

MINUTES
MURFREESBORO WATER RESOURCES BOARD
August 24, 2021

The Murfreesboro Water Resources Board met on Tuesday, August 24, 2021 in the conference room at the Operations and Maintenance Building, 1725 S. Church Street. Present at the meeting were Board members: Mr. John Sant Amour, Dr. Al Carter, Mr. Ron Crabtree, Mr. Brian Kidd, and Ms. Madelyn Scales-Harris. Also present were Darren Gore, Michele Pinkston, Valerie Smith, Doug Swann, Roman Hankins, Steve Tate, Matt Powers, Alan Cranford, Joe Russell, John Strickland, Donald Hughes, and Luke Williams along with other members of the public.

Item B was removed from the Consent Agenda.

Items A, C, and D of the Consent Agenda were presented for the following considerations:

A. Consider USGS joint funding agreement –

Staff presented for the Board's consideration an agreement between the Department of Interior and the Murfreesboro Water Resources Department for a program of water resources data collection on the East Fork and West Fork of the Stones River.

This is a standard agreement under which we have participated for several years in monitoring the base flow on the East Fork Stones River and the base flow in conjunction with water quality monitoring of the West Fork Stones River. This information is essential in determining whether the East Fork Stones River is a candidate for discharging the Water Resource Recovery Facility's effluent into it as a permitted receiving stream. The water quality information gained in the West Fork Stones River is also critical in determining the enhanced benefit the WRRF effluent provides our current permitted receiving stream.

Staff recommended the Board approve the agreement as presented.

The cost to the Department is \$23,509 per year with USGS matching \$12,050 for a total of \$35,559. This program is included in the proposed 2021-2022 fiscal year budget and is unchanged from the previous fiscal year.

C. Consider 2020 Sewer Rehabilitation Contract Final Change Order #2 –

At the March 2020 Board meeting the Board approved the Engineering, Construction Administration & Resident Inspection, through the master services agreement with S&ME/LJA, necessary for this sanitary sewer rehabilitation project. This project was originally bid July 14, 2020, and at the July 2020 Board meeting the Board approved the award of the contract to SBW Constructors, LLC in the amount of \$4,250,092.

Final Change Order #2 is a decrease in the contract amount of \$626,587.25 for a total contract value of \$3,623,504.75.

Staff recommended the Board recommend to City Council approval of this Final Change Order #2 with SBW Constructors.

D. Consider Xage security license and support renewal purchase –

Xage Security is a U.S.-based cybersecurity company that develops software to protect operational technology used in industrial operations. The cybersecurity software, Xage Security Fabric, is the only identity and access management software that protects interactions between devices, operators, and software regardless of vendor in an operational network. Xage sells the software in a number of different industries including utilities, wastewater, manufacturing, transportation, and defense in the U.S. and abroad.

The software is currently configured at the Water Resource Recovery Facility and configured in monitor mode at Water Treatment Plant.

Staff recommended the Board approve the purchase of the Xage Security License and Support Renewal for 1 year in the amount of \$20,520 with funding from FY22 operating funds.

A motion was made by Ron Crabtree to accept Items A, C, and D of the Consent Agenda as presented and it was seconded by Dr. Carter. The Board voted unanimously to approve.

The July 27, 2021 Board Minutes were unanimously accepted as presented.

The Board considered Pall membrane module replacement.

The Department currently has a contract with Pall Corporation for membrane module replacement. The contract was executed on November 17, 2016 for a period of five years set to expire on November 17, 2021. The price per module was \$1,250 subject to PPI adjustment.

The Stones River Water Treatment Plant commissioned its Pall Corporation membranes on December 18, 2008. Since commissioning, the Pall membranes worked as expected with minimal fiber breaks and very good recovery following the Manufacturer's cleaning program until June of 2020.

According to industry standard, hollow fiber membrane modules are designed to last approximately 10 years. The original configuration of the membranes consisted of ten racks with 50 modules each for a total of 500 modules. The Pall Corporation membrane modules are currently 12 ½ years old.

In 2015, staff conducted a trial using Scinor membranes to see if there was an equivalent competitor with Pall. The trial showed that Pall was a significantly better membrane than its closest competitor. This led to the contract with Pall. It was at this time that each rack was changed from 50 modules per rack to 56 modules per rack. There are currently 56 modules per rack, and 10 racks total, for a total of 560 modules.

Following the Scinor trial, the Department replaced all 56 modules on Rack 1. Rack 1 is currently performing excellently. Racks 2-10 are having fiber breakage issues and are the modules needing replacement. There are 504 total modules for racks 2-10.

After checking with Pall on their willingness to extend the contract for another five years, staff was informed that the cost per module had risen due to material costs, etc. They calculated the PPI from 2016 to current and the cost per module went from \$1,250/module to \$1,429/module. The cost for a purchase

outside of the contract is currently \$2,125/module which is good through December 31, 2021. If the Department purchased the module before the contract expires, it will save over \$375,000. Cost under contract for 504 modules is \$771,730.20 and outside the contract is \$1,147,500.

The proposal from Pall Corporation is \$771,730.20. The proposal includes the adjustment in PPI per the contract. A sinking fund was set up between FY15 and FY17 to accrue funds in the Department's working capital reserves in the amount of \$800,000.

Staff recommended the Board recommend to the City Council approving the membrane replacement from the Pall Corporation in accordance with the existing contract and proposal.

Dr. Carter made a motion to approve. Brian Kidd seconded. The motion unanimously passed.

The Board considered award of contract for high service pump station and membrane feed pump improvements.

The bids for the High Service Pump Station and Membrane Feed Improvements Project were received on July 26, 2021. Only one bid was submitted by J. Cumby Construction Company, Inc.

For a little over a year, SSR and staff have worked to ensure that the improvements for the High Service Pump Station and Membrane Feed Pump Station would meet the current and future needs of the Department. SSR's probable construction cost was \$2,198,000 and the budgeted cost for this project is \$2,561,000.

J. Cumby Construction Company, Inc. is the low responsible and responsive bidder for the project with a base bid price of \$2,013,000. SSR found no discrepancies in the bid received from J. Cumby Construction Company, Inc.

SSR has not worked with J. Cumby Construction Company, Inc previously; however, MWRD has worked with them on the Northwest Broad Street Pumping Station project. SSR reviewed all their financials, references, and project resume and finds them to be a reputable contractor.

SSR has thoroughly reviewed the low bid and has considered it competitive and in line with present construction pricing levels. The bid came in \$548,000 under budget and \$185,000 under SSR's probable construction cost estimate.

Staff recommended the Board recommend to the City Council approving the High Service Pump Station and Membrane Feed Pump Improvements bid from J. Cumby Construction Company, Inc. in accordance with their bid.

Brian Kidd made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

The Board considered Step system approval for remaining Haywood Hall property.

At the September 2018 meeting, the Board approved, in concept, of a step system to serve a portion of the Hall Property along Veals Road (western portion). This approval was contingent upon annexation of the property. The property was approved for annexation. The developer has met with City Planning and is requesting the remainder of the property as well as additional properties be annexed (eastern portion).

The properties, once combined, would total 206 acres and the proposed zoning is PRD. The development would be comprised of approximately 460 single family homes as well as approximately 114 townhomes depending on there being enough soils to serve them. The property would be served by Consolidated Utility District for water service.

Staff recommended that the Board recommend to the Planning Commission and City Council approval of serving the development with a step system.

The Developers will install the step system infrastructure and dedicate it to the Department for operation and maintenance.

Madelyn Scales-Harris abstained from voting since she will be voting at the City Council meeting.

Brian Kidd made a motion to approve. Ron Crabtree seconded. The motion unanimously passed.

The Board considered SSR Task Order 09-47-001.2 Amendment No. 8, Summer 2021 East and West Fork Stones River Bioassessment Sampling and J. Percy Priest Reservoir Stratification Study.

AquAeTer has completed its water quality and stream assessments for the West and East Fork Stones River commissioned for 2014-2020. The bioassessment monitoring results were very encouraging and demonstrate that the West Fork Stones River is healthy and meeting its designated uses. Staff believes it is necessary to continue this work through the summer of 2021, as a next installment of developing the protocol that we believe will help create a new permitting framework for the City of Murfreesboro with the Tennessee Department of Environment and Conservation (TDEC).

All results demonstrate the West Fork is exceeding the standard for Tennessee Macroinvertebrate Index (TMI) of 32 (scores above the horizontal green line) of Murfreesboro's ecoregion. Additionally, the assessments demonstrate that the effluent being discharged from the WRRF is not impacting stream health. TMI scores assess biological integrity of streams. Macroinvertebrates are used by TDEC as indicator organisms to determine if a stream supports fish and aquatic life.

The continued sampling efforts and TMI scores are intended to support the strategy of approaching TDEC to offer alternate permitting potentials to the City of Murfreesboro as we attempt to get ahead of the growth projected in the City's Murfreesboro 2035 Comprehensive Plan. One of the main overarching goals that the Department has over the next 20 years is to influence the regulatory framework focusing on reclaimed water.

In addition to the macroinvertebrate sampling, staff has asked AquAeTer to conduct another stratification study of J. Percy Priest. This study was approved for FY20 but was not conducted. The study is intended to demonstrate that during stratified conditions in the reservoir, the phosphorus being discharged from the WRRF is not getting into the lower reaches or deeper part of the lake where Smyrna is withdrawing water to supply their drinking water plant. Past assertions have been made that phosphorus from Murfreesboro's WRRF had been getting to the bottom of the lake during summertime conditions, binding

with manganese, and causing problems at Smyrna's drinking water treatment plant and creating "black" water discharge at certain residents.

Staff recommended the Board recommend City Council approve Amendment #8 to SSR Task Order 09-47-001.2 to allow for continued biological sampling of the West and East Fork Stones River and the optional stratification study.

The extension to sampling and monitoring the West and East Fork Stones River and J. Percy Priest stratification study is a net additional fee of \$84,740 from previous approved fee ceilings. The optional stratification study is \$42,500 and was approved last year. Staff recommended funding both of these items from the Department's working capital reserves in the amount of \$127,240.

Brian Kidd made a motion to approve. Madelyn Scales-Harris seconded. The motion unanimously passed.

Staff presented and discussed the Water Resources Dashboard Performance for July 2021.

There being no further business, the meeting was adjourned.

John Sant Amour, Chairman