

AMENDMENT TO CONTRACT FOR SERVICES

This contract is made this ____ day of _____, **2024**, by and between *ARDURRA GROUP, INC.* of 6909 McPherson Road, Suite 110, Laredo, Texas 78041 hereinafter referred to as **PROVIDER** and The City of Laredo, Utilities Department of 5816 Daugherty Ave., Laredo, Texas 78041 hereinafter referred to as **CLIENT**.

Provider hereby agrees to perform the following Engineering services for **CLIENT**:

SCOPE OF WORK

**Zacate Creek Wastewater Treatment Plant Alternative Treatment Process
Evaluation and Design
Amendment No. 3
ZCWWTP West Bank Stabilization**

ORIGINAL PROJECT DESCRIPTION:

The existing Zacate Creek Wastewater Treatment Plant (ZCWWTP) is currently not meeting compliance requirements by TCEQ. To address the compliance issues, the City requested Ardurra to investigate the existing conditions of the ZCWWTP.

The Owner's objectives for the Project are as follows:

1. Achieve Discharge Permit Compliance:
2. Value engineering / Economic solution
3. Reduction of capital expenditure
4. No increase or decrease in flow or organic capacity
5. A time sensible quick solution
6. Design life between 5-10 years

AMENDMENT NO. 1 DESCRIPTION:

The City of Laredo requested Ardurra to provide a safety assessment of the ZCWWTP to identify potentially hazardous conditions and safety issues at this plant.

Upon completion of the safety assessment, Ardurra identified existing issues, potential regulatory agency compliance issues, provided recommendations for improvements.

AMENDMENT NO. 2 DESCRIPTION:

The City of Laredo has requested Ardurra to provide the Detailed Design, Bid and Construction services for the process modifications listed in the City's correspondence with TCEQ as part of the Compliance Action Plan for ZCWWTP. Previously, The Texas Commission of Environmental Quality informed the City of Laredo (City) of violations to the Clean Water Act (CWA) via Docket No. 2019-0881-MWD-E. These violations alleged the failure to meet effluent limitations as required by Texas Pollutant Discharge Elimination System (TPDES) Permit # TX002546 at the Zacate Creek Wastewater Treatment Plant (ZCWWTP).

This scope of work has been developed based on a comprehensive condition assessment and operations assessment of ZCWWTP. This assessment allowed the City to understand the cause of permit excursions. It also identified operational and infrastructure improvement actions to positively enhance plant performance.

AMENDMENT NO. 3 DESCRIPTION:

Based on field observations and a cursory desktop review of aerial imagery, as well as a review of a recent Geotechnical Study performed by Carrillo & associates dated July 26, 2023, the recent rockfall was a result of extensive undermining of the embankment toe which occurred as a result of weathering and erosion of the relatively low strength sandstone rock. After repeated wetting and drying cycles, the rock mass loss toe support and a vertical plane of weakness developed at the location of the newly created embankment edge. During our site visit, it was also observed that the existing tangent pile wall at the northwest corner of the facility has been tilting out and away at the top of the piles due to displacement of a rock mass. An existing crevice noted in the aforementioned study has also increased in size and length.

Ardurra recommends that immediate measures be taken to prevent surface water runoff over the new embankment face and into the existing crevice, as well as minimizing loading the top of the embankment within 30 feet of the embankment's top edge. In addition, Ardurra recommends that long term remediation design and implementation begin immediately to minimize possibility of the existing retaining wall tilting further and eventually failing. The failure of the retaining wall will further jeopardize the integrity of the ZCWWTP, specifically the West Aeration Basin. This would not only compromise the ability of the City to meet Effluent Permit Limitations but also compromise the wellness and safety of the operators as it is necessary for them to continue to operate this compromised structure.

We anticipate that the embankment repairs will be performed in multiple phases due to site constraints and access to the toe of the embankment. Ardurra is proposing the following to stabilize the West Bank of the ZCWWTP:

- Design and implementation of preventative measures to guard against further erosion at the toe of the slope. Such measures may consist of:
 - Shotcrete reinforced with wire mesh to reduce the potential for erosion of the toe materials.
 - Rip rap or toe berm protection may be implemented to redirect water flow away from the rock embankment.
- Removal of the existing compromised pile wall and replacement with a new pile wall.
- Construction of a new pile wall will require access to the toe of the embankment.
- Consideration will be given to reclaiming the areas previously lost by locating the new wall alignment along the former known embankment location and backfilling the wall with lightweight erosion resistant materials.
- Geotechnical Investigations to provide recommendations for deep foundation elements and tangent pile wall improvements.
- Aerial Topography to assist with design of the new Tangent Pile Wall and Drainage Improvements at the ZCWWTP.
- Environmental Permitting will be completed as needed throughout the development of design and construction of the project.

BASIC SERVICES:

TASK 1: GEOTECHNICAL ENGINEERING

1.1. SUBSURFACE INVESTIGATION

1. Based on Rock Engineering's, Ardurra's Sub-Consultant, experience with soils in the area of the project, Rock Engineering proposes to perform a total of two borings to a termination depth of 50 feet utilizing rock coring methods. (Total Number of Borings: (2 Total Linear Feet of Drilling: 100 LF).
2. Ardurra's Sub-Consultant will stake the boring locations in the field prior to the field investigation.
3. Coordination with the Texas 811 System will be performed by Ardurra's Sub-Consultant to identify underground utilities in the proximity of the boring locations. The borings will be relocated if necessary.
4. The client shall perform due diligence to assure Rock Engineering that the boring locations are accessible and clear of private utilities and obstructions, such as fences, shrubs and trees. The client shall notify Rock Engineering of any conflicts. The borings will be relocated if necessary.
5. An experienced technician will log the borings in the field full-time during the drilling operations.
6. A truck mounted drilling rig will be utilized to access the boring locations.
7. The borings will be sampled every 5 feet to the termination depth of the boring locations using rock coring methods.
8. Upon completion of coring the open boreholes will be grouted.

1.2. LABORATORY TESTING PROGRAM

1. Depending upon the actual subsurface conditions encountered, Ardurra's Sub-Consultant engineers will assign some or all of the following tests on selected samples, as necessary to properly classify the soils and determine overall strength the soil profile at the site.
 - Rock Quality Designation (RQD), and
 - Unconfined Compressive Strength Tests
2. All phases of the laboratory testing program will be performed in general accordance with applicable ASTM Specifications. All field and laboratory test results will be provided on the boring logs or in the report.

1.3. ELECTRICAL RESISTIVITY TOMOGRAPHY (ERT)

1. Ardurra's Sub-Consultant will perform an ERT to develop a 2-d profile based on resistance. Any impedance or anomaly would show and may indicate a possible fault, void, plane of weakness or different material type. *If something of interest is found, more exploration may be warranted. Additionally, and similar to borings, subsurface features may change between the surveyed locations.*

1.4. GEOTECHNICAL ENGINEERING REPORT

1. In addition to the field and laboratory testing, a geotechnical engineering report will be prepared that includes the following:
 - Site and project description,
 - Description of the field exploration, laboratory testing, and the performed ERT
 - Discussion of the engineering properties of the subsurface materials, erosion protection measures as well as the ERT findings.
 - Recommendations for deep foundation elements used for the tangent pile wall and any recommendations necessary to mitigate potential issues found while performing the ERT.

Specifically excluded from this proposal is provisions of L-pile analyses of deep foundations.

Deliverables:

- Subsurface Investigations
- Laboratory Testing & Reports
- ERT
- Geotechnical Engineering Report

TASK 2: AERIAL TOPOGRAPHIC SURVEY

1. Tie in with GPS to control network at project site in State Plane Coordinates on vertical datum NAVD88. Set aerial targets and checkpoints for quality assessment/quality control. Calibrate project control network to local vertical benchmarks.
2. Capture aerial LiDAR and photogrammetric imagery to be used for topo, low-confidence area delineation, and aerial mapping of visible above ground features and terrain within the project area. (Image below.)
3. Process aerial imagery & LiDAR for the entire subject parcel.
4. Calibrate LiDAR and imagery to the project control.
5. Develop a topographic map for the subject parcel (0.5' contours)
 - Includes a minimum of a 50' grid for the DTM surface.
 - 3D surface and mass points
6. Low-confidence areas (if any) will be identified for additional field support, which is to be provided by others.

Deliverables:

- Digital files in NAD 83 coordinates in .dwg, and/or .dgn format

TASK 3: DESIGN PHASE

3.1. PRE-FINAL DESIGN (90%)

1. Prepare construction plans in compliance with CPPS using English units on 11" x 17".
2. Structural Design of the recommended tangent pile improvements and immediate remediation improvements for the stability of the West Bank of Zacate Creek WWTP.

- a. Structural Design will take into account limited access to site and constructability of improvement.
3. Civil Engineering Design will include stormwater improvements to divert water from the existing sump drain near the existing Aeration Basin.
 - Civil Engineering Design will also include temporary Drainage Structures on Zacate Creek to ensure positive drainage during construction of the structural improvements.
4. Provide pollution control measures and BMP layout for the Contractor's Storm Water Pollution Prevention Plan, using the City Standard Notes and BMP Detail Sheets as applicable.
5. Submit two (2) sets of the interim plans (90% submittal) in half-size (11" x 17") hard
6. copies and electronic format using City Standards as applicable to City staff for review and approval purposes with 90% estimates of probable construction costs. Identify distribution list for plans and bid documents to all affected franchise utilities and stakeholders.
7. Participate in Project 90% review meeting. Prepare and distribute meeting minutes to attendees within five working days of the meeting. Assimilate all review comments, as appropriate, and proceed to the 100% submittal.

Deliverables:

- 90% OPCC
- 90% Construction Plan Set and Technical Specifications

3.2. FINAL DESIGN PHASE (100%)

1. Prepare construction plans in compliance with CPPS using English units on 11" x 17".
2. Provide pollution control measures and BMP layout for the Contractor's Storm Water Pollution Prevention Plan, using the City Standard Notes and BMP Detail Sheets as applicable.
3. Submit two (2) sets of the final plans (100% submittal) in half-size (11" x 17") hard
4. copies and electronic format using City Standards as applicable to City staff for review and approval purposes with 100% estimates of probable construction costs. Identify distribution list for plans and bid documents to all affected franchise utilities and stakeholders.

Deliverables:

- 90% Comment Response Form
- 100% OPCC
- 100% Construction Plan Set and Technical Specifications

TASK 4: ENVIRONMENTAL PERMITTING

4.1. COORDINATION AND CALLS WITH CLIENT AND REGULATORY AGENCIES

1. Ardurra will coordinate and communicate with the city and regulatory agencies throughout the permitting process.

4.2. PRE-APPLICATION MEETING WITH USACE

1. A pre-application meeting with the USACE Fort Worth Regulatory Division is recommended to discuss the project and the Nationwide Permit proposed to authorize the work, to confirm if

Section 408 Review is necessary for work in Zacate Creek, and to identify any other requirements. Ardurra will schedule and participate in the pre-construction meeting.

4.3. USACE REGULATORY PERMIT

1. Ardurra will perform the following services to obtain a regulatory permit from the USACE to allow stabilization of the bank.
 - Coordination with the USACE Fort Worth Regulatory Branch;
 - Coordination with Ardurra's structural and civil groups responsible for preparation of design and construction drawings;
 - Preparation of documents required to apply for USACE permit (Pre-Construction Notification (PCN) including exhibits; and,
 - Respond to USACE request(s) for additional information, as needed.

4.4. WATER QUALITY CERTIFICATION

1. Ardurra will prepare and submit a Tier I Checklist and Certification Request to the TCEQ for 401 Certification Review.

Deliverables:

- Draft Permit Applications
- Final Application Submission
- As-Needed Coordination with regulatory agencies

TASK 5: BIDDING PHASE

1. Assist in solicitation of bids by identification of prospective bidders, and review of bids by solicited interests.
2. Attend one pre-bid meeting and provide meeting minutes.
3. Review all pre-bid questions and submissions concerning the bid documents and prepare any addenda or other revisions necessary to inform contractors of approved changes prior to bidding.
4. Attend one bid opening, analyze bids, evaluate, prepare bid tabulation, and make recommendations concerning award of the contract.
5. Attend Council award meeting.

Deliverables:

- Pre-Bid Meeting attendance and minutes
- Responses to bidder questions
- Addenda issuance, as needed
- Engineer's Letter of Recommendation to Award Construction Contract

TASK 6: CONSTRUCTION PHASE

1. Attend one (1) Pre-Construction Meeting and provide meeting minutes (two staff members).
2. Capture all addenda and provide an IFC/Conformed Construction Plan Set and Technical Specifications.

3. Client/Owner in construction contract preparation, review submittals and address up to six (6) requests for information.
4. Conduct up to two (2) site visits per month during construction for a max total of twelve (12) site visits. Additional site visits can be performed, at the City's request. Additional site visits will be considered an additional service and will be billed on an hourly basis.
5. Review and certify Contractor's Applications for Payments.
6. Attend six (6) monthly construction progress meetings and provide meeting minutes (two staff members).
7. Attend one (1) pre-final walkthrough and prepare checklist of pending items (two staff members).
8. Attend one (1) final walkthrough (two staff members).
9. Prepare and provide project closeout documentation to City of Laredo such as the contractor's warranty statement and release of liens and certification of the Final Application for Payment.

Deliverables:

- Pre-Construction Meeting attendance and minutes
- Attendance to 6 Monthly Progress Meetings and provide meeting minutes
- Up to 12 site visits
- Submittal and RFI review and responses
- Engineer's Letter of Recommendation for Closeout

ADDITIONAL SERVICES

This section defines the scope of additional services that may only be included as part of this contract if authorized by the City. The Consultant may not begin work on any services under this section without specific written authorization by the City. The Consultant shall, with written authorization by the City, perform the following:

TASK 7: ADDITIONAL ENVIRONMENTAL SERVICES

1. Ardurra's Basic Services does not include archeological, or threatened and endangered species surveys. Need for these surveys is not anticipated to obtain a USACE regulatory permit. However, there is a possibility that they may be requested during the interagency coordination portion of the USACE permitting process. If one or more of these surveys is requested, Ardurra will request proposals for subconsultant(s) to complete the survey(s). A proposal for additional services will be prepared for client's review and approval.
2. Section 408 review is necessary for a project that will alter, permanently or temporarily, a USACE Civil Works project. There is an USACE Civil Works Project on Zacate Creek in Laredo, Texas. The project appears to be upstream, but Ardurra has not yet confirmed the limits or scope of this USACE Civil Works project. If determined during the pre-application meeting that Section 408 review is required, a proposal for additional services will be prepared for client's review and approval.
3. There may be other potential Additional Services. Should Client desire Ardurra to perform Additional Services beyond the proposed fees for Scope of Work, this contract may be amended to accommodate the additional work. Estimated fees for Additional Services have not been established for the project, but will be developed when, and if, requested by the client.

4. r potential Additional Services. Should Client desire Ardurra to perform Additional Services beyond the proposed fees for Scope of Work, this contract may be amended to accommodate the additional work. Estimated fees for Additional Services have not been established for the project, but will be developed when, and if, requested by the client.

SCHEDULE:

The CONSULTANT agrees to complete the various phases of work under this contract in accordance with the schedule set forth as follows:

BASIC SERVICES		COMPLETION DATE
TASK 1	GEOTECHNICAL ENGINEERING	2 MONTHS FROM NTP
TASK 2	AERIAL TOPOGRAPHIC SURVEY	1.5 MONTHS FROM NTP
TASK 3	DESIGN PHASE	2 MONTHS FROM TASK 1&2
TASK 4	ENVIRONMENTAL PERMITTING	PRIOR TO TASK 6
TASK 5	BIDDING PHASE	2 MONTHS DAYS FROM TASK 3
TASK 6	CONSTRUCTION PHASE	7 MONTHS FROM TASK 5
ADDITIONAL SERVICES		
TASK 7	ADDITIONAL ENVIRONMENTAL REVIEW	TBD

*Permitting Timeline could vary based on TCEQ review and comment type

FEES:**A. Fee for Basic Services**

The City will pay the Engineer a fixed fee for providing all “Basic Services” authorized as per the table below. The fees for Basic Services will not exceed those identified and will be full and total compensation for all services outlined in above, and for all expenses incurred in performing these services. The Engineer will submit monthly statements for basic services rendered. The monthly statements will be based upon Engineer’s estimate (and City Concurrence) of the proportion of the total services actually completed at the time of billing. City will make prompt monthly payments in response to Engineer’s monthly statements.

B. Fee for Additional Services

For services authorized by the City under the “Additional Services” section, the City will pay the Engineer a not-to-exceed fee as per the table below or as negotiated and approved at a later date

C. Summary of Fees

ORIGINAL CONTRACT		\$ 98,900.00
AMD NO. 1		\$ 25,262.00
AMD NO. 2		\$ 292,786.00
<i>SUBTOTAL (ORIGINAL CONTRACT + AMD NO. 1 + AMD NO. 2):</i>		<i>\$ 416,948.00</i>
AMD NO .3		
BASIC SERVICES		
TASK 1	GEOTECHNICAL ENGINEERING	\$ 40,225.00
TASK 2	AERIAL TOPOGRAPHIC SURVEY	\$ 12,160.00
TASK 3	DESIGN PHASE	\$ 134,205.00
3.1	CIVIL ENGINEERING	\$ 19,140.00
3.2	STRUCTURAL ENGINEERING	\$ 115,065.00
TASK 4	ENVIRONMENTAL PERMITTING	\$ 27,465.00
4.1	COORDINATION AND CALLS WITH CLIENT AND REGULATORY AGENCIES	\$ 2,010.00
4.2	PRE-APPLICATION MEETING WITH USACE	\$ 1,875.00
4.3	USACE REGULATORY PERMIT	\$ 22,010.00
4.4	WATER QUALITY CERTIFICATION	\$ 1,570.00
TASK 5	BIDDING PHASE	\$ 4,250.00
TASK 6	CONSTRUCTION PHASE	\$ 22,150.00
<i>SUBTOTAL AMD NO. 3 BASIC SERVICES:</i>		<i>\$ 240,455.00</i>
ADDITIONAL SERVICES		
TASK 7	ADDITIONAL ENVIRONMENTAL SERVICES	TBD
<i>SUBTOTAL AMD NO. 3 ADDITIONAL SERVICES</i>		<i>TBD</i>
<i>TOTAL AMD NO. 3:</i>		<i>\$ 240,455.00</i>
<i>TOTAL (ORIGINAL CONTRACT + AMD NO. 1 + AMD NO.2 + AMD NO.3):</i>		<i>\$ 657,403.00</i>

Method of Payment:

Payment shall be made to the Consultant based upon the several phases as described heretofore and in accordance with the following:

D. Fee and Scope Assumptions:

Our proposal is based on the following assumptions and exclusions:

- Engineering fees included in this proposal only apply to items specifically listed in this proposal.
- Agency review fees, impact fees, permitting fees and platting fees are not included herein.
- No field surveys or SUE Level A services are included as part of this work to verify utility depths or other information.
- This proposal does not include a fee to prepare easements for drainage, construction, water, sewer, electrical, or gas services.
- Platting of the property and/or recordation of any drainage and utility easements or replatting of the development are not included in this scope of work.
- Assistance with contractor's one-year warranty review.
- Any additional services required by the **CLIENT** which may arise and are not outlined above shall be compensated for on an hourly basis or negotiated to a lump sum fee.
- Significant schematic design or land use changes requested by the **CLIENT** during preparation of the construction plans shall be conducted as an Additional Service at an hourly rate.

Any additional work not listed in the above Scope of Work will be performed on a time and material basis.

Invoicing will be submitted on a monthly basis based on percent of completion. *Payments not received within thirty (30) days of the date of invoice will cause interest at the rate of 1.5% per month to accrue on any outstanding balance.*

Provider shall provide at his sole expense any and all equipment, tools and any other thing, including employees, subcontractors, or other such assistance, necessary to the performance by him of the above-described service.

This budget figure will not be exceeded without writing modification of this Agreement. The additional services must be authorized in writing by the Client.

This writing constitutes the full agreement of the parties, and no oral statements or other writings shall be construed to be a part of this contract, executed by the parties.

We appreciate the opportunity to submit this proposal and look forward to assisting you with this project. If this proposal and agreement meet your approval, please acknowledge by signing this proposal letter and returning a copy to our office via email, and US Mail for our records. This will serve as the Notice to Proceed (NTP) to begin design work.

Thank you for your consideration.