

Key Largo Wastewater Treatment District
Board of Commissioners Meeting
Agenda Item Summary

Meeting Date:
August 20, 2024

Agenda Item Number: M-2

Action Required:
Yes

Department:
Capital Projects

Sponsor:
Ed Castle

Subject:

VPS Mods CO#5-Longer Cables Vac Trailer,Cable Extensions & Wiring Pins

Summary of Discussion:

This change order is for increasing the length of cables which are to be pulled from the front of the emergency vacuum trailer to the receptacles at the vacuum stations due to design changes post-construction, as well as for re-wiring and up-sizing the cables for the 20hp sewage pumps at Vac Stations E, G, and I and providing cable enlarging pin adapters to ensure compatibility and meet the required minimum cable size for the 75 hp pumps at Vacuum Stations A, D, and J/K.

<u>Reviewed / Approved</u>	<u>Financial Impact</u>	<u>Attachments</u>
Operations: _____	\$ 10,946.97	1. Memo
Administration: _____	Expense	2. Change Order 5
Finance: _____	Funding Source:	
District Counsel: _____	Grant(s)	
District Clerk: _____	Budgeted:	
Engineering: _____	No	

Approved By: _____
General Manager



Date: 8.15.24

MEMO

To: KLWTD Commissioners

From: Ed Castle, PE – Weiler Engineering

Date: August 20th, 2024

Re: KLWTD VPS Mods Project Change Order #5

Overview:

This memo outlines the recommendations for Change Order 5 related to the Vacuum Pumping Station (VPS) Upgrades project. This project included the emergency vacuum trailer and the modifications needed at the VPSs to connect to the trailer. The proposed changes are needed to accommodate that as-built configuration of the emergency trailer and to accommodate unforeseen electrical conductor upsizing needed to comply with Florida Building Code requirements.

Change Order 5 Recommendations:

1. Extension of Power and Signal Cables:

- **Original Specification:** The initial bid specifications included 25-foot power and signal cables, based on the assumption that the connection points would be mounted on the rear of the trailer and that they trailer could back up to the VPSs.
- **Change:** KLWTD staff determined that the best configuration for installation of the quick-connects was to locate them near the tongue of the trailer, utilizing the metal bulkhead for added support. With the connection points installed, KLWTD staff deployed the trailer to the VPSs to determine the best location for setting the trailer. Staff determined that a 50' cord length was needed at Vacuum Station E to allow for convenient location of the trailer.
- **Rationale:** Extending the cables will ensure that all connection points are easily accessible and securely mounted, improving the durability and operational ease of the trailer during emergency deployments.

2. Conductor Sizing for Sewage Pumps:

- **Issue Identified:** The current power conductors for the sewage pumps on the VPS trailer are standardized for 75 HP pumps with connectors sized for a #6 wire gauge. However, some stations, specifically Vac E, Vac G, and Vac I, use 20 HP pumps with smaller #8 wires. It was assumed that since overload protection for the 20 HP pumps is provided in the control panel on the trailer, the existing conduit and conductors feeding the 20 HP pumps would be adequate. However, the National Electric Code (NEC)

requires that the conductors be sized consistently with the incoming feed conductors.

- **Change:** It is recommended to pull new conductors from the sewage pumps to the switch panel for the 20 HP pumps to match the wire gauge to the connector size appropriately per NEC requirements.
- **Rationale:** Adjusting the conductor size will ensure compatibility with the existing infrastructure and maintain compliance with NEC guidelines. This approach would standardize connections across stations while accommodating the specific needs of those with 20 HP pumps.

Conclusion:

The proposed recommendations in Change Order 5 are intended to optimize the operation and reliability of the VPS trailer across all KLWTD stations. Extending the cables and resizing conductors, as recommended, would address the challenges encountered during installation and support the overall integrity of the emergency system. WEC and District Staff recommend approval of Change Order 5.

**SECTION 00950
CHANGE ORDER FORM**

CONTRACTOR ("Contractor"): Reynolds Construction, LLC	CHANGE ORDER No. 5 PROJECT TITLE: KLWTD Vacuum Station Modifications PROJECT No. 03105.078:110		
OWNER: Key Largo Wastewater Treatment District ("Owner" or "District")	ENGINEER: Weiler Engineering 6805 Overseas Hwy Marathon, Florida 33050		
DATE OF ISSUE: August 20 th , 2024	EFFECTIVE DATE: <u>August 20th, 2024</u> , contingent upon approval by the District's Board of Commissioners. Contractor shall commence work only after receipt of notification to proceed by the District's Contract Manager.		
<p>Description of Work to be Performed: The Contractor is hereby authorized and directed to perform the following Work, generally described as: Procuring additional length of cable and installing longer cable sets for the emergency vac trailer per Weiler Engineering's RFI response #8 and PCO #5 attached. Additionally, this change order is for the procurement of larger cable size and cable enlarging pin adapters and to provide labor to install them to accommodate the minimum requirements for cable size for the sewage pumps as specified in the attached PCO #6 and in Weiler Engineering's response to RFI #13. The Contractor shall remain responsible for delivery and acceptance of the equipment and materials and shall retain full responsibility and liability for all aspects of the work as defined in the Contract Documents.</p> <p>Reason for Change: The reason for the change is due to the cable sets not being long enough to extend to the vacuum trailer for PCO #5. For PCO #6, the reason for the change is because the electrical wiring in place for the sewage pumps does not meet the minimum required size and the installed ground conductor is below the minimum allowable conductor size for the receptacle provided.</p> <p>Work to be Performed is more specifically described as: Reynolds to procure piping materials and provide labor for the piping modifications.</p> <p>Attachments: Reynolds PCO #5 Cable Set Length Extension, WEC RFI Response #8, Reynold's PCO #6 Wiring Modifications, WEC RFI Response #13</p>			
<p>Total Proposed Increase (decrease) in Contract Price and Contract Time for this Change Order</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; padding: 5px;"> Increase (decrease) in Contract Price: <div style="text-align: right;">\$10,946.97</div> </td> <td style="width: 50%; border: none; padding: 5px;"> Increase (decrease) in Contract Time (Calendar days): <div style="text-align: right;">0 Days</div> </td> </tr> </table>		Increase (decrease) in Contract Price: <div style="text-align: right;">\$10,946.97</div>	Increase (decrease) in Contract Time (Calendar days): <div style="text-align: right;">0 Days</div>
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<p>Acknowledgments:</p> <p>The aforementioned change, and work affected thereby, is subject to and governed by all provisions of the original Agreement and RFP. It is expressly understood and agreed that the approval of this Change Order shall have no effect on the original Agreement, including all GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, and STANDARD SPECIFICATIONS, other than matters expressly provided herein.</p> <p>This Change Order constitutes full and mutual accord and satisfaction for the adjustment of the Contract Price and Contract Time as a result of increases or decreases in cost and time of performance caused directly and indirectly from the change. Acceptance of this Change Order constitutes an agreement between OWNER and CONTRACTOR that the Change Order represents an equitable adjustment to the Agreement and that CONTRACTOR shall waive all rights to file a Contract Claim or claim of any nature on this Change Order. Execution of this Change Order shall constitute CONTRACTOR's complete acceptance and satisfaction that it is entitled to no more costs or time (direct, indirect, impact, etc.) pursuant to this Change Order. Owner may require consent of the Contractor's surety, if any, to the terms of this Change Order.</p>			
Original Contract Price: \$3,155,800.00	Original Contract Time: 365 Days (Calendar days or dates)		

SUMMARY OF PRIOR CHANGE ORDERS			
C-O No.	Description of Change	Change in Contract Price	Change in Contract Time
1	Owner Direct Purchase of AIRVAC parts and valve packages from Ferguson and Fluid Control Specialists	\$ (500,192.00)	0 Days
2	Additional Scope of work to include replacing 18" butterfly valve between Post-EQ tank and Booster Pumps	\$ (84,880.31)	0 Days
3	Owner Direct Purchase of piping materials	\$ (44,360.01)	0 Days
4	Stainless Steel Piping Mods, Emergency Vac Trailer Mods, & Alternate Influent Valves for Vac E	\$104,252.79	175 Days
5		\$	Days
TOTAL OF ALL PRIOR CHANGES		\$(525,179.53)	175 Days
CURRENT CONTRACT PRICE AND TIME (Adjusted by Prior Change Orders BUT before adjusting for this Change Order)		\$2,630,620.47	535 Days
NEW CONTRACT PRICE AND TIME (Adjusted by Prior Change Orders AND this Change Order)		\$2,641,567.44	535 Days
Original Contract Substantial Completion Date: 05/18/2024		New Contract Substantial Completion Date: 11/09/2024	
APPROVAL AND CHANGE ORDER AUTHORIZATION			
Contractor: <u>Reynolds Construction LLC</u> By (Signature) _____ <u>Joshua Vondersaar, Operations Manager</u> (Printed Name and Title of Officer) (Date) _____ ATTEST: _____ (Secretary) (Corporate Seal)		Owner: <u>Key Largo Wastewater Treatment District</u> By (Signature) _____ <u>Peter Rosasco, General Manager</u> (Printed Name and Title of Officer) (Date) _____ ATTEST: _____ District Clerk (Seal)	