



COMMISSION FILE NO: 26-059-5 **DATE INTRODUCED:** May 4, 2026

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

REFERRED BY COMMISSION CHAIRPERSON TO: Operations Committee

RELATING TO: Change Order Request, Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility, and Restore the Executive Director’s Original Authority

SUMMARY:

The Commission is requested to authorize the Executive Director to execute a change order to Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility (SSWRF), with Carollo Engineers, Inc., (Carollo) in an amount not to exceed \$91,534 and to restore the Executive Director’s original delegated authority.

SSWRF uses a conventional activated sludge system to biologically treat wastewater. The activated sludge process involves growing microorganisms in the aeration basin with organic material in wastewater as the food source. To survive, microorganisms must be continuously fed organic material and oxygen. Successful operation of an activated sludge system relies upon keeping a balance of microorganisms with nutrients in the wastewater and oxygen in the aeration basin. If oxygen or nutrients limit the health of microorganisms, system performance suffers.

SSWRF has 28 aeration basins divided into four batteries. Each battery contains seven basins. Twenty-four basins were constructed in 1970 with four additional basins constructed in 1983. The aeration basins are equipped with fine bubble diffused air systems with approximately 2,500 diffusers in each basin. This diffuser system supplies the aeration basins with oxygen. Fourteen basins have ceramic plate diffusers, while the other 14 have flexible membrane diffusers. The diffuser systems are about 21 years old, and the scope of Project S02015 includes design and construction to replace and upgrade the diffuser systems in each basin.

ATTACHMENTS: **BACKGROUND** **KEY ISSUES** **RESOLUTION**
FISCAL NOTE **SBE** **OTHER** _____

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COMMITTEE ACTION: _____ **DATE:** _____

COMMISSION ACTION: _____ **DATE:** _____

SUMMARY (Cont'd)

Change Order Request, Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility, and Restore the Executive Director's Original Authority

In July 2020, the Commission authorized the Executive Director to enter into Contract S02015D01 with Carollo in an amount not to exceed \$2,009,823. Carollo's scope of service included:

- Evaluating and confirming aeration system loadings.
- Developing a new aeration system configuration, considering:
 - Diffuser patterns.
 - Selector zones and baffle wall locations.
 - Wet weather capacity.
 - Process energy optimization.
 - Adaptability for future process changes.
 - Instrumentation and controls.
- Recommending diffuser type and size(s) for the replacement.
- Evaluating and recommending construction constraints, sequences, and schedule to minimize impacts to SSWRF capacity and operations.
- Providing bid and construction documents (plans and specifications) for up to two construction contracts.
- Performing bid and award services.
- Providing engineering services during construction (ESDC).
- Updating the facility operation and maintenance manuals.
- Delivering training and startup services.
- Providing applications engineering related to the new aeration system.

The requested change order involves the following items related to construction of the aeration basin diffuser system replacement and upgrade:

- The original Carollo engineering contract scope assumed construction completion by October 2025. Construction Contract S02015C01 is scheduled for completion by December 2028. The longer construction duration requires additional engineering services to manage the consultant team and attend construction progress meetings.
- The original contract assumed four construction phases (one for each battery of aeration basins). To avoid a significant capacity reduction during construction, only four of the 28 aeration basins may be out of service at a time. This increased the number of construction phases from four to seven.

SUMMARY (Cont'd)

Change Order Request, Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility, and Restore the Executive Director's Original Authority

- The additional construction phases resulted in an increase in construction submittals for Carollo to review. Carollo's original contract assumed review of 160 construction submittals. Carollo has reviewed 189 submittals. Carollo and District staff estimate that an additional 58 submittals will be required to complete construction.
- The aeration process control approach (when and how air flow is adjusted) changed from the original plan as the project progressed. This change resulted in additional effort to update operations manuals, provide staff training, support system start-up, and complete necessary engineering work.

District staff issued a change order under the Executive Director's authority for Carollo to provide engineering services for the above items through September 2026. The requested change order provides engineering services for the above items from October 2026 through June 2029.

As the contract progressed, the District executed multiple change orders under the Executive Director's authority to provide engineering services for the following activities:

- Additional preliminary design workshops with District and Veolia Water staff to share information and collect feedback.
- Concrete coring in aeration basins with false floors to confirm the floor materials and thickness.
- Condition assessment, design report, preliminary plans and preliminary specifications for concrete rehabilitation in the aeration basins.
- Investigate the benefits and challenges of increasing the water surface elevation in the aeration basins.
- Update aeration basin modeling and analysis to include data from January 2020 through January 2022.
- Engineering services to rehabilitate and protect the main air header buried near the Aeration Buildings.
- Evaluate the ability of the aeration basins to biologically remove phosphorus if chemical addition in the primary clarifiers is reduced or eliminated.
- Collect and analyze data to compare the performance of existing and upgraded aeration basins.

In addition to these change orders, the Commission authorized a change order in September 2021 that added preparation of final plans and specifications, bid and award services, and ESDC for aeration basin concrete rehabilitation to the contract.

SUMMARY (Cont'd)

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CONTRACT COST CHANGES

	AMOUNT	PERCENTAGE INCREASE OVER ORIGINAL CONTRACT	AUTHORIZED BY	SWMBE
Original Contract	\$2,009,823		Commission	23.7%
Previous Change Orders	\$467,450	23.3%	Executive Director and Commission	25.2%
Requested Change Order	\$91,534	4.6%	Request of Commission	55.3%
Total Change Orders	\$558,984	27.8%		26.2%
TOTAL	\$2,568,807			24.3%

For engineering service contracts greater than or equal to \$500,000, the Commission has delegated to the Executive Director the authority to make changes to \$200,000 or 10% of the original contract price, whichever is less. For this contract, a limit of \$200,000 prevails. To date, the Executive Director has utilized \$199,494 of this authority, leaving a balance of \$506. The request to restore the Executive Director’s authority is in case any additional changes beyond the remaining Executive Director’s authority are necessary. Without this restored authority, work may need to stop while staff obtains necessary change order authority from the Commission.

The existing Total Project Cost (TPC) for Project S02015 does not include the cost for the requested change order. Staff will adjust the TPC to account for the cost as part of the 2027 Capital Budget process.

RESOLUTION

Change Order Request, Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility, and Restore the Executive Director’s Original Authority

RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director is authorized to execute a change order to Contract S02015D01, Engineering Services – Aeration Basin Diffuser Replacement at South Shore Water Reclamation Facility, with Carollo Engineers, Inc., in an amount not to exceed \$91,534, and that the Executive Director’s original delegated authority is restored.