

RESOLUTION NO. 22-028

**A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, APPROVING A CHANGE ORDER TO TASK ORDER NO. 9 TO BLACK & VEATCH CORPORATION FOR ENGINEERING AND DESIGN SERVICES FOR REPLACEMENT OF ACTIVATED SLUDGE PUMPS, TO INCLUDE RETURN ACTIVATED SLUDGE AND WASTE ACTIVATED SLUDGE PLUMBING AT THE RICHARD A. HEYMAN ENVIRONMENTAL PROTECTION FACILITY IN AN AMOUNT NOT TO EXCEED \$55,358.00; AUTHORIZING ANY NECESSARY BUDGET ADJUSTMENTS; AUTHORIZING THE CITY MANAGER TO EXECUTE DOCUMENTS UPON CONSENT OF THE CITY ATTORNEY; PROVIDING FOR AN EFFECTIVE DATE**

WHEREAS, in Resolution No. 17-207, the City Commission approved a three-year contract for General Engineering Services to Black & Veatch Corporation and in Resolution No. 20-142 the contract was extended two years; and

WHEREAS, Task Order 9 was approved in Resolution 21-21-078, and City staff and consultants recommend a change order to include evaluation of alternate plumbing materials and design of replacement plumbing and valves at the manifold for the RAS and WAS systems, with the goal of reducing long-term costs, maintenance efforts and to improve reliability; and

WHEREAS, Section 2-845(a) of the Code of Ordinances requires City Commission approval of any change order in excess of five percent of the contract price any public service building or capital improvement project; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF KEY WEST, FLORIDA, AS FOLLOWS:

Section 1: That the attached Change Order to Task Order No. 9 to Black & Veatch Corporation for Engineering Evaluation and Design Services for Replacement of Activated Sludge Pumps at the Richard A. Heyman Environmental Facility, in an amount not to exceed \$55,358.00, is hereby approved.

Section 2: That adequate funds for this Change Order to Task Order No. 9 are available in account Sewer/Treatment Plant/CIP 401-3504-535-6500, and any necessary budget transfers or adjustments are hereby approved.

Section 3: That the City Manager is authorized to execute any necessary documents, upon consent of the City Attorney.

Section 4: That this Resolution shall go into effect immediately upon its passage and adoption and authentication by the signature of the Presiding Officer and the Clerk of the Commission.

Passed and adopted by the City Commission at a meeting held this 19th day of January, 2022.


Authenticated by the Presiding Officer and Clerk of the Commission on 20th day of January, 2022.

Filed with the Clerk on January 20, 2022.

Mayor Teri Johnston	<u>Yes</u>
Vice Mayor Sam Kaufman	<u>Yes</u>
Commissioner Gregory Davila	<u>Yes</u>
Commissioner Mary Lou Hoover	<u>Yes</u>
Commissioner Clayton Lopez	<u>Yes</u>
Commissioner Billy Wardlow	<u>Yes</u>
Commissioner Jimmy Weekley	<u>Yes</u>

  
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TERI JOHNSTON, MAYOR

ATTEST:

  
\_\_\_\_\_  
CHERYL SMITH, CITY CLERK



## THE CITY OF KEY WEST

Post Office Box 1409 Key West, FL 33041-1409 (305) 809-3700

### EXECUTIVE SUMMARY

**Date:** December 22, 2021

**To:** Patti McLauchlin, City Manager

**CC:** John Paul Castro, Utilities Director

**From:** Ian McDowell, Associate Engineer

**Subject:** Approve change order to task order no. 9 from Black & Veatch Corporation for engineering evaluation and design services for replacement of activated sludge pump plumbing at the Richard A. Heyman Environmental Protection Facility

#### **Action Statement**

Approve change order for task order No. 9 from Black & Veatch Corporation in the amount for \$55,358.00 for engineering evaluation and design services for replacement of return activated sludge (RAS) and waste activated sludge (WAS) plumbing at the wastewater treatment facility, under the General Engineering contract approved in Resolution 17-207 and extended in Resolution 20-142. Authorize the City Manager to execute this agreement and any necessary budget transfers/amendments. The original design task order was for \$92,813.00 bringing the total design cost to \$148,171.00.

#### **Background**

The RAS and WAS pumps at the Richard A. Heyman Environmental Protection Facility (RAHEPF) are used to maintain balance of microorganisms in the treatment process of wastewater. These pumps are over 30 years old and exhibit significant signs of wear and tear. Localized equipment related to the pumps, including instrumentation and plumbing, show similar signs of age-related deterioration. It is desirable to renew the RAS pumps, WAS pumps, instrumentation, and plumbing to maintain and improve reliability and serviceability of the critical systems at the RAHEPF. Task order #9 was approved in resolution 21-078 for the amount of \$92,813.00.

After further review, both RAHEPF staff and city of Key West staff suggest that the extent of plumbing replacement be expanded to include the manifold and valves immediately after the RAS and WAS pumps. This plumbing consists of 35-year-old ductile iron pipe that deteriorates from the inside out with no indication of condition until failure. In November, while city staff

were in discussions about the need for additional work and potential change order with Black & Veatch, an elbow in the RAS system failed and flooded the utilidor at RAHEPF.

**Purpose and Justification**

The purpose of this change order is to include evaluation of alternate plumbing materials and design of replacement plumbing and valves at the manifold for the RAS and WAS system with task order No. 9. Specifically, Black & Veatch will evaluate HDPE as a piping and valving material as opposed to the existing ductile iron pipe. HDPE does not corrode like ductile iron pipe and is significantly easier for plant staff to repair and replace. The evaluation and design represent a significant step in updating plumbing materials at RAHEPF which can reduce long-term costs, maintenance efforts, and improve reliability.

This resolution supports Key West Strategic Plan infrastructure goal #4 and economic goal #1: *Long-term sustainability of the City's hard assets*

**Financial**

Funding will come from account 401-3504-535-6500 in project number SE35042102. Staff has reviewed the hourly cost breakdown and believe the rate mixture is properly balanced and match the hourly rates set forth within the contract documents.

**Recommendation**

Staff recommends approving task order for \$55,358.00 for Black & Veatch Corporation to provide engineering evaluation and design services to replace plumbing of the activated sludge pumps at RAHEPF and authorizing the City Manager to execute this agreement and any necessary budget transfer/amendments.

CLIENT	City of Key West	TREND NUMBER	1
PROJECT	RAS WAS Pump Replacement	REVISION NUMBER	

TREND NAME	DATE INITIATED	INITIATED BY	DATE NOTIFIED	STATUS (A, O, P, or W)	TOTAL TREND COST			
					Trend Eval.	Engineering Cost	Construction Cost	Total Cost
Additional pipe replacement	8/18/2021	Key West	12/21/21	P	\$ -	\$ 55,358		\$ 55,358

TREND DATA

DESCRIPTION OF TREND

During the 60% workshop on 11/10/21 the City confirmed that all the pipe and valves would need to be replaced in the pipe gallery up to the elbow flange. The City requested to develop a analysis to determine which pipe material would be the most suitable. BV estimated the additional effort for designing the new pipe support and creating the additional valves specifications (ball and knife valves are now needed), as the scope of work only included the pipe replacement from the pump up to the common header. This additional effort will also include the creation of an evaluation report as well as the Client's review before starting with the new design. The design will include a new internal 100% QC review including the new design. This specific effort will include:

- Pipe material evaluation report to the existing Ductile Iron pipe - specifically, consider HDPE and/or FRP.
- Revise current demolition sheets to include limits of piping demolition for replacement.
- Revise current mechanical drawings to include limits of new/replacement piping.
- Miscellaneous ball valve spec
- Knife Gate valves spec
- Pipe support details (noting that new/additional details will likely be required to accommodate alternative pipe materials)
- Connection details (noting the new/additional details will likely be required to accommodate

Overall Construction Cost

Cost

Total Construction Cost \$

Design Engineering Cost:

	Hours	Rate	Cost
Senior Project Manager	5	\$ 240.00	\$ 1,200.00
Engineering Manager	25	\$ 197.00	\$ 4,925.00
Technical Specialist - Mech. Process	68	\$ 238.00	\$ 16,184.00
Project Engineer -- Civil/Mech. Process	86	\$ 165.00	\$ 14,190.00
Project Engineer - Structural	54	\$ 165.00	\$ 8,910.00
Staff Engineer - Mechanical Process	48	\$ 133.00	\$ 6,384.00
Engineering Technician	31	\$ 115.00	\$ 3,565.00
<b>Total Engineering Cost</b>			<b>\$ 55,358.00</b>

Trend Eval. Engineering Cost

Cost

Total Trend Eval. Engineering Cost \$

EFFECT ON SCHEDULE:

EFFECT ON PROJECT COST:

TAKE ACTION INDICATED:

NONE	( )	NO CHANGE	( )	CANCEL	( )
ADD TO	( X )	ADD TO	( X )	INCL. IN PROJECT	( )
DELETE FROM	( )	DELETE FROM	( )	OTHER	( )
				DISCUSS w/ CLIENT	( )

TYPE OF COST OPINION PREPARED

( ) NONE ( ) PRELIMINARY ( ) DETAILED

IMPACT TO FOLLOWING TYPES OF WORK

AN "X" OR NOTE BESIDE ANY OF THE FOLLOWING DESIGN GROUPS INDICATES THAT WORK SCOPE WILL BE EFFECTED BY THIS CHANGE NOTICE.

CIVIL	_____	ELECTRICAL	_____
SITWORK	_____	CONTROL SYS	_____
ESTIMATING	_____	STRUCTURAL	X
SPECS	X	ARCHITECTURAL	_____
MECH-HVAC	_____	PROCESS	_____
MECH-PROC	X	SCHEDULING	_____

ROUTING AND DISTRIBUTION:

TITLE/DISCIPL	NAME	ROUTING	TITLE/DISCIPL	NAME	ROUTING	TITLE/DISCIPL	NAME	ROUTING
PRO. MGR	Isabel Botero	K	STRUCTURAL			PUMPS		
ENG. MGR	Pablo Gata	K	ELECTRICAL			PROCESS		
			INSTRUMENTATION			GEO-TECHNICAL		
			MECHANICAL (Process)			ESTIMATING		

ATTACHMENTS:

REFERENCES:

Black & Veatch Confidential