

WATER RESOURCES BOARD

Tuesday, March 3, 2020
Operations & Maintenance Facility
1725 South Church Street
3:30 PM

AGENDA

1. Consent Agenda:
 - A. Consider SRWTP Commercial Structures & Facilities Painting Contract extension and SSR RPR Task Order 19-41-024.0 2
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10. Financials
11. Other business
12. Adjourn



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MEMORANDUM

DATE: February 24, 2020
TO: Water Resources Board
FROM: Alan Cranford
SUBJECT: Commercial Structures and Facilities Painting Contract Extension
SSR RPR Task Order 19-41-024.0
Stones River Water Treatment Plant

Background

In December 2018, Staff brought the bids for repainting of the Stones River Water Treatment Plant and Auxiliary Intake Building over the next four years. The approved bidder was Commercial Painting, Inc. They started their painting in FY19 and this is the extension for the painting during FY21. FY21 is budgeted at \$445,000. This work will start after July 1, 2020.

Fiscal Impact

The current cost of the FY21 project is \$397,200 for painting and \$43,100 for coating inspection from SSR and \$4,700 for contingency.

Recommendation

Staff requests that the Board recommend to the City Council accepting Commercial Painting, Inc. second amendment for the painting contract and SSR coating inspection RPR task order.

Attachments

Commercial Painting, Inc. Contract Extension
SSR Coating RPR Task Order 19-41-024.0

**SECOND AMENDMENT
TO THE
CONTRACT
BETWEEN THE CITY OF MURFREESBORO
AND
COMMERCIAL PAINTING INC.**

This Second Amendment ("Second Amendment") to the Contract, entered into December 20, 2018 ("Contract"), is effective as of this 1st Day of July, 2020, by and between the City of Murfreesboro ("City"), a municipal corporation of the State of Tennessee and Commercial Painting Inc. ("Contractor"), a Corporation of the State of Tennessee.

RECITALS

WHEREAS, on December 20, 2018 the City entered into a contract with Commercial Painting Inc., for Commercial Structure and facilities Painting; and,

WHEREAS, the term of the contract between the City and Contractor is currently from July 1, 2019 to June 30, 2020 and,

WHEREAS, the City and Contractor wish to extend the Contract term for an additional year pursuant to provision 1.14 of the Invitation to Bid, dated October 23, 2018.

NOW THEREFORE, the City and Contractor mutually agree to extend the term of the current Contract, from July 1, 2020 until June 30, 2021 in the amount of \$397,200.00 which includes areas identified as "Area Five", "Area Seven", "Area Eleven", "Area Twelve", "Area Thirteen", and "Area Sixteen" in the original contract.

CITY OF MURFREESBORO

COMMERCIAL PAINTING INC.:

By: _____
Craig D. Tindall, City Manager

By: _____
Ken Darby, Vice President

Approved as to form:

Adam F. Tucker, City Attorney

ENGINEERING TASK ORDER 19-41-024.0

Task Order

In accordance with the Standard Form of Agreement Between Owner and Engineer for Professional Services, dated August 6, 2002 ("Agreement"), Owner and Engineer agree as follows:

1. Background Data

- a. Effective Date of Task Order: February 25, 2020
- b. Owner: Murfreesboro Water Resources Department (MWRD)
- c. Engineer: Smith Seckman Reid (SSR)
- d. Specific Project (title): Coating Inspection for Commercial Structures and Facilities Painting Project
- e. Specific Project (description): The project includes RPR/Coating Inspection services performed by SSR for MWRD's Commercial Structures and Facilities Painting Project for Fiscal Year 2020-2021. This project was bid out by MWRD and the contract was awarded to Commercial Painting, Inc. (CPI) in October 2018. As part of this project, SSR will inspect the work performed by CPI for adherence to the agreed upon Specifications. For Fiscal Year 2020-2021, coating improvements will occur in Area 5 (process basins/ awning), Area 7 (pipe gallery), Area 11 (brine building), Area 12 (fluoride building), Area 13 (high service pump building), and Area 16 (offices).

2. Services of Engineer

- A. The specific services to be provided or furnished by Engineer under this Task Order are:
 - RPR Services (Agreement, Paragraph 1.6.2.1) and the following:
 - Including part time Resident Project Representative (RPR) services and NACE Coating Inspector services. Visit the site on an as-needed basis to ensure all critical coating tasks are observed and inspected. This includes, but is not limited to, surface preparation, containment setup, base coating, intermediate coating, and top coating. The following breaks down the maximum number of projected site visits for each phase of this project.
 - FY 2020-2021: **60 total trips**
- B. All of the services included above comprise Basic Services for purposes of Engineer's compensation under this Task Order.

3. Exclusions

- A. N/A

4. Additional Services

A. Additional Services that may be authorized or necessary under this Task Order are set forth as Additional Services in Part 2—Additional Services of Engineer, of the Agreement modified for this specific Task Order, and attached to and incorporated as part of this Task Order.

5. Owner's Responsibilities

A. Owner shall have those responsibilities set forth in Section 3 of the Agreement, subject to the following:

- Delete Paragraph 3.5.

6. Task Order Schedule

<u>Party</u>	<u>Action</u>	<u>Schedule</u>
Engineer	Complete FY 2020-2021 Coating Inspection	By end of FY 2020-2021.

7. Payments to Engineer

A. Owner shall pay Engineer for services rendered under this Task Order as follows:

Description of Service	Amount	Basis of Compensation
1. Basic Services (Section 1 of Agreement)		
a. FY 2020-2021	\$34,100	Hourly Not to Exceed
TOTAL COMPENSATION (lines 1.a-b)	\$34,100	
REIMBURSABLE EXPENSES **		
a. Out-of-Town Mileage	\$0.00	\$0.58 /mile
b. Air Transportation	\$0.00	At Cost
c. Meals and Lodging	\$0.00	At Cost
d. External Plotting	\$400	At Cost
e. Permitting Fees	\$50	At Cost

Engineer expects the entire contract duration for these services to be less than 12 months. If the contract duration extends beyond this time, commensurate additional compensation may be required.

8. Consultants retained as of the Effective Date of the Task Order:

A. N/A

9. Attachments:

A. Detailed project understanding.

10. Terms and Conditions

- A. Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is February 25, 2020.

CITY OF MURFREESBORO:

WITNESS:

By: _____

By: _____

Print Name: _____

Print Name: _____

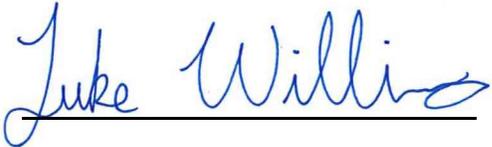
Title: _____

Title: _____

SMITH SECKMAN REID:

WITNESS:

By:  _____

By:  _____

Print Name: Mike Bernard

Print Name: Luke Williams

Title: Principal

Title: Water/Wastewater Engineer

APPROVED AS TO FORM:

City of Murfreesboro Legal Department

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**COATING INSPECTION FOR COMMERCIAL STRUCTURES AND FACILITIES PAINTING
PROJECT
DETAILED PROJECT UNDERSTANDING
ATTACHMENT TO TASK ORDER 19-41-021.0**

Project Understanding

The task order covers the basic engineering and inspection services necessary to complete each of the following tasks:

- Coating Inspection and RPR Services for Fiscal Year 2020-2021 of the MWRD Commercial Structures and Facilities Painting Project including Area 5 (process basins/ awning), Area 7 (pipe gallery), Area 11 (brine building), Area 12 (fluoride building), Area 13 (high service pump building), and Area 16 (offices).

The task order excludes engineering basic services for each of the following:

- Bidding Phase Services (to be performed by MWRD).
- Construction Administration Phase Services (to be performed by MWRD).

Murfreesboro Water Resources Department
Commercial Structures and Facilities Painting RPR
Financial Year 2020-2021
Preliminary Estimate of Manpower

			TOTAL	Summary	
				Engineer II	EIT I
Task 6- Resident Project Representative					
	SubTask 6.1	Part-time RPR Services	260		260
	SubTask 6.2	Project Management	60	60	
Task 6 Subtotal Hours			320	60	260
Task 6 Subtotal Cost			\$34,100	\$8,100	\$26,000
SSR LABOR HOURS			320	60	260
SSR LABOR COST			\$34,100	\$8,100	\$26,000
TOTAL PROJECT COST			\$34,100		



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Consent Agenda

DATE: February 21, 2020
TO: Water Resources Board
FROM: Alan Cranford
SUBJECT: Chemical Bid Extensions

Background

Bids were publicly opened on July 1, 2017 for water treatment chemicals to be used at the Stones River Water Treatment Plant. Section 1.3.4 of the bid documents states “**The successful bidder shall provide the chemical(s) as specified. Pricing shall be effective for the term of the contract, which is through June 30, 2018 with the option to renew for up to three additional one-year terms.**” The following companies have now renewed their contract for the third term through June 30, 2021. The bids are as follows:

American Development Company:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Sodium Hydroxide	\$0.168/lb	\$ 5,000.00

Brenntag Mid-South:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Citric Acid 50%	\$5.58/gal	\$ 16,000.00

Univar:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Sodium Chloride	\$0.16/lb	\$ 70,000.00

Bids were publicly opened on April 9, 2018 for water treatment chemicals to be used at the Stones River Water Treatment Plant. Section 1.3.4 of the bid documents states “**The successful bidder shall provide the chemical(s) as specified. Pricing shall be effective for the term of the contract, which is through June 30, 2019 with the option to renew for up to three additional one-year terms.**” The following companies have now renewed their contract for the second term through June 30, 2021. The bids are as follows:

Water Resources Department

300 NW Broad Street * P.O. Box 1477 * Murfreesboro, TN 37133-1477 * Office: 615 890 0862 * Fax: 615 896 4259
TTY 615 848 3214 * www.murfreesborotn.gov

American Development Company:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Hydrogen Peroxide	\$0.33/lb	\$ 26,000.00

Gulbrandsen Technologies, Inc.:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Polyaluminum Hydroxichloride	\$0.1977/lb	\$ 20,000.00

Bids were publicly opened on March 25, 2019 for water treatment chemicals to be used at the Stones River Water Treatment Plant. Section 1.3.4 of the bid documents states “**The successful bidder shall provide the chemical(s) as specified. Pricing shall be effective for the term of the contract, which is through June 30, 2020 with the option to renew for up to three additional one-year terms.**” The following companies have now renewed their contract for the first term through June 30, 2021. The bids are as follows:

American Development Company:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Calcium Thiosulfate	\$0.508/lb	\$ 12,000.00

American Development Company:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Phosphate	\$0.842/lb	\$ 45,000.00

American Development Company:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Sodium Permanganate	\$0.762/lb	\$ 285,000.00

Polydyne:

CHEMICAL	UNIT PRICE	EST. ANNUAL EXPENSE
Polyelectrolyte Coagulant Aid	\$0.91/lb	\$ 40,000.00

Fiscal Impact

The price of the chemicals will be reflected in the FY 2020-21 Operating Budget. The contract price will be good through June 30, 2021.

Recommendations

Staff requests the Board recommend to City Council approving the renewal of the chemical bid extensions as provided above.

Attachments

None



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MEMORANDUM

DATE: February 24, 2020
TO: Water Resources Board
FROM: Ryan Potts
SUBJECT: Advanced Metering Infrastructure (AMI) server and version upgrades

Background

The AMI servers are currently running on Windows Server Edition 2008 which has met its end of life effective January 14, 2020.

Also, MWRD is currently running Itron Fixed Network version 5.1. We need to upgrade to version 5.4 to resolve communication and time sync issues between the servers and the field devices.

Recommendation

Recommend upgrading the Windows Server Operating System from 2008 to 2016 (end of life 1/11/2027) and Fixed Network from version 5.1 to 5.4. Price estimate attached.

Fiscal Impact

Fiscal impact will be a total of \$63,780 from FY20 rate-funded capital budget. This will replace a SAN (Storage Area Network) budgeted at \$60,000 which is not necessary at this time. We believe we can perform enough of the work internally to get the total cost under \$60,000.

Attachment

Price Estimate



Electric / Gas / Water
 Information collection, analysis and application

2111 N. Molter Rd.
 Liberty Lake, WA 99019
 fax: 866-787-6910
www.itron.com

**Pricing Summary for
 Murfreesboro Water & Sewer**

BMR# 19090-20 Ver1 Jan
 January 10, 2020

Item	Part Number	Description	Qty	Unit Price	Extended Price	Notes
Professional Services						
1	Services	Itron Supplemental Services - Upgrade Locally Installed Fixed Network Software from 5.1 to 5.4			\$56,320.00	(1)
2	Expenses	Estimated Travel & Expenses			\$7,460.00	
Total					\$63,780.00	

Notes and Assumptions

- (1) Itron Professional Services above are estimated to be a 2 month project duration to provide Fixed Network NAA software upgrade 5.1 to 5.4 and migrate data to new system with USS in a support role.
 Itron has included a remote Project Manager 2 hours per week and 4 hours for start up/4 hours close out activities.
 Murfreesboro W&S is responsible for procurement of any necessary server hardware/3rd party software upgrades.
 Murfreesboro W&S will provide VPN or remote access
 USS.Murfreesboro W&S is responsible for interface development. Itron has not included any services for interface work.
 Itron has included 80 hours to support data migration to new system
 USS will be responsible for any necessary training
 Itron has included 2 trips on site. If additional travel is required, T&E will be billed at actual.
 Should additional hours be required, this will be done thru the Itron Change Order process.
 USS. Murfreesboro W&S to perform field work to upgrade repeaters (requires USS.Murfreesboro W&S to perform upgrade at each Repeater site).
- (2) Pricing is based on Itron's standard terms and conditions.
- (3) Taxes and freight are not included. Prices are in US dollars. Price is valid for 90 days.



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MEMORANDUM

DATE: March 26, 2020
TO: Water Resources Board
FROM: Darren Gore/Doug Swann
SUBJECT: Water Resources Department audit for the Year Ending June 30, 2020
Stormwater Fund audit for the Year Ending June 30, 2020

Background

Attached is a proposal dated February 25, 2020 from Jobe, Hastings & Associates to perform the annual audits of Murfreesboro Water Resources Department and the Murfreesboro Stormwater Fund as of June 30, 2020.

Recommendation

Staff recommends accepting the proposal as presented.

Fiscal Impact

The proposed fee is \$28,500. As the audit is performed during the subsequent fiscal year, funding will come from the Professional Services expense account in the FY21 budget year.

This quote reflects no increase in the audit fee from FY19.

Attachment

Jobe, Hastings & Associates proposal



JOB, HASTINGS & ASSOCIATES

Certified Public Accountants

745 SOUTH CHURCH STREET – BELMONT PARK
P.O. BOX 1175 MURFREESBORO, TN 37133-1175
(615) 893-7777 FAX: (615) 896-5990
www.jobehastings.com

James R. Jobe, CPA
Donna K. Hastings, CPA (*inactive*)
Joel H. Jobe (1944 – 2006)

February 25, 2020

Mr. Darren Gore
Murfreesboro Water Resources Department
P.O. Box 1477
Murfreesboro, TN 37130

Re: Audit Proposal

Dear Mr. Gore:

Thank you for the opportunity to perform the audits of the Murfreesboro Water Resources Department and the Murfreesboro Stormwater Fund for the prior fiscal year. We appreciate the confidence that you have shown in our firm by allowing us the opportunity to submit a proposal for the coming fiscal year.

We are pleased to submit our proposal to audit the financial statements of the Murfreesboro Water Resources Department and the Murfreesboro Stormwater Fund for the year ending June 30, 2020. The audits will be financial and compliance audits and will be conducted in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, as well as those prescribed by the Comptroller of the Treasury of the State of Tennessee. Furthermore, the audit of the Water Resources Department will be conducted in accordance with all requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance), if applicable.

We propose to perform the audits of the Murfreesboro Water Resources Department and the Murfreesboro Stormwater Fund for a total combined fee of \$28,500 (\$24,900 for the Murfreesboro Water Resources Department and \$3,600 for the Stormwater Fund.) This fee is based on the amount of time we feel is necessary to perform the audits in an efficient but comprehensive manner as required by the standards.

Your selection of us as auditors will enable us to begin interim audit testing prior to the fiscal year ending June 30, 2020, and meet with departmental personnel to plan the audit time-line to ensure that the deadline of October 30, 2020 is met.

If you need any additional information other than what we have provided, please let us know. We appreciate your business and look forward to continuing to work with you.

Sincerely,

James R. Jobe, CPA
Partner

MINUTES
MURFREESBORO WATER RESOURCES BOARD
January 28, 2020

The Murfreesboro Water Resources Board met on Tuesday, January 28, 2020 in the conference room at the Operations and Maintenance Building, 1725 S. Church Street. Present at the meeting were Board members: Dr. Al Carter, Mr. Ron Crabtree, Mr. Brian Kidd, Ms. Kathy Nobles, Ms. Sandra Trail, Mr. Kirt Wade, and Ms. Madelyn Scales-Harris. Also present were Darren Gore, Valerie Smith, Doug Swann, Michele Pinkston, Roman Hankins, Anita Heck, Steve Tate, Donald Hughes, Jimmy Stacey, Alan Cranford, Joe Russell, John Strickland, Mike Bernard, Jay Bradley, Lynda Sullivan, Sharon Seibert, Randy McCullough, Adam Todd, Andy McCrary, and Travis Wilson along with other members of the public.

The Consent Agenda was presented for the following considerations:

A. Consider Walter Hill Dam Rehabilitation Change Order No. 3 –

Haren Construction Company, Inc. (HCCI) has completed the repairs of the Walter Hill Dam. In addition, the Tennessee Department of Environment and Conservation has inspected the dam and states that it is in compliance with the Safe Dams Act.

Change Order No. 3 is to modify the contract amount by decreasing the amount by \$60,940.50. The deduction comes from quantity adjustments from both Change Order No. 1 and Change Order No. 2. The first adjustment in the amount of \$30,400 is for an unused coating system originally proposed in Change Order No. 1. The remaining \$30,540.50 is for time, material, and labor not needed for the pressure grouting associated with Change Order No. 2.

The contract price prior to this change order was \$631,958.54, the revised contract price will be \$571,054.04. This is \$60,940.50 below what was approved.

Staff recommended the Board recommend to the City Council approving Change Order No. 3 for Haren Construction Company, Inc. closing out the project.

B. Consider Glenwood & Lawndale Drive Waterline Replacement Bids –

Operations and Maintenance requested sealed bids for the materials necessary for the waterline replacement on Glenwood & Lawndale Drives. The table below shows the bid results.

Bid Results	
Company	Total
Core & Main Waterworks	\$30,539.45
Fortiline	\$31,059.88
Hayes Pipe	\$31,594.18
G&C Supply Co Inc.	\$32,409.20
Consolidated Pipe	\$33,296.00

Staff recommended the Board recommend to City Council approval to purchase the materials for the waterline replacement, from the lowest bidder, Core & Main. Funds are available in the Capital Budget.

C. Consider 2018/19 Sanitary Sewer Rehab Contract Change Order No. 1 –

The Board previously approved the Engineering, Construction Administration & Resident Inspection necessary for this next sanitary sewer rehabilitation project with S&ME. Bids were received and the project was awarded to SBW Constructors in the amount of \$3,842,301.

At this time, staff requested S&ME to prepare Change Order No. 1 for the project to add additional open-cut sewer point repairs, costs associated for exploratory digging just east of the Northfield Kroger, additional sewer main replacement within the intersection of W. Clark Blvd. and NW Broad Street, and other miscellaneous work and associated paving. This additional work was determined as necessary either through field verification by SBW prior to performing work, pre-rehab videos performed by a sub-contractor to SBW and/or recent video by Operations & Maintenance.

Staff recommended that the Board recommend to the City Council approval of Change Order No. 1 in the amount of \$150,812 to be added to the project along with an additional 73 days for the construction.

Funding for the Engineering, Construction Administration, Inspection and Construction was approved from a combination of 2018/2019 and 2019/2020 Budget & Working Capital Reserves.

Funding Source	Budgeted Amount	Engineering Expenditures	Construction Expenditures	Remaining
Rate Funded Operating Budget 2018-19	\$1,000,000	\$(432,000)	\$0	\$568,000
Working Reserves 2018-19	\$1,500,000		\$0	\$1,500,000
Rate Funded Operating Budget 2019-20	\$1,000,000	\$0	\$(3,842,301)	\$1,000,000
Working Reserves 2019-20	\$1,000,000	\$0		\$(2,842,301)
Change Order #1			\$(150,812)	\$(150,812)
Total	\$4,500,000	\$(432,000)	\$(3,993,113)	\$74,887

The total contract amount with this change order will be \$3,993,113.

A motion was made by Ron Crabtree to accept the Consent Agenda as presented and it was seconded by Kirt Wade. The Board voted unanimously to approve.

The December 10, 2019 Board Minutes were unanimously accepted as written.

The Board considered Mill Street, Tiger Hill & Halls Hill Storage Tank Repair/Recoating Bids.

Initial Invitations to Bid (ITB) for the Mill Street, Tiger Hill and Halls Hill Storage Tank Repair and Repainting project were accepted on November 5, 2019 and rejected by the Board on December 10, 2019. The ITB was re-advertised and released for bid for the second time on December 3, 2019 and bids were publicly opened on Tuesday, January 7, 2020. There were 11 plan holders, however, only 7 bids were submitted. The bid tabulation is below.

Bidder	Bid Amount
Currens Construction Services, LLC	\$2,557,130
Preferred Sandblasting and Painting, LLC	\$2,611,500
Utility Service Co., Inc.	\$2,959,500
Tank Pro, Inc.	\$3,040,970
Worldwide Industries Corp	\$3,087,620
TMI Coatings, Inc.	\$3,270,000
Classic Protective Coatings, Inc.	\$3,472,870

After evaluation of the submitted bids, the low responsive and responsible bidder is Currens Construction Services, LLC in the amount of \$2,557,130.

The low bidder, Currens Construction Services, LLC is located in Harrodsburg, KY. Though SSR and MWRD have not worked with Terry Currens recently, SSR is familiar with this company as they have completed multiple projects with SSR's coating inspection subcontractor, Mid-South Tank Consultants, and come highly recommended. The opinion of probable construction cost for this work was approximately \$2,596,300. Currens' bid is slightly under the original cost estimate.

The previous bid, which was rejected due to errors, was in the amount of 2,650,840 after the errors were corrected. The rebidding of the project saved the Department \$93,710.

Staff recommended the Board recommend to the City Council approving the storage tank repair and repainting bid from Currens Construction Services, LLC in accordance with their bid. Funding is budgeted in the amount of \$2,800,000 in the FY20 and FY21 Working Capital Reserves 5-yr CIP.

Kathy Nobles made a motion to approve. Kirt Wade seconded. The motion unanimously passed.

The Board considered SSR Engineering Task Order 1941021.0, SRWTP High Service Pump Station and Membrane Feed Pumps Improvements.

Staff brought this project to the December Board meeting for adjustment to the current budgeting schedule and provided additional information regarding the need for renovations to the High Service Pump Station and Membrane Feed Pump Station.

The High Service Pump Station and Membrane Feed Pump Station have been budgeted for replacement in the Department's FY20-FY22 rate funded capital expenditure budget. The re-budgeting request compresses the previous 3-yr plan for improvements into completing the project during a portion of FY20 and FY21.

All of the mechanical and electrical work will be conducted by John Bouchard and Sons in accordance with the Water/Wastewater Mechanical and Electrical contract.

The equipment portion of the project will likely bid in the last quarter of the MWRD Financial Year of 2019-2020 (June 2020). Construction is anticipated to begin in the first quarter of the MWRD Financial Year of 2020-2021 and all work should be completed within that fiscal year.

The immediate fiscal impact for designing these improvements is \$140,130. The total estimate for the entire project is \$2,561,000 with funding coming from working capital reserves with an accompanying refunding component coming from rate funded capital in the amount of \$1,000,000 for FY21.

Staff recommended the Board recommend to the City Council approval of SSR Engineering Task Order 1941021.0 in the amount of \$140,130.

Kathy Nobles made a motion to approve. Madelyn Scales-Harris seconded. The motion unanimously passed.

The Board considered ELI Engineering Work Authorization (WA) for Thompson Lane Widening Utility Design Improvements.

In 2015 the Department received Preliminary Field Review plans that TDOT was going to reconstruct and widen Thompson Lane between NW Broad Street and Memorial Boulevard. On December 30, 2019, all Utilities received notification to proceed with the engineering necessary to prepare plans, a schedule of working days and cost estimates for the adjustment or relocation of water, sewer, and repurified water mains that may be in conflict with the reconstruction.

As with all roadway improvement projects staff considers these projects as ideal opportunities for making improvements to the water, sewer and/or repurified water systems and to replace old cast iron, clay and concrete lines.

Currently, Wisner Company (Wiser) is the design engineer for the roadway. Typically, the Department would request the design engineer for the roadway project give a proposal for the water, sewer and/or repurified water main improvements or relocations. In this situation however, Wisner has not provided the Department with a professional engineering staff member demonstrating acceptable experience in the area of utility design in conjunction with such a significant roadway reconstruction project. Therefore, the Department has requested and received WA#4 from ELI to design the improvements and/or relocations utilizing the City's MSA unit prices. The staff at ELI are familiar with the project as well as MWRD's system. It is anticipated that this work would be included in TDOT's project for bid and constructed through their contract. The anticipated bid date is June of 2022; however, this depends on funding and right of way acquisition.

The WA from ELI for the initial design, as TDOT refers to it as an "A Date Package Submittal", is in an amount not to exceed \$175,000. Additional engineering past this "A Date Package" will be brought back to the Board for approval.

Staff recommended the Board recommend to City Council approval of the WA with ELI in an amount not to exceed \$175,000.

This project is not included in the Department's Capital Improvement Plan (CIP). Based on the Board approved recommendations of the 2007 Financial Conditions Assessment prepared by SSR, all water and sewer improvements associated with new roadway or roadway improvements in the City would be

funded from the Department's working capital reserves account. It is therefore recommended that the design costs for this project come from working capital reserves account. The future fiscal impact associated with the construction costs associated with utility improvements at this intersection will be brought back before the Board for approval.

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

The Board considered JB&S Task Order 19-05, Aerator Gearbox Installation at WRRF.

Staff submitted Task Order 19-05 with John Bouchard & Sons (JB&S) for the installation and replacement of three pre-existing aerators in the oxidation ditches at the Water Resource Recovery Facility (WRRF).

In April 2019, the Board approved purchase of three oxidation ditch aerators and associated parts in the amount of \$383,022. At that time, staff estimated that the installation of these aerators through the contract with JB&S to be \$72,000. These aerators have been delivered to the WRRF and are ready to be installed.

The pre-existing oxidation ditch aerators to be replaced were originally installed at the WRRF in 2000 and are at the end of their useful life. They are key units of the water treatment process. The system relies on a total of nine 200 HP Aerators mechanically introducing oxygen into the biological mixed liquid.

Staff recommended the Board recommend to City Council approving the installation of the WRRF's oxidation ditch aerators 1B, 1C, and 2B by JB&S at a cost of \$70,047 (\$23,349 each). Funding will be from the Department's working capital reserves.

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

The Board reviewed Special Sanitary Sewer Assessment Districts (SSSAD) recoupment as of December 2019.

Starting in 1994, MWRD established certain areas that the Department "front end" funded with cash reserves to facilitate growth by installing adequate sanitary sewer infrastructure. That forward-thinking, proactive planning has continued throughout the past 20 years. Setting the proper utility foundation has been a viable model to trigger and support structured growth in "green field" areas within and around the City of Murfreesboro.

In addition, the Department's initial tenets were as follows:

- 1) The special sanitary sewer assessment districts were established so that the ratepayer would not bear the financial burden of fostering new development.
- 2) The intent of establishing special sanitary sewer assessment districts was to recoup the Department's investment; not to make a profit.
- 3) The initial sewer assessment districts term limits were based on a trajectory or trend of development that the City was experiencing in the late 1990's and early 2000's. The recession that occurred in the latter 2000's was not accounted for in the timeline anticipated to fully recoup the Department's investment.

As a result of some of the skewed recoupment periods and that some of the SSSAD's had been fully recouped, the Board recommended in December 2014 and the Council approved in February 2015; 1) Modifying assessment district ordinances that had a specific time limit (e.g. 15 or 25 years) to an indefinite limit based on complete repayment of MWRD's expenses and 2) Modifying assessment district ordinances that the special assessment cease when all of the district's construction expenses have been recouped.

In September of 2018 the Board asked staff to look at the earnings foregone by making the cash outlay for the sewer improvements associated with the special sanitary sewer assessment districts. As of December 2019, there has been approximately \$5.0M in foregone interest earned (assuming 1% annually) in the 20 years since the inception of the Overall Creek SSSAD established in 1999 and the last assessment district established in 2016 on South Church Street.

MWRD has invested \$35.8M in SSSAD's since 1999 and have recouped \$25.1M (70.1% of total). When accounting for the interest earnings foregone the recoupment drops to 61.5%.

Staff presented and discussed the Water Resources Dashboard Performance for December 2019.

Staff presented the Financial Reports for the year ending December 31, 2019.

Staff proposed to reschedule the February 25th meeting to Tuesday, March 3rd.

There being no further business, the meeting was adjourned.

Alphonse Carter, Jr., Vice Chairman



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MEMORANDUM

DATE: February 21, 2020
TO: Water Resources Board
FROM: Darren Gore
SUBJECT: FY2019 Water and Sewer Cost of Service Study

BACKGROUND

The Murfreesboro Water and Sewer Department was provided a cost of service study (COSS) from Jackson Thornton Utilities Consultants for FY2019. Jackson Thornton will provide a presentation to the Board summarizing the FY19 COSS. Next month, a pro forma for FY24 will be presented in conjunction with a discussion and analysis on rate design to meet the Department's 5-yr projected revenue requirements. The COSS was reviewed in a historical perspective; looking back at where the Department was in 2007, 2011, 2013, 2015 and 2017 and where the Department is as of 2019. The objectives of the COSS is to make sure there is enough revenue to meet the needs of the system, ensure fair and equitable rates as well as customers' ability to pay; thereby making the rates defensible. The COSS develops the process to determine revenue requirements, develops revenue requirements by rate class, develops recommended rate designs, and recommends potential rate changes.

MWRD defines five customer classes. The customer classes are generally defined as follows:

- 1) Residential class includes detached and attached residential units, duplexes, mobile homes and apartments.
- 2) Small Commercial includes churches, hotel/motel and other retail/service establishments that have a meter smaller than 1 ½".
- 3) Large Commercial includes Middle Tennessee Medical Center (MTMC) as well as the same categories as defined in small commercial but having a water meter 1 ½" or larger.
- 4) Industrial includes all industrial water and sewer users in MWSD's water service area and all sewer users in CUD's water service area.
- 5) Government includes MTSU, the VA hospital, schools and all internal Murfreesboro accounts

For the purposes of this memo, management is summarizing the findings of the aforementioned studies for water and sanitary sewer in the following tables:

TABLE 1: WATER SYSTEM REVENUE REQUIREMENT FY17 & FY19

TOTAL REV. REQ.	FY 2017	FY 2019	Diff. (\$)	Diff. (%)
Operations & Maintenance	\$ 9,274,214	\$ 10,849,218	\$ 1,575,005	17.0%
Plus: Debt Service	\$ 3,392,100	\$ 2,956,184	\$ (435,916)	-12.9%
Plus: Rate Funded Capital	\$ 1,260,223	\$ 1,404,819	\$ 144,596	11.5%
Total Revenue Requirement	\$ 13,926,536	\$ 15,210,221	\$ 1,283,685	9.2%
Less: Other Revenue	\$ 943,104	\$ 1,344,016	\$ 400,912	42.5%
Rate Requirement	\$ 12,983,433	\$ 13,866,205	\$ 882,772	6.8%
Annual Sales (kGal)	3,098,909	3,029,168	(69,741)	-2.3%

TABLE 2: SEWER SYSTEM REVENUE REQUIREMENT FY17 & FY19

TOTAL REV. REQ.	FY 2017	FY 2019	Diff. (\$)	Diff. (%)
Operations & Maintenance	\$ 11,001,452	\$ 12,803,382 *	\$ 1,801,930	16.4%
Plus: Debt Service	\$ 11,615,825	\$ 10,126,732	\$ (1,489,093)	-12.8%
Plus: Rate Funded Capital	\$ 4,187,777	\$ 3,930,181	\$ (257,596)	-6.2%
Total Revenue Requirement	\$ 26,805,053	\$ 26,860,295	\$ 55,241	0.2%
Less: Other Revenue	\$ 972,205	\$ 1,809,740	\$ 837,535	86.1%
Rate Requirement	\$ 25,832,849	\$ 25,050,555	\$ (782,294)	-3.0%
Annual Sales (kGal)	3,506,926	3,637,052	130,127	3.7%

When reviewing the Department’s recovery of cost in total, the following chart summarizes the Department’s history over FY07, FY11, FY13, FY15, FY17 and FY19 as pertaining to Total Rate Requirements and Total Rate Revenue. As you can see, the Department started in a 20.7 percent under recovery in 2007 and is currently in an 11.2% over recovery (in total). When looking at the increase annual sales in sewer, staff believes the reason it only shows a 3.7% increase is due to General Mills discharging 49% less sewer on average to the City’s collection system.

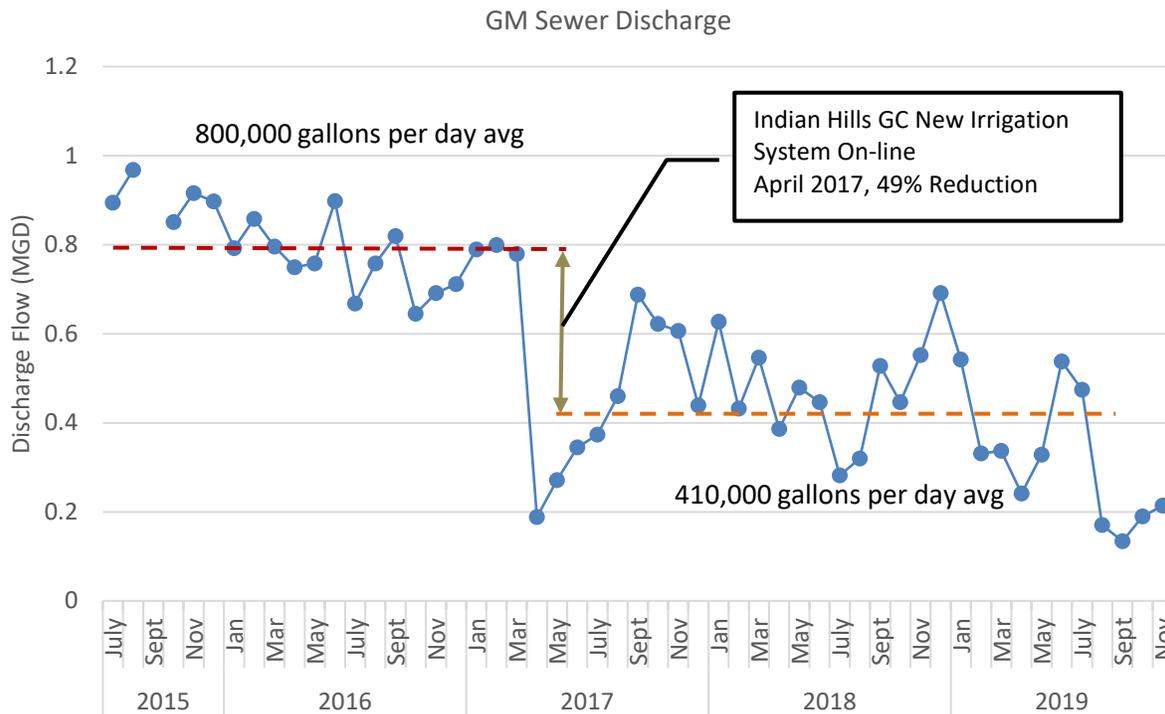
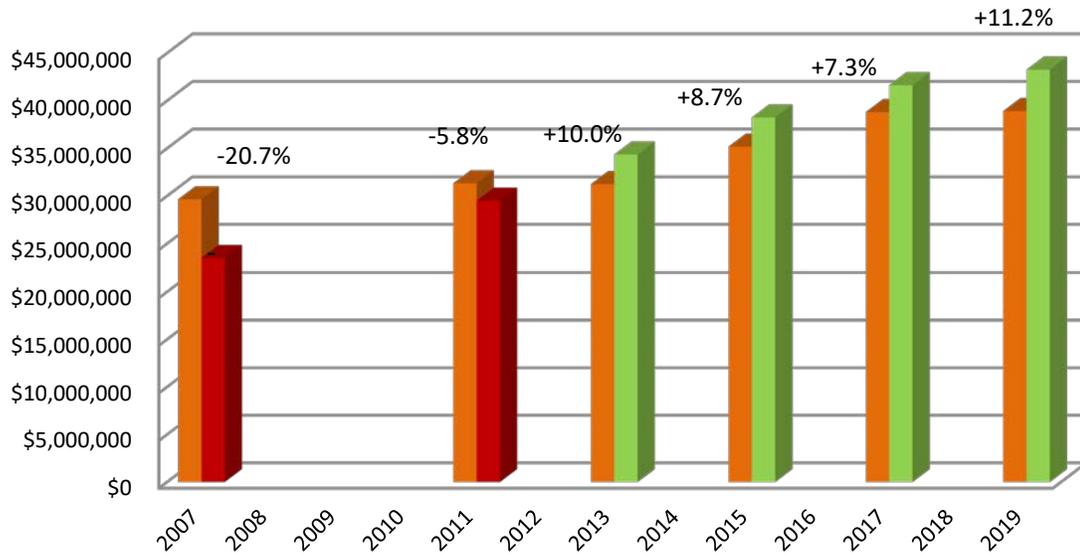


CHART 1: TOTAL WATER AND SEWER RATE REQUIREMENTS AND RATE REVENUE



	2007 COSS	2011 COSS	2013 COSS	2015 COSS	2017 COSS	2019 COSS
Total Rate Requ'mnt	\$29,650,005	\$31,328,535	\$31,244,197	\$35,175,522	\$38,816,282	\$38,916,760
Total Rate Revenue	\$23,498,628	\$29,507,833	\$34,353,148	\$38,243,420	\$41,639,144	\$43,265,652

The Department is well positioned in understanding the cost, funding and rate structure to construct future improvements to meet customer demands and regulatory requirements. The FY24 pro forma will be presented in the Board’s March meeting and the associated 5-yr revenue requirements. Staff will also review potential rate designs that will ensure future cost of service is recovered through rate revenue.

Continued cost of service studies conducted biannually will guide management in making adjustments to rates so as to ultimately attempt to recover 100% from all customer classes; thereby preventing to the greatest degree possible any subsidies from one class to another or from the water utility to the sewer utility.

RECOMMENDATION

The Cost of Service Study FY19 for water, sewer and reuse are for information purposes. No formal action is required by the Board.

FISCAL IMPACT

Not applicable at this time.

ATTACHMENTS

- FY19 Water Cost of Service Study
- FY19 Sewer Cost of Service Study
- FY19 Reuse Cost of Service Study



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MEMORANDUM

DATE: February 24, 2020
TO: Water Resources Board
FROM: Darren Gore
SUBJECT: Consolidated Utility District (CUD) dual meter billing

Background

MWRD uses the following guidance on billing for multiple meters on a service:

- If there is a large meter and a small meter (Compound or High-Low), MWRD charges water and sewer minimums for the larger meter and consumption on both meters.
- If meters are similar size, MWRD charges based on whether each meter serves a single service line to the customer.

With regard to CUD billing for multiple meters on a service:

- CUD also has High-Low meters. They charge only one minimum on those configurations.
- On dual meters of a similar size, CUD charges the minimum charge on both meters, the assumption being that the customer would need a larger meter if only one was being used.

This question arose when it was determined that CUD was not being consistent in charging the MWRD sewer minimum for dual meters. In a particular instance on a new customer, CUD began charging two minimums on a dual 6" meter customer. When billing was questioned, and after conversation with MWRD, CUD began charging only one minimum to cover both 6" meters. The customer then asked about a refund for the period that two minimums were charged. CUD then passed that question on to MWRD, thereby getting us to this point.

Recommendation

Staff feels that dual meter configurations serve as a redundancy for customers and the department, allowing the customer to continue to receive water if one meter fails.

Staff requests confirmation (as policy) of our current practice to charge only one minimum on a dual meter configuration. Additionally, in the absence of an adopted MWRD policy regarding charging minimum monthly bills on the dual meter configuration set up by CUD, staff recommends that no refunds be issued by MWRD based on customers being charged sewer per CUD's policy.

Fiscal Impact

CUD currently has nine pairs of 6" dual meters that are affected by MWRD policy. Charging the full minimum on both meters in each pair would result in an additional \$9,000+ in monthly sewer income for MWRD.

Water Resources Department

300 NW Broad Street * P.O. Box 1477 * Murfreesboro, TN 37133-1477 * Office: 615 890 0862 * Fax: 615 896 4259
www.murfreesborotn.gov/mwrdd



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MEMORANDUM

DATE: February 24, 2020
TO: Water Resources Board
FROM: Darren Gore
SUBJECT: SSR Task Order 1941016.0 – Biosolids Polymer System Replacement and Upgrade Murfreesboro Water Resource Recovery Facility (WRRF)

Summary

Staff is requesting approval of SSR Engineering Task Order 1941016.0 to design the biosolids polymer system replacement and upgrade for the Murfreesboro Water Resource Recovery Facility (WRRF).

Background

MWRD introduced to the Board at the December 2019 meeting the need to replace two existing dry polymer feed systems originally built in 2001 and 2008 that have met the end of their useful life. This project has been included in the Department’s 5-yr CIP and requires approval of an engineering task order to begin work. The polymer feed system injects polymer into the Water Resource Recovery Facilities biosolids in order to optimize their dewatering in the Fournier rotary presses.

In addition to the age of the system, the current arrangement compromises the overall capacity and effectiveness of the dewatering system. The polymer system upgrades will address these issues by designing an upgraded system, sized for future solids production loadings with 100-percent redundancy. Equipment planned includes the following:

- 2 sets of mixing/aging tanks, each sized for all 8 rotary presses
- 2 disperser/mixers (feeders), each sized for all 8 rotary presses
- 2 bag unloaders, each sized for all 8 rotary presses
- 10 polymer feed pumps (8 duty and 2 spare)

MWRD will procure the equipment and develop task orders for John Bouchard and Sons to install the polymer system using the City’s master services agreement. Additionally, MR Systems will provide the integration of local controls and field instrumentation into the WRRF’s Supervisory Control and Data Acquisition System (SCADA) using the City’s master services agreement.

Fiscal Impact

Summary of Opinion of Project Costs

Description	Opinion of Probable Cost
Polymer System Equipment Costs ¹	\$630,000
Ancillary Equipment and Installation Costs ¹	\$400,000

Description	Opinion of Probable Cost
Fournier Control Panel Replacement	\$150,000
Contingency	\$250,000
Total Probable Construction Cost	\$1,430,000
Engineering and Construction Administration	\$112,235
Resident Project Representative ³	\$50,000
Estimated Reimbursable Expenses	\$3,500
Total Probable Project Cost	\$1,595,735
<u>Notes:</u>	
1. Costs include Contractor's Overhead and Profit.	
2. Construction costs are rounded up to the nearest thousand dollars.	
3. RPR services, if requested by MWRD, would be included as a separate task order.	

The immediate fiscal impact will be associated with approving SSR's task order for designing these improvements at \$112,235. The Department has earmarked \$1,450,000 in FY20-21 from our working capital reserves to fund this project. Staff has increased that by \$150,000 based on the updated summary of costs provided by SSR.

Recommendations

Staff recommends the Board recommend to the City Council approval of SSR Task Order 1941016.0.

Attachments

1. SSR Task Order No. 1941016.0

Task Order

In accordance with the Standard Form of Agreement Between Owner and Engineer for Professional Services, dated August 6, 2002 ("Agreement"), Owner and Engineer agree as follows:

1. Background Data

- a. Effective Date of Task Order: _____, 2020
- b. Owner: Murfreesboro Water Resources Department
- c. Engineer: Smith Seckman Reid
- d. Specific Project (title): Biosolids Polymer System Replacement and Upgrade
- e. Specific Project (description): The project includes the design, bidding, and construction administration for replacing the existing water resource recovery facility (WRRF) biosolids polymer system with a new upgraded system sized for future solids production with 100% redundancy.

2. Services of Engineer

- A. The specific services to be provided or furnished by Engineer under this Task Order are:

the services (and related terms and conditions) set forth in the following sections of Basic Services of Engineer in the Agreement modified herein for this specific Task Order, as attached to the Agreement referred to above, such sections being hereby incorporated by reference:

- Preliminary Design Phase (Agreement, Paragraph 1.3) and the following:
 - Evaluation of future solids handling production requirements
 - Evaluation of the scope of supply of new polymer systems to meet the future solids handling production requirements
 - Structural evaluation based on new equipment loadings
 - Evaluation of rotary press control panel upgrade
 - Preparation of schematic design and basic equipment arrangement
- Final Design Phase (Agreement, Paragraph 1.4) as modified below:
 - Preparation of construction drawings and specifications to be delivered for MWRD review at 50% and 90% project milestones
 - Preparation of opinion of probable construction costs to be delivered for MWRD review at the 50-percent milestone and a final cost opinion delivered to MWRD prior to MWRD contract procurement (100% milestone)

- Bidding or Negotiating Services (Agreement, Paragraph 1.5) as stipulated below:
 - Engineer will issue drawings and technical specifications to John Bouchard & Sons, MR Systems, up to 3 polymer system manufacturers and if necessary, Fournier Industries requesting scope and price proposals.
 - Engineer will respond to requests for information.
 - Construction Phase Services (Agreement, Paragraph 1.6) and the following:
 - Visit the Site promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with Owner and Contractor to review the Work and determine the status of completion. Follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, Owner's objections, notice to Contractor, and issuance of a final certificate of Substantial Completion. Assist Owner regarding any remaining engineering or technical matters affecting Owner's use or occupancy of the Work following Substantial Completion.
 - not including Resident Project Representative (RPR) services (as referenced in 1.6.2.1).
 - Operational Phase Services (Agreement, Paragraph 1.7)
- B. All the services included above comprise Basic Services for purposes of Engineer's compensation under this Task Order.

3. Exclusions

- A. Services associated with government funding programs, i.e., State Revolving Fund loan program.
- B. Study and Report Phase Services (Agreement, Paragraph 1.2).
- C. Murfreesboro Codes and TDEC review submittals.
- D. SCADA/telemetry equipment design.
- E. Controls integration services.
- F. Bidding or Negotiating Phase (Agreement, Paragraph 1.5).
- G. Construction contract document preparation.
- H. Reviewing monthly payment requests.
- I. Monthly construction progress meetings.
- J. RPR Services (Agreement, Paragraph 1.6.1). These services will be provided under a separate Task Order, if Owner should require these services.
- K. Construction contractors and materials delivery scheduling and coordination.

4. Additional Services

A. Additional Services that may be authorized or necessary under this Task Order are:

set forth as Additional Services in Part 2—Additional Services of Engineer, of the Agreement modified for this specific Task Order, and attached to and incorporated as part of this Task Order.

5. Owner's Responsibilities

Owner shall have those responsibilities set forth in Section 3 of the Agreement, subject to the following:

A. Delete Paragraph 3.5.

6. Task Order Schedule

In addition to any schedule provisions provided in Exhibit A or elsewhere, the parties shall meet the following schedule:

<u>Party</u>	<u>Action</u>	<u>Schedule</u>
Engineer	Furnish electronic review copies of the 50% Preliminary Design Phase documents, opinion of probable Construction Cost, and other Preliminary Design Phase deliverables to Owner.	Within 35 days of the receipt of Owner's comments regarding the basis of design memorandum.
Owner	Submit comments regarding 50% Preliminary Design Phase documents, opinion of probable Construction Cost, and other Preliminary Design Phase deliverables to Engineer.	Within 5 days of the receipt of 50% Preliminary Design Phase documents, opinion of probable Construction Cost, and other Preliminary Design Phase deliverables from Engineer.
Engineer	Furnish electronic review copies of the 90% Drawings and Specifications, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, to Owner.	Within 45 days of the receipt of Owner's comments regarding the 50% Preliminary Design Phase documents.
Owner	Submit comments and instructions regarding the 90% Drawings and Specifications, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, to Engineer.	Within 5 days of the receipt of the 90% Drawings and Specifications, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables from Engineer.
Engineer	Furnish electronic review copies of the 100% Drawings and Specifications, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, to Owner.	Within 10 days of Owner's comments regarding 90% Drawings and Specifications and other 90% documents.
Owner	Submit comments and instructions regarding the 100% Drawings and Specifications, the	Within 5 days of the receipt of the final Drawings and Specifications, the draft bidding-

	draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, to Engineer.	related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables from Engineer.
Engineer	Furnish electronic copies of the 100% Drawings and Specifications, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, to Owner.	Within 10 days of the receipt of Owner's comments and instructions regarding the 100% Drawings and Specifications, the draft bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables.

7. Payments to Engineer

A. Owner shall pay Engineer for services rendered under this Task Order as follows:

	Description of Service	Amount	Basis of Compensation
1.	Basic Services (Section 1 of Agreement)		
a.	Preliminary and Final Design Phase	\$80,265	Hourly Not to Exceed
b.	Bidding or Negotiating Phase	\$3,985	Hourly Not to Exceed
c.	Construction Phase*	\$16,690	Hourly Not to Exceed
d.	Operational Phase	\$3,055	Hourly Not to Exceed
e.	Project Management	\$8,240	Hourly Not to Exceed
	TOTAL COMPENSATION (lines 1.a-e)	\$112,235	
	REIMBURSABLE EXPENSES **		
a.	Out-of-Town Mileage	\$400	\$0.57 /mile
b.	Air Transportation	\$0	At Cost
c.	Meals and Lodging	\$2,750	At Cost
d.	External Plotting	\$350	At Cost

*Based on a 180-day continuous construction period.

**Reimbursable expenses are estimated amounts.

Engineer expects the entire contract duration for these services to be less than 330 days. If the contract duration extends beyond this time, commensurate additional compensation may be required.

8. Consultants retained as of the Effective Date of the Task Order:

A. None.

9. Attachments:

B. Detailed project understanding.

10. Terms and Conditions

Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is _____, 2020.

CITY OF MURFREESBORO:

WITNESS:

By: _____

By: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

SMITH SECKMAN REID:

WITNESS:

By: _____

By: _____

Print Name: _____

Print Name: _____

Title: _____

Title: _____

APPROVED AS TO FORM:

City of Murfreesboro Legal Department

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**BIOSOLIDS POLYMER SYSTEM REPLACEMENT AND UPGRADE
DETAILED PROJECT UNDERSTANDING
ATTACHMENT TO TASK ORDER 1941016.0**

Project Understanding

The task order covers the engineering basic services necessary to complete the following:

Project will include preparation of a design, bidding, and construction administration, as limited herein, of upgrades to the existing Biosolids Polymer System.

Currently, MWRD has 2 existing dry polymer feed systems originally built in 2001 and 2008, respectively. Each dry polymer system is comprised of 1 dry polymer feeder including bulk bag frame and trolley; 2 mixing/aging tanks; and 4 polymer feeder pump systems. Each dry polymer system is designed to provide dilute polymer to 4 rotary presses for a total of 8 existing rotary presses.

The current polymer system dedicates a single polymer pump skid to each rotary press. As a result, in the event of a polymer pump skid failure, the associated rotary press cannot be utilized. Further, in the event of a mixer or tank failure, 4 of the 8 rotary presses cannot be utilized. This arrangement compromises the overall capacity and effectiveness of the dewatering system. In addition, due to the age of the existing polymer systems, Staff is concerned with the capacity and overall reliability of the systems.

The polymer system upgrades will address these issues by designing an upgraded system, sized for future solids production loadings with 100% redundancy. Equipment planned includes the following:

- 2 sets of mixing/aging tanks, each sized for all 8 presses
- 2 disperser/mixers (feeders), each sized for all 8 presses
- 2 bag unloaders, each sized for all 8 presses
- 10 polymer feed pumps (8 duty and 2 spare)

The following assumptions are made regarding the work:

- Electrical conduit and conductors can be reused
- Polymer system I&C wiring can be reused
- Piping interconnections to be limited to permit the redundancy necessary without overcomplicating the system
- No piping/work in the Dewatering Room will be required
- Adequate space is available in the existing Electrical Room to accommodate any additional breakers
- Design of structural improvements is limited to equipment pads only

The new dry polymer system equipment will be procured by MWRD and installed by John Bouchard & Sons (JBS) along with the installation of ancillary equipment necessary for a complete upgrade via the City Master Services Agreement with JBS. The SCADA integration and integration of local controls and field instrumentation will be performed by MR Systems and contracted directly with MWRD via the City Master Services Agreement. Engineer will assign all construction scheduling, materials delivery scheduling, and coordination responsibilities to JBS. Murfreesboro Codes and TN Department of Environment and Conservation (TDEC) reviews and approvals are not required as this project is considered maintenance and not a facility modification or capacity upgrade.

MWRD Staff plans to upgrade the Fournier Rotary Press control panel soon. SSR will evaluate the need or benefit of including the upgrade as part of this project. If determined necessary or beneficial, SSR will design the panel upgrade. The panel will be procured by MWRD and installed by JBS.

Project Meetings and Site Visits

In addition to meetings referenced in the Agreement, Engineer will perform each of the following:

- Conduct an Owner kickoff meeting to discuss the overall scope, schedule, costs, and other pertinent items critical to project success.
- Conduct Owner review workshops at basis of design memo, 50-percent, and 90-percent deliverable milestones.
- Perform 2 site visits with MWRD personnel to inspect similar polymer system installations.
- Perform a WRRF site visit to inspect existing conditions and space constraints.
- Conduct a pre-procurement scope meeting, if deemed necessary.
- Perform a site visit to determine that construction is complete and acceptable.

Deliverables

All deliverables will be transmitted electronically, unless requested otherwise by MWRD.



**MURFREESBORO WATER RESOURCES DEPARTMENT
POLYMER SYSTEM REPLACEMENT
1941016.0
PROJECT LABOR ESTIMATE**



		Summary										
		Project Director	Sr. Project Manager	Project Manager I	Engineer IV	Engineer III	Engineer II	Engineer I	Sr. Designer II	Designer II	Admin/ Clerical	Hours/ Task Costs
Hourly Rate		\$205.00	\$180.00	\$160.00	\$180.00	\$160.00	\$135.00	\$120.00	\$140.00	\$95.00	\$75.00	\$142.50
Task 0 - Project Planning and Management												
SubTask 0.1	Project Budget	1	2	0	0	0	0	0	0	0	0	3
SubTask 0.2	Subconsultant Contracts/JBS and MR Coordination	0	3	0	0	0	0	0	0	0	0	3
SubTask 0.3	Project Scheduling	1	3	0	0	0	0	0	0	0	0	4
SubTask 0.4	Project Setup (Accting, eRes, etc.)	0	3	0	0	0	0	0	0	0	8	11
SubTask 0.5	Project Work Plan	1	6	0	0	0	0	0	0	0	0	7
SubTask 0.6	QAQC Plan	1	2	0	0	0	0	0	0	0	0	3
SubTask 0.7	Weekly Projections, eRes, etc.	0	2	0	0	0	0	0	0	0	0	2
SubTask 0.8	Monthly Billing	0	4	0	0	0	0	0	0	0	0	4
SubTask 0.9	Kickoff Meeting (internal) Prepare Agenda	0	2	0	0	2	0	0	0	0	0	4
SubTask 0.10	Kickoff Meeting (internal) Attend Meeting	0	2	0	0	2	0	0	2	0	0	6
SubTask 0.11	Kickoff Meeting (internal) Prepare Minutes	0	2	0	0	2	0	0	0	0	0	4
Task 0 Subtotal Hours		4	31	0	0	6	0	0	2	0	8	51
Task 0 Subtotal Cost		\$820	\$5,580	\$0	\$0	\$960	\$0	\$0	\$280	\$0	\$600	\$8,240
Task 1 - Conceptual Design (30 days)												
SubTask 1.0	Project Management (Weekly Projections, eRes, etc.)	0	0	0	0	0	0	0	0	0	0	0
SubTask 1.1	Kickoff Meeting - Prepare Agenda	0	0	0	0	2	0	0	0	0	0	2
SubTask 1.2	Kickoff Meeting - Attend Meeting	0	2	0	0	2	0	0	0	0	0	4
SubTask 1.3	Kickoff Meeting - Prepare Minutes	0	0	0	0	1	0	0	0	0	2	3
SubTask 1.4	Review Record Drawings of the Dewatering Facility	0	0	0	0	2	0	0	0	0	0	2
SubTask 1.5	Existing Facility Condition/Needs Assessment	0	0	0	0	2	0	0	0	0	0	2
SubTask 1.6	Coordination with Equipment Manufacturer											
SubTask 1.7	Site Visits (1 Trip)	0	2	0	6	4	2	0	0	0	0	14
SubTask 1.8	Similar Equipment Inspection Trips	0	20	0	0	20	0	0	0	0	0	40
SubTask 1.9	Preliminary Equipment Selection/ Process Design	0	1	0	0	4	0	0	0	0	0	5
SubTask 1.10	Process Calculations	0	0	0	0	4	0	0	0	0	0	4
SubTask 1.11	Not Used	0	0	0	0	0	0	0	0	0	0	0
SubTask 1.13	Concept Confirmation Workshop with Owner	0	0	0	0	0	0	0	0	0	0	0
SubTask 1.16	Preliminary Structural Evaluation	0	0	0	4	0	0	0	0	0	0	4
SubTask 1.16	Preliminary Electrical Evaluation	0	0	0	6	0	0	0	0	0	0	6
SubTask 1.17	Preliminary Mechanical Evaluation	0	0	0	0	0	8	0	0	0	0	8
SubTask 1.18	Preliminary Plumbing Evaluation	0	0	0	0	0	8	0	0	0	0	8
SubTask 1.19	Preliminary I&C Evaluation	0	0	0	0	12	0	0	0	0	0	12
SubTask 1.20	Preliminary Plans	0	1	0	0	4	0	0	12	0	0	17
SubTask 1.21	Opinion of Probable Construction Cost	0	1	0	0	2	0	0	0	0	0	3
SubTask 1.22	Owner Progress Meetings (1) - Prepare Agendas	0	0	0	0	1	0	0	0	0	0	1
SubTask 1.23	Owner Progress Meetings (1) - Attend Meetings	0	2	0	0	2	0	0	0	0	0	4
SubTask 1.24	Owner Progress Meetings - Prepare Minutes	0	0	0	0	1	0	0	0	0	0	1
SubTask 1.26	Rotary Press Control Panel Upgrade Evaluation	0	0	0	0	10	0	0	0	0	0	10
SubTask 1.27	Not Used	0	0	0	0	0	0	0	0	0	0	0
SubTask 1.28	PER QAQC	0	0	0	2	0	0	0	0	0	0	2
Task 1 Subtotal Hours		0	29	0	18	73	18	0	12	0	2	152
Task 1 Subtotal Cost		\$0	\$5,220	\$0	\$3,240	\$11,680	\$2,430	\$0	\$1,680	\$0	\$150	\$24,400

			Summary										
Hourly Rate			Project Director	Sr. Project Manager	Project Manager I	Engineer IV	Engineer III	Engineer II	Engineer I	Sr. Designer II	Designer II	Admin/ Clerical	Hours/ Task Costs
			\$205.00	\$180.00	\$160.00	\$180.00	\$160.00	\$135.00	\$120.00	\$140.00	\$95.00	\$75.00	\$142.50
Task 2 - 50% Preliminary Design Completion (30 days)													
SubTask 2.0	Project Management (Weekly Projections, eRes, etc.)		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.1	Internal Review Meetings (1)		0	1	0	1	1	1	0	1	0	0	5
SubTask 2.2	Owner Progress Meetings (1) - Prepare Agendas		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.3	Owner Progress Meetings (1) - Attend Meetings		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.4	Owner Progress Meetings - Prepare Minutes		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.5	Site Visits		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.6	Site Design		0	0	0	0	1	0	0	4	0	0	5
SubTask 2.7	Erosion Protection/Sediment Control Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.8	Landscaping/Irrigation Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.9	Process and Process Piping Design		0	2	0	0	8	0	0	20	0	0	30
SubTask 2.10	Conveyance Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 2.11	Structural Design		0	0	0	4	0	0	0	8	0	0	12
SubTask 2.12	Building/Architectural Design & Space Planning		0	1	0	0	0	0	0	4	0	0	5
SubTask 2.13	Electrical Design		0	0	2	0	3	3	0	0	0	0	8
SubTask 2.14	Instrumentation & Controls Design		0	1	0	0	8	20	0	0	0	0	29
SubTask 2.15	Mechanical/Plumbing Design		0	0	1	1	3	4	0	4	0	0	13
SubTask 2.16	Technical Specifications (No Contract Documents)		0	1	0	4	4	2	0	0	0	4	15
SubTask 2.17	Construction Phasing Plan		0	0	0	0	0	0	0	2	0	0	2
SubTask 2.18	Demolition Plans		0	0	0	0	1	0	0	2	0	0	3
SubTask 2.19	50% Design Submittal - QAQC		3	1	2	0	2	0	0	1	0	0	9
SubTask 2.20	50% Design Submittal - Prepare OPCC		0	0	0	0	0	2	0	0	0	0	2
SubTask 2.21	50% Design Submittal - Package and Deliver		0	0	0	0	2	2	0	2	0	0	6
SubTask 2.22	50% Design Submittal - Owner Review Meeting		3	3	0	0	3	0	0	2	0	0	11
SubTask 2.23	Planning Commission/Codes Submittals		0	0	0	0	3	0	0	0	0	0	3
SubTask 2.24	Regulatory Submittals/Permits		0	0	0	0	0	0	0	0	0	0	0
Task 2 Subtotal Hours			6	10	5	10	39	34	0	50	0	4	158
Task 2 Subtotal Cost			\$1,230	\$1,800	\$800	\$1,800	\$6,240	\$4,590	\$0	\$7,000	\$0	\$300	\$23,760
Task 3 - 90% Final Design Completion (20 days)													
SubTask 3.0	Project Management (Weekly Projections, eRes, etc.)		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.1	Internal Review Meetings (1)		0	1	0	1	1	0	0	1	0	0	4
SubTask 3.2	Owner Progress Meetings (1) - Prepare Agendas		0	0	0	0	1	0	0	0	0	0	1
SubTask 3.3	Owner Progress Meetings (1) - Attend Meetings		0	2	0	0	2	0	0	0	0	0	4
SubTask 3.4	Owner Progress Meetings - Prepare Minutes		0	0	0	0	1	0	0	0	0	0	1
SubTask 3.5	Site Visits		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.6	Site Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.7	Erosion Protection/Sediment Control Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.8	Landscaping Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.9	Process and Process Piping Design		0	1	0	0	6	0	0	20	0	0	27
SubTask 3.10	Conveyance Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.11	Structural Design		0	0	0	4	0	0	0	4	0	0	8
SubTask 3.12	Building/Architectural Design		0	0	0	1	1	0	0	0	0	0	2
SubTask 3.13	Electrical Design		0	0	2	0	1	11	0	0	20	0	34
SubTask 3.14	Instrumentation & Controls Design		0	0	0	0	4	15	0	0	0	0	19
SubTask 3.15	Mechanical/Plumbing Design		0	0	0	0	1	9	0	0	0	0	10
SubTask 3.16	Technical Specifications (No Contract Documents)		0	1	0	2	6	2	0	0	0	2	13
SubTask 3.17	Construction Phasing Plan		0	0	0	0	1	0	0	0	0	0	1
SubTask 3.18	Demolition Plans		0	0	0	0	1	0	0	2	0	0	3
SubTask 3.19	90% Design Submittal - QAQC		2	5	1	0	1	0	0	2	0	0	11
SubTask 3.20	90% Design Submittal - Prepare OPCC		0	0	0	0	0	0	0	0	0	0	0

			Summary										
Hourly Rate			Project Director	Sr. Project Manager	Project Manager I	Engineer IV	Engineer III	Engineer II	Engineer I	Sr. Designer II	Designer II	Admin/ Clerical	Hours/ Task Costs
			\$205.00	\$180.00	\$160.00	\$180.00	\$160.00	\$135.00	\$120.00	\$140.00	\$95.00	\$75.00	\$142.50
SubTask 3.21	90% Design Submittal - Package and Deliver		0	1	0	0	2	1	0	3	0	0	7
SubTask 3.22	90% Design Submittal - Owner Review Meeting		3	3	0	0	3	0	0	0	0	0	9
SubTask 3.23	Planning Commission/Codes Submittals		0	0	0	0	0	0	0	0	0	0	0
SubTask 3.24	Regulatory Submittals/Permits		0	0	0	0	0	0	0	0	0	0	0
Task 3 Subtotal Hours			5	14	3	8	32	38	0	32	20	2	154
Task 3 Subtotal Cost			\$1,025	\$2,520	\$480	\$1,440	\$5,120	\$5,130	\$0	\$4,480	\$1,900	\$150	\$22,245
Task 4 - 100% Final Design Completion (10 days)													
SubTask 4.0	Project Management (Weekly Projections, eRes, etc.)		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.1	Internal Review Meetings (1)		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.2	Owner Progress Meetings (1) - Prepare Agendas		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.3	Owner Progress Meetings (1) - Attend Meetings		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.4	Owner Progress Meetings - Prepare Minutes		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.5	Site Visits		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.6	Site Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.7	Erosion Protection/Sediment Control Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.8	Landscaping Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.9	Process and Process Piping Design		0	0	0	0	2	0	2	0	0	0	4
SubTask 4.10	Conveyance Design		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.11	Structural Design		0	0	0	1	0	0	0	0	0	0	1
SubTask 4.12	Building/Architectural Design & Space Planning		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.13	Electrical Design		0	0	3	0	1	5	0	4	0	0	13
SubTask 4.14	Instrumentation & Controls Design		0	0	0	0	4	5	0	0	0	0	9
SubTask 4.15	Mechanical/Plumbing Design		0	0	0	0	0	9	0	0	0	0	9
SubTask 4.16	Technical Specifications (No Contract Documents)		0	0	0	1	4	0	0	0	2	0	7
SubTask 4.17	Construction Phasing Plan		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.18	Demolition Plans		0	0	0	0	1	0	4	0	0	0	5
SubTask 4.19	100% Design Submittal - QAQC		0	1	1	0	1	0	2	0	0	0	5
SubTask 4.20	100% Design Submittal - Prepare OPCC		0	1	0	0	6	0	0	0	0	0	7
SubTask 4.21	100% Design Submittal - Package and Deliver		0	1	0	0	2	1	2	0	0	0	6
SubTask 4.22	100% Design Submittal - Owner Review Meeting		0	0	0	0	0	0	0	0	0	0	0
SubTask 4.23	Planning Commission/Codes Submittals		0	0	0	0	0	0	0	0	1	0	1
SubTask 4.24	Regulatory Submittals/Permits		0	0	0	0	0	0	0	0	1	0	1
Task 4 Subtotal Hours			0	3	4	2	21	20	0	14	0	4	68
Task 4 Subtotal Cost			\$0	\$540	\$640	\$360	\$3,360	\$2,700	\$0	\$1,960	\$0	\$300	\$9,860
Task 5 - Price Proposals from JBS and MR (20 days)													
SubTask 5.0	Project Management (Weekly Projections, eRes, etc.)		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.1	Preparation of Advertisement for Bids (No Scope)		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.2	Distribution of Documents		0	1	0	0	2	0	0	0	2	0	5
SubTask 5.3	Scoping Coordination		0	1	0	0	4	0	0	0	0	0	5
SubTask 5.4	Scoping Meeting - Prepare Agenda		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.5	Scoping Meeting - Attend Meeting		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.6	Scoping Meeting - Prepare Minutes		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.7	Requests for Information		0	0	0	0	2	6	0	0	0	0	8
SubTask 5.8	Addenda Preparation		0	0	0	0	0	6	0	0	0	0	6
SubTask 5.9	Proposals Evaluation and Recommendation to Award		0	1	0	0	2	0	0	0	0	0	3
SubTask 5.10	Conformed Contract Set Preparation (No Scope)		0	0	0	0	0	0	0	0	0	0	0
SubTask 5.11	Contract Documents Preparation (No Scope)		0	0	0	0	0	0	0	0	1	0	1
Task 5 Subtotal Hours			0	3	0	0	10	12	0	0	0	3	28
Task 5 Subtotal Cost			\$0	\$540	\$0	\$0	\$1,600	\$1,620	\$0	\$0	\$0	\$225	\$3,985
Task 6 - Construction Oversight and Administration (240 days)													

		Summary										
		Project Director	Sr. Project Manager	Project Manager I	Engineer IV	Engineer III	Engineer II	Engineer I	Sr. Designer II	Designer II	Admin/ Clerical	Hours/ Task Costs
Hourly Rate		\$205.00	\$180.00	\$160.00	\$180.00	\$160.00	\$135.00	\$120.00	\$140.00	\$95.00	\$75.00	
SubTask 6.1	Internal Review Meetings	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.2	Pre-Construction Conference - Prepare Agenda	0	1	0	0	2	0	0	0	0	1	4
SubTask 6.3	Pre-Construction Conference - Attend Meeting	0	4	0	0	4	4	0	0	0	0	12
SubTask 6.4	Pre-Construction Conference - Prepare Minutes	0	0	0	0	1	4	0	0	0	2	7
SubTask 6.5	Submittal Review and Distribution	0	2	0	0	16	17	0	0	0	4	39
SubTask 6.6	Address Requests for Information	0	1	0	0	4	4	0	0	0	0	9
SubTask 6.7	Periodic Site Visits (2 visits)	0	2	0	0	12	12	0	0	0	0	26
SubTask 6.8	Not Used	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.9	Progress Meetings - Prepare Agendas	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.10	Progress Meetings - Attend Meetings	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.11	Progress Meetings - Prepare Minutes	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.12	Review and Process Pay Requests (No Scope)	0	0	0	0	0	0	0	0	0	0	0
SubTask 6.13	Evaluate/Coordinate Change Order Requests	0	2	0	0	2	0	0	0	0	0	4
SubTask 6.14	Facility Startup	0	2	0	0	8	2	0	0	0	0	12
Task 6 Subtotal Hours		0	14	0	0	49	43	0	0	0	7	113
Task 6 Subtotal Cost		\$0	\$2,520	\$0	\$0	\$7,840	\$5,805	\$0	\$0	\$0	\$525	\$16,690
Task 7 - Project Commissioning and Close-out												
SubTask 7.1	Operation and Maintenance Manuals	0	0	0	0	2	0	0	0	0	0	2
SubTask 7.2	Standard Operating Procedure Development	0	0	0	0	2	0	0	0	0	0	2
SubTask 7.3	System Commissioning and Acceptance	0	0	0	0	0	0	0	0	0	0	0
SubTask 7.4	Efficiency Monitoring and Documentation	0	0	0	0	0	6	0	0	0	0	6
SubTask 7.5	Contract Closeout	0	0	0	0	0	0	0	0	0	0	0
SubTask 7.6	One Year Warranty Inspection	0	0	0	0	0	0	0	0	0	0	0
SubTask 7.7	Record Drawings and Warranty Documents	0	0	0	0	4	3	0	4	0	0	11
Task 7 Subtotal Hours		0	0	0	0	8	9	0	4	0	0	21
Task 7 Subtotal Cost		\$0	\$0	\$0	\$0	\$1,280	\$1,215	\$0	\$560	\$0	\$0	\$3,055
LABOR HOURS		15	104	12	38	238	174	0	114	20	30	745
REVENUE		\$3,075	\$18,720	\$1,920	\$6,840	\$38,080	\$23,490	\$0	\$15,960	\$1,900	\$2,250	\$112,235



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MEMORANDUM

DATE: February 20, 2020
TO: Water Resources Board
FROM: Valerie H. Smith
SUBJECT: Development Restrictions
Limited Sanitary Sewer Capacity
Flow Monitor Basin 10-Upper Reaches

SUMMARY

Based on recent temporary flow studies conducted in MWRD's sanitary sewer service area, surcharge conditions occurred under wet weather conditions that require staff to implement restricted connections to the sewer system. Staff would request the Board's recommendation in limiting density to 2.5 single family unit equivalents in the following areas:

- Flow monitoring basin 10A-3; area south of MTSU encompassing areas south of East Lytle St. to north of East Castle St. (exhibit attached)
- Flow monitoring basin 10A-4; area south of MTSU encompassing areas south of Alumni Dr. to north of John Bragg Hwy and north of University Ridge Apartments (Norman Ave.; exhibit attached).

BACKGROUND

Between December 13, 2018 to January 21, 2019, the Department requested ADS, through our professional services agreement, to install 3 temporary sewer flow monitors within flow monitor Basin MF10 because a developer was interested in building a hotel just north of E. Main Street along Rutherford Blvd. Staff was uncertain whether the downstream sewer main could handle the additional flow from a hotel.

Between the dates of December 23 to December 31, 2018, Murfreesboro received a total of 3.24" with the heaviest rain during this period being December 31st of 1.91". This rain produced sewer depths from 5" to 20" at the temporary monitor locations as shown on the attached spreadsheet. With these depths of flow, the surcharge elevations can be determined within the sewer main and manholes up and/or downstream of the monitor locations.

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.

[Water Resources Department](#)

300 NW Broad Street * P.O. Box 1477 * Murfreesboro, TN 37133-1477 * Office: 615 890 0862 * Fax: 615 896 4259
TTY 615 848 3214 * www.murfreesborotn.gov

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 Surge 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 little 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.

Using this new surcharge guideline specified by EPA, and the recent flow monitoring study information, staff realizes the necessity to restrict development in the temporary flow monitor areas of 10A-3 and 10A-4. The recently passed Sewer Allocation Ordinance and supporting Resolution has reduced the allowed densities based on the current zonings, however, staff feels the results of the flow monitoring warrant the need to restrict development densities even further in order to allow the vacant properties within these areas to continue to develop.

RECOMMENDATION

Staff recommends restricting the development in Basins 10A-3 & 10A-4 to those allowable for a Commercial Zoning at 2.5 single family units per acre (sfu/acre) or 650 gallons per day per acre (gpd/acre) no matter the current zoning.

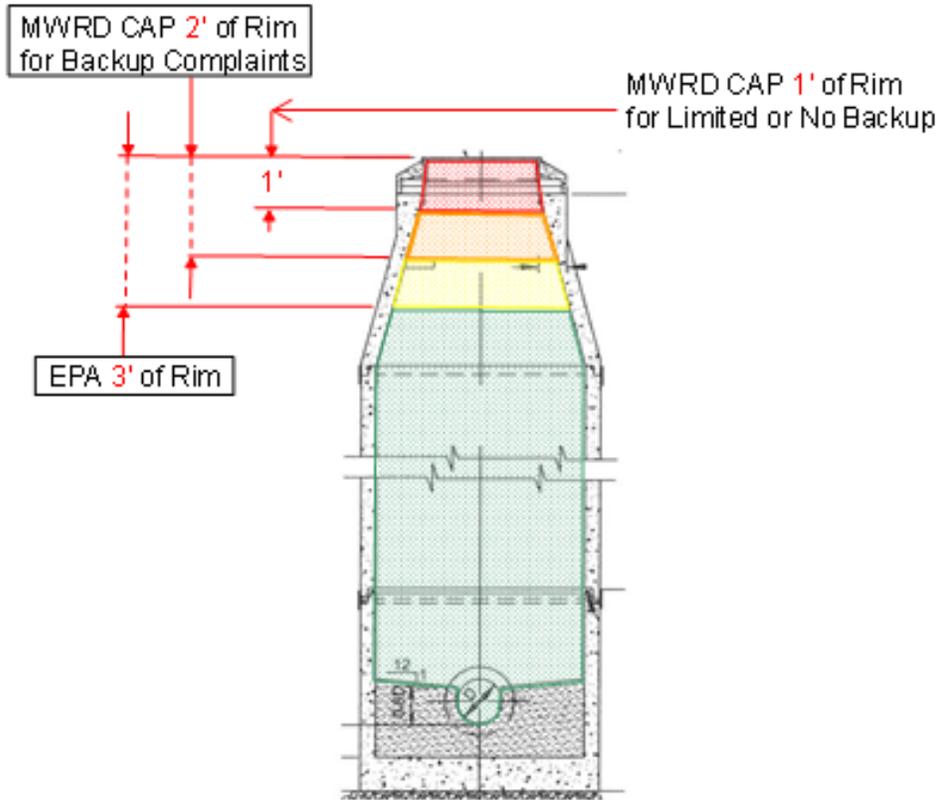
FISCAL IMPACT

Limiting the development density will reduce the sewer connection fees that the Department will collect.

ATTACHMENTS

- Temporary Flow Monitoring Results
- Exhibit 10A-3
- Exhibit 10A-4
- Table 1 of Resolution 19-R-26

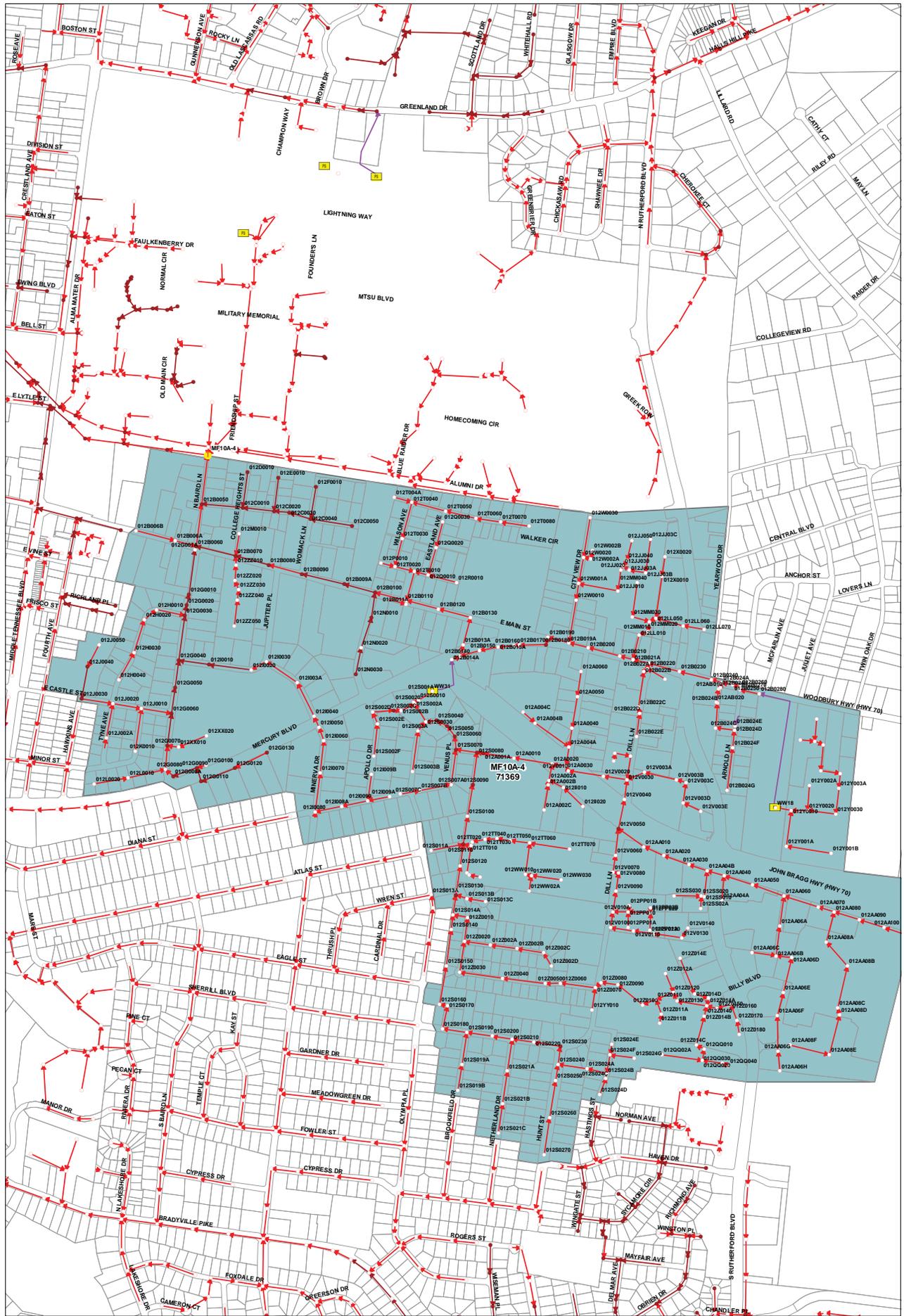
Exhibit 1: Manhole and Depth to Rim



**Murfreesboro Water Resources
Temporary Flow Monitoring Results
December 2018-January 2019**

Manhole No.	Monitor No.	Sewer Main Size (Inches)	Depth of Sewer Flow (Inches)	Depth of Sewer Flow (Feet)	Invert Elevation of Manhole	Sewer Flow Elevation @ Monitor	Manhole of Concern #1	Top of Casting of Manhole of Concern #1	Manhole of Concern #2	Top of Casting of Manhole of Concern #2	Sewer Depth Below Rim Manhole #2	Sewer within 3 FT of Rim?
											(Feet)	
016A0130	10A-2	18	5.3	0.44	599.56	600.00	016A0130	605.44	-----	-----	5.44	No
016B0160	10A-3	15	12.68	1.06	601.02	602.08	016B0160	605.77	016B0170	604.71	2.63	Yes
012B0040	10A-4	12	20.2	1.68	605.08	606.76	06B0190	606.12	012B0010	607.25	0.49	Yes

Sewer Flow within 3 Feet of the Top of Casting or Above.



MURFREESBORO WATER AND SEWER DEPARTMENT

MF10A-4



KAC 2/11/19
MF10A-4.MXD

TABLE 1**Maximum Daily Wastewater Generation Allowance**

Land-Use Classification	Included Zoning Classifications	Maximum Daily Allowance (gallons per acre per day)	Single-Family-Unit Equivalents (SFUE) per Acre
Commercial	CM-R, CM, CM-RS-8, OG-R, OG, CL, CF, CH, and PCD	650	2.5
Industrial	G-I, H-I, L-I, PID	1,040	4.0
Low-Density Residential	RS-15, RS-12, RS-10, and PRD (if average lot size \geq 10,000 sq. ft.)	780	3.0
Medium-Density Residential	RS-8, RS-6, RS-4, R-D, RS-A, PRD (townhome only), and PRD (mixed-housing type or where average lot size <10,000 sq. ft.)	1,820	7.0
High-Density Residential	RM-12, RM-16, R-MO, PRD (apartment only) and CU (dormitories only)	2,340	9.0
Mixed-Use	MU and PUD	1,040	4.0
College and University; Institutional	CU (except dormitories), PND	880	3.4
Parks	P	130	0.5
Central Business District, City Core Overlay, and Gateway Overlay	CBD, CCO, GDO	No Limit	No Limit



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MEMORANDUM

DATE: February 25, 2020
TO: Water Resources Board
FROM: Valerie Smith
SUBJECT: Mercury Blvd Pump Station &
Flow Monitor Basin 9A Study
Civil Infrastructure Associates (CIA)
Engineering Services

Summary

With the recommendation to limit the density of development within Basin 10A-3 & 10A-4 the Department would like to study the Mercury Blvd Station, within Basin 10A-4, as well as gravity sewer mains and Pump Station #13, within Basin 9A, to determine whether the flow coming to the Mercury Blvd station could be pumped to Basin 9A in order to free up capacity within Basins 10A-3 & 10A-4. Staff recommends approval of the proposal from CIA for this study.

Background

Between December 13, 2018 to January 21, 2019, the Department requested ADS, through our professional services agreement, to install 3 temporary sewer flow monitors within flow monitor Basin MF10 because a developer was interested in building a hotel just north of E. Main Street along Rutherford Blvd. Staff was uncertain whether the downstream sewer main could handle the additional flow from a hotel.

Between the dates of December 23 to December 31, 2018, Murfreesboro received a total of 3.24” with the heaviest rain during this period being December 31st of 1.91”. This rain produced sewer depths from 5” to 20” at the temporary monitor locations. These surcharge depths came within 3’ of the manhole rim at or near the temporary monitor locations within Basins 10A-3 & 10A-4. This depth, within 3’ of the manhole rim, is a guideline set by EPA to disallow additional sewer connections. Instead of disallowing connections staff would like CIA to study whether flow can be redirected to Basin 9A, and this basin handle the additional flow, in order to free up capacity in Basin 10A-4.

Recommendation

Staff would request the Water Resources Board recommend to Council approval of the Engineering Proposal from CIA in an amount not to exceed \$30,000.

Fiscal Impact

This study is not included in the Department's Capital Improvement Plan (CIP). It is therefore recommended that the cost come from working capital account.

Attachments

CIA Engineering Proposal
GIS Exhibits Basin 10A-3, 10A-4 & 9A

February 19, 2020

Ms. Valerie Smith, P.E.
Assistant Director
Murfreesboro Water and Sewer Department
220 NW Broad Street
Murfreesboro, TN 37130

RE: Proposal for a Mercury Boulevard Sewage Pump Station Study (Basin 10)

Dear Valerie:

Thank you for the opportunity to submit a proposal for the above referenced project. Below is a summary of the anticipated tasking and a fee estimate for the needed study.

Proposed Study Components:

- Gather existing pump station data for Mercury Blvd and DeJarnette Lane stations.
- Collect and consider gravity sewer flow monitoring data for existing gravity sewer pipe capacities.
- Calculate and consider existing and future sewer flows.
- Preliminary design and cost calculations for 3 most feasible force main routes.
- Preliminary design and cost calculations for replacing aged Mercury Blvd SPS.
- Preliminary design and cost calculations if modifications are needed to DeJarnette SPS.
- Produce a written report summarizing data and recommendations.

Estimated Engineering fee: Not to exceed - \$30,000

Should any other additional services be required, our standard hourly rates are as follows:

Principal.....	\$170.00/Hr.
Engineer.....	\$150.00/Hr.
Engr. Tech/CAD.....	95.00/Hr.

If you have any questions or comments regarding this agreement or the project in general, please do not hesitate to call me at 615-516-2852

Sincerely,
CIA, CIVIL INFRASTRUCTURE ASSOCIATES, LLC

Ms. Valerie Smith, PE
Opinion of SPS Study Cost (Basin 10) Mercury Blvd.
February 19, 2020
Page 2 of 2



Linda Sullivan, PE, President

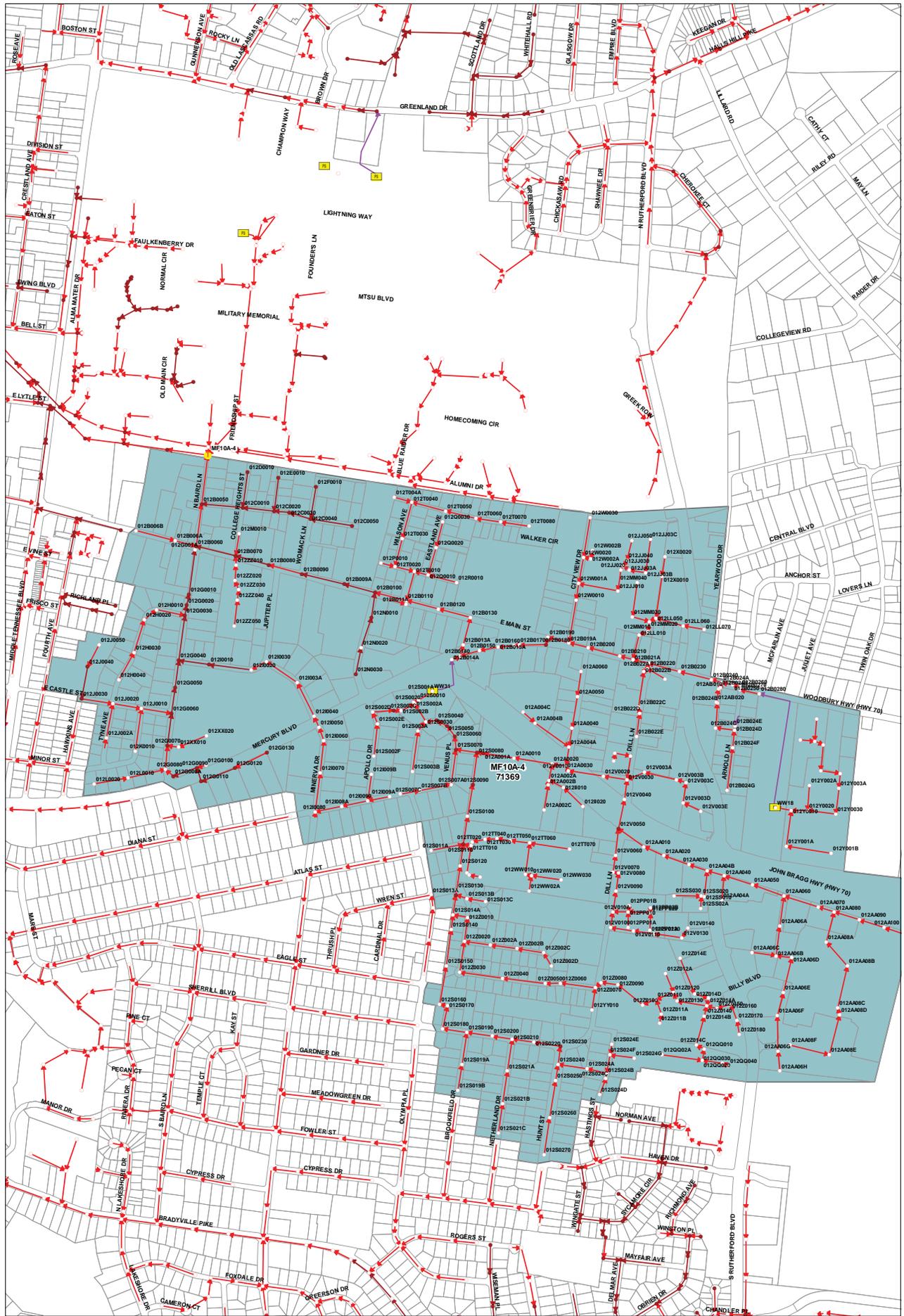


MURFREESBORO WATER AND SEWER DEPARTMENT

MF10A-3



KAC 2/11/19
MF10A-3.MXD

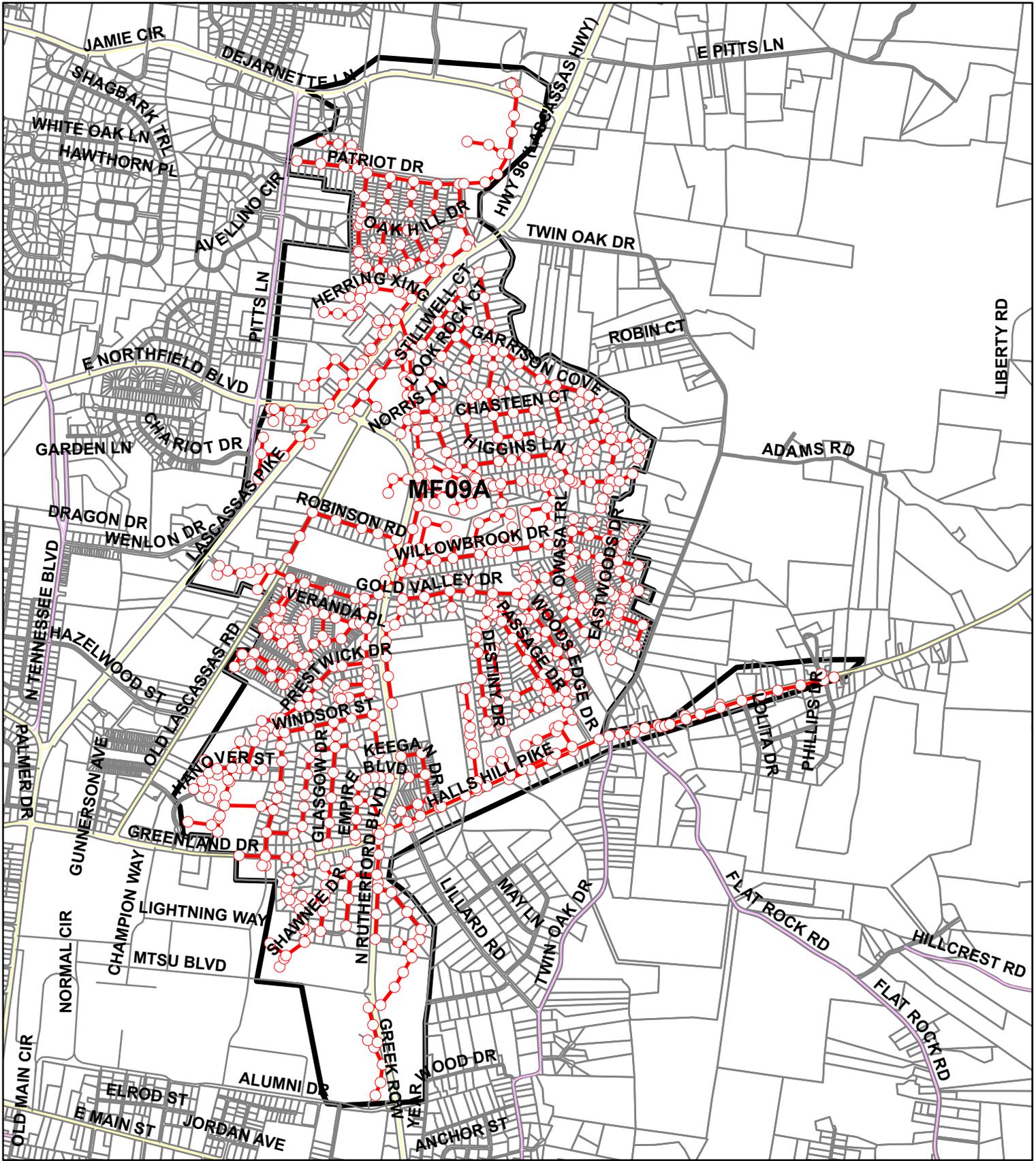


MURFREESBORO WATER AND SEWER DEPARTMENT

MF10A-4



KIAC 2/11/19
MF10A-4.MXD



MURFREESBORO WATER RESOURCES DEPARTMENT

MF09A





... creating a better quality of life

MEMORANDUM

DATE: February 26, 2020
TO: Water Resources Board
FROM: Darren Gore, Doug Swann, Randy McCullough
SUBJECT: Customer Service and Credit Card Trends

Background

With the adoption of our IT Strategic Plan in 2012, Murfreesboro Water Resources Department embarked on an ambitious plan to improve various Customer Service systems, including our billing system (CIS.Infinity), online access (Infinity.Link), account access via telephone (Interactive Voice Response – IVR) and mobile service order system (CIS.Mobile).

Timeline:

November 2012 – Accept credit cards over the counter and online
June 2014 – CIS.Infinity Customer Information System
June 2014 – CIS.Mobile – Interfaced Service Order system
July 2014 – Online account access via Link
March 2015 – Telephone account access via IVR

The following charts illustrate the benefits achieved through implementation of the products and customer options. Among the key points:

- MWRD has seen a 31% decrease in over-the-counter payments by customers
- MWRD has seen a 45+% decrease in payments via mail and night deposit
- Of all calls to our Customer Service department in 2019, over 75% (up from 70% in 2018) were handled via the IVR and did not initially require Customer Service Clerk interaction
- In 2019, a total of \$8.3 million in credit card and e-check payments were processed
- Credit card and e-check payments increased by 15% from 2018 to 2019
- Average credit card/e-check transaction in 2019 was \$96.77 vs \$88.90 in 2018
- 90% of credit card/e-check payments were made online or via IVR
- Customer office visits are down over 30% on average from March 2013 to December 2019

Recommendation

No action is necessary. This memo and charts are for information purposes only.

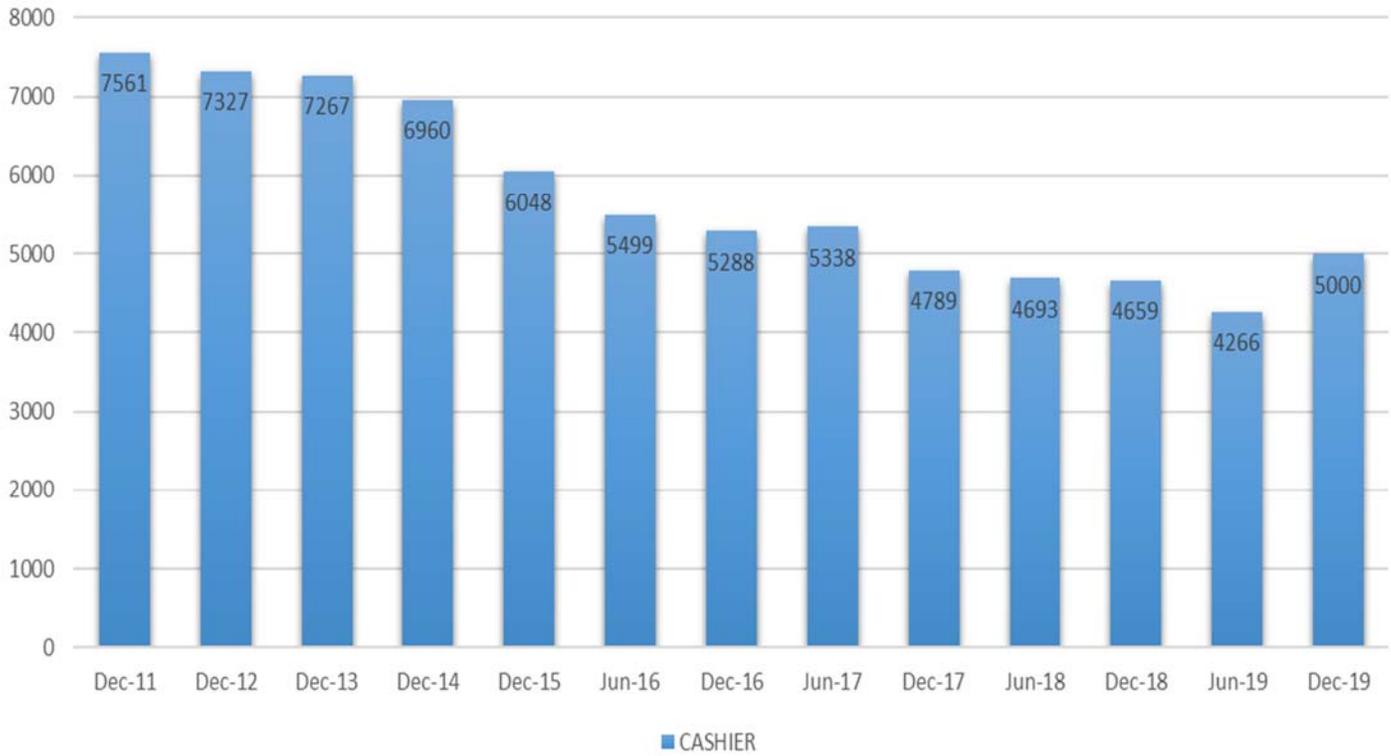
Fiscal Impact

There is no fiscal impact.

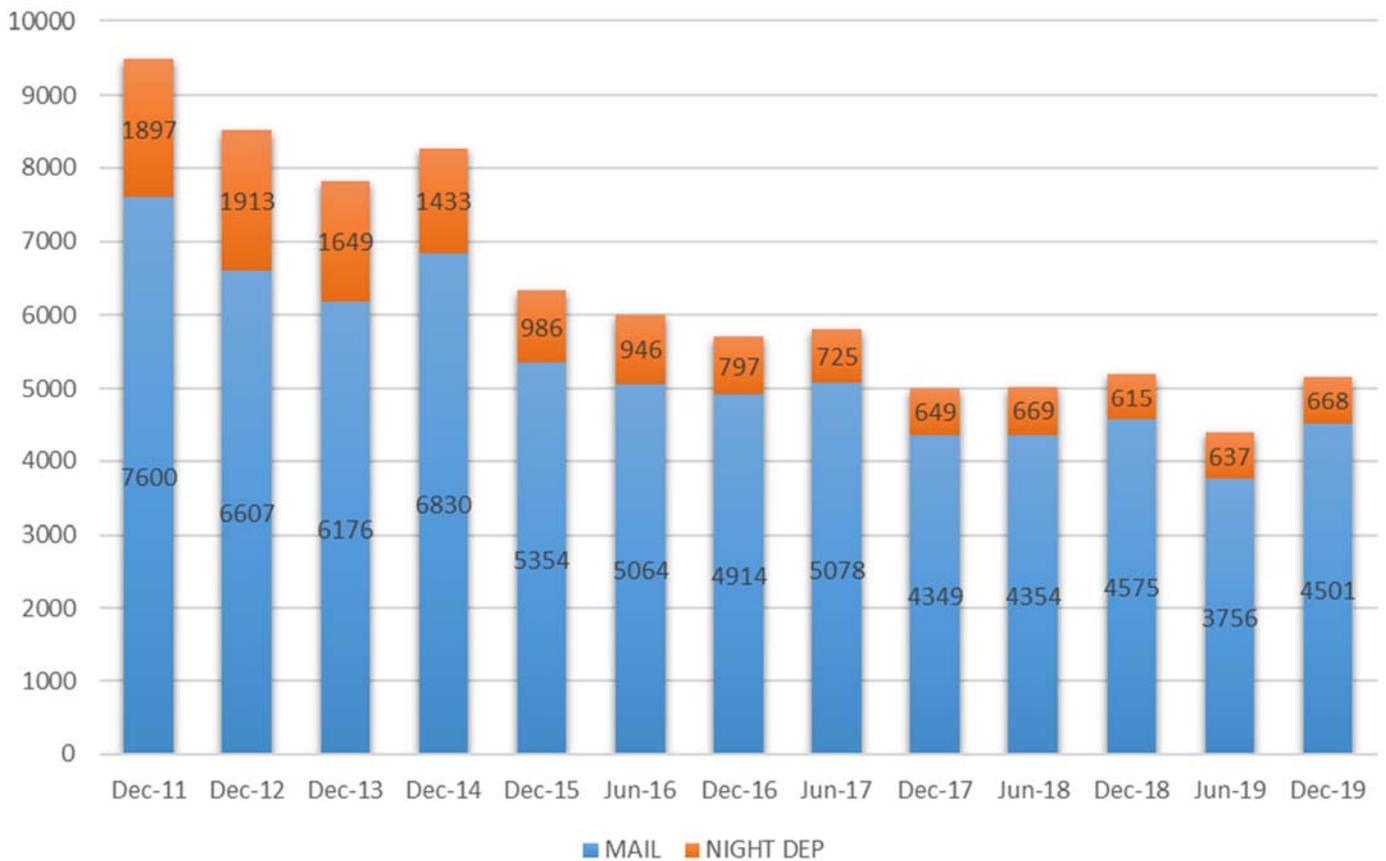
Attachments

Charts

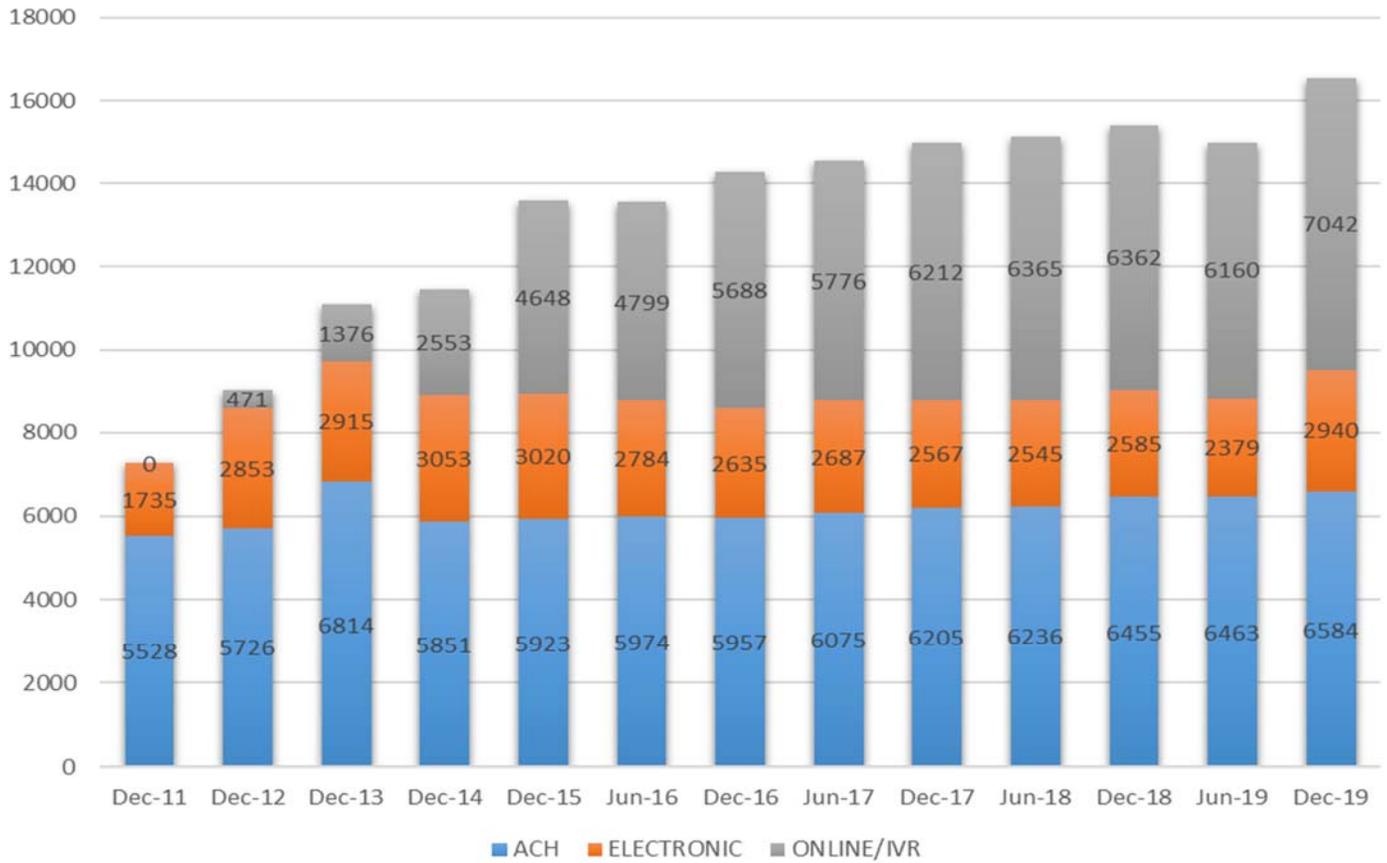
CASHIER PAYMENTS



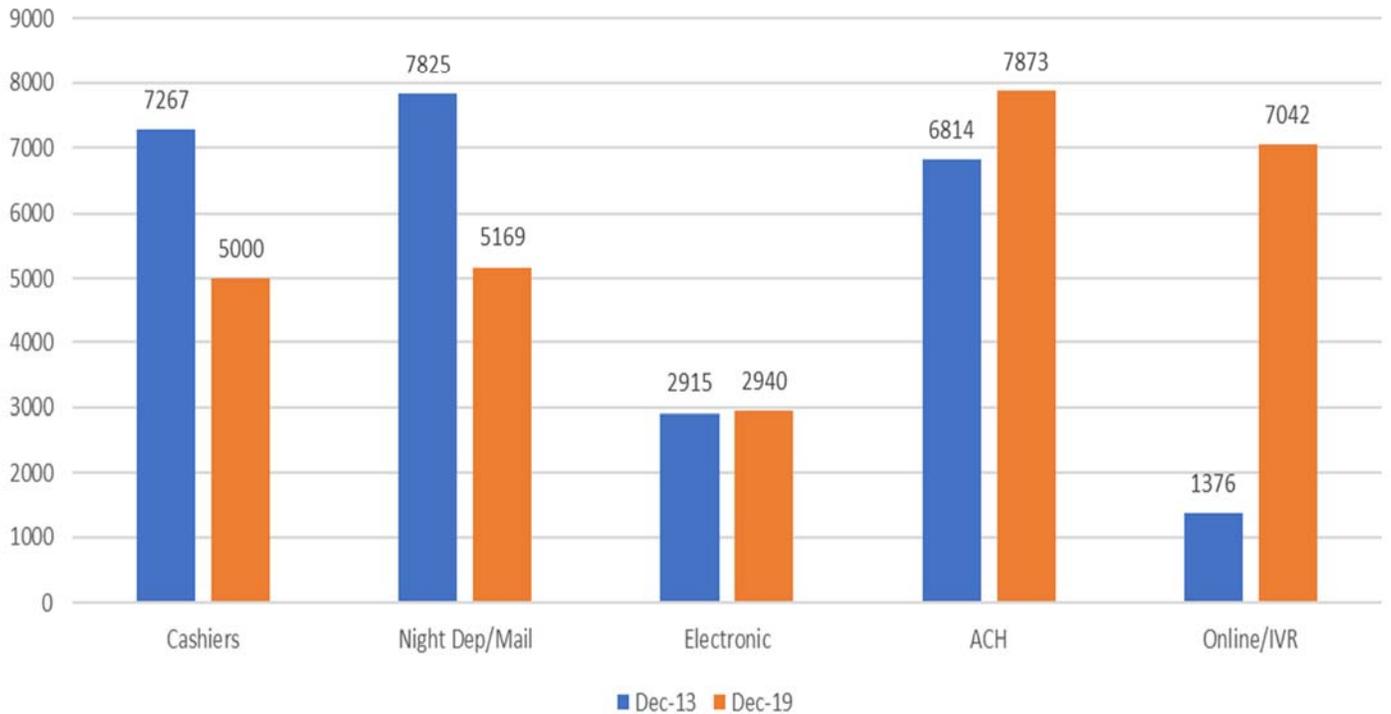
MAILED AND DEPOSITED PAYMENTS



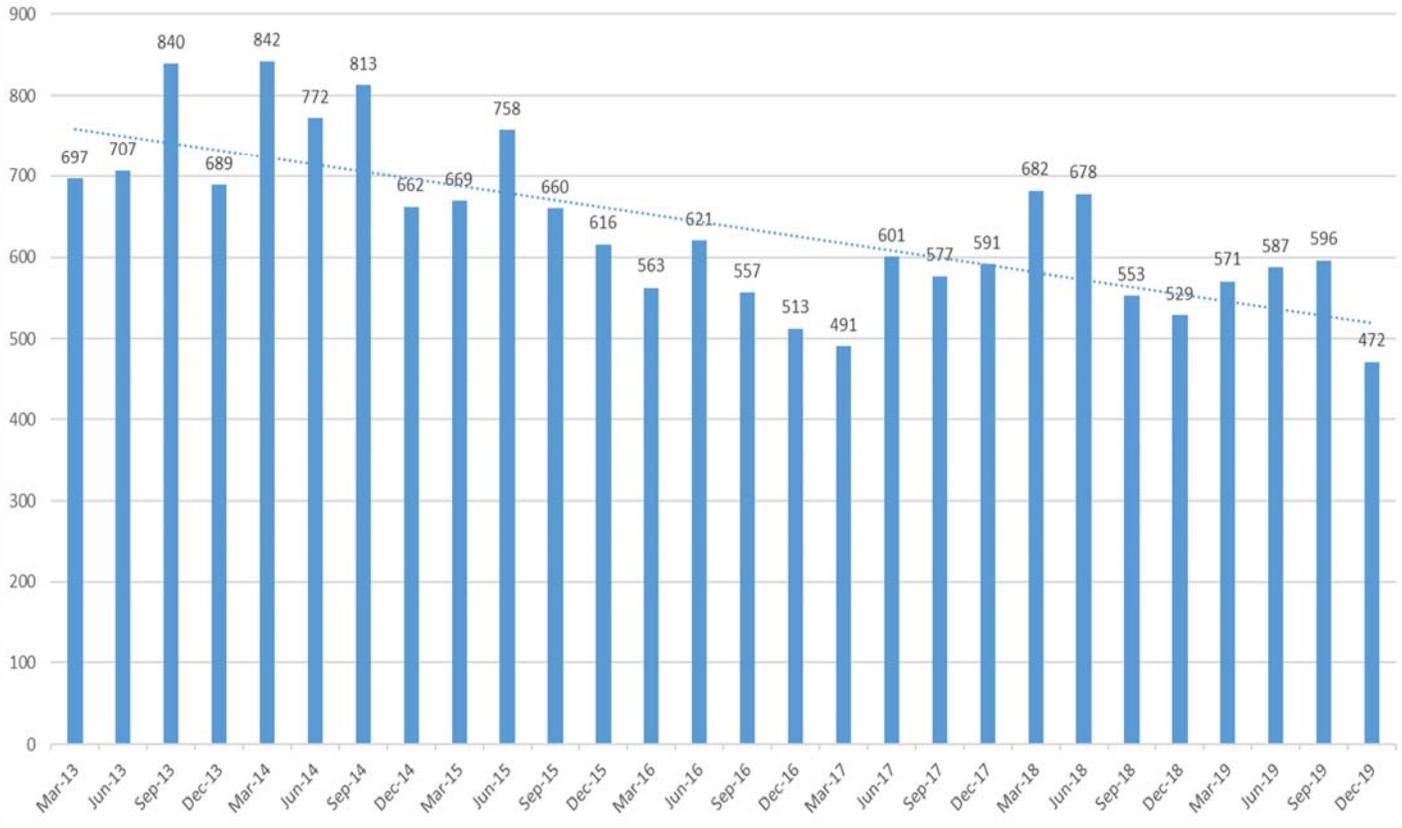
ELECTRONIC PAYMENTS



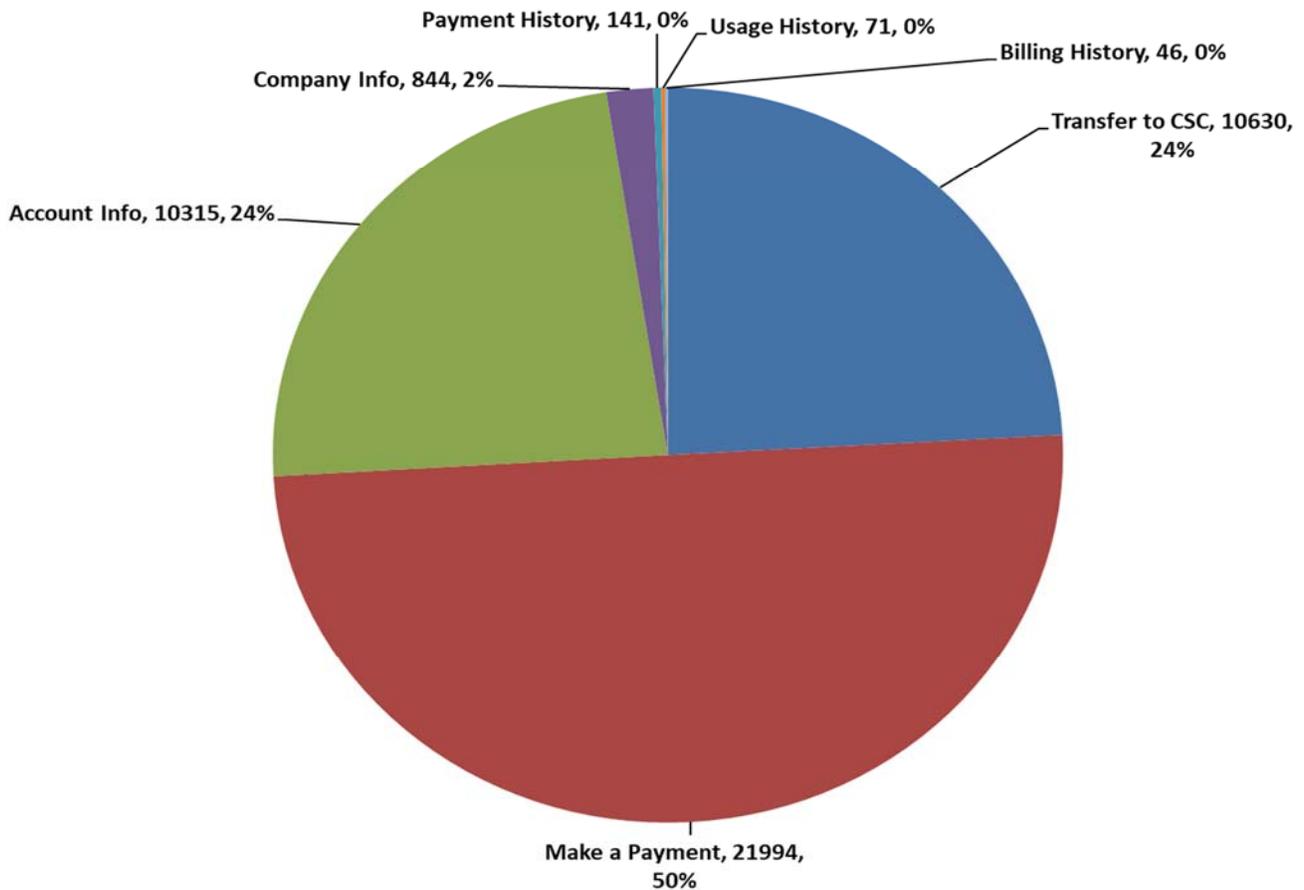
Payment by Type Trend A Snapshot in Time - Dec 2013 compared to Dec 2019



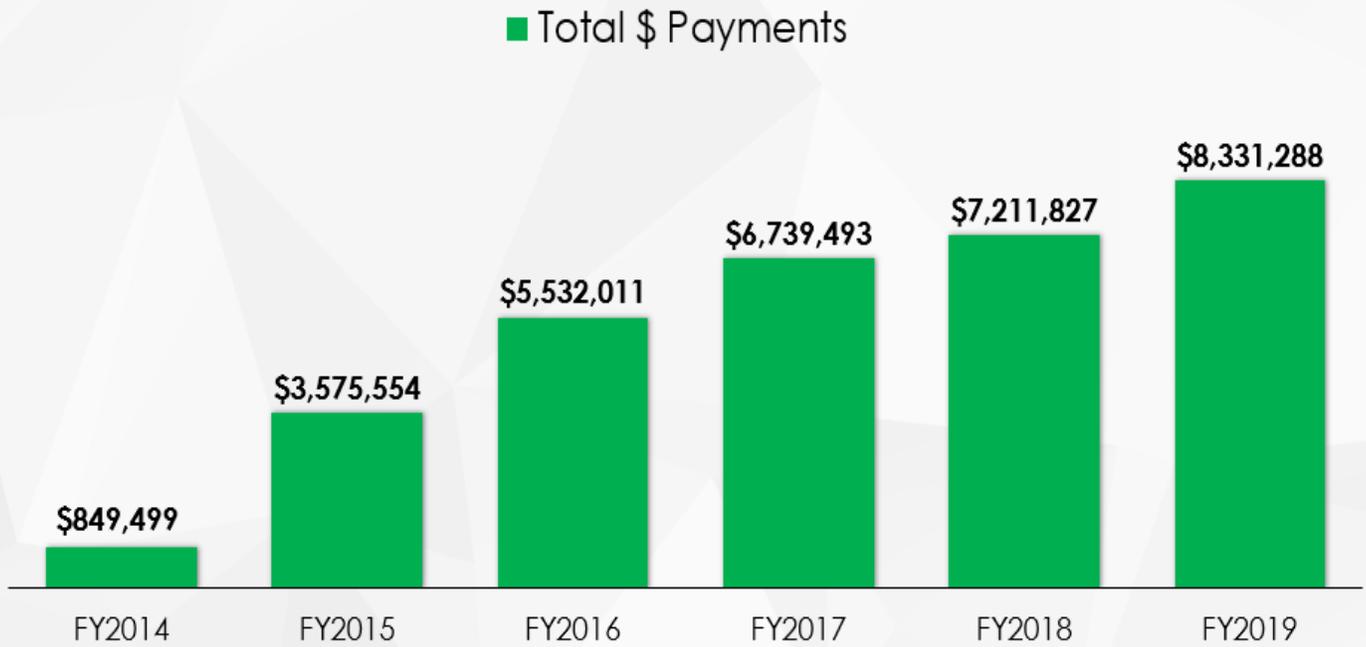
Quarterly Customer Service Visit Log Trend 2013-2019



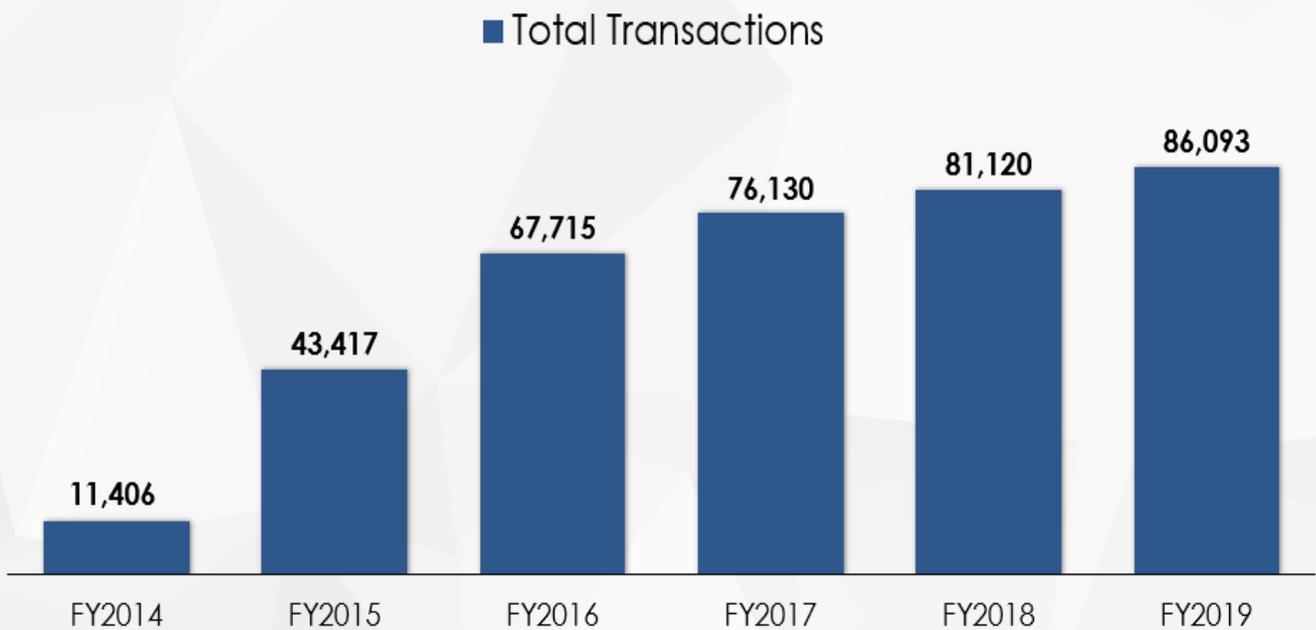
IVR Calls 2019



Customer Payments Processed / Dollars 2014 - 2019



Customer Payments Processed / Transactions 2014 - 2019





WATER RESOURCES

DASHBOARD PERFORMANCE

January 2020



MWRD FY2020-2024 CIP

NO.	PROJECT	2019-2020 2019	2020-2021 2020 Issue	2021-2022 2021 Issue	2022-2023 2022 Issue	2023-2024 2023 Issue	TOTAL
	Construction- Northeast Regional PS & Force Main						\$0
	Overall Creek PS & Force Main Upgrade						\$0
	Construction- Biosolids Processing Equipment						\$0
	TOTAL Capital Improvements funded from Debt Service	\$0	\$0	\$0	\$0	\$0	\$0

NO.	PROJECT	2019-2020 2020 FY	2020-2021 2021 FY	2021-2022 2022 FY	2022-2023 2023 FY	2023-2024 2024 FY	TOTAL
	Sewer rehab- Account 335	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000
	Meters, Water/Sewer Taps, Hydrants - 280, 290, 300, 310	\$435,000	\$435,000	\$435,000	\$435,000	\$435,000	\$2,175,000
	Water lines- Account 320	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$1,750,000
	Sewer Lines - Account 330	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$1,750,000
	Biolsolids Processing Equip & Storage Sinking Fund	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
	Walter Hill Dam Repair/Remediation Sinking Fund	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$625,000
	Lift Station Replacement Sinking Fund	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,250,000
	NE Regional PS & FM Sinking Fund	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
	GAC Replacement	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$625,000
	High Service Pumps & Membrane Pump Improv.		\$1,000,000				\$1,000,000
	Vehicle and Equipment Replacement	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$7,500,000
	TOTAL Capital Improvements funded from Rates	\$5,135,000	\$6,135,000	\$5,135,000	\$5,135,000	\$5,135,000	\$26,675,000

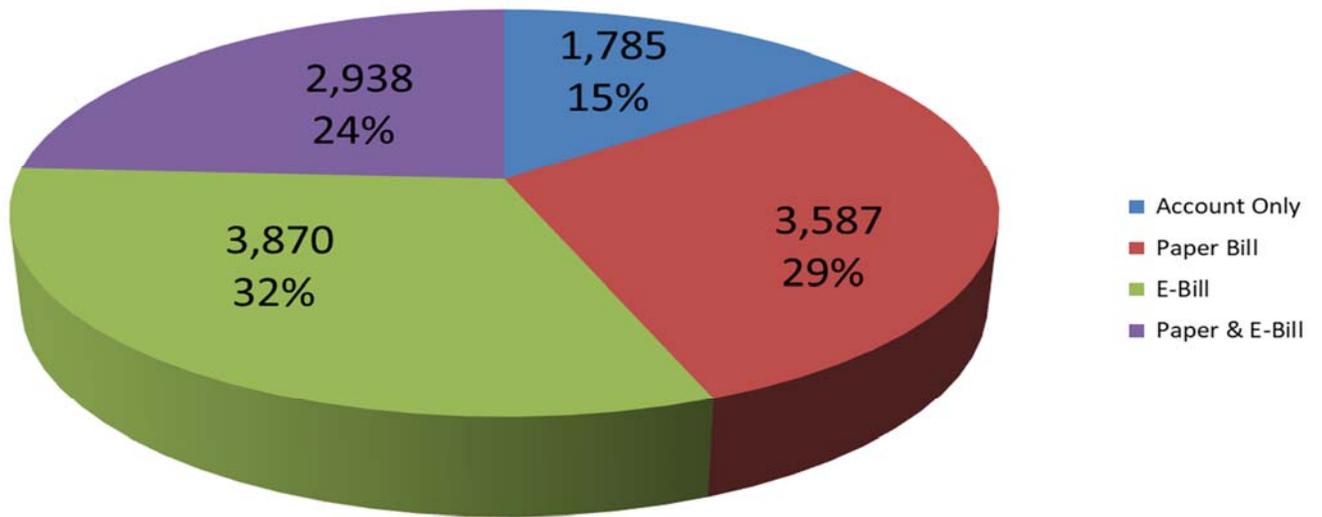
NO.	PROJECT	2019-2020 2020 FY	2020-2021 2021 FY	2021-2022 2022 FY	2022-2023 2023 FY	2023-2024 2024 FY	TOTAL
	W&S CAPITAL IMPROVEMENT PROJECTS						
	Misc FY20 Working Reserve Commitments	\$1,850,000					\$1,850,000
	Biosolids Processing Equipment & Storage Addition	\$1,000,000	\$9,500,000	\$5,500,000			\$16,000,000
	Replace Biosolids Polymer System	\$100,000	\$1,350,000				\$1,450,000
	Overall Creek Pump Station & Force Main Upgrade	\$500,000	\$7,500,000	\$4,300,000			\$12,300,000
	NE Regional Engineering Design	\$500,000	\$1,500,000	\$250,000	\$250,000		\$2,500,000
	NE Regional P.S. & Force Main		\$3,000,000	\$10,000,000	\$7,500,000		\$20,500,000
	Cherry Lane / Sazerac Sanitary Sewer		\$1,000,000	\$1,500,000			\$2,500,000
	SR840 Interchange Area Sanitary Sewer	\$200,000	\$1,100,000	\$1,100,000			\$2,400,000
	Joe B. Jackson Sanitary Sewer	\$50,000	\$750,000				\$800,000
	MWRRF Wet Weather Treatment Train Impr	\$50,000	\$150,000	\$500,000	\$2,500,000	\$2,500,000	\$5,700,000
	Mill Street Painting, Halls Hill and Tiger Hill Tank Repairs	\$1,000,000	\$1,800,000				\$2,800,000
	Replace Pall Membranes					\$650,000	\$650,000
	High Service PS & Membrane Feed Pump Improv.		\$2,500,000				\$2,500,000
	Direct Potable Reuse Demonstration			\$350,000	\$350,000		\$700,000
	Stones River Water Qual Sampling / NPDES Permitting	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$750,000
	Subtotal CAPITAL PROJECTS	\$5,400,000	\$30,300,000	\$23,650,000	\$10,750,000	\$3,300,000	\$73,400,000
	TRANSPORTATION (Water/Sewer Imp.)						
	Bradyville Pike			\$1,500,000	\$1,500,000	\$500,000	\$3,500,000
	Jones Blvd Widening		\$500,000	\$500,000			\$1,000,000
	Cherry Lane Repurified Main Extension (14,600 LF)		\$2,000,000	\$1,000,000			\$3,000,000
	Cherry Lane Sanitary Sewer Construction	\$150,000	\$1,000,000	\$1,500,000			\$2,650,000
	SR 99 Widening- Old Fort to Cason Lane		\$500,000	\$1,000,000			\$1,500,000
	St. Clair St.		\$500,000				\$500,000
	John Rice Blvd & Rucker Lane		\$200,000				\$200,000
	Maney Avenue Reconstruction - Phase 2		\$250,000	\$250,000			\$500,000
	Wilkinson Pike Reconstruction (MCP to TL)		\$650,000	\$650,000			\$1,300,000
	Subtotal TRANSPORTATION PROJECTS	\$150,000	\$5,600,000	\$6,400,000	\$1,500,000	\$500,000	\$14,150,000
	REHABILITATION						
	Sewer Rehabilitation - Maintenance Contract	\$2,770,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$8,770,000
	INFORMATION TECHNOLOGY PROJECTS						
	IT/Computer Systems Hardware Upgrades	\$350,000	\$100,000	\$100,000	\$100,000	\$100,000	\$750,000
	Electronic Content Management (Scanning/Imaging)		\$250,000	\$250,000			\$500,000
	IT Design Services & Consulting	\$100,000	\$100,000	\$100,000			\$300,000
	Comp Maintenance Management System (CMMS)		\$400,000	\$600,000			\$1,000,000
	Subtotal INFORMATION TECHNOLOGY PROJECTS	\$450,000	\$850,000	\$1,050,000	\$100,000	\$100,000	\$2,550,000
	TOTAL Projects from Working Capital Reserves	\$8,770,000	\$38,250,000	\$32,600,000	\$13,850,000	\$5,400,000	\$98,870,000

PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	\$8,000,000	\$7,500,000	\$7,500,000	\$7,500,000	\$7,500,000
SINKING FUND DEPOSITS TO RESERVES FROM RATES	\$2,375,000	\$3,375,000	\$2,375,000	\$2,375,000	\$2,375,000
SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES	\$24,331,276	\$24,817,902	\$25,314,260	\$25,820,545	\$26,336,956
PROJECTED WORKING CAPITAL RESERVE BALANCE	\$83,220,668	\$55,845,668	\$33,120,668	\$29,145,668	\$33,620,668
FUNDS ABOVE SECURED MINIMUM BALANCE	\$58,889,392	\$31,027,766	\$7,806,408	\$3,325,123	\$7,283,712

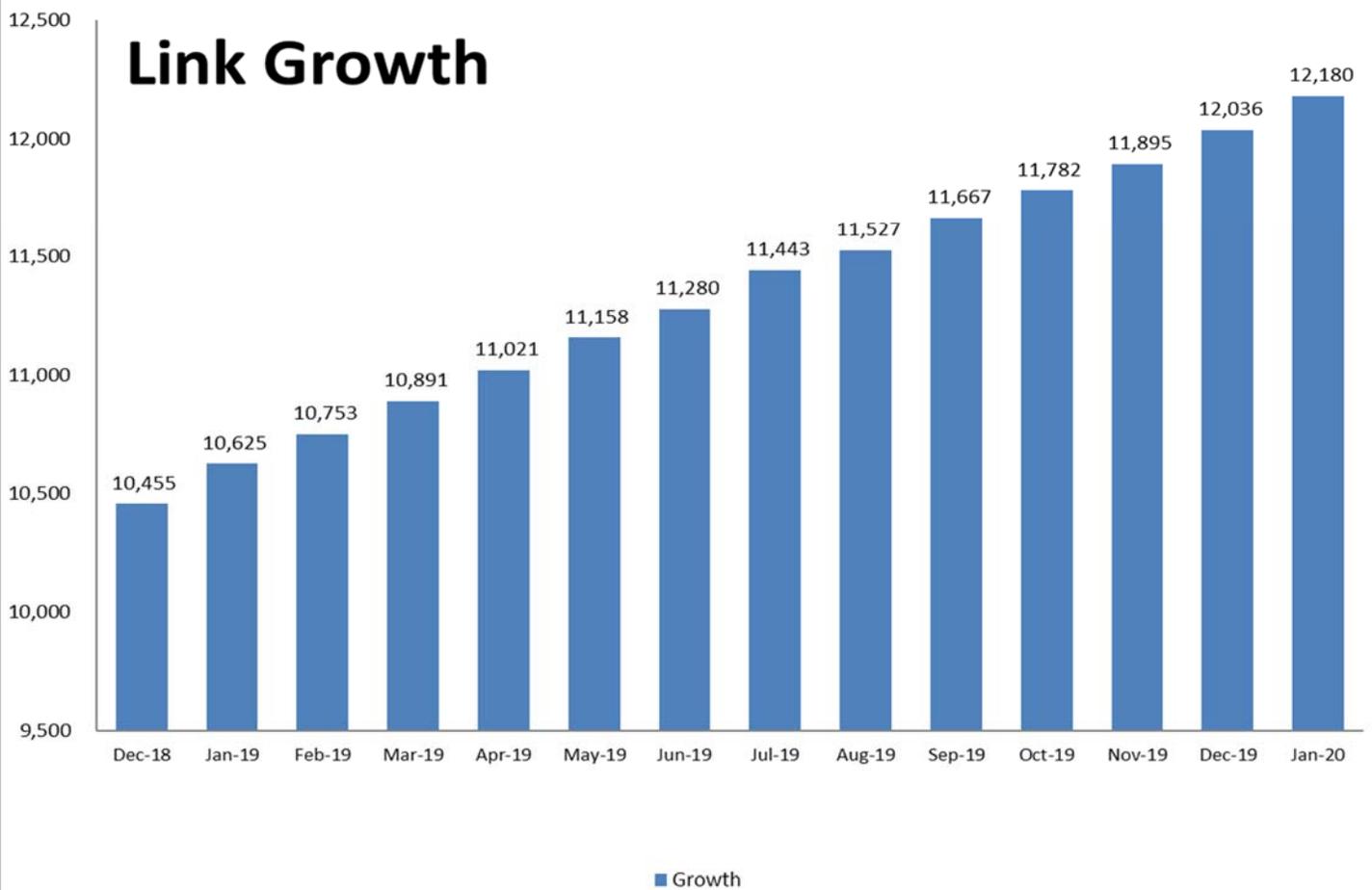
**Preliminary *Draft* 5-YR CAPITAL IMPROVEMENTS PLAN (CIP)
STORMWATER UTILITY FUND, FY20.-24**

NO.	PROJECT	Originator	2019-2020 2020 FY	2020-2021 2021 FY	2021-2022 2022 FY	2022-2023 2023 FY	2023-2024 2024 FY	TOTAL
			<i>Projected</i>	<i>Budget</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	<i>Pro Forma</i>	
	Neighborhood Projects (NP)							
NP-1	Memorial Blvd / Haynes Dr. Drainage Improvements	City Eng	\$125,000	\$50,000				\$175,000
NP-2	Mitchell-Nielson Drainage Project	City Eng	\$50,000					\$100,000
NP-3	Huntwood/Leaf Ave Neighborhood Drainage Imp.	City Eng	\$100,000	\$100,000				\$200,000
NP-4	Southern Meadows / Kimbro Woods Drainage Imp.	City Eng	\$500,000	\$500,000				\$1,025,000
NP-5	Liberty Dr. / Thatcher Trace Spring Box	City Eng	\$50,000	\$75,000				\$125,000
NP-6	Pennington Drive Drainage Repair/Upgrade (Added)	City Eng						\$0
NP-7	Gateway Pond Repair	Eng/MRSD						\$0
NP-8	Hardwood Drive Drainage Upgrade (Added)	City Eng	\$250,000					\$250,000
NP-9	Pacific Place/Riverrock Blvd Drainage Imp.	City Eng	\$0	\$0				\$0
	Subtotal		\$1,075,000	\$725,000				\$1,875,000
	Water Quality Improvement (Compliance) Projects (WQ)							\$0
WQ-1	Town Creek Bioretention BMP's @ Cannonsburgh	MWRD						\$0
WQ-2	Molloy Lane Water Quality Pond	MWRD	\$25,000	\$125,000	\$75,000			\$225,000
WQ-3	Rosebank Springs Constructed Wetlands	City Eng	\$35,000	\$165,000	\$115,000			\$350,000
WQ-4	Lee's Branch Stream Restoration	City Eng	\$25,000					\$25,000
WQ-5	West Fork Stones River at Cason Trail; bank repair	MWRD	\$140,000					\$180,000
WQ-6	Bear Branch Water Quality Mitigation	City Eng						\$0
WQ-7	Sinking Creek Headwater protection BMP	MWRD/Eng	\$30,000	\$50,000	\$150,000	\$150,000	\$150,000	\$530,000
WQ-8	Todd's Lake Regional Wetlands Improvements	City Eng						\$0
WQ-9	Hooper's Bottom Regional Water Quality Project	City Eng	\$25,000	\$150,000		\$175,000	\$175,000	\$550,000
WQ-10	Lytle Creek/Ridgley Road Bacteriological Reduction (Added)	MWRD	\$15,000	\$75,000	\$25,000			\$125,000
WQ-11	Memorial Blvd/VA Pond Trash Rack (Added)	MWRD						\$0
WQ-12	Spence Creek Restoration	MWRD/Eng	\$25,000	\$25,000	\$25,000			\$100,000
WQ-13	E. Lokey Ave Trash Rack at Sinking Creek	MWRD	\$30,000	\$75,000				\$105,000
WQ-14	Sinking Creek/ Northfield Blvd Commercial Retrofit Study/Project	MWRD	\$25,000	\$50,000	\$100,000			\$185,000
WQ-15	Overall Street retrofit/ bioretention - streetscape	MWRD	\$35,000	\$100,000				\$135,000
WQ-16	Downtown planter box retrofits study/project	MWRD	\$50,000	\$50,000				\$110,000
	Subtotal		\$460,000	\$865,000	\$490,000	\$325,000	\$325,000	\$2,620,000
	Public Drainage/Streets Participation Projects (PD)							\$0
PD-1	Maney Avenue Phase 2	City Eng						\$50,000
PD-2	Town Creek Conveyance (Murfree Springs to Cannonsburgh)	City Eng	\$500,000	\$250,000	\$100,000			\$900,000
PD-3	Maple St. Alley Permeable Paver Project	City Eng						\$0
	Subtotal		\$500,000	\$250,000	\$100,000			\$950,000
	Totals		\$2,035,000	\$ 1,840,000	\$ 590,000	\$ 325,000	\$ 325,000	\$ 5,445,000

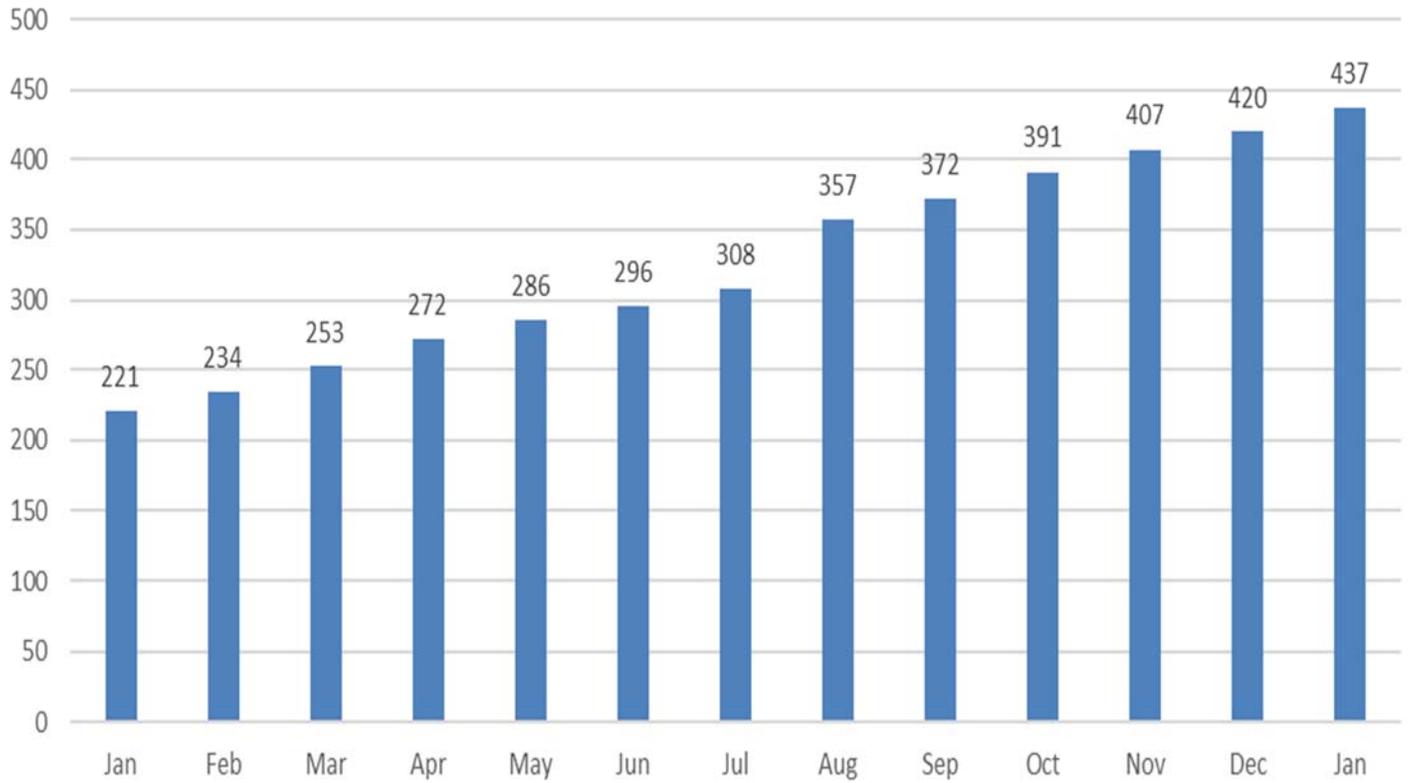
Infinity.Link Customers as of January 2020 = 12,180



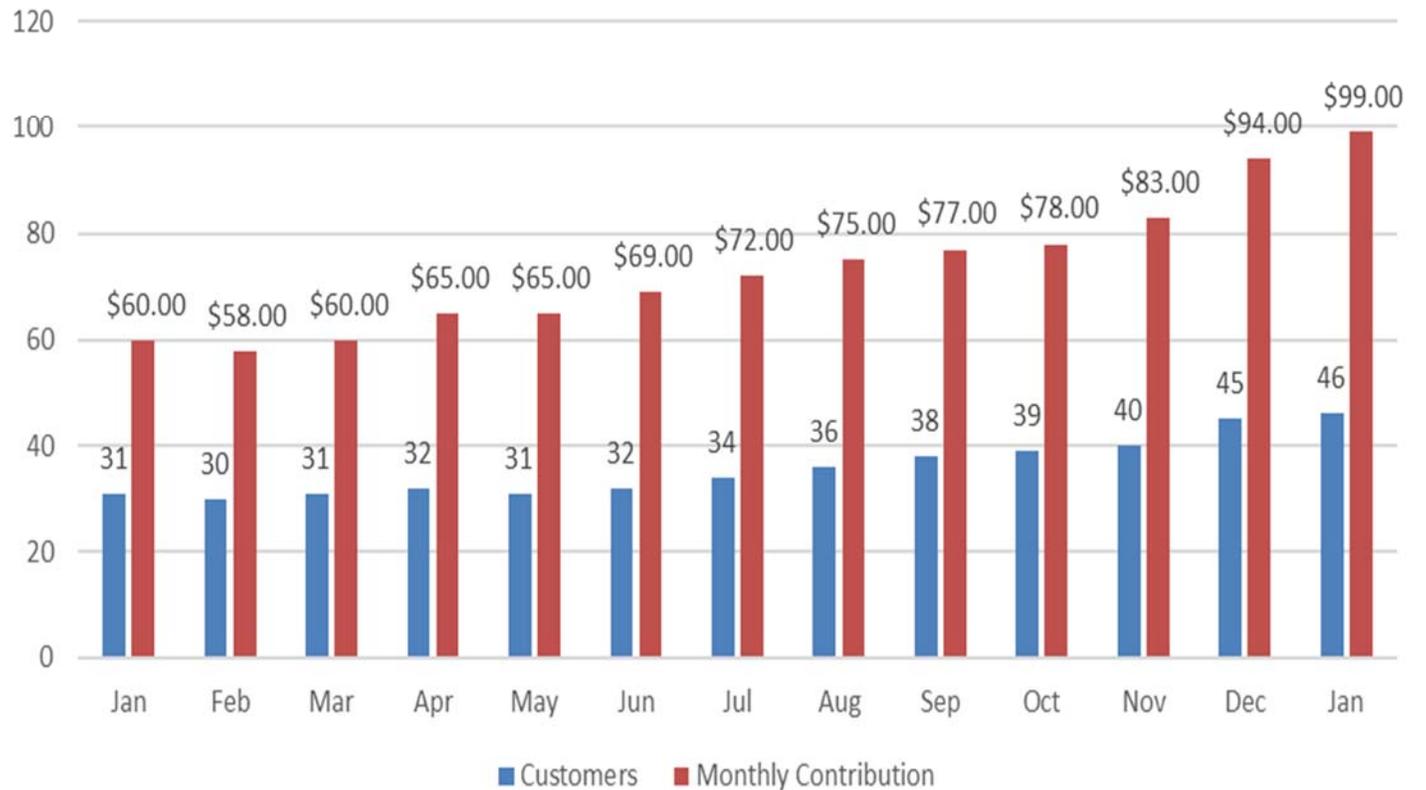
Link Growth



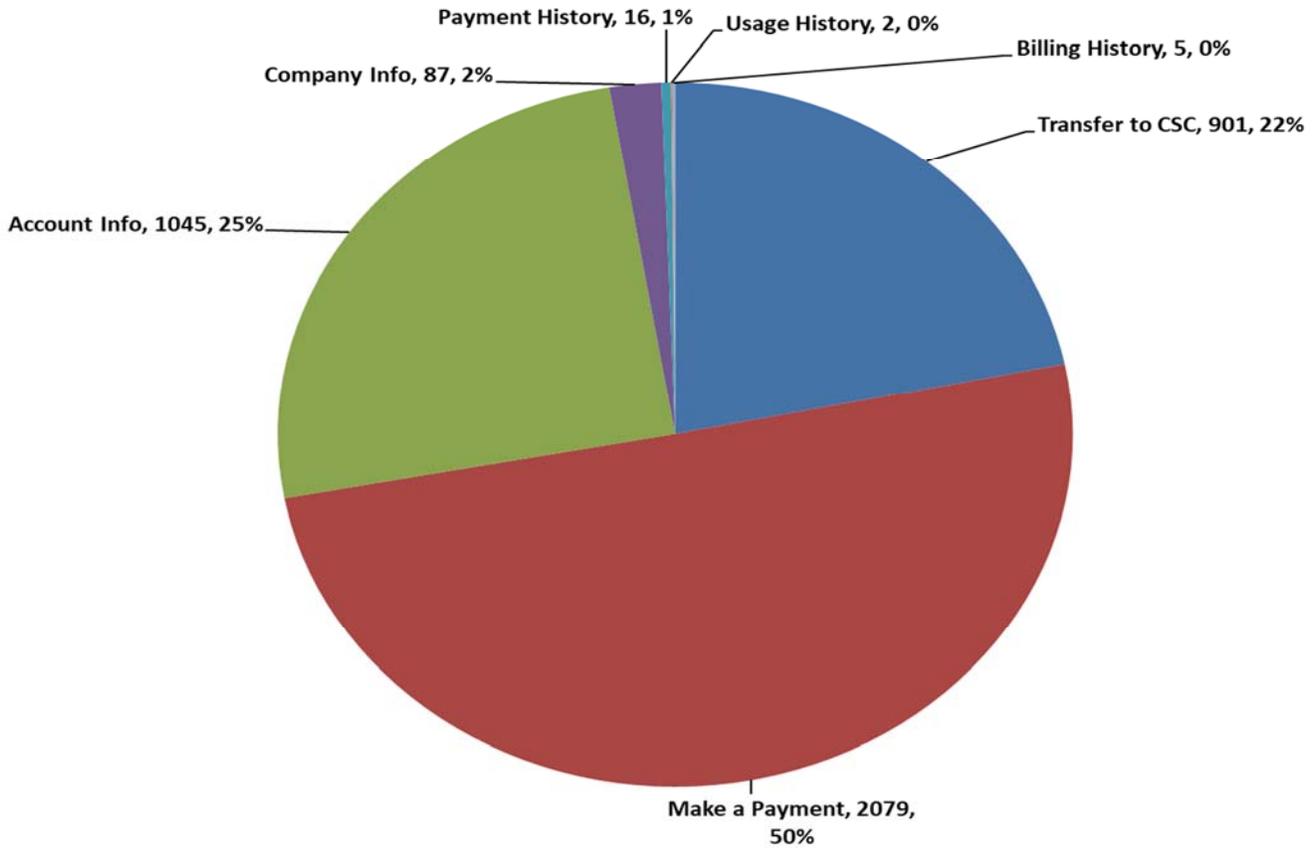
AMI Customer Portal Users



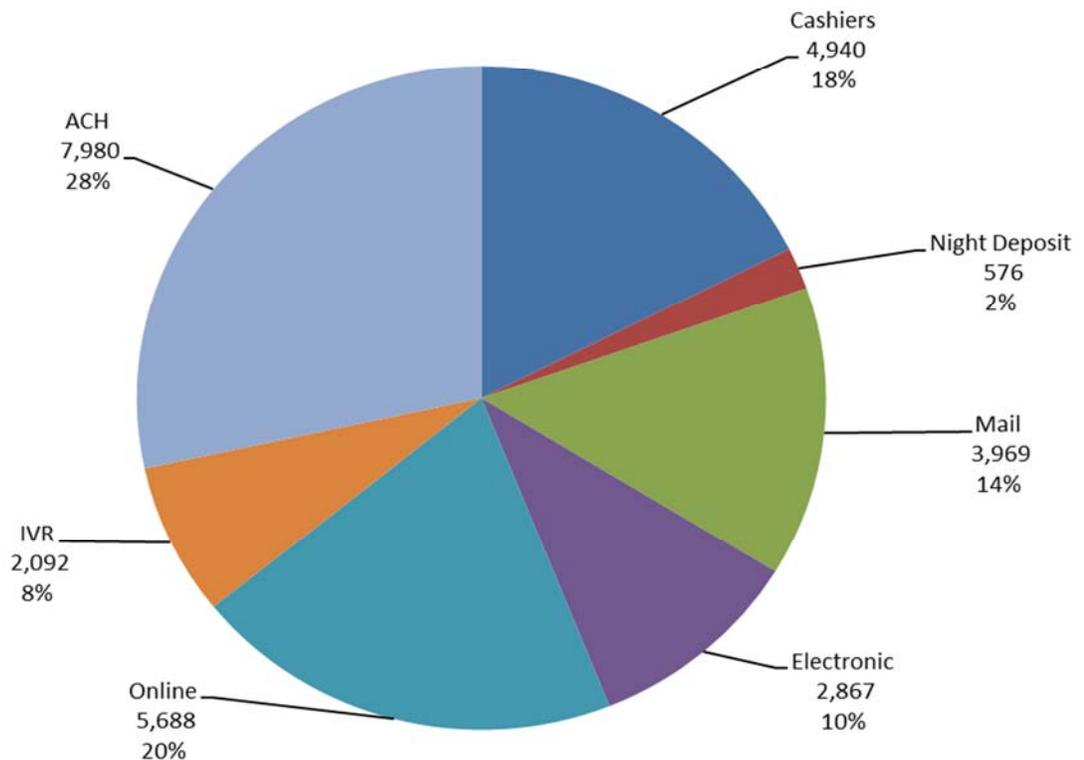
H₂O Users & Monthly Contributions



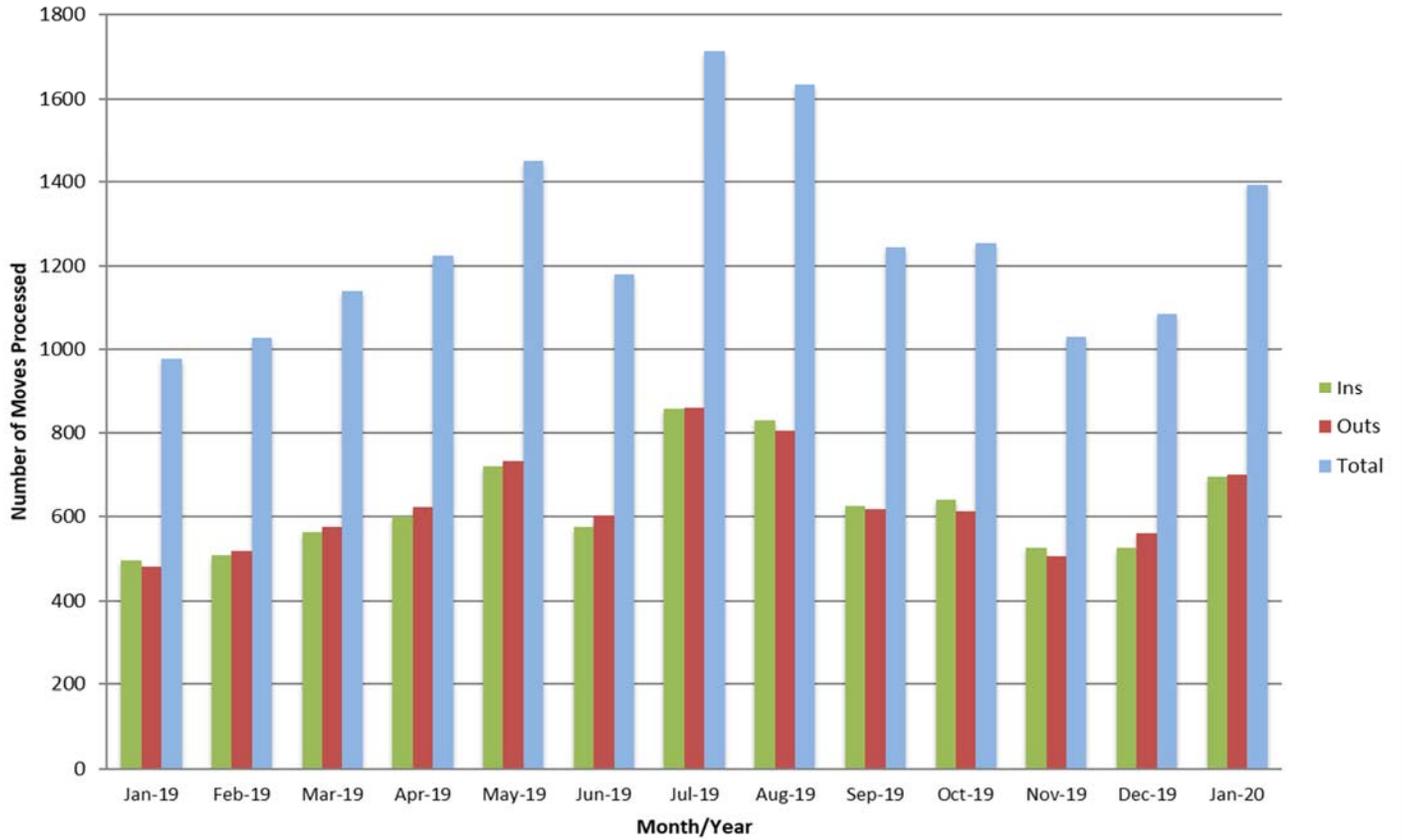
IVR Calls From 01/01-01/31/20 = 4,135



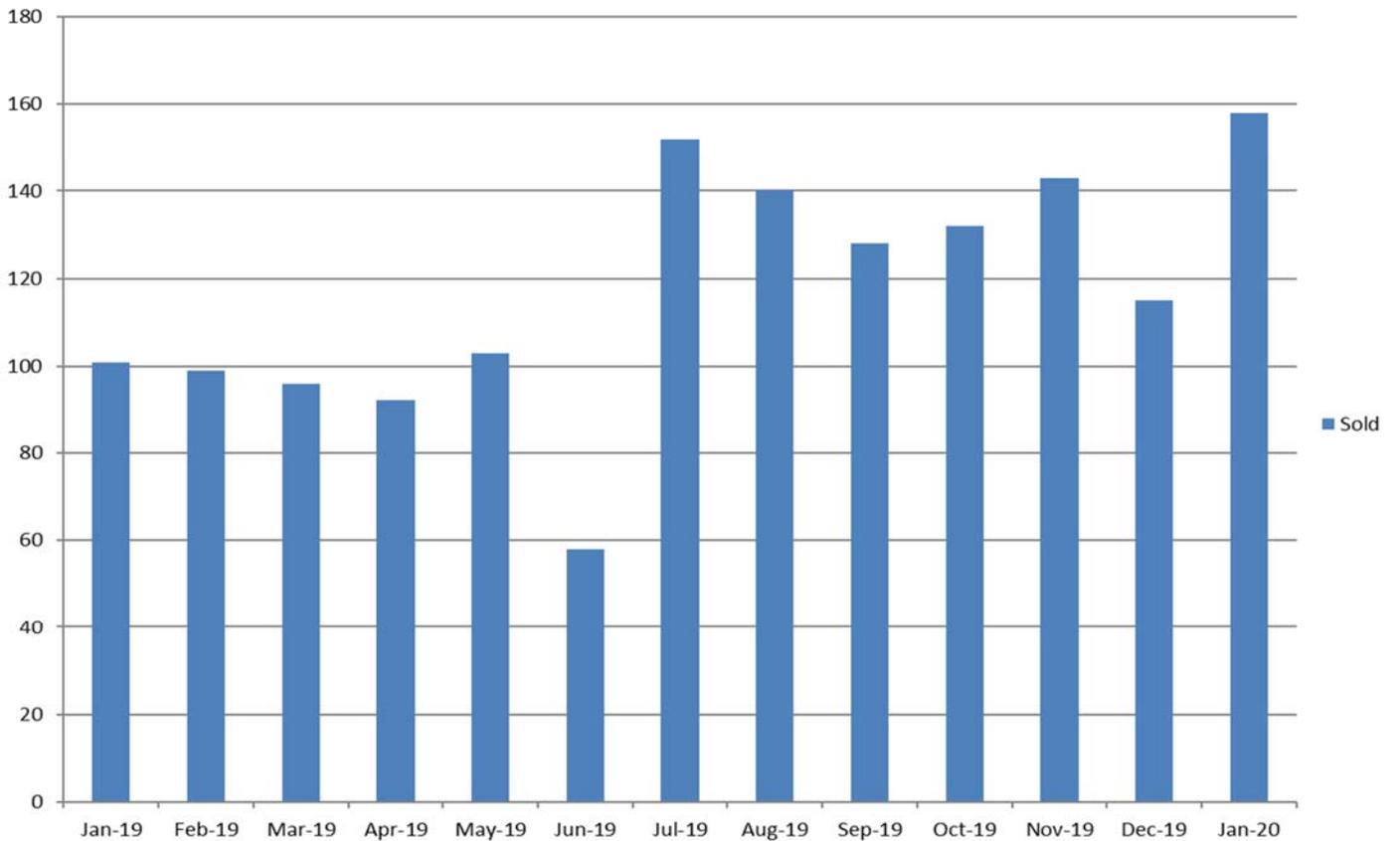
January 2020 Payments by Type



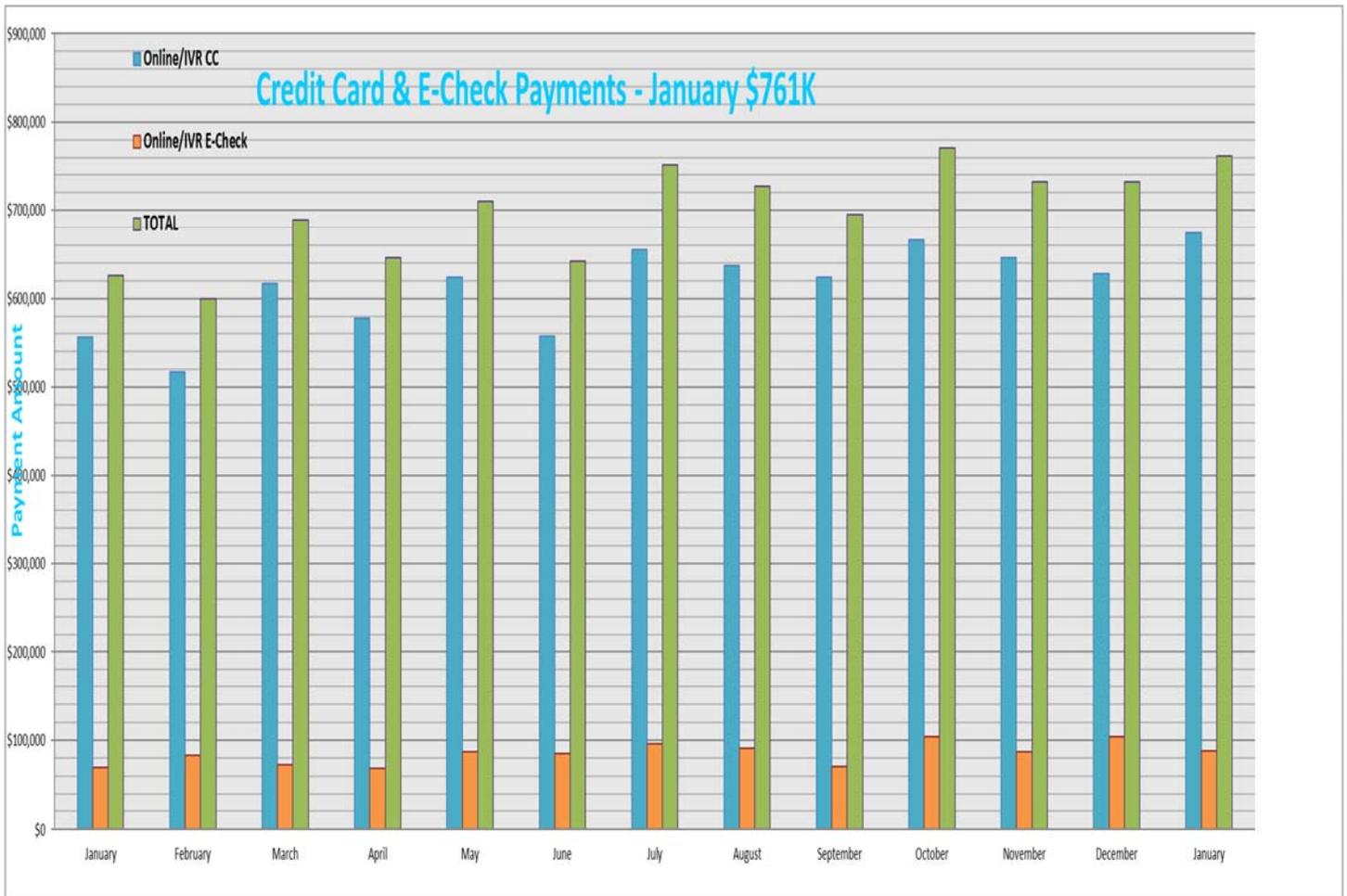
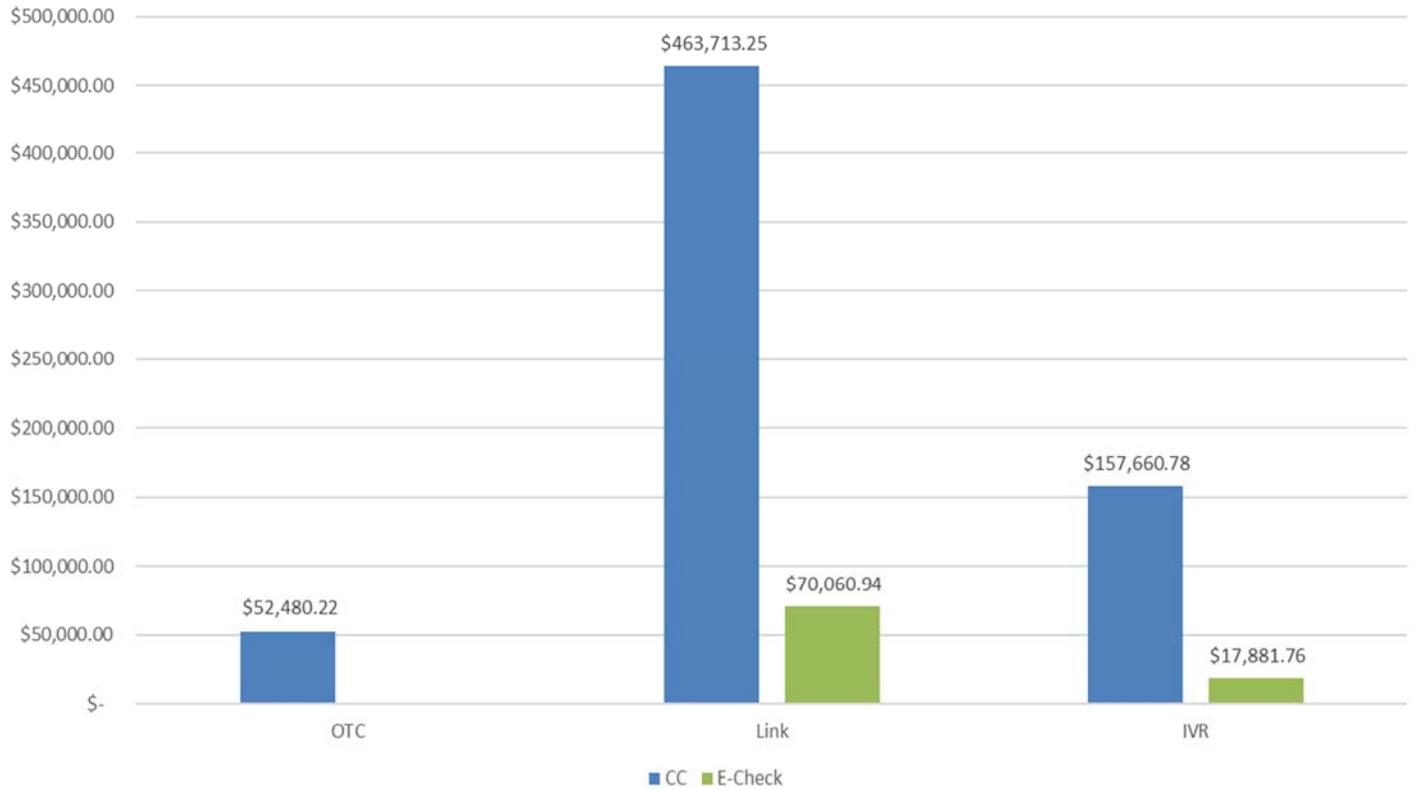
January Moves Processed = 1,393



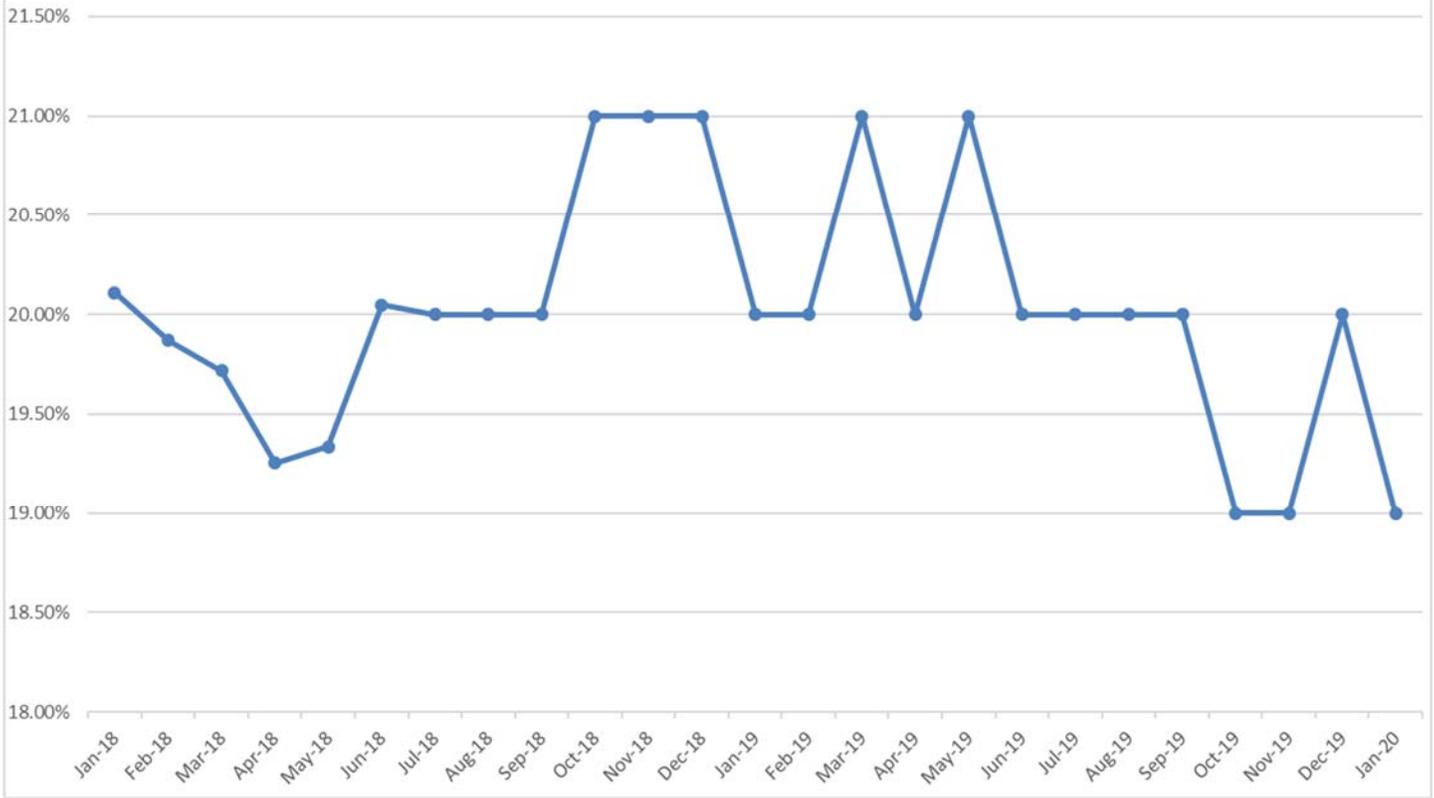
January Taps Sold = 158



Electronic Payment Method January 2020



Water Loss - 12-month rolling average

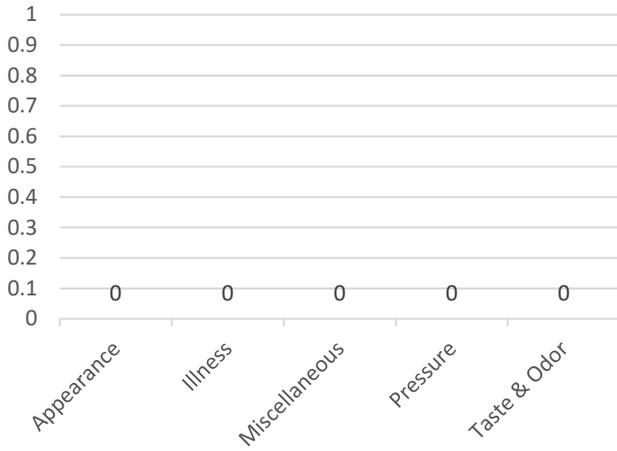


STONES RIVER WATER TREATMENT PLANT

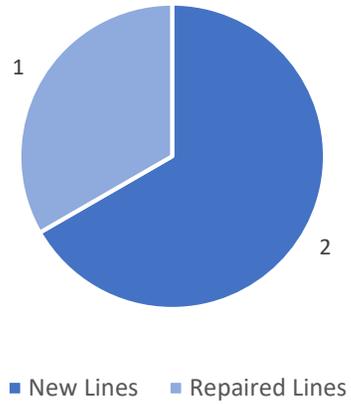
Dashboard Report

January 2020

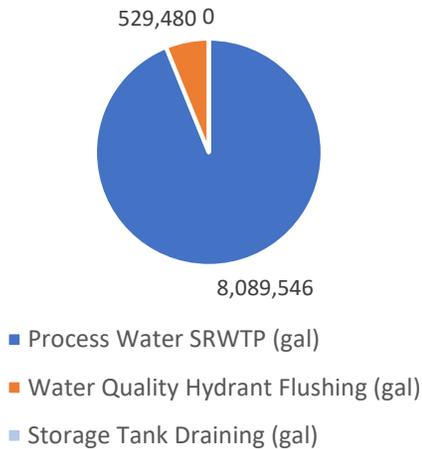
Drinking Water Laboratory Section Water Quality Complaints



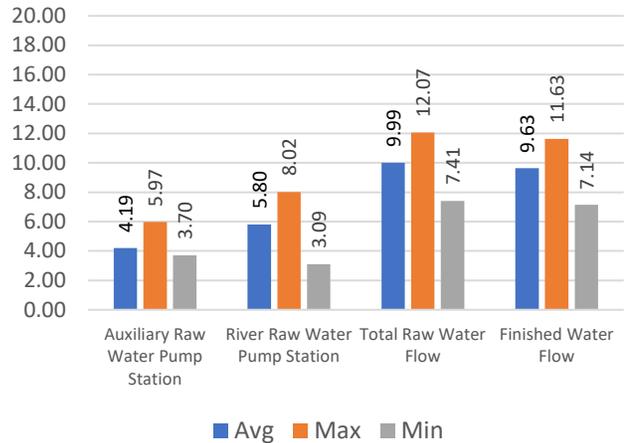
Drinking Water Laboratory Section New & Repaired Lines Tested



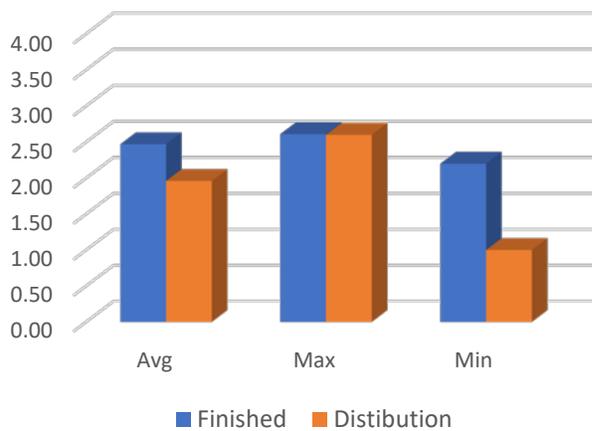
Water Quality Water Used Not Sold



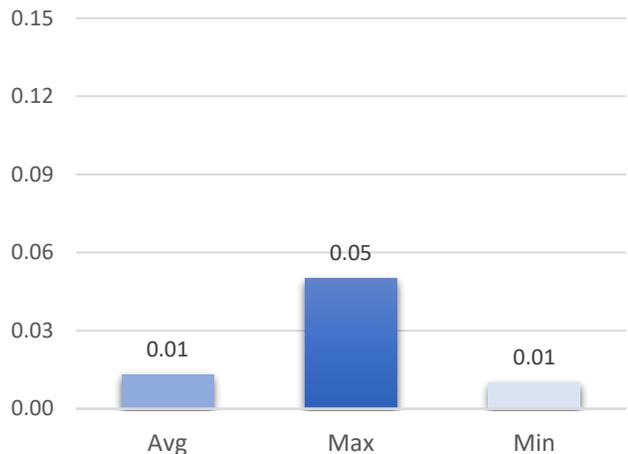
Plant Operations Section Flow (MGD)



Plant Operations Section Chlorine (mg/L)



Plant Operations Section Finished Turbidity (NTU)

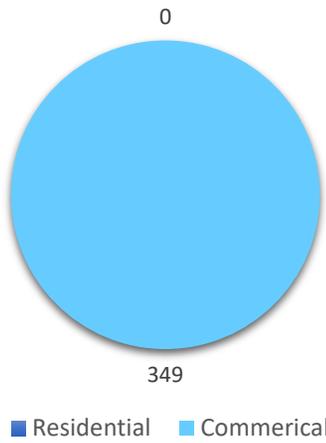


STONES RIVER WATER TREATMENT PLANT

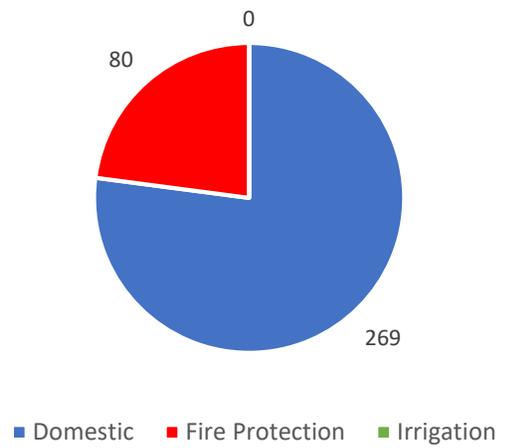
Dashboard Report

January 2020

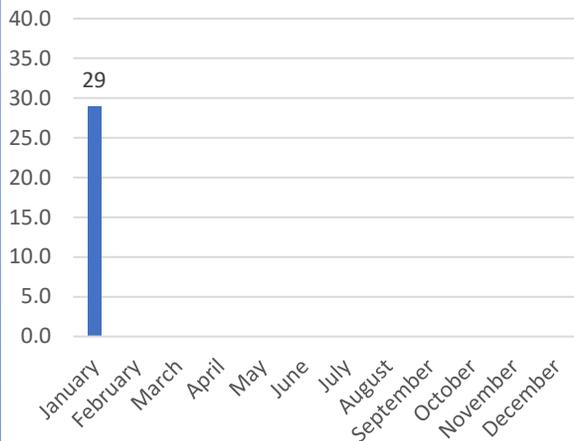
Cross-Connection Control Section Number of Devices Tested By Category



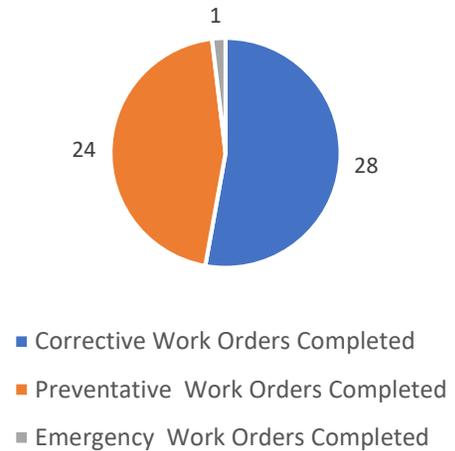
Cross-Connection Control Section Number of Devices Tested



Drinking Water Operations Section Pall Membrane Module Pin Count



Drinking Water Maintenance Section Work Order Status

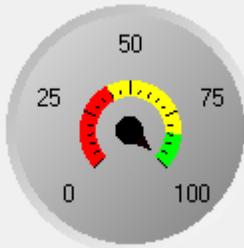


MURFREESBORO WATER RESOURCE RECOVERY FACILITY

DASHBOARD REPORT

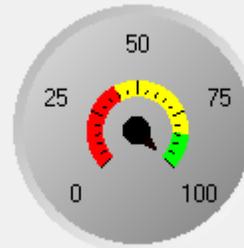
January, 2020

BOD PERCENT REMOVAL



99.1

AMMONIA PERCENT REMOVAL

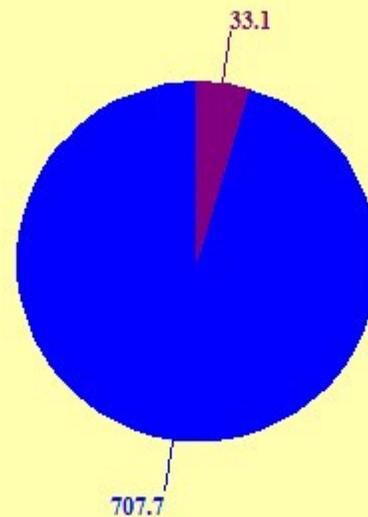


99.5

764.645
**MILLION GALLONS
TREATED**

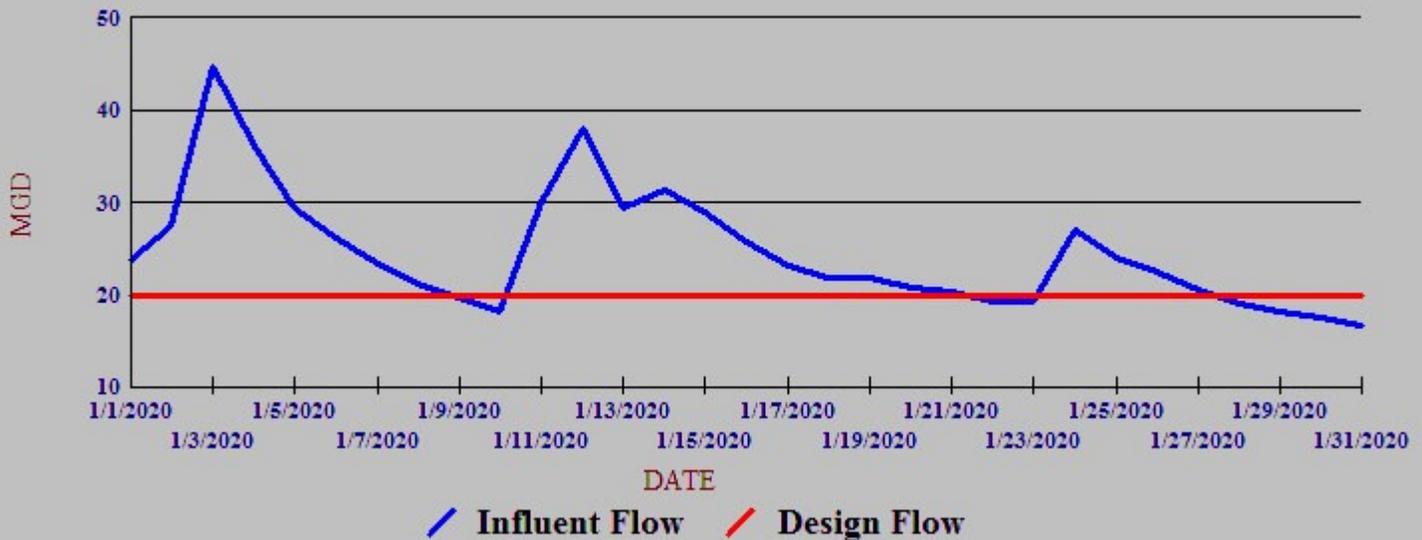
2,997.32
**TONS
BIOSOLIDS
REMOVED**

EFFLUENTS

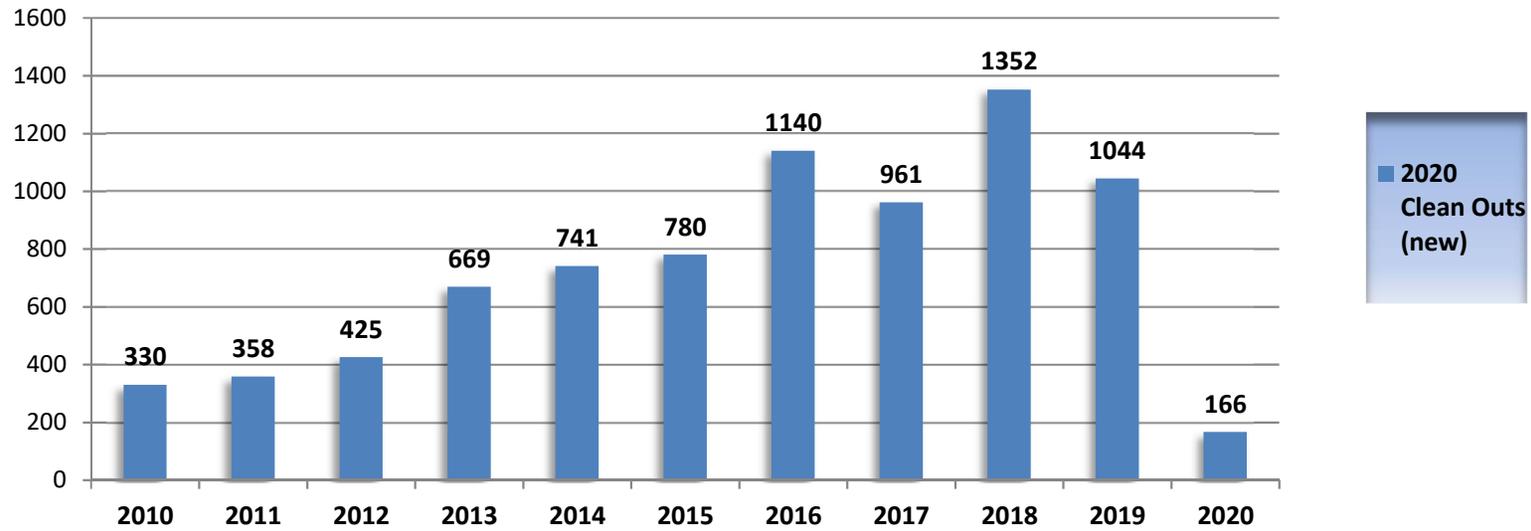


MGD
■ DISCHARGE ■ REUSE

AVERAGE INFLUENT FLOW



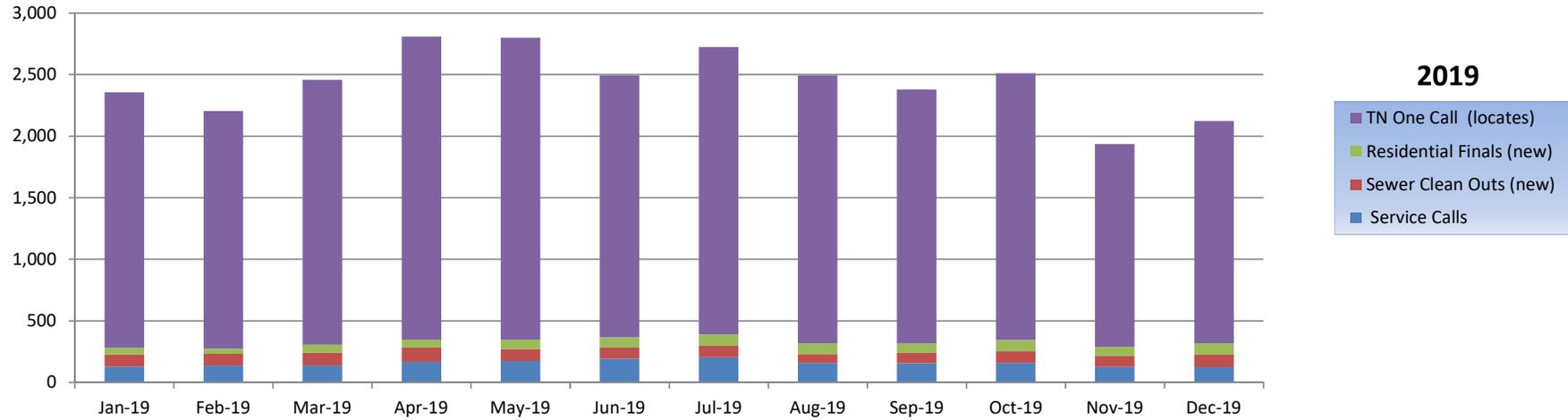
NEW SEWER CLEAN OUTS



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
2020 Clean Outs (new)	330	358	425	669	741	780	1140	961	1352	1044	166

** For the calendar year Jan-Dec*

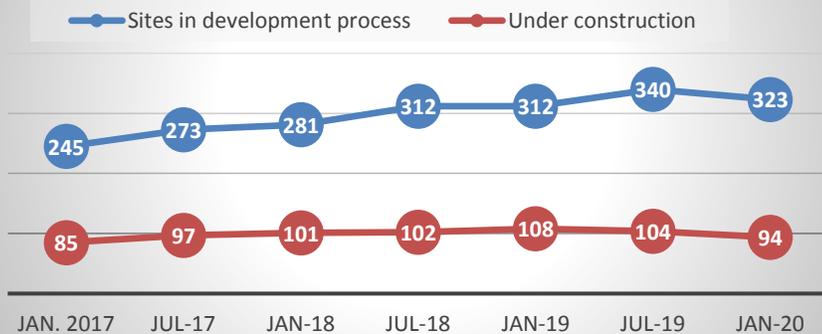
OPERATIONS & MAINTENANCE MONTHLY TOTALS



	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total
Service Calls	129	138	139	168	176	193	205	159	156	159	128	124	1,874
Sewer Clean Outs (new)	100	95	104	115	97	91	93	72	85	94	89	102	1,137
Residential Finals (new)	52	41	65	65	76	84	93	86	75	94	75	91	897
TN One Call (locates)	2,076	1,931	2,150	2,463	2,452	2,125	2,334	2,177	2,064	2,165	1,645	1,807	25,389
TOTAL	2,357	2,205	2,458	2,811	2,801	2,493	2,725	2,494	2,380	2,512	1,937	2,124	29,297

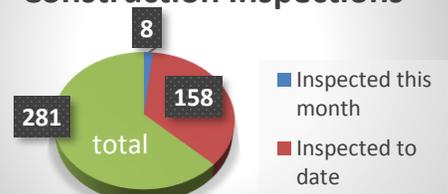
Stormwater Dashboard – January 2020

Construction Phase Inspections of Stormwater Control Measures (SCMs)



Inspection Program

Stormwater Post Construction Inspections



Education and Outreach



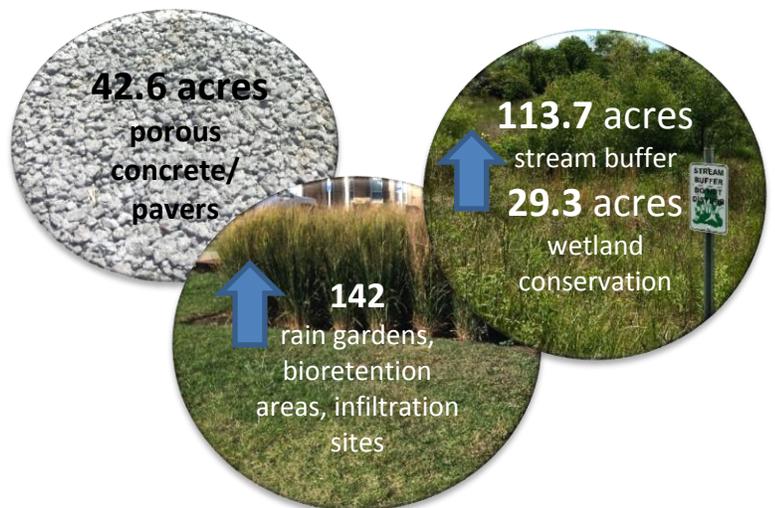
61 property owners along Spence Creek and Upper West Fork Stones River received yard waste door hangers (MTSU)

140 students educated (MTSU/ Project WET)

February – Outreach and education to area elementary schools

March – 12th Annual Tree Day

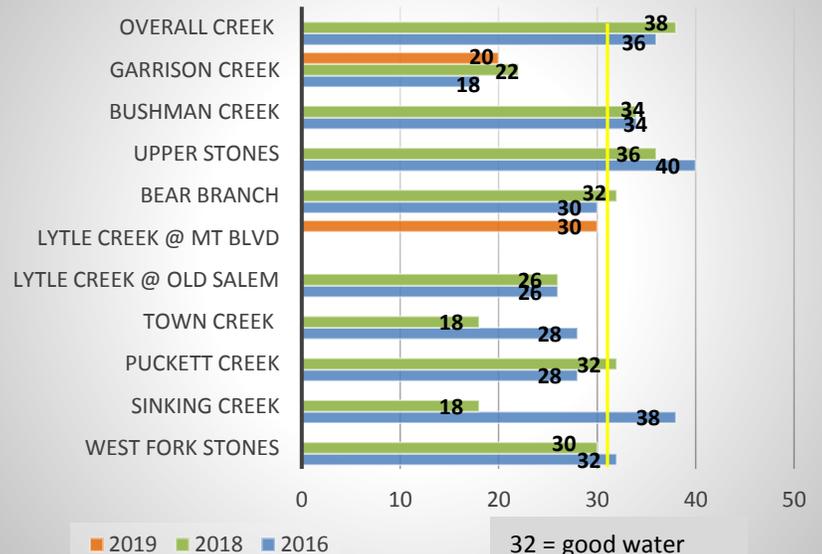
LID/ Green Infrastructure



Stormwater Infrastructure

	Jan	YTD	Total
Junction Boxes	49	49	1,768
Headwalls	41	41	6,922
Ponds	5	5	519
Gravity Mains	9,889 ft	9,889 ft	703.2 miles
Weirs	1	1	305
WQ Units	0	0	112
Underground Storage	0	0	30

Water Quality Scorecard



**MURFREESBORO WATER RESOURCES DEPARTMENT
OPERATING REVENUES AND EXPENDITURES
SEVEN MONTHS ENDED JANUARY 31, 2020**

	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Operating Revenues			
Water Revenue	\$ 9,755,076	\$ 16,654,000	59%
Repurified Revenue	\$ 20,782	\$ 26,000	80%
Wastewater Revenue	\$ 17,196,665	\$ 29,804,000	58%
Other Income	\$ 543,476	\$ 596,000	91%
Total Operating Revenues	\$ 27,515,999	\$ 47,080,000	58%
Water Operating Expenses	\$ 5,765,886	\$ 11,526,114	50%
Wastewater Operating Expenses	\$ 6,349,871	\$ 12,829,162	49%
Total Operating Expenses	\$ 12,115,758	\$ 24,355,276	50%
Net Earnings from Operations	\$ 15,400,241	\$ 22,724,724	68%

	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
WATER REVENUES			
Metered Water	\$ 8,898,367	\$ 15,200,000	59%
Water Adjustments	\$ (7,215)	\$ (26,000)	28%
Private Fire Protection	\$ 66,401	\$ 112,000	59%
Service Initiation Fees	\$ 142,295	\$ 230,000	62%
Late Fees	\$ 433,523	\$ 700,000	62%
Non-Payment Fees	\$ 95,615	\$ 180,000	53%
Returned Payment Fees	\$ 4,950	\$ 8,000	62%
Cross Connection	\$ 111,170	\$ 225,000	49%
Enernoc	\$ 9,969	\$ 25,000	40%
Miscellaneous	\$ -	\$ -	
TOTAL WATER REVENUES	\$ 9,755,076	\$ 16,654,000	59%

REPURIFIED REVENUES			
Repurified Revenue	\$ 20,782	\$ 26,000	80%
TOTAL REPURIFIED REVENUES	\$ 20,782	\$ 26,000	80%

WASTEWATER REVENUES			
Enernoc	\$ 3,540	\$ 5,000	71%
Sewer Charges	\$ 16,961,923	\$ 29,500,000	57%
Sewer Adjustments	\$ (46,332)	\$ (140,000)	33%
Surveillance	\$ 22,344	\$ 38,000	59%
Sampler	\$ 10,500	\$ 18,000	58%
BOD	\$ 147,493	\$ 275,000	54%
Amonia	\$ 36,040	\$ 60,000	60%
Septage Charges	\$ 55,830	\$ 45,000	124%
STEP Revenue	\$ 5,327	\$ 3,000	178%
TOTAL SEWER REVENUES	\$ 17,196,665	\$ 29,804,000	58%

OTHER INCOME			
Interest Earnings	\$ 383,923	\$ 400,000	96%
Inspections	\$ 117,106	\$ 166,000	71%
Miscellaneous	\$ 42,446	\$ 30,000	141%
TOTAL OTHER INCOME	\$ 543,476	\$ 596,000	91%

**MURFREESBORO WATER RESOURCES DEPARTMENT
 OPERATING REVENUES AND EXPENDITURES
 SEVEN MONTHS ENDED JANUARY 31, 2020**

	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Water Operating Expenses			
Water Source	\$ 76,223	\$ 208,000	37%
Water Treatment	\$ 2,251,739	\$ 4,259,169	53%
Water Storage	\$ 11,921	\$ 67,300	18%
Water Distribution	\$ 924,751	\$ 1,776,098	52%
Cross Connection	\$ 185,508	\$ 351,959	53%
Water Plant Administration	\$ 425,306	\$ 977,419	44%
AMI Field Services	\$ 460,065	\$ 919,329	50%
O&M Admin Allocation (40%)	\$ 128,648	\$ 229,594	56%
Customer Service Allocation (50%)	\$ 352,116	\$ 690,837	51%
Engineering Allocation (40%)	\$ 195,169	\$ 463,758	42%
Field Inspection Allocation (25%)	\$ 70,138	\$ 112,868	62%
Admin Allocation (40%)	\$ 684,302	\$ 1,469,782	47%
Total Water Operating Expenses	\$ 5,765,886	\$ 11,526,114	50%
Wastewater Operating Expenses			
Wastewater Collections	\$ 1,167,100	\$ 2,213,855	53%
Wastewater Rehab	\$ 83,071	\$ 158,500	52%
Wastewater Pump Stations	\$ 477,153	\$ 779,924	61%
Wastewater Industrial Surveillance	\$ 172,600	\$ 320,878	54%
Wastewater House Services	\$ 8,339	\$ -	
Wastewater Treatment	\$ 1,442,117	\$ 2,953,269	49%
Wastewater Disposal	\$ 311,317	\$ 727,407	43%
WRRF Administration	\$ 473,392	\$ 916,888	52%
STEP System	\$ 1,493	\$ 24,000	6%
Repurified Treatment	\$ 225	\$ 121,000	0%
Repurified Distribution	\$ 2,689	\$ 29,500	9%
Repurified Disposal	\$ 135,667	\$ 309,797	44%
O&M Admin Allocation (60%)	\$ 192,972	\$ 344,391	56%
Customer Service Allocation (50%)	\$ 352,116	\$ 690,837	51%
Engineering Allocation (60%)	\$ 292,753	\$ 695,638	42%
Field Inspection Allocation (75%)	\$ 210,413	\$ 338,605	62%
Admin Allocation (60%)	\$ 1,026,453	\$ 2,204,674	47%
Total Sewer Operating Expenses	\$ 6,349,871	\$ 12,829,162	49%

**MURFREESBORO WATER RESOURCES DEPARTMENT
OPERATING REVENUES AND EXPENDITURES
SEVEN MONTHS ENDED JANUARY 31, 2020**

SUMMARY OF NET TAP FEES	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Water Taps/Reserves	\$ 249,862	\$ 500,000	50%
Sewer Taps/Reserves	\$ 3,060,909	\$ 5,500,000	56%
Special Assessment Districts	\$ 1,106,531	\$ 2,000,000	55%
	<u>\$ 4,417,301</u>	<u>\$ 8,000,000</u>	<u>55%</u>

DEBT SERVICE	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Principal	\$ 1,540,343	\$ 11,547,588	13%
Interest	\$ 993,655	\$ 1,940,732	51%
	<u>\$ 2,533,998</u>	<u>\$ 13,488,320</u>	<u>19%</u>

Debt Coverage Ratio	YTD ACTUAL	ANNUAL BUDGET	% TO BUDGET
Operating Net Earnings	\$ 15,400,241	\$ 22,724,724	68%
Debt Service	\$ 2,533,998	\$ 13,488,320	19%
	6.08	1.68	