

DRAFT TASK ORDER No. 37
WWTRC Expansion

This Task Order pertains to an Agreement by and between The City of Boerne, ("CITY/OWNER"), and HDR Engineering, Inc. ("ENGINEER"), dated October 10, 2023, ("the Agreement"). ENGINEER shall perform services on the project described below as provided herein and in the Agreement. This Task Order shall not be binding until it has been properly signed by both parties. Upon execution, this Task Order shall supplement the Agreement as it pertains to the project described below.

TASK ORDER NUMBER: 37

PROJECT NAME: WWTRC Expansion

PART 1.0 PROJECT DESCRIPTION:

The City of Boerne is expanding the treatment capacity of the 1.4 million gallons per day (mgd) Wastewater Treatment and Recycling Center (WWTRC). The project is required to treat wastewater generated by growing developments in East Boerne, as well as a future transfer of flow from the wastewater treatment plant (WWTP) on Esser Road.

The expanded capacity will be determined during preliminary engineering but is anticipated to be approximately 3.9 mgd of annual average daily flow (ADF). The expansion is generally anticipated to include new influent pumps, new equipment in the headworks facility (screening and grit removal), two new biological nutrient removal (BNR) basins, one new secondary clarifier and sludge pump station, two new banks of cloth media disc filters, new ultraviolet disinfection equipment, additional reclaimed water storage and pumping, and an aerated sludge holding tank and pump station, and administration building.

An interim phase of the expansion will include potential re-rating of existing facilities to increase the current 1.4 mgd capacity to reflect peaking factors lower than what was assumed during the initial design. The re-rated capacity will be determined during preliminary engineering, but is anticipated to be up to 2.2 mgd of annual average daily flow (ADF), with an assumed peaking factor of 3.5.

PART 2.0 SCOPE OF SERVICES TO BE PERFORMED BY ENGINEER ON THE PROJECT:

1. Project Kickoff, Management, Coordination, Data Acquisition and Review

1. ENGINEER will provide overall project management of ENGINEER's scope of work including budget monitoring, scheduling, invoicing, internal project quality assurance reviews, correspondence and communication, and documentation of project assumptions and deliverables.
2. ENGINEER will coordinate with OWNER and subconsultants including surveying, and geotechnical.

3. ENGINEER will attend a project kickoff meeting with the OWNER. Project kickoff will include a site visit to the WWTRC.
4. ENGINEER will receive, from the OWNER, available existing data relevant WWTRC operation.

ENGINEER Deliverables:

1. Data needs requested of OWNER, in email format.
2. Kickoff meeting materials, agenda, invoices, monthly progress reports, and meeting notes, in electronic PDF format.

Meetings:

1. One kickoff meeting to review project scope, schedule, goals, roles, data needs and communication procedures. Meeting will be in person at OWNER'S offices, up to two hours in duration, and attended by ENGINEER's project manager, project principal, deputy project manager, and up to three project engineers. Meeting will be followed by a WWTRC site visit, up to two hours.

2. Site, Tree and Topographic Survey and Subsurface Utility Engineering

1. ENGINEER will obtain LiDAR point data of existing building interiors. This will be limited to areas of existing buildings that are anticipated to require modification or installation of new equipment.
2. ENGINEER will subcontract the services of a surveyor to perform a site, tree and topographic survey to capture updated topographic information and current site property boundary.
3. ENGINEER will subcontract the services of a surveyor to perform a site survey to capture as-built information on existing facilities including corners of structures, top of wall elevations, and weir elevations.
4. ENGINEER will subcontract the services of a subsurface utility engineer (SUE) to perform an exploration of existing utilities to confirm as-built locations and depths of yard piping and duct banks within the WWTRC property.
 - i. SUE activities will include Quality Service Level (QL) A test holes.

ENGINEER Deliverables:

1. Site survey and SUE information in electronic CAD and PDF format.

Assumptions:

1. The QL-A SUE evaluation is anticipated to include up to 30 test holes.
2. Interior LiDAR point data will be collected in portions of the headworks/dewatering building where new equipment is anticipated, and will be collected in the existing reclaimed water pump station. Interior LiDAR point data will not be obtained in the maintenance building or blower building.

3. Geotechnical Subsurface Exploration

1. ENGINEER will subcontract the services of a geotechnical subconsultant to perform a geotechnical investigation in the areas where no previous data exists, where new structures will be added with the expansion.
 - i. The investigation includes up to five boring locations, each anticipated to be up to 30 feet deep.
 - ii. The investigation will include index properties and strength tests to characterize subsurface conditions.
 - iii. The subconsultant will provide a geotechnical data report containing boring logs and test results.
 - iv. ENGINEER will perform engineering analyses of the field and laboratory data from subconsultant in the geotechnical data report to provide design and construction recommendations.

ENGINEER Deliverables:

1. Geotechnical data report and boring logs, in electronic PDF format.

Assumptions:

1. Previous developed geotechnical data will be used where available.
2. The specific depth, location and exact properties tested at each boring may vary dependent on the specific needs at each proposed treatment unit or structure.
3. New borings are anticipated at the following locations of proposed new structures: BNR basins, secondary clarifier, reclaimed water storage tank, sludge pump station, and cloth media disk filters.

4. Preliminary Engineering and Evaluations

1. ENGINEER will conduct preliminary evaluations to inform the WWTRC expansion needs, including:
 - i. Regulatory and Permitting Review.
 1. Participate in a pre-application meet with TCEQ to identify permitting needs and begin TCEQ coordination.
 2. Identify existing and potential future regulatory drivers.
 3. Outline potential permit limits, including total phosphorus and total nitrogen, total dissolved solids (TDS) and chlorides.
 - ii. Influent flows and loads.
 1. ENGINEER will establish peaking factors for the expanded facility.
 - a. ENGINEER will review up to 10 years of historical influent flows and operational data at the WWTRC to establish peaking factors in the WWTRC service area.
 - b. ENGINEER will review up to 10 years of historical influent flows and operational data at the Esser Road

- WWTP to establish peaking factors in the Esser Road WWTP service area.
- c. A weighted average will be calculated to estimate the peaking factor to the WWTRC when flows from the Esser road WWTP are diverted to the WWTRC.
- d. If hourly peak flow data is not available, ENGINEER will make an assumptions based on available influent lift station operational data.
- 2. ENGINEER will review up to 10 years of historical loading at the WWTRC and Esser Road WWTP to establish anticipated loads for the expanded facility.
- 3. The existing WWTRC treatment units will be evaluated for capacity re-rating based on revised peaking factors and loadings.
- iii. Overall operational strategy and philosophy.
 - 1. ENGINEER will meet with City Utilities staff and WWTRC operators and staff to understand existing operational strategy and philosophy.
 - 2. ENGINEER will interview operators to identify operational challenges to incorporate into the expansion.
 - 3. ENGINEER will review historical influent and effluent phosphorus data and alum dosage to evaluate potential changes to phosphorus removal protocol with the expansion, and the potential impacts to solids production, solids handling and disposal.
- iv. Condition assessment of existing facilities and equipment.
 - 1. ENGINEER will meet with City Utilities staff and WWTRC operators and perform a site visit to visually observe the condition of existing facilities and equipment, to confirm what repair or rehabilitation of existing facilities should be included with the expansion design.
 - 2. The assessment will focus on existing equipment that may require replacement or rehabilitation. Assessment of structural condition will be limited to structures where proposed facilities will tie into existing structures (such as the BNR basins and cloth media disk filters).
- v. Aeration system control and operation.
 - 1. ENGINEER will review the aeration system in the biological nutrient removal (BNR) basins, including blower capacity, turndown capability, and diffused air configuration.
 - 2. ENGINEER will review historical process control data, including dissolved oxygen concentrations, mixed liquor suspended solids (MLSS) concentration, and total suspended solids.
- vi. Solids handling system control and operation.
 - 1. ENGINEER will review historical process control data, including total suspended solids, recycle activated sludge (RAS) and waste activated sludge (WAS) flow rates and solids retention time (SRT).

2. ENGINEER will meet with Utilities staff to understand solids handling challenges.
3. ENGINEER will evaluate potential improvements to solids handling performance with the addition of the sludge holding tank and pump station, designed with Phase 1 of the WWTRC, but not constructed.
4. ENGINEER will evaluate the impact of changes in the BNR basins on solids production.
- vii. Reclaimed water system demands, WWTRC storage and operation.
 1. ENGINEER will review ultimate demands on the reclaimed water system.
 2. Based on the anticipated expanded supply, ENGINEER will estimate required reclaimed water storage volume and pumping capacity to meet increased reclaimed water demands.
- viii. Disinfection strategy.
 1. ENGINEER will evaluate the feasibility of utilizing sodium hypochlorite for disinfection in lieu of existing chlorine gas.
- ix. SCADA and cyber-security.
 1. ENGINEER will evaluate existing SCADA panels and operator interface to determine the scope of SCADA improvements.
- x. Traditional design-bid-build versus Construction Manager at Risk (CMAR) delivery.
 1. ENGINEER will evaluate the potential benefits of CMAR delivery.
 2. Evaluation will include a detailed description of the CMAR process and impact to the WWTRC expansion schedule.
 3. ENGINEER will complete a market survey to gauge contractor interest in the project by traditional design-bid-build and CMAR delivery methods.
2. ENGINEER will develop a draft Preliminary Evaluations Technical Memorandum (TM) to summarize findings of preliminary evaluations phase.
 - i. It is anticipated that individual evaluations will be provided as separate memorandums for City review. The individual evaluations will be compiled into one final TM.

ENGINEER Deliverables:

1. Draft separate memorandums on individual preliminary evaluations, in electronic PDF format.
2. Final TM documenting the results of the preliminary evaluations incorporating CITY comments on draft individual memorandums, in electronic PDF format.

Meetings:

1. One meeting and site visit to review visually observe the condition of existing facilities and equipment. Meeting will be in person, up to four hours in duration, and attended by ENGINEER's project manager, deputy project manager, and up to three project engineers.

2. One meeting and site visit to discuss WWTRC operations and challenges with Utilities staff. Meeting will be in person, up to four hours in duration, and attended by ENGINEER's project manager, deputy project manager, senior advisor, and up to three project engineers.
3. Up to five meetings to review the City's comments on the preliminary engineering memorandums. Meetings will be held in person at CITY offices, up to two hours in duration, and attended by ENGINEER's project manager, deputy project manager, and up to two project engineers.
4. One City Council presentation to inform Council on the outcome of the preliminary engineering and evaluations, including potential CMAR delivery.

Assumptions:

1. Condition assessment will be based on non-intrusive site observations and input from Utilities staff, including historical information on equipment repair and/or replacement.
2. Condition assessment is limited to what is visible without moving existing materials or equipment. Only tactile and visual observation methods will be utilized. Destructive and non-destructive testing is not included.
3. Condition assessment will not include any confined space entry.
4. CITY will provide access to all areas requiring observation.
5. Reclaimed water demands will be forecasted based on historical reclaimed water billing data in the Esperanza and Ranches at Creekside neighborhoods.
6. CITY will provide five years of historical plant operational and process control data.

5. Permitting Assistance

1. ENGINEER will prepare a Texas Pollutant Discharge Elimination System (TPDES) major permit amendment application. The TPDES major permit amendment application task will include the following items. ENGINEER will coordinate with TCEQ in developing permit language that accommodates a phased expansion, including the interim re-rated phase and the 3.9 MGD phase.
 - i. Advise the CITY of any need for data or services which are not included in ENGINEER's services described herein.
 - ii. Review existing domestic wastewater permit issued by the Texas Commission on Environmental Quality (TCEQ), testing and monitoring data, and the materials available from the associated application for the permit from the CITY.
 - iii. Attend coordination meetings with the TCEQ. One meeting will be at TCEQ headquarters in Austin, and one meeting will occur with the local TCEQ field office staff.
 - iv. Prepare an application for a major amendment of the permit consisting of the following required TCEQ Major Permit Amendment Application components:
 1. Administrative Report 1.0
 2. Administrative Report 1.1

3. Supplemental Permit Information Form
4. Technical Report 1.0
5. Technical Report 1.1
6. Worksheet 2.0 – Receiving Waters
7. Worksheet 2.1 – Stream Physical Characteristics
8. Worksheet 4.0 – Pollutant Analyses Requirements
9. Worksheet 5.0 – Toxicity Testing Requirements
10. Worksheet 6.0 – Industrial Waste Contribution
- v. Prepare the following attachments to the application:
 1. Original USGS Map
 2. Affected Landowner Map
 3. Landowner Disk or Labels
 4. Buffer Zone Map
 5. Flow Diagram
 6. Site Drawing
 7. Original Photographs
 8. Design Calculations
 9. Design Features
 10. Solids Management Plan
 11. Water Balance
- vi. ENGINEER will provide up to 16 hours of TCEQ coordination after submittal of application to TCEQ.

ENGINEER Deliverables:

1. Deliver to CITY one electronic and one hard copy of application. Deliver to CITY one original and three hard copies of the application materials for OWNER to submit to TCEQ.

Meetings:

1. One meeting at TCEQ staff to discuss permit requirements of expanded WWTRC. Meeting is assumed to be in person at TCEQ headquarters, in person, up to two hours in duration, and attended by ENGINEER's project manager and permitting lead.
2. One meeting with TCEQ regional office to discuss permit requirements of expanded WWTRC. Meeting is assumed to be in person at TCEQ regional office, in person, up to two hours in duration, and attended by ENGINEER's project manager and permitting lead.
3. One meeting with Utilities staff to review the permit application. Meeting is assumed to be virtual, up to two hours in duration, and attended by ENGINEER's project manager and permitting lead.

Assumptions:

1. CITY shall provide the following information and services to enable ENGINEER to complete its scope of services:
 - a. Test reports for all testing required to complete the permit application
 - b. Maps of the property showing property boundaries, existing and proposed outfalls, adjacent landowners, and treatment facilities.
 - c. Monitoring reports for the last 12 months
 - d. All water monitoring data
 - e. Signatures required on the completed application and copies
 - f. Documentation of Signatory authority
2. Data provided by the CITY will contain all data necessary to prepare the required TCEQ TPDES Permit Amendment Application components potentially including, but not limited to:
 - a. Receiving water hydraulics, hydrology, and channel dimensions
 - b. Detailed engineering reports/plans including design calculations, site controls, groundwater protection, odor/dust/bioaerosol management,
 - c. Pathogen reduction alternatives
 - d. Vector attraction alternatives
 - e. Volume and frequency of sludge disposal
 - f. Calculations that show 25-year, 24-hour rainfall is prevented from leaving surface disposal unit
3. The following services will be provided by ENGINEER at CITY's request and are not part of the basic services of this agreement. Compensation amount and terms will be established at the time the additional service is authorized by the CITY.
 - a. Detailed process analysis and design to modify or upgrade the plant.
 - b. Testing or certification of any kind required for the TPDES permit amendment or water right application.
 - c. Topographic surveys, stream surveys or other field surveys.
 - d. Public meeting attendance for permit applications and amendments.
 - e. Any service necessary to update the OWNER's conservation or drought plan as may be required during the water right task.
 - f. Any other service not included specifically in Basic Services.
4. CITY will pay all application fees, water quality testing fees and other fees assessed by the State or other entities associated with the TCEQ Permit Amendment Application.

6. Basis of Design and Facility Plan

1. ENGINEER will update previous BioWin and mass balance models developed with the initial WWTRC design to represent the expanded WWTRC capacity.
2. ENGINEER will develop a basis of design and facility plan to document design parameters of treatment facilities and site related items. The basis of design and facility plan will include describe what facilities are required for the interim re-rated phase (up to 2.2 mgd annual average flow), as well as what additional facilities will be required to expand the WWTRC to 3.9 mgd (annual average flow).
3. The basis of design and facility plan are anticipated to include the following at each major treatment unit, but will be refined during preliminary engineering:
 - i. Interim phase (up to 2.2 mgd, annual average flow)
 1. Influent Lift Station
 - a. No improvements or modifications.
 2. Headworks
 - a. Addition of one new fine screen and conveyance.
 - b. Modification of existing HVAC, plumbing, electrical and control systems to accommodate new or replaced equipment.
 3. BNR basins
 - a. Addition of internal mixed liquor recycle (IMLR) pumps to two existing BNR basins.
 - b. Modification of existing electrical and controls systems to accommodate new or replaced equipment.
 4. Secondary clarifiers and RAS/WAS pump station
 - a. No improvements or modifications.
 5. Filtration
 - a. No improvements or modifications.
 6. Disinfection
 - a. No improvements or modifications.
 7. Reclaimed Water
 - a. Addition of second ground storage tank.
 - b. Addition of reclaimed water pump(s).
 - c. Additional chlorine gas feed to serve expanded reclaimed water system.
 - d. Modification of existing HVAC, plumbing, electrical and control systems to accommodate new or replaced equipment.
 8. Solids Handling and Dewatering
 - a. Addition of new sludge holding tank and pump station.
 - b. Installation of a second screw press purchased by the City.
 - c. Addition of control panel for second screw press purchased by the City.
 - d. Potential addition of a third screw press and control panel.

- e. Bridge crane replacement or modifications to reach locations of new dewatering equipment.
 - f. Modification of existing electrical and control systems to accommodate new facilities.
- ii. 3.9 mgd Phase (annual average flow)
 - 1. Influent Lift Station
 - a. Replacement with higher capacity pumps.
 - b. Addition of screening to influent gravity interceptor.
 - c. Jib crane replacement or modifications to reach pumps.
 - d. Modification of existing HVAC, electrical, and control systems to accommodate pump replacement.
 - 2. Headworks
 - a. Addition of one new fine screen and conveyance.
 - b. Addition of second grit chamber.
 - c. Structural modifications to porch to reduce differential settling.
 - d. Modification of existing HVAC, plumbing, electrical and control systems to accommodate new or replaced equipment.
 - 3. BNR basins
 - a. Addition of two new BNR basins, including IMLR pumps and architectural masonry veneer to match existing basins.
 - b. Potential new mixers to address issues with existing mixer shaft length.
 - c. Modification of existing electrical and controls systems to accommodate new or replaced equipment.
 - 4. Secondary clarifiers and RAS/WAS pump station
 - a. Addition of one new secondary clarifier.
 - b. Addition of one new sludge pump station.
 - c. Modification of existing HVAC, electrical and control systems to accommodate new facilities.
 - 5. Filtration
 - a. Addition of two new cloth media disc filter banks.
 - b. Modification of existing electrical and control systems to accommodate new filter equipment.
 - 6. Disinfection
 - a. Addition of new UV equipment.
 - b. Modification of existing electrical and control systems to accommodate new UV equipment.
 - 7. Reclaimed Water
 - a. Addition or replacement of reclaimed water pump(s).
 - b. Additional chlorine gas feed to serve expanded reclaimed water system.
 - c. Modification of existing HVAC, plumbing, electrical and control systems to accommodate new or replaced equipment.
 - 8. Solids Handling and Dewatering

- a. Addition of a third screw press and control panel, if not included with the interim, re-rated mgd phase.
 - b. Modification of existing electrical and control systems to accommodate new facilities.
- 9. Administration Building
 - a. Incorporate previously designed administration building into bid package.
 - b. Building size and layout will remain the same. Architectural, HVAC, plumbing, electrical, fire protection, and civil design will be limited to modifications required to meet applicable current building codes.
 - c. If previous structural design is not sufficient to support loading per current building codes, deficiencies will be provided to the CITY for review and approval.

ENGINEER Deliverables:

- 1. Draft Basis of Design and Facility Plan, in electronic PDF format.
- 2. Final Basis of Design and Facility Plan, incorporating CITY Comments to draft, in electronic PDF format.

Meetings:

- 1. One meeting to review the City's comments on the draft Basis of Design and Facility Plan. Meeting will be held in person, and attended by ENGINEER's project manager, deputy project manager, technical advisor and up to two project engineers.

Assumptions:

- 1. Modifications of the existing electrical distribution system may be required, but a major expansion or upgrade is not anticipated, as it is assumed that incoming power is of the correct size to power all proposed facilities and equipment.
- 2. Existing standby power system is sufficient for the expanded capacity and new equipment.
- 3. Modifications of the existing SCADA control system may be required, but a major upgrade is not anticipated to be required to meet cyber security or expansion needs.
- 4. New blowers will not be required. Existing blowers are sufficient to support the expanded BNR basin capacity.
- 5. Structural design of the reclaimed water storage tank and sludge holding tank will be deferred design by the Contractor during construction.
- 6. All structures, with the exception of the administration building, will be supported by shallow on-grade mat foundations. Deep foundations are not anticipated and would be considered additional services, if required based on geotechnical investigation and design recommendations.

7. If the preliminary evaluations phase results in a recommendation to switch to sodium hypochlorite for reclaimed water disinfection, design of these facilities is not included and would be considered additional services.
8. Structural design modifications to the administration building are not included and would be considered additional services.
9. No HVAC or plumbing modifications are required at the BNR basins, filters, or UV disinfection.
10. Site civil design will include modification of grading plan and paving plan to accommodate new structures.
11. Site civil design will evaluate existing storm sewer system capacity to account for increased impervious cover.
12. Design of a new reclaimed water pump station is not included, and would be considered additional services.

7. Final Design and Bid Documents – Interim, Re-Rated Phase

1. ENGINEER will prepare construction documents (plan drawings and specifications) indicating the scope, extent and character of the work to be performed.
 - i. ENGINEER will prepare a construction package for facilities and modifications required to re-rate the WWTRC capacity to up to approximately 2.2 mgd (annual average flow).
2. ENGINEER will develop drawings for the project in a three dimensional Building Information Management (BIM) environment, using Revit. Site civil drawings will be produced in AutoCAD Civil 3D. ENGINEER's BIM and CAD standards will be followed.
3. ENGINEER will submit interim deliverables for Owner review at the following milestones:
 - i. 30% Design:
 1. Construction drawings, as described above.
 2. Technical Specification Table of Contents.
 3. Opinion of Probable Construction Cost (Class 4).
 - ii. 60% Design:
 1. Construction drawings, as described above.
 2. Technical Specifications.
 3. Opinion of Probable Construction Cost (Class 3).
 - iii. 90% Design:
 1. Construction drawings, as described above.
 2. Technical Specifications.
 3. Opinion of Probable Construction Cost (Class 2).
 - iv. Bid Documents
 1. Final signed and sealed construction drawings, as described above.
 2. Final signed and sealed technical specifications.
 3. Opinion of Probable Construction Cost (Class 1).
4. ENGINEER will submit a summary transmittal letter to TCEQ describing the project and compliance with Chapter 217 regulations.

ENGINEER Deliverables:

1. 30% design drawings, specification table of contents, and OPCC, in electronic PDF format and one full size set of drawings.
2. 60% design drawings, specifications, and OPCC, in electronic PDF format and one full size set of drawings.
3. 90% design drawings, specifications, and OPCC, in electronic PDF format and one full size set of drawings.
4. Final bidding documents, in electronic PDF format and three 11"x17" paper copies. Final OPCC, in electronic PDF format and one full size set of drawings.
5. TCEQ summary transmittal letter, in PDF format.

Meetings:

1. One meeting to review the City's comments on the 30 percent design documents. Meeting will be held in person, and attended by ENGINEER's project manager, deputy project manager, technical advisor and up to two project engineers.
2. One meeting to review the City's comments on the 60 percent design documents. Meeting will be held in person, and attended by ENGINEER's project manager, deputy project manager, technical advisor and up to two project engineers.
3. One meeting to review the City's comments on the 90 percent design documents. Meeting will be held in person, and attended by project manager, deputy project manager, technical advisor and up to two project engineers.

Assumptions:

1. The selected delivery method will be traditional design-bid-build. If the CITY selects a CMAR delivery method, ENGINEER's final design phase scope of services will change and could require additional services.
2. The OPCCs will be the class noted above, with the associated level of expected accuracy as defined by the Association for the Advancement of Cost Engineering (AACE) Recommended Practice No. 18R (2016). ENGINEER's OPCCs are to be made on the basis of ENGINEER's experience, qualifications, and general familiarity with the construction industry. However, because ENGINEER has no influence over the cost of labor, materials, equipment, or services furnished by others; contractors' methods of determining prices; competitive bidding; or market conditions, ENGINEER cannot and does not promise proposals, bids, or actual construction cost will not vary from OPCCs prepared by ENGINEER. If OWNER requires greater confidence as to OPCC, then OWNER agrees to obtain an independent cost estimate.
3. Technical specifications will be based on HDR's six-digit master specifications.
4. Division 00 specifications will be based on EJCDC standard documents.
5. City review meetings will be held within two weeks of deliverable submission.
6. Two-dimensional AutoCAD drawings generated for the initial WWTRC design will be converted to three-dimensional models in Revit.
7. In coordination with the CITY, some facilities may be included as additive or deductive bid alternates.

8. Final Design and Bid Documents – 3.9 mgd Phase

1. ENGINEER will prepare construction documents (plan drawings and specifications) indicating the scope, extent and character of the work to be performed.
 - i. ENGINEER will prepare a construction package for facilities and modifications required to expand the WWTRC capacity to approximately 3.9 mgd (annual average flow).
2. ENGINEER will develop drawings for the project in a three dimensional Building Information Management (BIM) environment, using Revit. Site civil drawings will be produced in AutoCAD Civil 3D. ENGINEER's BIM and CAD standards will be followed.
3. ENGINEER will submit interim deliverables for Owner review at the following milestones:
 - i. 30% Design:
 1. Construction drawings, as described above.
 2. Technical Specification Table of Contents.
 3. Opinion of Probable Construction Cost (Class 4).
 - ii. 60% Design:
 1. Construction drawings, as described above.
 2. Technical Specifications.
 3. Opinion of Probable Construction Cost (Class 3).
 - iii. 90% Design:
 1. Construction drawings, as described above.
 2. Technical Specifications.
 3. Opinion of Probable Construction Cost (Class 2).
 - iv. Bid Documents
 1. Final signed and sealed construction drawings, as described above.
 2. Final signed and sealed technical specifications.
 3. Opinion of Probable Construction Cost (Class 1).
4. ENGINEER will submit a summary transmittal letter to TCEQ describing the project and compliance with Chapter 217 regulations.

ENGINEER Deliverables:

1. 30% design drawings, specification table of contents, and OPCC, in electronic PDF format and one full size set of drawings.
2. 60% design drawings, specifications, and OPCC, in electronic PDF format and one full size set of drawings.
3. 90% design drawings, specifications, and OPCC, in electronic PDF format and one full size set of drawings.
4. Final bidding documents, in electronic PDF format and three 11"x17" paper copies. Final OPCC, in electronic PDF format and one full size set of drawings.
5. TCEQ summary transmittal letter, in PDF format.

Meetings:

1. One meeting to review the City's comments on the 30 percent design documents. Meetings will be held in person, and attended by ENGINEER's project manager, deputy project manager, technical advisor and up to two project engineers.
2. One meeting to review the City's comments on the 60 percent design documents. Meetings will be held in person, and attended by ENGINEER's project manager, deputy project manager, technical advisor and up to two project engineers.
3. One meeting to review the City's comments on the 90 percent design documents. Meetings will be held in person, and attended by project manager, deputy project manager, technical advisor and up to two project engineers.

Assumptions:

1. The selected delivery method will be traditional design-bid-build. If the CITY selects a CMAR delivery method, ENGINEER's final design phase scope of services will change and could require additional services.
2. The OPCCs will be the class noted above, with the associated level of expected accuracy as defined by the Association for the Advancement of Cost Engineering (AACE) Recommended Practice No. 18R (2016). ENGINEER's OPCCs are to be made on the basis of ENGINEER's experience, qualifications, and general familiarity with the construction industry. However, because ENGINEER has no influence over the cost of labor, materials, equipment, or services furnished by others; contractors' methods of determining prices; competitive bidding; or market conditions, ENGINEER cannot and does not promise proposals, bids, or actual construction cost will not vary from OPCCs prepared by ENGINEER. If OWNER requires greater confidence as to OPCC, then OWNER agrees to obtain an independent cost estimate.
3. Technical specifications will be based on HDR's six-digit master specifications.
4. Division 00 specifications will be based on EJCDC standard documents.
5. City review meetings will be held within two weeks of deliverable submission.
6. Two-dimensional AutoCAD drawings generated for the initial WWTRC design will be converted to three-dimensional models in Revit.
7. Final design documents will include the administration building as an additive or deductive bid alternate. In coordination with the CITY, other facilities may be included as additive or deductive bid alternates.

9. Bid Phase Services – Interim, Re-Rated Phase

1. ENGINEER will provide Bid Phase services to the OWNER, including:
 - i. Distribution of bid documents, by uploading documents to the CivCast website.
 - ii. Develop agenda for and conduct one pre-bid meeting. The pre-bid meeting will be held in person at the project site or OWNER's offices, attended by ENGINEER's project manager and project engineer.
 - iii. Preparation and distribution of addenda containing clarifications and modifications to the Bid Documents.
2. ENGINEER will attend bid opening. Following the bid opening, ENGINEER will:

- i. Review bids received for inclusion of required information and correct bid price tabulation.
 - ii. Review contractor qualifications for performing the required work. Evaluate the apparent low bidder in accordance with the Bid Documents. Make a written recommendation to the OWNER for the award of the contract. Recommendation will be made based on the lowest responsive and responsible bid.
- 3. ENGINEER will prepare Conformed Documents (Addenda changes incorporated into Bid Documents).

ENGINEER Deliverables:

- 1. Pre-bid meeting agenda, in electronic Word format.
- 2. Up to three Addenda, in electronic PDF format. ENGINEER will upload the addenda to CivCast.
- 3. Written recommendation of award, in PDF format.
- 4. Bid Documents (consisting of final design drawings and specifications), in electronic PDF format and three half-size printed versions.
- 5. Conformed Documents (consisting of final design drawings and specifications, incorporating changes made by addenda), in electronic PDF format and three half-size printed versions.

Assumptions:

- 1. The selected delivery method will be traditional design-bid-build. If the CITY selects a CMAR delivery method, ENGINEER's bid phase scope of services will change and could require additional services.
- 2. The OWNER will issue contract documents to the selected contractor.
- 3. ENGINEER will provide conformed documents as a courtesy to the contractor who is awarded the contract.
- 4. The OWNER will receive and review executed documents and insurance certificates.
- 5. The pre-bid meeting will be at OWNER'S offices and followed by a site visit. The combined duration of the pre-bid meeting and site visit is anticipated to be up to two hours. The pre-bid meeting will be attended by ENGINEER's project manager and project engineer.
- 6. The bid opening will be at OWNER's offices and attended by ENGINEER's Project Manager.
- 7. ENGINEER will not be required to attend a City Council meeting to present the recommendation of award.
- 8. ENGINEER will not provide contractor with electronic Revit design files.

10. Bid Phase Services – 3.9 MGD Phase

- 1. ENGINEER will provide Bid Phase services to the OWNER, including:

- i. Distribution of bid documents, by uploading documents to the CivCast website.
 - ii. Develop agenda for and conduct one pre-bid meeting. The pre-bid meeting will be held in person at the project site or OWNER's offices, attended by ENGINEER's project manager and project engineer.
 - iii. Preparation and distribution of addenda containing clarifications and modifications to the Bid Documents.
- 2. ENGINEER will attend bid opening. Following the bid opening, ENGINEER will:
 - i. Review bids received for inclusion of required information and correct bid price tabulation.
 - ii. Review contractor qualifications for performing the required work. Evaluate the apparent low bidder in accordance with the Bid Documents. Make a written recommendation to the OWNER for the award of the contract. Recommendation will be made based on the lowest responsive and responsible bid.
- 3. ENGINEER will prepare Conformed Documents (Addenda changes incorporated into Bid Documents).

ENGINEER Deliverables:

- 1. Pre-bid meeting agenda, in electronic Word format.
- 2. Up to three Addenda, in electronic PDF format. ENGINEER will upload the addenda to CivCast.
- 3. Written recommendation of award, in PDF format.
- 4. Bid Documents (consisting of final design drawings and specifications), in electronic PDF format and three half-size printed versions.
- 5. Conformed Documents (consisting of final design drawings and specifications, incorporating changes made by addenda), in electronic PDF format and three half-size printed versions.

Assumptions:

- 1. The selected delivery method will be traditional design-bid-build. If the CITY selects a CMAR delivery method, ENGINEER's bid phase scope of services will change and could require additional services.
- 2. The OWNER will issue contract documents to the selected contractor.
- 3. ENGINEER will provide conformed documents as a courtesy to the contractor who is awarded the contract.
- 4. The OWNER will receive and review executed documents and insurance certificates.
- 5. The pre-bid meeting will be at OWNER'S offices and followed by a site visit. The combined duration of the pre-bid meeting and site visit is anticipated to be up to two hours. The pre-bid meeting will be attended by ENGINEER's project manager and project engineer.
- 6. The bid opening will be at OWNER's offices and attended by ENGINEER's Project Manager.
- 7. ENGINEER will not be required to attend a City Council meeting to present the recommendation of award.

8. ENGINEER will not provide contractor with electronic Revit design files.

11. Final Design, Bid Documents and Bid Phase Services – Reclaimed Water

1. ENGINEER will prepare construction documents (plan drawings and specifications) indicating the scope, extent and character of the work to be performed.
 - i. ENGINEER will prepare a construction package for facilities and modifications required to expand the reclaimed water storage and pumping capacity at the WWTRC.
2. ENGINEER will develop drawings for the project in a three dimensional Building Information Management (BIM) environment, using Revit. Site civil drawings will be produced in AutoCAD Civil 3D. ENGINEER's BIM and CAD standards will be followed.
3. ENGINEER will submit interim deliverables for Owner review at the following milestones:
 - i. 60% Design:
 1. Construction drawings, as described above.
 2. Technical Specifications.
 3. Opinion of Probable Construction Cost (Class 3).
 - ii. Bid Documents
 1. Final signed and sealed construction drawings, as described above.
 2. Final signed and sealed technical specifications.
 3. Opinion of Probable Construction Cost (Class 1).
4. ENGINEER will provide Bid Phase services to the OWNER, including:
 - i. Distribution of bid documents, by uploading documents to the CivCast website.
 - ii. Develop agenda for and conduct one pre-bid meeting. The pre-bid meeting will be held in person at the project site or OWNER's offices, attended by ENGINEER's project manager and project engineer.
 - iii. Preparation and distribution of addenda containing clarifications and modifications to the Bid Documents.
5. ENGINEER will attend bid opening. Following the bid opening, ENGINEER will:
 - i. Review bids received for inclusion of required information and correct bid price tabulation.
 - ii. Review contractor qualifications for performing the required work. Evaluate the apparent low bidder in accordance with the Bid Documents. Make a written recommendation to the OWNER for the award of the contract. Recommendation will be made based on the lowest responsive and responsible bid.
6. ENGINEER will prepare Conformed Documents (Addenda changes incorporated into Bid Documents).

ENGINEER Deliverables:

1. 60% design drawings, specifications, and OPCC, in electronic PDF format and one full size set of drawings.
2. Final bidding documents, in electronic PDF format and three 11"x17" paper copies. Final OPCC, in electronic PDF format and one full size set of drawings.

3. Pre-bid meeting agenda, in electronic Word format.
4. One addendum, in electronic PDF format. ENGINEER will upload the addendum to CivCast.
5. Written recommendation of award, in PDF format.
6. Bid Documents (consisting of final design drawings and specifications), in electronic PDF format and three half-size printed versions.
7. Conformed Documents (consisting of final design drawings and specifications, incorporating changes made by addenda), in electronic PDF format and three half-size printed versions.

Assumptions:

1. The selected delivery method will be traditional design-bid-build. If the CITY selects a CMAR delivery method, ENGINEER's final design phase scope of services will change and could require additional services.
2. The OPCCs will be the class noted above, with the associated level of expected accuracy as defined by the Association for the Advancement of Cost Engineering (AACE) Recommended Practice No. 18R (2016). ENGINEER's OPCCs are to be made on the basis of ENGINEER's experience, qualifications, and general familiarity with the construction industry. However, because ENGINEER has no influence over the cost of labor, materials, equipment, or services furnished by others; contractors' methods of determining prices; competitive bidding; or market conditions, ENGINEER cannot and does not promise proposals, bids, or actual construction cost will not vary from OPCCs prepared by ENGINEER. If OWNER requires greater confidence as to OPCC, then OWNER agrees to obtain an independent cost estimate.
3. Technical specifications will be based on HDR's six-digit master specifications.
4. Division 00 specifications will be based on EJCDC standard documents.
5. Two-dimensional AutoCAD drawings generated for the initial WWTRC design will be converted to three-dimensional models in Revit.
6. Pre-bid meeting agenda, in electronic Word format.
7. Up to three Addenda, in electronic PDF format. ENGINEER will upload the addenda to CivCast.
8. Written recommendation of award, in PDF format.
9. Bid Documents (consisting of final design drawings and specifications), in electronic PDF format and three half-size printed versions.
10. Conformed Documents (consisting of final design drawings and specifications, incorporating changes made by addenda), in electronic PDF format and three half-size printed versions.

12. Additional Services

1. The following services are not included in this scope of work, and will be considered additional services:
 - i. Stakeholder outreach and support.
 - ii. Construction phase services.
 - iii. Claim disputes.

- iv. Record drawing preparation.
- v. Value engineering.
- vi. Witnessing factory equipment testing.
- vii. Energy modeling of HVAC and plumbing systems.
- viii. Life cycle cost analysis of HVAC and plumbing systems.
- ix. Design of retention or detention ponds.
- x. Flood study.
- xi. Drainage analysis.

PART 3.0 OWNER'S RESPONSIBILITIES:

The OWNER shall be responsible for the following:

- Provide data pertinent to the project.
- Participate in teleconferences and meetings.
- Review and approve ENGINEER'S invoices.

PART 4.0 PERIODS OF SERVICE:

ENGINEER is authorized to begin rendering services as of the date of Notice to Proceed (NTP). ENGINEER shall complete its obligations per the following schedule:

TASK No.	Duration
1. Project Management, Kickoff, Coordination, Data Acquisition and Review	Ongoing throughout the project
2. Site, Tree and Topographic Survey and Subsurface Utility Engineering	120 calendar days from NTP
3. Geotechnical Subsurface Exploration	120 calendar days from NTP
4. Preliminary Engineering and Evaluations	150 calendar days from NTP
5. Permitting Assistance	120 calendar days from NTP ¹
6. Basis of Design and Facility Plan	90 days from completion of Task 4- Preliminary Engineering
7. Final Design and Bidding Documents – Interim, Re-Rated Phase	270 calendar days from completion of Task 6-Basis of Design and Facility Plan
8. Final Design and Bidding Documents – 3.9 MGD Phase	360 calendar days from completion of Task 7-Final Design Documents: Interim, Re-Rated Phase
9. Bid Phase Services – Interim, Re-Rated Phase	Dependent on bid phase duration, anticipated to be 60 calendar days from completion of Task 7 – Final Design Documents: Interim, Re-Rated Phase
10. Bid Phase Services – 3.9 MGD Phase	Dependent on bid phase duration, anticipated to be 60 calendar days from completion of Task 8 – Final Design Documents: 3.9 MGD Phase
11. Final Design, Bidding Documents, and Bid Phase Services – Reclaimed Water	240 calendar days from NTP

1. Limited to time for the pre-application meeting and preparation of permit application. Does not include any time for TCEQ review. TCEQ has a goal of one year after receipt of the permit application.

Unless otherwise stated in this Agreement, the rates of compensation for ENGINEER'S services have been agreed to in anticipation of the orderly and continuous progress of the project

through completion. If any specified dates for the completion of ENGINEER'S services are exceeded through no fault of the ENGINEER, the time for performance of those services shall be automatically extended for a period which may be reasonably required for their completion and all rates, measures and amounts of ENGINEER'S compensation shall be equitably adjusted.

PART 5.0 ENGINEER'S FEE:

Compensation shall be on a lump sum basis for Tasks 1 through 11, as follows:

TASK No.	FEE
1. Project Management, Kickoff, Coordination, Data Acquisition and Review	\$369,920
2. Site, Tree and Topographic Survey and Subsurface Utility Engineering	\$151,630
3. Geotechnical Subsurface Exploration	\$108,810
4. Preliminary Engineering and Evaluations	\$329,950
5. Permitting Assistance	\$89,180
6. Basis of Design and Facility Plan	\$257,610
7. Final Design and Bidding Documents – Interim, Re-Rated Phase	\$941,230
8. Final Design and Bidding Documents – 3.9 MGD Phase	\$1,718,840
9. Bid Phase Services – Interim, Re-Rated Phase	\$141,510
10. Bid Phase Services – 3.9 MGD Phase	\$151,000
11. Final Design, Bidding Documents and Bid Phase Services – Reclaimed Water	\$86,110
Total Professional Services	\$4,345,790

ENGINEER will submit monthly invoices listing the amount of work completed to date as a percentage of the lump fee.

This Task Order is executed this _____ day of _____, 2024. Execution of this Task Order shall serve as ENGINEER’S Notice to Proceed.

<u>CITY OF BOERNE</u>	<u>HDR ENGINEERING, INC.</u>
<u>“OWNER”</u>	<u>“ENGINEER”</u>
BY: _____	BY: _____
NAME: <u>Ben Thatcher</u>	NAME: <u>Mark Borenstein, P.E.</u>
TITLE: <u>City Manager</u>	TITLE: <u>Sr. Vice President</u>
ADDRESS: <u>447 N. Main St.</u> <u>Boerne, TX 78006</u>	ADDRESS: <u>710 Hesters Crossing, Suite 150</u> <u>Round Rock, TX 78681</u>