

**PROFESSIONAL SERVICES  
SUPPLEMENTAL AGREEMENT # 02  
FOR  
WILBARGER CREEK REGIONAL WASTEWATER TREATMENT FACILITY**

**STATE OF TEXAS           §  
  §  
COUNTY OF TRAVIS       §**

This Supplemental Agreement No. 02 to a contract for Professional Services is made by and between the City of Pflugerville, Texas ("City") and Garver, LLC ("Consultant"). City and Consultant may be referred to herein singularly as "Party" or collectively as the "Parties."

WHEREAS, the City and Consultant executed an Agreement for Professional Services ("Agreement") on the 9<sup>th</sup> day of November, 2020 for the Wilbarger Creek Regional Wastewater Treatment Facility project ("Project") in the amount of \$1,605,192.00; and

WHEREAS, the City and Consultant desire to enter into a Supplemental Agreement # 01 for Professional Services for the Project in the amount of \$7,896,181.00, on June 22, 2021 to add Design, Bid Phase and Special Services effort to the Agreement; and

WHEREAS, the City and Consultant desire to enter into a Supplemental Agreement # 02 for Professional Services for the Project in the amount of \$6,891,860.00, on April 25, 2023 to add Construction Phase and Post Construction Engineering Services to the Agreement; and

WHEREAS, it has become necessary to amend the Agreement to modify the provisions for the Term of the Agreement, Scope of Services, and Compensation; and

WHEREAS, it is necessary for the City to amend its agreements from time to time to comply with changes in state law relating to contracts of municipalities.

NOW, THEREFORE, premises considered, the City and the Consultant agree that said Agreement is amended as follows:

**I.**

Article II. Term shall be amended by changing the term of the Agreement to terminate on January 31, 2027, with the ratification and incorporation of the remaining terms of the Agreement.

Article III. Scope of Services and Appendix A, shall be amended as set forth in the attached addendum to Appendix A.

Article IV. Compensation to Consultant and Appendix B (Fee Schedule), shall be amended by increasing/decreasing by \$6,891,860.00 the amount payable under the Agreement for a total of \$16,393,233.00, as shown by the attached Addendum to Appendix B (Fee Schedule).

2.

Except as amended hereby, and as previously amended as indicated above, the terms of the Agreement shall remain unchanged and in full force and effect.

**EXECUTED** and **AGREED** to as of the dates indicated below.

**CITY OF  
PFLUGERVILLE**

**CONSULTANT**

\_\_\_\_\_  
(Signature)

  
\_\_\_\_\_  
(Signature)

Printed Name: Sereniah Breland

Printed Name: Mary Elizabeth Mach, PE

Title: City Manager

Title: Vice President

Date: \_\_\_\_\_

Date: April 6, 2023

APPROVED AS TO FORM:

  
\_\_\_\_\_

Charles E. Zech  
City Attorney  
DENTON NAVARRO ROCHA BERNAL & ZECH, P.C.

**APPENDIX A – CITY OF PFLUGERVILLE  
WILBARGER CREEK RWWTF PHASE 1 CONSTRUCTION  
SCOPE OF SERVICES  
CONSTRUCTION PHASE SERVICES**

**GENERAL**

Generally, the Scope of Services includes professional services for the construction phase services as noted in this document for the City of Pflugerville Wilbarger Creek Regional Wastewater Treatment Facility (RWWTF). The Owner and Client is the City of Pflugerville (Owner) and is represented by CP&Y, the Owner's Representative (OR).

The Scope of Services includes professional services to support the construction phase of a new, greenfield 6 Million Gallons per Day (MGD) RWWTF. This project will be delivered as a Construction Manager At-Risk (CMAR) project and will include a Pre-Construction Services Phase (including Early Work Package and Project Optimization Subphases) along with a Construction Services Phase. The planned capital improvements include new facilities to meet the targeted capacity and treatment criteria for the permitted site.

The scope assumes all virtual meetings unless specifically identified in the scope. During the design phase of the project the following systems/facilities were designed:

- Hydraulic capacity of the RWWTF Annual Average Design of 6 MGD.
- Hydraulic capacity of the RWWTF Peak Flow of 24 MGD.
- Site civil, such as yard piping, site utilities (drains, water distribution), paving, drainage, site access and security.
- Influent pump station.
- Headworks facility with screening and grit removal with screenings and grit processing loading.
- Influent foul air facility.
- Aerobic sludge holding tank.
- Aerobic sludge holding tank transfer pump station.
- Secondary treatment splitter structures.
- A2O activated sludge basins for secondary treatment.
- Blower facility.
- Mixed liquor splitter box.
- Secondary clarifiers.
- RAS/WAS pump station.
- Tertiary filter facility.
- Ultraviolet disinfection facility.
- Effluent facility.
- Chemical storage and feed facilities.
- Non-potable plant water system.
- Solids dewatering facilities.
- Operations, laboratory, and maintenance building.
- Electrical service facilities and electrical distribution facilities.

- Backup power generator system.
- SCADA system.

## SCOPE OF WORK

The scope of work presented below describes the engineering services during the CMAR Pre-Construction Phase, the Construction Phase (including the commissioning and start-up sub-phase), and during the Post-Construction Phase of the Wilbarger Creek RWWTF Phase 1 Construction. The total duration of the project is approximately forty-five (45) months, with work being performed under the following Phases and Durations:

Phase	Anticipated Start	Anticipated Completion	Duration
CMAR Pre-Construction Phase	May 2023 (NTP)	December 2023	7 months
Construction Phase	August 2023 (EWP NTP)	October 2026 (Final Completion)	38 months
Post-Construction Phase (for Record Drawing Completion)	October 2026 (Final Completion)	January 2027	3 months

### 1. Task I: Project Management and Administration

#### 1.1 Project Management

Engineer shall monitor the delivery of the construction phase tasks for the Project. This task includes the Engineer's coordination with the Owner's staff, selected General Contractor, and OR to manage the delivery of the work outlined in this scope of work. The Engineer will perform the duties of project oversight and reporting to provide updates on the following items: project performance, schedule updates, budget tracking, monthly status reports, and project invoicing.

Engineer will track and update, for the work provided by the engineer, the budget, schedule, progress of work, and potential changes to the scope of work. Engineer will provide a project status report and submit with monthly invoice.

The project status report on the Engineer's work will include summary of work completed to date, work planned for upcoming month, and schedule update as needed.

It is assumed that the OR will track program overall budget and schedule and will submit all necessary outlay documents as required by the project funding agency.

#### 1.2 Coordination with Other Consultants

Coordination with other consultants who are currently working on the Wilbarger Interceptor Project and the Weiss Lane Lift Station Decommissioning Project to coordinate project activities throughout the project.

It is assumed that no more than four (4) coordination meetings will be held virtually during the construction phase. Each meeting will be no more than one hour in length. Other miscellaneous coordination will be handled via email correspondence or as part of progress meetings.

## **2. Task II: (Time and Materials) Engineering Support Service during CMAR Pre-Construction Services**

The Engineer will provide services to support the Owner and the selected CMAR Contractor during the Pre-Construction Phase of the project. Work to be provided under this task is to be based on a Time and Materials (T&M) basis. Budgets indicated show preliminary authorization of funding but does not imply a not-to-exceed fee for the Pre-Construction services (additional authorizations of funding may be deemed necessary if the level of effort necessary to complete Pre-Construction services is projected to exceed the original authorization amount).

### **2.1 Preconstruction Initiation**

- 2.1.0 CMAR Initiation/Kickoff Meeting: Engineer will participate in the CMAR Initiation Workshop, led by the Owner/Construction Management Team (who will lead the meeting, set the agenda, and prepare meeting minutes). It is anticipated that this meeting will be in-person at the Owner's facilities. Participants will include the project manager, design phase manager, lead process mechanical engineer, lead electrical engineer, lead instrumentation/controls engineer, lead structural engineer, lead civil engineer, and support specialists.
- 2.1.1 Design Coordination and Question/Answer Responses: Engineer will participate in the coordination of design elements and address questions/provide responses to the CMAR Contractor to address questions and clarifications to the 100% Issued for CMAR Procurement drawing set. For purposes of estimating the initial T&M fee authorization, a total of 100 questions is anticipated from the CMAR contractor.
- 2.1.2 Design Updates: Engineer will provide design updates to the 100% Issued for CMAR Procurement drawing set, based upon the original design intent, to drawings and specifications as part of the preparation of the initial project plan and Baseline CMAR Construction cost estimate. Design edits will be provided as Addenda to the original contract drawings. For purposes of estimating the initial T&M fee authorization, a total adjustment to the drawings and specifications are anticipated as follows (roughly equivalent to 10% of the document set): 50 specifications adjusted, 125 drawings adjusted, and 50 standard details adjusted.
- 2.1.3 Review and Coordination of CMAR OPCC: Engineer will review and coordinate regarding Opinion of Probable Construction Cost (OPCC) generated by the CMAR. CMAR will be scoped to provide an OPCC within 45 days of Notice to Proceed. This OPCC is anticipated to be based on the 100% design documents and any design updates completed as part of the initial question/answer responses. The OPCC is anticipated to utilize the anticipated Cost-Modeling template developed around anticipated CMAR work

packaging. Engineer is anticipated to review the OPCC, offer feedback, compare facility costs to the 100% (December 2022) Engineer's OPCC, and provide memorandum feedback. The engineer will have up to 15 days to provide feedback and issue comments by memorandum format.

- 2.1.4 Review Project Execution Plan: Engineer will review, coordinate, and comment regarding the Project Execution Plan prepared by the CMAR.
- 2.1.5 Review Project Risk Management Plan: Engineer will review, coordinate, and comment regarding the Risk Management Plan developed by the CMAR.
- 2.1.6 Meeting Participation: Engineer will participate in project update meetings throughout the Preconstruction Phase. Meetings are anticipated to occur virtually, weekly throughout the 7-month Preconstruction Phase (30 meetings total). Participants at each meeting are anticipated to include (for purposes of estimating this T&M task) the project manager, lead process mechanical engineer, and up to 2 additional engineering team members as needed to address project comments. Meetings are anticipated to last one hour and agendas and meeting minutes are anticipated to be provided by others (such as the owner, owner's representative, or CMAR).
- 2.1.7 Permitting Assistance: Engineer has previously completed permitting as needed with several entities. It is anticipated that, upon CMAR NTP, responsibility for permitting will shift to the CMAR for completion of all remaining/pending permits. In support of the CMAR on these additional efforts, the Engineer will assist the CMAR by updating drawings, providing support documentation, and/or participating in update conversations with permitting entities to finalize.
- 2.1.8 Initial Design Optimization Coordination: Engineer will review the initial list of Design Optimizations provided by the CMAR to assess benefits, drawbacks, realignment towards design objects, concerns, etc. This should occur prior to the start of the detailed analysis provided during the Optimization Subphase.

## 2.2 Early Work Packaging Sub-Phase

The CMAR is anticipated to release an Early Work Package (EWP) with multiple subpackages early in the Pre-Construction Phase. EWP subpackages should generally be based on the original "Issued for CMAR Procurement" set, with only minor modifications or design optimizations. The EWP Sub-Phase will include issuance of an EWP Guaranteed Maximum Price (GMP) by the CMAR and is anticipated to result in a Change Order to the CMAR to initiate construction of the EWP work.

- 2.2.0 EWP Packaging: Engineer will support CMAR in developing EWP bidding phase packaging, as needed. It is expected that the CMAR will provide the primary effort in developing packaging; however, Engineer will support by reviewing bid packages, clarifying front-end specification language, and/or providing documents to assist CMAR in

splitting the work. For purposes of estimating effort for this T&M task, 30 subpackages were assumed to be bid.

- 2.2.1 EWP Bidding Phase Support: Engineer will issue clarifications during EWP bidding phase as requested by the CMAR and CMAR suppliers, and, as necessary, issue drawing and specifications revisions by addendum to address clarifications. For purposes of estimating effort for this T&M task, a total of 10 questions, 10 specifications updates, and 10 drawing updates were assumed.
- 2.2.2 Review of EWP Pricing and Evaluation: Engineer will provide review of the EWP pricing and assist in advising the evaluation team on packages provided by CSP procurement. For purposes of estimating effort for this T&M task, a total of 20 CSP package reviews (meetings held virtually) were assumed, in addition to evaluation of up to 30 subpackages and pricing.
- 2.2.3 Participate in EWP GMP Workshop: Engineer will prepare and participate in the EWP GMP Workshop with the Owner, OR, Construction Observation, and CMAR. This workshop should serve as a review of all EWP pricing and prepare for issuance of the CMAR EWP Change Order to initiate construction. For purposes of estimating effort for this T&M task, it is anticipated that this meeting will occur in-person for a 3-hour duration and will include the project manager, lead process mechanical engineer, and up to two additional design team members. Agendas and meeting minutes will be provided by others (CMAR).
- 2.2.4 EWP Conformed Document Set Preparation: Engineer will issue an EWP Conformed Document set, which will include updates for any addenda prepared during the EWP Bidding Phase. Drawings, Specifications, and Standard details will be provided as "EWP Conformed."

### 2.3 Optimization Sub-Phase

The design team and CMAR are anticipated to conduct an Optimization Sub-Phase, which will include the optimization of the design for scope, schedule, budget, and risk purposes as mutually agreed by the Design Team, Owner, OR, Construction Observer, and CMAR. The anticipated workflow for optimization activities is:

1. Identification of optimization request by CMAR.
2. Initial coordination of optimization (as noted in Task 2.1.8 above).
3. Optimization Workshop #1, led by CMAR, to provide additional information regarding risk mitigation, schedule benefits, cost impacts, etc.
4. Design engineer prepares level of effort, scope (anticipated drawing/specification updates), and schedule requirements necessary to complete the optimization.
5. Evaluation of the optimization for "Go" or "No-Go."
6. Owner/OR issues written "notice to proceed" for design optimization.
7. Design engineer prepares design updates for the optimization (including calculations,

- preparation of drawings and specifications, QA/QC reviews, etc.)
8. Engineer submits design revision to Owner, OR, CM, and CMAR for evaluation and comment.
  9. Optimization Workshop #2, led by CMAR in virtual setting, to confirm understanding of design revisions and benefits to the project.
  10. Acceptance of the design optimizations prior to the Balance of Plant package bidding.

It is anticipated that each design optimization, examples as noted in Section 2.3.1 below, will follow the workflow indicated above.

2.3.0 Optimization Workshop 1: Engineer will participate in the Optimization Workshop #1 led by the CMAR. It is anticipated that this meeting will be in-person at the Owner's facilities. Participants will include the Project Manager, Design Phase Manager/Process Mechanical Engineer, lead electrical engineer, lead instrumentation/controls engineer, lead structural engineer, lead civil engineer, and support specialists. Agendas and meeting minutes will be provided by others (CMAR).

2.3.1 Prepare Design Optimization Designs: Multiple design optimization package adjustments are anticipated to be accepted. Examples are noted and preliminarily estimated for level of effort below. The effort shown is preliminary and provided only for purposes of estimating the authorization amount of this T&M task. The level of effort for each optimization will be finalized during the Optimization Subphase after clarification of scope, design updates, and issuance of Notice to Proceed.

2.3.1.0 Design Optimization #1: Engineer to prepare Design Optimization. For example, this could include modifications to the Influent Lift Station. For estimation purposes for this T&M Task, Garver has assumed the preparation of up to 30 drawings and revisions on 5 specifications necessary to support the updates.

2.3.1.1 Design Optimization #2: Engineer to prepare Design Optimization. For example, this could include modifications to Aeration Basin structural design to accommodate a Post-Tension Design Alternate. For estimation purposes for this T&M Task, Garver has assumed the preparation of up to 20 drawings and revisions on 3 specifications necessary to support the updates.

2.3.1.2 Design Optimization #3: Engineer to prepare Design Optimization. For example, this could include modifications to Foundation Design Optimizations. For estimation purposes for this T&M Task, Garver has assumed the preparation of up to 20 drawings and revisions on 3 specifications necessary to support the updates.

2.3.1.3 Design Optimization #4: (To be added as noted by separate agreement; hours are shown to establish budget for the initial T&M authorization):

## 2.4 Balance of Plant Packaging Sub-Phase

In addition to the EWP, the CMAR is anticipated to complete a Balance of Plant (BOP) bid package with multiple subpackages to conclude the Pre-Construction Phase. BOP subpackages should



generally be based on the original “Issued for CMAR Procurement” set, with only minor modifications or design optimizations. The EWP Sub-Phase will include issuance of an EWP Guaranteed Maximum Price (GMP) by the CMAR and is anticipated to result in a Change Order to the CMAR to initiate construction of the EWP work.

- 2.4.0 BOP Packaging: Engineer will support CMAR in developing BOP bidding phase packaging, as needed. It is expected that the CMAR will provide the primary effort in developing packaging; however, Engineer may be asked to support by reviewing bid packages, clarifying front-end specification language, and/or providing documents to assist CMAR in splitting the work. For purposes of estimating effort for this T&M task, 30 subpackages were assumed to be bid.
- 2.4.1 BOP Bidding Phase Support: Engineer will issue clarifications during EWP bidding phase as requested by the CMAR and CMAR suppliers, and, as necessary, issue drawing and specifications revisions to address clarifications. For purposes of estimating effort for this T&M task, a total of 10 questions, 10 specifications updates, and 10 drawing updates were assumed.
- 2.4.2 Review of BOP Pricing and Evaluation: Engineer will provide review of the BOP pricing and assist in advising the evaluation team on any packages provided by CSP procurement. For purposes of estimating effort for this T&M task, a total of 30 CSP package reviews (meetings held virtually) were assumed, in addition to evaluation of up to 30 subpackages and pricing.
- 2.4.3 Participate in BOP GMP Workshop: Engineer will prepare and participate in the BOP GMP Workshop with the Owner, OR, Construction Observer, and CMAR. This workshop should serve as a review of all BOP pricing and prepare for issuance of the CMAR BOP Change Order to complete construction initiation. For purposes of estimating effort for this T&M task, it is anticipated that this meeting will occur in-person for a 3-hour duration and will include the Project Manager, Design Phase manager, and up to two additional design team members. Agendas and meeting minutes will be provided by others (CMAR).
- 2.4.4 BOP Conformed Document Set Preparation: Engineer will issue a BOP Conformed Document set, which will include updates for any addenda prepared during the BOP Bidding Phase. Drawings, Specifications, and Standard details will be provided as “BOP Conformed.”

### **3. Task III: ENGINEERING SERVICE DURING CONSTRUCTION**

#### **3.1 Monthly Progress Meetings and Site Visits**

- 3.1.0 Pre-construction Meeting: The Engineer will attend one (1) pre-construction meeting at the outset of NTP for EWP Authorization to provide information & answer questions.

Meeting agenda and summary will be provided by the Owner's Representatives / Construction Manager (OR/CM) team.

- 3.1.1 Monthly Progress Meetings: Engineer will attend Monthly Progress Meetings to be held during the project with the Owner's staff, Contractor, and OR/CM to discuss aspects of the project presently underway, project schedule, and upcoming issues. The scope of work assumes thirty-eight (38) progress meetings that will be facilitated by OR/CM. These meetings will generally be about two (2) hours in duration. The appropriate Engineer team members shall attend these meetings to discuss pertinent issues, typically by three people (typically the project manager, design phase manager, and one additional design team member). Meeting agenda and summary will be provided by OR/CM team.
- 3.1.2 Virtual Meetings: In addition to the 38 in-person progress meetings, it is anticipated that thirty-eight (38) bi-weekly virtual meetings will be held over the course of construction to discuss construction progress, coordinate on RFI and shop drawings responses, and miscellaneous construction issues, and schedule of upcoming activities and meetings. It is assumed that Engineer will have three people (project manager, design phase manager, and one additional team member) at each call, plus subject matter experts as needed, and the call duration will be one hour for each. Meeting agenda and summary will be provided by OR/CM team.
- 3.1.3 Post-Progress Meeting Site Visits: The Engineer will make visits to the site to observe construction progress at intervals appropriate to the stage and on-going work being conducted. Visits will be conducted once per month in conjunction with the construction progress meetings to observe construction progress. The purpose of the visits will be to assess the construction progress, quality of the work, coordinate with Contractor on upcoming CS&U strategies and generally determine if the work is proceeding in accordance with the Contract Documents. The site visits will be scheduled to coincide with the monthly project meetings and to walk the site and develop a standardized report on the general conformance of the work in place, construction observation and any issues identified by the project representatives that attended the meeting. Engineer is to provide photo log and written summary of any issues observed at the site for each visit.
- 3.1.4 Discipline Site Visits: In addition, 54 site visits are included by various discipline leads. These site visits will be used to address field issues that may rise during construction (this assumes two project representatives per visit), including visits as follows:

- Architectural – 5
- Structural – 15
- HVAC, Plumbing, and Fire Protection/Fire Alarm – 4
- Electrical – 20

- Instrumentation, Control, and SCADA – 10

Engineer is to provide photo log and written summary of any issues observed at the site for each visit.

### 3.2 Submittal Review and Substitutions

- 3.2.0 Submittals: The Engineer will review and approve, or take other appropriate action, with respect to shop drawings, equipment operation manuals, samples, and other data which Construction Contractor is required to submit for conformance with the Contract Documents. The scope of work assumes up to 1,100 shop drawings (600 action-review drawings and 500 informational review drawings) and 650 resubmittal reviews. Submittal review responses will be provided through the Owner's construction document control system.
- 3.2.1 Submittal Review: Corrections or comments made by Engineer on the shop drawings during this review will not relieve Contractor from compliance with requirements of the drawings and specifications. The check will only be for review of general conformance with the design concept of the Project and general compliance with the information given in the contract documents. The Contractor will be responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner. Engineer's review shall not constitute approval of safety precautions or constitute approval of construction means, methods, techniques, sequences, procedures, or assembly of various components. When certification of performance characteristics of materials, systems or equipment is required by the Contract Documents, either directly or implied for a complete and workable system, Engineer shall be entitled to rely upon such submittal or implied certification to establish that the materials, systems or equipment will meet the performance criteria required by the Contract Documents.
- 3.2.2 Software Licenses: Software licenses required for construction document control will be provided by Others.
- 3.2.3 Submittal Review Coordination Virtual Meetings: To facilitate quick turnaround on key submittal reviews by multidiscipline, up to thirty (30) submittal review coordination virtual meetings will be held with the key project team members, Contractor, and equipment suppliers to discuss review comments and clarifications. These meetings will be no more than 2 hours each, and the CMAR will coordinate to schedule meetings, provide meeting agendas at least 3 days prior to the meeting, and provide meeting minutes. Meetings are suggested to occur during the initial submittal development by the manufacturers (so disciplines can provide specific feedback of items of concern prior to the release of the

submittal), approximately one-third or halfway through the submittal review period (so disciplines can provide initial feedback on items and clarifications that may be necessary to avoid resubmittal), or after submission of a rejected submittal response (to provide additional context as to the reasons for submittal rejection). These suggestions may be expanded as necessary to meet project needs.

3.2.4 Conformance: Review laboratory, shop, and mill test of material for general conformance with Contract Document requirements.

3.2.5 Substitutions: The Engineer will evaluate and determine the acceptability of substitute materials and equipment proposed by the Construction Contractor and make recommendations to the Owner as to their acceptance or rejection. The scope of work assumes up to 10 such individual substitution evaluations.

### 3.3 Requests for Information and Work Change Directives

3.3.0 Requests for Information (RFIs): The Engineer will address RFIs submitted during construction to provide additional clarifications regarding the intent of the Contract Documents as appropriate to facilitate the completion of the work. Such clarifications and interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. The scope of work assumes the response of up to 200 RFIs during the construction period.

3.3.1 Work Change Directives (WCDs): The Engineer will review and prepare WCDs which will subsequently be incorporated into a Change Order, to the Owner's staff as appropriate for the Owner to approve and issue the directives. The Engineer shall not issue or have the authority to approve such WCDs until the Owner has approved and accepted the Contractor's cost and schedule change to implement such WCDs. The scope of work assumes up to 20 WCDs shall be coordinated and executed during the construction period.

### 3.4 Substantial and Final Completion Inspections

3.4.0 Substantial Completion Inspection: Following notice from the Contractor that the construction work is substantially complete, the Engineer will have a representative from each discipline on site, in conjunction with the Owner and OR/CM, to conduct the necessary inspection(s) to determine if the work is substantially complete. After considering any objections by the Owner, the Engineer will deliver a list of items to be corrected or completed prior to achieving Final Completion. It is assumed the OR/CM will issue notice of Substantial Completion.

3.4.1 Substantial Completion Coordination and Resolution: Engineer will assist the Owner and its representatives that the CMAR contractor addresses items on the punchlist to the

satisfaction of the Owner. This could include coordination, review of additional materials, coordination of change orders, and other tasks necessary to complete the punchlist activities.

- 3.4.2 Final Inspection: The Engineer will conduct a final inspection to determine if the completed work is acceptable, so the OR/CM may recommend, in writing, final payment to the Construction Contractor and may give written notice to the Owner and Construction Contractor that the work is acceptable. The Engineer will indicate that the work is acceptable to the best of their knowledge, information and belief and based on the extent of services performed and furnished under this Agreement.
- 3.4.3 Final Completion Coordination and Resolution: Engineer will assist the Owner and its representatives that the CMAR contractor addresses items on the punchlist to the satisfaction of the Owner. This could include coordination, review of additional materials, coordination of change orders, and other tasks necessary to complete the punchlist activities. It is assumed the Engineer and OR will both provide a certification that work has been completed in accordance with the Contract Documents. It is assumed that OR will issue Final Completion documents for Engineer review and signature.
- 3.4.4 Project Completion Activities Summary: In performing project completion activities, including Substantial Completion reviews and Final Completion Review services, Engineer will endeavor to protect the Owner against defects and deficiencies in the work of the CMAR; but Engineer cannot guarantee the performance of the CMAR, nor be responsible for the actual supervision of construction operations or the safety measures that the CMAR takes or should take. However, if during construction Engineer observes that the CMAR's work does not comply with the construction contract documents, Engineer will notify the Owner and the Owner's Representatives of such non-compliance and provide, if necessary, its recommendation that the CMAR correct the deficiency and/or stop work, as appropriate for the situation as part of the Substantial Completion Review and the Final Completion Review. Engineer will also record the observance, the discussion, and the actions taken. If the CMAR continues without satisfactory corrective action, Engineer will notify the Owner immediately, so that appropriate action under the Owner's contract with the CMAR can be taken.

### 3.5 Record Drawings

The Contractor will provide the complete record of As-Built redlines in electronic format. The Engineer will develop record drawings based on the As-Built redlines provided by the Constructor and submit to the Owner via electronic submission.

## 4. Task V: Commissioning and Start-Up Engineer Support and Witness Factory Testing

It is understood that the Owner will develop commissioning and start up (C&SU) testing procedures for

the Contractor and Contractor will implement the testing procedures. It is assumed that the Owner or their OR will lead all Pre-C&SU meetings, set the agenda, and prepare minutes. Contractor will be responsible for leading all meetings during C&SU in the same manner, along with overall coordination and construction completion during the C&SU period. Contractor is still required to submit the testing procedures through the normal review process through the Engineer. It is assumed that C&SU staffing plan/matrix, communication protocol, water quality monitoring and sample plan, testing QAQC, C&SU checklist, acceptance requirements, testing phase and schedule, daily reports, testing operation supplies quantity estimating, and etc. will be developed and outlined in detail by the Owner to include in the C&SU testing plan. The Engineer will provide support of the Owner developed C&SU testing plan and procedures as follows.

#### 4.1 Testing Plan Review, Coordination Meetings, and Site Visits

Engineer will supply commissioning and startup support for the following items:

- 4.1.0 C&SU Testing Plan Review and Meetings: The Engineer will review the C&SU plan. Engineer shall attend up to two (2) plan review meetings with the Contractor, Owner, and OR/CM to discuss comments and finalize the testing plan. One (1) meeting will include process mechanical team, and one meeting will include process mechanical team, electrical team, and I&C/control team. Each meeting will be about four hours in duration, and meeting agendas and minutes shall be the responsibility of the Owner, OR, or CMAR Team.
- 4.1.1 Pre-C&SU Coordination and Meetings: Engineer will attend Pre-C&SU coordination meetings with the Contractor, Owner, and OR/CM to plan C&SU activities and provide inputs to preliminary process set points, including up to two (2) in-person meetings and two (2) virtual meetings. Each in-person meeting will have up to three persons attending from the process mechanical team. Each virtual meeting will have up to six persons attending, from the process mechanical team, electrical team, and I&C/control team. The in-person meetings will generally be about four (4) hours in duration and the virtual meetings will be about two (2) hours each in duration, and meeting agendas and minutes shall be the responsibility of the Owner, OR, or CMAR Team.
- 4.1.2 C&SU Coordination Site Visits: Engineer will make up to two (2) site visits for C&SU coordination.
- 4.1.3 Coordination Meetings during C&SU: The Engineer will attend up to four (4) virtual meetings during C&SU period to coordinate with the Contractor, Owner, and OR team to discuss field issues and solutions. Topics discussed at each of the OR/Contractor-led C&SU Coordination Meetings will be progress to date, upcoming schedules, vendor onsite support and coordination needs, and issues found to date including resolution progress. These meetings will be about two hours each in duration, and meeting agendas and minutes shall be the responsibility of the Owner, OR, or CMAR Team.

- 4.1.4 C&SU Training and O&M Staff Coordination: It is assumed that the Owner will provide chemical supplies during the C&SU testing. It is assumed that the OR team will monitor daily operation and treatment performance during the C&SU, coordinate with the Owner plant staff to collect samples and to perform analytical testing in accordance with the C&SU testing plan, and document daily operation logs, event logs, field issues and observations etc. Analytical testing will be paid by others.
- 4.1.5 I&C Coordination: Engineer to participate in up to three (3) coordination meetings with the Plant Control System Integrator (PCSI) to review scheduling, shop drawing submittals, and design implementation, and meeting agendas and minutes shall be the responsibility of the Owner, OR, or CMAR Team.
- 4.1.6 Process Training: Engineer will prepare and provide Process Training for the operations staff prior to seeding. The training will be developed to be done in two (2) sessions and each session is planned for up to six (6) hours. Engineer assumes that the training will be performed two times for each session to help manage operator availability.

#### 4.2 Witness Factory Testing and Functional Demonstration Testing

Engineer will evaluate and provide recommendations regarding factory and/or field test procedures of key equipment, and Application Services Provider. It is anticipated that the Owner, OR (such as the C&SU subconsultant), or CMAR startup team will provide agendas and/or anticipated schedules of operations and minutes for these reports.

- 4.2.0 PCSI Witness Factory Testing (WFT): Engineer will attend the WFT along with the PCSI, and Owner's SCADA Inspector (assumed virtual attendance). The testing will be conducted in the System Integrator's facility as applicable. The test will verify functionality, performance, and stability of the hardware and software. Engineer will support the WFT with up to two (2) separate trips and up to ten man-days total.
- 4.2.1 Vendor Witness Factory Testing (VWFT): Engineer will attend the VWFTs along with the PCSI, and Owner's SCADA Inspector (virtual attendance only). The testing will be conducted in the Vendors' facilities as applicable. The test will verify functionality, performance, and stability of the monitoring and control functionality with the SCADA HMI Control System prior to vendor's system delivery to the job site. There is a total of up to six (6) separate such VWFTs to be conducted.
- 4.2.2 Operational Readiness Testing (ORT), Clean Water Test (CWT), and Seeding: The ORT will be conducted by the PCSI and witnessed by the Construction Manager/Observer. The CWT will be conducted prior to seeding. The testing will be conducted at the project site. The entire system shall be checked for proper installation, calibrated, and adjusted on a loop-by-loop and component-by-component basis to ensure that it is in conformance with related submittals and specifications. Engineer will support the ORT, CWT, and

Seeding with up to five (5) separate trips and up to ten (10) total man-days.

4.2.3 Functional Demonstration Testing (FDT): Engineer will attend the FDT with the PCSI, Application Services Provider, applicable Equipment Suppliers and Owner's SCADA Inspector. The testing will be conducted at the project site to demonstrate that it is operating and in compliance with the specifications. Each specified function shall be demonstrated on a site- by-site basis. Engineer will support the FDT with up to two (2) separate trips and up to four (4) total man-days.

4.2.4 Site Acceptance Test (SAT): The 30-day SAT will be a test by the Contractor, PCSI and Owner's SCADA inspector. The testing will be conducted at the project site to demonstrate the entire system will operate continuously for a period of 30 consecutive days with full plant operation, without a single non-field repairable malfunction. Engineer will provide support and oversight of the SAT with up to two (2) separate trips and up to five (5) total man-days.

## **5. Task V: Final Power System Studies**

A preliminary power study for purposes of determining the available short circuit duties and potential arc flash hazard was performed during the final design phase. The final power system study will be conducted during the construction phase by the Contractor and Engineer.

## **6. Task VI: (Time and Materials) Regulatory Coordination**

Garver will assist the Owner in complying with regulatory and agency technical requirements for the construction of the RWWTF as noted in the following items:

- The technical requirements for State's technical regulations as administered by TWDB for this project.
- The funding program requirements of the TWDB's Clean Water State Revolving Fund (CWSRF).
- Garver will assist the Owner with startup and commissioning coordination for the Texas Commission on Environmental Quality (TCEQ).
- Miscellaneous additional coordination on a Time and Materials Basis.

## **7. TASK VII: (Time and Materials) Additional Service Tasks**

These items are not part of the basic engineering services and will be added to the scope of services upon written authorization from the Owner. The services provided under this task will be used at the Owner's discretion on an as-needed basis.

### **7.1 Additional Engineering Service During Construction**

This task represents additional engineering services during construction to be used if the number of site visits, submittals/resubmittals and/or RFIs exceed those planned for in Task 2 and Task 4, and any additional engineering service that may be required.



## **8. Task VIII: Other Service Tasks, Clarifications, and Exclusions**

Other service tasks will be negotiated with the Owner as needed, including additional studies and investigation as required to support recommended solution and/or as required to address system which may become affected as a result of the proposed work but not originally envisioned or as added by the Owner. These other services may include the following and will be authorized by the Owner in writing for an additional fee as agreed upon by the Owner and the Engineer:

1. Any additional meetings during construction and commissioning and start-up, outside of those listed herein.
2. Overall Plant Operations and Maintenance (O&M) Manual Preparation.
3. Treatability studies.
4. Physical laboratory scale modeling.
5. Hydraulic transient analysis.
6. Computational fluid dynamics (CFD) modeling.
7. Any off-site survey work outside the plant fence line.
8. Subsurface utility engineering.
9. Any additional geotechnical borings and laboratory testing.
10. Phase 1 and Phase 2 environmental site assessment (ESA).
11. USACE Permitting.
12. Archeological investigation Services.
13. Plant security system design.
14. Site landscaping.
15. Texas Department of Insurance windstorm inspection as city is located outside of tier 1 counties.
16. Development of value engineering design options and associated cost savings.
17. Construction management and inspection.
18. Review and approval of Contract's applications for payment is in OR's Scope.
19. Plant SCADA system programming and application engineering services.
20. Vendor control panel testing by Owner's SCADA Inspector.
21. HVAC Inspection outside of those listed herein.
22. Analytical laboratory testing during C&SU.
23. Testing chemicals during C&SU.
24. System Operation and Maintenance manual.
25. Hard copies of record drawings and specifications.
26. Engineer support services during one-year warranty outside of those listed herein.
27. Software licenses needed for review of construction documents.
28. Engineer's support to provide documents and respond questions from federal funding agencies, and to prepare, coordinate, and submit necessary documentation to assist with project reimbursement and project closeout documents.
29. The contractor will provide on-site concrete cylinder cure boxes for construction material testing. Contractor to provide OSHA rated lift for observations of above-grade structural steel and bolted / welded connections.
30. Contractor's Defective Work Correction
31. Geotechnical Engineering Supports During Construction Phase
32. Additional Virtual Meetings During Construction

33. Engineer Support During Two-Year Warranty
34. End-of-Warranty Walkthrough
35. Building Mechanical and HVAC Inspection

## Appendix B

### City of Pflugerville

#### *Wilbarger Creek RWWTF Phase 1 Construction Services*

### FEE SUMMARY

<b>Basic Services Section</b>	<b>Estimated Fees</b>
Task 1: Project Management and Administration	\$ 594,280
Task 2: (T&M) Engineering Support Service during CMAR Pre-Construction	\$ 1,643,090
Task 3: Engineering Service During Construction	\$ 3,789,440
Task 4: Commissioning & Start-Up Engineer Support and Witness Factory	\$ 547,720
Task 5: Final Power System Studies	\$ 22,540
TASK 6: (T&M) Regulatory Coordination	\$ 68,210
<b>Subtotal for Basic Services Section</b>	<b>\$ 6,665,280</b>
<b>Additional Services Section</b>	<b>Estimated Fees</b>
Task 7: (T&M) Additional Service Tasks	\$ 216,580
<b>Subtotal for Additional Services Section</b>	<b>\$ 216,580</b>
<b>Total All Services</b>	<b>\$ 6,881,860</b>

APPENDIX B

City of Pflugerville  
Wilbarger Creek RWWTF Phase 1 Construction Services

All Tasks

WORK TASK DESCRIPTION	Project Management				Process/Process Mech				Civil		Structural		Electrical		BIM			Tech Writer	Admin	Arch.		GARVER	GARVER	SUBCONSULTANT	SUBCONSULTANT	GARVER MARKUP ON SUBS	GARVER	SUB-CO TOTAL	TOTAL
	SR PM	PE	Design Lead	QA/QC Lead	PM Group Lead	Sr Process Eng	PE	EIT	PM/PE	EIT	SR PM	EIT	SR PM	PE	Designer Revit	Designer II	Designer I	Doc Processing	Admin	SR Arch	Jr. Arch.								
	E-6	E-2	E-5	E-7	E-5	E-4	E-2	E-1	E-3	E-1	E-6	E-1	E-6	E-2	D-3	D-2	D-1	RS-2	AM-2	E-6	E-2								
	\$335.00	\$158.00	\$272.00	\$385.00	\$272.00	\$223.00	\$158.00	\$137.00	\$192.00	\$137.00	\$335.00	\$137.00	\$335.00	\$158.00	\$178.00	\$150.00	\$128.00	\$120.00	\$106.00	\$335.00	\$158.00	LABOR	ODC	Kfrnese	GAI		TOTAL		
	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.	hr.			5%	5%				
<b>Basic Services Section</b>																													
<b>1. Task 1: Project Management and Administration</b>																													
1. Project Management	720	540	450	55															90			\$479,635	\$1,000	\$29,720	\$46,080	\$3,790	\$484,425	\$75,800	\$560,225
2. Coordination with Other Consultants	40	40	40																8			\$31,448	\$0	\$0	\$2,476	\$124	\$31,572	\$2,476	\$34,048
<b>Subtotal - Task 1: Project Management and Administration</b>	<b>760</b>	<b>580</b>	<b>490</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>\$511,083</b>	<b>\$1,000</b>	<b>\$29,720</b>	<b>\$48,556</b>	<b>\$3,914</b>	<b>\$515,997</b>	<b>\$78,276</b>	<b>\$594,273</b>
<b>2. Task 2: (T&amp;M) Engineering Support Service during CMAR Pre-Construction Services</b>																													
2.1 Preconstruction Initiation																						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.1.0 CMAR Initiation/Kickoff	24	12	24	4	8	8			8		8		2		8							\$28,274	\$600	\$2,910	\$2,366	\$264	\$29,138	\$5,276	\$34,414
2.1.1 Design Coordination and Q/A	30	40	50	8	30	30			50	25	50		8	25					100			\$89,779		\$7,680	\$0	\$384	\$90,163	\$7,680	\$97,843
2.1.2 Design Updates	135	68	135	40	34	23	113		34	34	34		45	8	150	238	300	100				\$298,606		\$39,680	\$29,872	\$3,478	\$302,084	\$69,552	\$371,636
2.1.3 Review CMAR OPCC	16	16	32		4	4	113		8	4	8		2		8							\$24,510		\$3,470	\$7,232	\$535	\$25,045	\$10,702	\$35,747
2.1.4 Review Project Execution Plan	8	8	12																			\$7,688		\$0	\$0	\$0	\$7,688	\$0	\$7,688
2.1.5 Review Risk Management Plan	8	8	12																			\$7,688		\$0	\$0	\$0	\$7,688	\$0	\$7,688
2.1.6 Meeting Participation	30	16	30	6		12																\$31,344		\$2,175	\$0	\$109	\$31,453	\$2,175	\$33,628
2.1.7 Permitting Assistance	40	10	10						15	30					15		30	30				\$34,800		\$3,720	\$0	\$186	\$34,986	\$3,720	\$38,706
2.1.8 Initial Design Optimization Coordination	40	40	60	18	20	20			40	40	60	60	8	8	16							\$106,684		\$9,920	\$0	\$496	\$107,180	\$9,920	\$117,100
2.2 Early Work Packaging Sub-Phase																						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.2.0 EWP Packaging	15	30	15			15			15	30	12	12			90		60	30				\$57,144		\$0	\$2,607	\$130	\$57,274	\$2,607	\$59,881
2.2.1 EWP Bidding Phase Support	15	15	15			8			15	8	15	12	24		15	30	60	15				\$42,863		\$12,600	\$6,560	\$958	\$43,821	\$19,160	\$62,981
2.2.2 EWP Pricing and Bid Evaluations	30	30	30						4	1	4	1	4									\$28,721		\$0	\$2,588	\$129	\$28,850	\$2,588	\$31,438
2.2.3 Participate EWP GMP Workshop	12	12	12																			\$10,620		\$837	\$42	\$10,662	\$837	\$11,499	
2.2.4 EWP Conformed Document Set Prep	6	30	12	2		4	4	8	4	8	4	8	1	4	30	60	60	16				\$42,611		\$6,840	\$1,968	\$440	\$43,051	\$8,808	\$51,859
2.3 Optimization SubPhase																						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.3.0 Optimization Workshop #1	12	12	12																			\$10,620	\$600	\$2,640	\$1,356	\$200	\$11,420	\$3,996	\$15,416
2.3.1 Prepare Design Optimization Packages																						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.3.1.0 Design Optimization #1	16	16	32				8	16	30	60	60	120	4		60	60	120	12				\$108,388		\$31,220	\$7,926	\$1,957	\$110,345	\$39,146	\$149,491
2.3.1.1 Design Optimization #2	12	12	24				6	12	20	40	60	120	2		40	40	80	12				\$86,366		\$0	\$7,926	\$396	\$86,762	\$7,926	\$94,688
2.3.1.2 Design Optimization #3	12	12	24				6	12	20	40	60	120	2		40	40	80	12				\$86,366		\$0	\$7,926	\$396	\$86,762	\$7,926	\$94,688
2.3.1.3 Design Optimization #4	10	10	22			8	6	12	20	40	26	56	2		44	48	96	12		6	10	\$74,012		\$10,720	\$7,926	\$932	\$74,944	\$18,646	\$93,590
2.4 Balance of Plant Packaging Sub-Phase																						\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.4.0 BOP Packaging	15	30	15			15			15	30	12	12			90		60	30				\$57,144		\$0	\$6,022	\$301	\$57,445	\$6,022	\$63,467
2.4.1 BOP Bidding Phase Support	15	15	15			8			15	8	15	12	24		15	30	60	15				\$42,863		\$12,600	\$15,264	\$1,393	\$44,256	\$2,864	\$47,120
2.4.2 BOP Pricing and Bid Evaluations	30	30	30						4	1	4	1	4									\$28,721		\$0	\$5,176	\$259	\$28,980	\$5,176	\$34,156
2.4.3 Participate BOOWP GMP Workshop	12	12	12																			\$10,620		\$837	\$42	\$10,662	\$837	\$11,499	
2.4.4 BOP Conformed Document Set Prep	6	30	12	2		4	4	8	4	8	4	8	1	4	30	60	60	16				\$42,611		\$6,840	\$1,968	\$440	\$43,051	\$8,808	\$51,859
<b>Subtotal - Task 2: (T&amp;M) Engineering Support Service during CMAR Pre-Construction Services</b>	<b>549</b>	<b>514</b>	<b>647</b>	<b>80</b>	<b>62</b>	<b>159</b>	<b>147</b>	<b>277</b>	<b>278</b>	<b>456</b>	<b>401</b>	<b>675</b>	<b>26</b>	<b>32</b>	<b>674</b>	<b>606</b>	<b>1066</b>	<b>418</b>	<b>140</b>	<b>8</b>	<b>14</b>	<b>\$1,359,043</b>	<b>\$1,200</b>	<b>\$153,015</b>	<b>\$116,357</b>	<b>\$13,469</b>	<b>\$1,373,712</b>	<b>\$269,372</b>	<b>\$1,643,084</b>
<b>3. Task 3: Engineering Service During Construction</b>																													
3.1.0 Pre-Construction Meeting (1)	12	16	16	4					12	8		8										\$19,148	\$600	\$2,640	\$1,560	\$210	\$19,958	\$4,200	\$24,158
3.1.1 Monthly Progress Meetings (38)	152	152	304						152													\$189,896	\$29,640	\$17,520	\$105,492	\$6,151	\$225,687	\$123,012	\$348,699
3.1.2 Virtual Meetings (38)	38	76	38		8	8			8	12		12										\$54,502	\$0	\$8,880	\$13,756	\$1,132	\$55,634	\$22,636	\$78,270
3.1.3 Post Progress Meeting Site Visits (38)	38	114	38						144													\$60,806	\$0	\$4,440	\$0	\$222	\$61,028	\$4,440	\$65,468
3.1.4 Discipline Site Visits (54)	144	180	144		96	32			248	144		160	80	60								\$307,212	\$14,040	\$0	\$46,800	\$2,340	\$323,592	\$46,800	\$370,392
3.2.0 Submittal Reviews (1100)	275	825	275	40	100	300	440		550	800	300	300	500	60								\$1,036,945	\$0	\$37,750	\$205,779	\$12,176	\$1,049,121	\$243,629	\$1,292,650
3.2.1 Resubmittal Reviews (650)	40	487.5	100			80	200	140	80	80	120	80										\$332,625	\$0	\$0	\$52,605	\$2,630	\$335,255	\$52,605	\$387,860
3.2.3 Submittal Review Coordination Virtual Meetings (30)	27	54	27			12	12	54	16		16			8								\$56,907	\$0	\$3,720	\$5,792	\$476	\$57,383	\$9,512	\$66,895
3.2.4 Review laboratory, shop, and mill tests		80				40	40		20	40	40	40										\$56,080	\$0	\$6,800	\$0	\$340	\$56,420	\$6,800	\$63,220
3.2.5 Substitution Evaluations (10)	30	80	80			40	40	120	40	80	40	80	20	20								\$131,110	\$0	\$1,860	\$0	\$93	\$131,203	\$1,860	\$133,063
3.3.0 Requests for Information (200)	80	140	80			40	40	140	80		180				50	50	100					\$260,740	\$0	\$11,150	\$62,772	\$3,696	\$264,436	\$73,922	\$338,358
3.3.1 Work Change Directives (20)	30	60	80			24	24	60	32	48	32	48	12	12	80	120	160	80	80			\$165,386	\$0	\$7,440	\$13,920	\$1,068	\$166,454	\$21,360	\$187,814
3.4.0 Substantial Completion Walk-thru	8	8	12			0	12	12	12		12																		

