



Memo

TO: Mayor Manier and City Council
FROM: Ed Andrews, Public Works Director
DATE: June 7, 2019
SUBJECT: Water Treatment Plant #1 – Q(100) Flood Levee Design

At the October 15th, 2018 City Council meeting a review of possible funding opportunities and flood protection frequencies was presented. The City of Washington engaged CMT under Work Order 16-2 to assist in a detailed review of flood protection options (design requirements & funding) at Water Treatment Plant #1 (WTP#1). WTP#1 was built in 1959 and in 1986, FEMA first released Flood Insurance Rate Maps (FIRMs) for Washington which mapped WTP#1 in the 100-year flood plain.

While there is a Federal Program (CAP-205) for a 50/50 cost share, this program would require a more aggressive 500-year flood protection. CMT has also reviewed the IEPA's minimum 100-year flood protection, which unfortunately does not have a cost share component, but is at a much lesser net cost. WTP#1 is the older of the City's two water plants. Expansion at this location is limited, such that the likely future scenario is a new WTP#3 at a different location. The construction costs were summarized below:

Flood Protection	Est Cost	Funds	
		Federal	Local
Q(500)	\$ 900,000	\$ 450,000	\$ 450,000
Q(100)	\$ 158,000	\$ -	\$ 158,000

It was decided by Council to target Q(100) protection. As such, we budgeted \$50,000 for the design of the levee engineering under Stormwater, Account #218-00-800-5100. The City has a master services agreement with CMT (Crawford Murphy & Tilly) for engineering support for the water system and they have prepared work order price for their services supporting this effort.

This matter has been presented at the most recent Public Works Committee meeting and was recommended to be placed on the Committee of the Whole Meeting agenda of Monday, June 10th, 2019 for additional discussion and advancement to presentation at the next Council Meeting.

cc: File

**City of Washington
Engineering Services Work Order**

WORK ORDER 19-3 under the Standard Agreement Dated August 2015

Project Description

Water Treatment Plant No. 1 Limited Levee Project

Services to be Provided

Refer to the attached Exhibit A

Schedule

Work will begin upon receipt of this executed Engineering Services Work Order and will be completed within 6 months and submitted for appropriate review and approval.

Compensation

Compensation for the services provided under this Engineering Services Work Order will be in accordance with the manner selected below.

☒ On a time and expense basis in accordance with the current year's Schedule of Hourly Charges which is subject to change at the beginning of each calendar year. Reimbursable direct expenses will be invoiced at cost. Professional or Subconsultant services performed by another firm will be invoiced at cost plus ten percent. It is estimated that the compensation for the above services, including reimbursable expenses, will not exceed \$31,300.

☐ At the lump sum amount of \$_____.

The compensation for the above services, including reimbursable expenses, will be invoiced as the work is performed. (See Exhibit A for additional information.)

Approval & Notice to Proceed

Issued By: City of Washington

Accepted By: Crawford, Murphy & Tilly, Inc.

Signed: _____

Signed: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

EXHIBIT A
City of Washington, Illinois
WTP No. 1 Limited Levee

SCOPE OF SERVICES

The **Scope of the Improvements** for the **Water Treatment Plant No. 1 Limited Levee Project** includes the following items:

- The construction of a limited levee around the west side of water treatment plant No. 1, see attached exhibit.

The **Scope of Services** for **Design Phase** shall consist of the following tasks:

1. Field Survey of project area.
2. Download field survey data and develop topographic drawings
3. Geotechnical Investigation
 - a. Slope stability analysis
 - b. Seepage Analysis
 - c. Retaining Wall Design Soil Parameters
4. Site Layout Design
5. Interior Drainage Analysis (hydrology and hydraulic calculations for the area within the levee. It is assumed that the interior drainage can be accomplished through storage and gravity outlet)
6. Structural Design of Concrete Retaining Wall
7. Develop Preliminary Construction Plans
 - a. Cover Sheet
 - b. Location Map and General Notes
 - c. Site Plan
 - d. Grading Plan
 - e. Misc. Construction Details
 - f. General Structural Notes and Details
 - g. Structural Plan Sheet
8. Develop Preliminary Opinion of Probable Construction Cost
9. Conduct Design Coordination Meeting with the City Staff
10. Develop Pre-Final Construction Drawings
11. Develop Pre-Final Construction Documents (Bidding, Contracting, & Technical Specifications)
12. Submit Pre-Final Drawings and Documents to the City for Review.

EXHIBIT A
City of Washington, Illinois
WTP No. 1 Limited Levee

SCOPE OF SERVICES

13. Update Final Drawings and Documents per City Comments
14. Develop Final Opinion of Probable Construction Costs
15. Joint Permit Application (IDNR, USACE, and IEPA)
16. Project Management & QA/QC Review

Project Assumptions

- The interior drainage can be accomplished with storage and gravity outlet. No stormwater pump design effort has been included.
- IDNR will not require hydraulic modeling of the floodway/floodplain
- USACE will not require a wetland investigation

Budgeted Cost and Estimated Schedule

The estimated completion for the construction plans and specifications is approximately 6 months after receipt of a signed Agreement for Engineering Services authorizing CMT to proceed on a time and expense basis for an amount not to exceed Thirty-One Thousand Three Hundred Dollars and No Cents (\$31,300.00).

Additional Services not included in the Upper Limit of Compensation

- Bidding phase services
- Construction phase services
- Floodway/Floodplain Hydraulic Modeling
- Wetland Investigation/Delineation
- Endangered Species Survey

SCOPE OF SERVICES

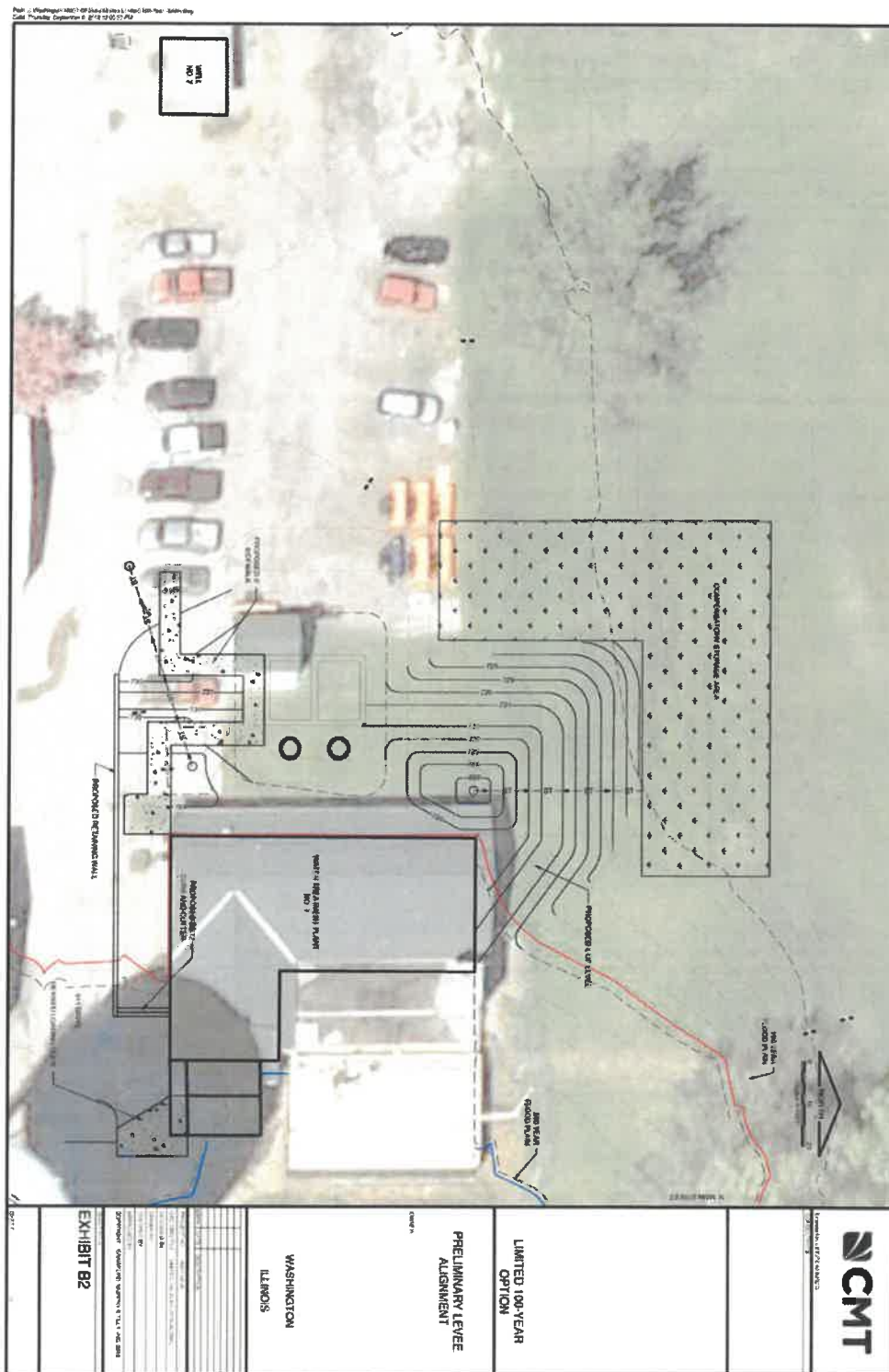


EXHIBIT C
CRAWFORD, MURPHY & TILLY, INC.
STANDARD SCHEDULE OF HOURLY CHARGES
JANUARY 1, 2019

Classification	Regular Rate
Principal	\$ 220
Project Engineer II Project Architect II Project Manager II Project Environmental Specialist II	\$ 210
Project Engineer I Project Architect I Project Manager I Project Environmental Specialist I Project Structural Engineer I	\$ 185
Sr. Structural Engineer II	\$ 170
Sr. Technician II	\$ 155
Aerial Mapping Specialist	\$ 150
Sr. Engineer I Sr. Architect I Sr. Structural Engineer I Land Surveyor	\$ 145
Technical Manager II Environmental Specialist III	\$ 135
Sr. Technician I	\$ 130
Sr. Planner I GIS Specialist Engineer I Architect I Structural Engineer I	\$ 125
Environmental Specialist II Technician II	\$ 110
Planner I Technical Manager I Environmental Specialist I Technician I Project Administrative Assistant	\$ 90
Administrative/Accounting Assistant	\$ 50

If the completion of services on the project assignment requires work to be performed on an overtime basis, labor charges above are subject to a 15% premium. These rates are subject to change upon reasonable and proper notice. In any event this schedule will be superseded by a new schedule effective January 1, 2020.

Out of pocket direct costs will be added at actual cost for blueprints, supplies, transportation and subsistence and other miscellaneous job-related expenses directly attributable to the performance of services. A usage charge may be made when specialized equipment is used directly on the project.

Subconsultant services furnished to CMT by another company will be invoiced at actual cost, plus ten percent.

CRAWFORD, MURPHY & TILLY, INC.
CONTRACT ATTACHMENT 2019 PROFESSIONAL SERVICES COST ESTIMATE
CLIENT
City of Washington
PROJECT NAME
WTP #4 Limited Levee Design
CMT JOB NO.

Prep By	SLD
DATE	06/06/19
Approved by	
DATE	06/06/19

TASK NO.	TASKS \ CLASSIFICATIONS	MAN HOURS & LABOR SUMMARY												
		Planner / Specialist / Technician / Sr. Eng / Sr. Technician / Technical Manager / Sr. Eng / Sr. Technician / Aerial Mapping Specialist / Sr. Technician II / Sr. Structural Eng II / Proj Mgr I / Proj Eng I / Proj Mgr II / Proj Eng II / Proj Arch I / Proj Arch II / Proj Env Spec II / Principal												
		Planner / Specialist / Technician / Sr. Eng / Sr. Technician / Technical Manager / Sr. Eng / Sr. Technician / Aerial Mapping Specialist / Sr. Technician II / Sr. Structural Eng II / Proj Mgr I / Proj Eng I / Proj Mgr II / Proj Eng II / Proj Arch I / Proj Arch II / Proj Env Spec II / Principal												
CURRENT YEAR 2019 HOURLY RATES		\$220	\$210	\$185	\$170	\$155	\$150	\$145	\$135	\$130	\$125	\$110	\$90	TOTAL
1	Field Surveys			1				1				8	8	18
2	Download Field Surveys and Topo											4		4
3	Geotechnical Services			1										1
4	Project Management & QA/QC			12										12
5	Interior Drainage Hydrology/Hydraulics			2							8			10
6	Structural Design			8				12						20
7	Site Layout			4							8			12
8	Preliminary Construction Plans			8						8				28
9	Preliminary OPCC			2							4			6
10	Design Coordination Meeting with City Staff			4										4
11	Develop Pre-Final Plans									8	12			20
12	Develop Pre-Final Documents										16			24
13	Submit Pre-Final Plans and Documents for Review										2			2
14	Update Plans and Documents per Review Comments										8			16
15	Final OPCC										4			6
16	Joint Permit Application										8			12
17														
TOTAL MAN HOURS				64				13		16	82	12	8	195
SUBTOTAL - BASE LABOR EFFORT				\$11,840				\$1,885		\$2,080	\$10,250	\$1,320	\$720	\$28,095
TASKS (CONTINUED)														
1	Field Surveys			\$1,930										TOTAL
2	Download Field Surveys and Topo			\$440										FEE
3	Geotechnical Services			\$185										\$2,030
4	Project Management & QA/QC			\$2,220										\$440
5	Interior Drainage Hydrology/Hydraulics			\$1,370						\$1,400				\$185
6	Structural Design			\$3,220										\$3,760
7	Site Layout			\$1,740										\$1,370
8	Preliminary Construction Plans			\$4,020										\$3,220
9	Preliminary OPCC			\$870										\$1,740
10	Design Coordination Meeting with City Staff			\$740										\$4,020
11	Develop Pre-Final Plans			\$2,540										\$870
12	Develop Pre-Final Documents			\$3,480										\$740
13	Submit Pre-Final Plans and Documents for Review			\$250										\$2,540
14	Update Plans and Documents per Review Comments			\$2,480										\$3,480
15	Final OPCC			\$870										\$250
16	Joint Permit Application			\$1,740										\$2,480
17														\$870
TOTALS				\$28,095						\$1,400				\$1,740
TIME PERIOD OF PROJECT				2019	2020	2021	2022							\$29,735
PERCENTAGE OF WORK TO BE PERFORMED BY YEAR				100%										MULTI-YEAR + OT
WEIGHTING FACTOR FOR 5% ANNUAL ADJUSTMENT				1.00000										MULTIPLY AMT
ESTIMATED CONTINGENCY														1.00000
ROUNDING														5%
TOTAL FEE														\$1,490
														\$75
														\$31,300