

## SCOPE OF WORK

### CITY OF CORPUS CHRISTI **ONSWTP Solids Handling and Disposal Facilities** CITY PROJECT NO. 23059

#### **PROJECT DESCRIPTION:**

City of Corpus Christi (City) owns and operates the O.N. Stevens Water Treatment Plant (ONSWTP) that treats a blend of surface waters from Choke Canyon and Lake Corpus Christi (via the Nueces River) and Lake Texana and the Colorado River (via the Mary Rhodes Pipeline). The ONSWTP uses a conventional water treatment process (coagulation, flocculation, sedimentation, filtration) for removal of turbidity and naturally occurring organic matter. The combination of these processes generates a solids waste stream that is primarily removed through the sedimentation basins.

Historically, ONSWTP utilized three (3) on-site and four (4) off-site lagoons for storing the solids waste stream. The off-site lagoons are referred to as Pollywogs and have areas designated as wildlife and bird sanctuary and require a permit that must be renewed every 5 years. The Pollywogs have received a major portion of solids in the past and have nearly reached their maximum storage capacity which was confirmed by a survey conducted in 2023 as a part of City Project 4247 – TA 4 – ONSWTP Solids Handling Assistance Summary Letter. The City received approval from TCEQ (in Dec. 2021) and renewed their permit to continue utilizing Pollywogs which is valid only until 2026. The City contracted with a 3<sup>rd</sup> party contractor in 2019 to dredge the on-site lagoons 5 & 6 to restore a good portion of their capacity but these lagoons have been observed to fill at a greater rate with increasing demands and thereby increased solids production. A mass balance performed in 2023 by Ardurra as a part of City Project 4247 – TA 4 – ONSWTP Solids Handling Assistance Summary Letter confirmed that these lagoons have to be dredged annually in order to keep up with the increasing plant demands. The decant water from these lagoons has the potential to cause water quality issues if the lagoons are operated more than their storage capacities. Based on findings presented by Ardurra under City Project 4247 – TA 4 – ONSWTP Solids Handling Assistance Summary Letter, it is recognized that the current process of storing solids and dredging the lagoons is not the most cost-effective method of handling and disposal of solids and it is essential that a new solids handling facility be built at ONSWTP to effectively manage (thicken and dewater) solids. In addition, the dewatered solids from ONSWTP can be used beneficially by the City Solid Waste Department as Alternate Daily Cover (ADC) that will provide savings to the City operated landfill.

The purpose of this project is to provide engineering services for a new solids handling facility at ONSWTP for a future plant production capacity of 200 MGD.

The scope of services for this proposal includes Basic services (Preliminary Design, Detailed Design and Bid Services) plus other Additional Services, as authorized for the following improvements. Construction Phase Administration and other related services are necessary but not currently included in the scope. These will be added and negotiated during the construction award process.

- Gravity thickeners and mixing tank(s)

- Two-story dewatering facility with centrifuges (as determined in findings presented by Ardurra under City project 180195 ONSWTP Solids Handling & Disposal Facilities), polymer system, roll-off dumpster area, office/control room and storage room
- Yard piping, site, grading, drainage, parking lot, access roads, sidewalks, etc.
- Condition assessment and improvements to existing sludge pumps and piping including downstream of the sludge collectors for Basin 1 & 2
- Evaluate the requirements for one or more new solids pump stations, including wet well, pumps and piping.
- Additional upgrades for a dredging equipment (repurpose existing dredging equipment owned by City or include a bid item for procurement of a new equipment) as needed.
- Electrical & Instrumentation upgrades including a new PCR building and substation.

## **BASIC SERVICES**

### **1 Preliminary Design Phase**

Prior to the preparation of detailed plans and specifications, the Consultant will develop a Preliminary Design (30% Design) for the required project elements. The purpose of the Preliminary Design phase is to develop an adequate definition of the project to enable the Detailed Design phase to proceed without significant changes. A prerequisite to the preparation of plans and specifications is the development of a specific Preliminary Engineering Report (PER) that incorporates the project site conditions and constraints, summarizes the rationale for each major detailed design decision, and contains design criteria including process control criteria and process descriptions for each component and system incorporated into the project. The PER and 30% design will establish the design parameters, criteria, and concepts necessary for preparation of detailed plans and specifications.

The Consultant will provide the following services under this phase:

- 1.1 The Consultant will perform project management tasks such as managing schedule, managing deliverables on E-builder, submitting monthly invoices to City for payment during preliminary phase of the project. The Consultant will also prepare and submit monthly status reports to the City with the monthly invoice. Monthly status reports will comprise of a one-page summary of the progress to date on the project, work completed during the prior month, work anticipated to be completed during the upcoming month, and discussion of any scope, schedule, or budget issues that may need to be resolved. The level of effort is assumed to be 1-hr every week.
- 1.2 Project Kick-off Meeting
  - The purpose of the Kickoff meeting is to confirm user requirements for key elements concerning design, budget and schedule. For this, the consultant will prepare a meeting agenda and distribute it to designated City staff prior to the meeting.
  - During the Project Kickoff Meeting the Consultant's team will take notes regarding the proceedings of the meeting. Consultant will transcribe and distribute the meeting notes into formal meeting minutes.

- 1.3 Perform condition assessment using visual inspection and operator interviews for the facilities listed below. The purpose of this task would be to determine upgrades needed to these existing facilities for assessing existing capacity and identify needed improvements. Up to three (3) 4-hour site visits are anticipated for this effort.
  - Solids Pump Station located near Sedimentation Basins
  - Wash-water return pump station
  - Drain lines and solids piping contributing to solids flow
- 1.4 Utilize previously developed flow projections, jar test results and pilot testing results to estimate flow rates using safety factors as necessary, update mass balance and define solids loading rates criteria for different unit processes.
- 1.5 Size each unit process using solids loading criteria being developed. Additional scope for demonstration and optimization is included as an additional service and the data obtained from demonstration and optimization shall be used if additional scope is authorized. Preliminary unit processes to be considered and sized include:
  - Gravity thickener equipment & thickener tanks
  - Mixing/holding tank
  - Dewatering equipment (Centrifuge)
  - Polymer equipment
  - Process Piping
  - Stockpiling, loading, and hauling area
  - Solids pumping and centrate pumping
- 1.6 Develop preliminary Process Flow Diagrams (PFD's) for the recommended process equipment and preliminary process-mechanical drawings.
- 1.7 Develop preliminary Process and Instrumentation Diagrams (P&ID's).
- 1.8 Identify and provide preliminary sizing for any electrical improvements required to supply power to any proposed solids handling or disposal unit processes.
- 1.9 Evaluate options for routing electrical to the proposed facilities location and prepare preliminary electrical site layouts for the proposed improvements.
- 1.10 The Consultant will develop preliminary site plan layouts showing the location of proposed improvements.
- 1.11 Develop drainage area boundaries for existing and proposed drainage areas served.
- 1.12 Conduct hydraulic analysis to quantify the storm sewer design of existing and proposed systems as required.
- 1.13 Develop preliminary (horizontal alignments) utility and yard piping improvement layouts required for all alternatives being considered.
  - Residuals piping from the sedimentation basins, filter backwash, filter to waste, to the proposed thickening and mixing unit processes as required.

- Residuals piping from the thickening or mixing unit processes to dewatering unit processes.
  - Staging area plan views for conveyance of residuals from dewatering unit processes.
  - Yard piping relocations and tie-ins associated with the preliminary horizontal alignments
- 1.14 Perform hydraulic calculations and develop a preliminary solids hydraulic profile.
  - 1.15 Determine preliminary structural loadings and structural element sizing.
  - 1.16 Prepare Preliminary (30%) Structural backgrounds as necessary to depict process units on mechanical drawings.
  - 1.17 Determine preliminary materials of construction and architectural aesthetics.
  - 1.18 Prepare preliminary opinions of probable construction costs for the pertinent design scope identified.
  - 1.19 Provide regular progress meetings used to coordinate ongoing issues, discuss project status and obtain input from the City. Consultant will prepare meeting minutes and will finalize and distribute after review by the City's Staff. Up to six (6) two-hour progress meetings or site visits with utility and engineering services staff are anticipated through the Preliminary Phase.
  - 1.20 Coordinate the work of all subconsultants, including leading of meetings with subconsultants to coordinate completion of work and adherence to schedules. Meetings will be held bi-monthly (18 meetings total; 1-hour duration) throughout the Preliminary Phase.
  - 1.21 Prepare a project schedule that summarizes all of the major tasks of the project and the critical path of the project. Consultant will update the project schedule as the project progresses or changes occur throughout the preliminary phase.
  - 1.22 Prepare anticipated index of drawings and specifications for the detailed design phase
  - 1.23 Provide a Quality Assurance and Quality Control review of preliminary drawings and PER.

- 1.24 Prepare and submit electronic copy of the Draft PER that documents the analyses, approach, opinions of probable construction costs, and documents the work with text, tables, schematic-level exhibits and computer models or other applicable supporting documents as necessary.
- 1.25 Upon Draft submittal, Conduct Project review workshop with City staff to review recommendations. Prepare PowerPoint presentation, handouts, exhibits and meeting notes as necessary.
- 1.26 Assimilate all City review comments on the DRAFT PER and submit the Final PER (electronic copy and 1 hard copy).

## **2 Detailed Design Phase.**

Upon completion of the preliminary phase, the Consultant will:

- 2.1 Continue to perform project management tasks such as managing schedule, managing deliverables on E-builder, submitting monthly invoices to City for payment during detailed design phase of the project. The Consultant will also prepare and submit monthly status reports to the City with the monthly invoice. Monthly status reports will comprise of a one-page summary of the progress to date on the project, work completed during the prior month, work anticipated to be completed during the upcoming month, and discussion of any scope, schedule, or budget issues that may need to be resolved. The level of effort is assumed to be 1-hr every week.
- 2.2 Provide services during the design phase for process automation system development. Consultant will provide these services in conjunction with the required SCADA documentation.
- 2.3 Review design calculations for new building structures and foundations to ensure design is in accordance with the International Building Codes. Perform wind pressure calculations in accordance with the International Building Code 2003/2006 for all building envelopes to ensure all component and cladding elements meet or exceed the requirements of TDI for Windstorm.
- 2.4 Coordinate the work of all subconsultants and design team, including leading of meetings with subconsultants to coordinate completion of work and adherence to schedules. Meetings will be held monthly (up to 30 meetings total; 1-hour duration) throughout the Detailed Design Phase.
- 2.5 Provide Quality Assurance/Quality Control (QA/QC) measures to ensure that all submittals of the interim and final complete plans and complete bid documents with specifications accurately reflect the percent completion designated and do not necessitate an excessive amount of revision and correction by City.

- 2.6 Develop a construction sequence plan to communicate sequencing requirements to the Contractor before bidding. The purpose of the plan is to provide the Contractor a sequence to perform their construction activities in such a manner that allows for continuous operation of all essential plant facilities to meet demands throughout the construction period. The Consultant will evaluate sequencing alternatives based on cost and impacts to plant operations, coordination and review of the developed alternatives with plant staff. A preferred alternative will be finalized and included in the contract documents. The goal is to ensure the continuation of operations at the plant while maintaining the plant's capability to treat water. The Consultant will include in the construction documents a separate specification for testing, training, and facility start-up as applicable (Included as an additional service).
- 2.7 Provide regular progress meetings and/or site visits to coordinate ongoing issues, discuss project status and obtain input from the City. Up to fifteen (15) one-hour progress meetings/site visits with utility and engineering services staff are anticipated through the design phase.
- 2.8 Prepare construction plans in City standard format for the work identified in the approved PER to a 60% level of completion.
- 2.9 Prepare construction (technical) specifications in City standard format for the work identified in the approved PER to a 60% level of completion.
- 2.10 Development of Opinion of Probable Construction Cost (OPCC) per plans and specification to a 60% level.
- 2.11 Furnish one (1) set of the interim 60% submittal (electronic and 1 hard copy using City Standards as applicable) to the City staff for review and approval purposes with estimates of probable construction costs. Identify distribution list for plans and bid documents to all affected franchise utilities. Submit the required plan executive summary, project checklist & drawing checklist which will identify and summarize the project by distinguishing key elements and opinion of probable project costs.
- 2.12 Hold Project 60% review meeting (three-hour duration approx.). Prepare meeting agenda and distribute meeting minutes to attendees.
- 2.13 Assimilate all review comments, as appropriate and, upon Notice to Proceed, update 60% plans and prepare additional sheets as necessary to complete the plans to 90%-100% level of completion.
- 2.14 Update 60% specifications and add sheets to complete the plans to 90%-100% level of completion.
- 2.15 Prepare City Standard Front end documents to a 90%-100% of completion.
- 2.16 Update the Opinion of Probable Construction Cost (OPCC) to achieve a 90%-100% level of completion.

- 2.17 Provide one (1) set of the 90%-100% plans and bid documents (electronic and hard copy using City Standards as applicable) to the City staff for review and approval purposes with revised estimates of probable costs. Plan executive summary, project checklist and plan checklist.
- 2.18 Hold Project 90%-100% plan review meeting (three-hour duration approx.). Prepare meeting agenda and distribute meeting minutes to attendees.
- 2.19 Assimilate all review comments, as appropriate and, upon Notice to Proceed, update 90%-100% plans to a final level.
- 2.20 Update 90%-100% specifications to final level of completion based on City comments.
- 2.21 Update City Standard Front documents to a final level of completion. Coordinate with City's procurement department as necessary.
- 2.22 Update the Opinion of Probable Construction Cost (OPCC) based on City comments.
- 2.23 Provide final signed and sealed plans and bid documents (electronic and 1 hard copy using City Standards as applicable) to the City staff for project advertisement. Update plan executive summary and prepare project checklist and plan checklist. Said bid documents henceforth become the shared intellectual property of the City of Corpus Christi and the Consultant.

Scope Item Assumptions:

- Meetings will be held at ONSWTP.
- Utilities and Engineering Services Staff will attend progress meetings.
- Additional features such as site physical security, building physical security or building access controls are not included in the scope currently and can be added as an additional service if requested by the City.
- Consultant's staff working on the project will remotely dial in by phone as necessary.
- The City staff will:
  - Designate an individual to have responsibility, authority, and control for coordinating activities for the Project.
  - Provide the budget for the Project specifying the funds available for the construction contract.
  - Provide electronic copy of the City's standard specifications, standard detail sheets, standard and special provisions, and forms for required bid documents.

### 3 Bid Phase

The Consultant will:

- 3.1 Perform project management tasks such as managing schedule, managing deliverables on E-builder, submitting monthly invoices to City for payment during bid phase. The Consultant will also prepare and submit monthly status reports to the City with the monthly invoice. Monthly status reports will comprise of a one-page summary of the progress to date on the project, work completed during the prior month, work anticipated to be completed during the upcoming month, and discussion of any scope, schedule, or budget issues that may need to be resolved. The level of effort is assumed to be 1-hr every week.
- 3.2 Attend pre-bid meeting.
- 3.3 Review all pre-bid questions and submissions concerning the bid documents and prepare, in the City's format, for the Engineering Services' approval, a response form for posting on CivCast.
- 3.4 Assist the City in preparing addenda and make revisions to plans and specifications as necessary.
- 3.5 Attend bid opening.
- 3.6 Assist the City in reviewing bids and bidder references for completeness, balance of bid items, and responsiveness, and prepare a tabulation of bid prices.
- 3.7 Assimilate all addenda changes and issue a set of conformed contract documents to the City and Contractor.
- 3.8 Attend City Council Meeting readings and provide support to City Staff as needed during presentation. (up to four 1-hour meetings are anticipated for this effort)

Scope Item Assumptions:

- The effort for bid phase is based on traditional design-bid contract award strategy typically adopted by the City. Effort for alternate bid strategy is not included in this proposal.
- The City staff will:
  - Designate an individual to have responsibility, authority and control for coordinating activities for reviewing bids and the construction contract award.
  - Provide the budget for the project specifying the funds available for the construction contract.
  - Provide the City's updated standard specifications, standard detail sheets, standard and special provisions and forms for required bid documents.
  - Arrange and pay for printing of all documents and addenda to be distributed to prospective bidders.

- Advertise the projects for bidding, maintain a list of prospective bidders, receive and process deposits for all bid documents, issue (with assistance of Engineer) any addenda, prepare and supply bid tabulation forms, and conduct bid opening.
- Receive the Consultant's recommendation concerning bid evaluation and recommendation and prepare agenda materials for the City Council concerning bid awards.
- Prepare, review, and provide copies of the contract for execution between the City and the Contractor.
- This Scope of Services does not include time for the Consultant to assist the City in the event of bid protests.

#### **4 Construction Administration Phase (Not included)**

### **ADDITIONAL SERVICES**

This section defines the scope of additional services that may only be included as part of this contract if authorized by the Director of Engineering Services. A/E may not begin work on any services under this section without specific written authorization by the Director of Engineering Services. Fees for Additional Services are an allowance for potential services to be provided and will be negotiated by the Director of Engineering Services as required. The A/E shall, with written authorization by the Director of Engineering Services, perform the following:

#### **1 Dewatering Demonstration and Optimization**

The purpose of this task is to compare dewatering performance of centrifuges or other technologies and develop design criteria components such as polymer dosages and loading rates. The plant operations staff will also get an opportunity to witness operations first-hand. Up to three (3) manufacturers will be selected with a goal of developing and optimizing polymer feed rates, analyzing electrical demands and determining productions/operations schedule. The Consultant and the City will collaborate to develop pilot testing program based on City's need for up to three (3) weeks and summarize the findings in the PER.

#### **2 Allowance for Rental Equipment for Dewatering Demonstration and Optimization (T&M)**

The purpose of this allowance is to cover rental equipment and chemical costs associated with the additional service for Dewatering Demonstration and Optimization for up to 3 weeks. The Consultant will work with the City to develop the pilot testing program to request vendor proposals for rental equipment and will bill the City on a T&M materials basis based on invoices received from the vendors. These rental equipment can be directly procured through the City and the City can chose whether to authorize this task after project award.

### **3 Design Assistance for Dredge Equipment**

The solids from Pre-sedimentation basin and Wash-water Lagoon can be dredged using a dredge equipment and can be pumped to the proposed solids handling facility to retain the capacity of Pre-sedimentation basin. This will be evaluated as a part of the Preliminary Design Phase and if the City makes a decision to proceed, the effort under this task will be utilized. The Consultant will provide basic services (design through construction) under this task for providing electrical and mechanical connections at the Wash-water area for utilizing the existing or new dredging equipment. The schedule for this task will follow the basic services schedule for this contract and this item will bid out with the overall package for new solids handling facilities.

### **4 Feasibility Study for Lagoon Berm Removal and Modifications**

The City has expressed interest in the possibility of eliminating the north and south lagoons by removing the existing berm that is currently providing separation from the pre-sedimentation basin. This will increase the capacity of pre-sedimentation basin by adding the north and south lagoon volume to the pre-sedimentation basin. The Consultant will coordinate with Geotechnical Engineer (subconsultant) to perform geotechnical analysis as required to determine feasibility and upgrades needed for this modification. This is anticipated to be completed during the Preliminary Design phase and recommendations will be presented in the PER or a separate memorandum.

### **5 Design, Bid & Construction Phase Assistance for Lagoon Berm Removal**

The Consultant will provide basic services (design through construction) under this task for removal of berms based on City's decision after completion of feasibility study listed in Task 4. It is recommended that the berm removal be bid out as a standalone bid package to avoid any regulatory delays on the overall bid package for construction of new solids handling facilities. The scope does not include permitting associated with TCEQ dam review committee. The consultant shall provide two design deliverables for this scope item 90%-100% and final plans. The Construction duration is assumed to be 8 months for this task.

### **6 Regulatory Coordination for Lagoon Berm Removal (Allowance - T&M)**

The Consultant will prepare and submit required documents as necessary and if requested by the City to coordinate with regulatory agencies for lagoon berm removal. All work under this task item will be performed on a Time & Materials (T&M) basis. It is difficult to estimate the level of effort at this time and the final fee will be negotiated at a later date and is currently included as an allowance.

### **7 Regulatory Support and Coordination for New Solids Handling Facilities (AEP, TCEQ & Development Services - T&M)**

The Consultant will prepare and submit required construction plans to Texas Commission on Environmental Quality (TCEQ) and attend up to two 1-hour meetings with TCEQ and prepare responses if necessary. This work also includes coordination with AEP two 1-hour meetings with proposed access road and yard piping improvements that will pass through AEP

overhead power lines/poles. The Consultant will coordinate with City Development Services as necessary. All work under this task item will be performed on a Time & Materials (T&M) basis.

## **8 Topographic Survey**

The Consultant will perform topographic survey. All work will be tied to and conform with the City's Global Positioning System (GPS) control network and comply with Category 6, Condition I specifications of the Texas Society of Professional Surveyors' Manual of Practice for Land Surveying in the State of Texas, Ninth Edition. The Consultant will include reference to a minimum of two (2) found boundary monuments from the project area and establish Horizontal and Vertical Control as required. Horizontal control will be based on NAD 83 State plane coordinates (South Zone), and the data will have no adjustment factor applied – i.e. – the coordinate data will remain in grid. Vertical control will be based on NAVD 88. All control work will be established using conventional (non-GPS) methods. Perform topographic surveys to gather existing condition information. The Consultant will obtain x, y, and z coordinates of all accessible existing sanitary sewer, storm sewer, water and gas lines as well as any other lines owned by third-parties and locate all visible utilities, wells and signs within the apparent ROW width along project limits. Surveying services, related to subsurface engineering (SUE) shall be provided as part of the scope of work for SUE (Additional Service 11, below). The Consultant will Generate electronic planimetric base map for use in project design. The scope assumes up to 10 days of field survey.

## **9 Warranty Phase Services (Not included)**

## **10 Testing and Training Plan, Start-up Services (Not included)**

## **11 Risk Management Plan**

The Consultant will provide a complete Risk Management Plan that will serve as a communication tool to manage and control those events that could have a negative impact on the project. The plan will serve as the controlling document for managing and controlling all project risks. The plan will address the following:

- Risk Assessment
- Risk Mitigation
- Risk Contingency Planning
- Risk Tracking and Reporting

Included in the plan will be a risk impact assessment matrix that will assign risk ratings to risks or conditions based on combining probability and impact scales. A series of three (3) workshops (no more than 2 hours each) will be conducted with the City to continuously evolve and maintain the Risk Management Plan throughout the life cycle of the project. In addition to risk register, a decision and action item log will be prepared for the project by the Consultant and provided to the City throughout the Design Phase after all progress meeting/workshops. The Decision/Action Item Log will track all decisions made during

meetings and will be formatted per City's requirements and made available via share file provided by the Consultant.

## **12 Windstorm Certification (Not included)**

## **13 Geotechnical Investigation**

The Consultant will identify the extent of subsurface geotechnical investigations as required to support the design of the new facilities and will coordinate this effort with the Geotechnical Engineer (subconsultant). The Consultant will attend up to two (2) two-hour site visits with the Geotechnical Engineer for geotechnical engineering work. A detailed geotechnical investigation report summarizing the discussions on test analyses, findings and recommendations shall be prepared by the Geotechnical Engineer. The Consultant will review draft report and work with the Geotechnical Engineer to finalize the geotechnical report.

## **14 SUE (Allowance – T&M)**

The Consultant will coordinate with subconsultant to provide Level A Subsurface Utility Engineering (SUE) services for the project. Subsurface Utility Engineering services are divided into four (4) levels (Level A through Level D). Level A Services involve physically locating the utility by different geophysical methods. Once the utility is located, its coordinates are noted by survey measurements.

The purpose of performing Level A SUE services for the project is to ensure no conflicts occur between the proposed construction and existing utilities at the ONSWTP. The vertical and horizontal location, size, pipe material and configuration of the utility line will be recorded. The Consultant will transfer the data obtained from the field to update utility base maps and project design plans. Consultant will also coordinate with the City regarding potential utility crossings and conflicts.

The Consultant will provide the following services:

### **14.1 Sub Surface Utility Engineering (Level A)**

- Sub Surface Utility Location and Data Recording.
- Coordinate with Texas 811 and City to determine the approximate location of underground utilities to be exposed.
- Utilize Hydro Vac Methods to expose underground utilities and survey to record exact horizontal and vertical location. Once the survey work is complete, each SUE test hole will be backfilled.
- Collect and record field data.
- Review field data obtained during on-site survey and utility location.
- Update base maps and project construction plans

### **Notes and Assumptions**

- The scope of work assumes that during field survey and subsurface location, the City will provide the following:
  - Staging area for equipment on site (Hydro Vac Unit(s), backfill trailer)

- Area for excavated material to be left on site temporarily which will be used as backfill material
- Access to on site water source equivalent to a fire hydrant
- The level of effort for this contract is based on 8 locates or greater involving trenching and hydro excavating to a depth of 10 feet.
- Hydro Vac method will be utilized for locating subsurface utilities. The potholes will be temporarily barricaded. Once the work is complete, the crew will backfill the utility potholes.
- Exclusions:
  - Identifying exact point of underground utility intersection and/or elbows and turns (this service can be performed at an additional cost if requested by City)
  - In the event that work cannot be performed or is limited by inaccessibility due to weather, City to provide means of accessibility (i.e. rig mats)
  - Transfer of material directly into containers such as vacuum boxes or related containers.
  - Backfill limited to native material or sand.
- Work is limited to a maximum of five (5) days and services will be billed on a T&M basis since the exact locations and extent will be finalized after preliminary design

## **SUMMARY OF FEES:**

**Fees for Basic Services:** The City will pay the Consultant for providing all “Basic Services” on a Lump Sum basis as the project moves towards completion. The fees will be full and total compensation for services and for all expenses incurred in performing these services.

**Fees for Authorized Additional Services.** The City will pay the Consultant for ALL additional services specified in this amendment on a Lump Sum basis except for Tasks 2,6,7 and 14. The services under Tasks 2,6,7 and 14 will be provided on a Time and Material (T&M) basis as the project moves towards completion. The fee will be full and total compensation for services and for all expenses incurred in performing these services.

Task No.	Task Description	Fee
<b>Basic Services</b>		
1	Preliminary Phase	\$ 868,176
2	Design Phase	\$ 2,891,542
3	Bid Phase & Conformed Documents	\$ 72,986
4	Construction Phase (Not included)	\$ -
	<b>Subtotal Basic Services</b>	<b>\$ 3,832,704</b>
<b>Additional Services</b>		
1	Dewatering Demonstration and Optimization	\$ 92,240
2	Allowance for Rental Equipment for Dewatering Demonstration and Optimization (T&M)	\$ 225,000
3	Design Assistance for Dredge Equipment	\$ 215,360
4	Feasibility Study for Lagoon Berm Modification	\$ 66,827
5	Design, Bid & Construction Phase Assistance for Lagoon Berm Removal	\$ 217,120
6	Regulatory Coordination for Lagoon Berm Removal (Allowance - T&M)	\$ 32,400
7	Regulatory Support and Coordination (AEP, TCEQ & Development Services - T&M)	\$ 24,680
8	Topographic Survey	\$ 38,780
9	Warranty Phase Services (Not Included)	\$ -
10	Testing and Training Plan, Start-up Services (Not Included)	\$ -
11	Risk Management Plan	\$ 44,314
12	Windstorm Certification (Not Included)	\$ -
13	Geotechnical Investigation	\$ 44,620
14	Subsurface Utility Engineering (Allowance - T&M)	\$ 26,320
	<b>Subtotal Additional Services</b>	<b>\$ 956,722</b>
	<b>Total Fee</b>	<b>\$ 4,789,425</b>

**SCHEDULE:**

The Consultant’s services shall be performed in a timely manner consistent with sound professional practices. Any adjustments made to the agreed upon schedule shall be made in writing and accepted by both parties.

The Consultant shall begin work immediately upon receipt of the executed Contract and/or Notice to Proceed (written or emailed). The work under this project is expected to be completed as shown below.

<b>Activity</b>	<b>Anticipated Schedule</b>
DRAFT 30% Design Submittal	6 months after A/E NTP
DRAFT 30% City Review by	7 months after A/E NTP
Final 30% Design Submittal	9 months after A/E NTP
60% Design Submittal	14 months after A/E NTP
60% Design City Comments by	15 months after A/E NTP
90%-100% Design Submittal	20 months after A/E NTP
90%-100% Design City Review Comments by	21 months after A/E NTP
Final Signed & Sealed Plans & Bid Documents	26 months after A/E NTP
Bidding & Construction Award	31 months after A/E NTP
Construction Completion	67 months after A/E NTP