entire fenced area for SRWTP and FWTP plus a 50-foot boundary beyond.
 - An aerial survey will extend to off-site areas for SRWTP and FWTP including: alignment of storm water lines, existing Intake No. 2, greenbelt/parkway near proposed work, proposed Intake No. 3 and the proposed raw water conveyance pipeline (from Intake No. 3 to SRWTP).
 - Additional ground survey will be used to detail areas for SRWTP and FWTP that were not visible for the aerial survey (e.g., tree canopy, roof overhangs, or critical elevations inside buildings).
 - Geotech borings and pothole locations will be surveyed based on reference points left in the field after that work is complete.
- Hazardous material testing (Existing SRWTP Maintenance Building)
 - Samples will be collected from equipment and materials that will be removed to determine if special handling procedures will be needed during construction.
 - Four (4) samples for lead and asbestos testing have been budgeted for this work.
- Potholing
 - Potholes will be made to confirm location of buried utilities (pipes, conduits, ductbanks) at depths up to 12 feet below grade utilizing a vector truck.
 - SRWTP: Eight (8) potholes in the area of the proposed and Chemical Storage - North (82) and Maintenance Building (94).

- FWTP: Four (4) potholes in the area west and south of the Filters (52).
- Intake RW Conveyance: Eight (8) potholes along public right of way of proposed pipe alignment, includes traffic control.
- SW Outfall Modification: Two (2) potholes in Summit Tunnel Avenue and Bercut Drive.
- SRWTP Pilot Study Support
 - CONTRACTOR will provide technical support related to CITY-operated pilot plant. The pilot will simulate the current process at the plant (pretreatment + media filtration) and will be used to test process changes (e.g., type of chemical, dose, addition of ozone, etc.). This tool will aid staff in understanding impacts on the full-scale plant performance before such changes are implemented.
- Engineering Support (As-Needed Basis)
 - This task is an allowance to allow CONTRACTOR to perform out-of-scope tasks as directed by the CITY. Works will not start on tasks until notice to proceed, specific to the tasks, is issued by the CITY.
- Permit Assistance
 - Department of Drinking Water (DDW): CONTRACTOR will support CITY in preparing application package (BODR to be included) to DDW for the amended operating permit. This task includes preparing responses to questions developed by DDW. This does not include design/construction related permitting support associated with early out package(s) for chlorine conversion, SRWTP maintenance building, FWTP electrical upgrades, or stormwater improvements at SRWTP/FWTP.
 - CONTRACTOR will coordinate with CITY and environmental subconsultant to integrate and refine integration of EIR mitigation measures based on final layout of facilities in BODR.

Assumptions :

- Support services field work will be coordinated by CONTRACTOR to avoid multiple mob/demob efforts. Most field work activities assume one (1) mob/demob per SRWTP (or FWTP) site except survey which includes two (2) mob/demob events.
- No other permits (e.g., building department review/permit) are included as part of CONTRACTOR's responsibility except those explicitly listed above.
- Permits related to construction activities onsite or within public right-of-way (e.g., stormwater discharge, encroachment, grading) would be during the detailed design phase and the responsibility of the construction contractor.
- Survey will not include a boundary survey for either SRWTP or FWTP. New parcel boundary for SRWTP will be done separately by CITY as part of acquisition of properties along existing northern boundary and in southeast corner.
- Survey work will be done to support predesign and design services and will not include record survey or establishing or preserving survey monuments.
- Bench- or pilot-scale water quality and process testing and their associated sample laboratory analyses are not included in this scope of work.

Meetings: (virtual)

- Workshops for permitting - SRWTP (3)
- Workshops for permitting - FWTP (3)

Deliverables:

- Draft Geotechnical Report - SRWTP (PDF, up to 10 hard copies)
- Final Geotechnical Report - SRWTP (PDF, up to 10 hard copies)
- Draft Geotechnical Report - FWTP (PDF, up to 10 hard copies)
- Final Geotechnical Report - FWTP (PDF, up to 10 hard copies)
- Potholing Plan – SRWTP (PDF, up to 10 hard copies)
- Potholing Plan – FWTP (PDF, up to 10 hard copies)
- Permit Packages – SRWTP (PDF)
- Permit Packages – FWTP (PDF)

Task 17 – Final Environmental Impact Report

The draft Environmental Impact Report (EIR) developed during the Conceptual Design phase of work will be adjusted based on the final project definition as developed in the BODR. CONTRACTOR will perform the following activities as part of this task:

- Support Water+ email and Water+ voice mails for a period of 12-months following Draft EIR submission to state clearinghouse.
- Discuss impacts on EIR and revise EIR documents based on overhead and underground service for new transformers to receive 2-69kV services at FWTP.
- Discuss impacts on EIR and revise EIR documents based on overhead and underground service from new SMUD J-Substation near SRWTP.
- Discuss impacts on EIR and revise EIR documents based on drainage improvements at FWTP including a new stormwater line along the south side of FWTP along College Town Drive from State University Avenue to Howe Avenue.
- Discuss impacts on EIR and revise EIR documents based on drainage improvements at SRWTP including a new stormwater line on the south side of SRWTP along Summit Tunnel Avenue to Bercut Drive.
- Compile comments on Draft EIR following public review period.
- Prepare responses to comments with assistance from CITY.
- Develop Final EIR per CEQA Guidelines section 15312.
- Coordinate and develop Mitigation Monitoring and Reporting Program (MMRP).
- Assist CITY in the certifying process of the EIR documents.
- Prepare Notice of Determination (NOD).
- Attend two (2) public meetings (1-public review, 1-CITY Council) and assist CITY in preparing meeting materials.
- Model impacts of American River water temperature based on modifications at FWTP.

Meetings:

- Progress meetings (once every 2 weeks at same time as weekly Project Progress Meetings)
- Outreach meetings related to Tribal Cultural Resources, AB52 (2)
- Public review (2)
- Coordination meetings (2)

Deliverables:

- Meeting agenda and minutes (PDF)
- Draft EIR (PDF and two hard copies)
- Final EIR (PDF and two hard copies)

Assumptions:

- CITY will assist in drafting responses to agency review comments.
- No significant re-scope of proposed expansion or modification work or environmental analysis at SRWTP or FWTP will be required.
- CITY will post NOD with the County and pay filing fees.

Task 18 – Bench-Scale Ozone Testing

CONTRACTOR will perform bench-scale testing to confirm ozone design criteria on settled water samples collected from SRWTP and FWTP. Three (3) rounds of sampling and testing will be performed for each plant. Carollo’s Water ARC® facility in Boise, Idaho will perform testing with outside lab analytical support (e.g., Eurofins) where needed.

Sampling dates for each round of testing may be adjusted based on coordination with CITY staff and plant operations. The fall/winter round of sampling will be conducted prior to the annual shutdown of either plant. An allowance task has been included for analytical work in case there are water quality constituents that appear in the raw water (e.g., MIB, geosmin, anatoxin, microcystin).

Task 18.1 – Sampling and Testing

CONTRACTOR will collect samples from the common settled water channel at each plant. Ozone testing samples will be shipped overnight and stored in a cold room. Lab analytical samples will be shipped to Eurofins. Bench-scale testing will be conducted within 3 weeks of sampling. A detailed description of parameters to test is provided in the table below. If taste and odor compounds (e.g., MIB) are detected during sampling, then additional analysis will be conducted on these compounds to confirm ozone treatment effectiveness.

Three (3) rounds of sampling and testing will be conducted. Approximate time frames of sampling is presented in the “Schedule” section below. The goal will be to sample across the year to collect seasonal variation in ozone demand in the water. The test matrix may be adjusted based on results collected after the first round of testing. CONTRACTOR will present preliminary findings after each round of testing is complete.

OZONE TESTING PLAN ⁽¹⁾	
EVENT	DESCRIPTION OF WORK
Field Sampling	<ul style="list-style-type: none"> • Collect plant water quality data measured during the day of sampling⁽²⁾. • Collect one 5-gallon container from each plant and overnight to Boise, Idaho for testing⁽³⁾. • Collect samples for alkalinity, bromide, calcium, hardness, pH, total organic carbon, and turbidity.
Bench-scale testing	<ul style="list-style-type: none"> • Measure alkalinity, pH, total organic carbon, and turbidity upon receipt of samples. • Develop an ozone demand and decay curve for the following conditions: <ul style="list-style-type: none"> • Two temperatures⁽⁴⁾: SRWTP (60 & 84°F), FWTP (50 & 72°). • Five ozone dosages: 0.5, 1, 2, 3 and 5 mg/L ozone (applied) • Ozone residual/decay at seven hydraulic retention times (HRT=1, 2, 4, 6, 8, 10 and 15 minutes) • Three chlorine residuals: 0.25, 0.5, 1, and 1.5 mg/L for determining ozone demand (at one temperature) • Measure bromate and manganese at each temperature and ozone dose at 15-minute HRT. • Develop demand curve for ozone quenching for the following conditions: <ul style="list-style-type: none"> • Two chemical types: sodium bisulfite, calcium thiosulfate. • Dosage: Stoichiometric, 50% above stoichiometric, 100% above stoichiometric. • Ozone residual at four retention times (1, 2, 3 and 4 minutes). • Two ozone residuals at start of test: 0.5 and 2 mg/L ozone
<p>Notes:</p> <p>(1) This table details the tests for one round of sampling and testing at each site, SRWTP and FWTP. There will be a total of three (3) rounds of testing distributed across the seasons to capture the seasonal variability in water quality. Ozone quenching tests will only be done in Round 1.</p> <p>(2) Data include but are not limited to temperature, turbidity, pH, alkalinity of raw water and settled water.</p> <p>(3) Round 1 of sampling will require two 5-gallon samples from each plant. Additional sample volume needed for ozone quenching tests.</p> <p>(4) Temperature range represents historical average low temperature during winter months (Oct-April) and 95th percentile during summer months (May-Sept). Testing temperature will be within 3°F +/- of listed historical values.</p>	

Meetings: (virtual)

- Kickoff
- Project Progress (after results from each round of testing)
- Draft TM review comments

Deliverables:

- Draft lab results in tabular/graphical tables format following each sampling/testing round (PDF)

Assumptions:

- CITY will provide site access for Carollo staff to collect samples.
- CITY will provide water quality data.

Task 18.2 – Technical Memorandum

CONTRACTOR will develop a technical memorandum to document activities and results from bench-scale testing.

Meetings: (virtual)

- Preliminary Testing Results (3)
- Draft TM review comments (1)

Deliverables:

- Draft lab results in tabular/graphical tables format following each sampling/testing round (PDF)
- Draft TM after final round of testing (PDF)
- Final TM (PDF)

Task 19 – Additional Evaluations

Additional evaluations in support of these services will be approved by the CITY's project manager on an as-needed basis.

BUDGET

The total fee for work described herein is \$9,201,182. Costs will be billed on a monthly basis on a time and materials not-to-exceed basis. A detailed fee breakdown and current hourly rates are as shown in the attached Budget Table and Fee Schedule. The Fee Schedule is subject to annual adjustments.

SCHEDULE

The work will be conducted over approximately 16 months from the Notice-to-Proceed to final deliverable (BODR). It should be noted that comments from the CITY should be made within the review periods noted in the table. If comments from the CITY or other stakeholders extend past this review period, then adjustments will be required to the listed dates. Key dates for deliverables are summarized below.

PROJECT MILESTONES		
TASK	DESCRIPTION	DATE ⁽¹⁾ ⁽²⁾
Basis of Design Report (BODR)		
	SRWTP Stormwater Outfall	January 30, 2025
	Chlorine Conversion (SRWTP, FWTP)	April 1
	SRWTP Maintenance Building	May 17
	Posting of NOD (Final EIR)	July 1
	Final BODR	January 26, 2026
Bench-scale Ozone Testing		
	Round 1 Sampling / Testing	October 2024 ⁽³⁾ ⁽⁴⁾
	Round 2 Sampling / Testing	April 2025
	Round 3 Sampling / Testing	July 2025
	Draft TM	September 15
	Final TM	October 20
Notes: (1) Based on Notice-to-Proceed (NTP) of October 1, 2024. If NTP shifts forward, then subsequent dates for deliverables also shift. (2) 3-week review period by CITY for each deliverable included in schedule. (3) Ozone testing schedule based on an NTP of October 1, 2024. If NTP shifts forward, then subsequent dates for deliverables also shift. (4) Approximate time frame. Date of sampling to be coordinated with CITY staff. Draft results to the CITY are anticipated approximately 4 weeks after sampling.		

