

**COMMISSION FILE NO:** 20-073-5 **DATE INTRODUCED:** May 4, 2020

**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 S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility, 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 S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility (SSWRF), to J.F. Ahern Co. (Ahern) in the amount of \$1,090,389. Ahern was the lowest responsible, responsive bidder between two bids received.

Further, the Commission is requested to increase the total project cost (TPC) for Project S03003, Post-Secondary Capacity Improvements, by \$647,740 for an amended TPC of \$2,642,674 and to make a corresponding change to the TPC for Project S99001, Allowance for Cost and Schedule Changes.

Wastewater disinfection is at the heart of the public health aspect of wastewater treatment. Wastewater contains a very large number of pathogenic organisms, and many of these organisms are not removed in the primary and secondary treatment processes. The purpose of wastewater disinfection is to kill remaining pathogenic organisms to the extent necessary to protect public health.

At SSWRF, the disinfection process uses sodium hypochlorite as the disinfecting agent. After disinfection, chlorine residual could persist in the effluent for hours. Prolonged chlorine residual can negatively affect aquatic species. To minimize this effect, chlorinated wastewater is dechlorinated before it is discharged to Lake Michigan. At SSWRF, sodium bisulfite is used to dechlorinate the chlorinated wastewater.

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

*OP\_Award\_S03003C03\_Disinfection\_Improvements\_legislative\_file.docx*  
04-09-20

**COMMITTEE ACTION:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**COMMISSION ACTION:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

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

### **Award of Contract S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility, and Approve Changes in Total Project Costs**

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Some objectives of the District's 2035 Vision are to achieve zero sanitary sewer overflows, combined sewer overflows, and basement backups. The District can reduce these risks in many different ways, including increasing wet weather treatment capacity at SSWRF. One relatively low cost way to increase this capacity is by implementing blending.

Blending at SSWRF means routing some wastewater that has gone through preliminary and primary treatment around the secondary treatment process and combining it back with wastewater that has received preliminary, primary, and secondary treatment. After this wastewater has been combined, it is then chlorinated and dechlorinated before being discharged into Lake Michigan. This blended effluent must meet all effluent water quality requirements under the District's Wisconsin Pollutant Discharge Elimination System permit and can only be performed under certain permit conditions. Blending allows for higher rates of treatment while still protecting effluent quality. The Wisconsin Department of Natural Resources allows blending in the SSWRF permit, but SSWRF currently does not have the capabilities to blend.

The District is in the process of implementing the capability to blend at SSWRF through several different design and construction contracts. This proposed construction contract will implement improvements to the chlorination and dechlorination system at SSWRF, due to the need to perform these operations on a higher flow rate with blending.

Contract S03003C03 includes the follow scope of work:

- Replace and upgrade two sodium hypochlorite pumps to increase pumping capacity.
- Replace the five sodium bisulfite pumps with four larger pumps to increase pumping capacity.
- Replace the chlorination piping and valves at the chlorine contact basin Parshall flumes to improve application of sodium hypochlorite.
- Provide precast concrete baffles at the upstream end of the chlorine contact basins to improve sodium hypochlorite mixing efficiency.
- Provide piping, valves, and diffusers at the chlorine contact basin effluent weirs to improve sodium bisulfite mixing efficiency.
- Provide piping and valves to pre-chlorinate primary effluent when blending. The new pre-chlorination point will provide sufficient chlorine contact time to meet regulatory requirements for disinfection when blending.
- Provide flow meters and valves at each of the 10 Return Activated Sludge (RAS) pumps to improve RAS chlorination control.
- Providing associated structural, mechanical, electrical, instrumentation, and control work.

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

Award of Contract S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility, and Approve Changes in Total Project Costs

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The contract duration is 432 days.

The low bid received by the District is greater than budgeted, and staff requests to increase the TPC accordingly. During the design phase, additional scope was added to the project that was not included in the 2020 Capital Budget.

## **RESOLUTION**

Award of Contract S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility, and Approve Changes in Total Project Costs

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**RESOLVED**, by the Milwaukee Metropolitan Sewerage Commission, that Contract S03003C03, Disinfection Improvements at South Shore Water Reclamation Facility, is awarded to J. F. Ahern Co. in the amount of \$1,090,389, 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 S03003, Post-Secondary Capacity Improvements, is increased by \$647,740 for an amended total project cost of \$2,642,674, and that a corresponding change is made to the total project cost for Project S99001, Allowance for Cost and Schedule Changes.