

Amendment No. 1

City of Corpus Christi

Holly & Rand Morgan Elevated Storage Tanks Implementation

Service Agreement No. 3097

Corpus Christi Project No.: 20267

CP&Y Project No.: CORP2000479

September 6, 2020

1) General

This Amendment is for Additional Engineering Services related to updating the implementation plan for the TCEQ Alternative Capacity Requirement (ACR), the design, bid and construction phases for the recommendations to bring the Holly and Rang Morgan Elevated Storage Tanks (EST) into service and planning efforts associated with the Expanded Pipe Reinvestment Program.

2) Basic Services

The Engineer shall provide the following services:

i) Project Management

- (1) Hold monthly meetings with the Owner to establish status of project, plan future activities, and discuss design issues. Meetings will be conducted using Teams or Owner web-based platform. In person meetings will be held as needed and as travel/meeting restrictions allow.
- (2) Perform project administrative duties such as progress monitoring, scheduling, correspondence, and office administration.
- (3) Submit monthly invoices with project status reports outlining the activities during that billing period to the Owner.
- (4) Attend internal Technical Review meetings with senior staff to ensure the project is being properly executed and to provide technical oversight for the project.
- (5) Make three presentations on findings and recommendations to the Council or senior management in PowerPoint format.
- (6) Engineer will perform QA/QC activities for all deliverables for this project.

ii) Update to the ACR Implementation Plan

(1) Hydraulic Modeling

- (a) Engineer will utilize GIS based hydraulic modeling software to perform a hydraulic analysis of the Corpus Christi water distribution system.
- (b) Engineer will update the model based on the changes made to the system since the last modeling effort.
- (c) Engineer will coordinate with Owner operations staff for system requirements and current system operations.
- (d) Scenarios run by the Engineer will include:

- (i) Analyze scenarios with two new ESTs (Holly and Rand Morgan).
 - (ii) Analyze scenarios with four new ESTs (Nueces Bay and Flour Bluff). Validate the new tank locations and elevations.
 - (iii) Develop recommended PRV settings and pump sizes for all four tanks.
 - (iv) Analyze scenarios removing old ESTs from service.
 - (v) Confirm all ACR requirements are met.
 - (vi) Simulations to check water quality/age and compare to water age/ water quality parameters provide by the Owner.
 - (vii) Extended period simulations to develop system operations recommendations.
- (e) The results of the hydraulic modeling effort will be summarized in the Update to the ACR Implementation Plan.
 - (f) Engineer will provide design criteria of the PRV and by-pass pumps for the Nueces Bay and Flour Bluff ESTs to the design engineer associated with those tanks.
- (2) Develop the updated ACR Implementation Plan and Report
 - (a) Provide background information regarding the current situation with the elevated water storage tanks.
 - (b) Document the model development and modifications to the model since the original ACR letter (2012 letter to TCEQ).
 - (c) Document the ACR requirements and the modeling results associated with the ACR requirements.
 - (d) Update the implementation plan along with the schedule associated with the implementation plan.
- (3) Coordination with TCEQ
 - (a) Engineer will coordinate with TCEQ concerning the updated ACR Implementation Plan.
 - (b) Engineer will have the following calls/meetings with the TCEQ:
 - (i) Preliminary meeting to document the process for which the update to the ACR Implementation Plan will occur.
 - (ii) Coordination meeting to update TCEQ on the progress of the project.
 - (iii) Meeting to discuss the findings of the modeling effort as they relate to the ACR requirements.
 - (c) Presentation to the TCEQ summarizing the final update to the ACR Implementation Plan and schedule extension request.
- (4) **Deliverables** - Draft and Final ACR Implementation Plan
- iii) PRV/By-Pass Pump Design, Bid and Construction Phase Services
 - (1) PRV and by-pass pump design will be only for the Holly and Rand Morgan ESTs. Similar improvements to the Nueces Bay and Flour Bluff ESTs will be by others.
 - (2) 60% Design Phase
 - (a) The design will include the following for the Holly and Rand Morgan ESTs:
 - (i) Mechanical
 - 1. Confirm space requirements to determine if recommended improvements will fit within the base of the new tanks (Holly and Rand Morgan).

2. Based on the hydraulic model, Engineer will evaluate the size and type of pumps for filling the ESTs.
 3. Engineer will coordinate with PRV suppliers to for valve sizing, controls and operation of the valve.
 4. Provided necessary piping and valves for the pumps and PRVs.
- (ii) Structural
1. Utilize previous Geotechnical Reports for use in structural evaluations.
 2. Evaluate existing EST slab to determine its capability of supporting new pumps.
 3. Design a new pump foundation/pad to support the new pumps.
- (iii) Electrical
1. Engineer will coordinate with Electrical Provider to determine the electrical needs required for the new pumps.
 2. Engineer will assist with negotiations of any electrical supply agreements, if needed.
 3. Engineer will evaluate the types of electrical equipment required for the new pumps and valves.
- (iv) Instrumentation
1. PLC panel to control and monitor station pump equipment and field instruments and will communicate with OWNER's SCADA system via their current network. If the existing tank PLC has sufficient spare I/O then the existing PLC will be utilized.
 2. Each pump will be provided with a local panel for manual operation of each pump.
 3. Develop proposed System Architecture.
 4. Control narratives addressing process functions for all equipment to be monitored or controlled by SCADA.
 5. A list in the specifications of the proposed I/O points inclusive of hard and virtual I/O points.
- (b) Engineer will prepare 60% engineering Construction Documents, for the OWNER's review and comment, at a scale suitable for 11"x17" sheets. Electronic files in PDF format will be provided to OWNER. Engineer shall provide an electronic submittal in pdf format for both the drawings and specifications. Full size drawings will not be prepared for 60% design submittal.
- (c) The 60% design submittal will include the following:
- (i) Drawings, including:
 1. Front End Sheets,
 2. Major Plan Views (all disciplines),
 3. Major Profile and Section Views (all disciplines),
 4. One Line Diagrams,
 5. PMID's,
 6. Limited Details.
 - (ii) The following specifications will be included:
 1. Table of Contents (TOC) of specifications to be the included in the Bid Documents,
 2. Major Civil Pipeline,
 3. Major Mechanical Equipment,
 4. Major Electrical and Instrumentation Equipment,

5. Mechanical and Instrumentation Control Narratives.

- (d) Perform internal peer and QA/QC review for all documents produced prior to submitting to the District.
 - (e) Incorporate comments developed from peer and QA/QC review process.
 - (f) Prepare 60% OPCC.
 - (g) **Deliverables** - 60% Plans, Specifications, and OPCC.
- (3) 90% Design Phase
- (a) Meet with OWNER to address OWNER's comments for the Project, based on review of the 60% Design submittal documents.
 - (b) Engineer will prepare written response to the comments generated by OWNER.
 - (c) Engineer will prepare 90% engineering Construction Documents, for the OWNER's review and comment, at a scale suitable for 11"x17" sheets. Electronic files in PDF format will be provided to OWNER. Engineer shall provide an electronic submittal in pdf format for both the drawings and specifications. Full size drawings will not be prepared for 90% design submittal.
 - (d) Perform internal peer and QA/QC review for all documents produced prior to submitting to OWNER.
 - (e) Incorporate comments developed from peer and QA/QC review process.
 - (f) Prepare 90% OPCC.
 - (g) **Deliverables** – 90% Plans, Specifications, Written Response to Comments to 60% Comments, and OPCC.
- (4) Bid Documents (100%)
- (a) Meet with OWNER to address OWNER's comments for the Project, based on review of the 90% Design submittal documents.
 - (b) Engineer will prepare written response to the comments generated by OWNER.
 - (c) Engineer will finalize and prepare engineering Construction Documents at a scale suitable for 11"x17" sheets. Electronic files in PDF format for bidding will be provided to OWNER. Engineer shall provide an electronic submittal in pdf format for both the drawings and specifications. Bid drawings will incorporate appropriate review comments from the 90% Design submitted to the Owner.
 - (d) Finalize drawings.
 - (e) Finalize specifications.
 - (f) Assist with the development of the front-end documents including development of the bid items.
 - (g) Finalize Opinion of Probable Construction Cost.
 - (h) Perform internal peer and QA/QC review of Contract Documents prior to submitting to the District.
 - (i) Incorporate comments generated from peer and QA/QC review process.
 - (j) Engineer, on the behalf of OWNER, will submit the drawings and specifications to the TCEQ for their regulatory review.
 - (k) **Deliverables** - Plans, Specifications and Front-End Documents suitable for bidding, OPCC.

- (l) **Exclusions** – Does not include scope to assist the Owner in obtaining alternative funding for this project.

iv) Bid Phase Services

- (1) Attend Pre-Bid Conference.
- (2) Field all bidder questions as they relate to the project. Engineer will provide a compiled question and response log that will be included in each addendum.
- (3) Develop addenda content as necessary to clarify the intent of the Contract Documents and/or to handle other administrative matters. The Owner's approval will be obtained prior to issuing any addenda items that affects the scope of the project or significantly alters the Project as approved by Owner.
 - (a)
- (4) Attend and assist Owner as needed during Bid Opening.
- (5) Following the bid opening, Engineer will review statement of experience and provide recommendation, electronically.
- (6) **Deliverables** - Pre-Bid Meeting Minutes, Q&A Log, Addendum Content and Electronic Bid Recommendation.
- (7) **The Owner will provide the following:**
 - (a) Advertise the Project for bidding, maintain the list of prospective bidders, issue any addenda, prepare bid tabulation and conduct the bid opening.
 - (b) Coordinate the review of the bids with the A/E.
 - (c) Prepare agenda materials for the City Council concerning bid awards.
 - (d) Prepare, review and provide copies of the Contract for execution between the Owner and the Contractor.

v) Construction Phase Services

- (1) Engineer will prepare Conformed Documents, after the bid opening, that incorporate any changes in the construction documents made by addenda. Engineer will provide electronic PDF sets of construction documents.
- (2) Attend and assist Owner in a Pre-Construction Conference.
- (3) Visit construction site during various stages of construction being performed to observe as an experienced and qualified design professional the progress and quality of the executed work by the Contractor(s) and to determine if such work is proceeding in general accordance with the Contract Documents. During such visits and on the basis of on-site observations the Engineer will notify Owner of reasonably detectable defects and deficiencies or work failing to conform to the Contract Documents. Engineer will not, during such visits or as a result of such observations of Contractor's works in progress, supervise, direct, or have control over Contractor's work, nor will Engineer have authority over responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's work, or for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the work. Accordingly, Engineer neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with

Contract Documents. Fee includes eight (8) site visits in addition to the monthly construction meetings.

- (4) Attend monthly construction meetings scheduled by Owner. Engineer will attend up to 12 monthly construction meetings.
 - (5) Review and make recommendations for shop drawings, product data, samples, and other submittals submitted by the Contractor. Fee includes the review of up to 35 submittals (25 initial submittals, and 10 resubmittals).
 - (6) Provide answers on "Request for Information" (RFI's) from the Contractor and Owner as related to clarification of the plans and specifications and/or to possible conflicts between the plans and specifications. Fee includes the review of up to 10 RFIs.
 - (7) Review and make recommendations to Owner on change order request from the Contractor. Fee includes up to 5 individual change order items.
 - (8) Conduct a walk-through with Owner and the Contractor to determine if the Project is substantially complete, and a final walk thru to determine if the work has been completed in accordance with the Contract Documents and if the Contractor has fulfilled all of his obligations there under so that Engineer may recommend, in writing, final payment to the Contractor and may give written notice to Owner and the Contractor that the work is acceptable, subject to any conditions therein expressed. It is assumed that there is one day for each site for each visit for a total of 2 walk-throughs.
 - (9) Incorporate changes made during construction based on information received from the Construction Contractor into the Contract Documents and submit record drawings within thirty (30) days after receiving as-built information from the Contractor. Submit the following items to Owner:
 - (a) One set of construction record drawings on 22"x34" bond paper.
 - (b) Two sets of construction record drawings on 11"x17" bond paper
 - (c) One set of construction record drawings in digital (AutoCAD) format, and in PDF.
 - (10) Engineer will notify TCEQ upon completion of the construction.
 - (11) **Deliverables** – Conformed Documents, Submittal Review Comments, Responses to RFI's, and Record Drawings.
 - (12) **Exclusions**
 - (a) Scope does not include daily construction inspections or specialty inspections.
 - (b) PLC and HMI programming services are not included in this scope.
- vi) Expanded Pipe Reinvestment Program (PgM)
- (1) **Information Review.** The purpose of this task is to refine the pipe reinvestment analysis that was presented in the first phase of this study and create a more well-defined overall program. The following information will be reviewed and used to develop the plan:
 - (a) GIS Data for the distribution system.
 - (b) Condition assessment projects that are underway or planned for the next 10 years.
 - (c) Master planned projects to address growth that are underway or planned for the next 10 years.

- (d) Computerized Maintenance Management System (CMMS - Maximo System) output that shows main breaks and customer line breaks in GIS to assess pipe conditions.
- (e) Bid tabs for all pipeline replacement projects over the last 5 years.

(2) Updated Reinvestment Estimate.

- (a) A unit costing table will be generated to use for all pipe sizes in the distribution system from 4 inch to 72 inch in size. All 3 inch and smaller piping will be replaced with 4" pipe. Basis for costs will be bid tabulations from the Owner's projects, other bid prices from projects in Texas, manufacturers pipe costs, and standard cost estimating methods to develop cost for all sizes. Categories will be created to include trenchless, open cut with and without pavement replacement.
- (b) The main break information, together with pipe age and material characteristics will be utilized to verify the target replacement age for categories of pipes. These replacement age estimates, and construction costs will be utilized to update the reinvestment analysis values for broad budgeting purposes.

(3) Deliverables - The following submittals will be made in the course of this task:

- (a) Summary of data analysis.
- (b) Summary of cost analysis and final proposed pipe estimates.
- (c) Summary of pipe condition evaluation and replacement cycle
- (d) Update of the reinvestment analysis.

3) Special Services

- i) Fee is based on easements on at the Rand Morgan EST. Since the Holly EST site is a former pump station site it is assumed the electrical infrastructure will be adequate to service the new pumps.
- ii) Easement Legal Description and Exhibit Preparation
 - (1) Provide Easement Legal Descriptions and Exhibits for the proposed Electrical provider transformer yard and primary feed circuits.
 - (2) Perform survey, render field notes and prepare individual parcel exhibits for new additional rights-of-way and/or easements needed for the project. Exhibits shall include a standard signed and sealed exhibit and a reprint of the boundary information on color aerial photography.
- (3) Parcel Exhibits - Individual parcel exhibits shall be sealed, signed and dated by a Registered Professional Land Surveyor and shall contain the following:
 - (a) Parcel number,
 - (b) Area required,
 - (c) Area remaining,
 - (d) Legal description,
 - (e) Current owner,
 - (f) Any existing platted easements or easements filed by separate instrument including easements provided by utility companies,
 - (g) Any physical features,
 - (h) Metes and bounds descriptions of parcel to be acquired. The description shall be provided on a separate sheet from the exhibit. Each type of easement shall be described separately. If additional parcels are

determined to be acquired, then a supplemental adjustment shall be made to the schedule of fees.

- (4) **Deliverables** - parcel exhibits shall be in both hard copy (8½" x 11") and pdf format.

4) Additional Services

i) Expanded Pipe Reinvestment Program

- (1) **Information Review.** The purpose of this task is to create a more well-defined overall program. The following information will be reviewed and used to develop the plan:

- (a) Maps of the collection system where sewer pipelines will be replaced over the next 10 years.
- (b) TXDOT or Owner's street widening program maps and schedule for the next 10 years.
- (c) City of Corpus Christi pavement and storm drainage replacement programs for the next 10 years.

- (2) **Develop the 10-year Pipe Replacement Program.** Using the information obtained from the Owner to develop a line by line pipe replacement program designed to bring the program current and to a maintainable pipe replacement program. The following information will be coordinated to create a CIP plan:

- (a) Street replacements and widening, pipelines upsized for growth, and wastewater line replacements (for growth and condition) will be evaluated with an attempt to coordinate concurrent construction of pipe replacements with other similar or related projects to minimize the cost of repaving, possible later relocation of new assets, and disruptions to traffic and general public.
- (b) Water pipelines determined to be replaced in the 10-year catchup program will mapped and compared to the locations of the other projects. The pipeline replacement projects in this time period will be scheduled (within the 10-year period) to coordinate and potentially be combined with other projects.
- (c) Replacement projects will also be coordinated and scheduled as follows:
 - (i) Nearby segments will be combined to create contiguous segments.
 - (ii) Groups of projects in nearby proximity will be combined to create a larger project.
 - (iii) The dollar value of the projects will be coordinated with the owner to create projects that will encourage competitive bidding. The number of projects created will influenced also by the Owner's ability to administer and inspect the projects.
 - (iv) Yearly investment levels will be balanced to create a more even spending program.
- (d) The final pipeline replacement program will consist of:
 - (i) Overall color-coded program map.
 - (ii) Annual detailed replacement map indicating coordinating projects.
 - (iii) Unit price cost estimates by projects, by investment year.

(iv) Narrative to describe the approach and rationale for the development of the plan.

(3) **Deliverables** - The following submittals will be made in the course of this task:

(a) Analysis of project coordination requirements.

(b) Pipe replacement Program for 10 years:

(i) Draft

(ii) Final

ii) Long Term Planning to 2035

(1) Data Collection

(a) Meet with Corpus Christi to hold a kickoff meeting/workshop. The information below will be in addition to data already received from the prior and current effort related to implementing the Holly and Rang Morgan ESTs. Receive copies of as-built drawings, video inspections, utility data map sets from existing geographical information system (GIS), and other records useful to the understanding of the City's water system, including:

(i) As-built drawings

(ii) GIS base map files that include:

1. Pipe size, material, and installation date

2. Fire hydrants

3. Water valves

(iii) Storage tank information, including capacity, location, availability, dimensions, water surface elevations, and system connections

(iv) Pressure reducing valve station information

(v) Source turn-out information

(vi) Booster pump station information, including design and operating features, capacity, system head, elevation, and related features

(vii) Historic SCADA data

(viii) O&M records for leaks, repairs, and replacements

(2) Population and Water Demand Projections

(a) Growth projections will utilize data from the Owner's planning group, county growth projections, and state level growth data to determine the amount and location of growth within the Owner's water service boundary. Any additional information from the City staff regarding industrial, commercial, and residential developments that may have any bearing on the projections will be integrated. The growth projections will include an outlook to the year 2035.

(b) Create demand scenarios at 5-year increments to correspond to the population growth for use in the model runs to evaluate existing system capacity and provide for future customers.

(3) Hydraulic Modeling

(a) Engineer will update the model as necessary to accommodate the projected future growth.

(b) Performance Criteria – Provide the appropriate performance criteria and methodologies for analysis used to evaluate the existing distribution system and its facilities, and to size future improvements.

(i) Minimum pressure for Peak Hour Demand, Maximum Day plus Fire Flow

- (ii) Storage capacity evaluation (operational, firefighting, and emergency) in accordance with TCEQ and AWWA guidelines.
 - (iii) Maximum system pressure
 - (iv) Firm pumping capacity
 - (v) Planning level required fire flow per land use type
 - (vi) System reliability
- (4) Develop CIP
- (a) Identify improvements necessary to address new facilities required for providing continued reliable water service through year 2035. Provide phasing of improvements, capital cost requirements, cost estimates which incorporate the consumer price index (CPI), and implementation schedule. The 15-year plan will be divided into three 5-year CIP programs.
- (5) **Deliverables** - Draft and Final Report

5) Compensation

Basic Services		
1) Project Management		\$30,727
2) Update ACR Plan		\$ 99,409
a. Modeling	\$69,106	
b. Develop the ACR Report	\$16,953	
c. Coordinate with TCEQ	\$13,350	
3) PRV/Pump Design		\$ 180,077
a. Design	\$118,636	
b. Bid	\$4,702	
c. Construction	\$56,739	
4) Pipe Reinvestment PgM		60,600
a. Information Review	\$24,659	
b. Update Reinvestment Cost Estimate	\$35,942	
Basic Services Total		\$ 370,813
Special Services		
1) Easement Survey		\$12,584
Special Services Total		\$12,584
Additional Services		
1) Pipe Reinvestment Additional Tasks		TBD
2) 2035 Long Range Planning		TBD
Additional Services Total		TBD
Amendment 1 Total		\$ 383,397

6) Schedule

Date	Activity
	NTP
Update to the ACR Implementation Plan	
12 Weeks from NTP	Modeling
16 Weeks from NTP	Update Implementation Plan
PRV and By-Pass Pump Design	
16 Weeks from NTP	60% Design
19 Weeks from NTP	City Review
27 Weeks from NTP	90% Design
30 Weeks from NTP	City Review
34 Weeks from NTP	Final Bid Set
36 Weeks from NTP	Advertise for Bids
38 Weeks from NTP	Pre-Bid Conference
40 Weeks from NTP	Receive Bids
47 Weeks from NTP	Contract Award
52 Weeks from NTP	Construction NTP
TBD	Construction Complete
Expanded Pipe Reinvestment Pgm	
12 Weeks from NTP	Information Review
24 Weeks from NTP	Updated Reinvestment Estimate

Client: City of Corpus Christi
 Project: Implementation of Holly and Rand Morgan EST
 Date: September 3, 2020

ESTIMATE FOR SCOPE OF SERVICES

Total Project

TASK	POSITION	Principal	Project Manager	Sr. Engineer	Project Engineer	EIT	CADD Tech	Clerical	TOTAL LABOR		Expenses			TASK FEE
		\$ 302	\$ 196	\$ 229	\$ 146	\$ 121	\$ 119	\$ 65	Hours	Cost	Printing	Mileage	Other	
Basic Services														
Project Management														
Monthly Meetings (12)		0	24	24	0	24	0	0	72	\$ 13,097	\$ 131	\$ 131	\$ 262	\$ 13,621
Project Monitoring		0	48	0	0	0	0	0	48	\$ 9,415	\$ 94	\$ 94	\$ 188	\$ 9,792
Invoicing (24 months)		0	24	0	0	0	0	36	60	\$ 7,033	\$ 70	\$ 70	\$ 141	\$ 7,314
Total Hours		0	96	24	0	24	0	36	180					
Total Cost		\$0	\$18,830	\$5,492	\$0	\$2,897	\$0	\$2,326	\$29,545				Total Task Fee =	\$ 30,727
Update the ACR Implementation Plan														
Hydraulic Modeling														
Update model for proposed conditions		0	32	0	0	0	0	0	32	\$ 6,277	\$ 63	\$ 63	\$ 126	\$ 6,528
Analyze scenarios with two new ESTs		0	40	0	0	0	0	0	40	\$ 7,846	\$ 78	\$ 78	\$ 157	\$ 8,160
Analyze scenarios with four new ESTs		0	40	0	0	0	0	0	40	\$ 7,846	\$ 78	\$ 78	\$ 157	\$ 8,160
Develop recommended PRV settings		0	24	0	0	0	0	0	24	\$ 4,708	\$ 47	\$ 47	\$ 94	\$ 4,896
Analyze scenarios removing old ESTs from service		0	32	0	0	0	0	0	32	\$ 6,277	\$ 63	\$ 63	\$ 126	\$ 6,528
Simulations to check water quality/age		0	24	0	0	0	0	0	24	\$ 4,708	\$ 47	\$ 47	\$ 94	\$ 4,896
Ensure all ACR requirements are met		0	100	0	0	24	0	0	124	\$ 22,511	\$ 225	\$ 225	\$ 450	\$ 23,412
EPS simulations for system operations recommendations		0	32	0	0	0	0	0	32	\$ 6,277	\$ 63	\$ 63	\$ 126	\$ 6,528
Write the ACR Report														
Background Information		0	2	0	0	12	0	4	18	\$ 2,100	\$ 21	\$ 21	\$ 42	\$ 2,184
Document model development		0	8	0	0	16	0	12	36	\$ 4,276	\$ 43	\$ 43	\$ 86	\$ 4,447
Document ACR modeling results		0	32	0	0	0	0	16	48	\$ 7,310	\$ 73	\$ 73	\$ 146	\$ 7,603
Update Implementation plan and schedule		0	2	0	0	12	0	12	26	\$ 2,616	\$ 26	\$ 26	\$ 52	\$ 2,721
Coordinate with TCEQ														
Meetings (3)		12	12	0	0	12	0	0	36	\$ 7,431	\$ 74	\$ 74	\$ 149	\$ 7,728
Written Correspondence		2	2	0	0	12	0	0	16	\$ 2,445	\$ 24	\$ 24	\$ 49	\$ 2,543
Presentation		4	4	0	0	8	0	0	16	\$ 2,960	\$ 30	\$ 30	\$ 59	\$ 3,078
Total Hours		18	386	0	0	96	0	44	544					
Total Cost		\$5,443	\$75,712	\$0	\$0	\$11,587	\$0	\$2,843	\$95,586				Total Task Fee =	\$ 99,409

Client: City of Corpus Christi
 Project: Implementation of Holly and Rand Morgan EST
 Date: September 3, 2020

ESTIMATE FOR SCOPE OF SERVICES

Total Project

TASK	POSITION	Principal	Project Manager	Sr. Engineer	Project Engineer	EIT	CADD Tech	Clerical	TOTAL LABOR		Expenses			TASK FEE
		\$ 302	\$ 196	\$ 229	\$ 146	\$ 121	\$ 119	\$ 65	Hours	Cost	Printing	Mileage	Other	
Design PRV/By-Pass Pump														
	Design													
	Front End Specs	0	4	0	0	16	0	8	28	\$ 3,233	\$ 32	\$ 32	\$ 65	\$ 3,363
	Structural Specs	0	2	0	0	16	0	8	26	\$ 2,840	\$ 28	\$ 28	\$ 57	\$ 2,954
	Mechanical Specs	0	4	0	0	22	0	8	34	\$ 3,957	\$ 40	\$ 40	\$ 79	\$ 4,115
	Electrical Specs	0	4	0	0	18	0	8	30	\$ 3,474	\$ 35	\$ 35	\$ 69	\$ 3,613
	I&C Specs	0	4	0	0	18	0	8	30	\$ 3,474	\$ 35	\$ 35	\$ 69	\$ 3,613
	Front End Sheets (6 sheets)	0	2	0	0	16	20	0	38	\$ 4,703	\$ 47	\$ 47	\$ 94	\$ 4,892
	Structural Plans (2 sheets)	0	2	0	0	18	20	0	40	\$ 4,945	\$ 49	\$ 49	\$ 99	\$ 5,143
	Structural Sections (2 sheets)	0	2	0	0	18	20	0	40	\$ 4,945	\$ 49	\$ 49	\$ 99	\$ 5,143
	Structural Details (2 sheets)	0	2	0	0	12	16	0	30	\$ 3,745	\$ 37	\$ 37	\$ 75	\$ 3,894
	Meter Vault PMID (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Mechanical Plan (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Mechanical Section (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Mechanical Details (2 sheets)	0	2	0	0	12	16	0	30	\$ 3,745	\$ 37	\$ 37	\$ 75	\$ 3,894
	Electrical One-line (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Electrical Power Plan (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Electrical Panel Schedules and Details (2 sheets)	0	2	0	0	12	16	0	30	\$ 3,745	\$ 37	\$ 37	\$ 75	\$ 3,894
	SCADA One-line Diagram (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	Loop Diagrams (2 sheets)	0	2	0	0	24	30	0	56	\$ 6,859	\$ 69	\$ 69	\$ 137	\$ 7,133
	60% QA/QC Review	0	6	6	0	0	0	0	12	\$ 2,550	\$ 26	\$ 26	\$ 51	\$ 2,652
	Incorporate Comments	0	0	0	0	4	6	4	14	\$ 1,455	\$ 15	\$ 15	\$ 29	\$ 1,513
	90% QA/QC Review	0	6	6	0	0	0	0	12	\$ 2,550	\$ 26	\$ 26	\$ 51	\$ 2,652
	Incorporate Comments	0	0	0	0	4	6	4	14	\$ 1,455	\$ 15	\$ 15	\$ 29	\$ 1,513
	100% QA/QC Review	0	6	6	0	0	0	0	12	\$ 2,550	\$ 26	\$ 26	\$ 51	\$ 2,652
	Incorporate Comments	0	0	0	0	4	6	4	14	\$ 1,455	\$ 15	\$ 15	\$ 29	\$ 1,513
	60% Class 2 OPCC	0	1	0	0	12	0	0	13	\$ 1,645	\$ 16	\$ 16	\$ 33	\$ 1,710
	90% Class 1 OPCC	0	1	0	0	8	0	0	9	\$ 1,162	\$ 12	\$ 12	\$ 23	\$ 1,208
	Final OPCC	0	1	0	0	4	0	0	5	\$ 679	\$ 7	\$ 7	\$ 14	\$ 706

Client: City of Corpus Christi
 Project: Implementation of Holly and Rand Morgan EST
 Date: September 3, 2020

ESTIMATE FOR SCOPE OF SERVICES

Total Project

TASK	POSITION	Principal	Project Manager	Sr. Engineer	Project Engineer	EIT	CADD Tech	Clerical	TOTAL LABOR		Expenses			TASK FEE
		\$ 302	\$ 196	\$ 229	\$ 146	\$ 121	\$ 119	\$ 65	Hours	Cost	Printing	Mileage	Other	
60% Review Workshop		0	4	4	0	4	0	0	12	\$ 2,183	\$ 22	\$ 22	\$ 44	\$ 2,270
Incorporate Owner Comments		0	0	0	0	4	8	4	16	\$ 1,693	\$ 17	\$ 17	\$ 34	\$ 1,761
90% Review Workshop		0	4	4	0	4	0	0	12	\$ 2,183	\$ 22	\$ 22	\$ 44	\$ 2,270
Incorporate Owner Comments		0	0	0	0	4	8	4	16	\$ 1,694	\$ 17	\$ 17	\$ 34	\$ 1,762
Bid														
Pre-Bid Conference & Preparation		0	2	0	0	2	0	0	4	\$ 634	\$ 6	\$ 6	\$ 13	\$ 659
Answer Bidder Questions		0	2	0	0	8	0	0	10	\$ 1,358	\$ 14	\$ 14	\$ 27	\$ 1,412
Develop Addendum Content		0	2	0	0	8	4	4	18	\$ 2,092	\$ 21	\$ 21	\$ 42	\$ 2,176
Recommendation		0	1	0	0	2	0	0	3	\$ 438	\$ 4	\$ 4	\$ 9	\$ 455
Construction														
Preconstruction Meeting & Preparation		0	2	2	0	0	0	0	4	\$ 850	\$ 9	\$ 9	\$ 17	\$ 884
Monthly Construction Meetings (12, 4hrs/ea)		0	0	48	0	24	0	0	72	\$ 13,882	\$ 139	\$ 139	\$ 278	\$ 14,437
Meeting Minutes		0	0	6	0	12	0	0	18	\$ 2,822	\$ 28	\$ 28	\$ 56	\$ 2,934
Other Meetings/Site Visits (4, 4hrs/ea)		0	0	16	0	8	0	0	24	\$ 4,627	\$ 46	\$ 46	\$ 93	\$ 4,812
Submittals/O&Ms/Test Reports Handling (35@1hrs)		0	0	0	0	0	0	35	35	\$ 2,261	\$ 23	\$ 23	\$ 45	\$ 2,351
Submittals/O&Ms/Test Reports Review (35@4hrs)		0	0	35	0	105	0	0	140	\$ 20,683	\$ 207	\$ 207	\$ 414	\$ 21,511
RFI handling (10@1hrs)		0	0	0	0	0	0	10	10	\$ 646	\$ 6	\$ 6	\$ 13	\$ 672
RFI's (10@4hrs)		0	0	10	0	30	0	0	40	\$ 5,910	\$ 59	\$ 59	\$ 118	\$ 6,146
Review as-built drawings from Contractor		0	0	0	0	4	0	0	4	\$ 483	\$ 5	\$ 5	\$ 10	\$ 502
Record Drawings		0	0	0	0	4	12	0	16	\$ 1,911	\$ 19	\$ 19	\$ 38	\$ 1,987
QA/QC Record Dwgs		0	0	0	0	4	0	0	4	\$ 483	\$ 5	\$ 5	\$ 10	\$ 502
Total Hours		0	82	143	0	609	368	109	1311					
Total Cost		\$0	\$16,084	\$32,726	\$0	\$73,506	\$43,792	\$7,043	\$173,151				Total Task Fee =	\$ 180,077

Client: City of Corpus Christi
 Project: Implementation of Holly and Rand Morgan EST
 Date: September 3, 2020

ESTIMATE FOR SCOPE OF SERVICES

Total Project

TASK	POSITION	Principal	Project Manager	Sr. Engineer	Project Engineer	EIT	CADD Tech	Clerical	TOTAL LABOR		Expenses			TASK FEE
		\$ 302	\$ 196	\$ 229	\$ 146	\$ 121	\$ 119	\$ 65	Hours	Cost	Printing	Mileage	Other	
Expanded Pipe Reinvestment Program														
Review Previous Reports														
Review Previous Reports/Data		1	8	4	24	32	2	2	73	\$ 10,525	\$ 105	\$ 105	\$ 211	\$ 10,946
Summarize and quantify data		2	2	2	40	24	24	2	96	\$ 13,185	\$ 132	\$ 132	\$ 264	\$ 13,712
Update Reinvestment Analysis														
Develop Pipe Costing Summary		1	4	8	32	40	0	0	85	\$ 12,424	\$ 124	\$ 124	\$ 248	\$ 12,921
Evaluate Pipeline Condition and Replacement Age		1	8	4	40	40	16	0	109	\$ 15,367	\$ 154	\$ 154	\$ 307	\$ 15,982
Update Reinvestment Analysis		2	6	2	16	16	0	4	46	\$ 6,768	\$ 68	\$ 68	\$ 135	\$ 7,039
Total Hours		7	28	20	152	152	42	8	409					
Total Cost		\$2,117	\$5,492	\$4,577	\$22,222	\$18,346	\$4,998	\$517	\$58,270				Total Task Fee =	\$ 60,600

Basic Services Total Fee = \$ 370,813

Special Services														
Easement Survey														
Establish Control		0	2	5	10	0	0	0	17	\$ 2,300	\$ 23	\$ 23	\$ 46	\$ 2,392
Field Survey		0	8	15	30	0	0	0	53	\$ 7,200	\$ 72	\$ 72	\$ 144	\$ 7,488
Process Data		0	2	4	0	0	0	0	6	\$ 700	\$ 7	\$ 7	\$ 14	\$ 728
Prepare Exhibits		0	2	16	0	0	0	0	18	\$ 1,900	\$ 19	\$ 19	\$ 38	\$ 1,976
Total Hours		0	14	40	40	0	0	0	94					
Total Cost		\$0	\$2,100	\$4,000	\$6,000	\$0	\$0	\$0	\$12,100				Total Task Fee =	\$ 12,584

Special Services Total Fee = \$ 12,584