Item 5

COMMISSION FILE NO: 24-142-11 **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: Contract J04081D01, Engineering Services – Heating, Ventilation, and Air Conditioning System Upgrades in the Dewatering and Drying Facility at Jones Island Water Reclamation Facility, and Approve Changes in Total Project Cost

SUMMARY:

The Commission is requested to authorize the Executive Director to execute on behalf of the District Contract J04081D01, Engineering Services – Heating, Ventilation, and Air Conditioning (HVAC) System Upgrades in the Dewatering and Drying (D&D) Facility at Jones Island Water Reclamation Facility (JIWRF), with T.Y. Lin International Great Lakes, Inc., (T.Y. Lin) in an amount not to exceed $3,128,215. T.Y. Lin was the highest scoring proposer, based on a qualifications-based selection method, between two proposals received.

Further, the Commission is requested to increase the total project cost (TPC) for Project J04081, D&D HVAC Upgrade, by $1,741,215 for an amended TPC of $17,899,515 and to make a corresponding change to the TPC for Project M99001, Allowance for Cost and Schedule Changes.

The D&D Facility, Building 258, located at JIWRF, contains equipment and systems to produce Milorganite®. Most HVAC systems are original to the facility, approximately 30 years old, and at or past their useful life. Age related failures will occur if the HVAC systems are not replaced. Replacing or upgrading the HVAC will mitigate the risk of an extended Milorganite® production outage due to a significant failure of HVAC equipment. An extended Milorganite® production outage would negatively affect operations, creating substantial challenges for managing biosolids, because Milorganite® is the primary and preferred way to handle biosolids.

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

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The HVAC assets addressed in the scope of this project include over 150 assets, such as air supply units, air cooled condensing units, fan coil units, exhaust fans, heating coils, pumps, water chillers, heat convectors, and controls. Assets also include auxiliary items, such as piping, ducts, vents, radiators, dampers, and actuators.

Some of these systems have operational issues that can result in inadequate or inefficient ventilation, cooling, and heating. Examples of the operational issues include:

- The six electrical rooms lack sufficient cooling because of aged HVAC equipment and changes made by projects since construction of the D&D Facility.
- The D&D Facility has a significant negative pressure caused by an imbalance in HVAC equipment function and operation, particularly in colder months when windows and doors are closed. The negative pressure causes considerable air movement from other buildings at JIWRF through utility tunnels to the D&D Facility. The other buildings suffer from air infiltration and heat loss as a result.
- The air supply units that serve the floors with the Milorganite® dryers fail to provide sufficient cooling to overcome the heat produced by the dryers.

Due to the nature of Milorganite® production, there are fire and explosion hazards from the potential ignition of combustible gas and dust. The National Fire Protection Association's (NFPA) Standard for Fire Protection in Wastewater Treatment and Collection Facilities, NFPA 820, establishes standards for "construction, ventilation, and electrical installation in wastewater facilities for protection against fire and explosion hazards." This project will implement HVAC and architectural improvements in the D&D Facility to comply with NFPA 820 based on recommendations from Project M03110, NFPA 820 Water Reclamation Facility Study.

The purpose of this project is to ensure that the District maintains safe and efficient operations of biosolids processing at the D&D Facility. Biosolids processing is critical to ensure permit compliance, provide revenue from Milorganite® sales, and maintain efficient operations.

SUMMARY (Cont'd)

Contract J04081D01, Engineering Services – Heating, Ventilation, and Air Conditioning System Upgrades in the Dewatering and Drying Facility at Jones Island Water Reclamation Facility, and Approve Changes in Total Project Cost

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Under Contract J04081D01, the consultant will:

- Review existing reference information.
- Conduct meetings with representatives from the District and Veolia Water Milwaukee, LLC.
- Perform a field inspection and develop a list of equipment.
- Conduct energy audit baseline and modeling of existing HVAC system.
- Perform engineering evaluations and preliminary design of HVAC systems.
- Prepare a design report.
- Evaluate and recommend construction constraints, sequences, and schedule to minimize impacts to D&D operations.
- Prepare bid and construction documents (plans and specifications).
- Conduct bid and award services.
- Perform engineering services during construction.
- Prepare facility operation and maintenance (O&M) manual updates, conduct O&M training, and startup services.
- Perform applications engineering related to the new HVAC system.

After the design work is complete, the District will publicly bid the construction contract. The duration for this contract is approximately 68 months.

Staff requests to increase the TPC. While developing the request for proposals, staff expanded the contract scope to include:

- Performing engineering services to replace additional HVAC equipment.
- Conducting an energy audit to identify cost effective measures to improve HVAC energy efficiency.
- Performing HVAC system modeling.
- Investigating negative pressure issue and tunnel air movements.
- Evaluating systems to recover heat from the dryers and D&D Facility.
- Investigating and evaluating the condition of the existing HVAC ducts and identifying ducts in need of replacement.
- Evaluating replacing part or all the ductwork to improve system efficiency.
- Identifying how the HVAC controls are incorporated into a new building automation system platform selected by the District.

In addition, staff underestimated the level of effort necessary to perform the scope of services.

RESOLUTION

Contract J04081D01, Engineering Services – Heating, Ventilation, and Air Conditioning System Upgrades in the Dewatering and Drying Facility at Jones Island Water Reclamation Facility, and Approve Changes in Total Project Cost

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RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director is authorized to execute Contract J04081D01, Engineering Services – Heating, Ventilation, and Air Conditioning System Upgrades in the Dewatering and Drying Facility at Jones Island Water Reclamation Facility, with T.Y. Lin International Great Lakes, Inc., in an amount not to exceed $3,128,215.

FURTHER RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the total project cost for Project J04081, Dewatering and Drying Heating, Ventilation, and Air Conditioning Upgrade, is increased by $1,741,215 for an amended total project cost of $17,899,515, and that a corresponding change is made to the total project cost for Project M99001, Allowance for Cost and Schedule Changes.