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

Meeting Date: July 2, 2024

Agenda Item Number: M-3

Action Required: Yes

Department: Capital Projects

Sponsor: Steve Suggs

Subject:

KLWTD Power Conditioning & Electrical Upgrades Project

Summary of Discussion:

WEC is requesting approval to publish the bid solicitation for the KLWTD Power Conditioning project. The scope of work includes providing and installing electrical infrastructure to ensure the operation of the WWTP and Vac Station E during times of power outages and storm events. The power conditioning and electrical features will be installed at the WWTP and Vac Station E located at 100301 Overseas Highway.

Reviewed / Approved		Financial Impact	Attachments
Operations:	_____	$ 3,656,919.86	1. Weiler Engineering Memo
Administration:	_____	Expense	
Finance:	_____	Funding Source: Grant(s)	
District Counsel:	_____		
District Clerk:	_____	Budgeted: Yes	
Engineering:	_____		

Approved By: _____ **Date:** 6/27/2024

General Manager

"Excellence in Engineering"

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MEMO

To: KLWTD Commissioners

From: Steve Suggs, PE – Weiler Engineering

Date: July 2nd, 2024

Re: KLWTD Power Conditioning and Electrical Upgrades Project

Project Overview:
Weiler Engineering Corporation (WEC) is proposing a critical project to enhance the electrical infrastructure at the KLWTD Wastewater Treatment Plant (WWTP) and Vacuum Station E. This project consists of two primary components: power conditioning and electrical conduit upgrades.

Part 1: Power Conditioning

1. SureVolt Electronic Voltage Regulating Transformers:
    a. The installation of SureVolt devices will regulate incoming voltage, ensuring clean and stable power for the WWTP. These transformers are rated at 2000 amps and 1500 kVA, significantly improving power quality and reliability.
2. RayVoss Surge Protection Devices:
    a. To safeguard against large surges, such as those caused by lightning strikes, RayVoss surge suppression devices equipped with Strikesorb technology will be installed on critical systems and equipment. This will protect the WWTP from both internal and grid-related surges.
3. Lightning Protection:
    a. The existing lightning protection system on the tanks has corroded and is no longer effective. We propose installing new lightning rods to enhance the plant's protection against lightning strikes.

Part 2: Electrical Conduit Upgrades

1. The existing galvanized conduit, installed during the WWTP's construction, has corroded, leading to frequent breaks in both power and signal wires. This corrosion disrupts the treatment process and increases maintenance costs.
2. We propose replacing the corroded conduit with Schedule 80 PVC conduit, installed above grade for ease of access and troubleshooting. This upgrade will involve rerunning the majority of power and signal wires, allowing for continuous connections to control panels, power panels, and motor control centers (MCCs). By eliminating numerous terminal boxes, we will reduce potential points of failure and improve system reliability.

Project Benefits:

1. Enhanced Resiliency: By installing power conditioning equipment and upgrading the electrical conduit system, KLWTD will significantly increase the resiliency of the WWTP to various electrical interruptions.
2. Improved Reliability: The proposed upgrades will ensure a stable and reliable power supply, minimizing downtime and operational disruptions.
3. Reduced Maintenance Costs: Above-grade PVC conduit will be more durable and accessible, reducing the frequency and cost of maintenance and repairs.

Estimated Cost and Funding:

The estimated cost of the project is $3,656,919.86, and it is grant-funded.

KLWTD Power Conditioning Project Cost Estimate

Description	**Units**	**Qty**	**Unit Cost**	**Total Cost**
Mobilization	LS	1	$158,308.22	$158,308.22
Bonds & Insurance	LS	1	$92,218.38	$92,218.38
Clearing, Grubbing, Grading	SY	500	$75.00	$37,500.00
Power wire/ conduit installed	LF	25200	$45.00	$1,134,000.00
Signal Wire / Conduit Installed	LF	37500	$30.00	$1,125,000.00
Electrical Room Modifications	EA	1	$20,000.00	$20,000.00
AC Mini Split	LS	1	$12,000.00	$12,000.00
Rayvoss SPD Installed	EA	10	$11,000.00	$110,000.00
Lightning Protection	LS	1	$94,321.00	$94,321.00
New 3000A ATS	LS	1	$111,125.00	$111,125.00
Installation of ATS	LS	1	$80,000.00	$80,000.00
Surevolt 1500 kVA	LS	1	$200,000.00	$200,000.00
Install Sure volt	LS	1	$150,000.00	$150,000.00
Contingency 10%	LS	1	$332,447.26	$332,447.26
Total Estimate				**$3,656,919.86**

Request for Approval:

We seek the Board's approval to proceed with this project and issue a bid solicitation. By approving this initiative, KLWTD will take a significant step towards ensuring the long-term reliability and efficiency of its wastewater treatment operations.