ROTH PROFESSIONAL SOLUTIONS

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PROJECT UPDATE MEMO
(INCLUDING 3-PHASE POWER COST)

LIFT STATION #2 GENERATOR ADDITION

To: Village of Kronenwetter

From: Robert J. Roth, PE

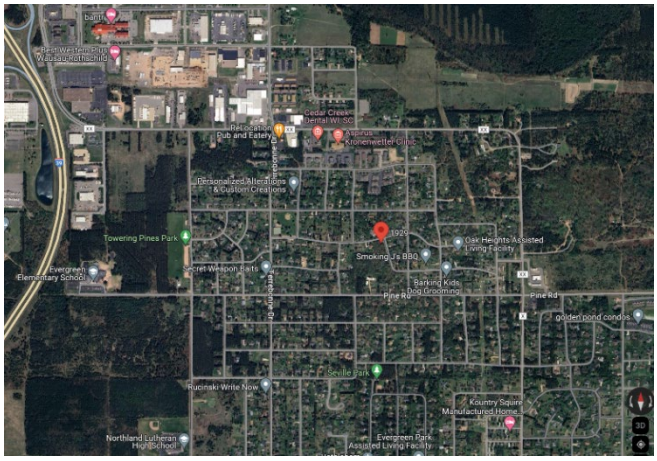
Re: Lift Station 2 Generator Addition

Date: August 29, 2024

BACKGROUND. The Village of Kronenwetter has commissioned the upgrade of LS2 to include a generator system. The station is currently a single phase electrical service with a VFD converter system. LS2 serves a mainly residential area and discharges directly to LS1 via the Pine Road & Tower Road Interceptors. All lift stations have high importance, however, this station is of very high importance due to its collection of other lift stations and overall flow responsibility.

The upgrade will center around the addition of an automated generator system located onsite. There is the potential to upgrade the electrical service to 3-phase power.

LOCATION. LS2 is located at 1929 Kimberly Road at the intersection with Rollingwood Road. It is part of the eastside sewer service area in the Village.



BUDGET. Project costs for the LS2 project will come from the 2024 "Generator" item at $150,000.

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

1. Main objective to provide for a gas-powered generator of sufficient size to handle emergency flows in a loss of power event
2. Include an ATS (automatic transfer switch), eliminating a man-powered onsite access situation for this particular station

3. Pursue 3-phase power for 277/480V or 208-230V based on WPS estimate at $155,384 to the site.
4. If 208V 3-phase is used, existing VFD phase converter can be utilized and existing pumps can be utilized.
5. The 480V 3-phase will require new pumps due to wiring for 208V, and the pumps cannot be rewired per B&M. A new control panel would be required.
6. Install a natural gas generator system with feed and meter.
7. Provide a 5x10 pad adjacent to the control panel.
8. Power isolation is available at the station, so no temporary power outages are anticipated in the area (for lift station).
9. Dedicated phone line for comm's/alarm notifications will remain for now.
10. SCADA slot(s) and panel space will be allocated (see below).
11. Panel configuration to remain, with main panel opening to drive side.

OPTIONS. There are two options as the station upgrade is considered:

A. 3-Phase Power Extension. 3-phase power service was originally based on the WPS estimate for extending 3-phase power to the LS2 site at $5,000, as it was believed the 3-phase power was adjacent to the site. However, in viewing the site, we did not see this 3-phase service potential adjacent to the site. We went back and reviewed the WPS estimate and it appears that information for LS1 and LS2 is switched based on the addresses provided. We had contacted WPS to confirm the information. As of an email received on 07-31-24, WPS reports an estimate for 3-phase power at $155,384 (See Attached).

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, 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. A preliminary estimate for the generator, pad and ATS is $85,000. The cost of ancillary scope items as described above are not expected to be in the range of $41,369 per B&M estimate (see attached). Engineering is $22,100 and the total of all scope items including engineering would fit below the budgeted amounts. Therefore, the total base upgrade would be $148,469, leaving some room for contingency.

If 3-phase power is opted for, a budget amendment would be most likely required, for an additional $156,000. Total project cost would be $306,000.

CURRENT STATUS. We 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. We are initiating field work and will be preparing plans and specifications in the near future.

NEXT STEPS. We will provide 50% bid documents for review with the Village as the next major step. This will include sizing of the generator and specifications for the project for the purpose of obtaining bids and a construction contract. After that, the project will be advanced to 90% bid documents and pursue finalization of the construction bid package.

DECISION. UC will need to determine if it wishes to include the 3-phase power portion of the project to the site for the additional project cost.

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

Sincerely,

ROTH PROFESSIONAL SOLUTIONS

Robert J. Roth, PE
Project Engineer

Enclosure: WPS Estimate
B&M Estimate for Control Options

315 DeWitt Street
Portage, WI 53901

Robert Roth <robert@rpsprofessionalsolutions.com>

Fwd: WPSC Estimate for 1929 KIMBERLY RD

1 message

Wayne Casper <wayne@rpsprofessionalsolutions.com> Wed, Jul 31, 2024 at 8:48 AM
To: Robert Roth <robert@rpsprofessionalsolutions.com>

For LS #2
Wayne A. Casper
Senior Engineering Technician
ROTH PROFESSIONAL SOLUTIONS
315 Dewitt Street, Portage, Wi. 53901
(608) 513-2199
wayne@rpsprofessionalsolutions.com

---------- Forwarded message ---------
From: **WPS New Service Installation** <newserviceinstallation@wisconsinpublicservice.com>
Date: Wed, Jul 31, 2024 at 8:32 AM
Subject: WPSC Estimate for 1929 KIMBERLY RD
To: wayne@rpsprofessionalsolutions.com <wayne@rpsprofessionalsolutions.com>

July 31, 2024

WAYNE RPS

1929 KIMBERLY RD

MOSINEE, WI 54455

Dear Customer:

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

Property Description: 1929 KIMBERLY RD
VILLAGE OF KRONENWETTER

County of MARATHON

State of WI

- The cost to install your Electric facilities is: $2,744.00 service and $152,640.00 system. Total Electric charges are $155,384.00.

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 or contact us at 800-242-9772 and refer to **Work Request** 3420043-1**.**

Thank you.

Sincerely,

New Service Installation Team

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: 8/19/24
Quote Number: 20241358
B&M Contact: Katie Gruber
Email: katie@bmtechservice.com
Direct: 608-547-9433

To: RPS Engineering
Attn: Rob Roth, PE
Re: Kronenwetter Lift Station 2 Control Panel Options
Equipment Only - Budgetary Numbers

We are pleased to provide the following base bid:

Qty.	Description:	Net Each	Net Extension
Option 1: Site Power Three Phase 208 Volt			
1	UL Listed Duplex Control Panel Controls: SC2000 transducer with 2 float back up controls (B&M to provide transducer/floats) Include Emergency Breaker with slide interlock, Motor Starters Include transformer Include 10x10 space for telemetry or dialer. Run alarms to terminal strip. Include PMR1, Alarm Beacon Light, No Horn Approximate size of enclosure: 60" x 36" x 12" Existing Pumps: ShinMaywa 4CNXH418T2E1_185-2HD, 208-230V/3 Phase, 25 HP, 70.8 FLA	$ 41,369.00	$ 41,369.00
	3 PH 208 VAC Option 1 Total		**$ 41,369.00**
Option 2: Site Power Three Phase 460 Volt			
1	UL Listed Duplex Control Panel Controls: SC2000 transducer with 2 float back up controls (B&M to provide transducer/floats) Include Emergency Breaker with slide interlock, Motor Starters Include transformer Include 10x10 space for telemetry or dialer. Run alarms to terminal strip. Include PMR1, Alarm Beacon Light, No Horn Approximate size of enclosure: 48" x 36" x 12"	$ 33,926.00	$ 33,926.00
2	Pumps: ShinMaywa 4CNXH418T2E1_185-2HD, 460V/3 Phase, 25 HP, 32 FLA Note: ShinMaywa pumps are not dual voltage, so to use 460 volt site power the pumps will need to be replaced.	$ 14,214.00	$ 28,428.00
	3 PH 460 VAC Option 2 Total		**$ 62,354.00**

Option 3: Site Power Single Phase with Phase Conversion VFDs

1	UL Listed Duplex Control Panel Controls: SC2000 transducer with 2 float back up controls (B&M to provide transducer/floats) Use existing VFDs (to be installed in field by B&M) for phase conversion Include transformer Include 10x10 space for telemetry or dialer. Run alarms to terminal strip. Include PMR1, Alarm Beacon Light, No Horn Approximate size of enclosure: 72" x 72" x 18" Existing Pumps: ShinMaywa 4CNXH418T2E1_185-2HD, 208-230V/3 Phase, 25 HP, 70.8 FLA	$ 55,567.00	$ 55,567.00
		1 PH Option 3 Total	**$ 55,567.00**

	Submittal Estimated Delivery:	4 Weeks	Site Installation:	Not Incl.	
	Equipment Estimated Delivery:	16-24 Weeks	Programming/Startup:	Not Incl.	
	Installation Manuals:	Incl.	Service Contract:	Not Incl.	
	Operation Manuals:	Incl.	Downpayment Due:	Project Terms	
	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: Does not include generator receptacle or transfer switch.

Clarification Notes:

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

Project Payment Terms: 5% at Receipt of PO; 10% Approved Submittals; 30% Release to Manufacturing; 50% Shipment of Equipment; 5% Startup

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

Quoted by_____ Accepted by_____

Katie Gruber, Sales/Project Manager
katie@bmtechservice.com
Direct: 608-547-9433

RPS Engineering