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February 6, 2017

Honorable Mayor and Council Members
City of Crosslake

RE: Crosslake Wastewater Treatment Facility Capital Improvements

Honorable Mayor and Council:

This letter is a follow-up to our previous letter dated December 7, 2016. It reflects revisions to the project scope based on comments from our meeting with City representatives on January 12, 2017. The changes include addition of a new screen in the pretreatment facility, replacement of the clarifier skimmer assemblies, and revision of well water storage tank to 30,000 gallons. In addition we would provide a site layout for a septage receiving station and bid this as an alternate item.

The recommended improvements as presently contemplated include:

- Screen at pretreatment structure
- Flow equalization tank
- Supervisory Controls and Data Acquisition (SCADA) system
- Biosolids wasting valves and control
- Filter backwash automation and holding tank
- Ferric Chloride system flow pacing
- Clarifier skimmer assemblies
- Biosolids tank mixing and piping improvements
- Generator replacement
- Septage receiving station (alternate bid)

Also discussed briefly at the meeting of January 12th was a new water supply well and storage tank to be used for fire flow and possibly WWTP needs. Costs for this are presented assuming property is available adjacent to the WWTP. The tank will be assumed to be a buried concrete tank with 30,000 gallons of capacity. Burying is considered necessary to maintain heat in the tank and prevent ice damage in the winter. The tank would be able to be a precast concrete tank at this size and reduce cost.

The cost opinion presented below is based upon our experience, current market trends, and the assumption that the work is completed as one large project. This has been updated from the previous table to include the additional items. Note engineering estimates were not increased, we would include these items for no increase.

Crosslake WWTP	
Item	Estimated Cost
Mobilization, Bonds and Insurance	\$125,000
Screen at pretreatment structure	\$85,000
Flow Equalization Tank	
- Concrete Tank	\$200,000
- Pumps and Piping	\$60,000
- Replacement of 6" pipe	\$30,000
- Grit Pump and blower	\$25,000
SCADA System & Electrical	\$200,000
Clarifier Skimmer assemblies	\$45,000
Biosolids wasting valves and control	\$75,000
Filter Backwash	
- Holding tank	\$35,000
- Piping	\$15,000
- Automated valves	\$40,000
Ferric Chloride system flow pacing	\$5,000
Biosolids tank mixing and piping improvements	\$50,000
Generator Replacement	
- Generator	\$50,000
- Transfer Switch	\$10,000
- Generator pad, labor and wiring	\$15,000
Subtotal	\$1,065,000
Construction Contingency (10%)	\$106,000
Engineering	\$170,000
Total Estimated Cost	\$1,341,000
Well, Submersible Pump, Pitless Unit	\$80,000
Tank (30,000 gallon precast)	\$90,000
Piping and Loadout Pump	\$40,000
Subtotal	\$210,000
Construction Contingency (10%)	\$21,000
Engineering	\$30,000
Total Estimated Cost	\$261,000

Total project cost of the WWTP improvements as listed above are approximately \$1.35 million. The water supply well and storage tank addition is approximately \$250,000-300,000 resulting in a combined total cost of about \$1.6 million.

Engineering Scope

The engineering costs related to the proposed improvements are presented below. These are unchanged from the earlier letter other than the scope is expanded to include the items discussed above. No cost changes are made, these will be included for no additional engineering cost. The scope of this proposal is for design services thru the bidding of the project, as well as subsequent construction related services (the construction services/fees would only be utilized after the council awards the construction project). Specifically, the project design scope includes:

- Site Survey
- Data collection including geotechnical investigation and report
- Design for one new flow equalization tank
- Final layout and design of the wastewater treatment facility improvements as discussed above
- Electrical, mechanical, and structural design of all improvements
- Review meetings and modifications with City staff
- Modifications and preparation of final plans and specifications for contract documents and bidding
- Bidding services through the award of the project
- Siting and design of well (listed as alternate)
- Design of buried water storage tank (listed as alternate)
- Septage Receiving Station (listed as alternate)

Construction services include:

- Contract and construction administration services
- On-site construction observation
- Shop drawing review and contractor coordination
- Start-up and operations assistance
- Record documents and O&M manual preparation

Engineering Design Cost Breakdown by Major Work Task

A breakdown of the estimated hours and associated costs for the major engineering work tasks is as follows:

Task 1 – Site Work		\$8,400
	• Geotechnical Report and Investigation	
	• Final Site Layout and Piping Plan	
	• Grading and Storm Water Plan	
Task 2 – Final Design		\$82,000
	• Final Design and Preparation of Contract Documents	
	- Structural Engineering	
	- Mechanical Engineering	
	- Electrical Engineering	
	- Process Design and Civil Engineering	

	• Review Meeting(s)	
	• Final Contract Documents with Comment Incorporation	
Task 3 – Bidding Services		\$8,000
	• Bidding Services	
Task 4 – Water Supply Well and Storage Tank Design (Alternate)		\$30,000
	TOTAL DESIGN FEE ENGINEERING COSTS WWTP IMPROVEMENTS ONLY	\$98,400
	TOTAL DESIGN FEE ENGINEERING COSTS WITH WATER SUPPLY WELL & STORAGE TANK	\$128,400

Construction Fees

Due to the nature of construction and the possibility of unforeseen conditions and schedules, we would propose an estimated hourly fee for construction related services of \$70,000 based on a 5-month construction schedule. This amount would not be exceeded without prior authorization from the City of Crosslake. Inspection would be full-time during underground work and part-time during other phases. Additional inspection time will be provided as requested, but we typically find part-time is the most cost effective method.

Total engineering fees for design and construction are \$168,400 with no water supply well/storage tank improvements and \$198,400 with the water supply well/storage tank improvements.

Schedule

As this project continues to move forward, there are a number of key dates that need to be met to keep the project progressing and funding intact. We have laid out a critical path below as a guide to these key dates.

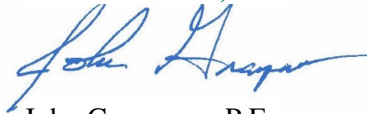
February 2017	• Authorization of engineering for design and services
February - March 2017	• Design work
March 2017	• Review partial design of WWTP improvements with City staff
April 2017	• Final design of WWTP improvements and preparation of bidding documents
April 2017	• Submit WWTP improvements plans and specifications to Minnesota Pollution Control Agency (MPCA)
May 2017	• MPCA approval and comments back to City • Council approval of WWTP improvements and authorization to bid
May 2017	• Solicit bids for improvements
June 2017 – December 2017	• Construction

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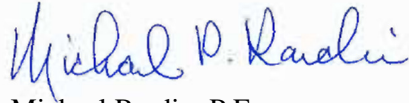
We appreciate this opportunity to assist the City of Crosslake with the identified WWTP improvements. If you or the Council should have any questions, please feel free to contact us at 218-825-0684.

Sincerely,

Bolton & Menk, Inc.



John Graupman, P.E.



Michael Rardin, P.E.

JG/MR:taa