Partners for a Better Quality of Life

November 8, 2022

Ryan Hedrick
Senior Project Manager
City of Corpus Christi
Engineering Services Department
1201 Leopard St.
Corpus Christi, TX 78401

RE: Professional Services Fee Proposal
        Project 22405- ONSWTP Navigation Pump Station Improvements- 30% PER and
        Hydraulic Model Upgrades

Mr. Hedrick,

Per your request CP&Y will provide professional services to provide a 30% Preliminary
Engineering Report for the ONSWTP Navigation Pump Station Improvements located at 302
North Navigation Blvd. The Preliminary Engineering Report will provide recommendations and
30% design drawings on the following topics:

- Hydraulic studies to determine new hydraulic grade line for the station.
- Re-routing of supply and discharge line to improve water quality.
- Replacement of pressure/flow control valves.
- Replacement of existing pumps.
- Replacement of tank isolation actuators.
- Evaluate need for on-site back-up power and freeze protection.
- Hydraulic Model Update and Calibration

A. SCOPE OF WORK

CP&Y, Inc. will provide the following professional services:

Task 1: Project Management

1. Hold monthly meetings with the owner to establish status of the project, plan future
   activities, and discuss design issues. Meetings will be conducted using Microsoft
   Teams or telephone.

2. Perform project administrative duties to include progress monitoring, scheduling,
   correspondence, and office administration.

3. Submit monthly invoices with project status reports outlining the activities during that
   billing period to the City.

4. Conduct a kick-off meeting with the City and the Design Team to review the scope and goals of the project.

5. Collect data required to evaluate the station. A data request will be submitted when contract is finalized.

6. Deliverables:
   a. Meeting agenda, meeting minutes with action/decision items.
   b. Monthly invoices.

Task 2: PER- 30% Design

1. Conduct a site visit to compare field conditions with as-built drawings and evaluate condition of existing pumps, valves and actuators.

2. Hydraulic Studies

   i. Update model for existing conditions and future conditions for Navigation Pump Station.
   ii. Size pumps for the future system hydraulic grade lines.

3. Water Quality Improvements

   i. Evaluate addition of chlorine boosting on-site.
   ii. 30% Design drawings showing re-routing of station supply and discharge lines.

4. Pressure/Flow Valves Replacement

   i. Evaluate and select new valves.
   ii. 30% Design drawing showing valve replacement.

5. Pumps Replacement

   i. Review system curves.
   ii. Evaluate new pump curves based on future system hydraulic grade lines.
   iii. Evaluate the need for VFDs.
   iv. Evaluate layout of new pumps and VFDs.
   v. 30% Design drawing showing pump replacement.

6. Valve Actuator Replacement

   i. Evaluate and select new actuators.
   ii. 30% Design drawing showing actuator replacement.

7. Evaluate On-Site Backup Power/Freeze Protection

   i. Review current Risk and Resilience Assessment.
   ii. Review SB3 compliance emergency preparedness plan.
   iii. Analyze and develop recommendations for backup power and

freze protection.

8. Evaluate Current Site Electrical

    i. Evaluate incoming feed.
    ii. Evaluate MCC, VFDs, switch gear and generator.
    iii. Provide recommendations for electrical improvements.

9. Preliminary Engineering Report

    i. Compile PER and 30% design drawings.
    ii. Perform quality control of the PER and drawings.
    iii. Incorporate QC comments.
    iv. Conduct a workshop with City of Corpus Christi to review the PER.
    v. Prepare and submit workshop meeting minutes.
    vi. Finalize PER and submit to City of Corpus Christi.

Task 3: Hydraulic Model Updates

1. Task 3 completes an update and calibration of the City of Corpus Christi hydraulic model.

2. Data Collection – for City GIS data, as-built records, system valve data, pump curve data, HSPS updates.

3. Hydraulic Model Initial build – Update and verification of all pipes, nodes, valves, tanks, and pumps.

4. Water Demand Study – update all demands for full year 2022.

5. Determine diurnal curves.

6. Water demand allocation to model nodes using GIS processes and geocoding.

7. Set up of model scenarios for ADD, MDD, PHD and for steady-state and for Extended Period Simulations.

8. Model Calibration.

B. DELIVERABLES

CP&Y will submit the following:

- Meeting minutes.
- Draft Preliminary Engineering Report (to include 30% Design Drawings) in electronic pdf format.
- Final sealed Preliminary Engineering Report (to include 30% Design Drawings) in electronic pdf format.
- Updated and Calibrated Hydraulic Model.

C. SCHEDULE

Below is a preliminary schedule for the duration of each phase. The overall duration of the contract is approximately 4 months from notice to proceed (NTP).

- Site Visit: 14 days (for scheduling and site visit)
- Evaluate conditions and prepare draft Preliminary Engineering Report: 90 days after data is received.
- Review of Preliminary Engineering Report by the City: 21 days
- Revise Preliminary Engineering Report, QC Report, and submit sealed report to the City: 30 days.

D. FEE SUMMARY

The attached Design Fee Spreadsheet contains a detailed list of tasks along with hours and fees associated with each task. Table D-1 below provides a summary of the Base Services design fees for the project.

Table D-1: Design Fee Summary

Task	Fee
Task 1- Project Management	$15,762
Task 2- PER- 30% Design	$134,015
Task 3- Hydraulic Model Updates	$130,436

Total Base Services: **$ 280,213**

Respectfully Submitted,
CP&Y, Inc.

Ted Stawasz, PE
Senior Project Manager

Client: **City of Corpus Christi**

Project: **22405- ONSWTP Navigation PS Improvements Design and Hydraulic Model Update**

Date: **November 8, 2022**

ESTIMATE FOR SCOPE OF SERVICES

POSITION / TASK	Principal	QC/QA	Project Manager	Sr. Modeler	Sr. Engineer	Sr. Electrical Eng.	Project Engineer	EIT	Sr. CADD Tech	CADD Tech	Admin	Sr. Accountant		TOTAL LABOR Hours	Cost	Printing	Travel	Other	TASK FEE
	$ 302	$ 248	$ 230	$ 231	$ 221	$ 250	$ 160	$ 130	$ 139	$ 119	$ 75	$ 95							
Basic Services																			
Task 1- Project Management																			
Monthly Meetings (4)			4	2			4							10	$ 1,901				$ 1,901
Project Monitoring	3		16											19	$ 4,579				$ 4,579
Invoicing (4 months)	1		4									6		11	$ 1,792				$ 1,792
Kickoff Meeting (Virtual)			2	2	2	2	2							10	$ 2,183				$ 2,183
Data Collection			4	4	4	2		16						30	$ 5,307				$ 5,307
Total Hours	4	0	30	8	6	4	2	20	0	0	0	6		80					
Total Cost	$1,210	$0	$6,885	$1,850	$1,326	$1,000	$320	$2,601	$0	$0	$0	$571		$15,762			**Task 1 Subtotal =**	$ 15,762
Task 2- PER- 30% Design																			
Site Visit																			
Site Visit			10		12	12								34	$ 7,946		$ 2,500		$ 10,446
														0	$ -				
Hydraulic Studies														0	$ -				
Update model for existing conditions and future conditions for Navigation PS				8			8							16	$ 3,128				$ 3,128
Size pumps for Existing and Future System HGLs				12			8							20	$ 4,053				$ 4,053
Water Quality Improvements																			
Evaluate addition of Chlorine boosting on site			2	8			4	4						18	$ 3,468				$ 3,468
30% drawings- Reroute incoming and discharge lines to remove loop			2	4	8			8	24					46	$ 7,538				$ 7,538
Pressure/Flow Valves Replacement																			
Evaluate amd select new valves			2	4	6			4						16	$ 3,230				$ 3,230
30% Design drawing showing valve replacement		2	2		4		4	2	8	12				34	$ 5,282				$ 5,282
														0	$ -				
Pump Replacement														0	$ -				
Review system curves					4		4	8						16	$ 2,564				$ 2,564
Evaluate new pump curves			2		8		4	10						24	$ 4,167				$ 4,167
Evaluate the use of VFDs			2		4	8	4	4						22	$ 4,502				$ 4,502
Evaluate layout of new pumps and VFDs			2		6	8	4	4	4	16				44	$ 7,405				$ 7,405
30% Design drawing showing Pump Replacement		2	2		6		8	8	12	8				46	$ 7,225				$ 7,225
Valve Acuator Replacement																			
Evaluate Existing Actuators			2		4		4							10	$ 1,982				$ 1,982
30% Design drawing showing actuator replacement		2	2		4		4		4	12									
Evaluate On-Site Backup Power/Freeze Protection																			
Review current Risk and Resilience Assessment					8		6							14	$ 2,727				$ 2,727
Review SB3 compliance Emergency Preparedness Plan					8		6							14	$ 2,727				$ 2,727
Analyze and recommend backup power and freeze protection measures			2		12		12							26	$ 5,029				$ 5,029
Evaluate Current Electrical																			
Evaluate Incoming Feed						8	8							16	$ 3,278				$ 3,278
Evaluate MCC, VFDs, Switch Gear, and Generator						24	8							32	$ 7,276				$ 7,276
Provide Recommendations for electrical improvements			2			20	8							30	$ 6,735				$ 6,735
PER																			

Client: **City of Corpus Christi**

Project: **22405- ONSWTP Navigation PS Improvements Design and Hydraulic Model Update**

Date: **November 8, 2022**

ESTIMATE FOR SCOPE OF SERVICES

TASK / POSITION	Principal $302	QC/QA $248	Project Manager $230	Sr. Modeler $231	Sr. Engineer $221	Sr. Electrical Eng. $250	Project Engineer $160	EIT $130	Sr. CADD Tech $139	CADD Tech $119	Admin $75	Sr. Accountant $95	TOTAL LABOR Hours	Cost	Printing	Travel	Other	TASK FEE
Compile PER and drawings				12	12	12	12	16	16	16	20		116	$18,054				$ 18,054
QC PER and drawings		6	4										10	$2,407				$ 2,407
Incorporate QC Comments		2	2	6	4	6	8	6			8		42	$7,383				$ 7,383
PER Workshop (Slide Presentation and Virtual Meeting)			2	4	6	4	2	4			2		24	$4,699				$ 4,699
PER Workshop Minutes			2					2					4	$719				$ 719
Finalize PER and submit to CC			4	8	8	8	4	4			4		40	$7,993				$ 7,993
Total Hours	0	14	48	66	124	110	130	84	68	64	34	0	742					
Total Cost	$0	$3,475	$11,016	$15,259	$27,404	$27,489	$20,774	$10,924	$9,479	$7,616	$2,543	$0	$135,980			Task 2 Subtotal =		$ 134,015
Task 3- Update Water Distribution Hydraulic Model																		
Model Update																		
Data Collection and Analysis				30			10	40					80	$13,736				$ 13,736
Hydraulic Model Initial Build			2	62			40	80					184	$31,589				$ 31,589
Water Demand Study			2	50			40	60			16		168	$27,411				$ 27,411
Determine Diurnal Curves				24				40					64	$10,751				$ 10,751
Set up of model scenarios for ADD, MDD, PHD and EPS			2	32				40					74	$13,059				$ 13,059
Model Calibration		10	4	70				110					194	$33,890				$ 33,890
Total Hours	0	10	10	268	0	0	90	370	0	0	16	0	764					
Total Cost	$0	$2,482	$2,295	$61,962	$0	$0	$14,382	$48,119	$0	$0	$1,197	$0	$130,436			Total Task Fee =		$ 130,436

Total Base Fee = $ 280,213