

FOURTH AMENDMENT TO AGREEMENT

THIS FOURTH AMENDMENT TO AGREEMENT ("Amendment") made and entered into as of this _____ day of _____, 2015, amends the Agreement heretofore entered into between the CITY OF FRESNO, a municipal corporation, ("CITY"), and CAROLLO ENGINEERS, INC., a Delaware corporation ("CONSULTANT").

RECITALS

WHEREAS, CITY and CONSULTANT entered into a professional services Agreement, dated June 24, 2013 ("Agreement") for the design of plans, generation of construction contract documents, and construction support services for the 80 million gallon per day ("80MGD") Southeast Surface Water Treatment Facility ("SESWTF") for a total fee of \$9,149,600 and a project contingency of \$841,400, which was amended July 21, 2014 ("First Amendment"), and subsequently amended on August 24, 2014 ("Second Amendment"), and on August 20, 2015 ("Third Amendment"); and

WHEREAS, the First Amendment utilized \$225,000 of the original project contingencies for additional services related to the design of the facility electrical sub-station resulting in an adjusted total CONSULTANT fee of \$9,374,600 and a remaining contingency of \$616,400; and

WHEREAS, the Second Amendment consisted of deferment and defunding of Part Five of CONSULTANT's original scope to accommodate and provide additional engineering services for the design and generation of construction plans and documents for the Kings River Raw Water Pipeline for the SESWTF, including an increase of CONSULTANT's compensation in the amount of \$52,867 utilizing project design contingencies resulting in an adjusted total CONSULTANT fee of \$9,427,467 and a remaining contingency of \$563,533; and

WHEREAS, the Third Amendment consisted of additional CONSULTANT agency coordination, surveying and design efforts required to complete the 100 percent construction documents. CONSULTANT's compensation for the Third Amendment was \$18,170, with costs funded from original project contingencies resulting in an adjusted total CONSULTANT fee of \$9,445,637 and a remaining contingency of \$545,363; and

WHEREAS, this Fourth Amendment will provide Construction Management and Services During Construction (CM/SDC) by the CONSULTANT that include assisting the City in administering the construction contract, monitoring the performance of the construction contractor, and provide the necessary oversight in the project meeting design intent; and

WHEREAS, the parties have negotiated an increase of \$9,442,415 in CONSULTANT compensation which will be partially offset to a value of \$8,897,052 through utilization of remaining Design Service Contingencies resulting in an adjusted total CONSULTANT fee of \$18,929,052 for work as further described in Exhibit A; and

WHEREAS, CITY now desires to amend the CONSULTANT's scope of work to account for changes noted in Exhibit A and in the above stated recitals; and

WHEREAS, with entry into this Amendment, CONSULTANT agrees CONSULTANT has no claim, demands, or disputes against CITY.

AGREEMENT

NOW, THEREFORE, in consideration of the above recitals, which recitals are contractual in nature, the mutual promises herein conditioned, and for other good and valuable consideration hereby acknowledge, the parties agree that the aforesaid Agreement be amended as follows:

1. Subsection (a) of Section 3 Compensation of the Agreement is amended in its entirety to read as follows:

CONSULTANT's sole compensation for satisfactory performance of all services required or rendered for the Project pursuant to this Amendment shall be a total fee of \$9,442,415. Such fees include all expenses incurred by CONSULTANT in performance of such services. The total fee for CONSULTANT is \$18,929,052.

2. Work related to the Agreement and this Amendment assure implementation and expeditious completion of Construction Management Services on or before the expiration of the respective limits as set forth in Exhibit A and the construction contract documents.

3. Except as otherwise provided herein, the Agreement, First Amendment, Second Amendment, and Third Amendment entered into by CITY and CONSULTANT on June 24, 2013, July 21, 2014, August 24, 2014, and August 20, 2015 respectively, remain in full force and effect.

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IN WITNESS WHEREOF, the parties have executed this Amendment at Fresno, California, the day and year first above written.

CITY OF FRESNO,
a municipal corporation

CAROLLO ENGINEERS, INC.,
a Delaware corporation

By: _____
Thomas C. Esqueda,
Director of Public Utilities

By: Ken Wilkins

Name: Ken Wilkins

Title: Sr. Vice President
(If corporation or LLC, Board Chair,
Pres. or Vice Pres.)

ATTEST:

YVONNE SPENCE, CMC
City Clerk

By: [Signature]

Name: MICHAEL BRONES

Title: SECRETARY
(If corporation or LLC, CFO, Treasurer,
Secretary or Assistant Secretary)

By: _____
Deputy Date

APPROVED AS TO FORM:
DOUGLAS T. SLOAN
City Attorney

By: [Signature] 11/28/15
Brandon M. Collet Date
Deputy

**EXHIBIT A
SCOPE OF SERVICES**

**CITY OF FRESNO
DEPARTMENT OF PUBLIC UTILITIES – WATER DIVISION
(CITY)**

AND

**CAROLLO ENGINEERS, INC.
(CONSULTANT)**

**SOUTHEAST SURFACE WATER TREATMENT FACILITY PROJECT
(PROJECT)**

PURPOSE

The purpose of this Scope of Services is to set forth CONSULTANT's services, time of performance, and payment.

Services are generally defined as construction management and engineering support during construction for the PROJECT.

This Scope of Services is hereby made part of the "Agreement for Professional Parties" executed June 24, 2013.

CONSULTANT SERVICES

CITY plans to construct the PROJECT and seeks professional services from CONSULTANT. The services shall include the following work elements:

1. Construction Management.
2. Resident Engineering and Field Observation.
3. Office Engineering Support.
4. Start-up Support and Project Close-Out

PROGRAM MANAGER

The Recharge Fresno Program Manager is considered an extension of the CITY's staff and is included in any reference herein to the "CITY."

CONSTRUCTION PERIOD

The construction work is expected to commence not later than December, 2015 and be complete not later than the end of September 2018, per the Contract Document requirements for a 1000 day construction duration. CONSULTANT shall provide construction support services, including such services related to the site Security System contract, through the end of December 2018 for project-close out. If services are required beyond December 2018, CITY and CONSULTANT shall mutually determine the required level of effort to complete the Project and a new Scope of Services or amendment to this Scope of Services shall be executed to address these services.

SCOPE OF SERVICES

GENERAL ASSUMPTIONS

Level of Effort

The scope of services and estimated work effort are the CONSULTANT's best judgment of the work required.

CONSULTANT has familiarized itself with the scope of services which are to be performed pursuant to this Agreement and as required in the contract documents for the Project, is in the business of providing the services to be performed hereunder, and is qualified, able, and willing to undertake the work specified herein.

CONSULTANT possesses all required licenses and certifications to perform its obligations under this Agreement, and is familiar with all applicable laws and standard procedures and all Program requirements, including DPU Construction Management Guidelines.

CONSULTANT shall work under, and at the direction of, the CITY's Project Manager, which may be a CITY of Fresno employee or a team member of the Recharge Fresno Program Manager.

Construction Records and Documentation

CONSULTANT shall maintain files and related construction documentation and is responsible for the completeness and accuracy of all records under this Scope of Services. All construction documentation/records and contract administration shall be performed, maintained, and archived by the CONSULTANT using CITY-provided Microsoft SharePoint based document management system.

File Access

CITY shall have full and complete access to all construction-related files created by the CONSULTANT during the Project for up to ten (10) years after the completion of the Project. Such access shall include the right to copy any and/or all such files at the CITY's expense.

Claim/Dispute Resolution

The CITY's Project Manager has overall responsibility for claims and dispute resolution and will provide an escalation strategy to resolve disputes at the lowest possible level, in the shortest amount of time.

The Construction Manager shall support the claims and dispute resolution process as follows:

- Coordinate dispute resolution in accordance with contract documents and maintain a log noting status and potential impact of all such disputes.
- Coordinate dispute resolution using escalation strategy, and direct the Construction Management Team to work within the Strategy.
- Escalate disputes for higher level consideration, up to and including claims processing in accordance with the contract documents
- Prepare complete documentation packages for and assist the CITY's Project Manager with presentations to the Program Change Board.

CONSULTANT may provide additional advisory support for dispute resolution and claims (see Work Element 4 – “Optional Services,” of this Scope of Services).

Services Provided by the CITY

The CITY is providing the following seven services to support the construction of the project:

1. Inspection and construction acceptance of facilities and systems as described in the DPU/BSSD Memorandum of Understanding (see Exhibit “B”).
2. Updates and maintenance of all project specific SharePoint document management systems and contract administration work flows.
3. Procure server hardware and software packages and/or any licenses that may be required related to electronic O&M Manuals
4. With support from the CONSULTANT and Construction Manager, provide Professional Services for SCADA Programming and coordination for implementation and procurement of up to six (6) Program licenses.
5. Provide and update the Construction Management Guide to provide processes, systems, and tools.
6. Lead all community interaction activities.
7. Construction safety oversight consultant and labor compliance consultant services.

CONSULTANT Construction Manager shall be responsible for coordinating these services with the construction work.

Construction Field Office

The CITY shall provide through the Contractor a furnished trailer for the on-site CONSULTANT’s staff. The trailer shall be provided with phone, internet, and copier/scanner. The CONSULTANT shall provide all computers, local printers, and monitors for each of its on-site personnel.

WORK ELEMENT 1 – FIELD CONSTRUCTION SUPPORT SERVICES

1.1- Construction Management

CONSULTANT shall provide a Construction Manager, Resident Engineer(s), Field Inspection, Administrative Support, Specialty Materials Testing, Environmental Compliance, and Project Management oversight and support.

Construction Manager shall coordinate with CITY staff, and other CONSULTANT staff and support disciplines including other consultants that may be contracted directly with CITY.

Construction Manager, acting as a representative of the CITY, shall administer the Contract Documents for the CITY and be supported by the Resident Engineer in the tasks outlined below. Construction Manager shall be the primary point of contact for the CITY and Contractor, and shall manage the execution of the work performed under this agreement, coordinate activities of staff, direct work assignments, and review work performed.

The CITY has the right to contact the Contractor directly for Quality Assurance purposes and/or for other reasons that serve their interests.

All project communication between the CITY and the Contractor shall be transmitted through the Construction Manager. Construction Manager shall:

- Receive Contractor correspondence and prepare and transmit responses, and shall review significant construction issues with and copy CITY on all formal correspondence to/from Contractor.
- Conduct and record weekly progress meetings with the Contractor and CITY to discuss status of the work and short-term work activities planned by the Contractor.
- Prepare meeting agendas and meeting records of discussions for distribution to meeting attendees, and shall schedule and conduct special meetings for planning, sequencing, and organizing the work, as needed, on a timely basis.

1.1. A - Schedule Review/Progress Payment Review

Construction Manager/Resident Engineer shall:

- Review Contractor's baseline schedule and updated CPM schedules for reasonableness of activity durations, sequencing and completeness.
- Review schedule issues with CITY.
- Review and approve construction Schedule of Values for progress payments.
- Review the work progress as compared to the Contractor's monthly schedule updates and advise on progress of work relative to progress payment requests, and apprise CITY of any schedule deviations and recovery plans.
- Track and confirm all equipment and materials for which Contractor requests payment prior to installation, and confirm items are stored and maintained per manufacturer's requirements and recommendations.
- Review and analyze the Contractor's CPM schedule to determine impact of delays, Change Orders, and/or weather delays on the overall project schedule.
- Monitor Contractor's three-week schedule on a weekly basis at the weekly progress meeting and compare the three week schedule with the latest updated CPM schedule.
- Prepare and submit to CITY a status report each month describing key construction issues, cost status, schedule status, and project progress.
- Support Labor Compliance Officer to conduct monthly interviews, obtain, and review certified payrolls, and receive and file monthly labor compliance reports prepared by the Labor Compliance Officer.

1.1.B - Submittal Management

Construction Manager/Resident Engineer shall receive, process, and monitor Submittals from the Contractor and shall coordinate responses to submittals. The Construction Manager shall conduct discussions and/or meetings with the Contractor, CITY, CONSULTANT Design Team, and other parties as needed to complete the submittal review and approval process in a timely manner. In so doing, CITY

Construction Manager may coordinate directly with CONSULTANT's field design team staff, or with CONSULTANT's office design team staff. Construction Manager shall coordinate with the CONSULTANT Design Team to complete submittal response turnaround within an average of 21-days of receipt.

1.1.C - Request for Information (RFI) Management

Construction Manager/Resident Engineer shall receive, process, and monitor Requests for Information from the Contractor and shall coordinate responses to RFIs that are related to construction issues or design issues. The Construction Manager shall conduct discussions and/or meetings with the Contractor, CITY, CONSULTANT Design Team, and other parties as needed to resolve RFIs in a timely manner. In so doing, CITY Construction Manager may coordinate directly with CONSULTANT's field design team staff, or with CONSULTANT's office design team staff. Construction Manager shall coordinate with the CONSULTANT Design Team to complete RFI response turnaround within an average of 7-days of receipt.

1.1.D - Change and/or Re-Work Management

Construction Manager/Resident Engineer shall:

- Use the CITY's Change Management work flow to initiate, discuss, prepare, negotiate, approve, pay, and document Change Orders including preparations to the Program Change Board.
- Perform Change Order administration, including issuing proposed Change Orders and Work Change Directives to Contractor, maintaining logs of proposed and approved Change Orders, receiving Change Order quotations from Contractor, negotiating Change Order costs and time extensions, processing final negotiated Change Orders through the Program Change Board, and incorporating approved Change Orders into progress payment schedule of values.
- Perform quantity and cost analysis as required for negotiation of Change Orders. Coordinate with the CITY and CONSULTANT Design Team as required for review and processing of Change Orders.
- Prepare scope of Change Orders and Work Change Directives based on drawings, specifications, and other design information. Prepare scope of Change Orders that are related to construction issues. Review Change Order requests with CITY.
- Issue Non Conformance Notices and keep a status log.
- Implement a process for tracking and monitoring the correction of the defective work identified as non-conforming to the Contract Documents.

1.2 – Resident Engineering and Construction Observation

In addition to the Resident Engineer the CONSULTANT shall provide Field Staff to inspect and document construction activities.

The Resident Engineer/Field Staff shall perform field inspection of construction work performed by the Contractor as the work progresses, and to advise the CITY whether the work is in conformance with the contract documents, and to notify CITY of any observed work items that are not in conformance.

The Resident Engineer/Field Staff, via the Construction Manager, shall notify the CITY within one working day of non-conforming work. Upon agreement of actions with the CITY the Construction Manager shall notify the Contractor in writing of non-conforming or rejected work, and shall issue instructions regarding corrective actions required and direct Contractor to immediately advise the CITY on the proposed corrective action plan and schedule. Construction Manager shall issue written correction notices to Contractor when necessary to address construction deficiencies and other matters not in conformance with the Contract Documents.

Resident Engineer/Field Staff shall prepare daily field inspection reports documenting observed construction activities and jobsite conditions, Contractor's manpower and equipment, work performed, and materials delivered and used. Resident Engineer/Field Staff shall also coordinate, witness, and document construction progress, major issues and deficiencies via date and time stamp digital photographs complete with work description, date and location. Daily reports and photographs shall be uploaded weekly.

Onsite inspections by Resident Engineer/Field Staff shall be supplemented by periodic site visits performed by CONSULTANT's specialty discipline staff, as needed. The Construction Manager shall coordinate these visits with specialty discipline staff to observe specific aspects of the ongoing construction work.

Review Contractor's survey data for key hydraulic structures and conveyance components for conformance with the with Contract Document design elevations.

CONSULTANT's Construction Management team shall perform its construction inspection services consistent with industry standard of care and CITY's standards and practices. Construction inspection services shall be for the sole purpose of enabling CONSULTANT's Construction Management and Design Team to determine whether the work is progressing in a manner indicating that the finished work shall conform to the Contract Documents, and to identify deficiencies for corrective action.

CONSULTANT's Construction Management and/or Design Team is not responsible to inspect or verify every element of the work or to discover each and every instance of non-compliance with the Contract Documents; however, the CONSULTANT's Construction Management and Design Team shall review the key components integral to the successful operation of the SEWTF to confirm compliance with contract documents.

Construction Manager shall also coordinate inspection and acceptance for all structures under the jurisdiction of CITY BSSD as defined in the AHJ Memorandum of Understanding, and similarly shall coordinate inspection and acceptance with Project elements under the jurisdiction of PG&E.

The Resident Engineer, via the Construction Manager, shall update the defective work lists on a weekly basis. Resident Engineer and Field Inspection staff shall observe the Contractor's remedial work on the defective/non-conforming work and confirm the acceptability of the work according to the QA/QC plans.

Assumptions

The CONSULTANT's Construction Management Team includes the following qualified technical experts:

- CONSULTANT's LOE and budget assumes approximately 3,120 hours for certified Specialty Inspection of reinforced concrete, epoxy dowel installation, masonry, shotcrete, high-strength bolts, structural steel, welding, fireproofing, protective coatings, and low/high voltage electrical work.
- CONSULTANT's LOE and budget assumes approximately 20 months for a full time Electrical Inspector to cover peak electrical construction including low/high voltage electrical work, conduit, duct banks, cabling, labeling, wiring installation/termination, grounding systems, and system loop testing.

1.3 - Construction Materials Testing and Review

Resident Engineer/Inspector shall develop, coordinate, provide, and implement quality control field and laboratory construction materials testing. Certified test results shall be reviewed and tracked for CONTRACTOR conformance with the Contract Documents.

Assumptions

- CONSULTANT's LOE and budget for materials testing laboratory services, including but not limited to compaction testing, concrete testing, and masonry mortar testing are based on quantity takeoffs for earthwork, concrete, and masonry construction.

1.4 - Environmental Compliance

Construction Manager shall develop, coordinate, provide, and implement an environmental compliance program in compliance with CEQA and the Contract Documents. The program will specifically include pre-construction surveys for biological, historical, and archaeological requirements in the Contract Documents, and shall also include development of a monitoring plan to ensure continued implementation and compliance of the Workers Environmental Awareness Program (WEAP) to be implemented by the Contractor.

1.5 - Job-Site Construction Record Drawings

Construction Manager and Resident Engineer shall oversee the Contractor's job-site construction record drawings regarding completeness and accuracy for the remaining course of construction, and shall:

- Quarterly, inspect the Contractor's official job-site construction record drawing set to verify compliance with record keeping requirements.
- Quarterly, review the record drawing markups submitted by the Contractor to check for accuracy, neatness, and to confirm that the job-site construction record drawing markups are complete for the remaining work to be completed.
- Keep an independent set of job-site construction record drawing information for use in verifying information provided by Contractor and to supplement Contractor provided drawing markups for the remaining work to be completed on the Project. The record information shall include, but not verify Contractor's construction work prior to work under this Task Order. Work to complete electronic records for all Contractor and CONSULTANT drawings from the job site is addressed in Work Element 3 below.

1.6 – Functional Performance Testing

The Construction Manager and Resident Engineer shall review the Contractor's Commissioning and Startup plans as to general conformance with the Contract Documents, and request from the Contractor modifications to the plans where the plans are determined to be incomplete, lacking detail, or are otherwise thought to be inadequate to demonstrate operational and performance requirements of the Contract Documents.

Construction Manager, Resident Engineer, and Field Staff shall observe, coordinate, and assist with commissioning and process startup, including all specified testing efforts by the Contractor, manufacturers, and shall receive test reports from Contractor and review for acceptance as necessary.

1.7- Partial and Final Acceptance - Punch List Assistance

Resident Engineer/Field Inspection staff, working with Construction Manager, shall complete documentation and provide coordination required for recommendation of final acceptance and closeout of the construction contract, including preparation of a final punch list of items requiring corrective action by the Contractor prior to Contract Closeout.

Construction Manager shall review project elements for substantial completion and final acceptance. Work shall include compilation of punch lists, supported via site visits by CONSULTANT's specialty discipline as necessary to develop a complete list.

Construction Manager shall confirm receipt of warranties, guarantees, spare parts, maintenance materials, and other items required of the Contractor, and will manage the turnover to the CITY.

WORK ELEMENT 2 – SPECIALTY FIELD ENGINEERING SUPPORT

2.1 – Discipline Engineer Field Support

CONSULTANT shall provide specialty discipline engineering support with primary responsibility to complete specific subtasks as identified by the Construction Manager. Engineering specialty disciplines shall visit the construction site to provide field consultation with respect to such items as design intent, interface issues of existing systems and equipment, structural inspection of critical structures and connections, geotechnical observation and consultation, and other related technical issues pertinent to the document conformance with the Contract Documents.

CONSULTANT shall provide field engineering services as needed during construction and startup for the duration of the Project through issuance of a Notice of Final Completion.

WORK ELEMENT 3 – OFFICE ENGINEERING SUPPORT DURING CONSTRUCTION (ESDC)

The ESDC services include combined office engineering, start-up/training services, and Project Close Out services, as defined herein. CONSULTANT office engineering support during construction shall include cooperative support with the CITY in development of the Project SCADA Programming "Request for Proposal" for the Project.

The scope of these services is based on a construction period of 1000 days from Contractor notice-to-proceed, which is estimated to occur not later than December, 2015. The Scope of Services is based on completion of final commissioning by end September 2018, and completion of all Project Close Out services following final commissioning by end December 2018.

3.1 - Shop Drawing Submittal Review

CONSULTANT shall receive, log, review, comment on, and return shop drawings, submittals, and samples provided by the Contractor via the Construction Manager. The purpose of reviewing submittals by CONSULTANT is to determine if the equipment and materials proposed by the Contractor shall meet the design intent of the Project and the requirements stipulated in the Contract Documents. CONSULTANT Design Team shall coordinate with the Construction Manager to maintain an average 21-day submittal review cycle time.

Assumptions

- This Scope of Services is based on the CONSULTANT's level of effort estimate of up to 500 submittals and equipment operations and maintenance manuals shall be submitted by the Contractor. The level of effort is based on approximately 50 % of the submittals requiring resubmittal. The scope and budget assumes 8 hours per submittal review time for 500 submittals. The scope and budget assumes 6 hours review time each, for 250 resubmittals.

3.2 - Requests for Information (RFIs)

CONSULTANT shall respond to Contractor's Requests for Information (RFIs) on the Contract Documents forwarded by the Construction Manager. The work shall involve both written responses to formal requests for information, and informal verbal telephone response. CONSULTANT Design Team shall coordinate with the Construction Manager to maintain an average 7-day response time to the Contractor.

Assumptions

- The level of effort is based on the CONSULTANT's estimate of 500 RFI at an average of four (4) hours per RFI.

3.3 - Change Orders

In the event changes to the Contract Documents are required, the CONSULTANT shall assist the Construction Manager in review of Change Order Request and preparation of Change Order. CONSULTANT, at the request of the Construction Manager, shall either review the Change Order Request prepared by the Construction Manager, or when Change Order Requests requires redesign, prepare detailed Change Order specifications, drawings, and/or sketches.

Construction Manager shall prepare all cost estimates for each Change Order, and negotiate with the Contractor the cost and extension of Contract Time associated with each Change Order.

CONSULTANT shall assist with field orders for which a Change Order is not issued by the Construction Manager. Field orders shall be checked for general compliance with the design intent.

Assumptions

- The level of effort for this task is based on assistance with 110 COR/CO at ten (10) hours each.

3.4 - Attendance at Meetings/Site Visits & Public Outreach

CONSULTANT's design team representative shall participate in project meetings at the job-site in order to keep abreast of construction activities and questions which may arise concerning construction progress and/or design intent. The Weekly Construction Progress Meetings to be held at the job site. For those meetings during which CONSULTANT'S design team representative is on site, the representative shall walk the job site with the CONSTRUCTION MANAGER to observe construction progress and discuss relevant construction issues.

Assumptions

- CONSULTANT design team representative shall participate in each weekly meeting for the project duration to facilitate resolution of design issues
- CONSULTANT shall attend up to 24 on-site meetings to discuss and assist in resolving construction issues as requested by CONSTRUCTION MANAGER.

Deliverables

- Summary of field notes to document the site visit.
- CONSULTANT design team and Construction Manager shall coordinate and provide support to the CITY's Program Construction Outreach Team, and shall attend up to five (5) Community Outreach events and/or stakeholder meetings during the contract duration, as may be scheduled by the CITY's Construction Program Outreach Team (Outreach Team).

Assumptions

- CONSULTANT'S design team and Construction Manager shall provide review, information, comments, and recommendations related to community and stakeholder Outreach Team meeting materials and issues.
- CONSULTANT shall, upon request by the Outreach Team, provide such files, drawings, and information that may be available for development of visual aids by the Outreach Team.

3.5 Startup Assistance

CONSULTANT shall assist Construction Manager and field team and Contractor in the operation and startup of new processes. Operation and startup assistance shall generally follow procedures outlined in the Contract Documents. CONSULTANT shall review Contractor's proposed plan and assist to define initial process set points and operational parameters. CONSULTANT shall be available to assist with resolution to startup and process issues and provide consultation and recommendations.

Assumptions

- The scope and budget assumes startup assistance up to 600 hours, including meetings with Contractor, review of startup plan and field time during startup and commissioning.

Deliverables

- Summary review comments of Contractor's start-up plan.

3.6 – Operations Plan and Process Training Services

CONSULTANT shall complete the Operations Plan with input from CITY SESWTF staff, as required for CA DPH operations permit. As part of this effort CONSULTANT shall prepare a site specific HAZMAT plan suitable for use as an appendix to the Operations Plan or stand-alone document for CITY and/or County review and approval. Upon approval by CITY, CONSULTANT shall coordinate with the Fresno County Health Department for upload of the HAZMAT Plan to the Fresno County Portal.

CONSULTANT shall conduct training for each treatment process and related equipment. Training shall be tailored to cover the treatment process design and operating intent, and shall supplement training provided by the equipment manufacturer or supplier.

Assumptions

- CONSULTANT's LOE and budget assumes 300 hours of engineering time to complete and upload the plan, including meetings with DPH and County to review and approve the documents.
- CONSULTANT shall provide, prepare and conduct up to 6 classroom presentations, field orientations, and question and answer sessions (duration of 2-hr to 4-hr per session).
- The scope of work and budget assumes up to 16 hours of engineering and graphic support time per training session, and attendance of up to 2 CONSULTANT staff per training session.

Deliverables

- Final training presentation materials.

3.7 – Electronic O&M Manual

CONSULTANT shall populate the Electronic O&M Manual (EOM) with O&M content for the SEWTF (*Note: The O&M Manual shall also include operation description for the Kings River diversion facility and conveyance pipeline, completed under a separate scope of work*).

CONSULTANT shall develop an electronic content management system that shall contain a variety of operations and maintenance information including facility and equipment descriptions, design criteria, process control narratives, design drawings, and vendor operations and maintenance (O&M) manuals. Using the EOM, CITY staff shall be able to access all of this information in an electronic format with an easy-to-use, graphical, user interface.

Assumptions

- Content shall be populated into the EOM in phases, beginning with a prototype chapter, with appropriate checkpoints for review and approval by CITY staff. The prototype chapter shall serve as the template of format and structure of the

information before proceeding with the development of the remaining chapters. The prototype EOM chapter shall be populated according to the standards utilized by CONSULTANT for similar water treatment facilities. CONSULTANT shall solicit review comments from CITY to define final format and structure and final approval before proceeding with the remaining facility chapters.

- EOM shall be a PDF and photo based, searchable document with key elements "linked" to various other pertinent information.
- The specific O&M Manual templates shall be discussed and are anticipated to include:
 - Process Schematic
 - Functional Description and Theory of Operation for plant unit processes and systems.
 - Design Criteria
 - Equipment/Instrument Specifications
 - Control Descriptions
 - Maintenance Procedures
 - Record Drawings
 - Photos
 - Services not included in this task:
 - Integration of EOM with SCADA, CMMS, or other CITY information systems.

Deliverables

- Initial EOM template, draft, and final versions for review and approval by CITY staff, and FINAL EOM, including all electronic files.

3.8 – Record Documents and Project Close Out

CONSULTANT shall be designated as Engineer of Record, and shall stamp and sign work completed, including but not limited to design changes required to complete per the Contract Documents, design changes required for remedial action and/or defective work, submittal reviews, RFI's, work plans, final grading plan/permit and Certificate of Occupancy, and record drawings.

CONSULTANT shall prepare Record Contract Drawings to incorporate modifications of Drawings resulting from Change Orders, observed site conditions, and construction Contractor's record of construction and coordinate transfer of field as-built drawings and specifications to the CITY.

Assumptions

- Construction changes shall be monitored and recorded by the Contractor and Construction Manager. CONSULTANT shall incorporate field markups at the end of construction and translate into electronic Record Contract Drawings and coordinate electronic and hard copy document archiving.

- The scope of work and budget assumes approximately 400 drawings need to be modified at 2 hours of CADD time per drawing, and 1 hour of engineering time per drawing.

Deliverables

- The electronic files of all construction record documents (AutoCAD and PDF format).
- 2 full-size sets of all construction record drawings
- 3 half-size sets of all construction record drawings.
- 1 full-size set of composite mylars for all offsite road and utility improvements.

WORK ELEMENT 4 – Optional Services

4.1 - Advisory Support for Dispute Resolution and Claims

CITY may request CONSULTANT to provide advisory support to assist in resolution of disputes or claims that are not specifically identified and/or anticipated elsewhere in this scope of services.

CITY and/or CONSULTANT shall jointly identify possible work effort required for advisory support not covered as part of this scope of services, and shall identify additional efforts and costs prior to expenditure of the effort. CITY's approval shall be required prior to expending additional effort or incurring costs. Under no circumstance shall CONSULTANT complete or invoice additional scope of services without prior approval of CITY.

4.2 - Factory Acceptance Testing

CITY may request CONSULTANT to provide factory acceptance witness testing to confirm compliance with Contract Documents.

CITY and/or CONSULTANT shall jointly identify possible work effort required for factory acceptance witness testing, and shall identify additional efforts and costs prior to expenditure of the effort. CITY's approval shall be required prior to expending additional effort or incurring costs. Under no circumstance shall CONSULTANT complete additional scope of services without prior approval of CITY.

PAYMENT

CONSULTANT shall perform services on a lump sum basis not to exceed a maximum of \$ 9,442,415 for this Scope of Services.

Earned Value will be used as the basis for monthly invoices. Each monthly invoice shall include a summary invoice to show Earned Value by task the total authorization, amounts expended to date, percent complete, amount invoiced, and remaining authorization. The invoice package shall also include a breakdown by task Earned Value for the month, a color coded bar graph to show of expenditures by task in the given month, and a summary "S-curve" to show cumulative project expenditures.

CONSULTANT shall monitor the progress of the work and associated expenditures for each task and subtask throughout the duration of the Contract. CONSULTANT is obligated to inform CITY in advance of any circumstances that could potentially result in exceedance of task or subtask level of effort estimates. Specifically, if CONSULTANT is expending more effort than was assumed as the basis for the level of estimate on any

task or subtask, and if CONSULTANT believes that additional compensation may be due as a result, CONSULTANT shall provide supporting rationale as to how the work effort and budget expenditure differs from assumptions set forth in this Scope of Services, and shall provide supporting backup information including documentation of work or re-work that could not have been anticipated when the level of effort was developed, and/or work outside the control of CONSULTANT. CONSULTANT's supporting documentation shall also include a summary of staff charges to the task(s) or subtask(s), including name, position, hours, and billing rate.

CITY shall pay CONSULTANT all amounts set forth in a properly documented invoice provided.

CITY shall have the right to demand, and receive within a reasonable time; a detailed explanation of the entire invoice, including staff charges, billing rates, hours, etc, and backup for any requested line item charged occurring on the invoice in order to confirm that the invoice properly reflects the work that has been performed.

EXHIBIT B

Memorandum of Understanding

**Determination of Authority Having Jurisdiction
(AHJ)**

Southeast Surface Water Treatment Facility Project

Prepared For

**City of Fresno Water Division and
Building and Safety Services Division**

April 2015
FINAL

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A	SESWTF Site Plan - Exhibit 'A', "AHJ Boundaries"

Acronyms and Abbreviations

CIP	Capital Improvement Plan
City	City of Fresno
CM	Construction Manager
CUP	Conditional Use Permit
CUWCC	California Urban Water Conservation Council
BSSD	Building and Safety Services Division
EVM	Earned Value Management
FID	Fresno Irrigation District
FMC	Fresno Municipal Code
FMFCD	Fresno Metropolitan Flood Control District
FY	Fiscal Year Program Implementation Program
KPI	Key Performance Indicator
MOU	Memorandum of Understanding
Metro Plan	Metropolitan Water Resources Management Plan
MG	Million Gallons
mgd	Million Gallons Per Day
MW	Megawatt
NEC	National Electrical Code
O&M	Operation and Maintenance
PG&E	Pacific Gas and Electric
Program	Water Division Capital Improvement Plan Implementation Program
RTM	Regional Transmission Main
SCADA	Supervisory Control and Data Acquisition
SES WTF	Southeast Surface Water Treatment Facility
SWRCB	State Water Resources Control Board
TGM	Transmission Grid Main
TM	Technical Memorandum
WBS	Work Breakdown Structure

Background

The City of Fresno (City) has recognized that the current use of groundwater as the primary source of water supply to the potable water system is not a sustainable model. In order to achieve a balanced and sustainable water supply system, the City's Water Division intends to expand their conjunctive source water use portfolio through further utilization of available surface water allocations.

The City's Capital Improvement Plan (CIP) Implementation Program (Program) is planned to support the implementation of the City's Water Supply Plan. Major projects within this program are:

1. A new 80-mgd southeast surface water treatment facility (SESWTF).
2. A new 72- inch raw water conveyance pipeline from the Kings River to the SESWTF.
3. Regional Transmission Mains (RTMs) to deliver treated potable water to the City's distribution network.

Design of these major projects are currently underway. As part of the design development phase for the new SESWTF, discussions were held between the Department of Public Utilities /Water Division, the Development and Resource Management Department/Building and Safety Services Division (BSSD), and the Fire Department. The SESWTF project is complex and heavily industrial in nature, involving multiple engineering disciplines. As such, it was determined that an interdepartmental methodology for code compliance was needed. This Memorandum of Understanding (MOU) proposes a cooperative Departmental division of responsibilities by instituting separate Authorities Having Jurisdiction (AHJ) as well as agreement on the methodology to ensure project adherence to building codes and regulations. This MOU is the result of these discussions between the Water Division, BSSD, and the Fire Department.

It is important to note that the Fresno Fire Department/Fire Marshall retains all Authority Having Jurisdiction over the entire project site regarding approval and enforcement of the most recent CCR Title 19 Public Safety; Title 24, Part 9, California Fire Code; and City of Fresno Municipal Code, Chapter 10, Article 5 – Fire Prevention amendments for Fire and Life Safety related design requirements that have been adopted at the time of bidding.

New 80-mgd SESWTF Project Description

The new SESWTF will be located on 58 acres purchased by the City near the intersection of Armstrong Avenue and Floradora Avenue. This parcel of land is located in the County and within the City's sphere of influence. The SESWTF is planned for a conventional treatment process with flocculation, ozonation, and granular activated carbon (GAC) filters with the following major components:

- Raw water intake;
- Flocculation and clarification;
- Intermediate ozonation;
- Dual media (GAC and sand) filtration;
- Two, 4- million gallon (MG) finished water storage reservoirs;
- Treated water pumping station;
- Residuals handling;
- Chemical facilities;
- Civil site work, including storm water containment and underground utilities;
- Maintenance building;
- Electrical substation;
- Operations building; and
- Offsite improvements.

Design for this project is under way, with construction currently planned to start in late-2015 and facility operation beginning by early of 2019.

1 BUILDING CODE ENFORCEMENT SCOPE OF WORK

The City's Water Division, BSSD, and Fire Department have agreed to divide the AHJ responsibilities that most clearly matches the technical expertise of the respective departments and the needs of the project. Attached is a color-coded site plan (Exhibit 'A') showing the buildings, facilities, and other affected project areas. Building, facilities, and areas highlighted in Blue shall be under the BSSD jurisdiction. Buildings, facilities, and areas highlighted in Yellow shall be under the Water Division code enforcement jurisdiction. Described below are the details of these AHJ responsibilities.

1.1 BSSD AHJ Responsibility Components

In general, BSSD shall be the designated AHJ for occupied buildings that house personnel on a continuous basis as well as the chemical building. Within these designated occupied areas, BSSD jurisdiction shall include foundation/structural, sanitary sewer, potable water lines, mechanical HVAC, lighting, Title 24 and ADA compliance, building power, chemical spill containment (where applicable), and personnel safety egress. In coordination with the City Fire Marshall, life/safety systems for these occupied buildings shall also be under BSSD and Fresno Fire jurisdiction. The boundary of BSSD jurisdiction shall extend up to 10-feet beyond the building envelope/footprint with BSSD AHJ authority specifically intended for underground utility system connections to these occupied buildings. Process systems and utilities located within the 10-foot building envelope/footprint but not connected to the occupied building shall be under the Water Division AHJ.

Design, specification, installation, testing, and inspection of water treatment control system hardware and components located within the designated occupied areas that are required for the operation of the water treatment process as well as the security system required by Homeland Security shall be under the jurisdiction of the Water Division. This includes the computers and servers, UPS systems, monitoring systems, specialty control room hardware and furniture. Electrical power receptacles and circuits permanently installed within the building that are to be connected to these control and security systems shall be under BSSD jurisdiction based on the loads provided for those circuits.

In addition, BSSD shall serve as the AHJ for the civil site grading and drainage in order to coordinate with the Fresno Metropolitan Flood Control District. The facilities and areas under BSSD jurisdiction are as follows:

1.1.1 Operations Building

The Operations building is a two-story facility intended to be manned 24/7. This building includes a control room, computer/server room, conference room, operators' locker room facilities, laboratory, restroom facilities, offices, building mechanical support, and public areas.

1.1.2 Maintenance Building

The maintenance building will be occupied by maintenance staff during regular working hours and during emergency repair periods. This building will include workshops, offices, storage rooms, fume/dust ventilation systems, and restrooms.

1.1.3 Chemical Building

The chemical building has been designated to be within BSSD AHJ in order to coordinate with unique Fire Department AHJ issues such as personnel safety egress, fire suppression, ventilation control, chemical spill containment, and chemical corrosion.

1.1.4 On Premises Site-Civil Grading and Drainage & Communications Tower

Although a 58-acre site has been secured for this facility, the eastern 2/3 thirds of the parcel shall be designed for a new surface water treatment facility. The western portion of the parcel is for a future phase of site development not related to the water treatment process. Development of the second phase is unknown at this time. Storm drainage coordination with FMFCD is currently underway. Storm drainage features include bio-swales, connecting drainage piping and culverts, and temporary storm runoff retention pond, with eventual connection of offsite storm drainage system by FMFCD.

In addition, a new SCADA communication tower is required for this facility. BSSD will serve as the AHJ for this tower structure similar to communication cell towers used throughout the City.

1.2 Water Division AHJ Responsibility Components

In general, Water Division shall be the designated AHJ for all process related buildings, facilities, and areas that house process equipment, pumping systems, blowers, compressors, valves, instrumentation, and electrical power facilities. These industrial related facilities are intended only for non-continuous occupied use by authorized maintenance and operations personnel. Within these industrial facilities and process areas, Water Division jurisdiction shall include foundation/structural, sanitary sewer, potable water lines, mechanical heating, ventilation, and air conditioning systems, mechanical process equipment and systems, instrumentation and process control systems, site and facility power distribution and lighting, Title 24 compliance, and personnel ingress/egress. Water Division shall coordinate with the City Fire Marshall for life/safety systems, including security detection and access control and monitoring systems for these facilities and areas. The facilities and areas under Water Division jurisdiction are as follows:

1.2.1 Process Related Facilities

The process facilities or areas where raw water is to be treated, purified, filtered, disinfected and storage are as follows:

- Raw water intake;
- Flocculation and clarification;
- Intermediate ozonation;
- Dual media (GAC and sand) filtration;
- Two, 4- million gallon (MG) finished water storage reservoirs;
- Treated water pumping station;
- Waste Solids and Residuals handling, including pump stations and holding and drying beds; and

1.2.2 Underground Utilities

A network of underground utility systems shall be designed and constructed for this treatment facility that are related to the processing of drinking water. These underground utilities shall be under the jurisdiction of the Water Division. These systems include the following:

- Raw water intake piping
- Treated water piping
- Filter Backwash and sludge water lines
- Sitewide potable water mains entering the property and sanitary sewer collector lines exiting the property.
- All potable water line, process water line, and sanitary sewer line connections to all process and non-occupied buildings and structures (except for the chemical building)
- All fire hydrant water lines shall be under the Fire Department AHJ.
- Tunnels, vaults, and manholes
- Chemical piping systems
- Electrical 12-kV medium voltage and low voltage power and control duct bank runs

1.2.3 Site-Wide Electrical Power Equipment and Facilities

Power will be supplied by PG&E at a City-owned 115-kV substation. Utility service is at 115kV with the voltage reduced to 12-kV for distribution to major project demand centers. This electrical power system shall be part of the Water Division AHJ responsibilities. In addition, PG&E has stipulated they shall inspect the substation construction and will not energize the substation until all tests have been performed to their satisfaction and a certificate of proper installation has been submitted by the Construction Manager. In accordance with the 2014 California Electrical Code (CEC), Article 100 definition of the service point between the utility and premises wiring, the electrical service entrance for the SESWTF is located on the 115kV side of the new 115-kV substation. Per CEC, all buildings and load demand centers downstream of this service entrance are treated as feeder circuits.

Revenue metering shall be made at the 115-kV level. The power systems and related facilities currently under design include the following:

- 115-kV substation (include substation fencing, equipment pads, transmission line tower structures)
- 12-kV Power distribution electrical room attached to the treated water pumping station
- Pad-mounted, outdoor power transformers
- Standby generators including fuel systems and automatic transfer and temporary paralleling switchgear

1.2.4 On-Site and Off-Site Improvements

As part of the SESWTF project, on-site and off-site improvements are required for vehicle and pedestrian access, traffic, and utility connections. On-site surface improvements include roads, curbs, landscaping, property fencing and block walls, setbacks, sidewalks, fire hydrants, and parking.

Off-site improvements include surface road widening, striping, paving, intersections, and underground utilities entering and leaving the SESWTF property line.

These on-site and off-site improvements will be under the jurisdiction of the Water Division with the exception of the on-site grading and drainage aspects, public access parking, and employee parking associated with occupied buildings, and fire hydrants. As described earlier, BSSD will be the AHJ for on-site grading and drainage. As described earlier, the Fresno Fire Department is the AHJ for all fire hydrants. The Water Division has been coordinating its off-site design with the City's Traffic Division, Department of Public Works, and the County of Fresno.

2 TECHNICAL REVIEW AND ENFORCEMENT METHODOLOGY

2.1 Building and Safety Services Division

Project areas that fall under the jurisdictional control of BSSD shall follow the City's standard policies and procedures for plan check review, permit issuance, and BSSD inspection documentation and sign-off.

2.2 Water Division

2.2.1 Design Technical and Code Compliance Review

During the design process, the Water Division shall use an independent technical quality review team consisting of registered professional engineers and architects. Each major discipline has its own technical quality reviewer (civil, water treatment, geotechnical, structural, process mechanical, building HVAC, electrical, and instrumentation and control). Detailed reviews of the design engineer's design product are held at the 30 percent Schematic Phase, 60 percent Design Development Phase, and 90 Percent Construction Document Phase. The Water Division technical reviews include a wide variety of process-focused issues such as: confirmation of compliance with State Drinking Water requirements; reliability and redundancy requirements; hydraulic, pressure, and flow criteria; structural and foundation requirements for seismic mitigation as well as static and dynamic loads; process mechanical throughputs; corrosion control; electrical short-circuit, arc-flash, voltage drop, grounding, and harmonic distortion; and code safety compliance. Technical reviewers employ a formal design comment tracking tool that documents reviewers' comments and the design engineer's response and resolution of these comments with formal acceptance by the technical reviewers. At the completion of design, these design comment tracking tools document the satisfaction of the design by the Water Division. As part of the construction document approval process that shall fall under the jurisdiction of the Water Division, BSSD shall be provided with a letter of certification and approval from the responsible design professionals that the plans are in compliance to 2013 California Building Standards Codes and other related State and Federal regulations in effect at the time of bidding.

2.2.2 Construction Inspection

The Water Division intends on using third-party construction management (CM) consultants who are qualified and experienced in the construction of water utility infrastructure. The CM team will include the lead construction manager who shall be a California registered professional engineer, assistant construction managers, and discipline specific inspectors. These inspectors shall be either experience registered engineers, or senior inspectors with certifications that meet or exceed the requirements of the certifications required of City of Fresno construction inspectors. This level of experience and certification provides highly qualified personnel knowledgeable in their field for the benefit of the City. BSSD shall be provided certification and qualifications for all third party inspectors that will be providing construction inspections for the Water Division portions of the project.

The CM team will be on-site at the SESWTF project location and will be charged with enforcement of all local, state, and federal laws, codes, regulations and construction documentation for all areas under their jurisdiction. All required tests shall be witnessed and signed off by the appropriate inspector. The construction manager is required to sign and stamp a certification of proper installation which documents that the contractor has constructed the facilities in accordance with the contract documents as well as local, state, and federal applicable codes and regulations in effect at the time of bidding.

3 JURISDICTIONAL COORDINATION AND ADJUDICATION

Coordination will be required between the Water Division CM team, BSSD staff, and the Fire Department. Water Division CM inspection staff shall monitor all contractor construction activities regardless of AHJ jurisdictional boundaries to confirm the contractor is performing work in accordance with the contract plans and specifications. The CM inspection team shall coordinate with the contractor to ensure the Water Division, BSSD, and Fire Department are properly notified when specific construction inspection is required. BSSD personnel shall perform the final permit compliance inspections and acceptance sign-off for those areas identified above as being under the jurisdiction of BSSD. For areas and facilities under the jurisdiction of BSSD, the contractor's work is not considered complete until BSSD sign-off has been attained. BSSD is the AHJ granting Building Occupancy for buildings under its jurisdiction.

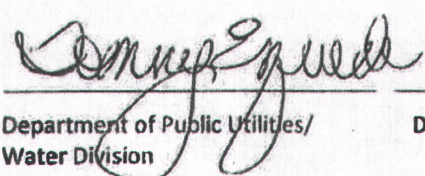
For all work under the jurisdiction of the Fire Department, the contractor's work is not considered complete until Fire Department approval has been attained.

For areas under the AHJ jurisdiction of the Water Division, before the contractor's work is to be considered for completeness, CM inspector(s) shall confirm installations are in accordance with contract plans and specifications, and all required tests have been satisfactorily performed. Approved testing procedures, forms, calibration sheets, inspection daily reports, etc. shall be used to document contract and code compliance by the contractor. The contractor's work for a specific location, area, or system shall be considered complete only upon receipt of a written and stamped certification by the Water Division's Construction Manager.

Copies of all witnessed and approved inspection and testing documentation shall be retained within the permanent project record files in order to document code compliance verification regardless of AHJ (Fire Department, BSSD, or Water Division).

It is anticipated that BSSD and Water Division CM inspection staff will require detailed coordination and agreement regarding what constitutes compliance at jurisdictional boundaries. Neither the Water Division CM inspectors nor BSSD inspectors shall interfere with each other's determination of installation/permit compliance within the other's jurisdictional boundary. In the event of conflict of opinion of acceptable work at a jurisdictional boundary, the Water Division and BSSD management shall agree to meet, and in good faith, resolve the issue in question in a timely manner.

 4/23/15
Building and Safety Services Division Date

 4/23/2015
Department of Public Utilities/
Water Division Date

