

**DRAFT THIRD AMENDMENT TO CONSULTANT SERVICES AGREEMENT  
BETWEEN CITY OF SUNNYVALE AND CAROLLO ENGINEERS, INC. FOR DESIGN  
AND CONSTRUCTION SUPPORT SERVICES FOR THE SECONDARY TREATMENT  
AND DEWATERING PROJECT**

THIRD Amendment to Consultant Services Agreement, dated \_\_\_\_\_, is by and between the CITY OF SUNNYVALE, a municipal corporation ("CITY"), and CAROLLO ENGINEERS, INC, a Delaware corporation ("CONSULTANT") (collectively referred to herein as "Parties").

WHEREAS, on September 11, 2017, CITY and CONSULTANT entered into a Consultant Services Agreement whereby CONSULTANT would perform professional services necessary for development of a safe and efficient design, preparation of bid documents for Public Works competitive bidding and, construction support for the Secondary Treatment and Dewatering project ("Agreement"); and

WHEREAS, on February 11, 2020, CITY and CONSULTANT entered into a First Amendment to Consultant Services Agreement whereby the Parties agreed to amend the Agreement by adding an additional Scope of Work, Exhibit "A-2", and additional compensation schedule, Exhibit "B-1", and to increase the contract not-to-exceed amount by \$1,217,192 for a new contract total amount of \$18,963,308; and

WHEREAS, on August 19, 2021, CITY and CONSULTANT entered into a Second Amendment to Consultant Services Agreement whereby the Parties agreed to amend the Agreement by adding an additional Scope of Work, Exhibit "A-3", and additional compensation schedule, "Exhibit B-2", and to increase the contract not-to-exceed amount by \$675,489.78 for a new contract total amount of \$19,638,797.78; and

WHEREAS, with respect to the Second Amendment to the Agreement, the Parties recognize that aforementioned Exhibit B-2 was mislabeled as Exhibit "B-3", and the Parties desire to correct the typographical error related to only the labeling of this exhibit.

WHEREAS, the Parties now agree that a THIRD Amendment to said Agreement is advisable;

NOW, THEREFORE, THE PARTIES ENTER INTO THIS THIRD AMENDMENT TO CONSULTANT SERVICES AGREEMENT:

1. Section 1 entitled "Services by CONSULTANT" is hereby amended as follows:

1. Services by Consultant

[Replace the first paragraph with the following:]

CONSULTANT shall provide services in accordance with Exhibit "A" entitled "Scope of Work," Exhibit "A-2" entitled "Additional Scope of Work," Exhibit "A-3" entitled "Engineering Services during Construction," and Exhibit "A-4" entitled "Engineering Services during Construction – Scope of Services, July 19, 2022." All exhibits referenced in this Agreement are attached hereto and are incorporated herein by reference. To accomplish that end, CONSULTANT agrees to assign Jim Hagstrom to this project, to act in the capacity of Project Manager and personally direct the professional services to be provided by CONSULTANT.

2. Section 2 entitled "Notice to Proceed/Completion of Services" is hereby amended as follows:

2. Notice to Proceed/Completion of Services

[Replace paragraph (b) with the following:]

- (b) When CITY determines that CONSULTANT has satisfactorily completed the services defined in Exhibit "A," Exhibit "A-2", Exhibit "A-3", and Exhibit "A-4", CITY shall give CONSULTANT written Notice of Final Acceptance, and CONSULTANT shall not incur any further costs hereunder. CONSULTANT may request this determination of completion when, in its opinion, it has satisfactorily completed the Scope of Work (Exhibit "A"), Additional Scope of Work (Exhibit "A-2"), Additional Scope of Work (Exhibit "A-3"), and Additional Scope of Work (Exhibit "A-4"). If so requested, CITY shall make this determination within fourteen (14) days of such request.

3. Section 4 entitled "Payment of Fees and Expenses" is hereby amended to follows:

4. Payment of Fees and Expenses

[Replace this section with the following:]

Payments shall be made to CONSULTANT on a monthly basis as set forth in the attached Exhibit "B" entitled "Compensation Schedule," Exhibit B-1 entitled "Additional Compensation Schedule," Exhibit B-2 entitled "Additional Compensation Schedule," and Exhibit "C" entitled "Compensation for Reimbursable Expenditures." All compensation will be based on monthly billings, based on hourly rates, as provided in Exhibit "B," Exhibit "B-1," Exhibit "B-2," and Exhibit "C". Compensation will not be due until said detailed billing is submitted to CITY within a reasonable time before payment is expected to allow for normal CITY processing. An estimate of the percent of total completion and actual hours completed associated with the various task descriptions of the services shall be furnished by CONSULTANT with said billing. When applicable, copies of pertinent financial records will be included with the submission of billing(s) for all direct reimbursables. In no event shall the total Compensation exceed the amounts set forth in Exhibit "B" for each task description total fee, and shall include services as identified in Exhibit "A" in the amount of Fifteen Million Nine Hundred Ninety Five Thousand Three Hundred Thirty Two and No/100 Dollars (\$15,995,332.00) for the duration of the contract, as well as optional services in an amount not to exceed One Million Seven Hundred Fifty Thousand Seven Hundred Eighty Four and No/100 Dollars (\$1,750,784.00) for the duration of the contract.

In no event shall the total amount of compensation exceed the amount set forth in Exhibit B-1 for each task description total fee, and shall include services identified in Exhibit A-2 in the amount of One Million Two Hundred Seventeen Thousand One Hundred Ninety Two and No/100 Dollars (\$1,217,192.00) unless upon written modification of this Agreement executed by both parties.

In no event shall the total amount of compensation exceed the amount set forth in Exhibit B-2 for each task description total fee, and shall include services identified in Exhibit A-3 in the amount of Seven Hundred Sixty Thousand Three Hundred Twenty Three and No/100 Dollars (\$675,489.78) for the duration of the contract, unless upon written modification of this Agreement executed by both parties.

In no event shall the total amount of compensation exceed the amount set forth in Exhibit B-3 for each task description total fee, and shall include services identified in Exhibit A-4 in the amount of Six Million Eight Hundred Eighty-Nine Thousand Four Hundred Fifty-Two and 03/100

Dollars (\$6,889,452.03) for the duration of the contract, unless upon written modification of this Agreement executed by both parties.

In no event shall the total amount of compensation payable under this agreement exceed the sum of Twenty-Six Million Five Hundred Twenty-Eight Thousand Two Hundred Forty-Nine and 81/100 Dollars (\$26,528,249.81) unless upon written modification of this Agreement. All invoices, including detailed backup, shall be sent to City of Sunnyvale, attention Accounts Payable, P.O. Box 3707, Sunnyvale, CA 94088-3707.

CONSULTANT will be reimbursed as promptly as fiscal procedures will permit upon receipt by the CITY of itemized invoices in triplicate. Invoices shall be submitted no later than 45 calendar days after the performance of work for which CONSULTANT is billing. Invoices shall detail the work performed on each milestone and each project as applicable. Invoices shall follow the format stipulated in the Compensation Schedule and shall reference the project title. The final invoice must contain the final cost and all credits due CITY. The final invoice should be submitted within 60 calendar days after completion of CONSULTANT's work.

4. Section 8 entitled "Standard of Workmanship" is hereby amended to read as follows:

8. Standard of Workmanship

[ Replace Second paragraph with the following:]

The plans, designs, specifications, estimates, calculations, reports and other documents furnished under Exhibits "A", "A-2", "A-3", and "A-4" shall be of a quality acceptable to CITY. The criteria for acceptance of the work provided under this Agreement shall be a product of neat appearance, well-organized, technically and grammatically correct, checked and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that used by CITY for similar projects.

5. The exhibit that was attached to the Second Amendment as "Exhibit B-3" is replaced with the correctly labeled "Exhibit B-2", which is attached and incorporated into this Third Amendment.

6. Exhibit "A-4," entitled Engineering Services During Construction – Scope of Services, July 19, 2022," is attached hereto and incorporated into this Third Amendment.

7. The amended Exhibit "B-3," which provides an additional compensation schedule, is attached hereto and incorporated into this Third Amendment.

8. All other terms and conditions remain unchanged and shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Third Amendment to the Agreement.

ATTEST:

CITY OF SUNNYVALE ("CITY")

By \_\_\_\_\_  
City Clerk

By \_\_\_\_\_  
City Manager

CAROLLO ENGINEERS, INC.  
("CONSULTANT")

By \_\_\_\_\_

APPROVED AS TO FORM:

\_\_\_\_\_  
Name/Title

\_\_\_\_\_  
City Attorney

By \_\_\_\_\_

\_\_\_\_\_  
Name/Title

Exhibit A-4

**CITY OF SUNNYVALE**  
**WPCP**  
**SECONDARY TREATMENT AND DEWATERING PROJECT**  
**ENGINEERING SERVICES DURING CONSTRUCTION**

**SCOPE OF SERVICES**

**July 19, 2022**

## **I.BACKGROUND**

The City of Sunnyvale (City) (Owner) will construct the Secondary Treatment and Dewatering Project at the Water Pollution Control Plant (WPCP). Engineering services during construction (ESDCs) were estimated by Carollo/Jacobs (Consultant) before any detailed engineering was completed on the proposed facilities. This scope of services brings the level of effort of the construction support services in Task I in line with the final design package. Relevant Tasks J (Commissioning Support Services) and K (Operation and Maintenance Manual Updates) remain the same as the original estimate.

## **II.SCOPE OF SERVICES**

This section presents the Scope of Services for the Secondary Treatment and Dewatering Project - Engineering Services during Construction (ESDC). This scope replaces the scope of Task I of the contract.

### **I.Construction Support Services**

Consultant shall provide engineering services during construction for all aspects of this project.

The Construction Management Consultant (CMC) in conjunction with the City's Public Works staff will have primary responsibility for construction management and inspection. The Consultant's point of contact shall be the CMC, not the contractor. The Consultant shall provide the following services:

#### **1.Review Request for Information (RFIs)**

Consultant shall review and respond to Requests for Information (RFIs) from the Contractor forwarded by the City's Construction Manager (CM) and issue interpretations and design clarifications (DCs) to the contract documents. Consultant will return RFIs within an average turnaround time of seven (7) calendar days with a target of no later than ten (10) calendar days.

**Deliverables:** Consultant will provide written responses to RFIs and DCs.

## 2. Review Submittals and Substitution Requests

Consultant shall review and respond to submittals and resubmittals from the Contractor forwarded by the CM. Consultant shall also review equipment substitution (or-equal) requests submitted by the Contractor. Contractor is responsible for deferred submittals to the Building Department and Consultant will provide support information. Consultant will return submittals within an average turnaround time of twenty-one days with a target of no later than twenty-eight (28) calendar days.

**Deliverables:** Consultant will provide written responses to submittals, resubmittals, and substitution requests.

## 3. Meetings and Field Observation

Consultant shall provide project administration, attend specified meetings, and provide supplemental field observation during the construction period.

1. **Project Management and Administration** - Consultant shall provide project administration necessary for proper planning, filing, execution, monitoring, quality control, and reporting of this project during the construction period.
2. **Pre-Construction Conference** – Consultant’s principal-in-charge, project manager(s), project engineer, electrical lead, and civil lead will attend a pre-construction meeting with the City, CM, plant staff, and Contractor. The purpose of the meeting is to facilitate understanding of the contract requirements by all parties involved. Agenda and minutes provided by City/CM.
3. **Progress Meetings** - Consultant shall attend progress meetings weekly with the City, plant staff, construction manager (CM) and Contractor. The purpose of these meetings is to discuss construction status and to review key issues with the Contractor. The meetings will be conducted by the CM. Consultant’s project manager or project engineer will attend. Consultant attendance will be virtual unless CM/Owner requires presence on site. Minimum 5 working days notice in advance of the meeting. Agenda and minutes provided by City/CM.
4. **Technical Meetings** - Consultant shall attend technical meetings with the City, plant staff, CM and Contractor. The purpose of these meetings is to discuss technical elements of the project outside of the regular progress meetings. These meetings will be conducted by the CM. Consultant shall provide, as-required, discipline specific personnel in the areas of civil, architectural, structural, HVAC, mechanical, electrical, and instrumentation for these technical meetings. Consultant attendance will be virtual unless CM/Owner requires presence on site. Minimum 5 working days notice in advance of the meeting. Agenda and minutes provided by City/CM.
5. **Off-Site PG&E Coordination Meetings** – Consultant shall hold monthly PG&E coordination meetings during construction for the off-site scope of work. Purpose of these meetings is to keep PG&E engaged on the project and obtain status updates from PG&E on any off-site work. Consultant will provide meeting agenda, meeting minutes, and update schedules. Consultant attendance will be virtual and include Project Manager, Project Engineer, and Electrical Engineer. PMC/City and CM will also attend and support the efforts associated with this off-site PG&E coordination. Task includes three additional meetings prior to the start of construction.

**Deliverables:** Consultant will provide Agenda, Meeting minutes and PG&E schedules.

6. **Field Observation** - Consultant will provide field structural observation services by a registered civil or structural engineer required by Chapter 17, Section 1704.6 of the 2019 CBC specifically described below. CM will provide special inspection services required by the California Building Code (CBC). Consultant will provide the structural observation services indicated in the Secondary Treatment and Dewatering Project Contract Documents (Dwg 000G021 and Section 01455). In addition, Consultant's geotechnical engineer (Fugro) will provide field observation services for the geotechnical related items. City/CM to provide minimum 5 working days advance notice of need for field observation.

**Deliverables:** Consultant will provide field notes and field reports by geotechnical and structural engineers.

7. **Final Punchlist and Inspection** - Consultant shall assist the City and CM in performing a project "walk-through" inspection and preparing a substantial completion punch list of outstanding items to be completed by the Contractor to achieve final acceptance.

**Deliverables:** Consultant will review and supplement punch-list items to be developed by the CM.

8. **(Optional) Post Construction Guaranty Period Meetings** – Consultant's project manager and project engineer will attend a post construction meeting with the City, CM, plant staff, and Contractor approximately 11 months after the date of substantial completion. The purpose of this meeting is to review any issues that may require the Contractor to repair prior to expiration of the project warranty period. Agenda and minutes provided by City/CM.

#### **4.Prepare Record Drawings**

Consultant shall prepare record drawings after construction contract closeout using Consultant's standard format to include changes made during the construction period. The Contractor and City's CM team will maintain a full-size set of marked-up drawings detailing all field changes and clarifications. Consultant shall not be responsible for field measuring as-built conditions and will rely solely on the information provided by the CM and Contractor as the basis for preparing the record drawings. CM to provide Conformed copy of full-size as-built drawing markups by the Contractor and the City's CM team.

**Deliverables:** Consultant to provide record drawings as AutoCAD and pdf.

#### **5.Assistance with Contract Changes**

Consultant shall provide engineering support services specified herein to assist the City and CM during the construction period.

1. **Review Cost Reduction Proposals** - Consultant shall review formal cost reduction proposals submitted by the Contractor.

**Deliverables:** Consultant will provide written responses to the value engineering proposals.

2. **Assist with Review of Contract Change Orders** - Review shall be limited to merits of the proposed change order and providing input on applicable unit and material prices of selected items. The City and CM will negotiate the proposed change order cost with the Contractor based on Consultant's input on applicable equipment and material prices.

**Deliverables:** Consultant will provide written responses to change orders.

3. **Assist with Owner Requested Field Changes** - Clarify and/or change the intent of the contract documents at the request of the City. In preparing the proposed change, Consultant will assist with revised specifications, drawings, and/or sketches, as necessary, to change the intent of the contract documents and review cost of proposed changes.

**Deliverables:** Consultant will provide completed specifications, drawings, and/or sketches per proposed changes to contract documents.

### **Assumptions and Clarifications.**

Some key assumptions made in development of the scope of work are listed below.

- The work effort and budget estimate are based on the issued-for-bid Secondary Treatment and Dewatering contract documents.
- Level of Effort is based on the attached Exhibit A.
- CM will manage flow of all construction documents including logging documents, distributing Contractor generated documents (e.g. RFIs, submittals, etc.) electronically to the Consultant for review, and issuing Consultant generated documents (e.g. RFI responses, submittal review comments, etc.) to the Contractor.
- City will provide access to the City's record management software (E-Builder) for the Consultant and Consultant's subcontractors free-of-charge (5 licenses total). The scope and budget do not include any license or access fees associated with the use of the record management software.
- After completion of the project, Consultant will have full access to project files created by the Consultant through the record management software including the right to copy any files for record keeping.
- CM will review bid results, contracts and all other documentation required under Division 0 with limited consultant support for technical items.
- CM will review and comment on submittals on the following topics: site safety, Contractor cost breakdown, Contractor submittal list, Contractor quality assurance, Contractor quality control, temporary shoring, dewatering, and Contractor's geotechnical report. Consultant will not participate in review of these submittals.
- CM will provide preliminary review of submittals and RFIs for general completeness, accuracy, and relevance. Incomplete, inaccurate, and/or irrelevant submittals and RFIs will be returned to the Contractor and not forwarded to the Engineer.
- CM will take lead in reviewing and commenting on Contractor's baseline schedule and schedule updates with limited consultant support.
- CM will take lead in reviewing and commenting on process progress payment requests with limited consultant support.



- CM and WPCP staff will take lead in reviewing and commenting on and coordinating System Outage Requests with limited consultant support.
- Contractor and/or CM will conduct all regular and special inspections at the project site.
- The scope and budget do not include management of certified claims filed in accordance with contract and PCC20104.
- The scope and budget do not include field alteration redesign services to correct facilities that the Contractor did not construct in accordance with the Contract Documents.
- The scope and budget does not modify the original task J or K in the original contract.
- The scope and budget do not include the development of Standard Operating Procedures (SOPs).
- The scope and budget do not include coordination or assistance related to SRF funding. AIS/BABA certification review will be performed by CM/PMC and Consultant will not participate or support comment tracking or communication on these topics.
- The scope and budget do not include pre-construction wildlife surveys that may be required.
- The level of effort and fee are an estimate based on common metrics for this type of a project and assumptions on what will be required from the engineer of record during the project construction phase. Level of effort may vary depending on the contractor.
- Consultant will respond to requests for support from CM/City on as needed basis within the framework and the scope of the services outlined herein.
- Consultant will review submittals and RFIs and provide technical support for the on-site PG&E scope of work, but the Contractor will lead coordination with PG&E for the onsite scope of work. The scope and budget does not include effort to lead participate in coordination meetings for the onsite scope.



FUGRO

Fugro USA Land, Inc.  
1777 Botelho Drive, Suite 262  
Walnut Creek, California 94596  
T +1 925 949-7100

Carollo Engineering, Inc.  
Attn: Mr. Jamie Pigott, PE  
2795 Mitchell Drive  
Walnut Creek, California 94598

June 7, 2022

**Revised Proposal for Geotechnical Services During Construction  
Sunnyvale SCWP Secondary Treatment and Dewatering - Sunnyvale, California**

**Dear Mr. Pigott,**

Fugro is pleased to present this revised proposal to provide Geotechnical Services During Construction for the Sunnyvale SCWP Secondary Treatment and Dewatering Project located in the Sunnyvale, California. Fugro was previously contracted to provide geotechnical engineering services for various projects at the Sunnyvale facility, and geotechnical investigation reports submitted include the following:

- "Geotechnical Investigation Report, Sunnyvale Cleanwater Program, Existing Plant Rehabilitation, Sunnyvale Water Pollution Control Plant, Sunnyvale, California," dated January 28, 2021, Fugro Project No. 04.72190095 (04.72190095-PR-001 03).
- "Geotechnical Interpretative Report, Sunnyvale WPCP, City of Sunnyvale, California," dated December 2021, Fugro Project No. 04.72180060 (04.72180060-PR-001 Rev 02).
- "Geotechnical Data Report, Sunnyvale WPCP Secondary Treatment and Dewatering, Sunnyvale, California," dated May 10, 2019, Fugro Project No. 04.72180060 (04.72180060-PR-001 Rev 00).
- "Geotechnical Evaluation – Administration and Lab Building Relocation Assessment, Sunnyvale WPCP, Sunnyvale, California," dated May 3, 2019, Fugro Project No. 04.72180060 (04.72180060-PR-003 Rev 00).
- "Geotechnical Study Master Plan and Facilities Upgrade Project, Water Pollution Control Plant, Sunnyvale, California," dated June 22, 2016, Fugro Project No. 04.72130065.

This proposal is based upon the information provided in the bid documents, contractor's schedule, communications with Carollo, and our experience with similar projects.

Fugro is in receipt of the bid documents prepared by Carollo Engineers. The following documents were used for the preparation of this proposal:

- SCWP, Secondary Treatment and Dewatering Project, Bid Set, 90% Submittal, Volume 2 Through 4, Specifications, Drawings, and Appendices, May 2021.
- Site Preparation and Secondary/Dewatering Project, Construction Schedule, February 2021.

## Project Description

The project requires geotechnical observation and/or testing during construction.

The Secondary Treatment Project includes:

- a. Site earthwork, yard piping, and pavement.
- b. Construction of buried utility relocations outside of the Water Pollution Control Plant boundaries including installation of 30-inch RAS pipe buried 0 to 9 feet below existing ground (~360 LF), 36 to 48-inch SE pipe buried 12 to 12 feet (550 LF), 6-inch SD pipe buried 7 to 11 feet BEG (~170 LF), 8-inch SD pipe buried 5 to 10 feet BEG (~430 LF), 12-inch SD pipe buried about 12 feet BEG (~130 LF), 8-inch DE pipe buried about 12 feet BEG (~70 LF).
- c. Temporary installation of shoring for the construction of Bioreactors, Secondary Clarifiers, SE pipe, RAS/WAS Pump Station, and yard piping (~1400 LF).
- d. Construction of mat foundations for the Primary Effluent Distribution Structure, Bioreactors/ Aeration Basins, Mixed Liquor Splitter Structure, Secondary Clarifiers, RAS Pump Station, WAS Pump Station, HC Overflow Box, Blower Building, Standby Generator, Sludge Blend Tank, Fuel Tank, and 12KV Transformers.
- e. Construction of pile foundations for the Thickening & Dewatering Building, DEMON Sidestream Treatment, and Digested Sludge Storage Tanks.

## Geotechnical Scope of Services

Based on our discussions with Carollo Engineers, we propose to provide Office and Field Engineering Services as described below. Our added scope Tasks for services during construction are numbered sequentially starting after the 8 (eight) Tasks of pre-construction phases that were previously authorized. Our proposed/revised additional tasks are described below.

### Task 9: Services During Construction

Fugro's services during construction will consist of the following five tasks:

#### Task 9.1: Office Support

- Consultation to address geotechnical related issues that may arise during construction;
- Review of submittals;

- Review of Requests for Information (RFI's);
- Project management, monitoring of project progress, documentation; and
- Attendance at meetings (as requested, assumes two 1-hour virtual meetings for Pre-Construction and Kick-off Meeting), and meetings during construction.

## Task 9.2: Field Observation Services

- Part-time to full-time observations during earthwork including subgrade observations prior to fill placement or foundation construction, excavations, and trench backfill;
- Full-time observation during shoring installation and removal;
- Periodic observation of approved subgrade stabilization method(s) for pavement and piping, as requested; and
- Full-time observation of shoring removal and provide as-needed consultation during construction limited to monitoring of settlements of structures adjacent to the shoring.

## Task 9.3: Auger Cast-In-Place (ACIP) Installation

Plans indicate 118 ACIPs for the Thickening and Dewatering Building, 70 ACIPs for DEMON Sidestream Treatment, and 21 ACIPs at the Digested Sludge Storage Tank are planned for the foundation support. In addition, 4 test piles are planned for verification testing. A Fugro engineer will provide full-time observation during installation of ACIP per the building code mandated Special Inspection requirements including top and bottom elevations, drilling speed and difficulties, depth of grout return, volume of used grout mix per pile, and total concrete used per day. A Fugro engineer will observe the installation and load testing operations and review the load test report(s) prepared by the Contractor.

As part of each site visit, a Daily Field Report (DFR) will be prepared that describes the day's geotechnical-related construction activities. At the completion of foundation installation, Fugro will provide a special inspection report for the ACIPs.

## Task 9.4: Office Services

At the end of the pile foundation installations, a final report that documents the activities throughout the construction phase will be provided.

# Estimated Fee

Our continuing services will be provided on a time and material basis under the terms and conditions of our current contract with Carollo. Our previously authorized budget for the our services prior and during construction is \$244,424. Fugro is requesting an additional budget amendment of \$265,990 for the services during construction phase of Secondary Treatment Project. This figure was derived from the sum of our estimates for the individual tasks as shown in the table below. This brings our total budget to \$510,414 (\$244,424 + \$265,990).

Our scope of geotechnical services during construction will include the Fugro Project Manager providing consultation, monitoring project progress, attending site visits, reviewing submittals, providing geotechnical RFI responses, and attending project meetings or conference calls, on an as-needed basis.

Site visits will be performed in direct response to requests from an authorized representative of your project team. We recommend that a Fugro representative be present on a part-time to full-time basis during earthwork and shallow foundation construction operations and full-time during installation of drilled pier foundations. During micro-tunnelling, we recommend a Fugro representative be present on a part-time basis to observe the entry and exit pit excavation and on a full-time basis to observe shoring removal. We request a minimum of 48-hours advance notice be provided for site visits. Nonetheless, we will try to accommodate site visit requests with less notice as much as possible. As part of each site visit, a computer-generated Daily Field Report (DFR) will be prepared that details the geotechnical-related construction activities observed. Final reviewed copies will be submitted to Carollo.

For the deep foundations of the ACIPS We anticipate Forty-Seven (47) full-day site visit during the installation of ACIPs.

Our estimates for half-day observation services assume 6-hour days in the field which includes about 2 hours roundtrip travel to and from our Walnut Creek office. Our estimates for full-day observation services assume 10-hour days in the field which includes about 2 hours roundtrip travel to and from our Walnut Creek office. Vehicle and basic sampling and testing equipment are charged at a rate of \$120/day and includes all mileage charges. No project minimums are charged for field visits, with the exception of a 2-hour "showup" charge for a scheduled site visit that is cancelled at the jobsite upon arrival or when field engineer is already in route to the jobsite.

It should be noted that construction especial inspection including material testing and filed density testing will be performed by a third-party CM.

We propose to perform this scope of work on a time-and-materials basis in accordance with our Fee Schedule at the time of services. Our 2017 Fee Schedule from the prime contract was used to calculate the rates in 2022 considering 2% escalation per year (table below). We understand that the geotechnical related construction items will extend in the second half of year 2024. In our cost estimate, we are including escalation from 2022 to midpoint of construction using a multiplier 1.055967307 to account for escalation through mid-2024.

This total estimated fee will not be exceeded unless the scope of services changes or additional time is requested for the field and/or office services, and not without your prior authorization. Our work can begin immediately upon receiving your written authorization.

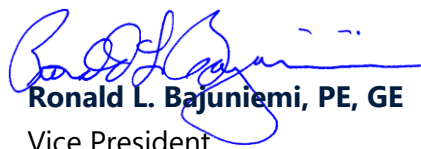
The proposed scope of work does not include identifying the presence, type, and extent of hazardous materials, if any, encountered during construction. If such materials are encountered, Fugro can provide appropriate hazardous materials consulting services under a separate contract with you.

We are pleased to provide this fee estimate to you and look forward to working with you on this project. If you have any questions or need additional information, please call.

Sincerely,



**Reza Rahimnejad, PhD**  
Senior Engineer



**Ronald L. Bajuniemi, PE, GE**  
Vice President

# Document Control

## Document Information

Project Title	Sunnyvale SCWP – Secondary Treatment & Dewatering Project
Document Title	Proposal for Geotechnical Services During Construction
Fugro Project No.	04.P0183631
Fugro Document No.	04.P0183631-P-002
Issue Number	04
Issue Status	Final
Fugro Legal Entity	Fugro USA Land, Inc.
Issuing Office Address	1777 Botelho Drive, Suite 262, Walnut Creek, California 94596

## Client Information

Client	Carollo Engineers, Inc.
Client Address	2795 Mitchell Drive, Walnut Creek, California 94598
Client Contact	Mr. Jamie Pigott, PE

## Revision History

Issue	Date	Status	Comments on Content	Prepared By	Checked By	Approved By
01	February 24, 2022	Daft	For Review	RR/MW	RLB	RLB
02	April 1, 2022	Draft	Revised per Client's Request	RR	RLB	RLB
03	April 5, 2022	Final		RR	RLB	RLB
04	June 7, 2022	Final	Revised per Client's Request	RR	RLB	RLB

City of Sunnyvale  
Sunnyvale Secondary Treatment and Dewatering Project  
ESDC - Secondary Treatment and Dewatering  
October 2022

Overall/ Carollo Detail			Carollo Labor																	Carollo ODCs	Total	Year (Midpoint)	Carollo/ Jacobs Labor Escalation	Total			
			Specific Project Role	Project Principal	Project Manager	Technical Support/ QC Lead	Construction Lead	Project Engineer/ Construction Lead	Civil Lead	Electrical	Instrumentation Lead	Structural Lead	Project Professional	Assistant Professional	Senior CAD	CAD Technician	Document Processing	Total Hours	Total Labor Costs	Key Partner	Geotech			Other Direct Costs	Total Fee	Total Fee	
				Project Principal	Project Manager	Technical Advisor/QC	Senior Project Professional	Project Professional	Project Professional	Senior Project Professional	Project Professional	Project Professional	Project Professional	Assistant Professional	Senior CAD	Staff Professional/ CAD Technician/ Graphics/ Administrative Assistant	Document Processing			Fee	Fee						
				Associated Rate Category in Rate Sheet	Project Principal	Project Manager	Technical Advisor/QC	Senior Project Professional	Project Professional	Project Professional	Senior Project Professional	Project Professional	Project Professional	Project Professional	Assistant Professional	Senior CAD	Staff Professional/ CAD Technician/ Graphics/ Administrative Assistant			Document Processing	Fee						Fee
				Individual	Jim Hagstrom	Karl Hadler	Scott Parker	John Newbrough	Jamie Pigott	Ryan Hook	Chris Carvalho/ Chris Loving	Doug Brown	Eric Wilkins	Various	Various	TBD	TBD			TBD	Fee						Fee
Rate	\$308	\$285	\$285	\$285	\$226	\$226	\$285	\$226	\$226	\$226	\$187	\$196	\$144	\$128	Fee	Fee											
Current Contract	I	Construction Support Services	-	-	-	-	-	-	-	-	-	-	-	-	-	-						2021.5	2%				
Current Scope/Budget	I.1	Base Scope Construction Support Services															\$ 1,894,837	\$ 1,040,650	\$ 63,000	\$ 65,489	\$ 3,063,976		\$ 285,571	\$ 3,349,547			
	I.1	Maintenance Building Deduction																\$ (116,990)									
		Current Total Budget for Base Scope of Work															\$ 1,894,837	\$ 923,660	\$ 63,000	\$ 65,489	\$ 2,946,986		\$ 285,571	\$ 3,232,557			
Revised Scope/Budget	I.1	Base Scope Construction Support Services	258	872	103	2,683	5,231	1,474	1,352	636	1,511	5,104	3,145	475	723	3,496	27,062	\$ 5,891,264	\$ 3,315,339	\$ 286,545	\$ 65,489	\$ 9,558,637	2025	\$ 563,373	\$ 10,122,009.46		
		Review RFI	118	388	47	1,210	2,350	588	588	235	588	2,233	1,410	118	118	1,763	11,750	\$ 2,555,049	\$ 1,606,123			\$ 4,161,172		\$ 254,631	\$ 4,415,802.96		
		Review Submittals and Substitution Request	103	339	41	1,059	2,057	514	514	206	514	1,954	1,234	103	103	1,542	10,283	\$ 2,235,886	\$ 1,144,252			\$ 3,380,137		\$ 206,839	\$ 3,586,976.22		
		Meetings and Field Observation	32	105	13	327	634	317	159	159	317	729	317	0	63	3,171	\$ 735,756	\$ 421,890	\$ 286,545	\$ 65,489	\$ 1,509,680		\$ 70,839	\$ 1,580,518.58			
		Prepare Record Drawings	0	12	0	25	62	25	62	25	62	75	112	248	497	37	1,242	\$ 230,020	\$ 80,988			\$ 311,008		\$ 19,032	\$ 330,039.57		
		Assist with Contract Change	6	20	2	62	120	30	30	12	30	114	72	6	6	90	600	\$ 130,466	\$ 58,374			\$ 188,841		\$ 11,556	\$ 200,396.22		
		(Optional) Post Construction Guaranty Period Meeting		8			8										16	\$ 4,087	\$ 3,712			\$ 7,799		\$ 477	\$ 8,275.90		
Additional Budget Request	I.1	Base Scope Construction Support Services															\$ 3,996,427	\$ 2,391,679	\$ 223,545	\$ -	\$ 6,611,651		\$ 277,801	\$ 6,889,452.03			



City of Sunnyvale  
Sunnyvale Secondary Treatment and Dewatering Project  
ESDC - Secondary Treatment and Dewatering  
October 2022

Jacobs Detail

Jacobs Detail			Jacobs Labor														ODCs		Total	Year (Midpoint)	Escalation	Total															
			Specific Project Role	Project Manager	Design Manager	Quality Management / Health and Safety	Architectural	Structural	Process Mechanical	Process Mechanical	Fire Protection / HVAC / Plumbing	Professional	Assistant Professional	Senior CAD	CAD Technician	Document Processing	Total Hours	Total Labor Costs	Other Direct Costs			Total Fee															
				Associated Rate Category in Rate Sheet																																	
				SR. Professional 2	SR. Professional 2	Pricipal Professional 1	Pricipal Professional 1	Pricipal Professional 1	Sr. Professional 1	Pricipal Professional 1	Pricipal Professional 1	Sr. Professional 2	Project Professional 2	Engineering Tech Lead	Technician 2	Office/Clerical																					
				Individual	Kathy Rosinski	Josh Koch	Geoff Kirsten	Geoff Kirsten	Alex Firth	Ryan Campbell	Cory Lancaster	Patrick Rausch	Various	Various	TBD	TBD							TBD														
Rate			\$215	\$215	\$249	\$249	\$249	\$187	\$249	\$249	\$215	\$165	\$217	\$123	\$120																						
	I	Construction Support Services														-	-	-	-	-	-	-	2021.5	2%													
Current Scope/Budet		I.1	Base Scope Construction Support Services															\$ 981,330.00	\$ 59,320	\$ 1,040,650.00		\$ 96,992	\$ 1,137,642														
		I.1	Maintenance Building Deduction															\$ (116,990.00)	\$ -	\$ (116,990.00)		\$ -	\$ (116,990)														
			Current Total Budget for Base Scope of Work															\$ 864,340.00	\$ 59,320	\$ 923,660.00		\$ 96,992	\$ 1,020,652														
Revised Scope/Budget		I.1	Base Scope Construction Support Services														324	705	157	1,170	2,006	1,220	1,220	374	3,490	2,743	948	678	727	15,764	\$ 3,256,019	\$ 59,320	\$ 3,315,339	2025	2%	\$ 3,518,194	
			Review RFIs														78	235	78	627	940	627	627	157	1,567	1,567	627	313	392	7,834	\$ 1,606,123		\$ 1,606,123		\$ 98,274	\$ 1,704,397	
			Review Submittals and Substitution Requests														55	166	55	443	664	443	443	111	1,439	1,107	221	111	277	5,533	\$ 1,144,252		\$ 1,144,252		\$ 70,013	\$ 1,214,265	
			Meetings and Field Observation														163	244	16	65	358	130	130	98	325	65	130	0	0	33	1,627	\$ 362,570	\$ 59,320	\$ 421,890		\$ 25,814	\$ 447,704
			Prepare Record Drawings														0	9	5	19	19	9	9	9	47	5	95	237	9	474	\$ 80,988		\$ 80,988		\$ 4,955	\$ 85,943	
			Assist with Contract Changes														28	42	3	17	17	11	11	0	112	0	6	17	17	280	\$ 58,374		\$ 58,374		\$ 3,572	\$ 61,946	
			(Optional) Post Construction Guaranty Period Meetings															8		8									16	\$ 3,712		\$ 3,712		\$ 227	\$ 3,939		
Additional Budet Requested		I.1	Base Scope Construction Support Services																													\$ 2,391,679	\$ -	\$ 2,391,679		\$ 105,864	\$ 2,497,543

Task Description	Sr. Principal Engineer (\$309.14/hr)	Principal Engineer (\$253.94/hr)	Sr. Professional (\$209.78/hr)	Project Engineer (\$182.17/hr)	Word Processor (\$110.41/hr)	Vehicle (\$93.85/day)	Estimated Cost
<b>9.1 Project Management Office</b> <ul style="list-style-type: none"> <li>Engineering Consultation</li> <li>Review of RFIs and Submittals</li> <li>Project management, monitoring of project progress, documentation</li> <li>Meetings</li> <li>DFRs</li> </ul>	20 40 5 20 10		40 80 5 20 20				\$ 63,980
<b>9.2 Field Observations</b> <ul style="list-style-type: none"> <li>During Earthwork, trenching, pavement sub-base preparation, and Shallow Foundations: <ul style="list-style-type: none"> <li>Assume a Project Engineer for 50 half-day site visits (@ 6 hrs/day, plus vehicle)</li> </ul> </li> <li>During Sheetpiles Installation <ul style="list-style-type: none"> <li>Assume a Project Engineer for 5 full-day site visits (@ 10 hrs/day, plus vehicle)</li> </ul> </li> <li>During Shoring Removal: <ul style="list-style-type: none"> <li>Assume a Project Engineer for 10 full-day site visits (@ 10 hrs/day, plus vehicle)</li> </ul> </li> </ul>				300 50 100		50 5 10	\$ 88,200
<b>9.3 Observation During the Installation of Auger Cast in Place (ACIP)</b> <ul style="list-style-type: none"> <li>Provide full-time observation during the installation of ACIP and testing (four ACIP load tests). Assume a project engineer for 47 full-time site visits (10 hrs./day at \$180/hr., plus \$120/day for vehicle = \$1,860/day, travel time included. Assume 1hr/site visit of senior professional for review of daily field reports at \$215/hr. Pile load tests are included (4days)</li> </ul>			47	470		47	\$ 99,980
<b>8.5 Construction Monitoring Reports</b> <ul style="list-style-type: none"> <li>Provide final installation report <ul style="list-style-type: none"> <li>We anticipate one summary report at the end of deep foundation installations</li> </ul> </li> </ul>	2		4	24	4		\$ 6,270
<b>Total:</b>							<b>\$258,430</b>
<b>Total Escalated through mid-2024 (multiplier: 1.055967307):</b>							<b>\$272,900</b>

Secondary Treatment and Dewatering Project  
ESDC Level of Effort: Scope Estimate & Assumptions

	Metric Value	Notes
Estimated Construction Cost	\$204,000,000	100% engineer's estimate
Total # of submittals	2239	
# of submittals	1261	based on preliminary submittal list
# of resubmittals	978	~75% rate, based on preliminary submittal list, consistent with Primary Project metrics
Total # of RFIs/RFCs	2448	
# of RFIs	2040	
# of RFCs	408	
RFIs per \$Million	10	same as used in site prep estimate, consistent with Primary Project metrics
RFCs per \$Million	2	same as used in site prep estimate, consistent with Primary Project metrics

Scope	Basis for Estimate			Total Carollo Hours	Notes
	Number	Units	Hours per item		
<b>1.0 Review Request for Information (RFIs)</b>				19,584	Total
				11,750	Carollo
				7,834	Jacobs
Review RFIs	2040	RFIs			7 hrs eng, 1 hr for document management
Carollo	1224	RFIs	8	9,792	
Jacobs	816	RFIs	8	6,528	
Review RFCs	408	RFCs			7 hrs eng, 1 hr for document management
Carollo	245	RFIs	8	1,958	
Jacobs	163	RFIs	8	1,306	
<b>2.0 Review Submittals and Shop Drawings</b>				15,816	Total
				10,283	Carollo
				5,533	Jacobs
Submittals	1261	submittals			7 hrs eng, 1 hr for document management
Carollo	800	submittals	8	6,991	~ 8hrs per submittal, developed based on preliminary submittal list
Jacobs	462	submittals	8	3,793	~ 8hrs per submittal, developed based on preliminary submittal list
Resubmittals	978	resubmittals			
Carollo	628	resubmittals	4	3,099	~ 4 hrs per resubmittal, ~75% rate
Jacobs	350	resubmittals	4	1,612	~ 4 hrs per resubmittal, ~75% rate
Substitution Requests	20	substitution requests			< consistent with original scope
Carollo	12	substitution requests	16	192	
Jacobs	8	substitution requests	16	128	
<b>3.0 Meetings and Field Observation</b>				4,830	Total
				3,187	Carollo
				1,643	Jacobs
Project Management	53	months			November 2022 to March 2027
Carollo	53	months	12	636	
Jacobs	53	months	8	424	
Pre-construction Conference	1	mtgs			per section 01200
Carollo	1	mtgs	16	16	
Jacobs	1	mtgs	16	16	
Progress Meetings	115	mtgs			Biweekly attendance at construction meetings
Carollo	115	mtgs	8	919	
Jacobs	115	mtgs	4	459	
Technical Meetings	121				
1: Submittals	68	mtgs			
Carollo	43	mtgs	8	344	3% of submittals
Jacobs	25	mtgs	8	200	3% of submittals
2: Quality Assurance	6	mtgs			
Carollo	4	mtgs	8	32	
Jacobs	2	mtgs	8	16	
3: Field Pre-Installation	12	mtgs			13 specs require pre-installation meetings
Carollo	6	mtgs	8	48	
Jacobs	6	mtgs	8	48	

4: Electrical Meetings	7		mtgs			as indicated in 01200
Carollo	7		mtgs	8	56	
5: I&C Meetings	8		mtgs			as indicated in 01200
Carollo	8		mtgs	8	64	
6: PG&E Coordination (onsite)	10		mtgs			Attendance at contractor/CM led PG&E coordination meetings
Carollo	10		mtgs	8	80	
7: Special/Expert Observation (structural, electrical, etc)	10		mtgs			
Carollo	6		mtgs	8	48	
Jacobs	4		mtgs	8	32	
PG&E Offsite Project Coordination	56		Months			
Carollo	56		Months	6	336	3 attendees each month plus 3 hrs support
Field Observation	50		mtgs			
Carollo	30		mtgs	16	480	
Jacobs	20		mtgs	16	320	
Final Inspections and Punchlist	2		days			
Carollo	2		days	48	96	4 staff, 2 days, 8 hr/day + data processing
Jacobs	2		days	48	96	4 staff, 2 days, 8 hr/day + data processing
Post Construction Guaranty Period Meetings	1		mtgs			OPTIONAL TASK - per section 01200
Carollo	1		mtgs	16	16	
Jacobs	1		mtgs	16	16	
Lessons Learned Workshop	1		mtgs			
Carollo	1		mtgs	16	16	
Jacobs	1		mtgs	16	16	
<b>4.0 Prepare Record Drawings</b>					1,716	Total
					1,242	Carollo
					474	Jacobs
Record Drawings	858		dwgs			< 2 hrs per dwg, consistent with original scope
Carollo	621		dwgs	2	1,242	
Jacobs	237		dwgs	2	474	
<b>5.0 Assistance with Contract Changes</b>					880	Total
					600	Carollo
					280	Jacobs
Review Cost Reduction Proposals	4		proposals			
Carollo	3		proposals	40	120	
Jacobs	1		proposals	40	40	
Assist with Review of Contract Change Orders	50		CCOs			< consistent with original scope
Carollo	30		CCOs	8	240	
Jacobs	20		CCOs	8	160	
Assist with Owner Requested Field Changes	8		field changes			
Carollo	6		field changes	40	240	
Jacobs	2		field changes	40	80	

**CAROLLO ENGINEERS, INC.  
FEE SCHEDULE**

**As of May 2022**

	<b><u>Hourly Rate</u></b>	<b><u>Individuals Covered by Proposed Rate</u></b>
Assistant Professional	\$187.00	TBD
Project Professional	\$226.00	Pigott (PE)/Hook (Civil Lead)/Brown (I&C Lead)/Wilkins (Structural Lead)
Senior Project Professional	\$285.00	Newbrough (Senior Construction Lead)/Carvalho (Senior Electrical Lead)/Loving (Senior Electrical Lead)
Project Manager	\$285.00	Hadler
Technical Advisor/QC	\$285.00	Parker
Project Principal	\$308.00	Hagstrom
Staff Professional/CAD Technician/Graphics/Administrative Assistant	\$144.00	TBD
Senior CAD Technicians	\$196.00	TBD
Document Processing	\$128.00	TBD

These hourly billing rates will be escalated by 2% beginning July 1, 2022.

**Sunnyvale Secondary Treatment and Dewatering Project**  
**CH2M HILL Engineers, Inc.**  
**Professionals and Technicians\***  
**2022 Hourly Billing Rates\*\***

<b>Classification</b>	<b>Rate</b>
<b>Principal-in-Charge*</b>	<b>\$332</b>
<b>Principal Professional 2*</b>	<b>\$298</b>
<b>Principal Professional 1*</b>	<b>\$249</b>
<b>Sr. Professional 2*</b>	<b>\$215</b>
<b>Sr. Professional 1*</b>	<b>\$187</b>
<b>Project Professional 3*</b>	<b>\$176</b>
<b>Project Professional 2*</b>	<b>\$165</b>
<b>Project Professional 1*</b>	<b>\$151</b>
<b>Staff Professional 2*</b>	<b>\$142</b>
<b>Staff Professional 1*</b>	<b>\$115</b>
<b>Engineering Technician Lead</b>	<b>\$217</b>
<b>Technician 3</b>	<b>\$165</b>
<b>Technician 2</b>	<b>\$123</b>
<b>Technician 1</b>	<b>\$104</b>
<b>Office/Clerical</b>	<b>\$120</b>

**Notes:**

\* Includes engineering, consulting, planner and scientist disciplines.

\*\*These rates are effective January 1, 2022 through December 31, 2022.

A markup of 5% shall be applied to all Other Direct Costs and Expenses.

An additional premium of 25% will be added to the above rates for Expert Witness and Testimony Services.

Rates are subject to escalation of 2% per year starting on January 1, 2018