

MINUTES
MURFREESBORO WATER RESOURCES BOARD
September 28, 2021

The Murfreesboro Water Resources Board met on Tuesday, September 28, 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. Kirt Wade, Ms. Kathy Nobles, and Ms. Sandra Trail. Also present were Darren Gore, Valerie Smith, Doug Swann, Mary Lancaster, David Ives, Steve Tate, Marshall Fall, Alan Cranford, Joe Russell, John Strickland, Donald Hughes, Kristina Trogler, Norman Hanks, A.J. Gezunterman, Jay Bradley, Whitney Raque, Jeff Jensen, and Brent Fowler along with other members of the public.

The Consent Agenda were presented for the following considerations:

A. Consider SRWTP Pall Membrane Annual Service Agreement –

The Stones River Water Treatment Plant commissioned its Pall Corporation membranes on December 18, 2008. Part of the contract was to provide onsite inspection of the membrane system twice a year for the first 5-years and once per year for the last 5-years of the contract. Our service ended in December 2020.

The annual service inspection has proved to be valuable for identifying small issues that has allowed the system at the water plant to operate so well over the past 12+ years. Staff would like to continue an annual service by Pall to help keep track of hardware, software, setpoints, parts, and performance.

Staff requested that Pall provide a proposal to continue the services over the next 3-years. The proposal from Pall Corporation for the annual service agreement is \$13,440/year for 3-years for a total of \$40,320. Funding will come from the annual operating budget each year.

Staff recommended that the Board recommend to the City Council approving the annual service contract from the Pall Corporation in accordance with their proposal.

B. Consider SRWTP Trane HVAC unit replacement –

The Facilities Management Department findings from the citywide analysis of the existing HVAC systems used by city departments identified the existing HVAC at the lake as needing replacement. This unit has recently stopped working and needs immediate replacement.

Trane has been providing service for several years on new HVAC equipment at the water treatment plant. During this period, staff has been pleased with Trane's support. Staff requested that Trane look at the units needing replacement and provide a proposal based upon an existing Co-op contract.

Trane provided the requested proposal for replacing the Auxiliary (Lake) Intake unit. The proposal and contract were reviewed by Purchasing and Legal prior to submission to the Board.

The cost to replace the unit is \$40,217 and the total budgeted for HVAC replacement in FY22 is \$175,000. Funding will come from the FY22 rate funded capital budget.

Staff recommended that the Board recommend to the City Council approving the purchase of the HVAC unit from Trane in accordance with their proposal.

C. Consider SRWTP grass cutting and landscaping bids –

Bids for the grass cutting and landscaping were received through ProcureNow and opened on August 24, 2021. There were two bids received. The bid tabulation is below.

Company Name	Total
Allied Universal	\$46,470
Barton Lawn Care	\$32,100

The bid included grass cutting, landscape maintenance, mulching and replacement to replace landscaping that was damaged or had died.

Funding is in the FY22 Operating Budget with a contract price through June 30, 2022. The contact has an option to renew for up to three additional one-year terms.

Staff recommended the Board recommend to City Council approving the grass cutting and landscaping bid from Barton Lawn Care in accordance with their bid.

D. Consider O&M Wet Well Wizard purchase –

Earlier this year, staff installed a Wet Well Wizard at Pump Station #36 and conducted a two-week trial. The equipment was successful at eliminating odors and FOG (Fats, Oils, and Grease) from the Collection System Lift Station Wet Wells. The Wizard is a unique aeration tube that is placed into the wet well to agitate and mix the wet well water. This agitation not only eliminates the ability of H₂S to form, but it also breaks up and liquefies FOG, and this prevents FOG masses from collecting and building in the wells.

The maintenance of the aeration system is minimal. It is simple to install, non-corrosive and utilizes minimal electricity. Staff is requesting to purchase three wizards to be installed at Pump Station #13 located on DeJarnette Lane.

Staff recommended the Board recommend to the City Council the sole source purchase of three Wet Well Wizards from Ancoria Water Solutions located in Decatur, GA.

The total cost to purchase three Wet Well Wizards is \$15,861. Funding is budgeted in MWRD's FY22 approved Capital Budget.

E. Consider WRRF tractor purchase –

The Department owns the Jordan Farm off Leanna Road and the much larger Coleman Farm off Central Valley Road. They were purchased to play a significant role toward ensuring compliance with the City's U.S. EPA discharge permit via high volume land irrigation of treated water from the WRRF.

Tractors are utilized to move large irrigators, work the land, and perform various other farm tasks. The Department’s 1995 John Deere 8100 tractor has reached the stage in its lifecycle that the most economical course is to trade it in on a new tractor. The new tractor and accessories cost is \$137,773.58. The trade-in value of the old tractor and its accessory equipment is \$75,500. This leaves a net cost of \$62,273.58. Funding will come from the Department’s rate funded capital budget.

Staff recommended the Board recommend to City Council approving the purchase of a tractor from TriGreen Equipment LLC.

F. Consider Administration Safety & Health vehicle purchase –

There is one vehicle approved in MWRD’s FY22 capital budget for the Safety & Health Administrator that will aid in field inspections, accident investigation, and training needs.

The vehicle is on the State of Tennessee Statewide Contract with Ford of Murfreesboro. Staff has verified the state contract offers the best price and delivery.

Item ID/Description	Vehicle Cost	Qty	Total Budgeted
Ford Ranger 4x4 Crew Cab	\$28,867	1	\$30,000

The cost for the vehicle on the State of Tennessee Statewide Contract is in the amount of \$28,867. In addition, the vehicle will be equipped with emergency lights, bed liner and cover.

Staff recommended that the Board recommend the City Council approve the purchase of this vehicle in accordance with the existing statewide contract as identified.

G. Consider O&M and AMI vehicle purchases –

In MWRD’s approved FY2022 Capital Budgets there are line items in the amount of \$35,000 each to replace vehicles due to age, high mileage, and maintenance issues.

Staff located the most appropriate vehicles for their intended use with Wilson County Motors and Ford of Murfreesboro. All are included on the State of Tennessee Vehicle Contract.

Description	Cost	Budgeted
2021 Ford F-250 Super Cab 4X4 – New Construction	\$27,677	\$35,000
2022 Chevrolet Colorado 4x4 Ext Cab – Locator	\$25,292	\$35,000
2021 Ford Explorer (4WD) - AMI	\$33,763	\$35,000
TOTAL	\$86,732	\$105,000

Staff recommended the Board recommend the City Council to approve the purchase of these vehicles as identified.

A motion was made by Sandra Trail to accept the Consent Agenda as presented and it was seconded by Kathy Nobles. The Board voted unanimously to approve.

The August 24, 2021 Board Minutes were unanimously accepted as presented.

The Board considered O&M water and sewer line material bids.

MWRD Operations and Maintenance requested sealed bids for the materials necessary to upgrade the water lines and rehab the sewer lines located on Leaf Ave, Harrison Ave, Rose Ave, Boston St, and Clover Ave. The table below shows the bid results.

Company	Total
Southern Pipe & Supply	\$155,354.10
Consolidated Pipe	\$158,043.50
Hayes Pipe	\$162,355.45
G&C Supply Co	\$175,944.60
Fortiline	\$188,469.70
Core & Main	\$208,642.36

Staff recommended the Board recommend to City Council approval to purchase the materials for the water and sewer line upgrades from the lowest bidder, Southern Pipe & Supply. Funds are available in FY22 O&M Budget Water Line and O&M Budget Sewer Lines.

Kirt Wade made a motion to approve. Dr. Carter seconded. The motion unanimously passed.

The Board considered SSR Task Order 2141013.0, Agreement for Consulting Services Regulatory Assistance and Water Quality Management.

Mr. Steve Tate, the Department's current Effective Utility Management (EUM) Coordinator, desires to retire from full time employment with the City; however, he would like to continue working part-time 15-20 hours a week.

Allowing Mr. Tate to continue working part-time as a contracted consultant provides benefit to the City. Mr. Tate's major role will be transitioning all of the KPI databases he maintains to other personnel within the Department as well as continuing to work directly on the Department's efforts to expand our NPDES permit application affording the City its next WRRF expansion and continue developing the business case of drying biosolids for beneficial reuse. He will also continue as a resource in identifying new metrics to capture as well as focusing attention on how to continuously improve the Department's current business intelligence platforms (e.g., CityWorks asset management system).

Staff recommended the Board recommend City Council to approve SSR Task Order 2141013.0.

Paying the maximum hourly rate for the part-time consultant for 15-20 hours per week would represent an approximate 50% reduction to the current EUM Coordinator salary. In addition, the part-time contract consultant would create additional savings as it would no longer be provided benefits.

Sandra Trail made a motion to approve. Kirt Wade seconded. The motion unanimously passed.

The Board considered contract addendum for Gryphon small-scale biosolids dryer refund.

In April 2021 staff made the Board aware that the small-scale Gryphon dryer had not met the performance specifications, and that special condition 4.01(D) was recommended as being invoked.

Special condition 4.01(D) stipulates the City can return the dryer to the supplier for a full refund of the purchase price.

Over the past several months, staff has been meeting with Gryphon to see if the small-scale dryer could be used in any research and development applications; seeking potential opportunities that could benefit both Gryphon and the City of Murfreesboro. Those opportunities have not coalesced or been made apparent. Therefore, in an effort to amicably conclude the duties and responsibilities under the contract, staff is recommending approval to allow Gryphon to make a series of payments over 30 months in lieu of making one payment.

Allowing 29-monthly payments in the amount \$21,905.45 and a final payment of \$21,868.97 equals \$657,145.19, or \$8,395.19 above the original biosolids dryer purchase price of \$648,750.

Staff recommended the Board recommend to City Council executing the contract addendum.

Sandra Trail made a motion to approve. Kathy Nobles seconded. The motion unanimously passed.

The Board reviewed MWRD Administration Building remodel and second story addition.

Murfreesboro's old City Hall, currently occupied by MWRD Engineering, GIS, and Stormwater personnel, is expected to be demolished and prepped for redevelopment by the City over the next two to four years. Given the need for additional office space for the displaced MWRD personnel, MWRD's Administrative Building is being proposed as having a second story added.

MWRD's Administrative Building was built in 1977 and was believed to have been built to have a second story addition constructed in the future. As part of preliminary due diligence to ascertain if a second story addition was cost effective, a structural analysis report was performed by Logan Patri Engineering, Inc. The summary results of this report indicate the building can support a second story with the following modifications:

- Additional reinforcement of 2 of 8 columns
- Additional reinforcement of 3 of 12 beams
- Transverse reinforcement of the exterior wall foundation in 14 locations

Adding a second story to the Water Resource Admin Building appears to be the most cost-effective solution at this time. The preliminary cost estimate described below indicates an approximate 20% cost savings to build a second story in lieu of constructing a new office building.

- The current administrative building is approximately 7,600 square feet. Renovating the downstairs without moving walls and significant reprogramming of space would be approximately \$125 per sf.; say \$1,000,000. Adding a second floor with the same square footage at around \$350 per square foot is equal to approximately \$2,700,000, so total of around \$3,700,000, or rounded to \$4,000,000 with some contingency.
- A new 2-story 15,000 square foot building at \$300 per square feet would be around \$4,500,000. When you add in land acquisition costs (assumed as ½ acre at \$500,000) the total for a new facility is around \$5,000,000.

Staff has added \$5,000,000 in the Department’s working capital reserve for MWRD Engineering, GIS, and Stormwater office space (\$4,000,000 for improvements and \$1,000,000 for architectural services and furniture, fixtures, and equipment (FF&E)). Staff also anticipates bringing a proposal at the October Board meeting to engage Kline Swinney Associates, an architectural firm, to design and bid the second story addition.

The Board discussed budgeting for sewer improvements in Salem Highway area.

MWRD has delayed all requests for approvals of new sewer connections in the Salem Hwy corridor due to capacity and potential overflow concerns. Utilizing additional flow monitoring data acquired between January and March of 2020, staff has determined the following benefit at the respective costs detailed in the scenarios tabulated below:

Scenario	Costs	Additional Served Area (Ac) (In + Out)	# of Current + Approved Connections	# of Future Land Use Connections Inside City	# of Future Land Use Connections Outside City	Total Connections
#1 “As-Is” (Current)	\$15,000	0	2412+1643	0	0	4055
#2 “To Be Upsize” (Vacant Property inside City Limits)	\$5.72M	315 + 0 Ac	2412+1643	2824	0	6879
#3 “To Be Upsize” (Vacant Property Inside + Annex Outside City Limits)	\$5.90M	315 + ~125	2412+1643	2824	300	7179
#4 “To Be New Route” (Vacant Property Inside + Annex Outside City Limits)	\$6.35M	315 + ~375	2412+1643	2824	900	7779

Staff recommends budgeting for the “To Be New Route” option at \$6.35M. Additional funds are anticipated for funding the design upgrades and acquiring additional necessary easements.

Between December 26, 2019 to March 7, 2020, the Department requested ADS, through our professional services agreement, to install 9 temporary sewer flow monitors within flow monitor Basin MF11A to measure flows to be used to study the capacity within different portions of the basin. During this time, Murfreesboro had several rainstorms, ranging from less than 1” to greater than 4”. A 2” storm on January 11, 2020 was used as the basis of this study.

In 2011, upon receiving a Commissioners Order from the State of Tennessee Department of Environment and Conservation, staff created a Capacity Assurance Program (CAP) to explain the basis for coordinating capacity decision criteria for each sewer basin within our sewer system. The objective of the CAP was to enable the Department to authorize new sewer service connections or increases in flow from existing sewer service connections while not increasing the likelihood of creating sanitary sewer system overflows (SSO’s). Within the CAP, the below table of Collection System Surcharge Condition Criteria was created to give guidelines as to when to disallow additional connections to the system.

Collection System Area/ Monitor Basin	Surcharge Condition Criteria
Area of Limited or No Backup	Sewer Hydraulic Gradeline within 1' of MH Rim
Area of Significant Backup Complaints	Sewer Hydraulic Gradeline within 2' of MH Rim
Siphon or Other Unique Structure	Evaluate Based on Design Criteria

Since the creation of this CAP, EPA Region 4 has created a different guideline specified within different consent decrees given to municipalities within the southeast. The guideline is to disallow additional sewer connections and sewer extensions when sewer surcharges within 3 feet of the manhole rim. This new surcharge guideline was used for this study as well.

Four scenarios were studied to develop a plan for necessary upgrades based on the current developed properties and the vacant properties within and outside of the City limits. Each scenario was studied to maximize the benefit of an upgrade by maximizing the potential number of single-family units (sfu's). Once the potential number of sfu's was calculated for each scenario, an estimated assessment fee is given, which doesn't take into consideration the existing assessment fee(s) in place. The current Salem/Barfield Assessment fee is \$750/sfu plus the additional assessments for Three Rivers at \$900/sfu and Basin "D" at \$925/sfu.

Scenario #1

Determine if there are currently any "hot spots" within the sewer interceptor line or the tributaries.

1. Flows include current flow, per the flow monitoring, plus
2. Additional estimated flows produced by the approved lots not yet constructed.

In order to maintain compliance with the EPA's guideline, three manholes must be raised approximately 1-foot. The cost to complete this is approximately \$15,000.

Scenario #2

Determine what improvements would need to be made to accommodate the flows if:

1. Everything currently approved was built, plus
2. All vacant land within the basin, inside city limits, developed per the current sewer use ordinance and current zoning.

Approximately 5720 linear feet of sewer upgrades would be required at an estimated cost of \$5.72M. This upgrade to the system will allow an additional 2,800 sfu's, at approximately \$2,050/sfu.

There is approximately 600 acres of undeveloped land within the basin currently outside of City limits. Using the development density of three sfu's per acre, and an 80% useable area of the acreage, the potential number of sfu's is significantly higher than the upgraded system would allow. For scenarios #3 & #4, the number of additional lots was maxed out based on collection system limitations and practical upgrades.

Scenario #3

Determine what improvements would need to be made to accommodate:

1. Flows from Scenario #2, plus
2. Vacant land inside the city limits,
3. As much flow as practical, vacant land outside City limits but still within the basin.

Approximately 6160 linear feet of sewer upgrades would be required at an estimated cost of \$5.90M. This upgrade to the system will allow an additional 3,100 sfu's at approximately \$1,900/sfu.

Scenario #4

Determine if the major hot spots in the gravity system could be eliminated by rerouting a portion of the interceptor to avoid the low-lying area near the World Outreach Church.

1. Rerouting alone would not eliminate the hot spots
2. Other upgrades upstream would also be necessary similar to the previous scenarios.
3. Improvements would need to be made to accommodate the flows from Scenario #2,
4. And as much flow as practical, vacant land outside City limits but still within the basin.

Approximately 6400 linear feet of sewer upgrades would be required at an estimated cost of \$6.35M. This upgrade to the system will allow an additional 3,700 sfu's at approximately \$1,700/sfu.

In order to allow the vacant properties within the City limits to continue to develop, staff is going to recommend to the City Planning Department to adhere to the current sewer allocation ordinance and the current zoning with no variance unless the capacity is reduced at another location within the same sub-basin.

Staff recommended budgeting for Scenario #4 and communicating with the affected stakeholders (e.g., developers, builders, and engineers) the current restrictions for sewer connections in this basin and the timeframe associated making the improvements to increase the sewer capacity. Staff discussed waiting to reach out to the development community after they had integrated the increased number of sewer connections into the overall system sewer allocation model to ensure downstream capacity was available for the additional 3,700 connections. Staff anticipates bringing forward a future recommendation to create an overlay Special Sanitary Sewer Assessment District to recoup these costs.

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

Staff presented the Financial Reports for the year ending August 31, 2021.

There being no further business, the meeting was adjourned.