



City of Homer

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Memorandum 22-198

TO: MAYOR CASTNER AND HOMER CITY COUNCIL
THROUGH: ROB DUMOUCHEL, CITY MANAGER
FROM: JANETTE KEISER, PE, PUBLIC WORKS DIRECTOR
DATE: November 3, 2022
SUBJECT: Rehabilitation of Sewage Lift Stations Electrical¹ and Control Works

I. **Issue:** The purpose of this Memorandum is to (1) request an appropriation to rehabilitate the electrical works of the Sewage Lift Stations and (2) award a Sole Source contract to Kachemak Electric Company.

II. **Scope of Work:**

In 2020, the City's approved Capital Budget included \$210,900 to upgrade the SCADA¹ in the City's eight lift stations. (See Ordinance 20-57.) This project was delayed for a variety of reasons and was one of the projects recommended for "repackaging" in the City Manager's Memorandum 22-157. These lift stations are identified on the City's Water/Sewer Asset Management Plan as being in critical condition and high risk. If a lift station goes down, we run the risk of having raw sewage running in the streets and in some cases, backing up into people's homes.

Since 2020, we've had the opportunity to study what needs to be done in consultation with SCADA provider, Evoqua, and Kachemak Electric Company. Kachemak Electric is the local electrical contractor that built the original electrical panels/controls and has been maintaining them for over 30 years. This team made an intensive analysis of the electrical boxes and determined that the SCADA was not the only problem. The electrical components no longer comply with National Electric Code standards, are obsolete and at the end of their useful life. For a number of years, when something broke down, we could rebuild it, even if we had to scrounge parts on eBay. Now, we've run out of spare parts and we can't get more.

The team identified the electrical/control works that each lift station needs to bring it back to a state of good repair. The costs include the parts and materials for electrical/controls work that was originally scoped as well as performance/payment bonding and prevailing wages for the on-site installation. We've added the estimated cost for freight and a contingency.

¹ SCADA is an acronym for a computerized control system.

This breaks down as follows, for the six most critical lift stations. We will work on the remaining two lift stations at a later time as more funds are available.

Lift Station	Materials	Installation²	Total
Campground	\$17,992	\$17,546	\$ 35,538
Launch Ramp	\$23,635	\$17,546	\$ 41,181
Kachemak Drive	\$22,274	\$29,010	\$ 51,284
Kachemak City	\$ 9,613	\$17,546	\$ 27,159
Bay Avenue	\$23,452	\$17,546	\$ 40,998
Beluga Lift Station	\$21,471	\$17,546	\$ 39,017
Freight (estimated)			<u>\$ 11,000</u>
		Subtotal	\$235,177
Contingency- 12%			\$ 28,221
Performance & Payment Bond			<u>\$ 8,109</u>
		Total	\$271,517

III. Pricing

We believe Kachemak Electric’s pricing is fair and reasonable for two reasons. First, on previous competitive procurements we’re aware of, both here and in other Kenai Peninsula jurisdictions, where Kachemak Electric is one of several bidders, Kachemak Electric has been the low bidder. Second, Kachemak Electric’s material prices are similar to prices we’ve paid for parts scrounged on eBay. Third, one of the electrical contractors we contacted, Liberty Electric, when we told them we’d also asked Kachemak Electric for a price quote, told us they would not be able to compete with Kachemak Electric.

We recommend adding a contingency of 12% to cover unforeseen conditions. For example, the cost of freight could differ from what we’ve estimated. Or, we could find that field installation is more challenging than what’s been estimated – renovation of old systems almost always raises the unexpected.

IV. Sole Source Procurement

Homer City Code requires an open market procurement where the estimated value is more than \$25,000 unless an exception exists. Three authorized exceptions are applicable in this case:

- a. *“Procurement of consultant and technical services”*, HCC 3.16.060(d). The scope of work includes assessing the complex, highly technical issues, identifying the components that need to be replaced/rehabilitated, furnishing the components, installing the components and integrating the components with existing control systems. This needs to be done in the dangerous environment of high voltage electricity, operating lift sewage stations and fragile existing systems.
- b. *“Procurement of ...construction completion services,”* HCC 3.16.060(f). The goal is not to demolish the existing lift stations, but to rehabilitate the electrical/control systems that run those lift stations. In this context, the work is to “complete” fully functional lift station systems.

² The cost of installation includes prevailing wages.

- c. *“Sole source procurement”* HCC 3.16.060(i). When staff first started exploring the issues, they contacted four local electrical contracting companies, including: Shank Electric, Woodworth Electric, Liberty Electric and Kachemak Electric. Kachemak Electric was the only company that responded. It is unlikely we would get any better response advertising further afield because so much of the work requires on-site field investigations to assess the problems and prescribe fixes.

Kachemak Electric has worked with the City for over 20 years, helping to keep these electrical panels functioning. Its work included the upgrade to our current stand-alone SCADA system about 10 years ago. Kachemak Electric is the only local representative for our lift station SCADA manufacturer and is the only authorized supplier of parts for the system. There is no one else in town that has the degree of expertise and intimate knowledge of the workings of our complex lift station electrical/control systems that Kachemak Electric has. We think this is why the other local contractors chose not to respond. They knew they could not compete with Kachemak Electric. One of the local contractors said as much.

V. Funding

This work would be funded from the Sewer CARMA Fund.

VI. Recommendation: That the City Council take the following actions:

- a. Appropriate \$271,517 for the renovation of the sewage lift stations
- b. Award a sole source contract to Kachemak Electric Company in the amount of \$271,517.



Name	Customer	Proposal#	Due/Bid Date
Homer, AK - Lift Station Updates	Kachemak Electric Co.		6/15/2022, 12:00 PM

Scope

Rev 1 - 6/12/22

Proposal references the following project information and includes those items as described in the attached Bill of Materials:

- E-Mails
 - 5/10/22 – Includes Overview Notes
 - 5/14/22 – Pictures
 - 5/17/22 – Supporting Documentation.
 - Rev 1 - 5/25/22 – From James Trissel Clarifications and Motor Information
- Specifications (As related to proposed equipment)
 - None
- Plan Drawings (As related to proposed equipment)
 - None
- Addendums
 - None
- Other
 - Phone conversation of 5/17/22
 - Rev 1 - Phone conversation of 5/24/22

A - Qty (1) Campground LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 208/120 volt, 3 Phase, 4 wire, 60 Hertz. Equipment will be housed in a NEMA 1 Painted Steel Enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 5 HP at 15 FLA submersible pumps. Unit to include the following main items: To Include:

- 1 NEMA Type 1 - Steel Enclosure, with back panel (Est. 60" x 36" x 12") - Actual size to be determined during final design.
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Sq D. VFD Sized for 5 HP at 15 FLA motors with Circuit Breaker (QOU)
- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Flgylt Motors)

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- 2 Motor Heat Sensor Alarm Activation, and Aux Contact
- 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors
- 1 - Controller - Provisions for Field Mounting Link2Site Modem

B. Qty 1 - Spit Fish Grinder (Retrofit Existing Control Panel)

Equipment to furnished loose for in field mounting by others. New equipment to operate on existing voltages. New VFDs will replace existing motor starters. Front panel mounted equipment (Indicators, Operators, Resets) will be supplied on a new bezel to cover removed Eaton pump operators and indicators. Equipment for panel cooling will be supplied for installation on to existing panels. To include the following main items:

- 2 VFD – Yaskawa sized for 480 volt, 3 phase, 15 HP at 22 FLA Hydromatic motors (Need to Verify Space in Panel and Motor FLA) - Space available in panel after removal of existing motor starters to accommodate new VFDs. (It is anticipated that each VFD will require 16" H x 9" W x 7" D space for mounting.
- 1 Thermostatically Controlled Ventilation System
- 2 Motor Current Transmitters
- 1 Bezel Sized to cover the holes left by removal of the Eaton motor operators/monitors and reset PBs. -- To include the following operators and indicators:
- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure
- 2 Running Time Meter
- 2 Display – Motor Current.

Note: Existing panel to be retained and reworked to accommodate the above new equipment. It is anticipated that the following existing panel equipment will need to be moved to accommodate the replace the existing motor starters with new VFDs:

Existing Motor Circuit Breakers to be Moved higher
Small Transformer Next to existing Motor Starters may need to be moved. (It is not known if this item is necessary after the removal of the Eaton motor starters and may be able to just be removed.)

Space available in panel after removal of existing motor starters to accommodate new VFDs. (It is anticipated that each VFD will require 16" H x 9" W x 7" D space for mounting.)

C. Qty (1) Launch Ramp LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 208/120 volt, 3 Phase, 4 wire, 60 Hertz. Equipment will be housed in a NEMA 1 Painted Steel Enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 15 HP at 67 FLA Flygt submersible pumps. Unit to include the following main items: To Include:

- 1 NEMA Type 1 - Steel Enclosure, with back panel (Est. 72" x 36" x 18") - Actual size to be determined during final design.
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Mitsubishi. VFD Sized for 15 HP at 67 FLA motors with Circuit Breaker (HDL)
- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Flygt Motors)
 - 2 Motor Heat Sensor Alarm Activation, and Aux Contact
 - 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors

- 1 - Controller - Provisions for Field Mounting Link2Site Modem

D. Qty (1) 30 Acres LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 230/120 volt, 1 Phase, 3 wire, 60 Hertz. Equipment will be housed in a NEMA 1 Painted Steel Enclosure suitable for wall mounting. Unit will monitor wet well level via new A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 1 HP at 8.6 FLA Hydromatic submersible pumps. VFDs to be used for phase conversion. (No need for adjusting frequency) Unit to include the following main items: To Include:

- 1 NEMA Type 4X - Steel Enclosure, with back panel and 1/2" Insulation (Est. 48" x 36" x 12") - Actual size to be determined during final design.
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 - Main and Emergency Breaker w/Manual Transfer Switch (HDL)
- 1 Surge Arrestor
- 1 - Interior Enclosure Light Hoffman 24VDC LED
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 10 Amp 1 Pole QOU Circuit Breaker (GFI)
- 1 10 Amp 1 Pole QOU Circuit Breaker (Site Lighting)
- 1 10 Amp 1 Pole QOU Circuit Breaker (Panel Heater)
- 1 15 Amp 1 Pole QOU Circuit Breaker (Spare)
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Yaskowa. VFD Sized for 15 HP at 67 FLA motors with Circuit Breaker (HDL)
- 2 Selector Switch – HOA
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 1 - Motor Heat Sensor Pilot Light, Manual Reset Pushbutton, and Alarm Activation
- 1 - Macromatic LCP Seal Failure Pilot Light, and Alarm Activation
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 LC150 Base Controller w/Operator Interface
- 1 Link2Site Modem Kit Communications Cellular Modem, Power Cable, Comm Cable, 3 DB Antenna
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- 1 - Strobe 12-48 VDC Alarm Light
- 1 - 15 Amp GFI Receptacle - Inner door/door mount
- 1 - Submersible Level Transmitter - Breather Bag
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 Muni-Float with 50 Ft. Cable

- 1 A1000i Submersible Level Transmitter w/60 Ft; Cable
- 1 A1000 Cable Suspension Kit with 21 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Reuse Existing Generator Receptacle - Panel Installer to Relocate at time of installation.

E. Qty (1) Kachemak Drive LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 208/120 volt, 3 Phase, 60 Hertz. Equipment will be housed in a NEMA 1 Painted Steel Enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 15 HP @ 26 FLA Flygt motors. Unit to include the following main items:

- 1 NEMA Type 1 - Steel Enclosure, with back panel (Est. 60" x 30" x 12") - Actual size to be determined during final design.
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Sq D. VFD Sized for 15 HP at 26 FLA motors with Circuit Breaker (QOU)
- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Flygt Motors)
 - 2 Motor Heat Sensor Alarm Activation, and Aux Contact
 - 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors
- 1 - Controller - Provisions for Field Mounting Link2Site Modem

Recommendation: - Exterior panel/enclosure thermostatically controlled ventilation to allow heat produced by VFDs to escape.

F1. Qty 1 Kachemak City LS (Retrofit)

Equipment to furnished loose for in field mounting by others. New equipment to operate on existing voltages. New VFDs will replace existing motor starters. Front panel mounted equipment (Indicators, Operators, Resets) will be supplied on a new bezel to cover removed pump operators and indicators. Equipment for panel cooling will be supplied for installation on to existing panels. To Include the following main items:

- 2 VFD – Yaskawa sized for 230 volt, 3 phase, up to 7.5 HP at up to 25 FLA motors
- 1 Thermostatically Controlled Ventilation System
- 2 Bezels sized to cover the holes of unused operators/monitors. – To Include the following operators and indicators:
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator VFD Failure
- 1 Power Conditioner – 120 VAC - Sola

Note: Existing panel to be retained and reworked to accommodate the above new equipment. It is anticipated that the following existing panel equipment will need to be moved to accommodate the replace the existing motor starters with new VFDs:

- Relocate Relays for Common Alarm, Liquid Level Alarm, and Flasher
- Suggest – Move LC-150 controller up higher and use right side to mount new VFDs.
- Space available in panel after removal of existing motor starters to accommodate new VFDs. (It is anticipated that each VFD will require ~14" H x 8" W x 7" D space for mounting.)

F2 - Qty (1) Kachemak City LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 230 volt, 3 Phase, 60 Hertz. Equipment will be housed in a NEMA 1 Painted Steel Enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 7.5 HP @ 25 FLA Flygt motors. Unit to include the following main items:

- 1 NEMA Type 1 - Steel Enclosure, with back panel (Est. 60" x 36" x 12") - Actual size to be determined during final design.
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Sq D. VFD Sized for 7.5 HP at 25 FLA motors with Circuit Breaker (QOU)
- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2

- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Flygt Motors)
 - 2 Motor Heat Sensor Alarm Activation, and Aux Contact
 - 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors
- 1 - Controller - Provisions for Field Mounting Link2Site Modem

Recommendation: - Exterior panel/enclosure thermostatically controlled ventilation to allow heat produced by VFDs to escape.

G - Qty (1) Bay Avenue LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 240/120 volt, 3 Phase, 60 Hertz. Equipment will be housed in a NEMA 4X 304 SS Enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 3 HP @ 10.6 FLA Hydromatic motors. Unit to include the following main items:

- 1 NEMA Type 4X 304 SS - Steel Enclosure, with back panel (Est. 60" x 24" x 18") - Actual size to be determined during final design. (Note - Customer to Verify if this enclosure will fit in existing enclosure and allow door to open fully.)
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Sq D. VFD Sized for 3 HP at 10.6 FLA motors with Circuit Breaker (QOU)
- 2 Selector Switch – HOA

- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Hydromatic Motors)
 - 2 Motor Heat Sensor Alarm Activation, and Aux Contact
 - 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors
- 1 - Controller - Provisions for Field Mounting Link2Site Modem

H - Qty (1) Beluga LS (New Control Panel)

Duplex Lift Station Motor Control Panel for operating on protected 240/120 volt, 3 Phase, 60 Hertz. Equipment will be housed in a NEMA 4X fiberglass enclosure suitable for wall mounting. Unit will monitor wet well level via existing A1000i Loop Powered Submersible Level Transmitter (Primary) and new 3 Float switches (Backup) and provide duplex pump down control of 10 HP @ 25 FLA Flygt motors. Unit to include the following main items:

- 1 NEMA Type 4X Fiberglass enclosure, with back panel (Est. 60" x 24" x 18") - Actual size to be determined during final design. (Note - Customer to Verify if this enclosure will fit in existing enclosure and allow door to open fully.)
 - Circuit breaker cutouts with mounting bracket
- 1 Incoming Power Terminal Block
- 1 Surge Arrestor
- 1 Phase/Voltage Monitor with input fusing
- 1 Phase/Power Fail Pilot Light, Alarm Activation, and Aux Contact
- 1 Power On Light
- 1 Circuit Breaker – Control Power
- 1 Power Conditioner 120/120 Volt - (Sola HD - Used to Power Only DC Power Supply, LC-150, Link2Site)
- 1 Thermostatically Controlled Ventilation System
- 1 Heater with High Temperature Cutout – Condensation Protection
- 2 Combination Sq D. VFD Sized for 10 HP at 25 FLA motors with Circuit Breaker (QOU)

- 2 Selector Switch – HOA
- 2 Potentiometer, 1 Turn – VFD Speed
- 2 Indicator Run
- 2 Indicator VFD Failure Alarm Activation, and Aux Contact
- 2 Running Time Meter
- 2 Motor Current Transmitters Display (Front Panel Mounted) - Pump 1 and 2
- 1 Motor Current Transmitter - Common - For Input to LC-150 Controller
- 2 Motor Protection Modules with Built In Indicators and Reset Push Button (Compatible with Flygt Motors)
 - 2 Motor Heat Sensor Alarm Activation, and Aux Contact
 - 2 Seal Failure Alarm Activation, and Aux Contact
- 1 DC Power Supply
- 1 Battery Backup System (~4 Hours)
- 1 Provide Cutout, Space and Wiring (Plugs) for Customer Supplied - LC-150 Duplex Controller (Primary)
 - Customer will mount and existing LC-150 controller in field.
- 1 Provide Space and Wiring for Customer Provided/Existing Link2Site Modem
 - Customer will mount and existing Link2Site Modem in field.
- 1 High Alarm Pilot Light, Manual Reset Pushbutton, Alarm Activation, and Aux Contact - (Float)
- 1 Indicators - Backup Active, Alarm Activation, and Aux Contact
- 1 Push Button - Backup Reset
- 1 DPC-4F Backup Level Controller (Float)
- 1 Intrinsic Safety Barrier (Analog)
- 3 Intrinsic Safety Barrier (Float)
- AR Relays, Timers, Terminal Blocks, Fuses, Wire Numbers
- Common Alarm Aux Contact
- Engraved Nameplates
- UL Label 698
- Self Laminating Wire Numbers
- Control Relays as required
- Terminal Blocks and Ground Lugs as Required
- EQUIPMENT SHIPPED LOOSE FOR IN FIELD MOUNTING:
- 3 - Muni-Float with 50 Ft. Cable

CUSTOMER SUPPLIED ITEMS:

- 1 - Controller - Provisions For Field Mounting LC-150 controller base and OI - To Include Wire Harness to Plug Connectors
- 1 - Controller - Provisions for Field Mounting Link2Site Modem

Spare Parts:

- VFD 240 volt 5 HP at 15 FLA (Campground LS)
- VFD 480 volt 15 HP at 22 FLA (Spit Fish Grinder)
- VFD 240 volt 15 HP at 67 FLA (Launch Ramp LS)
- VFD 240 volt 1 HP at 10 FLA (30 Acres – Single phase conversion)
- VFD 240 volt 15 HP at 26 FLA (Kachemak Dr. LS)
- VFD 240 volt 7.5 HP at 25 FLA (Kachemak City LS)
- VFD 240 volt 3 HP at 10.6 FLA (Bay Ave LS)
- VFD 240 volt 10 HP at 25 FLA (Beluga LS)

Services

- Engineering/Drafting
- Documentation *Electronic/Hardcopy* (Submittal and O&M Manuals) – See clarifications for specific documentation included.
- Preshipment Factory System Testing
- Warranty, Factory Standard 1 Year
- Freight Prepaid and Added (FOB Shipping Point)

Clarifications:

1. PRIMEX® requires a purchase order for all submittals for the amount quoted with "HOLD FOR APPROVAL" noted.
2. This proposal includes PRIMEX standard documentation package to include the following:
 1. Schematics
 2. Enclosure Layout
 3. Basic Bill of Material
 4. Cut Sheets/Data Sheets
 5. Description of Operation
3. Documentation package is provided electronically
4. PRIMEX quotations are based on factory estimated lead times at the time of quotation and can change without notice. PRIMEX does not accept responsibility for any delays in equipment delivery which are beyond our control. Expedited shipments may be available at additional cost and are at the discretion of the factories.
 1. Allow 6-8 weeks after receipt of Purchase Order for Engineering submittals to be sent.
 2. Allow 12-16 weeks for manufacturing and testing, after a formal release to production is received.
 3. Allow 15 Days transit time to job site.
 4. The above time estimates above DO NOT include time for ENGINEERS submittal review or equipment installation.
5. Proposal is based on using PRIMEX standard equipment and designs including:
 1. 22 MM Selector Switches and Indicators
 2. FV LED Indicator Lights
 3. Variable Speed Drives, Circuit Breakers
 4. Controllers
 5. Level Sensors
6. System uses VFDs for control of motors. Proposed VFDs cannot be mounted more than 100 feet away from motor. Consult factory if motor is to be mounted more than allowed distance from VFDs.
7. Panel sizing is estimated and will be determined during final design. In the event available panel space is limited, some components may need to be shipped loose for external mounting (Example – Sola Power Conditioners)
8. It is recommended that the motor voltages, HP and FLA at Launch Ramp LS is verified. The motor FLA data provided by City personnel appears to be ~ 50 % high based on voltage and HP of the motor.

Items specifically not included in this proposal

1. Freight (To be prepaid and added)
2. Sales or Use Tax
3. Permits of any kind
4. Performance, Payment or Equipment Bond of any kind
5. Extended or Special Equipment Warranty Coverage is not included unless specifically stated on this proposal.
6. Receiving and Storage of Equipment on the job site
7. Installation or Mounting of Equipment or Instruments and Job Site Labor other than specifically listed in this proposal.
8. Installation Materials, Brackets, Channel Strut, Wire, Clamps, Piping, Junction Boxes, Field Assemblies, etc., unless specifically described in our material list.
9. Mounting of any control panels or hardware
10. Field Terminations
11. Panel to Panel or Panel to Instruments Interconnect Drawings.
12. Witnessed Factory Acceptance Tests
13. Utility Meters, Meter Sockets, CT Cabinets, or Meter Stands
14. Coordination with utility company with regards to minimum short circuit rating for equipment. Unless otherwise directed all equipment provided in this proposal will be rated for 5KAIC or less.
15. Remote Mounted Disconnect Switches (Fused or Non Fused)
16. Automatic Transfer Switches
17. Generator
 1. Generators
 2. Receptacles
 3. Plugs
18. Lighting Panels or Panelboards
19. Sensors
 1. Flow

11/03/22

- 2. Temperature
- 20. Pressure Gauges
- 21. Valves
- 22. Stilling Wells
- 23. Area Flood Lights or Photo Cells
- 24. Enclosure Padlock(s)
- 25. Electrical Testing Services
 - 1. Harmonic
 - 2. ARC Flash
- 26. Calculations
 - 1. Harmonics
 - 2. Seismic
- 27. Field Services
 - 1. Installation
 - 2. Start Up
 - 3. Training
- 28. Antenna Masts
- 29. Spare Parts – Except as listed in Bill of Materials.
- 30. Link2Site Modems or Associated Antennas or Service fees. – Except as listed in Bill of Materials.
- 31. PRIMEX's sole obligation shall be the provision of those items specified within the "included" items listed above. The lack of an explicit exclusion does not imply inclusion.

Pricing Breakouts	Quantity	Installation Net Price	Primex
			Ext Price
Engineered Panels: Q-30869-1 - Unit B - Spit Fish Grinder (Retrofit)	1	21,969.00	\$ 9,191.00 X
Engineered Panels: Q-30869-1 - Unit A - Campground LS	1	17,546.00	\$ 17,992.00
Engineered Panels: Q-30869-1 - Unit C - Launch Ramp LS	1	17,546.00	\$ 23,635.00
Engineered Panels: Q-30869-1 - Unit D - 30 Acres LS	1	31,366.00	\$ 26,646.00 X
Engineered Panels: Q-30869-1 - Unit E - Kachemak Drive LS	1	29,010.00	\$ 22,274.00
Engineered Panels: Q-30869-1 - Unit F1 - Kachemak City LS (Retrofit)	1	17,546.00	\$ 9,613.00
Engineered Panels: Q-30869-1 - Unit F2 - Kachemak City LS (New Panel)			\$
Engineered Panels: Q-30869-1 - Unit G - Bay Avenue LS	1	17,546.00	\$ 23,452.00
Engineered Panels: Q-30869-1 - Unit H - Beluga LS	1	17,546.00	\$ 21,471.00
Engineered Panels: Q-30869-1 - Spare Parts - VFDs	1		\$

Proposal Amount \$ 332,458.00 = \$ 324,359 + \$ 8,109

Freight Terms: FOB Origin, Freight Prepaid and Add

Inclusions:

- 1. Installation
- 2. Engineered Panels as Describe Above
- 3. Demo existing floats & brackets
- 4. Provide & Install temp control station for by-pass
- 5. Prevailing Wages Inside Rates
- 6. Performance Bond (8,109.00)

Exclusions:

- 1. Lift Station 'By-Pass'
- 2. Winter Work Hours
- 3. Existing lift station repairs & violations (if any)
- 4. Contained space requirements monitoring
- 5. Utilities cost & permits
- 6. Locates & surveys
- 7. Notice of Work for the State of Alaska File Fee
- 8. Certified Payroll

Handwritten calculation in a box:
 \$ 324,359
 - 89,172

 \$ 235,187

Less: Fish Grinder \$31,160
 30 Acres \$ 58,012
 \$ 89,172

not including
 freight, contingencies
 or bonding



System Integrators since '1982'

CITY OF HOMER
FINANCIAL SUPPLEMENT

PROJECT NAME	<u>Sewage Lift Station Electrical</u>	DATE	<u>11/08/2022</u>
DEPARTMENT	<u>Public Works</u>	SPONSOR	<u>City Manager/PW Director</u>
REQUESTED AMOUNT	<u>\$ 271,517</u>		

DESCRIPTION	<p>In 2020, the City's approved Capital Budget, adopted via Ordinance 20-57, included \$210,900 to upgrade the SCADA in the City's eight lift stations, which are identified on the City's Water/Sewer Asset Management Plan as being in critical condition and high risk.</p> <p>This project was delayed for a variety of reasons and was one of the projects recommended for "repackaging" in the City Manager's Memorandum 22-157.</p> <p>We have identified six of the lift stations as being at the most risk of failure and plan to renovate those first and the other two later.</p>
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FUNDING SOURCE(S)	OPERATING	GF CARMA	GF FLEET CARMA	PORT RESERVES	WATER CARMA
	0%	0%	0%	0%	0%
	HAWSP	HART-ROADS	HART-TRAILS	PORT FLEET RESERVES	SEWER CARMA
	0%	0%	0%	0%	100%

FUNDING SOURCE 1: SEWER CARMA	FUNDING SOURCE 2:	FUNDING SOURCE 3:
Current Balance <u>\$ 1,897,658</u>	Current Balance _____	Current Balance _____
Encumbered <u>\$ 1,467,976</u>	Encumbered _____	Encumbered _____
Requested Amount <u>\$ 271,517</u>	Requested Amount _____	Requested Amount _____
Other Items on Current Agenda <u>\$ 98,281</u>	Other Items on Current Agenda _____	Other Items on Current Agenda _____
Remaining Balance <u>\$ 59,884</u>	Remaining Balance _____	Remaining Balance _____
FUNDING SOURCE 4:	FUNDING SOURCE 5:	FUNDING SOURCE 6:
Current Balance _____	Current Balance _____	Current Balance _____
Encumbered _____	Encumbered _____	Encumbered _____
Requested Amount _____	Requested Amount _____	Requested Amount _____
Remaining Balance _____	Remaining Balance _____	Remaining Balance _____

ORDINANCE REFERENCE SHEET
2022 ORDINANCE
ORDINANCE 22-80

An Ordinance of the City Council of Homer, Alaska, Amending the FY23 Capital Budget by Appropriating \$271,517 from the Sewer Capital Asset Repair and Maintenance Fund for the Rehabilitation of the Electrical Control Works for the City's Sewage Lift Stations.

Sponsor: City Manager/Public Works Director

1. City Council Regular Meeting November 14, 2022 Introduction

Memorandum 22-198 from Public Works Director as backup