



**COMMISSION FILE NO:** 24-144-11 **DATE INTRODUCED:** November 4, 2024

**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 S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, and Restore the Executive Director’s Original Delegated Authority

**SUMMARY:**

The Commission is requested to authorize the Executive Director to execute a change order to Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility (SSWRF), with Carollo Engineers, Inc., (Carollo) in an amount not to exceed \$100,607 and to restore the Executive Director’s original delegated authority.

Disinfection is the final treatment process at SSWRF. Disinfection is important, because wastewater contains pathogenic organisms, and many of these organisms are not removed in the primary and secondary treatment processes. SSWRF currently achieves effluent pathogen reduction by dosing with sodium hypochlorite; however, residual chlorine in the effluent can have a toxic effect on fish and other aquatic organisms. Residual chlorine is removed by dechlorination with sodium bisulfite.

The Wisconsin Department of Natural Resources (WDNR) issues a Wisconsin Pollutant Discharge Elimination System (WPDES) permit to the District, which allows the District to discharge treated wastewater to Lake Michigan from SSWRF. WPDES permits typically have a five-year term, and the District’s next permit is anticipated to be issued in 2025. Beginning in May 2020, WDNR began incorporating new disinfection-related effluent standards in WPDES permits for wastewater treatment facilities throughout the State. WDNR’s stated objective of the new standards is “to better protect recreational users (e.g., swimmers) from human health impacts related to the exposure to bacteria.” (WDNR email to WPDES permit holders, dated June 1, 2020)

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

*OP\_Change\_Order\_S03005D01\_Disinfection\_Process\_Improvements\_legislative\_file.docx*  
10-16-24

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

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

## SUMMARY (Cont'd)

Change Order Request, Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, and Restore the Executive Director's Original Delegated Authority

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The existing WPDES permit uses fecal coliform as a pathogen indicator. The new permit will also use *E. coli* as a pathogen indicator. The new WPDES permit limits for disinfection will be more stringent compared to existing limits. The permit will also allow time for the District to implement any necessary improvements; the District will have until April 30, 2029, to achieve compliance with the new standards.

In February 2024, the Commission authorized the Executive Director to enter into Contract S03005D01 in an amount not to exceed \$1,586,962. The scope of Contract S03005D01 includes:

- Reviewing of existing reference information and site conditions.
- Conducting meetings with representatives from the District and Veolia Water Milwaukee.
- Performing preliminary design:
  - Sampling and testing to provide additional data.
  - Evaluating the final two disinfection system alternatives:
    - Chlorination/dechlorination system.
    - Hybrid disinfection system using ultraviolet (UV) light disinfection and a chlorination/dechlorination system.
  - Modeling.
  - Providing instrumentation and controls.
- Conducting a geotechnical investigation, including soil borings.
- Completing lead and asbestos inspection and testing.
- Developing a construction strategy analysis to minimize the disruption of facility operations during construction.
- Providing evaluations and recommendations summarized in technical memoranda and a design report.
- Preparing bid and construction documents.
- Providing engineering services during construction and record drawings.
- Preparing startup plans, updates to facility operation and maintenance (O&M) manuals, and conducting O&M staff training.
- Performing applications engineering.

To support the preliminary design, the District performed two pilot tests with the existing chlorination/dechlorination system at SSWRF; the first in September 2023 and the second in September 2024. The District performed a UV disinfection pilot test at SSWRF from June to July 2024. Due to poor operating conditions at SSWRF during this period, the results of the UV disinfection pilot test could not demonstrate the ability to consistently meet the new WPDES permit limits; therefore, District staff recommends a second UV disinfection pilot test at SSWRF. The District is separately procuring rental of a second UV disinfection pilot unit.

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

Change Order Request, Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, and Restore the Executive Director's Original Delegated Authority

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The requested change order includes the following engineering services for the second UV pilot test at SSWRF:

- Providing supervision of UV disinfection pilot rental unit installation and startup.
- Conducting daily visits to operate UV pilot unit, performing maintenance, and collecting samples.
- Performing UV collimated beam tests and particle size distribution analysis.
- Conducting weekly progress meetings.
- Preparing technical memorandum summarizing the UV pilot and review workshop.

As this contract progressed, change orders were previously executed under the Executive Director's authority to provide engineering services for the following activities at SSWRF:

- Providing disinfection system troubleshooting.
- Performing pilot test with the existing chlorination/dechlorination system during September 2024.
- Performing coordination of second full scale UV disinfection pilot testing, preparing plans and specifications to install UV pilot unit, providing bid and award services, and preparing associated sampling plan.

## SUMMARY (Cont'd)

Change Order Request, Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, and Restore the Executive Director's Original Delegated Authority

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### CONTRACT COST CHANGES

|                        | AMOUNT             | PERCENTAGE INCREASE OVER ORIGINAL CONTRACT | AUTHORIZED BY                | SWMBE |
|------------------------|--------------------|--|------------------------------|-------|
| Original Contract      | \$1,586,962        |  | Commission                   | 20.8% |
| Previous Change Orders | \$156,640          | 10%  | Executive Director Authority | 12.1% |
| Requested Change Order | \$100,607          | 6%   | Request of Commission        | 22.6% |
| Total Change Orders    | \$257,247          | 16%  |                              | 16.2% |
| <b>TOTAL</b>           | <b>\$1,844,209</b> |  |                              | 20.2% |

For engineering service contracts greater than or equal to \$500,000, the Commission has delegated to the Executive Director the authority to make changes up to \$200,000 or 10% of the original contract price, whichever is less. For this contract, a limit of \$158,696 prevails. To date, the Executive Director has utilized \$156,640 of this authority, leaving a balance of \$2,056. 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.

## RESOLUTION

Change Order Request, Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, and Restore the Executive Director’s Original Delegated Authority

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**RESOLVED**, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director is authorized to execute a change order to Contract S03005D01, Engineering Services – Disinfection Process Improvements at South Shore Water Reclamation Facility, with Carollo Engineers, Inc., in an amount not to exceed \$100,607, and that the Executive Director’s original delegated authority is restored.