THE CITY OF KEY WEST
Post Office Box 1409 Key West, FL 33041-1409 (305) 809-3700

EXECUTIVE SUMMARY

Date: June 30, 2021

To: Patti McLauchlin, City Manager

CC: John Paul Castro, Utilities Director

From: Ian McDowell, Assistant Engineer

Subject: Awarding the construction contract to Charley Toppino & Sons, Inc. in response to ITB 21-006 for Richard A. Heyman Environmental Protection Facility aeration systems upgrades & electrical switchgear project

Action Statement

This resolution would award the contract for ITB 21-006 to Charley Toppino & Sons, Inc. in the amount of $3,824,000.00 for the Richard A. Heyman Environmental Protection Facility (RAHEPF) aeration systems upgrades & electrical switchgear replacement.

Background

In 2018, Black & Veatch was contracted as a consultant to provide an evaluation for the selection of a blower technology that would provide the most economical solution for the City, assessing both capital and maintenance costs. In 2019, Black & Veatch designed the aerations systems upgrade project to increase control, energy efficiency, and redundancy at the wastewater treatment plant (WWTP). It was determined that the main electrical switchgear would be at 95% capacity as a result of this project, in combination with other projects at the plant. Replacement of the electrical switchgear was planned for 2022 as presented in the capital plan, but the priority was re-assessed after evaluation of the impacts of various other projects. In 2020, Black & Veatch was contracted as a consultant to design replacement electrical switchgear at the WWTP and combine the bid documents and construction phase services with the aeration systems upgrade project.

Purpose and Justification

During review of the aeration and HVAC project, city and Keys Energy staff noted that the electrical capacity of the existing transformers and switchgear, all of which are original to the plant constructed in 1989, were reaching their capacity. The WWTP maximum load capacity is currently 900 kilowatts. While the aeration blower and third effluent pump projects are both power saving

projects, additional equipment is being installed which must be accounted for in the max load capacity of the transformers. The additional loads bring the theoretical maximum load for the plant to 1483 kilowatts, pushing our requirements to the edge of an aging electrical system. Adding all the new equipment into the electrical room with old switchgear and old transformers would result in additional costs in the future to rewire those components when upgrading the main electrical system, previously slated for 2022. Staff recognizes the need to reprioritize the projects to have the switchgear complete to reduce costs and save time.

The existing aeration system is comprised of two multistage centrifugal blowers with associated mechanical piping, electrical and instrumentation and controls components. The existing layout was designed with space and piping connections for the addition of a third blower unit in the future. Based on daily log data, only one blower is required to meet the plant's needs approximately 88% of the time. The City desires to increase air control, energy efficiency and redundancy at the facility with the addition of a new blower. It is anticipated that energy savings can be obtained by optimizing process control and by utilizing newer blower technology which is inherently more efficient. City staff have reviewed and approved the recommendations (blower type selection and process control strategy) from the initial evaluation phase, and the blower technology and improved process control upgrades have been incorporated into the detailed design phase. A 23% ($41,319) reduction in annual operating expenses is expected. Total savings over a 20-year period is expected to be approximately $571,665.

The aeration blower design has been shelved since late last year and will be added to the bid package for the switchgear. This will allow a single contractor to install the new electrical system, coordinate with KEYS for the treatment plants new transformers, and then install the aeration blower VFD's and turbo blowers in one project.

The new heat loads for the electrical gear will require cooling and the HVAC project for the electrical room was bid in December 2019 with expected install complete prior to the switchgear project bidding.

Bids for ITB 21-006 were opened June 23rd, 2020. Two bids were received:

Contractor name	Bid
Charley Toppino & Sons, Inc.	$3,824,000.00
Lawrence Lee Construction Services, Inc.	$4,055,000.00

Financial

Funding will come from account 401-3503-535-6500 (project SE35031801) and 401-3504-535-6500 (SE35042002), which currently have $1,685,407 available. $2,138,593 in account 401-3504-535-6500 will be transferred from compost facility project (project number TBD) budget to SE35042002. Project costs have changed from the original budgeted amount due to changes in scope associated with Keys Energy offering two new transformers for the WWTP at their cost and recent increases in building materials and equipment. Funds for the compost facility project will be re-budgeted for a future year.

Recommendation

Staff recommends awarding the construction contract to Charley Toppino & Sons, Inc. in the amount of $3,824,000.00 and authorizing the City Manager to execute this agreement and any necessary budget transfer/amendments.