

PROJECT UPDATE MEMO INCLUDING 3-PHASE POWER COSTS

LIFT STATION #6 UPGRADE PROJECT

To: Village of Kronenwetter

From: Robert J. Roth, PE

Re: Lift Station 6 Upgrade

Date: August 29, 2024

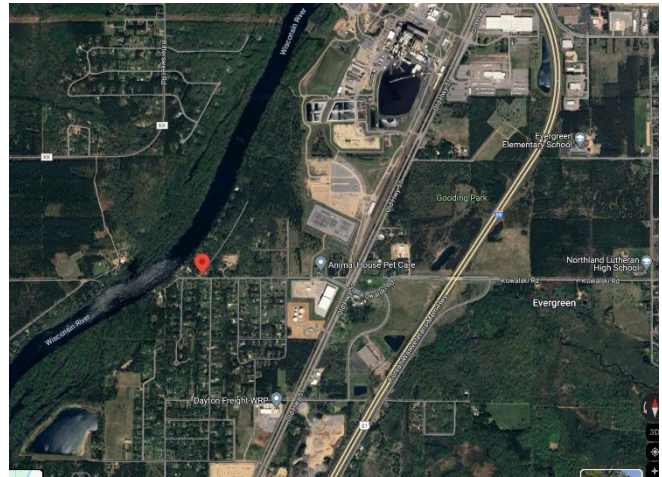
BACKGROUND. The Village of Kronenwetter has commissioned the upgrade of LS6. The station was built in 1997, and to my knowledge has not been upgraded other than recent pump/motor replacement and electrical work on the add-a-phase component. LS6 serves a mainly residential area and discharges directly to LS7 via an interceptor sewer on Old Highway “51”. All lift stations have high importance, however, this station is not a collector station in that it only serves one area and does not receive flow from other stations.

The upgrade will center around key items discovered in the Lift Station Assessment and Sewer Capacity Study as follows:

- ❖ Electrical. Lift station has a phase converter system for 3-phase power to pumps, but this type of system produces additional motor wear if the phase converter system is slightly out of phase, which has recently occurred with one of the pumps
- ❖ Valves. Original check and plug valves (1997)
- ❖ Plumbing. Valve vault drain clogged

LOCATION. LS6 is located at 2100 River Forest Lane at the intersection of Gardner Park Lane. It is part of the westside sewer service area in the Village.

BUDGET. Project costs for the LS6 project will come from the 2024 “Lift Station Updates” item at \$100,000.



SCOPE. The following key design elements are included in this lift station project:

1. Main objective to remove “add-a-phase system”, which requires full electrical and control upgrade
2. Replace with VFD converter to continue 3-phase power delivery (see below)
3. New floats, level control transducers, panel & VFD included in electrical upgrade
4. Valves are original and will be replaced
5. Valve vault plumbing drain and general maintenance (painting, sealing, etc.)
6. Discharge piping is 4” DI
7. One single pump replacement is necessary due to recent replacement of original 1999 pump
8. Keep existing generator receptacle, re-mount on new panel.
9. No new generator is planned for this station due to lack of overall station importance
10. Power isolation is available at the station, so no temporary power outages are anticipated
11. Dedicated phone line for comm’s/alarm notifications will remain for now
12. SCADA slot(s) and panel space will be allocated (see below)
13. Panel configuration to remain, with main panel opening to drive side

OPTIONS. There are two options as the station upgrade is considered, however, both options are not recommended at this time:

- A. 3-Phase Power Extension. 3-phase power is approximately 1,860 LF from LS6. The estimated cost of this extension is \$198,000 based on the estimate from WPS (see attached). It has been determined that a VFD phase converter is of higher quality technology and will be fully sufficient to continue a 3-phase power delivery to this station. And, the VFD phase converter (approximately \$15,000) is substantially less in cost comparison. The station being a primary service station, and not a collector lift station, allows for some flexibility by the Village in ranking the importance of such an investment. Therefore, we do not recommend 3-phase power for LS6.
- B. SCADA Interoperability. SCADA allows more efficient system communications, data recovery and future supported technology. It would effectively replace the existing dialer system and utilize wireless components. The long-term plan is to include SCADA, but due to the planning required to implement a full SCADA system across all lift stations, and the slightly less importance of this station, it is deemed not essential at this time. A SCADA upgrade would be likely linked to other lift stations and would involve radio improvements in a centralized location. Thus, this option would be a likely budgeted item on its own.

COSTS. The Village received a preliminary cost quote on only the electrical portion of the project (complete with floats, panels, labor, pump, etc.) totaling just over \$60,000. Engineering is \$17,100. The cost of valve and ancillary scope items as described above are not expected to be



more than \$23,000. At this preliminary stage the total of all scope items including engineering would fit below the budgeted amounts. Total project cost is approximately \$90,000 without 3-phase power.

CURRENT STATUS. We recently met onsite with Mark Mackey and Bill Gruber of B&M Technical Services to review the scope in full and this memo reflects the summary of project details.

NEXT STEPS. We will provide 50% bid documents for review with the Village as the next major step. We will accurately portray the scope that is outlined above including specifications for the purpose of obtaining bids and a construction contract. The next step following the 50% plan review will be to go to 90% bid documents and pursue finalization of the construction bid package.

DECISION. UC will need to verify the recommendation to not require a 3-phase power extension to the site.

Please contact me with any questions or if additional information is needed.

Sincerely,

ROTH PROFESSIONAL SOLUTIONS



Robert J. Roth, PE
Project Engineer

Enclosures: WPS 3-Phase Power Estimate
B&M Estimate



Robert Roth <robert@rpsprofessionalsolutions.com>

2100 RIVER FOREST LN1 message

WPS New Service Installation <newserviceinstallation@wisconsinpublicservice.com>Sat, Aug 17, 2024 at
9:36 AMTo: "wayne@rpsprofessionalsolutions.com" <wayne@rpsprofessionalsolutions.com>

July 30, 2024

WAYNE CASPER

[1582 KRONENWETTER DR](#)[MOSINEE, WI 54455-9060](#)

Dear Customer:

Following is the estimated cost for the proposed work request at:

Property Description: 2100 RIVER FOREST LN

VILLAGE OF KRONENWETTER

County of MARATHON

State of WI

- The cost to install your Electric facilities is: \$1,500.00 service and \$196,500.00 system. Total Electric charges are \$198,000.00.

The estimate is effective for sixty (60) days as of the date of this letter. It is based on our understanding of the existing conditions and the proposed location of the system and/or service on the property. If you decide to proceed with the proposed work request, we will calculate the actual cost. This actual cost may vary from the estimated cost because of changes in job scope, location/route, materials/labor costs, winter construction or other variables.

If you would like to proceed, a Service Application and Property Site Sketch & Liability Waiver will need to be completed. For more information you can visit our Website at: [WisconsinPublicService.com](https://www.wisconsinpublicservice.com) or contact us at 800-242-9772 and refer to **Work Request** 3422739-1.

Thank you.



B & M TECHNICAL SERVICE, INC.

PO Box 48 | 364 Industrial Drive Coloma, WI 54930

Office 715-228-7604 | Fax 715-228-3418

bmtechservice.com

Date: 5/28/2024

Quote Number: 20241215

B&M Contact: Josh Gruber

Email: josh@bmtechservice.com

Direct: 715-228-7604

To: Kronenwetter

Attn: Mark Mackey

Re: Lift Station #6 Rehab with New Panel, VFDs and Pumps

We are pleased to provide the following base bid:

Qty.	Description:	Net Each	Net Extension
1	Duplex Pump UL Listed Control Panel: 15 HP, 230 V, Phase Conversion VFDs Enclosure:NEMA4X(62x48x18) Stainless Steel Panel: Legs, Skirt, Insulated and Heated Components: SC2000 Controller with Transducer Primary Controls with 2 Float Backup System - Level Transducer and Floats. Schneider Electric ATV Phase Conversion Variable Speed Drive: 40HP, Control Breaker, Emergency Breaker, Gen Receptacle Breaker, Breaker Interlock, Main Breaker, Motor Breaker, Receptacle Breaker, Alarm Horn, Alarm Lights, Alarm Silence, Alternator, Elapsed Time Meters, Ground Fault Receptacle, Heater, Intrinsic Relay, PMR1, Level Lights, NEMA HOAs, Phase Monitor, Run Lights, Surge Arrestor, Thermal Terminals, Transformer 24 VAC.		
1	ShinMaywa CNXH Series Pump: 15 HP, 230 V, 3 Phase, 4" Discharge, 3" Solid		
2	Panel Labor: Installation, Startup, Testing and Training - Two Technician, Per Day (mileage included)		
1	Pump Labor: Installation, Startup, Testing and Training - Two Technician, Per Day (mileage included)		

Total \$ 60,762.00

	Estimated Delivery:	Per Schedule	Installation/Start-up:	Incl	
	Installation Manuals:	Incl.	Service Contract:	Not Incl.	
	Operation Manuals:	Incl.	Downpayment Due:	50%	\$30,381.00
	Sales Tax:	Not Incl.	Payment Terms:	Net 30	
	Estimated Freight:	Not Incl.	Quote Expiration:	30 Days	

Additions or deductions to base bid:

Exceptions and Special Notes:

Clarification Notes:

Unless otherwise noted any other equipment/services is not included and to be supplied by others.

For projects totaling more than \$10,000, 50% downpayment is required upon quote acceptance. Parts cannot be ordered prior to receiving downpayment.

To accept quote, please sign below and return to B&M Technical Service, Inc.

Quoted by _____

Regina Weyenberg, Assistant Project Coordinator

regina@bmtechservice.com

Direct: 715-228-7604

Accepted by _____

Kronenwetter

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