

**HIGHLINE WATER DISTRICT  
King County, Washington**

**RESOLUTION 18-6-6A**

**RESOLUTION AUTHORIZING CONSULTANT AGREEMENT #18-60-17 WITH S&B, INC.  
FOR THE 2018 REMOTE TELEMETRY UNIT (RTU) UPGRADES**

**WHEREAS**, at the 5/22/18 Board Workshop, the District Engineer informed the Board that the remote telemetry units at the Bow Lake, Star Lake and Pump Station No 4 (McMicken) sites were nearing the end of their useful life and required replacement; and

**WHEREAS**, the 2018 Budget included \$100,000 for upgrading the RTU's and other Scada System improvements at remote sites; and

**WHEREAS**, the District solicited proposals from qualified firms to furnish and install Scada System improvements in accordance with RCW 39.04.270; and

**WHEREAS**, the Board authorized Contract #17-60-23 with S&B, Inc. to upgrade the Scada System at the District headquarters; and

**WHEREAS**, the District requested S&B, Inc. to prepare a Scope of Work for upgrading the Remote Telemetry Units (RTUs) and other Scada System improvements at the Bow Lake Tank, Star Lake Tank and Pump Station No. 4 (McMicken) sites; and

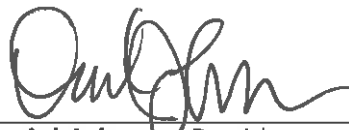
**WHEREAS**, the District's Engineer and General Manager have reviewed the scope of work from S&B, Inc. and recommend approval of this resolution.

**NOW, THEREFORE, BE IT RESOLVED:**

1. The General Manager or designee is authorized to enter into Contract #18-60-17 (referenced as Attachment 1 and incorporated herein by this reference) with S&B, Inc., for a not-to-exceed amount of \$83,002.53.
2. The General Manager and/or the District's Legal Counsel are authorized to make minor changes to the agreement if required.

**ADOPTED BY THE BOARD OF COMMISSIONERS** of Highline Water District, King County, Washington, at an open public meeting held this **6th** day of **June 2018**.

**BOARD OF COMMISSIONERS**



Daniel Johnson, President



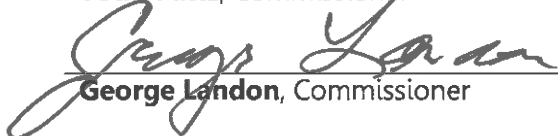
Kathleen Quong-Vermeire, Secretary



Todd Fultz, Commissioner



Vince Koester, Commissioner



George Landon, Commissioner

## ATTACHMENT 1

### AGREEMENT FOR CONSULTING SERVICES

This Agreement ("Agreement") is made and entered into by and between **Highline Water District**, a Washington municipal corporation ("District"), and **S&B, Inc.** a Washington corporation ("Consultant") (individually a "Party" and collectively the "Parties") for the purposes forth below.

1. Scope of Consulting Services. Consultant shall provide consulting services to the District under the terms of this Agreement for the following Project: 2018 RTU Upgrades ("Project"). The scope of services is more fully described on **Exhibit A** attached hereto and incorporated herein by this reference ("Scope of Work" or "Work").
2. Compensation and Payment. District shall pay Consultant for the time and materials devoted to the Project as consideration for the performance of the services set forth on **Exhibit A**, not to exceed the amount of Eighty Three Thousand Two and 53/100 Dollars (\$83,002.53) including tax. Such compensation shall be payable in the following manner:
  - A. Consultant shall submit a detailed monthly billing for all services provided describing in reasonable and understandable detail the services rendered, fees charged and expenses incurred by Consultant during the previous month in accordance with a schedule of rates and charges set forth on **Exhibit A** ("Rates and Charges"), including fees and expenses for additional services authorized by District as provided herein. District shall pay the invoice within forty five (45) days of receipt, except as to any disputed amounts.
  - B. Upon District's failure to pay within forty five (45) days of receipt the undisputed amount set forth in any monthly billing submitted to District by Consultant, such unpaid balance will bear interest at the rate of one half percent (.5%) per month until the amount of such unpaid balance, plus interest thereon shall be paid in full.
  - C. Consultant shall maintain accounts and records of fees billed and expenses incurred as described in this Section 2 in accordance with generally accepted accounting principles, and agrees to make such accounts, records and supporting documentation available to the District and its authorized representatives for inspection at mutually convenient times, both during the Project work and for three (3) years following the final payment for services rendered or termination of the Consultant's services under this Agreement.
3. Schedule of Work. Consultant shall commence the performance of its services under this Agreement upon receipt of notice to proceed from the District to do so and shall provide the services in accordance with the schedule on **Exhibit A**, subject to delays for causes beyond the reasonable control of Consultant or as otherwise agreed to by District.
4. Subcontractors. Consultant shall not subcontract or assign any portion of the work covered by this Agreement without the prior written approval of the District, such consent to be given in District's sole discretion. Subject to the provisions of the preceding sentence, this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto.
5. Independent Contractor. Consultant is an independent contractor and not an employee of the District. Consultant shall be responsible in full for payment of its employees, including insurance and deductions, and for payment to any subcontractors. No personnel employed by Consultant shall acquire any rights or status regarding the District. All of the services required hereunder shall be performed by Consultant or under its direction, and all

personnel engaged therein shall be fully qualified under applicable state, federal and local laws to undertake the work performed by them.

6. Changes in Scope of Services. The District may require changes or modifications in the scope of services to be performed under this Agreement. Any such changes or modifications shall be in writing and signed by the Parties. The compensation for the changes or modifications, whether a decrease or increase, shall be on the same terms and conditions as set forth in Paragraph 2 above or in a manner otherwise mutually agreed to by the parties.
7. Insurance. Consultant shall maintain throughout the performance of this Agreement the following types and amounts of insurance.
  - A. Comprehensive vehicle liability insurance covering personal injury and property damage claims arising from the use of motor vehicles with combined single limits of Two Million Dollars (\$2,000,000).
  - B. Commercial General Liability Insurance written on an occurrence basis with limits no less than Two Million Dollars (\$2,000,000) combined single limit per occurrence and Two Million Dollars (\$2,000,000) aggregate for personal injury, bodily injury and property damage. Coverage shall include, but not be limited to: blanket contractual; products/completed operations; broad form property damage; explosion, collapse and underground (XCU) if applicable; and employer's liability; and
  - C. Professional liability insurance (Errors and Omissions insurance) with limits no less than Two Million Dollars (\$2,000,000).

The insurance policies shall: (1) state that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability; (2) be primary to any insurance maintained by the District, except as respects losses attributable to the sole negligence of the District; and (3) shall state that the District will be given 45 days prior written notice of any cancellation, suspension, non-renewal or material change in coverage.

The District shall be named as an additional insured on the Commercial General Liability Insurance policy with regard to work and services performed by or on behalf of the Consultant and a copy of the endorsement naming the District as an additional insured shall be attached to the Certificate of Insurance.

Before commencing work and services, Consultant shall provide to the District a Certificate of Insurance and required endorsements evidencing the insurance described above. The District reserves the right to request and receive a certified copy of all required insurance policies.

The above insurance limits do not constitute a limit on Consultant's liability to the District. Any payment of deductible or self-insurance retention shall be the sole responsibility of Consultant.

Consultant shall be solely responsible for the safety of its employees and subcontractors at the Project work site, and shall comply with all applicable federal, state and local statutes,

regulations and ordinances regarding safety.

8. Performance/Payment/Maintenance Bonds. If required by the District, the Contractor shall furnish performance and payment bonds for the faithful performance and payment of all its obligations under this Agreement, provided the District shall reimburse the Contractor for the reasonable cost of such bonds. Each bond shall be in penal sums at least equal to the Project Cost unless otherwise stated, in such form and with such corporate sureties as are acceptable to the District. The performance bond shall remain in effect to guarantee the repair and replacement of defective equipment, materials, and workmanship, and payment of damages sustained by the District on account of such defects, discovered within two (2) years after final acceptance of the Work by the District.
9. Retainage. The District shall retain and hold back a retainage in the amount of five percent (5%) of any and all payments made to the Consultant for a period of sixty (60) days after the date of final acceptance of the Work, or until receipt of all necessary releases from the State Department of Revenue and the Department of Employment Security and until settlement of any liens relating to the Work filed under Chapter 60.28 RCW, whichever date is later.
10. Indemnification. Consultant shall defend, indemnify and hold harmless the District, its elected and appointed officers, employees and agents and volunteers from and against all claims, injuries, damages, liabilities, losses of suits, including attorneys' fees and costs, arising out of or relating to Consultant's performance under this Agreement, except for injuries or damages caused by the sole negligence of the District. For the purposes of this indemnification, Consultant specifically and expressly waives any immunity granted under the Washington Industrial Insurance Act, Title 51 RCW. This waiver has been mutually negotiated and agreed to by the parties. If a court of competent jurisdiction determines that this contract is subject to RCW 4.24.115, Consultant's obligation to defend, indemnify and hold harmless the District, its officers, employees, agents and volunteers shall be limited to the extent of Consultant's negligence. The provisions of this Section shall survive the expiration of termination of this Agreement.
11. Ownership of Documents and Work Product. Consultant agrees to return to District upon termination of this Agreement all documents, logs, drawings, photographs and other written or graphic material, however produced, received from District and used by Consultant in performance of its services hereunder. All documents, logs, drawings, specifications, designs, programs, software, information, equipment reports, mylars, surveys, data, reports and other work product (collectively referred to as "Work Product") produced by Consultant in connection with the services rendered under this Agreement shall be owned by District. Except for software and related documentation copyrighted by Consultant, District shall own all copyrights to such Work Product and Consultant agrees to assign all ownership rights to such Work Product to the District. Reuse of any such Work Product by the District for other than a specific project or modification in use by the District of any of the Work Product without the Consultant's prior written approval shall be at the District's sole risk.
12. Standard of Care. Consultant shall perform its services under this Agreement with the level of care, skill and competence of the consulting profession in accordance with the standard for professional services at the time the services are rendered under similar circumstances, at the same time and in the same locality.

13. Right of Entry. District shall provide for the right of entry of Consultant and its subcontractors and all necessary equipment in order to complete the services under this Agreement.
14. Compliance with Codes and Standards. Consultant's Professional Services shall be consistent with the standard of care and shall incorporate those publicly known federal, state and local laws, regulations, codes and standards that are applicable at the time Consultant renders its services.
15. Termination. This Agreement may be terminated by either Party upon five (5) days written notice for any reason. In the event of termination, Consultant shall be entitled to compensation for all services performed, costs incurred, and equipment provided through and including the date of termination, except as to any disputed amounts.
16. Disputes, Claims and Appeals. The Consultant shall address questions or claims (other than a request for equitable adjustment) regarding the Agreement in writing to the District, within ten (10) days of the date in which the Consultant knows or should know of the question or claim (including any denial of request for equitable adjustment). No claim by the Consultant shall be allowed if asserted after final payment under this Agreement. No claim shall be allowed for any costs incurred more than ten (10) days before the Consultant gives written notice, as required in this section. The District shall ordinarily respond to the Consultant in writing with a decision, but absent such written response, the questions or claim shall be deemed denied upon the tenth (10th) day following receipt by the District. Discussion between Consultant and District after the time period for notification of claim has expired shall not waive the ten (10) day requirement in this Pending final decision of a dispute, hereunder the Consultant shall proceed diligently with the performance of the Agreement and in accordance with the direction of the District. Complying with the procedures set forth herein is a prerequisite to filing any lawsuit by the Consultant against the District. Failure to comply precisely with the time deadlines under this Section as to any claim shall operate as a waiver and release of that claim and an acknowledgement of prejudice to the District.
17. Patents, Royalties and Consultant's Infringement Indemnity. The Consultant is responsible for paying all license fees, royalties or the costs of defending claims for the infringement of any intellectual property that may be used in performing this Agreement. Before final payment is made on this Agreement, the Consultant shall, if requested by the District, furnish acceptable proof of a proper release from all such fees or claims.
18. Consultant's Infringement Indemnity. Consultant shall indemnify and hold the District harmless from and against any and all third-party suits, actions, losses, damages, claims or liability of any type of character, type or description, including, but not limited to, all expenses of litigation, court costs and attorneys' fees, based upon any claim of infringement of any patent or other license or intellectual property right (whether by way of trademark or otherwise) resulting directly or indirectly from the manufacture, sale, supply or importation of the parts and components or their use in a waste water treatment plant. Consultant agrees to notify the District as soon as reasonably possible of any material matters with respect to which the foregoing indemnity is likely to apply and of which the Consultant has actual knowledge. If notified in writing of any action or claim for which the Consultant may be liable to provide indemnity, the Consultant shall, without limitation, defend (subject to reasonable consultation with the District) such action or claim at Consultant's expense and

pay the cost and damages and attorneys' fees awarded against the District in such action or claim; provided, however, that the Consultant shall have the reasonable right to control the defense and settlement of all such actions or claims, which settlement shall be subject to the consent of the District if applicable, not to be unreasonably withheld. Indemnification pursuant to this provision shall not be predicated on the District having made payment on any such claim. The obligations of this Subsection 1.18 shall survive Contract completion or termination and/or assignment of this Contract.,

19. Liquidated Damages. Notwithstanding any other remedies allowed under this Agreement, the Parties agree that time is of the essence on each and every portion of the Agreement. In the Scope of Work, fixed milestone dates are established for the performance of the Agreement. These milestone dates shall only be changed via a Change Order. Should the Consultant fail to meet the milestone dates established in the Agreement Schedule, including any extension of time authorized by Change Order, it is mutually understood and agreed by and between the Consultant and the District that the District may assess Liquidated Damages ("LDs") for such delays to the Contract Schedule, fixed and agreed, but not as a penalty, PROVIDED HOWEVER, LDs shall not be charged when the failure to meet specified milestones is due to a Force Majeure delay such as acts of God, fire or flood, serious explosions or accidents, foreign or domestic embargoes, wars or riots, labor disputes, or when the District causes the delay. It is further understood and agreed that the LDs set forth below may be offset against progress payments to the Consultant. In the event the remaining balance due to the Consultant is insufficient to cover the full amount of assessed LDs, upon demand, the Consultant shall pay the difference to the District:

20. Acceptance Process. The District may give iterative acceptances as the Work is accomplished either by phase or milestone. The Consultant shall give the District "notice of completion" of Work related to a specific milestone following the Consultant's completion of all such Work associated with the Milestone or phase.

A. Acceptance process.

Upon completion of the milestone deliverables the Consultant shall notify the District in writing and the Acceptance process will commence. Acceptance shall be based on conformance with the milestone guidelines. After notice by Consultant of completion of the milestone, District will issue a written notice of milestone Acceptance or provide Consultant with a notification of rejection, which will include documentation of the specific grounds for rejection, outlining items not in compliance with the deliverable guidelines. Acceptance shall not be unreasonably withheld.

B. Correction of deficiencies process.

If a deliverable is rejected, Consultant will have a commercially practicable time to correct items documented in the District's notification of rejection. Following the delivery of Consultants' notice that the Work has been corrected, the District will issue a written notice of Acceptance or provide Consultant with a notification of rejection, which will include documentation of the specific grounds for the rejection, outlining Work not in compliance with the milestone. The project schedule will be adjusted accordingly in the event that a dispute regarding the method or accuracy of the correction causes a delay. If the deliverable(s) fails to comply with the milestone after Consultants' second attempt to correct the Work and no clear plan can be agreed upon

between the District's Project Manager and the Consultant's Project Manager, the District will determine the appropriate corrective actions.

21. Final Acceptance Process. The District shall begin the Final Acceptance process in accordance with the Agreement as follows:
  - A. Final Acceptance shall be based on successful completion of commissioning period, as set forth in the Specifications and described in the Scope of Work provided in **Exhibit A**.
  - B. If the District Accepts the Work, the District will send a notice of Final Acceptance to the Consultant indicating the successful completion of the performance testing described in the Scope of Work, **Exhibit A**.
  - C. If the District determines that the Work is not acceptable, the District shall notify the Consultant in writing, describing the deficiencies.
  - D. The Consultant shall either provide a detailed, written plan to achieve Final Acceptance or to make corrections or replacements within a mutually agreed upon time period with no charge to the District. The Parties shall mutually agree on a start date for beginning another Performance test as described in **Exhibit A**, Scope of Work.
  - E. If the District Accepts the Work following a second or subsequent Performance Test the District will send a notice of Final Acceptance to the Consultant
  - F. If the Consultant does not correct or replace the unacceptable Work the District may declare a breach of contract.
  - G. Final Acceptance shall not be unreasonably withheld.
22. Warranty Provisions. Consultant warrants that the Work shall in all material respects conform to the requirements of this Agreement. Consultant warrants that qualified, professional personnel with in-depth knowledge shall perform the Work in a timely and professional manner, and that the Work shall conform to the standards generally observed in the industry for similar Work and shall be in compliance with all applicable laws, rules and regulations. Consultant further warrants that its provided service, software and equipment shall perform substantially in accordance with the description of such in this Agreement and its Exhibits, for a period of two (2) years from the date of final acceptance and that all service, software, and equipment shall be free from defects in materials and workmanship for a period of one (1) year from the date of final acceptance.
23. General Provisions.
  - A. Notices. Any notice or demand desired or required to be given under this Agreement shall be in writing and deemed given when personally delivered, sent by electronic mail, or deposited in the United States Mail (or with an express courier), postage prepaid, sent certified or registered mail, and addressed to the Parties as set forth below or to such other address as either Party shall have previously designated by such a notice:

To the District:  
Highline Water District  
Attn: General Manager  
23828 30th Ave S  
Kent, WA 98032  
Email: [meverett@highlinewater.org](mailto:meverett@highlinewater.org)

To the Consultant:  
S&B, Inc.  
c/o James Swanson, Vice President  
13200 SE 30th St.  
Bellevue, WA 98005  
Email: [jswanson@sb-inc.com](mailto:jswanson@sb-inc.com)

- B. Entire Agreement. This Agreement and its exhibit attachments contain the entire understanding between the District and Consultant relating to the consulting services which are the subject of this Agreement. This Agreement merges all prior discussions, negotiations, letters of understanding or other promises whether oral or in writing. Subsequent modification or amendment of this Agreement shall be in writing and signed by the parties to this Agreement.
- C. Waiver. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement.
- D. No Third Party Rights. This Agreement is made only for the benefit of the District and Consultant and successors in interest and no third party or person shall have any rights hereunder whether by agency, as a third party beneficiary, or otherwise.
- E. Jurisdiction/Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. Any suit to enforce or relating to this Agreement shall be brought in King County Superior Court, King County, Washington.
- F. Severability. If any term, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall remain in effect.
- G. Effective Date. The effective date of this Agreement shall be the date that this Agreement has been signed by authorized representatives of both Parties hereto ("Effective Date").

**S&B, INC.**  
("Consultant")

**HIGHLINE WATER DISTRICT**  
("District")

By \_\_\_\_\_  
Typed Name Randall T. Stead  
Its President  
Dated \_\_\_\_\_

By \_\_\_\_\_  
Typed Name Matt Everett  
Its General Manager  
Dated \_\_\_\_\_





## EXHIBIT A

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

May 25, 2018

Highline Water District  
23828 30th Avenue South  
Kent, WA 98032-2821  
Via email: [jdelmar@highlinewater.org](mailto:jdelmar@highlinewater.org)

Attention: Mr. Jeremy Delmar, P.E. Engineering Manager

Subject: Statement of Work  
2018 RTU Upgrades

Dear Review Team:

We are pleased to submit our scope of work for the above captioned project. This supply includes a replacement Remote Telemetry Unit (RTU) for both the Bow Lake and Star Lake reservoir sites, Pump Station 4 site, as well as a cellular modem addition at the Master Telemetry Unit (MTU) control panel. The new RTUs will replace the mature equipment with modern industrial controls and communication methods. Cellular communication will be used to communicate between the RTUs and the MTU. Startup and commissioning services are included in our scope of supply for each RTU and cellular modem addition at the MTU.

All RTU assembly and testing work will be done in-house by our staff of engineers and designers. Our experience includes a broad base knowledge of municipal telemetry and SCADA systems with an exclusive focus in water and wastewater applications. The District is familiar with the level of support our firm provides with your existing water control systems, and we look forward to the opportunity to work for the District to assist with the upgrade and expansion work identified.

Our firm is a certified Siemens Solution Partner, with competency in automation, motor control and process control systems. The work proposed in this scope of work is based on the use of equipment and software manufactured by Siemens Industry. Software and configuration for the programmable logic controller (PLC), District's Master PLC, and SCADA computer system are included for a complete and fully functional RTU upgrade at the Star Lake and Bow Lake reservoir sites. The Programmable Logic Controller, I/O, SCADA software and industrial networking components are manufactured by Siemens and locally supported our firm. Our facility in Bellevue carries stock of the parts used in this proposal and will locally support the project from design through acceptance and warranty services.

## Statement of Work

Both the Star Lake and Bow Lake reservoir RTUs are over 20 years old, and the Pump Station 4 RTU is over 15 years old and have served the District well during their life. A PLCs life is projected to be suitable for operation for twenty years. Given the age of the RTUs, a proactive replacement approach will reset the lifecycle of the reservoir automation equipment, and provide improved control capabilities.

### *Key Performance factors identified for these RTU replacements projects include:*

- Remote Telemetry PLC Speed and Processing Ability
- Elimination of obsolete PLC hardware at the remote telemetry units
- Migration to modern communication infrastructure (cellular)
- Improved local operational control with modern 7" color touch panel
  - Local Diagnostic capabilities
  - Trending
  - Short Term Historical Data Storage
  - Re-scalable analogs
- Improved Seismic response features
  - Master SCADA override capabilities (in accordance with District's request)
- Local Control set point Entries via touch panel

### **STAR LAKE SPECIFIC IMPROVEMENTS**

- Improved ease of use interacting with local process controls with pop up HOA switches via touch panel

### **BOW LAKE SPECIFIC IMPROVEMENTS**

- Separate control reactions for reservoir hatch intrusion vs. building for intrusion via touch panel

### **PUMP STATION #4 SPECIFIC IMPROVEMENTS**

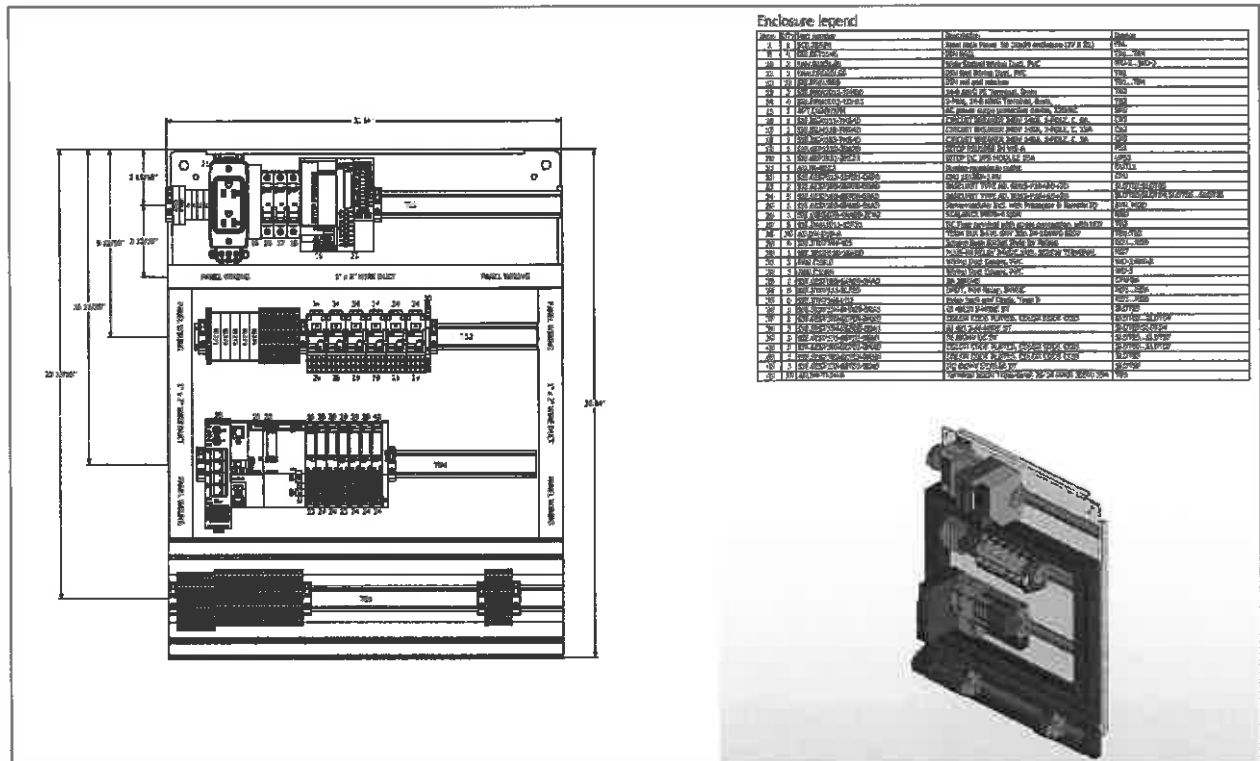
- Pop Up HOA controls for pumps via touch panel
- Pump Efficiency Calculations

## RTU Upgrades

### S&B Inc 4<sup>th</sup> Generation RTU

The Star Lake and Bow Lake reservoir sites and Pump Station 4 site will be replaced with an S&B Inc 4<sup>th</sup> Generation RTU. The RTUs come equipped with a Siemens S7-1500 series processor, Touch Panel control unit, and backup power system. The RTUs are capable of utilizing multiple communication protocols and can support several standard industrial communication protocols.

In this project, we will utilize a Model B size of a 30x24x12" RTU with a 7" touch panel control. It will utilize a cellular modem to communicate to the Master Telemetry Unit. [see diagram below of the back panel view of the RTU enclosure]



- Star Lake will use a model B-16DI-8DO-8AI-TP7-C RTU
- Bow Lake will use a model B-24DI-8DO-12AI-TP7-C RTU
- Pump Station #4 will use a model B-24DI-8DO-12AI-TP7-C RTU

### ***PLC***

A Siemens 1500 series processor and ET200-SP series form factor is selected as the replacement for your existing series 440 processor. The 1500 series processor is our most common PLC deployment today.

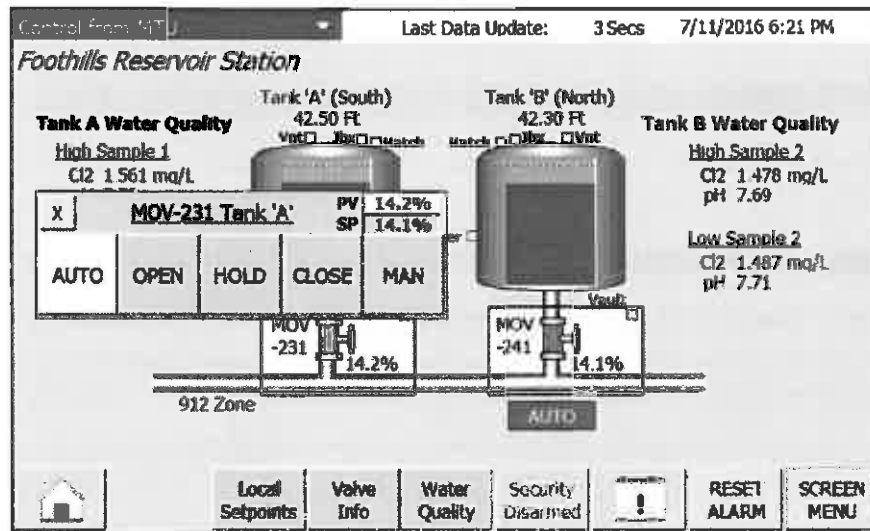
The Siemens 1500 series Programmable Logic Controller (PLC) is very powerful and fast – handling multiple requests from many locations simultaneously. The new PLC will accommodate the computing needs of the reservoir stations, and have sufficient capacity to significantly expand in scope as new control features or devices are added in the future. It comes with built-in security where users must authenticate through established credentials to view the PLC and make any adjustments to the program. This is an added layer of protection to stop any unauthorized access. The 1500 series processor will accommodate a wide variety of communication options including telephone, fiber optics, cellular, and/or cable/DSL communication. For this application, the District has selected cellular.



A key change in the technology between the existing system and the proposed new PLC is with the machine code. The new 1500 series PLC uses object oriented code which allows for CPU efficient execution of functional block, statement list and structured control languages using the industry standard IEC 61131 guidelines for programmable logic controllers. This conversion is a major step in building open system platforms that are less dependent on specific manufacturer features.

### Touch Panel Controls

A 7" Touch Panel control is placed on the Door of the RTUs. The touch panel will provide improved local control capabilities to the operator. The reservoir levels, water quality, valve position, and security sensors are all shown on the overview screen. On screen pop-up controls are included for each controlled pump and valve. (See the example screen below).



In addition to the process control features at the station, the RTU has built in screens for the following controls:

- Network Status
- Intrusion System
- Analog Devices Setup & Scaling
- Trending
- Alarm/Event Viewer
- Web Viewer
  - PDF Copy of Drawings
  - PDF Copy of Station Operating Narrative
  - PDF documents of Hardware component O&Ms

### Cellular Communication

The Cellular modem inside the RTU is dynamic and open cellular platform that is able to communicate on a Verizon, AT&T, or T-Mobile network. The owner needs only to select the cellular provider, and the corresponding SIM card is placed into the modem for use on the network. The District is responsible for purchasing and maintaining cellular service of the modem.

### VERIZON

Verizon offers a private cloud solution where a private network is created for exclusive use by the District. This network does not have access to the internet, providing a high level of isolation and a secure solution in its native form. Of the three options, by the inherent architecture it offers the most secure and least flexible solution. In the case of the SCADA RTU communication requirement for the District, the private network meets the needs with peer to peer and peer to master capability. An additional layer of security is possible by employing VPN tunnels within the private network. We do not have clients who have selected to add the second layer of security on Verizon networks as Verizon has marketing information that asserts 100% isolation. Verizon does not charge a municipal client for the build out of a private APN, for this reason, the District would initiate the account setup. Verizon is considered to have excellent coverage in your area.

### AT&T

AT&T offers a similar setup with private APN (see discussion above for Verizon) as well as a public facing static IP (see discussion below for T-Mobile). The monthly rates are in the median of the three options. Unlike Verizon, AT&T does charge between \$500 and \$1000 for the build out of a private network and no charge for a public address. AT&T is considered to have excellent coverage in your area.

### T-MOBILE

Cellular modems on this network have real world IP addresses to the internet and as a security measure we disable all incoming and outgoing conventional data. Each modem is configured as to use highly secure encryption technologies to establish point to point communication. This technology is often referred as virtual private networking or (VPN) architecture. The RTU is allowed to communicate with predetermined sites only and the data between MTU and RTU flows securely. The monthly rates are the least expensive of the three options and there is no charge for account setup. Since security is manually configured for each connection, a complex peer to peer communication system will take more time to complete than a private network without security. A benefit to this solution is that we can configure the device to accept a VPN connection to our facility for remote access and support of your personnel in diagnosing and troubleshooting. T-Mobile is considered to have excellent coverage in your area.

## Master Telemetry Upgrades

### ***Cellular Modem Addition***

The 2017 SCADA upgrades provided a Master PLC capable of utilizing modern communication methods. The District is currently using leased lines between the RTUs and MTU. To move to cellular communication, a cellular modem will be added to the Master Telemetry Unit to read/write data to the RTUs. A cellular modem will be added to the PLC chassis by our Field Engineer. Due to the known cellular impedance in the building, a remote mounted Antenna(s) will be placed either above the ceiling tiles or outside against the building – the location behind determined during a site test. An LMR cable is

run between the remotely mounted antenna(s) and modem. S&B will assist the District or Contractor in the installation of the cellular antenna(s).

### ***Cellular Study***

Due to the flexibility of Cellular providers, our scope of work includes a cellular site study where we test cellular signal strength and confirm transmission of data. This test will include validation of all District sites so the cellular selection is confirmed system wide. A price for this service is included in the Master Cellular scope.

## **Implementation of Upgrades**

### ***RTU Assembly & Test***

Both RTUs are assembled and tested at S&B's facility. The RTU test will include reservoir and valve simulation and automatic control capabilities. The cellular modem of the MTU will be set up near both RTUs and the cellular communication will be tested complete as a system. The RTU data will be tested against an in-house copy of the District's WinCC SCADA software. WinCC control of the RTU will also be checked. The WinCC SCADA updates will be archived and ready for download into the MTU once on site. After testing is complete, the RTUs will be de-energized, and readied for shipment.

### ***On Site Preparations at the District Office***

#### **CELLULAR MODEM INSTALLATION:**

The MTU's cellular modem will be installed in the PLC chassis, and the antenna(s) will be mounted either above the ceiling tiles or against the District's building to strong signal strength. The modem installation will be handled by S&B. S&B will assist the District or Contractor in the installation of the cellular antennas. A communication test back to S&B will be conducted to ensure the communication is steady and reliable. Once completed, the remote sites are ready for replacement.

#### **WINCC SOFTWARE UPDATES:**

The WinCC software additions will be loaded into the WinCC SCADA server computer to be ready to utilize the new control features built into the RTUs. The data load will not impact the existing use of the Bow Lake and Start Lake operations. The load will occur in the background.

### ***Startup & Commissioning***

The RTU upgrades will require the services of a licensed electrical contractor to remove the existing RTU, install the new RTU, retrofit the existing conduits, and land the existing field wiring to the new RTU's field terminals. Once complete, S&B will come on site for commissioning services. A sequenced approach of one RTU changeover at a time is expected.

After a new RTU is installed by a licensed electrical contractor, the RTU commissioning is expected to take 1 day to complete per site. We will start with one reservoir and be on site early in the morning (8am) to help bring the commissioning effort to completion before the end of the operators work day. Once complete, the second RTU commissioning will follow on a separate day.

COMMISSIONING

S&B Field engineers will begin by testing the local control capabilities of the station. We will next test the remote control capabilities via the SCADA Computer. Alarms, Events, set points, and the alarm dialer are checked for accuracy. A field engineer will complete a commissioning report to document the control features tested and it will be sent out to the owner along with As-Build drawings 2 weeks after startup services were completed.

TRAINING

Training is provided concurrent with the upgrade. Our field engineer will instruct the assigned operator(s) with the use of the new systems with specific focus on updated troubleshooting methods and control features as part of the station commissioning. This provides the District with hands on training and self-sufficiency in maintaining the SCADA system as we update and improve the technology base. Training will include approximately two (2) hours in duration per RTU during the same day as the startup. All training is provided at the RTU site/District Office.

SCHEDULING SERVICE

Startup/Commissioning services at jobsite are performed by our field engineer. A 2-week written notice is recommended for securing the required startup date. S&B will provide a pre-startup checklist for the Contractor to use in verifying the electrical and mechanical systems are ready for commissioning services. An email confirmation of the pre-startup checklist completion is required prior to S&B performing startup services. Our startup time budget is based on completed checklist. If S&B arrives on site and items are not complete, the Contractor is responsible to purchase all required field engineering hours needed for commissioning services that go beyond the quoted time.

***O&M Manuals***

S&B will provide an O&M for the District for the Bow Lake & Star Lake RTU Upgrades. Two copies will be proved to the District. The Binders include schematic drawings on 11x17 and a DVD with hardware manuals and operation description.

***Installation by Electrical Contractor:***

The system proposed is quoted for installation by the District's selected electrical contractor. Electrical and mechanical installation of the control panels and instruments at the project site is excluded from our scope. Many clients perform the mechanical installation work of mounting the equipment and



delegate only the electrical connections to a Contractor for expediency and cost savings. Following installation of the equipment our field engineer will perform startup testing and owner training.

### ***Warranty Support***

The system integration and software development required for this project is included with full support for a time period not less than one (1) year. During this time period, we will receive requests for assistance and respond using a high speed network connection to the control system via VPN within one business day. The initial response will identify problem areas, determining if the system requires software modifications, hardware replacement or both in order to maintain automatic operation of the system. If either the District or S&B determines that onsite work is required to resolve a problem, we will respond physically within one business day. Typical response times will be faster than one day for either scenario. The technologies available to us for troubleshooting the new system allow our engineers to remotely access the MTU system, assess current and historical conditions, and make assessments quickly.

We will support the District in the diagnosis and resolution of hardware failures to equipment provided under this scope of work during the warranty period without additional fees.

### ***Lead Time & Delivery***

Our typical project cycle is 6-8 weeks for delivery. Delivery is included in our quote.

Pricing

Deliverable	Prof. Services	System Integration	Tax (10%)	Hardware & Equip. Installation	Total
Bow Lake RTU	\$7,844.67	\$16,744.58	\$1,674.46	By Elect. Contractor	\$26,263.71
Star Lake RTU	\$7,330.60	\$16,123.21	\$1,612.32	By Elect. Contractor	\$25,066.13
PS4 (at McMicken)	\$11,551.15	\$14,677.57	\$1,467.76	By Elect. Contractor	\$27,696.48
MTU Cell Modem Addition + Cell Study		\$3,614.73	\$261.47	By S&B	\$3,976.21
<b>Total:</b>					<b>\$83,002.53</b>

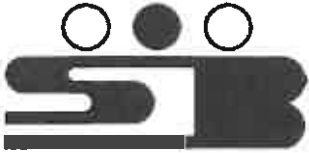
\*You will notice the RTU price has about an \$880 increase to move from a leased line communication method we quoted in 2017 to a cellular solution.

We look forward to the opportunity to work with you on any of the upgrades. Please feel free to contact us regarding any questions that you may have regarding our quotation.

Yours very truly,



Jordan Stead  
 Project Estimator / Inside Sales  
 S&B Inc.



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

## **GENERAL TERMS AND CONDITIONS – INSTRUMENT/CONTROL SYSTEMS**

### **1. SCOPE**

These terms and conditions apply to the sale of all instrument/control (I/C) systems assembled by S&B Inc. (Seller) and any inconsistent terms and conditions in Purchaser's purchase order are not binding on Seller, unless accepted, or these terms and conditions are modified by an authorized S&B Inc. representative.

### **2. ACCEPTANCE**

Purchase orders received from Purchaser do not bind Seller unless accepted by an Officer of Seller, either by acknowledgment, written acceptance, promise to ship, or shipment of the I/C systems communicated to Purchaser. Acceptance is expressly made conditional on Purchaser's assent to Seller's Material Terms and Conditions, which are additional to or different from Purchaser's terms, unless Seller agrees otherwise in writing.

### **3. PRICE AND PAYMENT**

Unless otherwise specified, quoted selling prices are FOB Seller's factory or its supplier's shipping point, with freight allowed to destination and are subject to change if not accepted within 30 days from the quotation date. The quotation may be withdrawn at any time prior to acceptance or extended beyond 30 days. Invoices are due and payable NET 30 days, unless otherwise specified, at the company offices at 13200 S.E. 30th Street, Bellevue, WA. 98005. Late payment of invoices is subject to interest. Invoices shall be rendered according to the following schedule.

<b>Benchmark</b>	<b>% of Total Price</b>
Upon notice from Seller that all drawings have been submitted for approval.	20%
Upon notice from Seller that the instrument system is ready for factory tests.	Additional 50%
Upon notice from Seller that the instrument system has been shipped or that factory tests are complete and equipment is being held for convenience of customer.	Additional 25%
Upon notice of acceptance from Purchaser or 180 days from notice of shipment, whichever occurs first.	Final 5%

If Purchaser defaults in any payment when due, Seller may at its option, and in addition to its remedies under the U.C.C. without incurring any liability thereof to Purchaser or Purchaser's customers, declare all payments for work completed immediately due and payable with maximum legal interest thereon from due date and stop all further work and shipments until all past due payments have been made and/or require that any further deliveries be paid for prior to shipment.

### **4. ITEMS INCLUDED**

The price quoted includes only the I/C system specified, and does not include actual installation, accessory or associated materials such as wiring, piping, etc., not specifically included. Equipment prices quoted include installation information and start-up assistance provided by the Seller's field engineer or technician. Such services will be provided in a mutually agreeable manner and time. Seller will provide, upon request, at Seller's established current rates, an experienced Project Engineer or Service Technician to provide on-site superintendence of the equipment installation. Responsibility for proper operation of equipment, if not installed by Seller or installed in accordance with Seller's instructions, rests entirely with Purchaser.

### **5. TAXES**

Any federal, state or local sales, or use or other taxes applicable to this transaction are not included in the price quoted, and unless a valid certificate of exemption is provided, any such tax shall be added to the price and is for the Purchaser's account.

### **6. SHIPMENTS AND DELIVERY**

Any shipment or delivery dates recited herein represent Seller's best estimate. No liability, direct or indirect, is assumed by Seller for failure to ship or deliver on such dates. In any event, delivery dates are based upon the effective date of the contract and prompt receipt by Seller of all necessary information and instructions from Purchaser, including approved submittal drawings. Seller shall have the right to make partial shipments, and invoices covering the same shall be due and payable by Purchaser in accordance with the payment terms hereof.

In the event that the I/C system specified herein is to be shipped outside the United States, Purchaser shall obtain all necessary import licenses and permits required to clear the shipment for entry into the foreign country and pay all duties, tolls and imports.

If Purchaser requests postponement of shipments or causes a delay in shipment, the entire purchase price shall be due and payable upon notice from Seller that the I/C system is ready for shipment, and thereafter any storage, or other charge Seller incurs, shall be for Purchaser's account, including interest on any unpaid balance at the maximum legal rate. All claims for damage, delay or storage for FOB Seller's plant shall be made directly against the carrier of the Purchaser. When shipments are FOB destination, Purchaser shall inspect the I/C system shipped and notify Seller of any damage or shortage within 5 days of receipt. Failure to notify Seller shall constitute acceptance of Purchaser, relieving Seller of any liability for shipping damages or shortages.

### **7. RISK OF LOSS AND SECURITY INTEREST**

Unless shipments of I/C systems are made FOB destination, all risk of loss or damage shall pass to the Purchaser upon delivery to a carrier for shipment. Purchaser shall protect and maintain Seller's title, including adequate insurance for Seller's benefit, and right of repossession to the I/C system specified herein or in any change order until the full purchase price has been paid in full and will not encumber or permit others to encumber such systems by any security instruments.

Purchaser acknowledges that as security for payment of the purchase price, Seller will retain and Purchaser has granted, a security interest in all I/C systems sold to Purchaser. Seller shall have all of its rights and remedies as a Seller and a secured party under the U.C.C. or other appropriate law. No waiver by Seller or any default shall constitute a waiver of any subsequent or further default. Seller may retain as liquidated damages any partial payments made and may peaceably repossess the equipment from the Purchaser's premises without prejudice to any further claims it may have. In the event legal action be brought to enforce the provisions of any order accepted by it, Seller shall be entitled to recover its court costs and reasonable attorney fees.

**8. WARRANTY**

Seller warrants that for a period of one year after test and acceptance by the Purchaser, or 18 months from date of shipment, whichever occurs first, all products assembled by Seller shall be free from defects in material and workmanship. Seller will at its sole option either repay the purchase price, or repair or replace at a location to be designated by it, any product defects, which develop within such period under normal and proper use, provided it receives prompt written notice of claimed warranty period. This warranty shall not apply to any products altered or repaired outside Seller's factory or with other than Seller's replacement parts, unless such repair was authorized in writing by Seller, or to products or parts subject to misuse, abuse, neglect or accident or damaged by improper installation or application. In no event shall Seller be liable for normal wear and tear, nor for any incidental or consequential damages due to inoperability of its products. The foregoing are Seller's sole warranties and guarantees, and all express or implied warranties, including all implied warranties or merchantability and fitness for a particular purpose, which exceed the above obligation, are hereby disclaimed by Seller.

**9. CANCELLATION, SUSPENSION AND DELAYS**

After acceptance by Seller, this contract shall not be subject to cancellation, suspension or delay. Orders may be cancelled only with Seller's written consent and upon payment of reasonable cancellation charges, which shall include all costs incurred and work done pursuant to the contract to date of cancellation, suspension or a delay plus reasonable overhead and profit. Additionally, all risks incident to and charges related to storage and/or resumption of work, at Seller's plant or elsewhere, shall be for Purchaser's sole account.

**10. LIMITATION OF LIABILITY**

Seller shall not be responsible or liable in any way for any failure to perform due to Acts of God, fire or flood, serious explosions or accidents, foreign or United States embargoes, war or riots, serious shortages, unavailability or significant price increases in commodities, materials or components, labor disputes, interruption of transportation, loss of essential production services, acts of any U.S. or foreign governmental authority, or by any other event beyond the reasonable control of Seller or its subcontractors. Seller shall not be liable to Purchaser for any incidental or consequential damages for any reason whatsoever.

**11. CHANGES AND BACKCHARGES**

Any changes in or any additions to the scope of work herein described or initiated by the Purchaser or resulting from any circumstances beyond Seller's control shall be for the account of and paid by the Purchaser. Written change orders shall initiate changes, and shall be considered as individual modifications and shall not delay payment to the Seller for the original order.

Seller will not approve or accept returns or backcharges for labor, materials or other costs incurred by Purchaser or others in modification or adjustment, service or repair of Seller furnished materials unless such return or backcharges are pursuant to Seller's warranty and have been authorized in writing by an Officer of Seller or by assigned purchase order or work requisition.

**12. PROPRIETARY INFORMATION**

All information furnished by Seller is submitted solely for Purchaser's consideration in connection with this job and shall be not be used by Purchaser nor disclosed to any third party without Seller's written consent.

**13. DRAWINGS AND DESIGN**

All drawings, descriptive matter, etc. submitted with this proposal are merely intended to give a general idea of the equipment described and a set of drawings may be supplied for approval after acceptance. Seller reserves the right to change or modify the design and construction of any equipment in order to incorporate improvements or to substitute material equal to or superior to that originally specified, and upon request, will assist with suggestions without liability for any resulting loss or damage to Purchaser.

**14. SOFTWARE AND LICENSE AGREEMENT**

All software is provided under a non-transferable, non-exclusive license for its use. The purchaser, and if different, the end-user, shall be required to sign Seller's End-User License Agreement upon accepting Seller's software documentation and using the software provided. All software and documentation are copyrighted by Seller and contain valuable trade secrets. No copies of this software or documentation may be made except as authorized under the terms of the license agreement except as required by law. The software and documentation are warranted against functional defects found during a period of one year after delivery. Seller's sole obligation shall be to correct any such defect in a manner chosen by Seller in its sole discretion. Seller shall have no liability for any lost profits or direct, indirect, incidental, consequential, or other damages arising from use of the software and documentation or any associated hardware.

**15. NON-ASSIGNMENT**

Purchaser shall not assign this contract, nor any interest herein or rights hereunder, without the written consent of Seller and any attempted assignment shall be voidable at Seller's sole option.

**16. ENTIRE AGREEMENT**

The contract expresses the entire agreement between the parties hereto and supersedes any previous communications, representations or agreements, whether oral or written, and is not subject to modification except by a writing signed by an authorized Officer of each party.

**17. GOVERNING LAW**

The contract shall be interpreted and governed by the laws of the State of Washington, including but not limited to any dispute, controversy or claim arising out of the contract.

**Agenda Item No.:** 5.1  
**Agenda Date:** 06/06/17  
**Reviewed By:** BO

**SUBJECT:** Authorize Contract #18-60-17 with S&B, Inc.  
2018 Remote Telemetry Unit (RTU) Upgrades

CATEGORY	
<i>Executive</i>	<input type="checkbox"/>
<i>Administrative</i>	<input type="checkbox"/>
<i>Engineering/Operations</i>	<input checked="" type="checkbox"/>

FINANCIAL						
<i>Expenditures?</i>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<i>Budgeted?</i>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
		<i>Amount:</i> \$ <u>83,002.53</u>				

**ATTACHMENTS:**

1. Resolution 18-6-6A
2. Attachment 1 – Contract #18-60-17

**COMMENTS:**

At the 5/22/18 Board Workshop, the District Engineer informed the Board that the remote telemetry units at the Bow Lake Tank, Star Lake Tank and Pump Station No 4 (McMicken) sites were nearing the end of their useful life and required replacement.

The 2018 Budget included \$100,000 for upgrading the RTU's and other Scada System improvements.

The District's Engineer and General Manager have reviewed the scope of services from S&B, Inc. and recommend approval of this resolution.