

McMAHON

ENGINEERS ARCHITECTS

February 28, 2012

Menasha Utilities
Utility Commission
321 Milwaukee Street
P.O. Box 340
Menasha, WI 54952-0340

Re: Menasha Utilities
High Lift Pumping Station / Standby Generator & Motor Control Modifications
Contract M0002-910283-B
Letter Of Recommendation
McM. No. M0002-910283.02

Dear Commissioners:

Bids were received at the Menasha Utilities Office at 2:00 p.m., January 19, 2012, for the Standby Generator & Motor Control Modifications Project (Contract M0002-910283-B).

A total of five bids were received for the Base Bid, ranging in price from \$923,000.00 to \$1,034,000.00. An Alternate Bid was also requested for replacement of three existing motors (Bid Tabulation enclosed). Bidders were required to submit Disadvantaged Business Enterprise (DBE) forms with their bid to comply with Safe Drinking Water (SDW) requirements.

Based upon the bids received, we recommended award of Contract M0002-910283-B to the low, responsive bidder, Pieper Electric, Inc. of Milwaukee, Wisconsin, for both the Base Bid and Alternate Bid #1 in the amount of \$1,008,000.00. We made this award recommendation in a letter to you, dated January 23, 2012.

However, after a more detailed evaluation of the proposed design and the high costs associated with it, and the reality of the available financing for this project, we recommend that the bids be rejected and the project redesigned/rebid.

If you have any questions, feel free to contact me.

Very truly yours,
McMAHON



Donald J. Voogt, P.E., BCEE
Associate / Senior Project Engineer



February 28, 2012

MEMORANDUM

To: Dick Sturm, Co-Manager
Menasha Utilities
321 Milwaukee Street
P.O. Box 340
Menasha, WI 54952-0340

From: Donald J. Voogt, P.E., BCEE
McMAHON

Re: Menasha Utilities
High Lift Pump Station Modifications
Cost Evaluation
McM. No. M0002-910283.02

A. Introduction

Bids were opened on January 19, 2012, for modifications to the existing High Lift Pump Station. These design improvements included, primarily, the addition of a standby power generator system, paralleling switchgear to allow smooth transfer of power to standby power and back, and Variable Frequency Drives (VFD's) for three of the four high lift pumps. The intent of these improvements was to accomplish decommissioning and demolition of the 500,000-gallon Manitowoc Street Elevated Water Tower, which is at the end of its useful life.

A total of five bids were received, with Base Bids ranging in price from \$923,000 to \$1,034,000. These bid prices were significantly higher than what Menasha Utilities (MU) had budgeted, so award of the bids has been deferred. The purpose of this Memorandum is to explain the factors that have contributed to the high bids, and to present options for a path forward on this project.

B. Background

In 2010, MU retained McMAHON Engineers to perform a Phase II System Evaluation of water storage needs. This Engineering Evaluation was initiated primarily in response to evidence of the continued deterioration of the Manitowoc Street Elevated Water Tower. McMAHON summarized their evaluation in a report, dated November 10, 2010, entitled *System Evaluation: Water System Storage Needs Phase II*.

The McMAHON report was presented to the MU Commission in December 2010. Also in December 2010, MU submitted a Notice Of Intent (NOI) to apply for Safe Drinking Water (SDW) funds through the Wisconsin Department Of Natural Resources (DNR) to indicate their desire to receive financial assistance for this project. Included with the NOI were water main improvements necessary to make the storage and high lift pump upgrades feasible.

On March 28, 2011, McMAHON was retained to prepare final plans and specifications for demolition of the Manitowoc Street Elevated Water Tower, and the addition of a standby generator, automatic transfer switch (ATS) and VFD's at the High Lift Pump Station. These plans and specifications were required to be complete and submitted to the DNR by June 30, 2011 to remain eligible for financial assistance. The plans and specifications were submitted on June 23, 2011, and technical approval was granted by the DNR on July 25, 2011.

In April 2011, McMAHON reconfigured the November 2010 report into an Engineering Report format to satisfy DNR Financial Assistance Application requirements. This Engineering Report, dated April 27, 2011, summarized three options to address the needs of the Manitowoc Street Elevated Water Tower, and recommended the option of demolition of the Water Tower and upgrading the High Lift Pump Station with VFD's and a standby generator. This option was presented with a preliminary plan and Opinion of Probable Cost of \$433,000. The following paragraph, from the report, is the preliminary Scope Of Work to be performed with this option:

“A preliminary upgrade plan has been developed for discussion purposes. This plan would need to be refined during Preliminary Design if the Utility decides to pursue this option. The proposed upgrade includes installing Variable Frequency Drives (VFD's) on Pumps #2, #3 and #4. This would allow the operator flexibility to deliver water to the system continuously based on system demand. Continuous feed to the system is needed to maintain adequate system pressures in the north end of the system. The plan also includes the addition of a 400 kW diesel generator to provide automatic backup power in the event of an emergency. The existing diesel generators and diesel fuel tanks would be abandoned. Based on preliminary investigations, the new generator could be located inside the existing High Lift Pump Station.”

Concurrent with submission of the plans and specifications for technical approval, MU submitted an application for financial assistance (low interest loan) to the DNR for the SDW loan program. The original project budget presented in the November 2010 Preliminary Engineering Report was utilized in the loan application, and was not updated to reflect the actual Final Design plans and specifications.

MEMORANDUM

The Final Design plans and specifications, prepared by McMAHON in June 2011, detailed requirements necessary to bring the conceptual scope to a viable and successful project, as well as additional requirements from the DNR. The DNR now required MU to locate the standby generator across the street from the High Lift Pump Station in the enclosed fenced area, where the Manitowoc Street Elevated Water Tower now stands. The following list includes items from the plans and specifications that were submitted to the DNR for their approval:

- Gravel drive to the standby generator.
- Concrete pad for the standby generator.
- Steel pipe bollards to protect the existing pad-mounted service transformer feeding the High Lift Pump Station.
- Underground electrical facilities from the standby generator to the High Lift Pump Station.
- Replace/repair concrete drive at the High Lift Pump Station caused by the installation of the underground electrical facilities.
- Replace/repair concrete sidewalk due to the installation of the underground electrical facilities.
- Replace/repair roadway caused by the installation of the underground electrical facilities.
- Demolish existing MCC-2 to facilitate a new Motor Control Center (MCC) with VFD's for Pumps #2 and #3.
- Remove existing diesel tanks and containment structure in the High Lift Pump Station.
- Remove existing diesel fuel lines to auxiliary engines.
- Remove auxiliary engines, drive shafts and right angle drive on pumps.
- Re-machine pump head shafts on Pumps #2 and #3.
- Remove concrete engine bases, grind floor smooth, patch and paint.
- Install new 400 kW enclosed standby generator.
- Install new main breaker and enclosure for standby generator.
- Install new Automatic Transfer Switch (ATS).
- Install new MCC-2 with the following:
 - ▶ Breaker, line reactor and VFD for a 250-HP pump.
 - ▶ Breaker, line reactor and VFD for a 300-HP pump.
 - ▶ Breaker and 125 kA surge protection device.
- Install new stand-alone line reactor and VFD for a 125-HP pump.
- Utilize existing Programmable Logic Controller (PLC) and control panel.
- Install new copper cables and conductors required for operation.

MEMORANDUM

In August 2011, MU was informed that the project they had submitted for loan assistance was ranked high in the funding range evaluation; meaning it appeared that MU would receive a low interest loan for the project. McMAHON was given instruction to prepare plans and specifications for a January 2012 Bid Opening. The fast advance to Bid Opening was needed to stay on schedule for the funding cycle.

On November 11 and December 20, 2011, McMAHON was asked to meet with MU staff to review the plans and specifications prior to release for bidding. At this Meeting, MU staff presented McMAHON with several concerns:

1. Water Plant personnel has been experiencing the loss of VFD's in the Main Plant during the Plant's monthly standby generator testing during the transfer from standby power from and back to utility power. The result of these VFD's tripping off-line caused the Plant to shut-down and required a great amount of work from the operations group to re-establish Plant production. MU requested that paralleling switchgear be used, rather than an ATS, to ensure a smooth transition from and back to utility power. VFD failures would cause sudden pressure swings in the water mains, since there was no tower to absorb such pressure surges. These pressure surges would, more than likely, result in water main breaks; which have been experienced in the past. McMAHON obtained a non-engineered cost estimate from a switchgear vendor indicating that the equipment cost would be approximately \$150,000 for this addition.
2. With the absence of the water tower for absorbing any pressure surges, MU requested the installation of a pressure relief valve in the High Lift Pump Station. This valve would relieve any pressure surges back into the clearwell. Main breaks caused by pressure surges have been a problem in the past. This valve would help reduce or eliminate these surges in the future. McMAHON has since provided MU staff with an approximate cost of up to \$30,000 for this addition.
3. The plan of using the existing PLC system was also a concern for MU staff. The existing PLC is located in the Main Plant with remote input/output modules located at the High Lift Pump Station. The communication between the PLC and remote Input/Output (I/O) is done with copper wire installed in conduit under the roadway. This existing system is used for remote monitoring of the existing auxiliary diesel engines, as well as remote operations.

MEMORANDUM

MU staff believes that the loss of the communication link or processor in the Main Plant would shut down the High Lift Pump Station and could cause an unacceptable pressure drop in the system resulting in the loss of flow, especially when the Island Elevated Water Tower is out of service. With a PLC at the High Lift Pump Station, this risk would greatly be reduced, improving the reliability of the system. McMAHON provided MU staff with an approximate cost of \$50,000 for this addition.

4. During the review of the plans and specifications, it was noticed that the pumps would be controlled by pressure, but there wasn't any existing pressure sensing devices in the existing High Lift Pump Station, and it would not be feasible to use the pressure transmitter located at the base of the water tower. MU staff requested that a pressure transmitter should be installed in the system to control the speed of the pumps. The price for this addition was included in the estimate of \$30,000 for the relief valve addressed in Item 2., above.
5. During discussions with McMAHON, MU staff was made aware that controls were not part of McMAHON's scope, and that MU staff would handle any controls upgrades and programming. At this time, MU staff does not have the time to take on such a project, and requested that the complete engineered project include the controls. The price for this additional engineering was presented to MU staff of being \$7,900.
6. MU staff also had concerns with putting VFD's on existing motors that were not designed for the low rpm and high voltages, which today's VFD's can generate. MU staff was requesting that the existing motors be replaced with high efficiency VFD-compatible motors. This decision was added as a Bid Alternate to the project, so costs could be readily identified at Bid Opening. The low bid for this Alternate was \$85,000.

McMAHON then continued to finish the plans and specifications for bidding, incorporating MU staff's concerns. Besides the concerns staff had on the initial design, a few other items were needed to provide a reliable engineered system. These additions are small in comparison, but do add to the cost. The following items are:

1. Remote annunciation and control of the standby generator.
2. Harmonic filtering.
3. 120-volt transformer and panel for standby generator enclosure.

It was also determined that the generator would need to be upsized to 500 kW. It has since been determined that upsizing the generator to 500 kW and moving it across the street likely impacted the project cost in excess of \$150,000.

When bids were opened on January 19, 2012, it was with great surprise and disappointment to MU staff, as well as McMAHON, as to the actual project cost. The lowest Base Bid for this project was \$923,000, with an Add Alternate of \$85,000 for the three new 480-volt motors. These actual bids totaled approximately 2.5-times the original project scope estimates for this element of the overall project. At the January 25, 2012 MU Commission Meeting, McMAHON and MU staff were given the directive to re-evaluate the design and budget, as well as to perform an update to the life cycle analysis of the three options presented to the Commission in December of 2010.

C. Project Development Evaluation

The most significant development on this project, since conception in November 2010 to release for bidding in December 2011, was not updating the project cost estimate as the actual design progressed and through the loan application process. Had the project cost been updated, interim steps could have been taken to re-evaluate the Final Design and, perhaps even re-evaluate the entire project concept. The remainder of this report is intended for that purpose.

D. Cost Analysis Of Current Design

Since the January 25, 2012 Commission meeting, McMAHON and MU staff have learned that the deadlines for the SDW loans have been extended, due to the fact that the State has not received their funding from the US EPA. This removed the tight deadline previously assumed, and allows time for the MU Commission to reject the project bids, redesign the project, and advertise for new bids.

From the review of the five bids received on January 19, 2012, it can be observed that the five bids were reasonably close together, which indicates that the bids were not irregular or inflated. In other words, the bids reflected the value of the work that was going to be performed. The reasons for the high bids opened on January 19, 2012 can be summarized in the following items:

- The project work scope has grown significantly since original conception in early 2010 to improve system reliability and to comply with DNR requirements.
- There have been significant increases in the cost of equipment, supplies and copper from 2010 to the 2012 time frame of the project.

- The short bidding period imposed, due to deadlines of the SDW loan schedule, did not allow the suppliers of the standby generator and switchgear satisfactory time to size and engineer their equipment, resulting in only one bidder for this equipment.

Over the past several weeks, work has been undertaken by McMAHON and MU staff to obtain a breakdown of the project that was bid on January 19. In addition, numerous re-design options have been evaluated and priced by McMAHON and MU staff.

E. Options Moving Forward

Option No. 1 - Retain, Repair & Paint The Existing Water Tower:

The option of retaining the use of the existing water tower was re-evaluated as a cost effective alternate to taking it down and replacing it with the project as currently designed. At the request of the Commission, a Life Cycle Cost Analysis for three options was conducted, based on prices obtained at the January 19, 2012 Bid Opening and on costs presented in the November 2010 Engineering Report. Assumptions for this analysis are as follows:

- ▶ 3% Annual Inflation
- ▶ 4.125% Compounding Value Of Money (per DNR guidelines)
- ▶ Life Of New Water Tower = 80-years
- ▶ Recognize that comparing options like this over an 80-year period is speculative.

a. Construct New Water Tower

- Capital cost, including land \$1,500,000
 - Present worth of painting, repairs over 80 year period (see attached analysis) \$654,600
- Total Present Worth \$2,154,600

Note: This does not include a present worth cost of maintaining and replacement of the electrical distribution equipment in the High Lift Pump Station, which could add another \$500,000 to this present worth estimate.

b. Repair & Paint Tower Now To Last 15-Years, Then Build A New One

- Current Repair & Painting Estimated Cost \$499,500
 - Tower Replacement Cost in 15-years \$2,337,000 (present worth = \$1,274,400)
 - Painting and repairs over the next 80-years same as Option No. 1 = \$654,600
- Total Present Worth \$2,428,500

MEMORANDUM

Note: This does not include a present worth cost of maintaining and replacement of the electrical distribution equipment in the High Lift Pump Station, which could add another \$500,000 to this present worth estimate.

- c. New Switchgear, Generator & VFD's (per January 19, 2012 lowest bid)
Assume \$7,000 per year maintenance and repair costs, life of 40-years, and complete replacement of all equipment in 40-years.
- Capital Cost (per bid) \$923,000
 - Present Worth Of Annual Maintenance \$380,400
 - Present Worth Of Complete Replacement in 40-years \$597,700
- Total Present Worth \$1,901,100

Please note that replacement of all motors has been neglected in these calculations, as those costs apply equally to each option (pump motors will always be needed at this Pump Station).

It can be seen from the analysis that demolition of the Elevated Water Tower and replacement with standby power and VFD's at the High Lift Pump Station remains the most cost effective option.

Option No. 2 - Do Nothing:

There are three very significant risks of not doing anything regarding the Elevated Water Tower and High Lift Pump Station at this time. First of all, the low interest loan funding for this project is tied directly with the Water Transmission Main project as a complete project recognized by the DNR as a singular, necessary project needed for the long-term reliability of the Menasha water system. If the High Lift Pump Station improvement and Elevated Water Tower demolition projects are removed from the overall project, loan funding for the water main projects will almost certainly get pulled.

Secondly, the water tower is in serious condition, and doing nothing to it is not a viable alternative. The tower is not safe for operating personal, and catastrophic failure in the near future is a real possibility unless significant repairs are made. There is no loan funding available for painting and repairing the water tower.

Finally, deferring the project until next year means Menasha could be out of the ranking for funding from the SDW Loan Program. This particular project seemed to hit at just the right time, when very few other communities were applying for loans; next year could be very different.

It is the opinion of MU staff and McMAHON that the project needs to be salvaged, and redesigned in such a manner as to bring costs more in line with available funding.

Option No. 3 - Bid The Original Design Concept:

The project, as first envisioned in 2010, was going to include a 400 kW generator to be located inside the High Lift Pump Station, an Automatic Transfer Switch (ATS), and new VFD's to drive Pumps #2, #3 and #4. The project was also going to demolish the 0.5 MGD Manitowoc Street Elevated Water Tower. An Opinion of Probable Cost of \$433,000 for this option was presented for comparative purposes.

There was very little preliminary engineering effort invested in this selected option, and the project advanced straight to Final Design. Final Design was initiated in March 2011.

As was presented previously in this Memorandum, the original design concept is no longer feasible, Code compliant, or reliable. The DNR requires that the generator be located across the street, which means it needs its own sound-attenuated enclosure. MU staff has also determined from experience at the Water Plant that a simple ATS presents significant problems with knock-out of VFD's during power transfer; these problems would be even more consequential at the High Lift Pump Station. Therefore, returning to the original design concept is not feasible.

Option No. 4 - Redesign Of The Switchgear:

When the bids received on January 19 were evaluated in detail, it became obvious that there was one element of the Final Design that contributed significantly to the high cost of the project. The project, as bid, included full paralleling switchgear, which allowed the power from the standby generator to energize the entire High Lift Pump Station, including the two MCC sections. MCC 1 provides power to High Lift Pumps 1 and 4 (400-HP and 125-HP, respectively). MCC 2 provides power to High Lift Pumps 2 and 3 (250-HP and 300-HP, respectively). This full switchgear is very large, and was going to present significant challenges for the installing Electrical Contractor, in addition to the high cost of the gear itself. Fitting the gear in the space available was going to require significant rework of cable tray, the addition of new tray, plus difficult wiring.

In consultation with manufacturers of the proposed switchgear, it became apparent that providing only half of the paralleling gear and only feeding one of the two MCC's would lower project costs significantly.

MEMORANDUM

Under this half-gear scenario, generator power would be fed only to MCC 2 during a power outage or test runs. This option is very feasible, as MCC 1 powers pumps that are rarely, if ever, used, and certainly could be done without during a power outage. Pumps 2 and 3, fed out of MCC 2, are the primary pumps used by the Utility.

Pump 2 has a capacity of 4.8 MGD, and Pump 3 has a capacity of 8 MGD. Average daily water-use demand is less than 3 MGD. A revised design of this half-gear description satisfies DNR requirements that average day demand during a power outage be met with the largest pump out of service.

An Opinion of Probable Construction Cost ⁽¹⁾ has been prepared for this redesign option:

Generator & Switchgear	\$225,000
MCC's / VFD's.....	\$185,000
Control Panel, SCADA Link To Water Plant.....	\$50,000
Mechanical Contract (pressure relief, pressure transmitter, motor rework) ..	\$30,000
<u>Electrical Contractor (labor, materials, installation, general conditions)</u>	<u>\$187,000</u>
Total	\$677,000

Cost for replacement of three of the high lift pump motors would add another \$85,000 to the project.

Option No. 5 - Consider Other Cost-Saving Measures:

Several design considerations have been identified that could lower the project cost without impacting reliability or performance. These include:

Delete Gravel Drive To Genset; MU Staff To Construct	(\$10,000)
Use Aluminum Conductors In Lieu Of Copper For Main Power Feeders	(\$19,000)
Use Schedule 80 PVC In Lieu Of Rigid Steel Conduit Under Roadway	(\$6,500)
<u>Leave Diesel Pump Engines In Place</u>	<u>(\$6,000)</u>
Total Potential Project Cost Reductions	\$41,500

If all of these cost saving measures were applied to Option No. 4 (switchgear redesign), the project could be lowered to an estimated construction cost from \$677,000 to \$635,500.

An additional option that should be considered and bid as an Alternate would be to replace the ½ paralleling switchgear with a sync-check automatic transfer switch (ATS) and separate breaker. It is projected that this could reduce project costs by approximately \$23,000.

MEMORANDUM

Finally, it is recommended that consideration be given to installing trimmed impellers and smaller motors on Pumps 2 and 3. These two pumps are larger than needed for the current and projected water demand of MU customers. Downsizing these pumps would reduce the size of the drive motors, reduce the size of the VFD's and electrical switchgear, and reduce the size of the standby generator. It is projected that this design option could lower project costs an estimated \$50,000.

There are other design options that could reduce cost, but these options reduce overall system reliability. These options include deleting the proposed pressure relief valve, and deleting the PLC control upgrade at the High Lift Pump Station. It is recommended that, since this pump station is the heart of the Menasha water delivery system, these design alternatives not be considered.

F. Recommendations

It is recommended, first of all, that the High Lift Pump Station be recognized for its critical contribution to the Menasha water system. With the Manitowoc Street Elevated Water Tower taken out of service, it is essential to maximize reliability and performance of this station. Significant pressure drops would be expected if this station were to ever go off-line for an extended period of time, and even short-term outages could be problematic. Therefore, the only feasible option is one that ensures reliability of this station.

It is, therefore, recommended that Option No. 4 - Redesign Of The Switchgear, be the base project. It is further recommended that some of the cost saving measures presented in Option No. 5 be considered. Specifically, it is recommended that aluminum conductors and Schedule 80 PVC conduit beneath the roadway be bid as an Alternate. It is further recommended that the gravel drive be redesigned to a minimal section. It is also recommended that replacement of motors be bid as an alternate, and the DNR be consulted after the Bid Opening as to available additional funds to finance project cost increases. Finally, it is recommended that Alternate Bids be received for an ATS option, and for a rebuilt pump/reduced motor size option.

MEMORANDUM

An updated Opinion of Probable Construction Cost ⁽¹⁾ for this recommendation is as follows:

Base Project	\$677,000
Deduct For Aluminum Conductors.....	(\$19,000)
Deduct For PVC Conduit.....	(\$6,500)
<u>Reduce Thickness Of Gravel Drive to 6-inches</u>	<u>(\$5,000)</u>
Total Estimated Constructed Cost	\$646,500
Bid Alternate For New Pump Motors.....	\$85,000
Bid Alternate For ATS & Separate Breaker	(\$23,000)
Bid Alternate To Rebuild Pumps 2 & 3 with Smaller Motors & Trimmed Impellers	(\$50,000)

If a decision on the recommendation contained in this Memorandum can be made at the March 1 Utility Commission Meeting, McMAHON will have revised plans and specifications complete and ready for rebid within 2-weeks.

Respectfully submitted,

McMAHON



Donald J. Voogt, P.E., BCEE
Associate / Senior Project Engineer

⁽¹⁾ **Disclaimer:** The attached Opinion Of Probable Cost was prepared for use by the Owner in planning for future costs of the project. In providing Opinions Of Probable Cost, the Owner understands that the Design Professional has no control over costs or the price of labor, equipment or materials, or over Construction Professionals' method of pricing, and that the Opinions Of Probable Costs provided herewith are made on the basis of the Design Professional's qualifications and experience. It is not intended to reflect actual costs, and is subject to change with the normal rise and fall of the local area's economy. This Opinion must be revised after every change made to the project or after every 30-day lapse in time from the original submittal by the Design Professional.

BID TABULATION

Owner: **MENASHA UTILITIES - City Of Menasha, Wisconsin**
 Project Name: **High Lift Pumping Station
 STANDBY GENERATOR & MOTOR CONTROL MODIFICATIONS**
 Contract No. **M0002-910283-B**
 Bid Date / Time: **January 19, 2012 @ 2:00 p.m., local time**
 Project Manager: **Donald J. Voogt, P.E., BCEE**

Contract M0002-910283-B	PIEPER ELECTRIC, INC. 5070 North 35th Street Milwaukee, WI 53209 (Bidder)	WEST ELECTRIC, INC. 1195 Flightway Drive DePere, WI 54115 (Bidder)	ELMSTAR ELECTRIC CORPORATION 800 Eastline Road Kaukauna, WI 54130 (Bidder)
BASE BID: Standby Gen & MC Mod.	\$923,000.00	\$950,503.00	\$957,601.00
ALTERNATE BID #1: Replace 3 Motors	+ \$85,000.00	+ \$99,590.00	+ \$92,508.00
Addendum Ack.	Yes - #1 & #2	Yes - #1 & #2	Yes - #1 & #2
Bid Security	5% Bid Bond	5% Bid Bond	5% Bid Bond
DBE / SDW Forms	✓	✓	✓

Contract M0002-910283-B	FAITH TECHNOLOGIES, INC. 2662 American Drive P.O. Box 627 Appleton, WI 54912 (Bidder)	NORTHERN ELECTRIC, INC. 314 N. Danz Avenue Green Bay, WI 54302 (Bidder)
BASE BID: Standby Gen & MC Mod.	\$1,002,800.00	\$1,034,000.00
ALTERNATE BID #1: Replace 3 Motors	+ \$113,975.00	+ \$98,056.00
Addendum Ack.	Yes - #1 & #2	Yes - #1 & #2
Bid Security	5% Bid Bond	5% Bid Bond
DBE / SDW Forms	✓	✓

MENASHA UTILITIES
WATER PROJECT BUDGET COMPARISON AS OF 2/28/12

	River Crossing, Tower & High Lift Project SDWF 4845-09				Water Main SDWF 4845-05 & Paris Street		
<u>ORIGINAL BUDGET</u>	River Crossing	Tower Demolition	High Lift Pump Station	Total Budget	Water Main	Paris Street	Total Budget
Plans/Design	34,300	10,350	18,900	63,550	60		60
Engineering	96,000		31,200	127,200	6,500		6,500
Construction	790,182	13,636	332,182	1,136,000	607,000	185,000	792,000
10% Contingency	79,018	1,364	33,218	113,600	60,700		60,700
Legal/Other	30,500		5,000	35,500	7,000		7,000
Total Budget	1,030,000	25,350	420,500	1,475,850	681,260	185,000	866,260
<u>PROJECTED WITH BIDS</u>	River Crossing	Tower (2) Demolition	Reject & Rebid High Lift Pump Station	Total with Bids	Water Main	Paris Street (3)	Total Budget
Plans/Design	34,300	10,350	25,400	70,050	60		60
Engineering	45,000		39,100	84,100	6,500		6,500
Construction (4)	532,953	7,510	646,500	1,186,963	637,038	192,095	829,133
5% Contingency		376		376	31,852		31,852
10% Contingency (1)	53,295		64,650	117,945			
Legal/Other	74,500		8,500	83,000	8,000		8,000
Total Budget	740,048	18,236	784,150	1,542,434	683,450	192,095	875,545
(Under) Over Budget	(289,953)	(7,114)	363,650	66,584	2,190	7,095	9,285

(1) Request 10% contingency on river crossing due to unknowns for boring, buried abandon building and soil concerns.

Request 10% contingency since rebidding High Lift Station Modifications

(2) Assumes foundation removal at tower is left as is or done by MU

(3) Paris Street budget variance can be taken from the 2012 water meter or valve budget

(4) Construction costs at bid price except for High Lift Modification is an estimate