

**COMMISSION FILE NO:** 18-005-1 **DATE INTRODUCED:** January 8, 2018

**INTRODUCED BY:** Executive Director (Signature on File in the Office of the Commission)

**REFERRED BY COMMISSION CHAIRPERSON TO:** Operations Committee

**RELATING TO:** Award of Contract J02013C02, Jones Island Water Reclamation Facility Return Activated Sludge Pipe Improvement Project, and Approve Changes in Total Project Costs

**SUMMARY:**

The Commission is requested to award and to direct the Executive Director to execute on behalf of the District Contract J02013C02, Jones Island Water Reclamation Facility (JIWRF) Return Activated Sludge (RAS) Pipe Improvement Project, to J.F. Ahern Co., in the amount of \$479,200. J.F. Ahern Co. was the lowest responsible, responsive bidder among three bids received.

Further, the Commission is requested to decrease the total project cost (TPC) for Project J02013, East Plant RAS Header and Pump Replacement, by \$219,604 for an amended TPC of \$1,873,545, and to make a corresponding change to the TPC for Project M99001, Allowance for Cost and Schedule Changes.

The main biological treatment process used at JIWRF takes place in large aeration basins that contain living microorganisms. The aeration basins are supplied with air as an oxygen source, allowing the microorganisms to metabolize and remove pollutants from wastewater. The population of microorganisms in the aeration tanks is commonly referred to as "activated sludge". After the microorganisms have consumed the wastewater pollutants, the activated sludge must be separated from the treated water. The separation takes place by gravity in the facility's secondary clarifiers. The microorganisms that settle to the bottom of the clarifiers are either returned to the beginning of the biological treatment process as RAS, or removed from the system as waste activated sludge (WAS).

**ATTACHMENTS:** **BACKGROUND** ☐ **KEY ISSUES** ☐ **RESOLUTION** ☒  
**FISCAL NOTE** ☒ **S/W/MBE** ☒ **OTHER** ☐ \_\_\_\_\_

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## SUMMARY (Cont'd)

### Award of Contract J02013C02, Jones Island Water Reclamation Facility Return Activated Sludge Pipe Improvement Project, and Approve Changes in Total Project Costs

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Activated sludge withdrawn from the secondary clarifiers flows to the RAS and WAS pump stations. The RAS pumps return most sludge back into the aeration basins to maintain the proper population of microorganisms for wastewater treatment. The RAS pumping rate normally changes with the incoming wastewater flow rate. The WAS pumps remove a smaller portion of the sludge in proportion to the incoming organic mass to maintain the proper inventory of microorganisms in the treatment system.

The RAS pumping system is critical to the operations of JIWRf. The JIWRf RAS pumping system is comprised of seven pumps, an original 48-inch diameter pipeline, a redundant 48-inch diameter pipeline, and a 30-inch diameter pipeline.

The 30-inch diameter RAS pipeline was replaced in 2010 due to its age and poor condition. The original 48-inch diameter RAS pipeline, which was installed over 30 years ago, has been taken out of service due to significant leaks, and Veolia Water Milwaukee (VWM) is using the redundant 48-inch diameter RAS pipeline that was constructed in 2010. Due to the configuration of the redundant 48-inch pipeline, RAS pumping capacity is less than the original 48-inch pipeline.

Staff originally recommended that the original 48-inch pipeline either should be relined or replaced to extend its useful service life, maximize JIWRf RAS pumping capacity, and restore redundancy. Engineering evaluation initially determined that pipeline relining was the most cost effective alternative over the life of the pipeline, and staff developed a construction contract bid package to perform that relining work.

The District publicly advertised and bid the contract, but only received one bid from J.F. Ahern Co. While the bid was responsive and the bidder responsible, the bid was higher than budgeted by nearly \$170,000. Costs for work to address internal corrosion pits in the pipeline were more than expected and previously experienced. Due to the bid being higher than the budgeted amount, the Commission rejected the lone bid.

The bid package was revised to include two bid alternatives: Alternate A: reline the existing RAS pipeline, and Alternate B: replace the RAS pipeline. Following are the bid results.

| Bidder             | Alternate A Bid (reline pipe) | Alternate B Bid (replace pipe) |
|--------------------|-------------------------------|--------------------------------|
| J.F. Ahern Co.     | \$479,200                     | \$479,200                      |
| Butters-Fetting Co | \$398,613                     | \$660,000                      |
| Mechanical Inc.    | No Bid                        | \$990,000                      |

## **SUMMARY (Cont'd)**

### **Award of Contract J02013C02, Jones Island Water Reclamation Facility Return Activated Sludge Pipe Improvement Project, and Approve Changes in Total Project Costs**

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Based upon the bids received for each alternative, District staff recommends awarding the contract to J.F. Ahern for Alternate B, RAS pipe replacement, because:

- Replacement has a lower life cycle cost than relining (50-year life for new versus 30-year life for relining).
- A new, replacement pipe (which includes a factory applied lining) will most likely have a longer lasting lining as compared to field lining an existing pipe.
- Relining has potential for increased costs as the interior condition of the existing 30-year old RAS pipe is not fully known. Replacement avoids those risks.

The scope of contract J02013C02 includes:

- Preparation work, including relocating some existing conduits that interfere with the pipe replacement.
- Removing and replacing 200 feet of 48-inch RAS pipeline and fittings. Components will have a factory applied ceramic epoxy coating.
- Applying external pipeline coating.
- Pipeline testing and startup.

The construction duration for this project is 300 calendar days.

The low bid received by the District is less than budgeted and staff requests to reduce the TPC accordingly.

Consistent with the Agreement for Management, Operations, and Maintenance Services between the District and VWM, VWM will make a \$10,000 contribution to the District for this project.

## **RESOLUTION**

Award of Contract J02013C02, Jones Island Water Reclamation Facility Return Activated Sludge Pipe Improvement Project, and Approve Changes in Total Project Costs

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**RESOLVED**, by the Milwaukee Metropolitan Sewerage Commission, that Contract J02013C02, Jones Island Water Reclamation Facility Return Activated Sludge Pipe Improvement Project, is awarded to J.F. Ahern Co. in the amount of \$479,200, and that the Executive Director is directed to execute a contract on behalf of the District.

**FURTHER RESOLVED**, by the Milwaukee Metropolitan Sewerage Commission, that the total project cost for Project J02013, East Plant Return Activated Sludge Header and Pump Replacement, is decreased by \$219,604 for an amended total project cost of \$1,873,545, and that a corresponding change is made to the total project cost for Project M99001, Allowance for Cost and Schedule Changes.