

**HIGHLINE WATER DISTRICT
King County, Washington**

RESOLUTION 23-6-21A

RESOLUTION WAIVING COMPETITIVE BIDDING REQUIREMENTS OF RCW 39.04.280(1)(A) and (b) AND AUTHORIZING THE GENERAL MANAGER TO ENTER INTO A PURCHASE AGREEMENT WITH S&B, INC. FOR CONTROL SYSTEM UPGRADES AT CRESTVIEW/PUMP STATION 6

WHEREAS, S&B Inc. is the District's SCADA System Integrator and has notified the District that several of the District's process control instruments located at Crestview/Pump Station 6 are at the end of their useful life, will not integrate with SCADA software upgrades, and has limited control and communication capability; and,

WHEREAS, as a cost-effective approach, S&B has recommended replacing the outdated equipment and reuse portions that remain in good physical condition to improve communications between key facilities, to remove dependency upon connections with known reliability issues, to allow for future software upgrades, and to increase the ability for additional process control resiliency; and,

WHEREAS, the District was informed that current market conditions have created significant lead times on automation equipment and is estimated to exceed 74 weeks; and,

WHEREAS, the District requested budgetary information from S&B to fabricate and replace the aging equipment and was advised that suppliers for process instruments are issuing 2-4 price increases annually due to the volatility of current market conditions; and,

WHEREAS, RCW 39.04.280(1)(a) authorizes the District to waive the competitive bidding process to purchase equipment limited to a single source of supply; and RCW 39.04.280 (1)(b) authorizes the District to waive the competitive bidding process to purchase equipment involving special facilities or market conditions; and

WHEREAS, the proposed process control equipment must be of the same manufacturer, Siemens, to properly integrate into the existing process control equipment originally fabricated/assembled by S&B; and,

WHEREAS, S&B is the single source for the process control equipment, is considered a special facility, and current market conditions warrant the need for a single source of supply approval.

NOW, THEREFORE, BE IT RESOLVED:

1. The competitive bidding requirements as set forth in RCW 57.08.050 are hereby waived pursuant to RCW 39.04.280(1)(a) and (b).
2. The General Manager or designee is authorized to develop and enter into a purchase agreement with S&B, Inc. to replace the aging equipment with an authorized project budget of \$85,000.00 plus applicable taxes.

HIGHLINE WATER DISTRICT
King County, Washington

RESOLUTION 23-6-21A

ADOPTED BY THE BOARD OF COMMISSIONERS of Highline Water District, King County, Washington, at an open public meeting held this **21st** day of **June 2023**.

BOARD OF COMMISSIONERS

DocuSigned by:
Daniel Johnson
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Daniel Johnson, President
DocuSigned by:
Polly Daigle
79D686DD798D4ED...
Polly Daigle, Commissioner
DocuSigned by:
Vince Koester
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Vince Koester, Commissioner

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Kathleen Quong-Vermeire
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Kathleen Quong-Vermeire, Secretary
DocuSigned by:
Todd Fultz
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Todd Fultz, Commissioner



S&B inc. 13200 SE 30th St., Bellevue, Washington 98005 (425) 644-1700 FAX (425) 746-9312

May 22, 2023

Highline Water District
23828 30th Avenue South
Kent, WA 98032-2821

Via email: jseibel@highlinewater.org
phite@highlinewater.org

Attention: Jon Seibel, Operations Supervisor
Philip Hite, Operations Manager

Subject: Crestview Pump Station
Budgetary Quote for Control System Upgrades

Dear District:

Following up on our meeting with you both on 5/9/22, we wanted to present costs for your budgetary planning to upgrade the Crestview station. Crestview is operating on legacy control equipment with limited control capability compared to current control equipment. To meet goals of improved communication between Crestview and Pump Station 8, as well as updating control strategies to mitigate the threat of an overflow at Crestview, the control panel at Crestview must first be upgraded. And finally, several process control instruments are also at end-of-life, and it would be beneficial to replace the units. The following sections provide greater detail about the upgrades.

We recommend the District use this document to plan for upgrading the station in the near future, as well as having a 2-hour workshop discussion with S&B to whiteboard use-cases for how to improve Crestview's control functions to meet the current conditions of the District's water system. This would include reservoir overflow mitigation strategies in the event of an extended power loss.

And finally, be aware of the current long-lead times of automation equipment (74 weeks). Therefore, if the District plans to budget for the replacement in the future, it would be wise to order equipment over 1-year in advance in order to implement the upgrade in the desired timeframe. S&B is happy to discuss early procurement strategies in more detail via phone call or meeting.

Key Areas Addressed in Upgrade

The proposed SCADA upgrades to the Crestview Station project will address 5 key points:

1. Replace legacy/mature equipment
2. Improve reliability of communication between Crestview and Pump Station 8 (PS8's operations are dependent upon Crestview's valve control)
3. Remove dependency upon leased line connection with known reliability issues
4. Ability to offer remote support to the Crestview site
5. Ability to program additional process control resiliency functions to the Crestview station
 - a. E.g., pumping water to other reservoir sites where overflows could more easily handled
 - b. E.g., adding a 2nd valve to close in the event of an extended power loss as a process safety interlock

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Crestview Pump Station

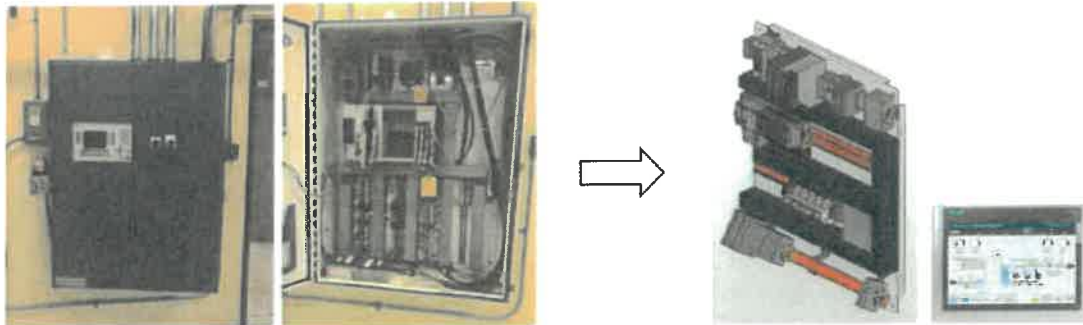
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Control Panel Upgrade (Back Panel Replacement)

The existing Crestview control panel is a large size, and in good physical condition. The most cost-effective approach would be to replace the back panel and touch panel only – leaving the existing enclosure and all conduits in place.

S&B's approach would be to ensure all field wires are clearly labeled to improve the exchange effort. Then S&B / District would schedule a day to pull out the back panel after the morning demand for water (~9am). The new back panel would be mounted in the existing enclosure in about 1-hour, and then the next 3-hours would be focused on re-landing the field wiring in the new field wiring terminals. And finally after wires are landed the focus would be on validating key field device signals to allow the station to be placed in automatic control at the end of Day 1. And then on Day 2, the focus is on validating all remaining field devices and overall process control, and operating training on the new touch panel interface.



Cellular:

One major change for the upgrade would be the migration to a Cellular communication method. The station's existing leased line connection has known reliability/connectivity issues, and a cellular solution will be far more reliable. In addition, with Cellular, we can develop a site-to-site (aka peer-to-peer) communication link between Crestview and Pump Station 8. This would allow Pump Station 8 to operate more reliably with Crestview, and more like "sister stations".

We have reviewed the Crestview station and found that there is a pathway for a remote mounted antenna to be placed under the grates, directly outside the electrical room. This would require an electrical contractor to be hired by the District to route 1.5" conduit about 50ft through two walls. Cellular antenna cable would be pulled thru the new conduit from the RTU cabinet to the exterior of the building where the cellular antennas can be mounted in a far better cellular signal orientation.



Controls:

A base deliverable is to provide the same process control functionality. But it would be best to take advantage of more capabilities in the new automation hardware and cellular communication system to ideate with the District on new control features for the station. Therefore, we highly recommend a 2-hour workshop to discuss control features / improvements with a focus on solving the known vulnerability of a sustained power outage where the control valve could not close the Seattle Inlet for a process safety response.

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Field Devices

The District has made several improvements over the last 5 years on aging instrumentation in the station, but one glaring need remains: the existing Sparling Flow Meters. These meters have mechanical parts, and are at end of life.

The District has already replaced the Pump 1 flow meter with a Siemens Mag Meter, and we recommend continuing with Siemens Mag Meter replacements on Pumps 2 and 3. A mag meter does not have any mechanical parts to measure flow and has a 20+ year projected life. Additionally, when you utilize a 24Vdc powered flow meter model, the control panel's 24Vdc power system can power the units and ride through any power blips without stopping the automatic process control.

In the photo, it features the Sparling meters (red/black units) on Pump 2 and 3 discharge headers. The Sparling flow meters did not follow the industry standard lay lengths. They are about 1' shorter than standard. So when the new flow meter is purchased, the District will have to order a new pipe spool piece to make up for the difference in lay length.



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Budgetary Pricing

We have priced the cost of the upgrades and process instruments based upon current prices. Please be aware we are receiving about 2-4 price increases per year from all of our vendors. We know we have a price increase occurring on Oct 1st, 2023, but it is possible we will have a Q2 increase from some of our vendors before then.

Below is the pricing for the upgrades. The Control Panel upgrade assumes S&B is performing the back panel exchange over 2-days, and an electrical contractor is to be hired by the District to run rigid conduit through two CMU walls and mount the cellular antennas under the walking grate.

For the workshop, we do not know what will be decided, so we placed a guess of about \$2,000 worth of additional software to meet the workshop output of the control requirements.

The Mag meters are a 3-4 month lead time, and therefore it is assumed it would be commissioned on a different date than the RTU upgrade, and a 1-day commissioning effort was added.

Scope	Budget
Control Panel (back panel + 12" HMI + cellular antennas)	64,675.00
Workshop on Control Strategies	2,000.00
Application Software to Meet Workshop Output (guess)	2,000.00
8" Mag Meter (Pump 2)	4,165.00
8" Mag Meter (Pump 3)	4,165.00
Mag Meter Commissioning, 1-day (assumed different date than RTU Upgrade)	1,550.00
Total	78,555.00

Standard Inclusions:

- Award based on a supply purchase order issued.
- Equipment is factory tested and shipped FOB factory with freight allowed, common carrier, destination.
- Shop Drawings, instruction manuals and software documentation via electronic media.
- Submittal Documentation per specifications
- Field Engineering Services for technical support of installation questions, start-up, and acceptance testing of equipment supplied by this quotation. S&B is a designer and supplier of control system equipment, providing technical support and engineering services to review installation of our equipment, commission and attest to its compliance with the project specifications.
- Quote is valid for thirty days.

Standard Exclusions:

Unless specifically included as a line item in this quotation's scope of supply the following are excluded from our scope of deliverables:

- State and local sales tax
- Installation costs and any associated permits
- Conduit, wire or cable external to the control system panels listed in this scope
- Mounting brackets, stanchions, supports, pads that are not integral to the control system panels or process instruments listed in this scope.
- Liquidated damages (available upon request and definition of scope)
- Subcontract (available for additional cost). This includes costs associated with certified payroll submission, EEO reports, completion of Affidavit of Wages paid.

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Crestview Pump Station

Budgetary Quote for Control System Upgrades

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- Bonding (service available for additional fee)
- Credit Card payment (service available for additional fee)
- Equipment not specifically listed in our scope of work

Our quotation is based on a progress payment schedule in compliance with the specifications. Our payment requests will be submitted electronically, 7 calendar days prior to the monthly closing date for inclusion. Failure to submit qualified payment requests or to transfer monies distributed by the Owner within 7 days for such payment requests may result in a 'stop work' until progress payments and interest charges are paid. Our form 977 (attached) provides our standard terms and conditions.

We look forward to the opportunity to work on this important project and will contribute to making this successful by delivering the highest quality of materials and startup services according to the agreed schedule. Please feel free to contact us regarding any questions that you may have regarding our quotation.

Yours very truly,

A handwritten signature in black ink, appearing to read 'Jordan Stead', is written over a light gray horizontal line.

Jordan Stead

Project Estimator / Inside Sales

S&B Inc.

Agenda Item No.: 5.1Agenda Date: 06/21/23Reviewed By: AP for Phil Hite

Subject: Resolution waiving competitive bidding requirements of RCW 39.04.280(1)(a) and (b) and authorizing the General Manager to enter into a purchase agreement with S&B, Inc. for control system upgrades at Crestview/Pump Station 6.

CATEGORY		FINANCIAL			
Executive	☐	Expenditures?	Yes ☒	No ☐	N/A ☐
Administrative	☐	Budgeted?	Yes ☐	No ☒	N/A ☐
Engineering/Operations	☒	Amount: \$ _____ <i>Not-to Exceed</i>			

Attachments:

1. Resolution 23-6-21A
2. Attachment #1 – Budgetary Quote for Control System Upgrades

Comments:

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Staff recommends approval of this resolution.