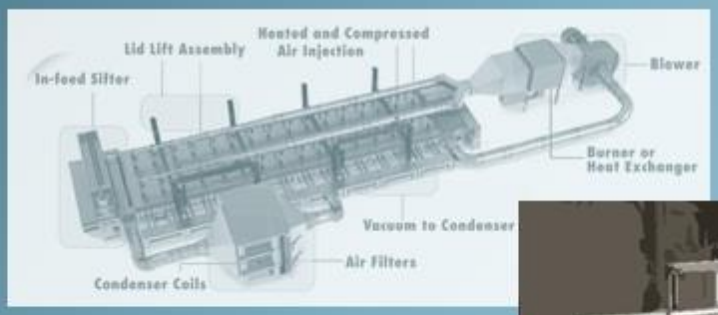
2020-2021
FY21 BUDGET

City of MURFREESBORO TENNESSEE



MURFREESBORO WATER RESOURCES DEPARTMENT

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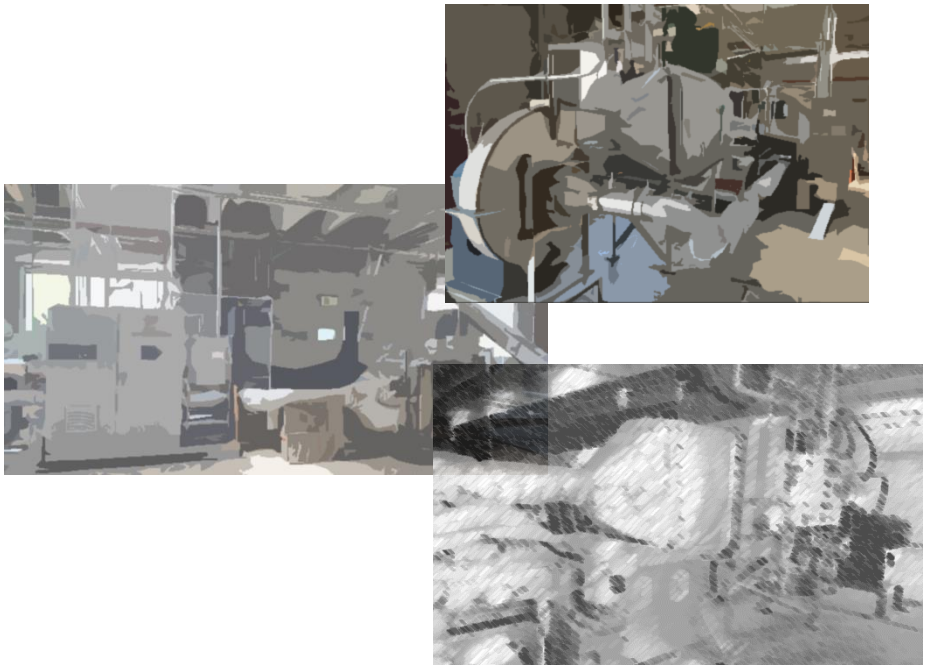
About the Cover



The Murfreesboro Water Resources Department (MWRD) always strives for balancing sustainable solutions with our community's ability to pay (i.e., affordability). With the imminent closure of Middle Point landfill, MWRD has installed a small-scale biosolids dryer at our Water Resource Recovery Facility (WRRF). Drying of biosolids will turn an otherwise useless waste product that is currently landfilled into a beneficial soil amendment. MWRD's biosolids make up less than 2% of what goes into Middle Point daily; however, creating a product that can be distributed into the soil safely and beneficially will demonstrate MWRD's leadership in the area of biosolids management and offer a long-term sustainable solution without the need for a landfill. We hope to optimize the performance of the small-scale unit in the next twelve months and then launch into our full scale biosolids drying operations in upcoming years.

Integrated • Sustainable • Affordable

City of MURFREESBORO TENNESSEE

. . . creating a better quality of life

Fiscal Year 2020-2021

Draft

Water Resources

Operating Budgets

Water Resources Board

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Kirt Wade, Council Member
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Kathy Moore Nobles
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Water Resources Staff

Darren Gore, *Director*

Doug Swann, *Assistant Director of Finance and Administration*

Valerie Smith, *Assistant Director of Engineering and Compliance*

Steve Tate, *Effective Utility Management Coordinator*

Alan Cranford, *Drinking Water Plant Manager*

John Strickland, *Water Resource Recovery Facility Manager*

Donald Hughes, *Distribution Operations Manager*

Jimmy Stacey, *Collection Operations Manager*

Randy McCullough, *Customer Service Manager*

Sharon Seibert, *Community Affairs Manager*

City Administration

Craig Tindall, *City Manager*

Gary Whitaker, *Assistant City Manager*

Adam Tucker, *City Attorney*

Erin Tucker, *Budget Director*

Melissa Wright, *City Recorder/Finance Director*

TABLE OF CONTENTS

BUDGET MESSAGE **7**

COMMUNITY PROFILE **17**

Overview 17

City Government 18

City of Murfreesboro Organizational Chart 19

BUDGET GUIDE **21**

WATER, SEWER AND STORMWATER BUDGET HIGHLIGHTS **25**

Responsible Budgeting 25

Expand Infrastructure 25

Establish a Strong City Brand 25

Maintain Public Safety 26

Improve Economic Development 26

FY 2020 Department Accomplishments 27

FY 2021 Department Goals 28

Organizational Structure 29

EFFECTIVE UTILITY MANAGEMENT **31**

MWRD's Strategic Vision 32

BENCHMARKING **35**

WATER RESOURCES BUDGET SUMMARY **39**

Water Resources Revenue Summary 41

Water Resources Expense Summary 43

REVENUE ITEMIZATION **45**

Water Revenue 46

Sewer Revenue 47

Repurified Water Revenue 48

Water taps / Sewer taps (System Development Charges) 49

Special Sewer Assessment Fees 50

FY21 Proposed Rate Schedule 51
Bill Amount for Selected Residential Monthly Consumption *53*
Rate Affordability *54*
Rates, Fees and Charges Objectives *55*

DIVISION NARRATIVES – ACCOMPLISHMENTS AND GOALS 57

Department Summary 57

Administration & Customer Service 59

Engineering 63

Operations and Maintenance 67

Drinking Water Treatment Plant 71

Water Resource Recovery Facility 75

DEBT SERVICE (CAPITAL OUTLAY) 79

RATE FUNDED CAPITAL EXPENDITURES 83

WORKING CAPITAL RESERVES 85

STORMWATER 89

PROPOSED BUDGET STORMWATER 93

CAPITAL IMPROVEMENTS – STORMWATER 94

APPENDICES 95

SYSTEM INFRASTRUCTURE REPORT 3/31/20 95

FY21 RATE-FUNDED CAPITAL DETAILS 97

HISTORICAL/SUPPLEMENTAL BUDGET INFORMATION 101

DETAILED BUDGET ITEMIZATION 107

BUDGET MESSAGE

May 7, 2020

Honorable Mayor and Members of the City Council and Water Resources Board,

RE: Draft 2020-21 (FY21) Budget

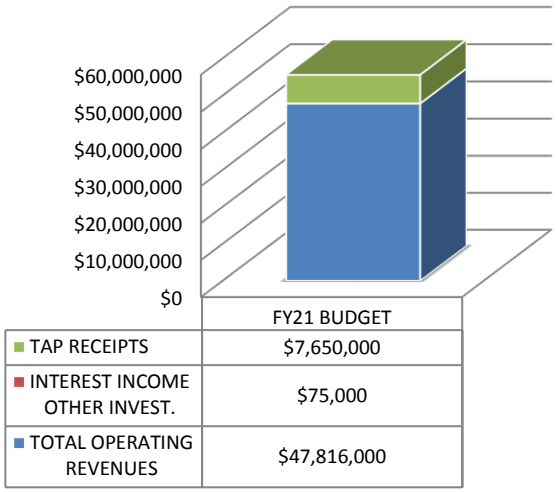
I submit to you the 2020-2021 (FY21) Draft Budget for review and consideration. It is presented in the same format that the City Budget has been prepared. As the City budget is amended so will the Water Resource and Stormwater budgets.

The multiple accomplishments of the Murfreesboro Water Resources Department (MWRD) for FY20 are detailed on page 27 of this document. The Department's highlighted or most significant accomplishments for FY20 are associated with completing a Waste Load Allocation (WLA) model on the West Fork Stones River, developed the rationale and enacted a sanitary sewer allocation ordinance to safeguard the capacity of the collection system and Water Resource Recovery Facility (WRRF), completed the installation and start-up of a small-scale biosolids dryer at the WRRF, completed the Walter Hill dam repairs, and completed the capacity study for Overall Creek pumping station.

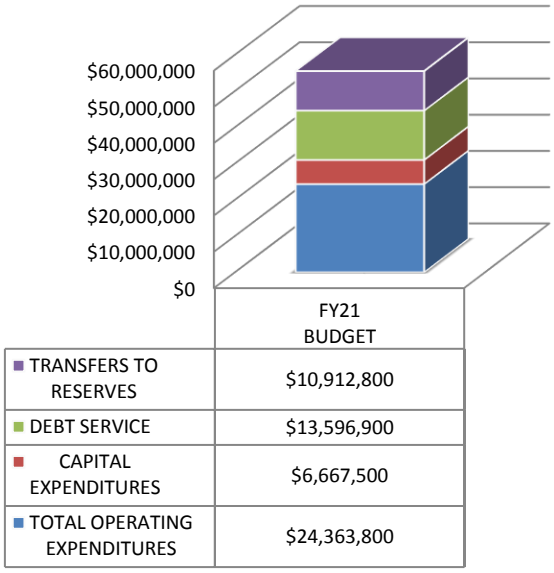
The Department's FY21 goals are detailed on page 28. The most significant ongoing projects by the Department are the anticipated completion of the Northeast Regional Pumping Station and Forcemain design, designing the Overall Creek pump station upgrades, completing the wet weather treatment capacity study at the Water Resource Recovery Facility, and applying for the WRRF's new 2021 National Pollutant Discharge Elimination System (NPDES) permit, and completing the construction of the 2018/2019 sewer rehabilitation project and designing and bidding the 2020/2021 sewer rehabilitation project.

The Water Resources FY21 draft budget is balanced and is not expected to deviate significantly from the overall revenue and expense total of $55,541,000. This amount is a $111,000 over the FY20 budget and $73,496 under FY20 projected revenues.

Total Revenues, $55.54M



Total Expenses, $55.54M



The FY21 total budget increase equates to a 0.20% increase. The reason for such a low increase in expenses across the board is due to salaries being frozen as a result of the COVID-19 pandemic. Staff has budgeted for nominal gains in rate revenue due to the state of emergency and lowered our anticipated tap revenue by 6%.

$3,507,300 of sinking funds are being earmarked to assign the excess revenue for future construction or repair and replacement. The sinking funds identified below have been assigned rate revenue since FY12. The total FY21 earmarked amounts and FY12-20 "banked" amounts are as tabulated below:

Table 1: Designated Sinking Funds FY12-20 and FY21 Budget

Sinking Fund	FY12-20 Balance	FY21 Budget Designated	FY21 Budget Balance
General	1,400,000		1,400,000
Lift Station Replacement	1,126,232	250,000	1,376,232
NE FM & PS	3,391,254	500,000	3,891,254
WRRF Sludge/Biosolids	2,800,000	500,000	3,200,000
Walter Hill Dam Repairs	375,000	125,000	500,000
Sewer Rehab	1,000,000	1,000,000	2,000,000
Future Debt	4,159,380		4,159,380
Future Capital Expense	6,628,132	1,132,300	7,760,432
TOTALS	**21,879,998**	**3,507,300**	**24,287,298**

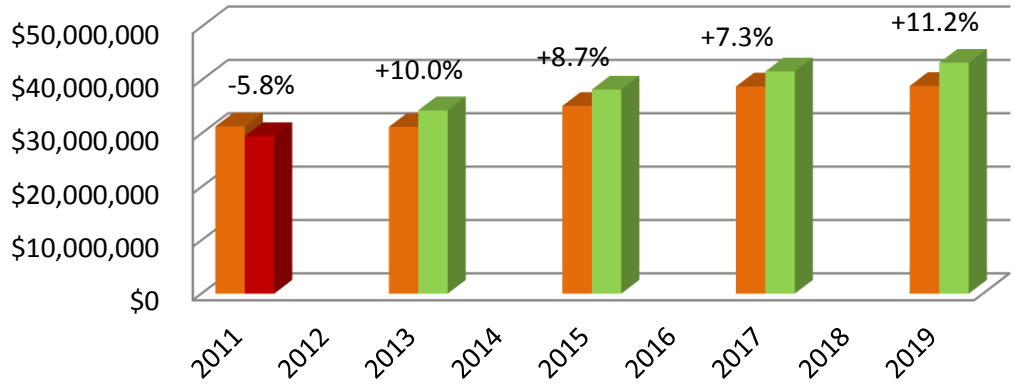
The use of sinking funds reduces the need to incur debt thereby alleviating the need for future rate increases.

The Murfreesboro Water Resources Department was provided a cost of service study (COSS) from Jackson Thornton Utilities Consultants for FY2019. That study was presented at the March 3, 2020 Board meeting. Jackson Thornton has since that time provided staff a pro forma for FY2024. The FY2024 pro forma was run using two scenarios:

1) Scenario "A" that assumes no new debt was added between FY19 and FY24. This assumes using reserves on hand to pay for $49,000,000 in capital projects.
2) Scenario "B" where $49,000,000 in debt (20-yr @ 3%) is incurred to pay for the Northeast Regional Pumping Station and Force main, Overall Creek Pump Station upgrades, as well as the necessary capital equipment to perform full scale biosolids drying at the Water Resource Recovery Facility (WRRF). Full payback of the total loan amount was assumed to start in FY2024.

The following chart summarizes the historical cost of service studies conducted by the Department from FY11 to FY19, illustrating the total rate revenue requirements and the actual rate revenue collected as an under or over recovery:

Chart 1: Total Water and Sewer Rate Requirements and Actual Rate Revenue



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

Chart 2 contains a lot of information and is a combined look at both water and sewer revenues. The most relevant number to note is the $3,049,614 "excess revenues" over and above anticipated expenses, or $45,831,260 minus $42,781,646 (on the upper right hand of the chart). The assumptions of the No Debt scenario demonstrate a 7.1% over-recovery in FY24.

Chart 2: Historical COS Studies and FY24 Pro Forma (No Debt Scenario)

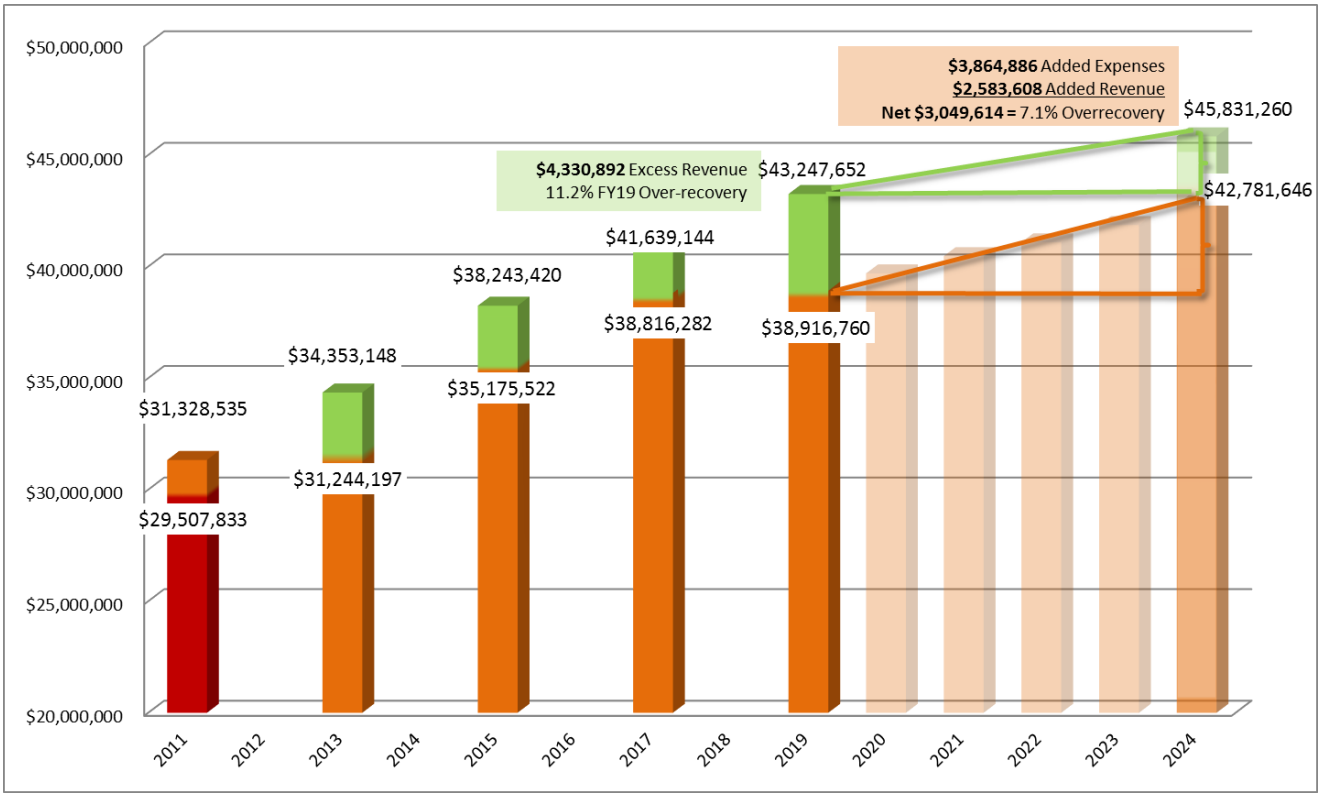
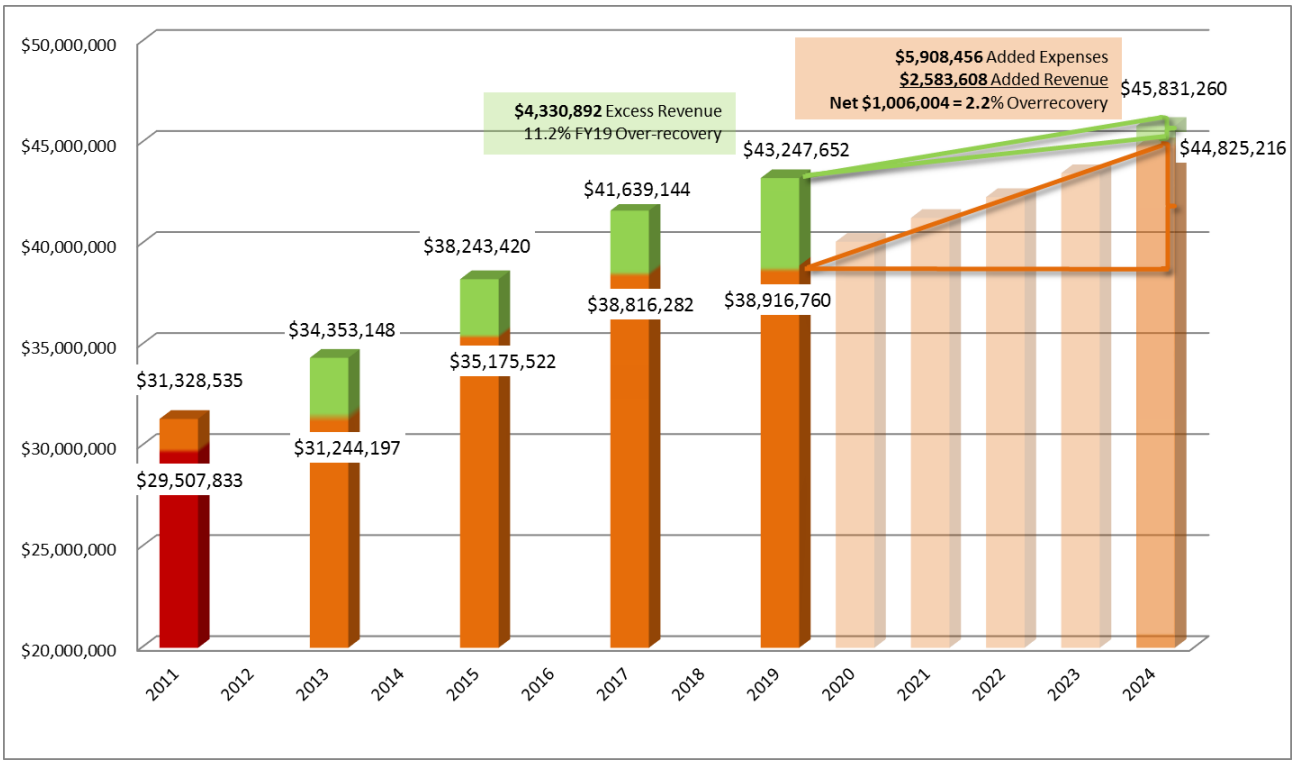


Chart 3 is also a combined look at both water and sewer revenues with the assumption of $49,000,000 in debt service (20-yrs @ 3% fixed interest). The most relevant number to note is the $1,006,004 "excess revenues" over and above anticipated expenses, or $45,831,260 minus $44,825,216 (on the upper right hand of the chart). The assumptions of the $49M in debt scenario demonstrate a 2.2% over-recovery in FY24.

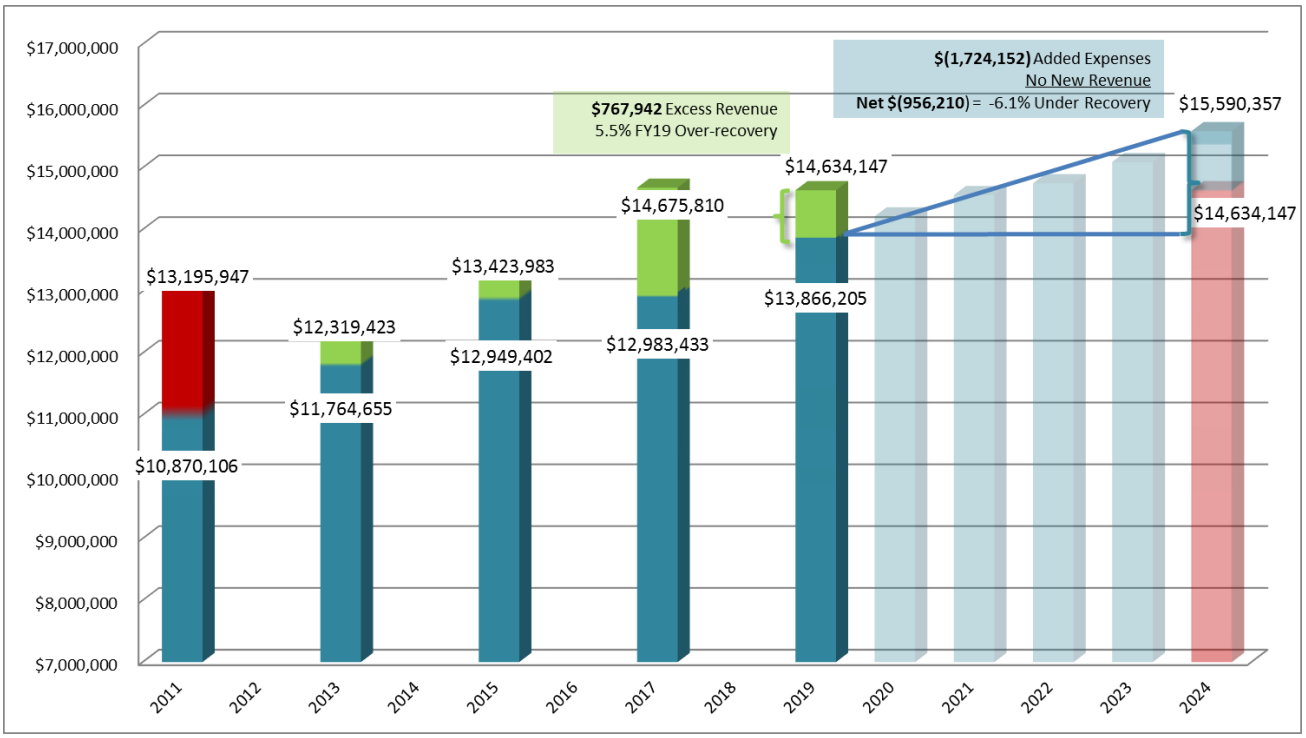
Chart 3: Historical COS Studies and FY24 Pro Forma ($49M Debt Scenario)



While both of these scenarios demonstrate an over-recovery of anticipated revenue to cost of service expenses, there is a small issue associated with water rates not fully supporting the cost of service associated with water related expenses in FY24. The over-recoveries charted above entail a subsidization of sewer related revenue covering water related expenses. From a cost of service standpoint, this is not an ideal position and staff recommends avoiding it from occurring.

Chart 4 looks at water revenues and cost of service only. No new debt is associated with water expenses during the timeframe between FY19 and FY24, so debt service does not affect increased expenses; therefore, the increase of $1,724,152 is associated with operations and maintenance only. Also, MWRD's water system is encompassed by Consolidated Utility District of Rutherford County; therefore, no new revenue derived from growth has been integrated into the FY24 pro forma. Using these assumptions, the water revenues are expected to fall short in an amount of $(956,210) as compared to expenses in FY24, under-recovering (6.1)%.

Chart 4: Historical COS Studies and FY24 Pro Forma (Water Only)



A proposed rate design for meter sizes 5/8" to 2" below by adjusting the minimum annually as tabulated below recovers approximately 20% of the under-recovery anticipated for FY24. Making these adjustments over a 5-yr period would make up the "gap" of the anticipated ($956,210) shortfall.

Table 2: Proposed Minimum Monthly Charge Adjustments

Meter Size (INCH)	FY20 Total minimum	FY21 Proposed minimum	Difference	# of Accounts	Added Revenue
5/8"	$8.22	$8.72	$0.50	24,917	$149,501.00
1"	$19.18	$20.71	$1.53	688	$12,668.01
1-1/2"	$41.10	$43.77	$2.67	359	$11,508.82
2"	$65.76	$69.05	$3.29	464	$18,307.58
3"	$164.40	$164.40	$0.00	96	$0.00
4"	$328.80	$328.80	$0.00	34	$0.00
6"	$685.00	$685.00	$0.00	17	$0.00
8"	$685.00	$685.00	$0.00	1	$0.00
			Total	**26,576**	**$191,985.41**

While the water monthly minimums are nominal increases, based on the current economic conditions, MWRD staff is not recommending a water or sewer rate increases for FY21. These increases may be held off for one or two years, necessitating larger adjustments in FY23 and FY24.

Chart 5: Monthly Water & Residential Cost Curve, FY19 COSS, FY21 Rate Design, and FY24 PF

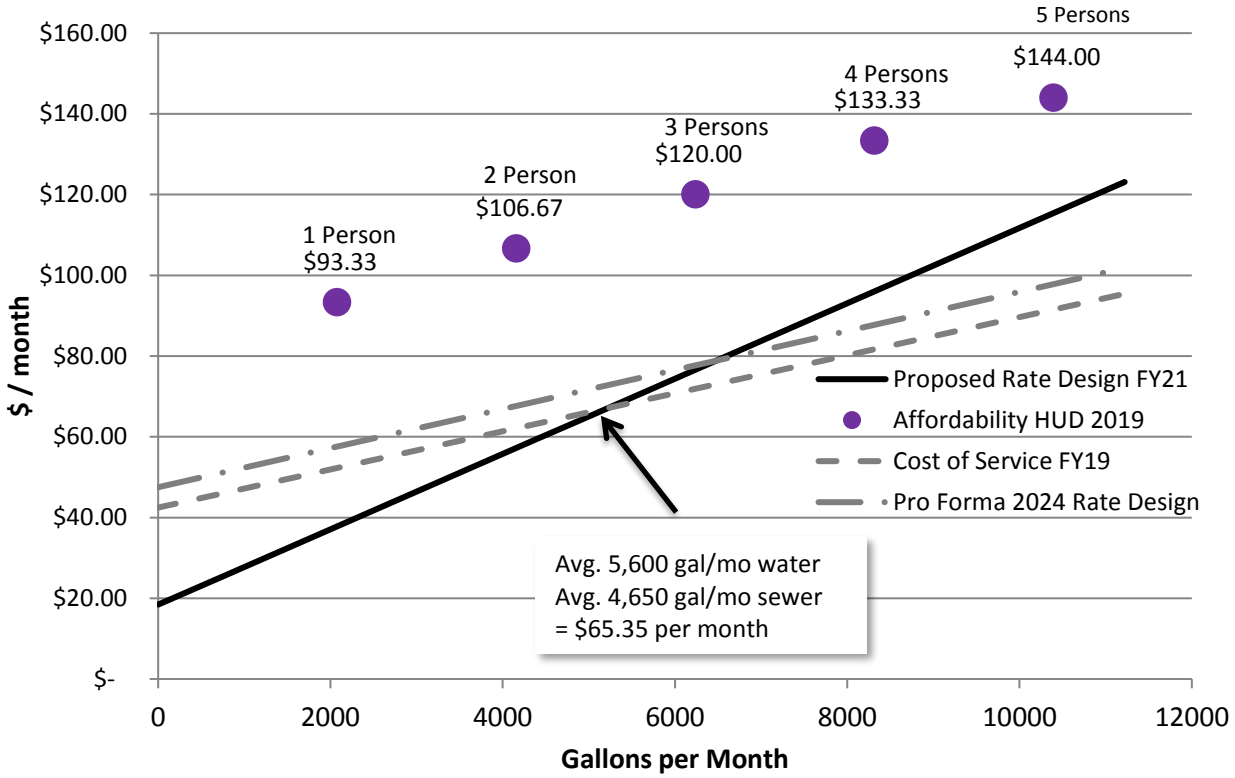


Chart 5 above demonstrates that MWRD's current rate design meets the affordability index for 1-person through 5-person homes. The good news is that the pro forma for FY24 also meets the current 2019 HUD affordability indexes. Note however that the cost of service for FY19 and pro forma for FY24 do show the need to increase the minimum monthly fees rather substantially and flatten out the commodity charges.

The affordability limits above represent 4% of a very low-income earner (50% of median income) in Murfreesboro. The table below illustrates 2019 HUD housing limits. Median family income of 4 is established at $80,000 per year, so 50% of median for a family of four is established as $40,000 per year.

Table 3: 2019 HUD Low Income Family Incomes

	1 person	2 persons	3 persons	4 persons	5 persons
50% Median Family Income	$28,000	$32,000	$36,000	$40,000	$43,200
4% annual	$1,120	$1,280	$1,440	$1,600	$1,728
4% monthly	$93.33	$106.67	$120.00	$133.33	$144.00

Staff is not recommending any changes to the system development charges (a.k.a., connection fees) for residential or nonresidential uses.

The FY21 total operating expenses, including benefits and payroll, increased $32,524 or .13% over the FY20 budgeted amount. Total expenses including transfer to reserves increased 0.20% (see table below). The reason for such a low increase in expenses across the board is due to salaries being frozen as a result of the COVID-19 pandemic. With the uncertainty of the economic recovery, the Water Resources Department along with the City have not budgeted for employees raises for FY21. In the event the

economy recovers better than expected, there are available funds to make salary adjustments during the middle of the budget year.

Table 4: Expense Categories % Change FY21 vs FY20

EXPENSE Category	% Change from FY20 budget
WATER, OPERATING & MAINTENANCE	-1.06%
SEWER, OPERATING & MAINTENANCE	1.37%
CUSTOMER BILLING & COLLECTION	-0.73%
ADM & GENERAL EXPENSES	0.23%
TOTAL OPERATING EXPENDITURES	0.13%
CAPITAL EXPENDITURES	-1.92%
DEBT SERVICE	0.80%
TRANSFERS TO RESERVES	0.93%
TOTAL EXPENDITURES/RESERVES	0.20%

STAFFING

The FY21 budget does not include any additional staffing requests as a result of the COVID-19 pandemic; however, prior to the state of emergency, the following personnel promotions and additional staffing were to be recommended:

- **Summary** – Addition of 2 ½ full-time equivalents and five promotions involving reclassification of job requirements. The total net increase anticipated with the new personnel and promotion/reclassifications is $183,000. In the event that these positions are not able to be incorporated in the FY21 budget at some point and time, the Water Resources Department will maintain its current total of 173 full time and 8 part time positions, which includes 9 full-time positions in the stormwater department.
- Operations and Maintenance – One promotion/reclassification of an Administrative Assistant II to a Business Systems Analyst. With the anticipation of migrating to CityWorks, a Computerized Maintenance Management System (CMMS), and consistent with the Department's Information Technology Master Plan, this promotion would ensure the development of a subject matter expert who would work with staff and vendor(s) to migrate O&M's "as is" paper systems to a more advanced "to be" best practices. After implementation of new software this person would work with staff to improve the Department's efficiency and effectiveness in water distribution and sewer collection systems asset management.
- Administration/Finance – One promotion/reclassification and a new hire:
    - An Accounting Clerk promoted to an Accounting Specialist I based on increased duties and complexity of job requirements.
    - A new hire for the position Administrative Aide I to help with customer billing processing and backup liaison with the finance department.
- Customer Service – One promotion/reclassification of an Administrative Support Specialist I promoted to an Administrative Support Specialist II. The Customer Service receptionist has taken on additional duties and is helping customers over the phone by answering basic account information and thereby alleviating that duty to the Customer Service Representatives.
- Advanced Metering Infrastructure (AMI) – One new hire of an AMI Technician. The new position would essentially maintain calibrations for customers with 2-inch and larger meters. Keeping

the Department's larger meters calibrated equals more accuracy in our billing consumption. It is anticipated that the efficiency and accuracy maintained in these larger meters would fund the position.

- Water Resource Recovery Facility (WRRF) – One promotion/reclassification and a full-time hire to replace a part-time position at the Jordan and Coleman farms:
    - A current W/WW Worker is requested to be promoted to Equipment Operator based on increased level of responsibility and job requirements.
    - A part-time Equipment Operator is requested to be replaced with a full-time Maintenance Technician. The part-time Equipment Operator has been vacant for several years and a significant portion of the work was provided by contracted labor. The contract labor services have been eliminated as is the part-time Equipment Operator position. The deferred costs associated with these positions fund the requested full-time Maintenance Technician
- Engineering – One promotion/reclassification of an Administrative Aide II to an Executive Administrative Aide. The City Manager has created a new position of Executive Administrative Aide for Executive Directors and Assistant Manager positions. The Water Resource's Department has a candidate that fits the reclassification of job skills and requirements associated with an Executive Administrative Aide.

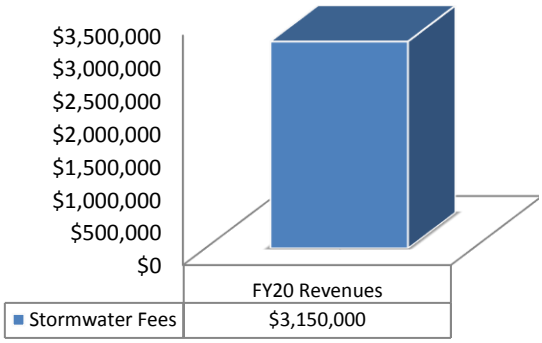
No raises are budgeted for Water Resources staff for F21. The total estimiated costs associated with providing 4.0% increases to personnel within the non-exempt step program and 3% across the board for exempt and open range non-exempt personnel would be $680,000 In the event that personnel raises are proposed after adoption of the FY21 budget, staff can use a portion of the future capital expenditures sinking fund and defer some capital expense purchases to fund the raises. This action would come back to the Board and City Council for approval.

The rate funded capital budget is $6,667,500, which is a decrease of $130,241 from the FY20 budget. MWRD's goal is a minimum of $5 million per year in rate-funded capital purchases. Rate funded capital purchases are budgeted to decrease 1.9% and debt service expense to increase by $108,580 (0.8%) as compared to the FY20 budget. This offset indicates the Department's strong financial position and ability to pay in cash what would otherwise need to be purchased through debt service.

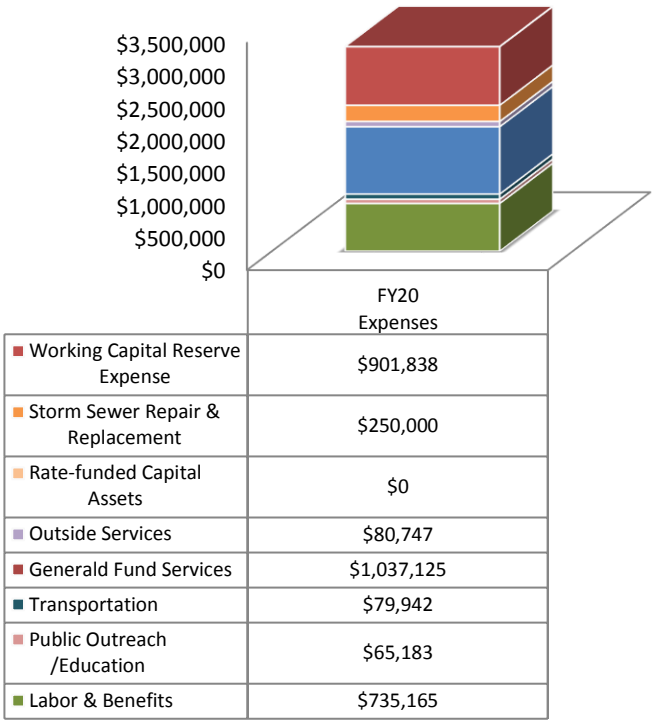
STORMWATER FUND

The Stormwater Fund budget is independent of the Department budget. It is funded from revenue based on a user fee of $3.25 per single family equivalent. The fund will be in its twelfth year in FY21. No change is recommended to the fee. The net revenue generated by the stormwater fee is budgeted at $3.15M

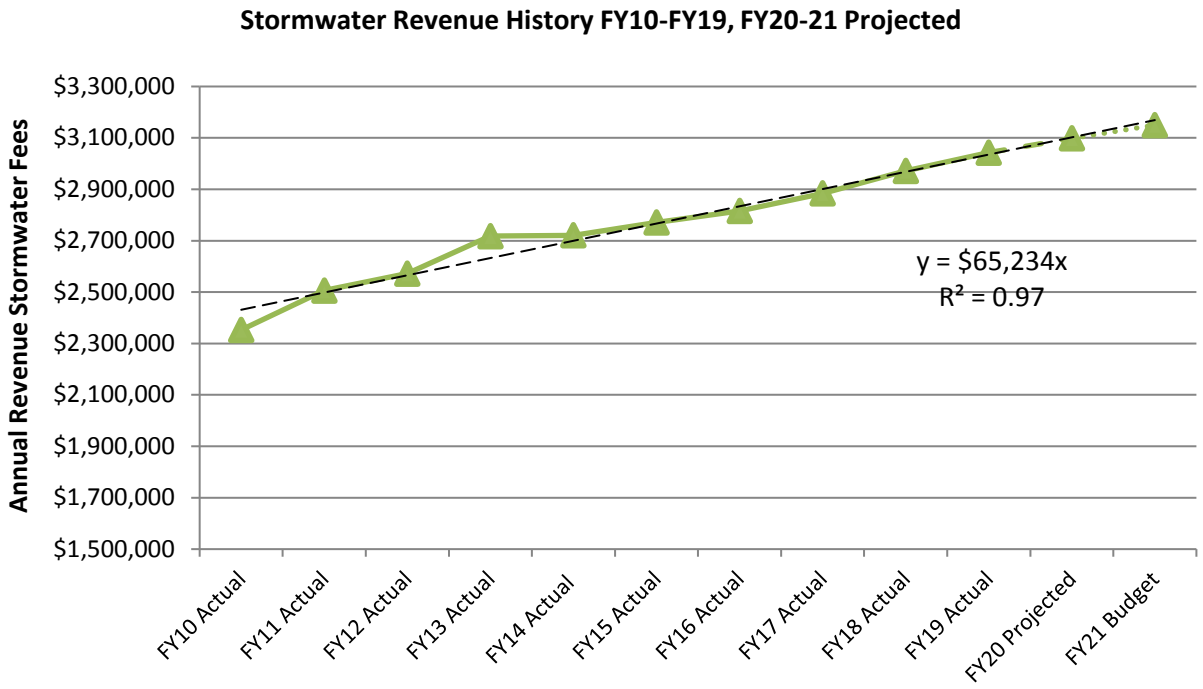
FY21 Revenues, $3.15M



FY21 Expenses, $3.15M



with operation expenses budgeted at $1,998,162 and rate funded capital expenditures at $0. The anticipated excess funds above operating expenses and rate funded capital expenditures are $901,838. The stormwater fund has developed an extensive five (5) year Capital Improvements Plan, currently totaling $5,445,000 from FY20 through FY24. A five (5) year pro forma has been developed to demonstrate the banking of excess revenues to pay for these proposed capital improvements without incurring any debt. Financial policies for the stormwater enterprise fund were adopted by the Water Resources Board and City Council on May 21, 2013 and July 11, 2013, respectively. An amendment to these policies was approved in FY18 to allow the minimum working reserve balance to be lowered to no less than three (3) months of operating expenses, or $499,540 for FY21.



The chart above shows that the stormwater fund has grown by approximately $65,000 each year. That is equal to approximately 1,667 single family unit equivalents annually. The average impervious square footage is equal to 3,470 square feet per single family unit, which equates to the City adding approximately 133 acres of imperviousness annually. These imperviousness areas have been required to meet the City's permanent stormwater runoff treatment standards since 2008.

Overview - Water Resources Department

Water service is provided through approximately 27,325 meter connections within the Murfreesboro Water Resources Department water service area (35.61 square miles), and sanitary sewer service is being provided to areas served in the Consolidated Utility District water service area for an estimated additional 21,779 sewer only customers. The City operates a separate fund for Stormwater services and has 39,722 customers. There are 63.86 square miles within the city limits and 179.6 square miles within the Murfreesboro Urban Growth Boundary (UGB). The City also operates the largest reclaimed water system in the State of Tennessee; having 184 customers and delivering between 4 to 8 million gallons per day of high quality repurified water.

The Murfreesboro Water Resources Department (Department) is an enterprise fund of the City of Murfreesboro. The fund is managed to fully recover the expenses of providing services from users (as opposed to taxes) and to build and preserve a substantial, long lived capital asset base in the treatment facilities, water distribution and storage system, wastewater collection system and repurified water distribution and storage system. Because utilities have many characteristics of a business, business accounting and financial management rules are usually applied to enterprise funds. Because of this, the presentation of the Department differs from that of the City General Fund Budget.

The Department's aggressive maintenance and replacement programs result in a greater asset value. The Total Asset Value as of June 30, 2019 was $533,708,703, a 2.96% increase from FY18. The Department financial and management model is to improve infrastructure each year, strive to provide excellent customer service, make knowledge-based decisions, and stretch the dollar to get the maximum benefit and minimize waste.

The employees of the Department are dedicated to providing its customers with a bountiful supply of clean, safe water, sanitary sewer service and recycled water service in the most economical and efficient way possible. The Department's responsibility to manage the City's municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit, which directly affects the quality of stormwater runoff within the City, allows for a holistic approach to affect the quality of the water we withdraw from our natural resources and the quality of the water returned to our streams, rivers and lakes.

There are a total of 173 full time and 8 part time positions in water resources, which includes 9 full time stormwater positions budgeted for FY21.

There are 3 licensed professional engineers, 1 engineer-in-training, 2 certified public accountant, 3 professional operators, and 61 employees with a Tennessee Certified Operators License for one or more of the following: water treatment, wastewater treatment, water distribution and wastewater collection system. We also have 6 technicians at Operations and Maintenance certified in pipeline assessment certification program (PACP).

CITY GOVERNMENT

The City operates under a Council-Manager form of government. The governing body is the City Council, which consists of seven members who serve four-year terms of office. Non-partisan elections for City Council are held in even numbered years on a staggered basis. City Council members are elected at large. The City Council is responsible for adopting ordinances, the annual budget, appointing committees and establishing policies. The City Council appoints a City Manager, who is responsible for carrying out the policies and ordinances of the City Council and the day-to-day operations. The City Manager appoints and supervises the various department heads of the City.

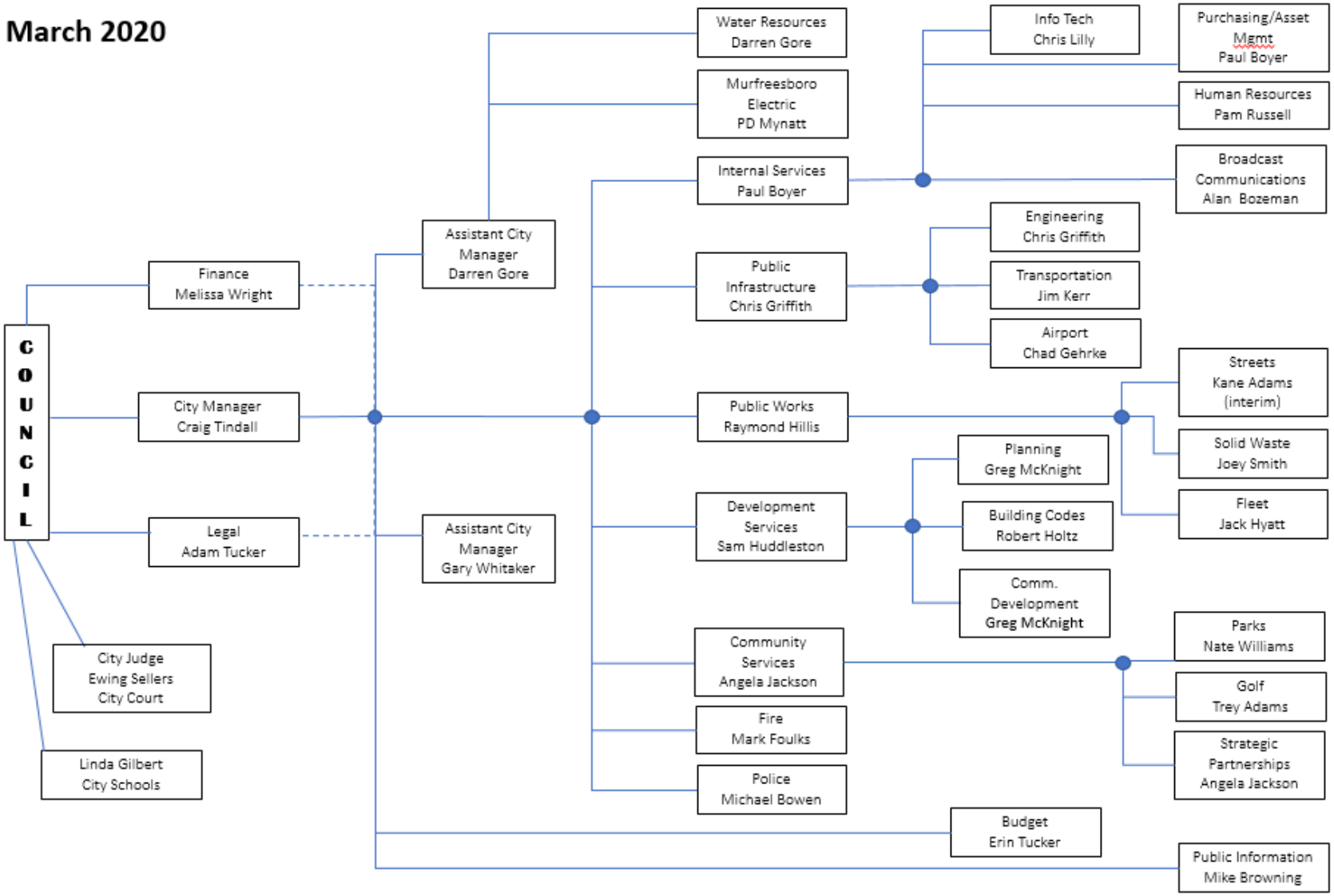
The Water and Sewer Department was created in 1958 by the adoption of a city ordinance. The powers and duties of the Board are established in Article IV of the Murfreesboro City Code. A seven-member citizen advisory board has the oversight of department policy and financial operations. The Board makes recommendations to the City Council. User charges provide the sole source of revenue for the Water and Sewer Department. No general tax base revenues are received.

The Murfreesboro Water and Sewer Board held its first meeting on December 12, 1958. The first members consisted of C. B. Huggins, Herman O. Jones (Councilman), Jennings A. Jones, Sam Lasseter, and Fount Pitts. At that time, the Mayor was A. L. Todd, Jr., City Manager was H. L. McCullough, and Joe W. Lovell was Superintendent of the Water Department. The Director of the Department reports to the City Manager. There have been five (5) Directors over the past fifty-five years; Joe Lovell, Jim Clark, Doug Miller, Joseph Kirchner and Darren Gore.

As of July 1, 2017, The Water and Sewer Department was newly titled the Water Resources Department. The Water Resources Board meetings are held on the fourth Tuesday of each month at 3:30 p.m., at 1725 South Church Street, Murfreesboro.

CITY OF MURFREESBORO ORGANIZATIONAL CHART

March 2020



BUDGET GUIDE

OVERVIEW

A budget is a financial and operating plan for a city enterprise fund for a period called a "fiscal year." The budget is a plan for the use of the fund's resources. Through these resources, services are provided to meet the needs and desires of water and sewer customers.

The City of Murfreesboro's and Water Resources Department's fiscal year begins on July 1 and ends on June 30. The fiscal year that begins on July 1, 2019 is referred to as FY20.

BUDGET PROCESS

The preliminary steps in the budget include a review of current economic conditions, revenue projections, community input, program initiatives, long range plans and federal and state mandates.

The departmental budget requests are submitted to the Director. These budget requests are reviewed by the Director and Assistant Director of Finance and Administration. The City Charter provides that the City Manager must prepare a proposed budget and submit it to the City Council not later than May 15 each year.

The Water Resources Board (Board) reviews the proposed budget at its April meeting. The Board recommends to the City Council the draft budget and any changes to rates and fees. The Director presents the draft budget and related recommendations to the City Council. The City Council conducts a public hearing on the proposed budget to obtain additional citizen input on the spending plan. Following the public hearing, the City Council amends the draft budgets as needed and adopts a budget ordinance for the city along with water and sewer rate ordinance and the water resources budget resolution.

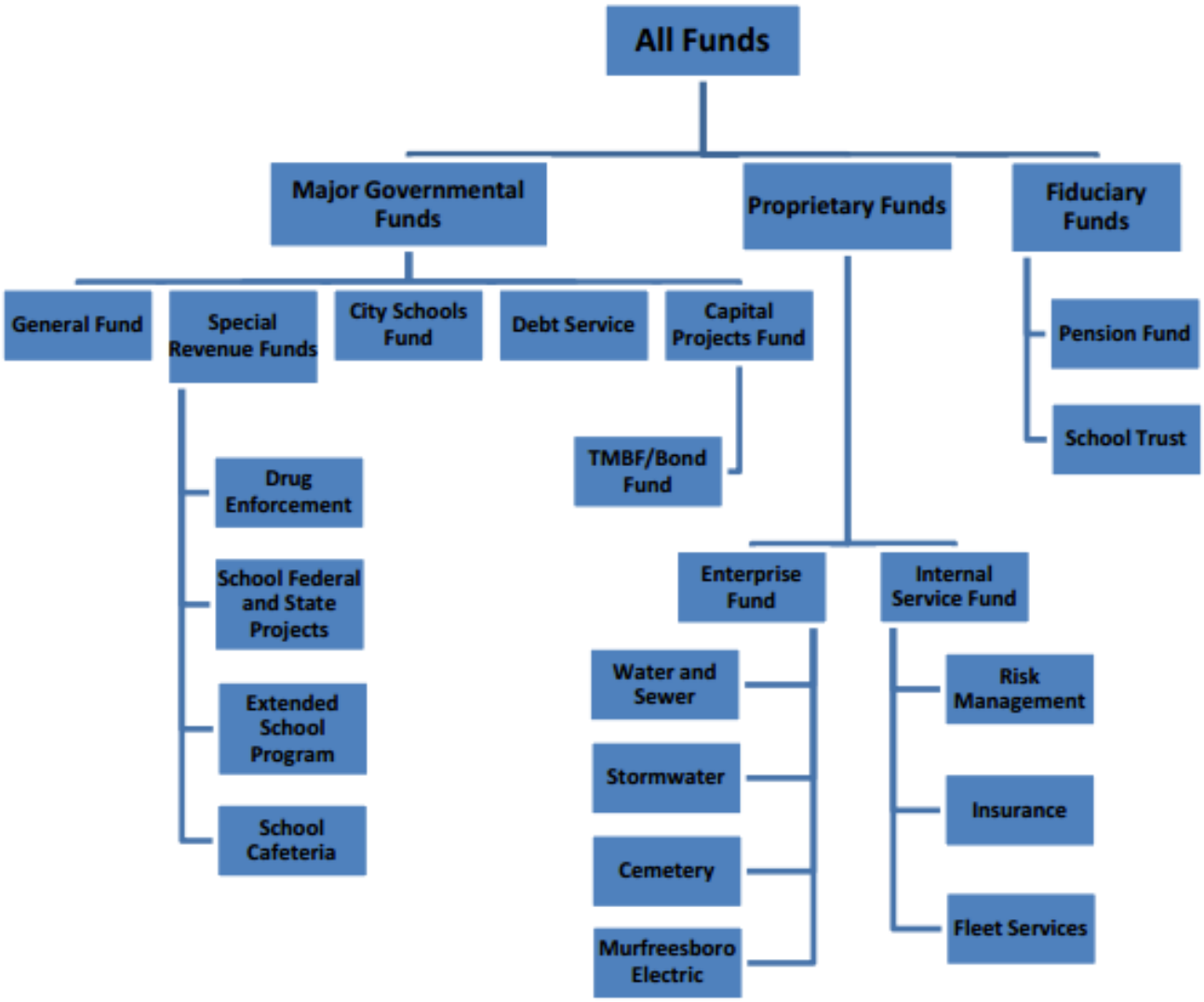
The WATER RESOURCES Department follows the general timeline in setting rates to coincide with the Department Budget Development:

- October Audit completed – Assessment of Working Capital Reserves available as of June 30.
- Cost of Service Study and Pro Forma commissioned in Sept/Oct. – Available by January.
- Capital Improvements Plan updated December – New Debt Service Cash Flow inserted into *Trailblaze* Financial Model; Large Capital Outlay from Working Reserves Identified
- January/February – Board and Council Update on Revised CIP, Debt Service and Rate Design
- March - Initiate Preliminary Budget

MONITORING OF REVENUES AND EXPENDITURES

Through the course of each fiscal year, the Director, Assistant Director of Finance and Administration and division heads monitor the budget established by City Council.

FUND OVERVIEW



FUND DESCRIPTIONS

A fund is established to account for a specific activity or purpose. Law mandates the creation of some funds. Other funds are established by management to demonstrate financial compliance with budget or legal requirements. All the funds of the City of Murfreesboro can be divided into three categories: governmental funds, proprietary funds, and fiduciary funds.

GOVERNMENTAL FUNDS

Governmental funds are used to account for most of the City's basic services. Governmental fund information is useful in determining whether there are more or fewer financial resources that can be spent in the near future to finance the City's programs. The City of Murfreesboro maintains twenty-nine (29) individual governmental funds. The modified accrual accounting method is used to account for the City's general government operations. This accounting method measures cash and all other financial assets that can be readily converted into cash.

Murfreesboro City Schools prepares a separate budget document.

PROPRIETARY FUNDS

There are two types of proprietary funds: enterprise funds and internal service funds.

Enterprise funds are used to account for operations that are financed and operated in a manner similarly to private business enterprises. The City's water resources department and electric department are the largest of these funds and prepare their own budget documents. While funds are appropriated by City Council, these enterprise funds are not presented in this document.

Internal service funds are used to account for activities that provide supplies and services for the City's other programs and activities. These services predominantly benefit governmental functions such as the fleet maintenance of vehicles and for its self-insurance programs.

FIDUCIARY FUNDS

Fiduciary funds are used to account for resources held for the benefit of parties outside of the government. The resources of those funds are not available to support the City's own programs. The accounting used for fiduciary funds is much like that used for proprietary funds. The Pension Fund is accounted for in this category.

EMPLOYEE COMPENSATION

Department employees are covered under the city's Classification and Compensation Plan.

WATER, SEWER AND STORMWATER BUDGET HIGHLIGHTS

The City Manager, in collaboration with the City Council, identified and established five priorities at an August 2019 retreat: responsible budgeting, expand infrastructure, establish a strong City brand, maintain public safety, and improve economic development. Department initiatives have been established based on these goals and are as follows:

RESPONSIBLE BUDGETING

- Maintain sufficient reserve funds to cover one year's operating expenses
- Maintain a Debt Service Coverage Ratio of 1.2 or greater
- Maintain a 5-yr Rate Design based on Cost of Service Studies conducted biannually
- Maintain affordability indexes of 4% for very low income earners (50% of median value per HUD)
- Fund capital expenses related to road projects from reserve funds
- Target funding of $1.5M annually for sewer rehabilitation from rate funded revenues
- Fund stormwater capital projects with "banked" working capital reserves, incurring no debt

EXPAND INFRASTRUCTURE

- Target 2% of sanitary sewer system for repair, replacement or rehabilitation to abate overflows and allow expansion of the system for economic development.
- Expand water, repurified and sanitary sewer mains along new or widened roadways for anticipated future development.
- Expand Overall Creek pumping station and build new Northeast Regional pumping station to accommodate new growth and wet weather conditions in the sanitary sewer system.
- Continue small scale project of drying biosolids to determine most cost-effective solution to avoid landfilling biosolids in the next five years.
- Attempt to permit wet weather treatment train at Water Resource Recovery Facility to avoid or diminish rain induced sanitary sewer overflows (SSO's).

ESTABLISH A STRONG CITY BRAND

- Establish Effective Utility Management as the Water Resources Department primary goal to deliver excellent services by:
    - Participating biannually in American Water Works Association (AWWA) benchmarking study; maintaining appropriate Key Performance Indicators (KPI's) to determine performance amongst peer utilities.
    - Updating strategic plan and capital improvement plan annually.
    - Adhering to Water Resource Integration Plan (WRIP) long-term sustainability goals and update WRIP every 5-years.
- Adhere to the tenets of a "Utility of the Future"; seeking sustainability while maintaining affordability through:
    - Viewing watershed management is as important as the formal treatment system
    - Designing treatment plants to become energy self-sufficient or net energy producers

    - Redesign Cities from below ground up to become extensions of the treatment and supply system
- Embrace new technology to increase efficiency and effectiveness through aggressive IT master planning and prudent implementation of state-of-the-art, off-the-shelf software.
- Participate in the City's Facebook presence, Police and Fire academies, CityTV and other tools to reach out to our residents and customers.
- Continue co-permitting relationship with MTSU on NPDES MS4 Phase II stormwater permit.

MAINTAIN PUBLIC SAFETY

- Continue proactive improvements and capacity assurance assessments to eliminate excess connections within bottlenecks of the sanitary sewer system thereby eliminating sanitary sewer overflows (SSO's).
- Develop outbound voice and email messaging to customers, notifying them of issues associated with their account (i.e., potential leak), and upcoming initiatives or safety notices involving the Water Resources Department.
- Provide a web-based portal for customer on-line account payment and electronic bill review and billing history.
- Provide a web-based portal for customers to view their water consumption history in near real time; actively allowing them to participate in water budgeting. This portal is being provided through the Advanced Metering Infrastructure implementation.

IMPROVE ECONOMIC DEVELOPMENT

- Accept electronic digital development construction plans for review and comment for ease of approval for development engineers. Support implementation of Cityworks Permits, Lands and Licensing (PLL) system.
- Target 2% of sanitary sewer system for repair, replacement or rehabilitation to abate overflows and allow expansion of the system for economic development.
- Continue attempts to expand National Pollutant Discharge Elimination System (NPDES) permit, affording expansion of Murfreesboro's Water Resource Recovery Facility (WRRF) which allows new or expanded sanitary sewer connections within the City.
- Attempt to maintain system development charges to sanitary sewer and water systems at a level that promotes new business and industry.
- Continue to research new decentralized sanitary sewer treatment technologies for land application of effluent to allow development to occur in areas not supporting the business case to extend conventional sanitary sewer mains.

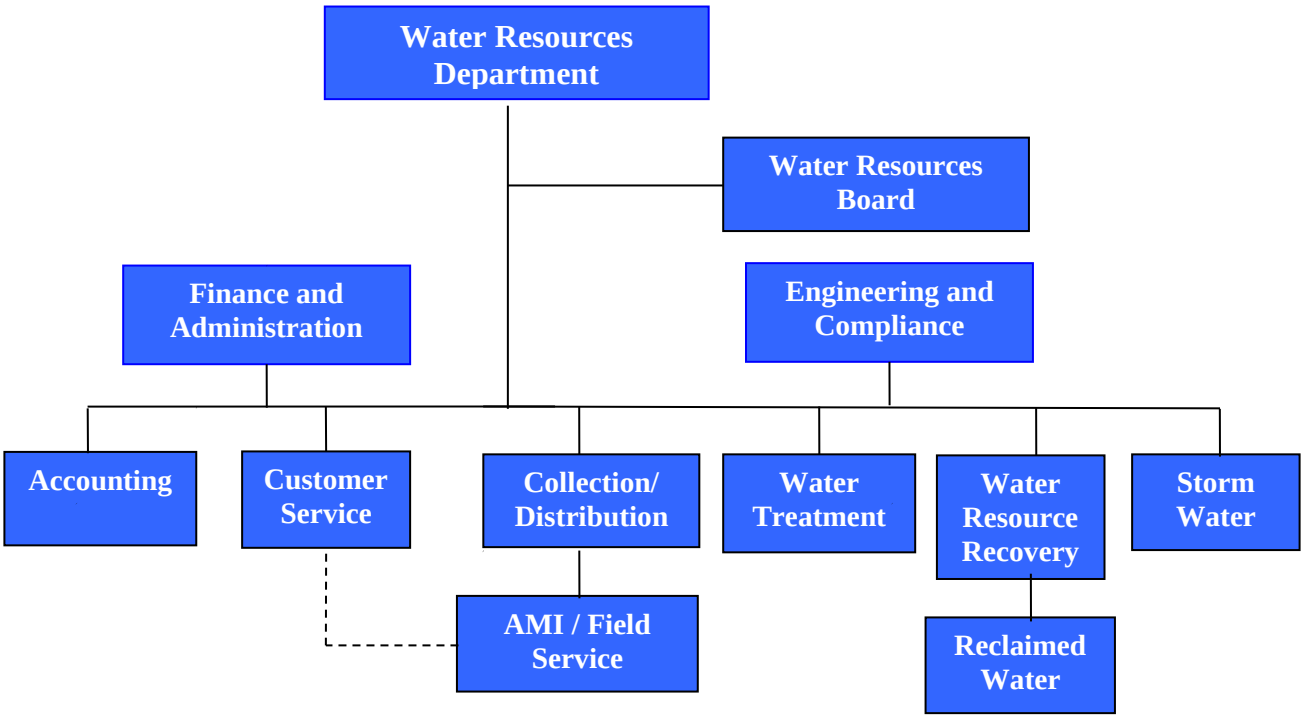
FY 2020 DEPARTMENT ACCOMPLISHMENTS

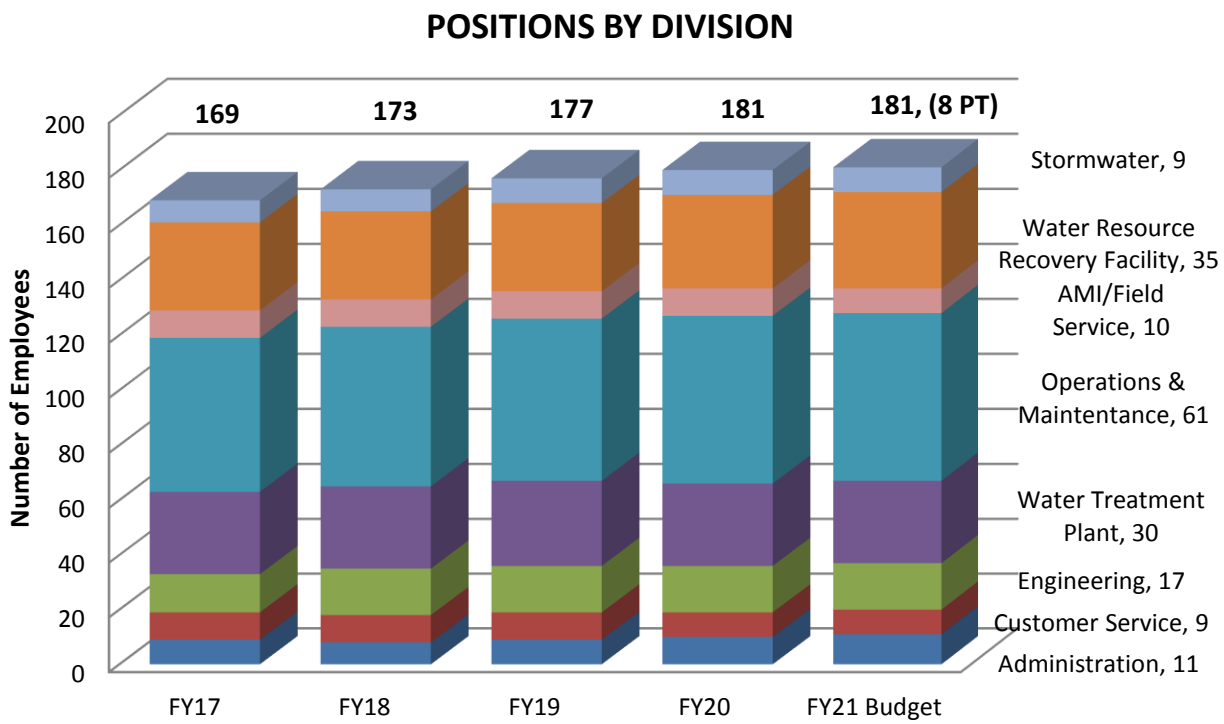
- Completed the Overall Creek Pump Station Capacity Study
- Completed various projects utilizing the Annual Mechanical/Electrical Services Contract with John Bouchard
- Received approval & Implemented the use of the Department's Standard Development Contract for Water/Sewer/Repurified Water main extensions
- Completed the Walter Hill Dam Rehabilitation
- Utilizing MWRD's new Customer Information System tools. MWRD experienced in 2019:
    - 30+% decrease in over-the-counter payments by customers
    - 45+% decrease in payments via mail and night deposit
    - 75% of phone calls were handled via the IVR and did not initially require Customer Service Clerk interaction
    - $8.3 million in credit card and e-check payments were processed
- Created the Sewer Allocation Ordinance and companion Resolution to protect the City's wastewater collection system and treatment facility capacity
- Successfully completed the Emergency Repair of two Sanitary Sewer Interceptor Collapses.
- Completed the installation of a Small-scale Biosolids Dryer Unit at the WRRF.
- Recalculated non-residential Stormwater Fees for parcels in City Limits
- Created SOP's for standard GIS/CIS tasks
- Researched/updated number of multi-resident structures that are being served by single meters (data used for multiple purposes)
- Updated watershed characteristics for pollutant reduction
- Created new surveys for stormwater department and sewer rehab for O&M in Survey 123
- Continued updates to mobile/web applications with ArcGIS Online /ArcGIS Portal / ArcGIS Enterprise. Currently using 62 applications for employee and public use, as well as 6 dashboards for analysis.
- Conducted on-going studies to assess the assimilative capacity of the East and West Fork Stones Rivers.
- Completed a Waste Load Allocation model to integrate into a site-specific rationale for TDEC review as a prototype for the City's upcoming 2021 NPDES permit.
- Continued to make a presence at public outreach events such as Earth Day, partner with MTSU when the opportunity presents itself, and educate public on water cycle, stormwater best practices and recycling of water for the "right use".
- Continued Partnering with Key Stakeholders, such as the U.S. Army Corps of Engineers, Tennessee Department of Environment and Conservation, the Rutherford County Chamber of Commerce, General Mills / Pillsbury, Rutherford County, Middle TN State University, Consolidated Utility District, and the development community.

FY 2021 DEPARTMENT GOALS

- Continue to develop decentralized sewer treatment system Septic Tank Effluent Pump (STEP) design guidelines and development policies for residential and multifamily developments
- Continue the Preliminary Design Phase of the NE Regional Pump Station, Forcemain and Gravity Sewer
- Finalize wet-weather treatment study at the Water Resource Recovery Facility (WRRF)
- Design the Sewer Improvements per the Master Plan for the Cherry Lane Corridor into Phase 2 & 3 Construction Plans as well as a portion of the NE Interceptor Forcemain and Repurified Water
- Continue the design of the Water/Sewer Replacements and Extensions in conjunction with the TDOT Bradyville Pike and N. Thompson Lane Roadway Widening projects and the Jones Boulevard Widening
- Construct sewer improvements in conjunction with the Rucker Lane Roadway Widening
- Complete the Construction of the 2018/2019 Sewer Rehabilitation Project
- Design & Bid the 2020/2021 Sewer Rehabilitation Project
- Complete the tank painting and repairs for Mill St., Halls Hill and Tiger Hill
- Complete the interim upgrades to the Overall Creek Pump Station
- Design additional upgrades to the Overall Creek Pump Station and Forcemain doubling the capacity
- Update the 201 Wastewater Facilities Plan; a tactical guide to delivering sanitary sewer service to new growth areas.
- Develop and Implement Sanitary Sewer Assessment Districts for the Cherry Lane/Sazerac area, the Veterans/ 840 Interchange area and Shelton Square Surrounding Properties
- Complete application for the 2021 National Pollutant Discharge Elimination System (NPDES) permit rationale
- Support migration to GIS-centric Computerized Maintenance Management Software (CMMS) via Cityworks AMS
- Create a detailed tree coverage for use in i-Tree & Infoswmm modeling software
- Evaluate O&M workflows with the goal of moving from paper forms to online forms & data (Workforce, Cityworks PLL, Survey 123)
- Implement the Fire Protection usage tracking & revenue recovery in CIS
- Seek to simplify the development process for small business owners and integrate into a “one stop shop” culture.
- Install wet chemistry nutrient meters and improve phosphorus removal at WRRF.
- Streamline services for new and potential industrial customers.
- Explore new methods to reduce F.O.G. accumulations in the collections system.
- Install additional irrigation units at the Coleman and Jordan farms
- Formulate and submit proposal for a Green Grants program
- Stormwater management plan (SWMP) to 90% complete
- To reach a total of 125 inspections of existing stormwater control measures
- Update stormwater ordinance to comply with current TDEC standards and 2019 TDEC audit (erosion and sediment control, stream buffers, post-construction runoff standards)

ORGANIZATIONAL STRUCTURE





A Brief History of Effective Utility Management

MAY 2006

Seven Collaborating Organizations sign a Statement of Intent to establish a framework for working together to advance understanding of the principles and practices of effective utility management, and to encourage and promote their wider application.

MAY 2007

Findings and Recommendations report delivered from a utility Steering Committee to the seven collaborating organizations. The report recommends a variety of activities be initiated, including the development of a stand-alone primer that outlines a strategy for effective utility management.

JUNE 2008

Effective Utility Management: A Primer for Water and Wastewater Utilities is released.

2009 - 2015

The Collaborating Organizations develop and sponsor a wide range of EUM-based workshops, webinars, case examples, and award programs to promote and support EUM implementation by the water sector.

APRIL 2015

The Association of Clean Water Agencies and the Association of State Drinking Water Administrators join as new EUM Collaborating Organization partners.

Collaborating Organizations convene a group of utility leaders to explore how the operating context of water sector utilities has changed since the *Primer* was released in 2008, and to consider refinements to the EUM framework.

FEB 2016

Taking the Next Step: Findings of the Effective Utility Management Review Steering Group report released. The report outlines key operating shifts in the water sector since 2008, and recommends a series of updates to the *Primer*.

JULY–DEC 2016

Collaborating Organizations convene a group of utility leaders to update the *Primer*.

OCT 2016

The Water Research Foundation and the Water Environment & Reuse Foundation join as new EUM Collaborating Organization partners.

JAN 2017

The Collaborating Organizations release the newly updated *Primer*.

2017 & BEYOND

The Collaborating Organizations sponsor ongoing education and promotional efforts to support implementation of EUM by the water sector, including webinars, workshops, and the development of other learning resources.

The Murfreesboro Water Resources Department's (MWRD) commitment to EUM has distinguished us as a leader among public utilities. Our commitment to continuous improvement encompasses all areas of service. As a supplier of products and services that are vital to life and foundational to our quality of life, we recognize and embrace our responsibility and role in sustaining our community and its environment; and take seriously the public trust we must maintain.

Our Goals

The ten attributes of Effective Utility Management (EUM) represent the explicit goals of MWRD and therein define the specific areas of focus in which we plan and execute. Every initiative, every action, every decision, and every dollar expended is explicitly targeted at achieving one or more of our goals for the express benefit of our community. The EUM attributes, Our Goals, are:

- Product Quality (PQ)
- Customer Satisfaction (CS)
- Employee and Leadership Development (ELD)
- Operational Optimization (OO)
- Financial Viability (FV)
- Enterprise Resiliency (ER)
- Infrastructure Strategy and Performance (ISP)
- Community Sustainability (CSU)
- Water Resource Sustainability (WRS)
- Stakeholder Understanding and Support (SUS)

Our Keys to Success

Our success hinges upon leadership at every level; and as leaders looking forward, our consistent willingness to operate as a team organization. Our progress in pursuit of our goals will be measurable so that we stay on the right track and adjustments can be made if necessary. The keys to success are:

- Leadership
- Strategic Planning
- Organizational Approaches
- Measurement
- Continual Improvement

MWRD'S STRATEGIC VISION

- ***Promoting Sustainability of Resources***
  The biological processes we employ at the Water Resource Recovery Facility and raw water from J. Percy Priest Reservoir are sustainable because they are "renewable". These great resources create the means to have a water and sewer utility. However, human resources are required for a utility to be of service to us. People make it happen.
    - *Beneficially Managing Effluent* – Murfreesboro relies on the West Fork Stones River (WFSR) as its primary effluent disposal avenue. Through ongoing biological assessments of the river over the past four years, results are dramatically proving that "the WFSR relies upon our

WRRF effluent for its vibrant biological health and even more notably its very existence in many months of the year".

- *The Water Resources Integration Plan (WRIP)* – the WRIP will be completed in 2018. The document chronicles our history and projects our future with a strong focus on the necessary collaboration with our local stakeholders CUD, Smyrna, and USCOE. The success of our continued growth, socioeconomic welfare, and sustainability largely depends on the availability of water and sewer services within the Urban Growth Boundary (UGB) and our collaborative participation with these stakeholders.
- *Resource Recovery* – the MWRRF produces an effluent of exceptional quality which protects, sustains, and enhances the West Fork Stones River (WFSR). Furthermore, with the pending closure of the Middle Point Landfill, there is now a business case to justify the implementation of solids recovery to produce Class A EQ biosolids which are suitable for agricultural use as a soil amendment.
- *Human Resource Recruitment and Retention* – our important EUM goal of fostering Employee Leadership and Development has in recent years encountered an emerging challenge. Perhaps because of the improvement in the overall economy and/or the elimination of the defined benefit pension for City employees; and in conjunction with other changes to our own Class and Compensation policies, we are experiencing a problematic impact on our most precious and significant resource, our operational staff. In 2018, MWRD is prepared to engage with City management, City Council, and other department directors in a strategic evaluation of this issue. The Department's culture is focused on delivery of services to its residents through the best workforce it can recruit and train.

- ***Promoting Efficiency in Systems and Practices***
  - *Maximizing AMI and Leak Detection Benefits* – our EUM Goal of Infrastructure Strategy and Performance (ISP) includes a strong focus on our efficiency in delivering water to our customers. AMI and system-wide leak sensors are new tools to monitor the integrity and performance of our distribution network. Our AMI staff is actively engaged in maximizing the potential benefits it affords us.
  - *Regaining Wastewater Collection/Treatment Capacity via I/I Removal* – our capacity to efficiently collect and treat wastewater is vital to public health, necessary for environmental protection, and directly proportional to our capacity to serve a rapidly growing service population. Gravity sewer systems are highly vulnerable to infiltration/inflow from rainfall events and groundwater.
  - *Managing Sewer System Growth*
    - The sewer service population growth rate set a new high in 2017, confirming projections.
    - Major collection system expansion projects continue as the new Northeast Regional Pump Station and force main is now on the drawing board. This new station will relieve capacity on the Sinking Creek Interceptor and provide capacity for new growth to the east and northeast.
    - In 2017, three new developments in the CUD water service area have applied for annexation and will be served by MWRD-maintained STEP systems.

        - Our newly named Wastewater Resource Recovery Facility has been expanded (completed in Nov 2017) with a design capacity of 24 MGD
    - *Maximizing Business Intelligence* – over the past 4 years, MWRD has endeavored to enhance overall operational efficiency and customer service through the implementation of multiple Information Technology (IT) improvements. MWRD is committed to continually improve to afford our technicians, operators, field and customer service reps, engineering and administrative staff the ability to efficiently and effectively mine, analyze and deliver data to support operations and our customer needs.

BENCHMARKING

MWRD participated in the 2018 American Water Works Assocation Utility Benchmarking program. 91 Combined Water and Wastewater Services (80 in 2014, 98 in 2015, 80 in 2016), 35 States Represented, 4 from Tennessee (including Metro Nashville, Johnson City, Oak Ridge and Murfreesboro).

AWWA Benchmarking Survey Results **Trends and Observations**

KPIs to watch highlighted

No.	KPI	2012		2014		2015		2016		2018	
		Median	MWRD	Median	MWRD	Median	MWRD	Median	MWRD	Median	MWRD
	# Combined Utilities Surveyed	58		80		98		80		91	
	ORG DEVELOPMENT										
1	Organizational Best Practices	41	24	69.1	69.1	76.9	70.8	76.9	76.9	78.5	70.8
2	Train Hrs/Employee	19	18	16	27	12.1	18	12.1	21.6	16.2	18.6
3	Employee Turnover	8.3	8.9	8.1	8.1	8.1	10.6	8.8	11.1	9.1	13.9
4	Retirement Eligibility	18	18.5	17.3	16.8	19.9	13	19.1	17.3	23.4	15.2
5	Employee H&S Severity Rate	NA		NA		26.3	25	18.5	45.3	21.3	64.5
	FINANCIAL										
6	Debt Ratio (%)	34.2	30.1	36	25	35	26	36	27	43	27
7	Return on Assets (%)	1.5	0.8	1.5	4.7	1.9	3.8	2.5	4	2	4.1
8	Cash Reserve (days)	221.6	408.8	259	572	272	601	296	605	322	1623
9	Debt Ser Cov Ratio (net inc/debt serv)			1.42	2.61	1.49	3.22	1.67	2.8	2	1.69
10	Operating Ratio (OM Cost/Revenue)	NA		61%	27%	61%	24%	54%	30%	55%	37%
11	Days of Working Capital	NA		NA		NA		311	943	342	694
	ORGANIZATIONAL										
12	Triple Bottom Line	65	30.1	55	65	65	60	65	60	60	60
13	Stakeholder Outreach Ratio	75	33.3	75	75	83	75	83	75	83	75
16	Water Disruptions per 1000 accts	3	12	2.24	1.41	1.66	1.8	1.67	1.94	1.56	7.45
17	Avg Monthly Water Bill ($)	28.11	35.3	28.56	26.76	30.45	25.56	31.27	25.56	34.4	33.77
18	Avg Monthly Sewer Bill ($)	29.67	47.63	32.02	34.2	34.18	33.04	34.02	33.54	35.55	37.65

AWWA Benchmarking Survey Results **Trends and Observations**

KPIs to watch highlighted

No.	KPI	2012		2014		2015		2016		2018	
		Median	MWRD	Median	MWRD	Median	MWRD	Median	MWRD	Median	MWRD
19	Avg Monthly Stormwater Bill ($)					4.26	3	4.44	3	5.48	3.25
20	Domestic per capita consumption (gpcd)	NA		66.6	40.9	63.8	63.4	60.5	55.1	64.9	
21	Service Affordability (W/WW/S)	1.20%	1.60%	1.40%	1.14%	1.49%	1.10%	1.57%	1.09%	1.49%	1.55%
	O&M COSTS										
22	Water Services per account	406	NR	361	174	417	193	461	214	NM	NM
23	Sewer Services per account	195.17	NR	NA		355	138	355	153	NM	NM
	SYSTEM INTEGRITY										
24	Leaks and Breaks/100 mi (water)	28.08	20.23	28	6	20	8	11.9	17	21.6	43.5
25	Non-revenue Water (% operating cost)	NA		NA		7.4	10.1	5.5	9.6	5.9	6.6
26	Infrastructure Leakage Index (water)	NA		NA		2.45	5.25	2.17	5.67	2.2	4.54
27	Annual Cost of Real Losses ($)	NA		NA		578,242	993,963	531,273	816,241	578,558	697,265
28	Non-capacity Sewer Overflow Rate	0.4*	4.9*	2.5*	0.8*	1.28	0.64	1.6	1.1	1.9	0.6
29	Capacity Sewer Overflow Rate					0.7	1.8	1.2	0.4	0.2	0.5

AWWA Benchmarking Survey Results

KPIs to watch highlighted

No.	KPI	Comments
	ORG DEVELOPMENT	
1	Organizational Best Practices	On par with peer group
2	Train Hrs/Employee	Consistently better than peers. 2014 spike due to CIS training
3	Employee Turnover	Upward trend continues while peer group fairly flat
4	Retirement Eligibility	Consistently and significantly better than peer group
5	Employee H&S Severity Rate	Trending much worse than our peers
	FINANCIAL	
6	Debt Ratio (%)	Consistently and significantly better than peer group
7	Return on Assets (%)	Consistently and significantly better than peer group
8	Cash Reserve (days)	Consistently and significantly better than peer group
9	Debt Ser Cov Ratio (net inc/debt serv)	Consistently and significantly better than peer group
10	Operating Ratio (OM Cost/Revenue)	Consistently and significantly better than peer group
11	Days of Working Capital	New KPI
	ORGANIZATIONAL	
12	Triple Bottom Line	On par with peer group
13	Stakeholder Outreach Ratio	On par with peer group
16	Water Disruptions per 1000 accts	Upward trend turned into a spike up in 2018. Result consistent with Items 14,22, 25-27.
17	Avg Monthly Water Bill ($)	We're trending flat while peers are going up
18	Avg Monthly Sewer Bill ($)	On par with peers since 2014
19	Avg Monthly Stormwater Bill ($)	We have some room to increase this if need be
20	Domestic per capita consumption (gpcd)	We're about normal. 2014 data looks questionable
21	Service Affordability (W/WW/S)	On par with peer group
	O&M COSTS	
22	Water Services per account	In prior years, consistently well below peers
23	Sewer Services per account	In prior years, consistently well below peers

AWWA Benchmarking Survey Results

KPIs to watch highlighted

No.	KPI	Comments
	SYSTEM INTEGRITY	
24	Leaks and Breaks/100 mi (water)	As expected, leak detection is up because we have sensors
25	Non-revenue Water (% operating cost)	We have room to improve here
26	Infrastructure Leakage Index (water)	We have room to improve here
27	Annual Cost of Real Losses ($)	We have room to improve here
28	Non-capacity Sewer Overflow Rate	Nice improvement from 2012 and better than peer group
29	Capacity Sewer Overflow Rate	Nice improvement from 2015-2016. Should improve more

WATER RESOURCES BUDGET SUMMARY

REVENUES	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
WATER, OPERATING REVENUE	$15,811,282	$16,032,477	$16,654,000	$16,314,300	$16,510,000
REPURIFIED, OPERATING REVENUE	$27,241	$26,558	$26,000	$28,583	$29,000
SEWER, OPERATING REVENUE	$28,147,375	$29,246,323	$29,804,000	$30,090,504	$30,928,000
OTHER INCOME AND EXPENSE	$308,921	$827,116	$596,000	$781,109	$349,000
TOTAL OPERATING REVENUES	**$44,294,819**	**$46,132,474**	**$47,080,000**	**$47,214,496**	**$47,816,000**
INTEREST INCOME OTHER INVEST.	$54,996	$307,323	$350,000	$250,000	$75,000
TAP RECEIPTS	$9,501,209	$8,541,111	$8,000,000	$8,150,000	$7,650,000
TOTAL REVENUES	**$53,851,024**	**$54,980,908**	**$55,430,000**	**$55,614,496**	**$55,541,000**
EXPENSES					
WATER, OPERATING & MAINTENANCE	$6,123,401	$7,371,830	$7,639,945	$6,707,219	$7,558,900
SEWER, OPERATING & MAINTENANCE	$6,850,152	$7,254,874	$8,531,018	$7,351,721	$8,647,800
CUSTOMER BILLING & COLLECTION	$1,895,235	$2,093,667	$2,301,003	$2,067,585	$2,284,100
ADM & GENERAL EXPENSES	$5,358,806	$5,101,449	$5,859,310	$5,108,732	$5,873,000
TOTAL OPERATING EXPENDITURES	**$20,227,595**	**$21,821,820**	**$24,331,276**	**$21,235,257**	**$24,363,800**
CAPITAL EXPENDITURES	$2,947,643	$3,546,406	$6,797,741	$4,128,439	$6,667,500
DEBT SERVICE	$13,119,136	$13,538,900	$13,488,320	$13,488,320	$13,596,900
TRANSFERS TO RESERVES	$12,403,793	$11,470,964	$10,812,663	$10,412,663	$10,912,800
TOTAL EXPENDITURES/RESERVES	**$48,698,166**	**$50,378,089**	**$55,430,000**	**$49,264,679**	**$55,541,000**
DEBT COVERAGE RATIO (DCR)					
OPERATING REVENUES	$ 44,294,819	$ 46,132,474	$ 47,080,000	$ 47,214,496	$ 47,816,000
OPERATING EXPENSES	$ 20,227,595	$ 21,821,820	$ 24,331,276	$ 21,235,257	$ 24,363,800
FUNDS AVAILABLE FOR DEBT COVERAGE	$ 24,067,224	$ 24,310,654	$ 22,748,724	$ 25,979,239	$ 23,452,200
DEBT SERVICE	$ 13,119,136	$ 13,538,900	$ 13,488,320	$ 13,488,320	$ 13,596,900
DCR (Goal = >1.2)	**1.83**	**1.80**	**1.69**	**1.93**	**1.72**

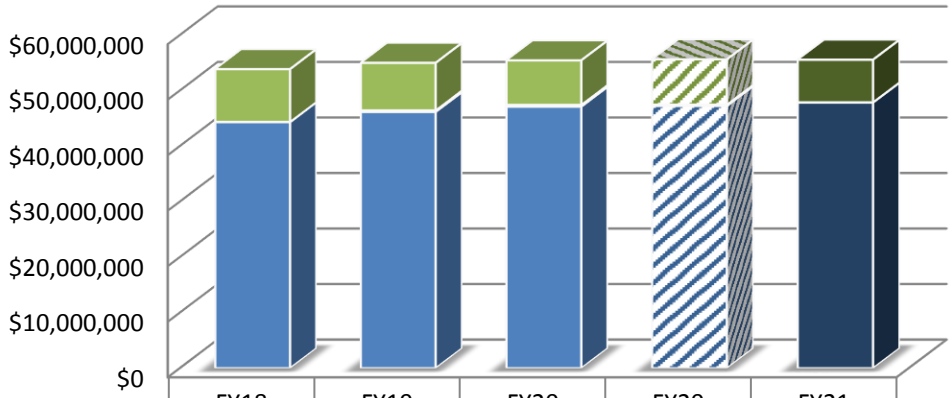
The following is a summary of the budget:

- The FY21 Budget reflects $55,541,000 in total revenues. The proposed budget is $111,000 more than the FY20 budget and $(73,496) less than FY20 projections.
- FY21 Operating Revenues total $47,816,000 an increase of $601,504 over FY20 projections and $736,000 increase over FY20 budget.
- No rate increase is proposed for FY21.
- The water rate is recommended to remain at $3.66 per 1000 gallons. The sanitary sewer rate is recommended to remain at $5.67 per 1000 gallons.
- Septic Tank Effluent Pump (STEP) rates are recommended to remain at $2.00 per 1000 gallons.
- Water and sewer connection fees are set at $1,200 and $2,550, respectively. From February 2011 through February 2012, water and sewer connection fees were reduced to $950 and $1,500, respectively. Effective March 1, 2012 rates returned to their pre-reduction levels. No increase in connection fees are budgeted for FY21.

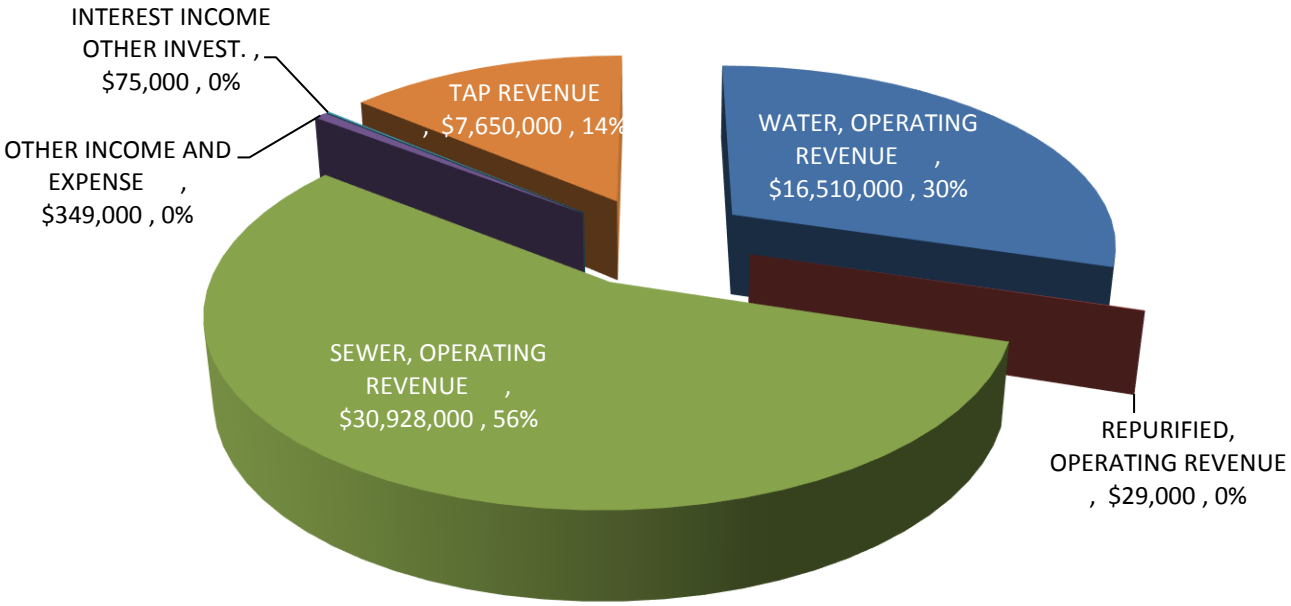
- Customer Service/Collection and Administrative/General expenses decreased by $(3,213) (-0.50%).
- Water Treatment Operating and Maintenance Expenses decreased by $(81,045) (-1.1%).
- Wastewater Treatment Operating and Maintenance Expense increased by $116,782 (1.4%)
- Rate funded capital purchases total $6,667,500, a decrease of $(130,241) (-1.9%) from FY20 budget.
- Debt Service Expenses total $13,596,900, an increase of $108,580 (0.80%) from FY20 budget.
- FY21 transfers to Reserves from connection fees and other sources have been budgeted at $10,912,800, an increase of $100,137 from FY20 projections. This includes $2,375,000 in reserve income for sinking funds to pay cash for large upcoming capital expenditures.
- The FY21 budget does not include any additional staffing requests as a result of the COVID-19 pandemic; however, prior to the state of emergency, the following personnel promotions and additional staffing were to be recommended as adding 2 ½ full-time equivalents and five promotions involving reclassification of job requirements. The total net increase anticipated with the new personnel and promotion/reclassifications is $172,000. In the event that these positions are not able to be incorporated in the FY21 budget at some point and time, the Water Resources Department will maintain its current total of 173 full time and 8 part time positions, which includes 9 full-time positions in the stormwater department.
- No raises are budgeted for Water Resources staff for F21. The total estimiated costs associated with providing 4.0% increases to personnel within the non-exempt step program and 3.0% across the board for exempt and open range non-exempt personnel would be $680,000. In the event that personnel raises are proposed after adoption of the FY21 budget, staff can use a portion of the future capital expenditures sinking fund and defer some capital expense purchases to fund the raises. This action would come back to the Board and City Council for approval.

WATER RESOURCES REVENUE SUMMARY

Total Revenues, $55,541,000

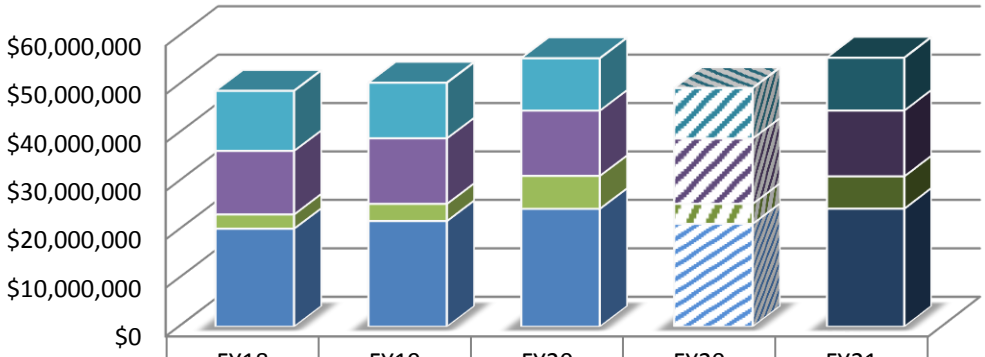


	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
TAP RECEIPTS	$9,501,209	$8,541,111	$8,000,000	$8,150,000	$7,650,000
INTEREST INCOME OTHER INVEST.	$54,996	$307,323	$350,000	$250,000	$75,000
TOTAL OPERATING REVENUES	$44,294,819	$46,132,474	$47,080,000	$47,214,496	$47,816,000



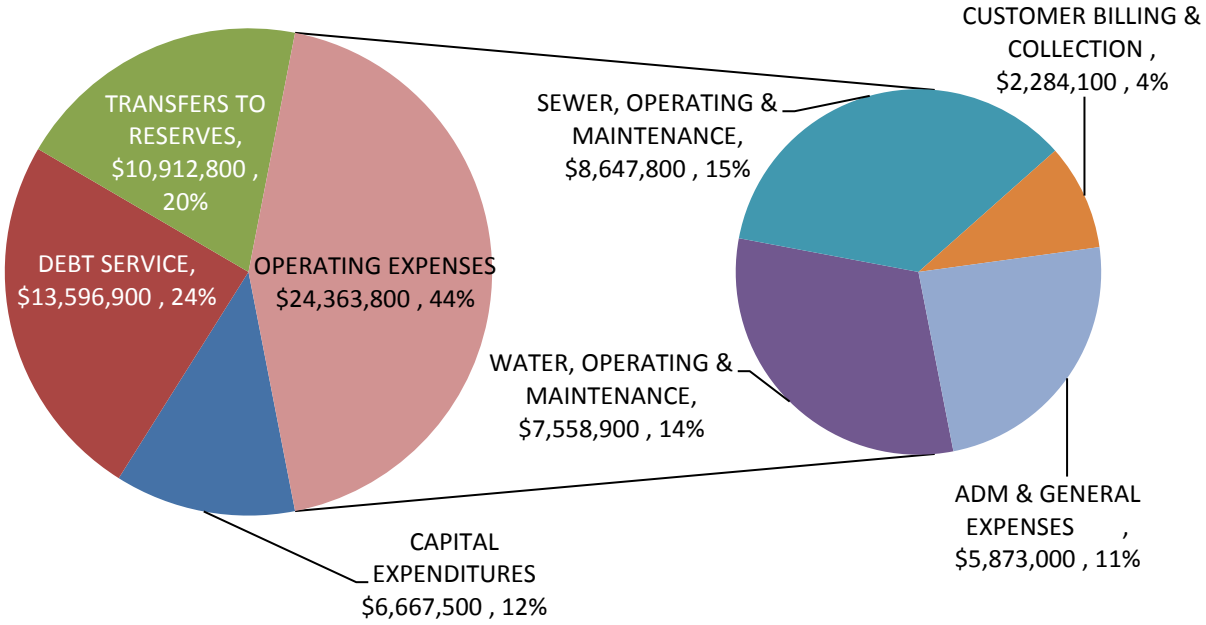
FY21 Total Revenues $55.54M

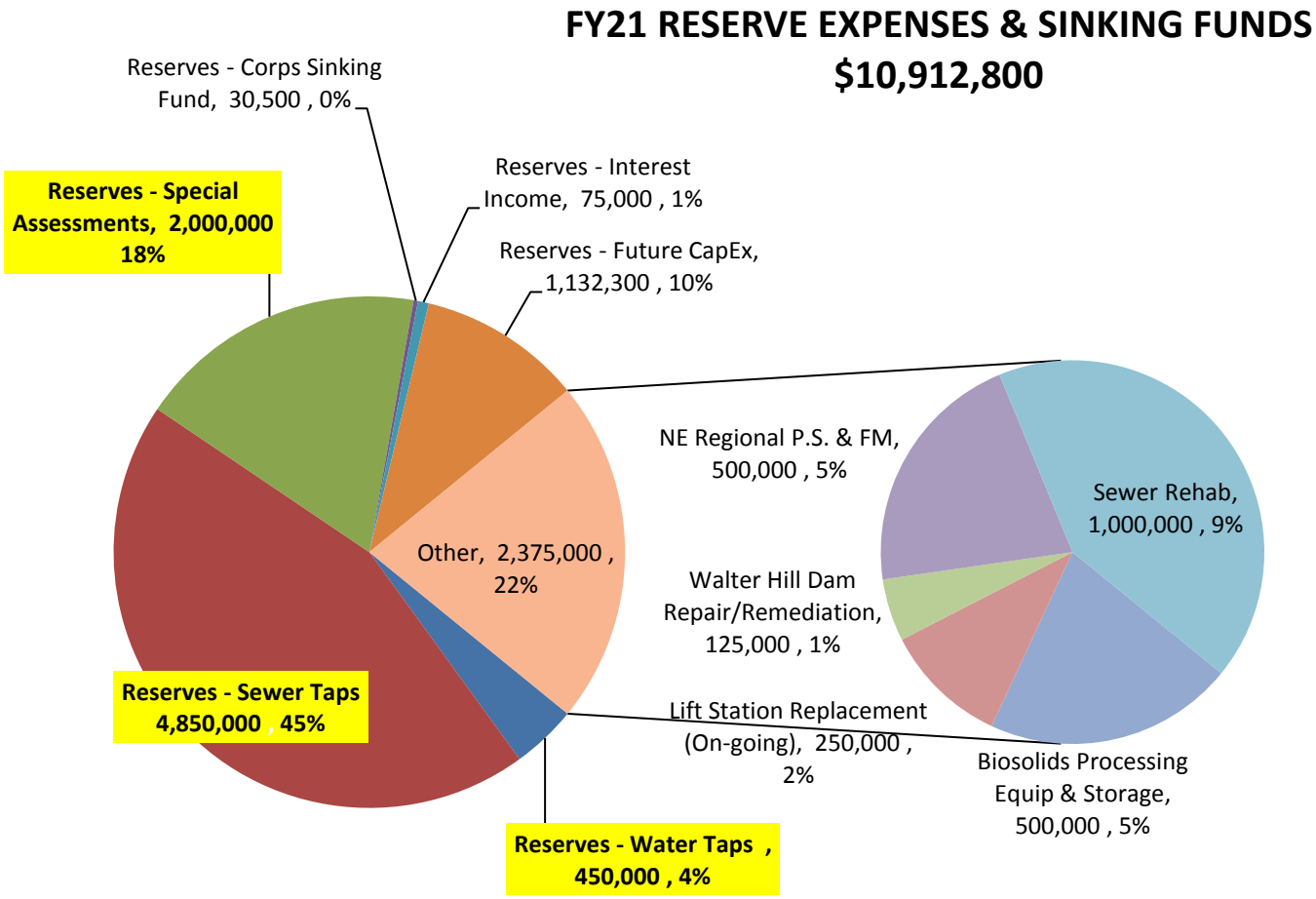
Total Expenses, $55,541,000



	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
TRANSFERS TO RESERVES	$12,403,793	$11,470,964	$10,812,663	$10,412,663	$10,912,800
DEBT SERVICE	$13,119,136	$13,538,900	$13,488,320	$13,488,320	$13,596,900
CAPITAL EXPENDITURES	$2,947,643	$3,546,406	$6,797,741	$4,128,439	$6,667,500
TOTAL OPERATING EXPENDITURES	$20,227,595	$21,821,820	$24,331,276	$21,235,257	$24,363,800

FY21 Total Expenses $55.54M

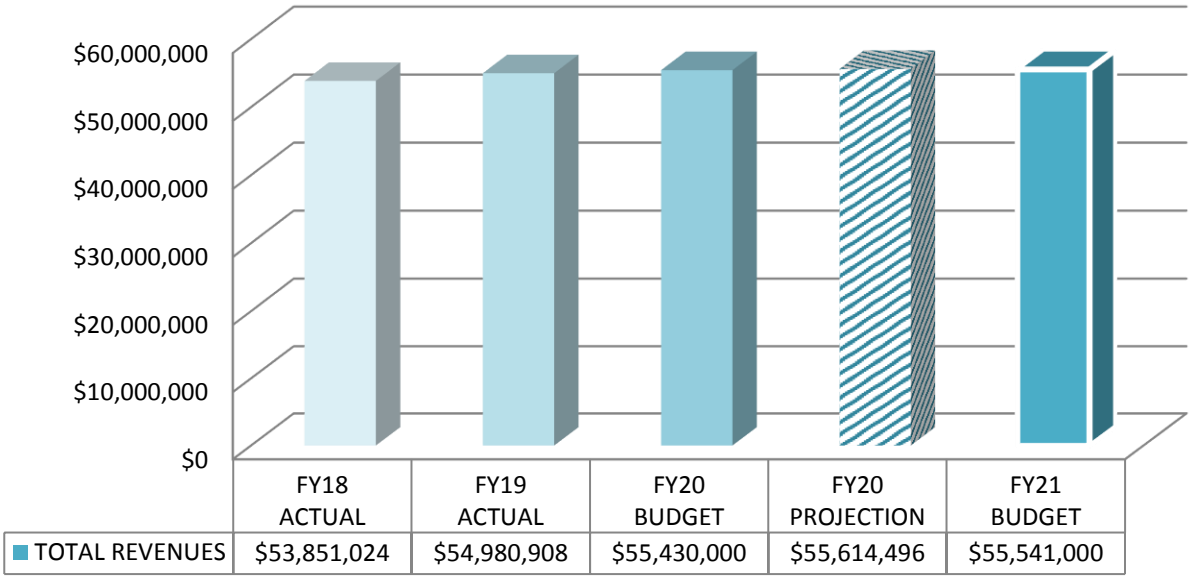



FY21 RESERVE EXPENSES & SINKING FUNDS
$10,912,800
Reserves - Corps Sinking Fund, 30,500 , 0%
Reserves - Interest Income, 75,000 , 1%
Reserves - Future CapEx, 1,132,300 , 10%
Reserves - Special Assessments, 2,000,000 18%
Other, 2,375,000 , 22%
Reserves - Sewer Taps 4,850,000 , 45%
Reserves - Water Taps , 450,000 , 4%
NE Regional P.S. & FM, 500,000 , 5%
Walter Hill Dam Repair/Remediation, 125,000 , 1%
Lift Station Replacement (On-going), 250,000 , 2%
Sewer Rehab, 1,000,000 , 9%
Biosolids Processing Equip & Storage, 500,000 , 5%

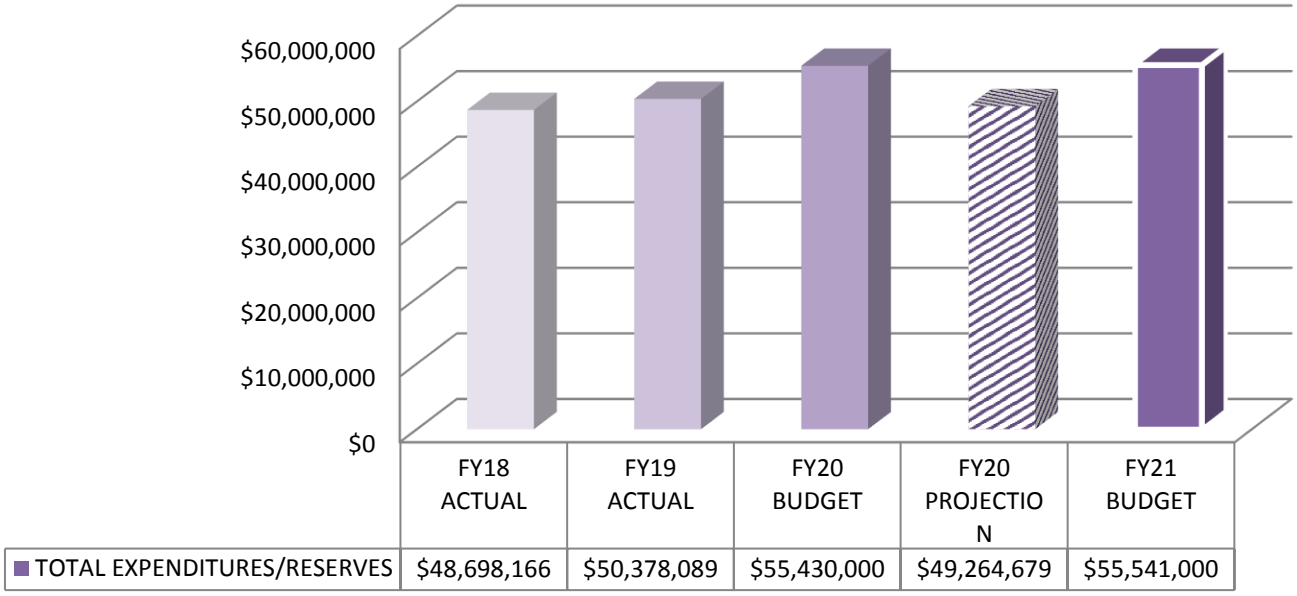
REVENUE ITEMIZATION

Projected Department Revenue for FY20 totals $55,430,000, which is $2,852,000 more than the FY19 budget. This is mainly a result of the following water and sewer revenue trends:

Total Budget Revenues Comparison



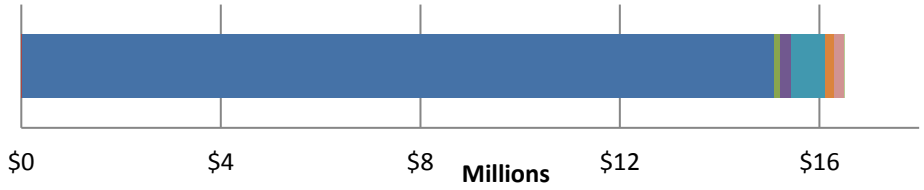
Total Budget Expenses Comparison



WATER REVENUE

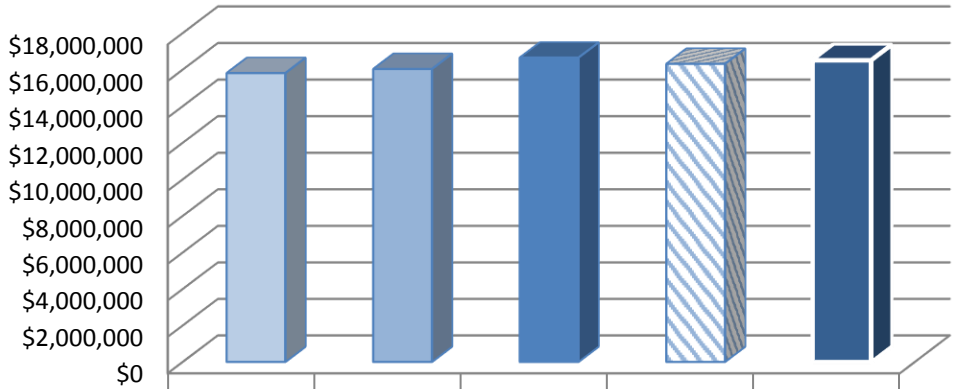
Water Revenue at year end FY20 is projected to be less than budgeted by $(339,700), or -2.0%. The FY21 revenue budget has only been decreased by $(144,000) based on the projections.

FY21 Water Operating Revenue, $16,510,000



	FY21 BUDGET
Metered Water Sales	15,100,000
Water Adjustments	-26000
Private Fire Protection	112,000
Service Initiation	230,000
Late Fees	675,000
Non-Payment	175,000
Returned Payment Fees	8000
CCC	200,000
Enernoc	25000

WATER, OPERATING REVENUE

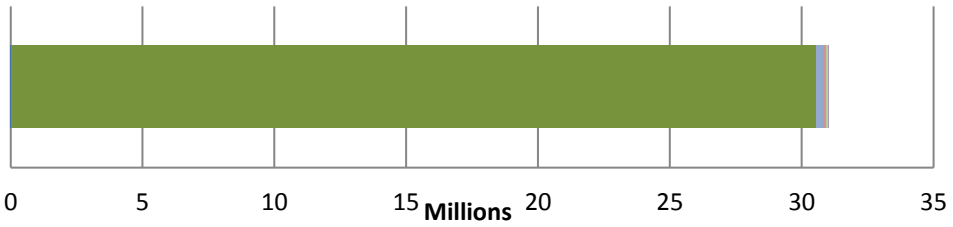


	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
WATER, OPERATING REVENUE	$15,811,282	$16,032,477	$16,654,000	$16,314,300	$16,510,000

SEWER REVENUE

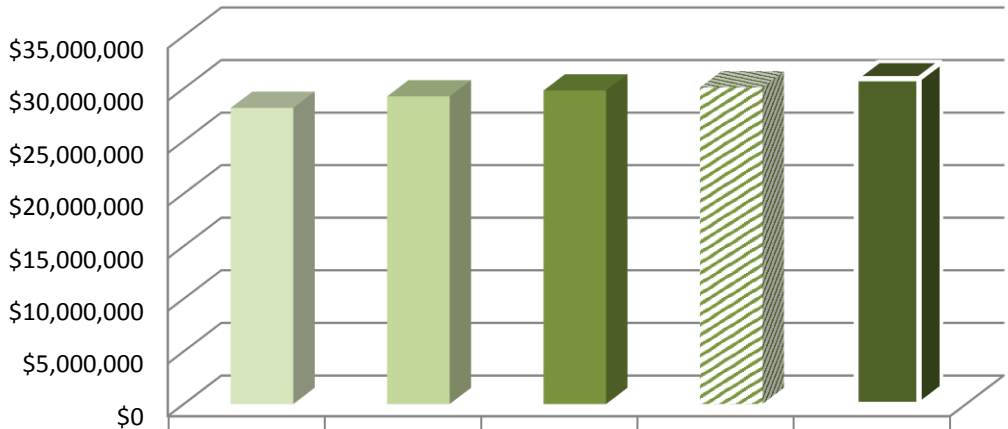
Sewer Revenue at year end FY20 is projected to be higher than budgeted. It is estimated to be approximately $286,504 (1%) over FY20 budget. Growth results in staff budgeting $1,124,000 higher revenue in FY21 versus the FY20 sewer revenue budget.

FY21 Sewer Operating Revenue, $30,928,000



	FY21 BUDGET
Enernoc	5000
Sewer Charges	30,500,000
Sewer Adjustment	(100,000)
Surveillance Fees	38,000
Sampler	18,000
BOD	275,000
Amonia	90,000
Septage Charges	90,000
STEP System Revenues	7,000

SEWER, OPERATING REVENUE



	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
SEWER, OPERATING REVENUE	$28,147,375	$29,246,323	$29,804,000	$30,090,504	$30,928,000

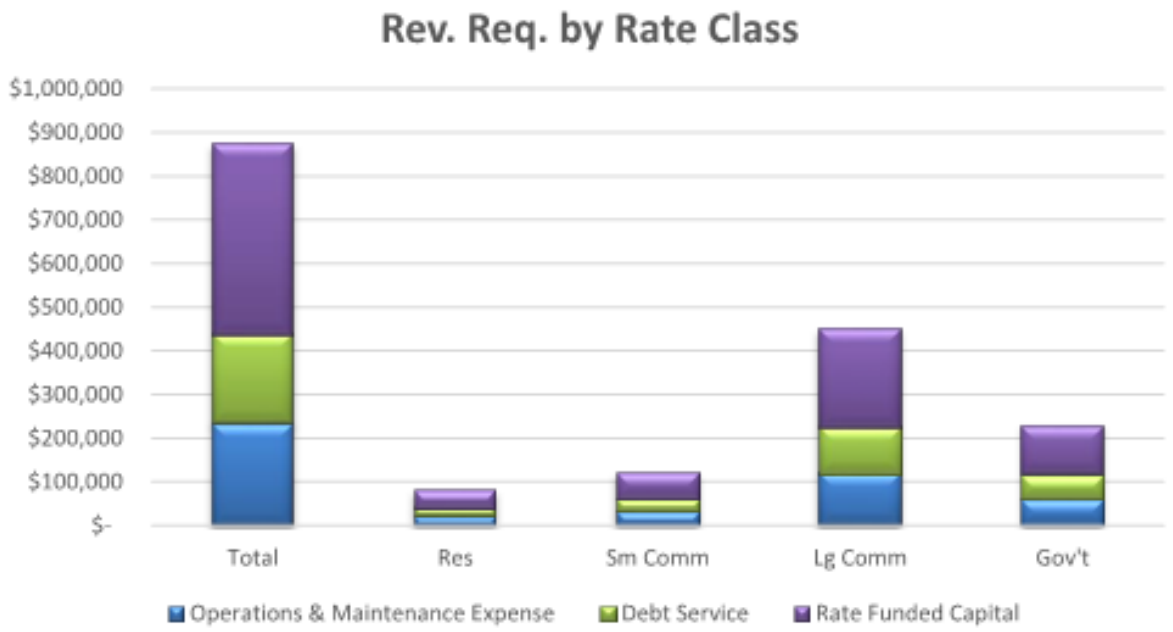
REPURIFIED WATER REVENUE

To reduce effluent discharge from the Sinking Creek Wastewater Treatment Plant, in 2006 MWRD began offering Repurified Water for irrigation purposes to portions of our service area. In addition to reducing necessary effluent discharge, repurified irrigation water also reduces the amount of water that the MWRD Water Treatment Plant must process and distribute. Rates for repurified water were set low (5¢ per hundred cubic feet) to encourage use by consumers. Consumption is budgeted to increase from $26,000 to $29,000 in FY21.

Revenue from Repurified water sales is small compared to water and sewer sales. A cost of service study was performed on the repurified system for FY19. The study showed that the Department is only currently recovering approximately 4% of its expenses in delivering this commodity. However, this commodity is unique in that it is only used during the summer months and is considered "waste" in the winter months. The Department is seeking solutions regarding recapturing the cost to serve this commodity to its customers. Disposal of repurified water via irrigation or land application does allow more capacity for the discharge of effluent to the West Fork Stones River, so there is a capacity (i.e., sustainability) benefit that is not calculated in the "hard" numbers associated with the FY19 COSS.

Rate Revenue for FY19	$26,558
Cost of Service (Under-recovery)	$(841,410)
FY21 Budget Repurified Revenue	$29,000

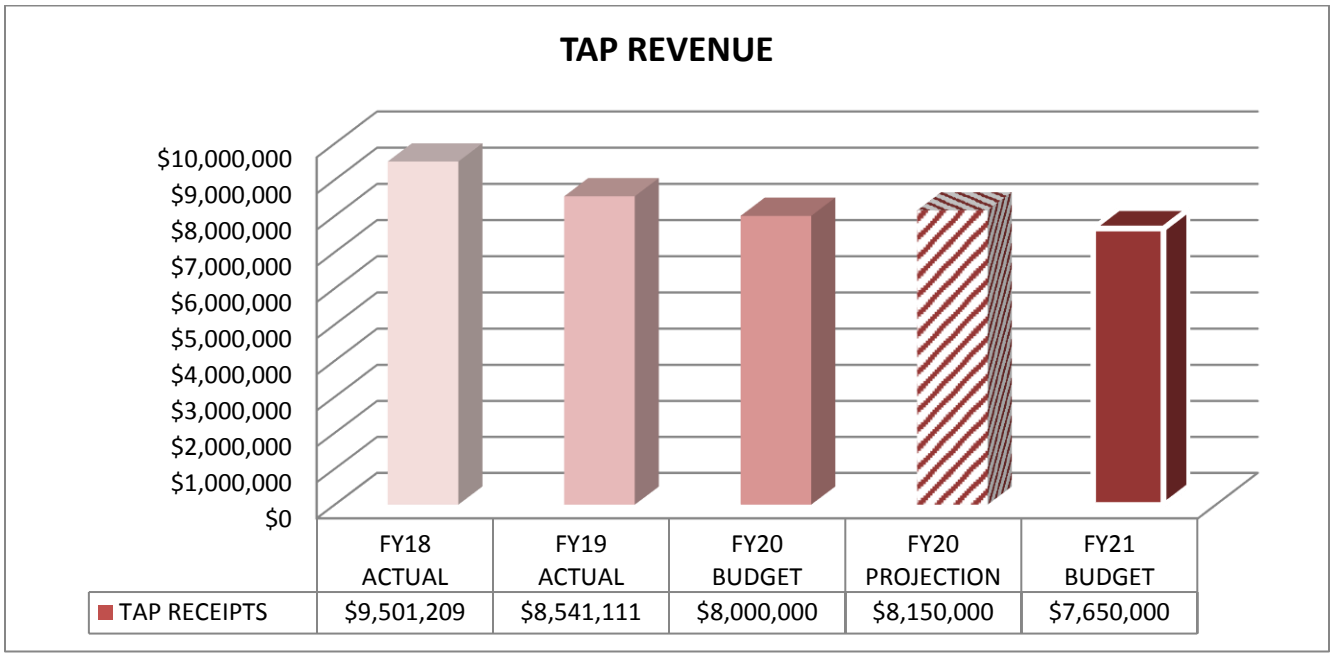
The following graph shows the revenue requirements in total by rate class to fully recover 100% of the expenses associated with the repurified water system.



WATER TAPS / SEWER TAPS (SYSTEM DEVELOPMENT CHARGES)

FY21 water tap revenue is budgeted to decrease in FY20 by $(50,000). FY20 water tap fees are projected to be $450,000. All excess tap fees beyond labor and material costs associated with tap installation are reserved for future capacity enhancement.

Sewer tap revenue and associated special assessments are projected below the expected amount of activity anticipated in FY20. FY20 sewer tap fees and special assessments are expected to be below budget by $(200,000). FY21 budgeted tap fees are $(650,000) below FY20 budget, or $6,850,000. All excess tap fees beyond labor and material costs associated with tap installation are reserved for future capacity enhancement.



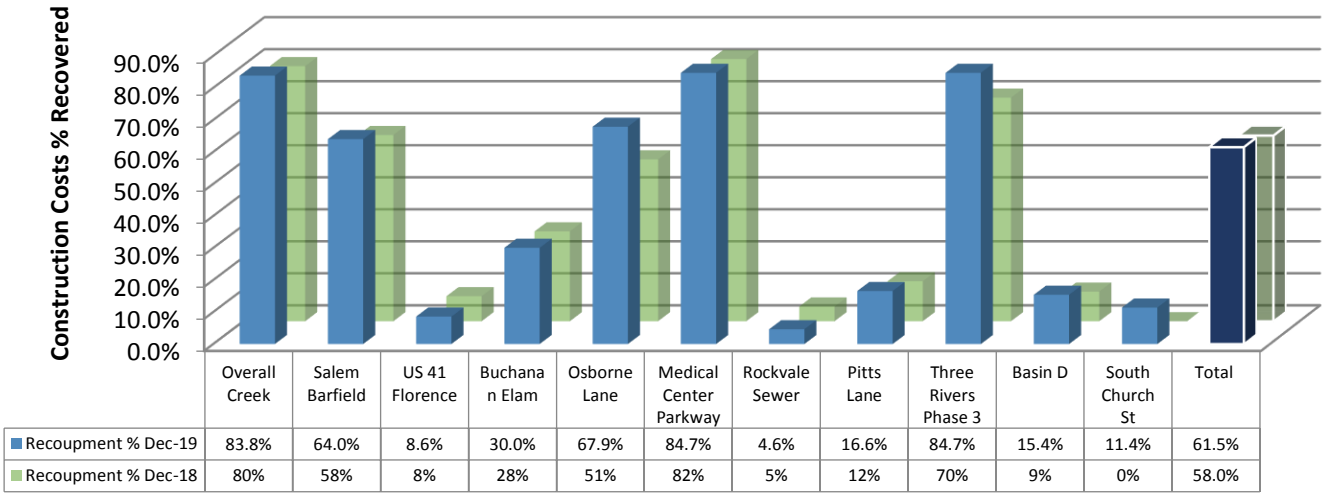
	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
TAP RECEIPTS	$9,501,209	$8,541,111	$8,000,000	$8,150,000	$7,650,000

SPECIAL SEWER ASSESSMENT FEES

In September 2018, the Board requested that staff review the sanitary sewer special assessment districts (SSSAD) under the condition of losing 1% in interest revenue each year that the SSSAD had been established. Through December 2019, the assessments have recouped a collective total or 61.9% when considering the interest earnings foregone.

Summary of Special Assessment Districts at December 2019

Assessment Districts	Inception Date	Actual Construction Costs	Collected Dec-18	Earnings Foregone Dec-18	Recoupment % Dec-18	Collected Dec-19	Earnings Foregone Dec-19	Recoupment % Dec-19
Overall Creek	1999	$18,218,700.00	$16,434,087.00	$2,403,811.55	80%	$17,358,843	$2,493,798	83.8%
Salem Barfield	2001	$2,920,664.00	$1,932,202.50	$400,814.33	58%	$2,143,096	$429,168	64.0%
US 41 Florence	2001	$2,851,514.00	$260,362.00	$482,407.37	8%	$290,638	$543,883	8.6%
Buchanan Elam	2001	$4,701,959.00	$1,520,357.15	$714,184.17	28%	$1,650,097	$791,593	30.0%
Osborne Lane	2001	$293,665.00	$169,277.00	$41,185.17	51%	$229,077	$43,915	67.9%
Medical Center Parkway	2006	$3,099,400.00	$2,699,169.10	$197,348.55	82%	$2,804,899	$212,318	84.7%
Rockvale Sewer	2006	$1,414,290.00	$80,057.50	$325,620.50	5%	$83,158	$387,411	4.6%
Pitts Lane	2008	$324,400.00	$44,650.00	$32,987.06	12%	$60,200	$39,221	16.6%
Three Rivers Phase 3	2014	$240,807.00	$175,500.00	$10,449.01	70%	$214,200	$12,100	84.7%
Basin D	2007	$1,448,846.00	$136,807.50	$28,278.48	9%	$231,158	$55,182	15.4%
South Church St	2016	$297,274.00	$0.00	$2,972.74	0%	$34,874	$9,008	11.4%
Total		$35,811,519.00	$23,452,469.75	$4,640,058.92	**58.0%**	$25,100,240	$5,017,596	**61.5%**



The Murfreesboro Water Resources Department was provided a cost of service study (COSS) from Jackson Thornton Utilities Consultants for FY2019. That study was presented at the March 3, 2020 Board meeting. Jackson Thornton has since that time provided staff a pro forma for FY2024. The FY2024 pro forma was run using two scenarios:

1) Scenario "A" that assumes no new debt was added between FY19 and FY24. This assumes using reserves on hand to pay for $49,000,000 in capital projects.
2) Scenario "B" where $49,000,000 in debt (20-yr @ 3%) is incurred to pay for the Northeast Regional Pumping Station and Force main, Overall Creek Pump Station upgrades, as well as the necessary capital equipment to perform full scale biosolids drying at the Water Resource Recovery Facility (WRRF). Full payback of the total loan amount was assumed to start in FY2024.

Table 1 compares the anticipated FY24 pro forma revenue requirements for the Water Resources fund to the anticipated FY24 rate revenue generated. This scenario assumes no debt will be incurred within the five-year timeframe.

Table 1: FY24 Revenue Requirement Compared to FY24 Rate Revenue (No Debt Scenario)

	Water	# Annual Billings	Sewer	# Annual Billings	Total
FY24 Rate Revenue	$14,634,147	318,910	$31,197,113	621,850	$45,831,260
FY24 Revenue Req'mnt	$15,590,357	318,910	$27,191,289	551,515	$42,781,646
Difference	($956,210)	0	$4,005,824	70,335	$3,049,614

The total difference of $3,049,614 is seen as the "revenue surplus" (7.1% over-recovery) that the Department anticipates over the next four years.

Table 2 compares the FY24 pro forma revenue requirements for the Water Resources fund to the anticipated FY24 rate revenue generated. This scenario assumes $49,000,000 will be incurred within the five-year timeframe to pay for the Northeast Regional Pumping Station and Forcemain, Overall Creek Pumping Station Upgrades and the capital equipment for full scale biosolids drying at the Water Resource Recovery Facility (WRRF).

Table 2: FY24 Revenue Requirement Compared to FY24 Rate Revenue ($49M Debt Scenario)

	Water	# Annual Billings	Sewer	# Annual Billings	Total
FY24 Rate Revenue	$14,634,147	318,910	$31,197,113	621,850	$45,831,260
FY24 Revenue Req'mnt	$15,590,357	318,910	$29,234,859	551,515	$44,825,216
Difference	($956,210)	0	$1,962,254	70,335	$1,006,044

The total difference of $1,006,044 is seen as the "revenue surplus" (2.2% over-recovery) that the Department anticipates over the four-year timeframe while incurring $49,000,000 in debt.

While both of these scenarios demonstrate an over-recovery of anticipated revenue to cost of service expenses, there is a small issue associated with water rates not fully supporting the cost of service associated with water related expenses in FY24. The over-recoveries tabulated above entail a subsidization of sewer related revenue

covering water related expenses. From a cost of service standpoint, this is not an ideal position and staff recommends avoiding it from occurring.

A proposed rate design for meter sizes 5/8" to 2" below by adjusting the minimum annually as tabulated below recovers approximately 20% of the under-recovery for water anticipated for FY24. Making these adjustments over a 5-yr period would make up the "gap" of the anticipated ($956,210) shortfall.

Table 3: Proposed Minimum Monthly Charge Adjustments

Meter Size (INCH)	FY20 Total minimum	FY21 Proposed minimum	Difference	# of Accounts	Added Revenue
5/8"	$8.22	$8.72	$0.50	24,917	$149,501.00
1"	$19.18	$20.71	$1.53	688	$12,668.01
1-1/2"	$41.10	$43.77	$2.67	359	$11,508.82
2"	$65.76	$69.05	$3.29	464	$18,307.58
3"	$164.40	$164.40	$0.00	96	$0.00
4"	$328.80	$328.80	$0.00	34	$0.00
6"	$685.00	$685.00	$0.00	17	$0.00
8"	$685.00	$685.00	$0.00	1	$0.00
			Total	**26,576**	**$191,985.41**

While the water monthly minimums are nominal increases, **based on the current economic conditions, MWRD staff is not recommending a water or sewer rate increases for FY21**. These increases may be held off for one or two years, necessitating larger adjustments in FY23 and FY24.

The water rate is recommended to remain at $3.66 per 1,000 gallons ($0.00366 per gallon) and the sewer rate is recommended to remain at $5.67 per 1,000 gallons ($.00567 per gallon). The average monthly bill for an MWRD customer that uses 5,200 gallons per month for water and 4,800 gallons per month of sewer will remain the same, or $66.70 per month.

Staff is not recommending any changes to the system development charges (a.k.a., connection fees) for residential or nonresidential uses.

BILL AMOUNT FOR SELECTED RESIDENTIAL MONTHLY CONSUMPTION

No raise in minimum bill or commodity rate
Proposed Rate 2020-2021
$3.66/kgal water, $5.67/kgal sewer

Gallons	Cubic Feet	Water	Sewer	**Total**	**Increase**	**% increase**
		$8.22	$10.22	**$18.44**	**$0.00**	**0.00%**
748	100	$10.96	$14.46	**$25.42**	**$0.00**	**0.00%**
1,122	150	$12.33	$16.58	**$28.91**	**$0.00**	**0.00%**
1,496	200	$13.70	$18.70	**$32.40**	**$0.00**	**0.00%**
2,244	300	$16.44	$22.94	**$39.38**	**$0.00**	**0.00%**
2,992	400	$19.18	$27.18	**$46.36**	**$0.00**	**0.00%**
3,740	500	$21.92	$31.42	**$53.34**	**$0.00**	**0.00%**
4,047	541	$23.04	$33.16	**$56.20**	**$0.00**	**0.00%**
4,989	667	$26.50	$38.50	**$65.00**	**$0.00**	**0.00%**
5,236	700	$27.40	$39.90	**$67.30**	**$0.00**	**0.00%**
5,984	800	$30.14	$44.14	**$74.28**	**$0.00**	**0.00%**
6,732	900	$32.88	$48.38	**$81.26**	**$0.00**	**0.00%**
7,480	1,000	$35.62	$52.62	**$88.24**	**$0.00**	**0.00%**
9,971	1,333	$44.74	$66.74	**$111.48**	**$0.00**	**0.00%**
11,220	1,500	$49.32	$73.82	**$123.14**	**$0.00**	**0.00%**
14,960	2,000	$63.02	$95.02	**$158.04**	**$0.00**	**0.00%**
22,440	3,000	$90.42	$137.42	**$227.84**	**$0.00**	**0.00%**
24,931	3,333	$99.54	$151.54	**$251.08**	**$0.00**	**0.00%**
37,400	5,000	$145.22	$222.22	**$367.44**	**$0.00**	**0.00%**
44,880	6,000	$172.62	$264.62	**$437.24**	**$0.00**	**0.00%**
67,320	9,000	$254.82	$391.82	**$646.64**	**$0.00**	**0.00%**
89,760	12,000	$337.02	$519.02	**$856.04**	**$0.00**	**0.00%**
112,200	15,000	$419.22	$646.22	**$1,065.44**	**$0.00**	**0.00%**
149,600	20,000	$556.22	$858.22	**$1,414.44**	**$0.00**	**0.00%**
2,244	300	$16.44	$22.94	**$39.38**	**$0.00**	**0.00%**
5,004	669	$26.55	$38.59	**$65.14**	**$0.00**	**0.00%**

Note: The table above is the fee schedule for monthly consumptions associated with 5/8” or 3/4" water meters (tax not included).

RATE AFFORDABILITY

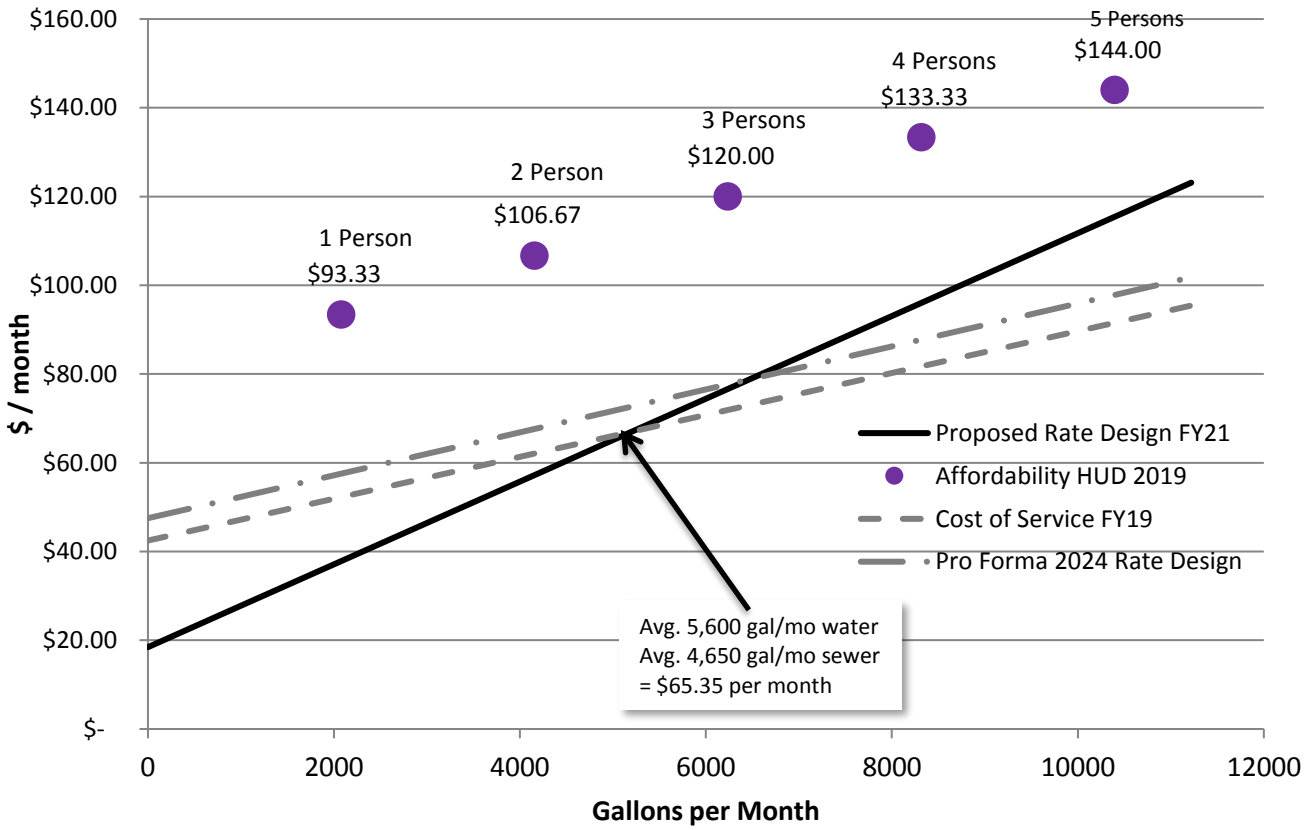
The Department seeks to maintain a target affordability ratio of 2.0% or less for water and 2.0% or less for sewer (combined 4.0%). This is measured by the dividing of the average annual residential bill by the median household income of the City. When setting rates and evaluating rate structures, the impact on low income customers is considered, while assuring that cost of service principles are met.

The Safe Drinking Water Act (S.1547) established special assistance where the average residential water bill exceeds 2 percent of median income.

AWWA Research Foundation report entitled "Water Affordability Programs" suggest that programs should not be based on median income but rates that cause water bills to exceed 2 percent of income for impoverished households. Because of the focus on impoverished households, measure of the 2 percent was selected to determine if water costs were burdensome.

The FY21 proposed monthly cost of water, tax, sewer and stormwater is compared to the Threshold Limits for Affordable Housing Assistance Murfreesboro Community Development 2019 below. Based on the average of 2.5 people per household using 5,600 gallons per month of water and 4,650 gallons per month of sewer, the annual cost of water and sewer after July 1, 2020 is calculated as $784.20, or $65.35 per month. This expense is less than 4% of the very low-income threshold of $120 per month, or $1,440 annually. In comparing one (1) person through a five (5) household, the affordability metric passes.

FY21 RATE DESIGN: *AFFORDABILITY* FOR RESIDENTIAL 5/8" METERS



RATES, FEES AND CHARGES OBJECTIVES

The Department's schedule of rates, fees, and charges are reviewed and adjusted, if necessary, on an annual basis to ensure that rate and revenue levels are adequately funding the overall goals and objectives of the Department and are reasonable and affordable. Rates and fees are established with consideration given to the following long-term rate setting objectives.

Rate structures should reflect fixed costs that don't vary with changes in water usage and production. They should also reflect variable costs, which do vary depending on the amount of water used or produced.

The following objectives provide a general framework which can be consistently applied to future water and sewer rate reviews. Because some policy objectives may unavoidably conflict with others, they should be considered in their entirety to strike an appropriate balance among them when reviewing and establishing the Department's water and sewer rates.

1. Revenue Requirements: Rates shall be sufficient to meet the Department's revenue requirements, while striving to charge the lowest feasible cost to the customer over the long run.
2. Customer Payment of Cost-of-Service: The Department shall implement a system of rates, fees, and charges that effectively recovers allocated costs to customers in proportion to their responsibility for the costs incurred by the utility. Adherence to the cost-of-service principle (benefiting party pays) shall be a guiding philosophy.
3. Equity: Rates should reflect a fair apportionment of the various costs of providing service among different groups of customers served by the Department based on their differing service requirements.
4. Efficiency: Rates should provide incentives for cost effective use of facilities and conservation of water and efficient use and reuse of water resources.
5. Rate Stability: Rate levels and structures shall be changed through gradual programmed implementation of rate adjustments.
6. Financial Stability: Rate levels and structures shall be sufficient in the recovery of costs to operate the system.
7. The Department will seek to maintain a target affordability ratio of 2 % or less for water and 2% or less for sewer (combined 4%). This is measured by the dividing of the average annual residential bill by the median household income of the City. When setting rates and evaluating rate structures the impact on low income customers is considered, while assuring that cost of service principles are met.
8. Connection Fees: The Department shall collect connection fees and sanitary sewer district fees from new water and sewer customers. These charges are intended to recover costs associated with facility capacity expansions necessary to meet the new customer's water and sewer demands. These charges provide a method for dividing the cost burden of existing and planned facilities between old and new customers.
9. Periodically the Department shall consider using the services of a qualified independent consultant to conduct a comprehensive cost of service and rate study every two years.

DEPARTMENT SUMMARY

The Murfreesboro Water Resources Department (Department) is an enterprise fund of the City of Murfreesboro. The fund is managed to fully recover the expenses of providing services from users (as opposed to taxes) and to build and preserve a substantial, long lived capital asset base in the treatment facilities, water distribution and storage system, wastewater collection system and repurified water distribution and storage system. Because utilities have many characteristics of a business, business accounting and financial management rules are usually applied to enterprise funds. Because of this, the presentation of the Department differs from that of the City General Fund Budget.

The Department's aggressive maintenance and replacement programs result in a greater asset value. The Total Asset Value as of June 30, 2019 was $533,708,703, a 2.96% increase from FY18. The Department financial and management model is to improve infrastructure each year, strive to provide excellent customer service, make knowledge-based decisions, and stretch the dollar to get the maximum benefit and minimize waste.

Water service is provided through approximately 27,325 meter connections within the Murfreesboro Water Resources Department water service area (35.61 square miles), and sanitary sewer service is being provided to areas served in the Consolidated Utility District water service area for an estimated additional 21,779 sewer only customers. The City operates a separate fund for Stormwater services and has 39,722 customers. There are 63.86 square miles within the city limits and 179.6 square miles within the Murfreesboro Urban Growth Boundary (UGB). The City also operates the largest reclaimed water system in the State of Tennessee; having 184 customers and delivering between 4 to 8 million gallons per day of high quality repurified water.

The employees of the Department are dedicated to providing its customers with a bountiful supply of clean, safe water, sanitary sewer service and recycled water service in the most economical and efficient way possible. The Department's responsibility to manage the City's municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) permit, which directly affects the quality of stormwater runoff within the City, allows for a holistic approach to affect the quality of the water we withdraw from our natural resources and the quality of the water returned to our streams, rivers and lakes.

There are a total of 173 full time and 8 part time positions in water resources, which includes 9 full time stormwater positions budgeted for FY21.

There are 3 licensed professional engineers, 1 engineer-in-training, 2 certified public accountant, 3 professional operators, and 61 employees with a Tennessee Certified Operators License for one or more of the following: water treatment, wastewater treatment, water distribution and wastewater collection system. We also have 6 technicians at Operations and Maintenance certified in pipeline assessment certification program (PACP).

The Murfreesboro Water Resources Board held its first meeting on December 12, 1958. The first members consisted of C. B. Huggins, Herman O. Jones (Councilman), Jennings A. Jones, Sam Lasseter, and Fount Pitts. At that time, the Mayor was A. L. Todd, Jr., City Manager was H. L. McCullough, and Joe W. Lovell was Superintendent of the Water Department. The Director of the Department reports to the Utility Enterprises Director.

A seven-member advisory board has the oversight of department policy and financial operations. The Board makes recommendations to the City Council. User charges provide the sole source of revenue for the Water

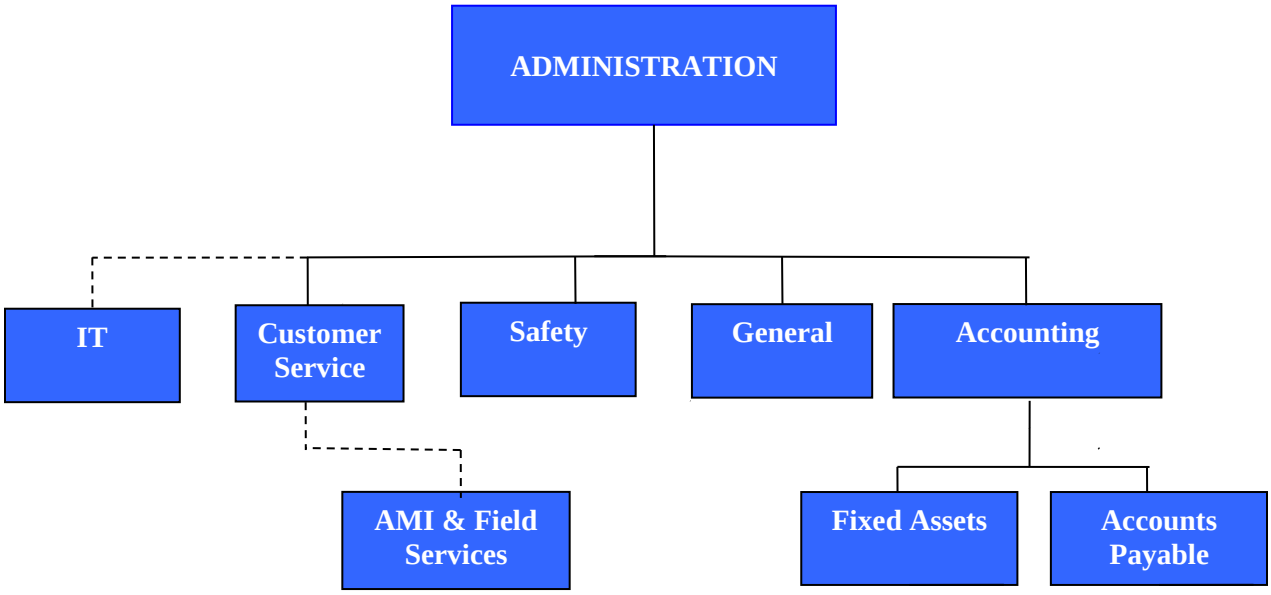
Resources Department. No general tax base revenues are received, yet our rates are well below those of many of our sister utilities.

The Water Resources Board meetings are held on the fourth Tuesday of each month at 3:30 p.m., at 1725 South Church Street, Murfreesboro.

DIVISION SUMMARY

The mission of the Murfreesboro Water Resources Administration and Customer Service staff is to provide service excellence in the initiation and ongoing service of water, sewer and repurified water. This division also expect to offer several web-based platforms for our customers to engage in their water consumption and billing history to afford the opportunity to formulate and maintain water budgets. The "Help 2 Others" (H2O) program is intended to be a partnering collaboration with Rutherford County Community Helpers to afford aid to lower income customers who may need aid to pay for their water and sewer services.

ORGANIZATIONAL CHART



IMPLEMENTATION OF COUNCIL PRIORITIES

MAINTAIN PUBLIC SAFETY

- Employee health and safety severity rate
- Training hours per employee

RESPONSIBLE BUDGETING

- Maintain compliance with Financial Management Policies adopted December 17, 2013.
- Maintain reserve funds in excess of annual operating expenses
- Maintain a Debt Service Coverage Ratio of 1.2 or greater
- Completed a Cost of Service Study for year ending June 30, 2019; Recovered 105% of allocated water service expenditures and 113% of allocated sewer expenditures

EXPAND INFRASTRUCTURE

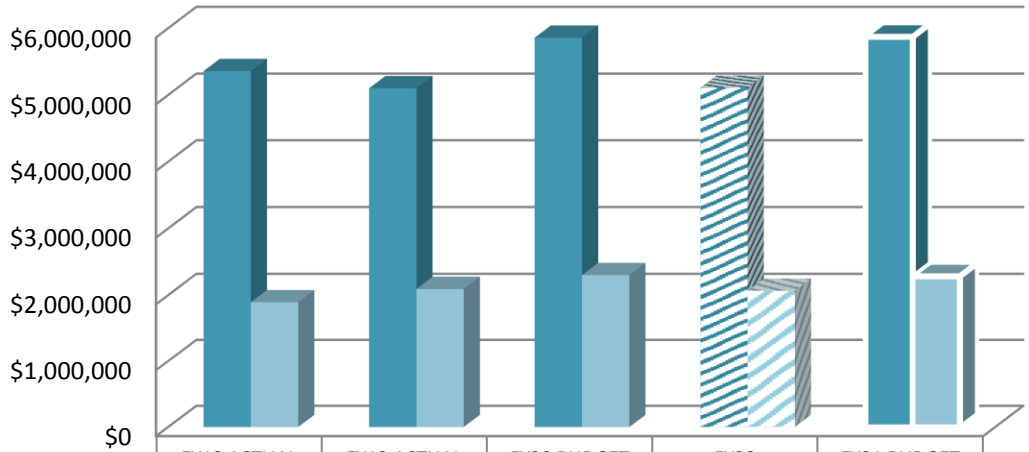
- Fund capital expenses related to road projects from reserve funds
- Fund $1 million annually for sewer rehabilitation from sewer rates

ESTABLISH A STRONG CITY BRAND

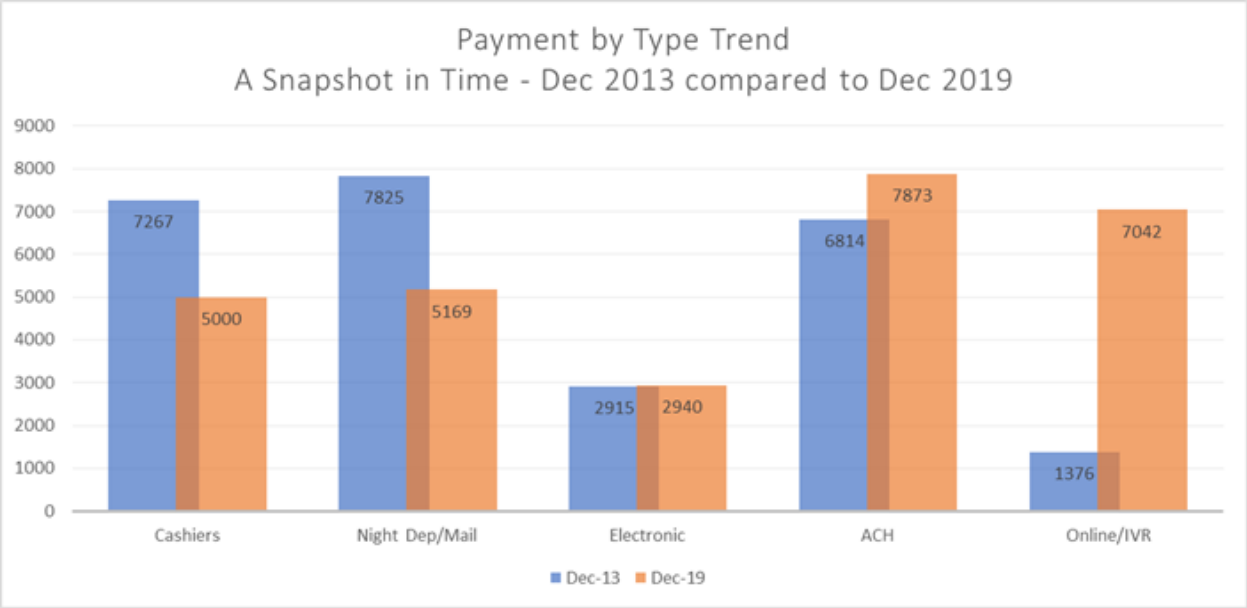
- Allow Customer interface to account history and usage through CIS and AMI web-based portals, proactively engaging customers primarily through early leak notifications
- Implement Landlord program to better serve large multi-family complexes and customers who own multiple properties
- Messaging to customers regarding continuous usage or water interruptions through Interactive Voice Response (IVR) or email systems.
- Continue implementation of the adopted Water Resources Department Information Technology (IT) master plan

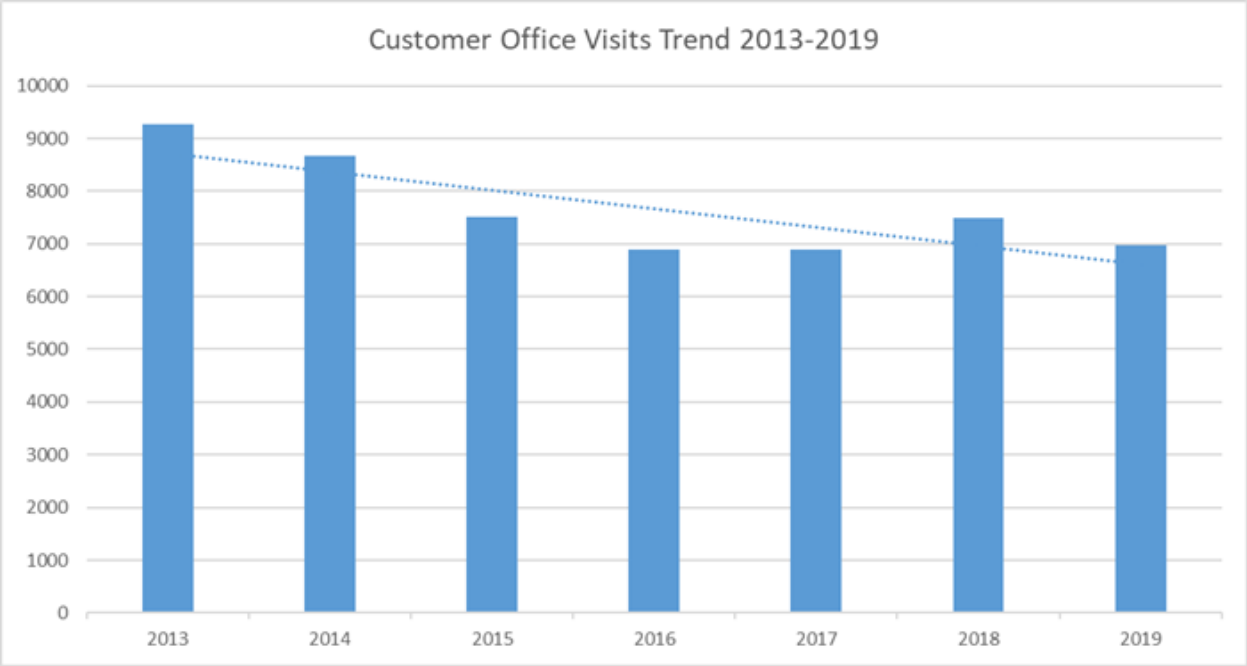
PROPOSED ADMINISTRATION, ENGINEERING AND CUSTOMER SERVICE BUDGET

CUSTOMER BILLING/COLLECTION AND ADMIN/GENERAL EXPENSES



	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
ADM & GENERAL EXPENSES	$5,358,806	$5,101,449	$5,859,310	$5,108,732	$5,873,000
CUSTOMER BILLING & COLLECTION	$1,895,235	$2,093,667	$2,301,003	$2,067,585	$2,284,100





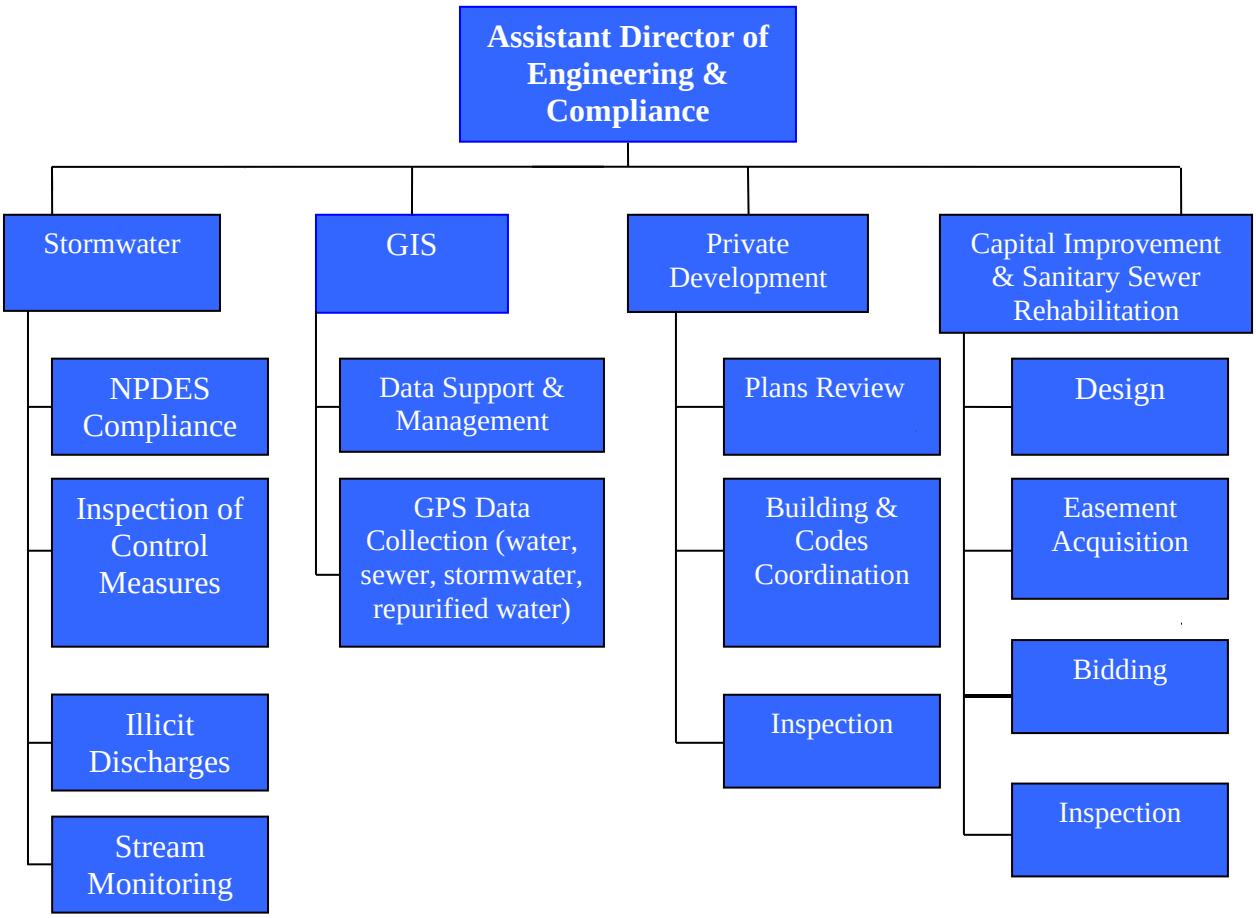
From 2013 through 2019:

- Cashier transactions down 31%
- On-line payments up over 500%
- Mail/night deposit payments down 34%
- Office visits down 24% (772 per month average to 583 per month average)

DEPARTMENT SUMMARY

The mission of the Murfreesboro Water Resources - Engineering Department staff is to provide adequate water, sewer and repurified water infrastructure for the citizens of Murfreesboro, to provide information regarding this infrastructure geographically through our GIS system and to meet the State of Tennessee's NPDES Stormwater permit requirements for MS4 Cities.

ORGANIZATIONAL CHART



IMPLEMENTATION OF COUNCIL PRIORITIES
RESPONSIBLE BUDGETING

- Continually update and provide a 5-year Capital Improvement Plan (CIP), for expansion, replacement or rehabilitation of water, sewer and repurified water infrastructure, to determine existing and future budget needs.

IMPROVE ECONOMIC DEVELOPMENT

- Provide Effective Utility Management (EUM) to achieve excellence in our performance and to meet the long-term needs of the Murfreesboro Water Resources Department and City.

ESTABLISH A STRONG CITY BRAND

- To remain true to the naming of the Department as a "Utility of the Future" and to model that the Murfreesboro Water Resources Department and the City are efficient in our Operations, Productivity and long-term Sustainability.

EXPAND INFRASTRUCTURE

- Ensure prompt review and approval of private development construction plans for water, sewer and repurified water extensions. To include coordination and explanation of the review and approval process with both engineers and developers.
- Continue to implement the Department's 5-year CIP and to upsize existing water, sewer and repurified water infrastructure as development and redevelopment continues.
- Continue to replace and upsize water mains to provide adequate fire protection to maintain an ISO Class 2 rating.

MAINTAIN PUBLIC SAFETY

- Continually rehabilitate the existing sewer collection system to prevent back-ups and overflows which has a direct effect on public health and safety.
- Continually maintain a Closed-Circuit Television database of the sewerage system to assist with the Operations and Maintenance of the sewerage system.

FY 2020 ACCOMPLISHMENTS

- Completed the Overall Creek Pump Station Capacity Study
- Completed various projects utilizing the Annual Mechanical/Electrical Services Contract with John Bouchard
- Received approval & Implement the use of the Department's Standard Development Contract for Water/Sewer/Repurified Water main extensions
- Completed the Walter Hill Dam Rehabilitation
- Completed the construction of the Ransom Dr. Pump Station Replacement.
- Created the Sewer Allocation Ordinance and companion Resolution to protect the City's wastewater collection system and treatment facility capacity
- Successfully completed the Emergency Repair of two Sanitary Sewer Interceptor Collapses.
- Completed the installation of a Small-scale Biosolids Dryer Unit at the WRRF
- Recalculated non-residential Stormwater Fees for parcels in City Limits
- Created metadata for all sewer features
- Implemented & maintained a billing mechanism for Solid Waste billing

- Populated missing data in CIS (Subdivision, Lot#, Tap#. Structure Type) to ensure integrity of data into the future
- Created SOP's for standard GIS/CIS tasks
- Researched/updated number of multi-resident structures that are being served by single meters (data used for multiple purposes)
- Maintained & updated Water, Sewer, Reclaimed, Stormwater, Sewer Rehab, & Easement infrastructure & SCM GIS Databases
- Maintained MWRD website pages for GIS, Engineering, Stormwater, & FOG
- Updated watershed characteristics for pollutant reduction
- Created new surveys for stormwater department and sewer rehab for O&M in Survey 123
- Continued updates to mobile/web applications with ArcGIS Online /ArcGIS Portal / ArcGIS Enterprise. Currently using 62 applications for employee and public use, as well as 6 dashboards for analysis.

FY 2021 DEPARTMENT GOALS

- Continue to develop decentralized sewer treatment system Septic Tank Effluent Pump (STEP) design guidelines and development policies for residential and multifamily developments
- Continue the Preliminary Design Phase of the NE Regional Pump Station, Forcemain and Gravity Sewer
- Design the Sewer Improvements per the Master Plan for the Cherry Lane Corridor into Phase 2 & 3 Construction Plans as well as a portion of the NE Interceptor Forcemain and Repurified Water
- Continue the design of the Water/Sewer Replacements and Extensions in conjunction with the TDOT Bradyville Pike and N. Thompson Lane Roadway Widening projects and the Jones Boulevard Widening
- Construct sewer improvements in conjunction with the Rucker Lane Roadway Widening
- Complete the Construction of the 2018/2019 Sewer Rehabilitation Project
- Design & Bid the 2020/2021 Sewer Rehabilitation Project
- Complete the interim upgrades to the Overall Creek Pump Station
- Design additional upgrades to the Overall Creek Pump Station and Forcemain doubling the capacity
- Develop New Revision to the 201 Wastewater Facilities Plan
- Develop and Implement Sanitary Sewer Assessment Districts for the Cherry Lane/Sazerac area, the Veterans/ 840 Interchange area and Shelton Square Surrounding Properties
- Continue to complete various maintenance projects through the Annual Mechanical/Electrical Services Contract with John Bouchard
- Continue to modify the installation of the Small-scale Biosolids Dryer Unit at the WRRF to achieve the testing requirements and a consistent Class A Biosolid
- Continue TN Department of Environment and Conservation (TDEC) consolidation of bioassessment surveys, waste load allocation modeling in order to develop 2021 National Pollutant Discharge Elimination System (NPDES) permit rationale
- Continue to Design and Construct Water & Sewer Infrastructure Improvements in conjunction with the City's Annual Paving Efforts Utilizing the experience of Operations and Maintenance
- Continue Permanent & Temporary Flow Monitoring within the Department's sewer system to better determine remaining capacity throughout the sewer system
- Continue to create & publish metadata for all features in GIS, excluding sewer

- Continue to support all facets of business with GIS and database technology
- Recalculate non-residential Stormwater Fees for parcels in City Limits
- Continue to remove streams from 303d list
- Improve integrity of stormwater infrastructure database
- Support migration to GIS centric CMMS (Cityworks)
- Continue to use ArcGIS Portal / Enterprise / Survey 123Online for department and public use for web and mobile mapping needs
- Continue moving employees to web based maps & apps, & away from static desktop software
- Continue to assist with public relations for MWRD by creating flyers, banners & brochures
- Create a detailed tree coverage for use in i-Tree & Infoswmm modeling software
- Create a geometric network for Sanitary Sewer – Evaluate geometric network models for Water & Stormwater
- Evaluate O&M workflows with the goal of moving from paper forms to online forms & data (Workforce, Cityworks, Survey 123)
- Continue to implement the Solid Waste billing mechanism &implement all changes
- Implement the Fire Protection usage tracking & revenue recovery in CIS
- Update CCTV maps & develop script for ongoing updates
- Develop the Hub Site, Story Maps, & the use of Insight software

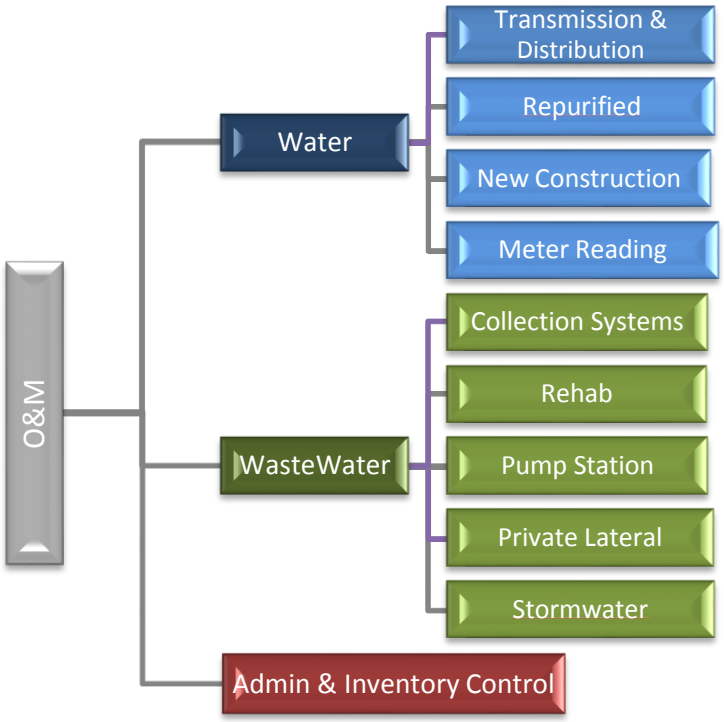
OPERATIONS AND MAINTENANCE

DEPARTMENT SUMMARY

The Operations and Maintenance division of the Murfreesboro Water Resources is an essential part of the department in that it encompasses the management of the City's Wastewater Collection and Water Distribution Lines. This includes the maintenance and rehabilitation of existing water and sewer lines, installing new meters and sanitary sewer cleanout connections, repairing water main leaks, clearing main sewer line blockages, and pump station maintenance and repairs. This division is responsible for new construction projects including the replacement and installation of new main water lines and sewer lines throughout the City of Murfreesboro.

The sanitary sewer service planning area encompasses the present city limits as well as the area within the Murfreesboro Urban Growth Boundary (UGB) and certain drainage basins which are contiguous to the UGB and drain naturally into the UGB. The total planning area encompasses 203 square miles. This planning area was established as part of the 201 Facilities Plan Update in 2002. The wastewater collection system consists of 648.89 miles of gravity sewer (reflects an increase of 11.23 miles), 42 pumping stations with 36.18 miles of force main and 16121 manholes (increase of 380), and 217.70 miles of house service lines (increase of 6.2 miles).

ORGANIZATIONAL CHART



IMPLEMENTATION OF COUNCIL PRIORITIES

MAINTAIN PUBLIC SAFETY

- Provide and maintain 446.87 miles of high-quality water service for all citizens of the City of Murfreesboro
- Provide and maintain 27.26 miles of repurified water lines.
- Provide and maintain 3,572 fire hydrants to maintain Class 2 fire protection.
- Insure well trained staff follows all public health procedures set forth by the TDEC and EPA.
- Grade II Operator Certifications – Distribution – 15 and Collection - 12.
- TN811 Locate Tickets – 25,389 increase of 833 from previous year.
- Maintenance Service Calls – 1,874 decrease of 234 from previous year.

EXPAND INSFRASTRUCTURE

- Meters – 27,246 an increase of 151 from previous year.
- Stormwater –704.59 miles increase of 27.39 from previous year.
- Cleanouts installed - 1,137 a decrease of 215 from previous year.
- Continue to rehabilitate the water and sewer infrastructure by replacing water/sewer main lines, updating house service connections including customers' sanitary sewer house services if criteria for replacement are met.

IMPROVE ECONOMIC DEVELOPMENT

- Maintain and expand an infrastructure that provides water and sewer service that will attract businesses and residents.
- Conduct residential and commercial inspections from the building's foundation to right-of-way.

RESPONSIBLE BUDGETING

- Continue to operate within the budget.

ESTABLISH A STRONG CITY BRAND

- Provide immediate response to customers' complaints, along with maintaining all services to the consumers.
- Respond to citizen inquiries regarding other city services by directing them to the right department and follow up that they have been contacted by others.

FY 2020/2021 DEPARTMENT GOALS

- Continue to replace distribution system infrastructure to improve water quality and fire protection.
- Continue to rehabilitate the sanitary sewer collection system to reduce inflow/infiltration and pumping and treatment process costs.
- Continue to maintain the approximately 1159.20 miles of water, sewer, and repurified infrastructure at a high quality at the most economical cost possible to the consumer. (Increase of 14.11)
- Maintain 1.1-million-dollar inventory and maintain 99% accuracy.

- Work with Street Department to maintain 704.59 miles of stormwater system.
- Continue house service crew to repair and/or replace customer house sewer service at no charge to the customer if it meets the department's criteria.
- Conduct ongoing meter testing to ensure maximum accuracy and promptly identify leaks.
- Continue to grow leak detection and large meter testing programs.

BENCHMARKING MEASUREMENTS

- Provide at least 216 hours of educational training for Distribution II and Collection II Operators according to TDEC.
- Complete 8 hours of Blasting Training required by TN Department of Commerce and Insurance.
- Achieve a score of 100 on the Sanitary Survey. (Previous score 100).
- Increase number of certified operators – three employees achieved DS II and CS II Operator Licenses from TDEC.
- Continue Employee Involvement Program (EIP) to improve employee communication and customer service.

DRINKING WATER TREATMENT PLANT

DIVISION SUMMARY

The Water Treatment Plant is charged with directing and conducting treatment, production and distribution of potable water for consumption; quality control and assurance through laboratory analysis of the potable water; the maintenance all plant facilities, storage tanks and equipment; flushing of distribution mains and dead-end lines; and identifying, detecting and preventing cross-connections to the potable water system.

The Stones River Water Treatment Plant is located behind the Alvin York Veteran's Administration Hospital, at 5528 Sam Jared Road. It has a treatment capacity of 20 million gallons per day. The last expansion in 2010 increased treatment and pumping capacity, added membrane filtration, granular activated carbon contactors, standby power generation and changed the disinfection process from chlorine gas to sodium hypochlorite. The water quality laboratory facilities were remodeled and expanded. The sand filters, replaced by membrane microfiltration, were converted to granular activated carbon beds providing removal of taste and odors; pharmaceuticals and personal care products; and disinfection byproducts. The plant operates continuously producing an average of 12 million gallons per day, with a peak of 15 million gallons per day, of potable water. All of which meets or surpasses all state and federal drinking water regulations.

The primary water source is the East Fork of the Stones River with an alternative source at the J. Percy Priest Lake, both of which are classified as surface water supplies. The water system is interconnected with Consolidated Utility District of Rutherford County's potable water system in case of an emergency.

The Department's water service area encompasses 36 square miles. The water distribution system includes five water storage tanks with a total storage capacity of 12 million gallons. All five storage tanks have standby power generation which allows the water treatment plant to control water in and out of the tank; monitor the telemetry systems; monitor the security system; and keep the wireless network operating in the event of a power outage.

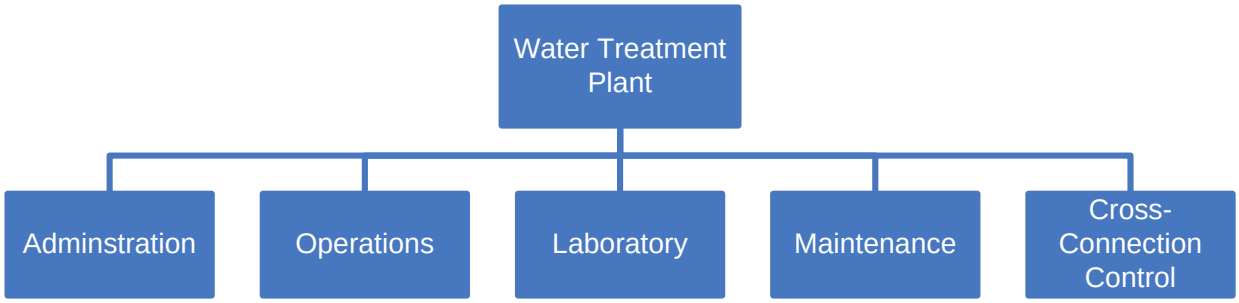
Murfreesboro maintains a Class 2, ISO Public Protection Classification for fire protection. The water system accounts for 40% of the score and the remaining 60% the Murfreesboro Fire Department. In the last rating survey, the Water Resources Department scored 37.76 points out of a possible 40 for water supply toward the scoring for the classification.

In 2010, the Stones River Water Treatment Plant was recognized by the American Council of Engineering Companies of Tennessee with the 2010 Engineering Excellence Grand Award and the Kentucky-Tennessee Section American Water Works Association 2010 Award of Excellence for Plant Operations in the 10 million gallons per day and above category.

In 2014, the Stones River Water Treatment Plant became a member in the Partnership for Safe Water Treatment Plant Optimization Program. The Plant is going into its sixth year in the program.

In 2019, the Murfreesboro Water Resources Department received a 99%, 596 points out of 599, on the Tennessee Department of Environment and Conservation Water Resources Sanitary Survey.

ORGANIZATIONAL CHART



IMPLEMENTATION OF COUNCIL PRIORITIES

RESPONSIBLE BUDGETING

- Provide for safeguarding of the public health and the environment by budgeting education to maintain highly trained personnel dedicated to producing, analyzing and distributing high-quality drinking water.
- Provide for safeguarding of the public health and the environment by budgeting responsibly for proper operation of the water treatment facility.
- Provide for safeguarding of the public health and the environment by budgeting responsibly for a well-executed cross-connection control program designed to eliminate possible contamination of the System's drinking water and a well-executed distribution flushing program designed to maintain high-quality drinking water.

IMPROVE ECONOMIC DEVELOPMENT

- Provide an adequate supply of water and pressure for fire protection to maintain an ISO Class 2 fire rating.
- Provide high-quality drinking water that will attract and maintain businesses and residents.
- Provide sufficient quantity of water to meet customer's demands.
- Provide twelve million gallons of potable water storage.

ESTABLISH STRONG CITY BRAND

- Provide good communication and rapport with neighboring utilities.
- Provide an annual water quality report supporting quality for the City.
- Provide high-quality drinking water that will attract and maintain businesses and residents.
- Provide immediate response to customer complaints and inquiries.

EXPAND INFRASTRUCTURE

- Provide water treatment plant for up to maximum of design flow.

MAINTAIN PUBLIC SAFETY

- Provide public safety through a well-qualified staff trained in emergency response.

FY 2020/21 DEPARTMENT GOALS

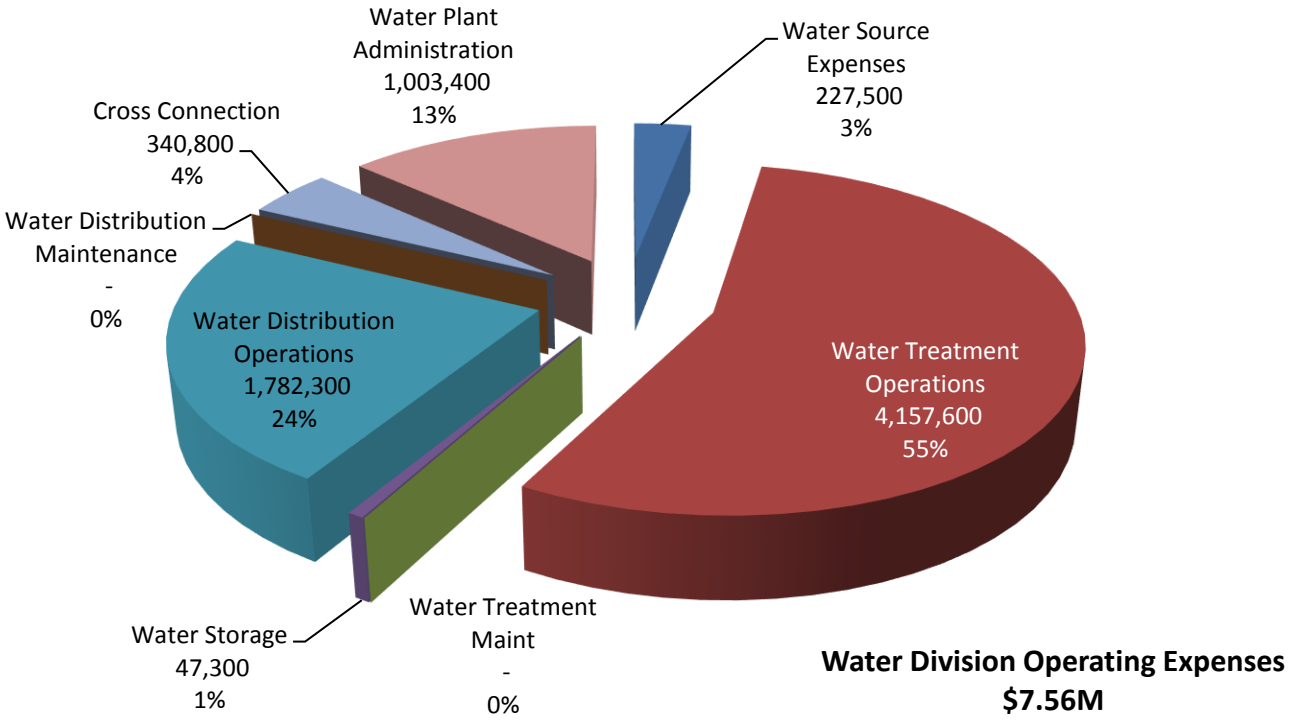
- Continue to improve energy conservation at all locations and participation in the Enel X program.
- Maintain standard for water treatment plant operators to achieve a TDEC Grade IV water certification within twenty-four (24) months from the date of being assigned as an operator.
- Encourage Shift Supervisors obtain the Certification Commission for Environmental Professionals' (C2EP) Class IV Professional Operator Certification.

BENCHMARKING MEASURES

- Achieve drinking water compliance rate of 100%.
- Achieve combined filter effluent turbidity of less than 0.10 NTU in 95 percent of all samples monthly based on values recorded at 15-minute time intervals.
- Maintain certification as a State Certified Laboratory in Chemistry and Microbiology.
- Maintain training hours per full-time employee at twelve (12) hours or more annually.
- Respond to 100% of customer complaints within 24-hours.

WATER LOSS

In accordance with TCA 7-82-702 and 68-221-1009a, the Utility Management Review Board and the Water and Wastewater Financing Board (Boards) have set an excessive water loss percentage at 30%. The Boards adopted the American Water Works Association (AWWA) water loss methodology for determinant water loss reported on financial statements.



Water Division Operating Expenses
$7.56M

DIVISION SUMMARY

The Clean Water Act prohibits discharging pollutants into a "water of the United States" without a National Pollutant Discharge Elimination System (NPDES) permit. The United States Environmental Protection Agency has delegated enforcement of this federal law to the Tennessee Department of Environment and Conservation (TDEC). In turn, TDEC has issued the City of Murfreesboro an NPDES permit to discharge the Murfreesboro WRRF's effluent water into the West Fork Stones River.

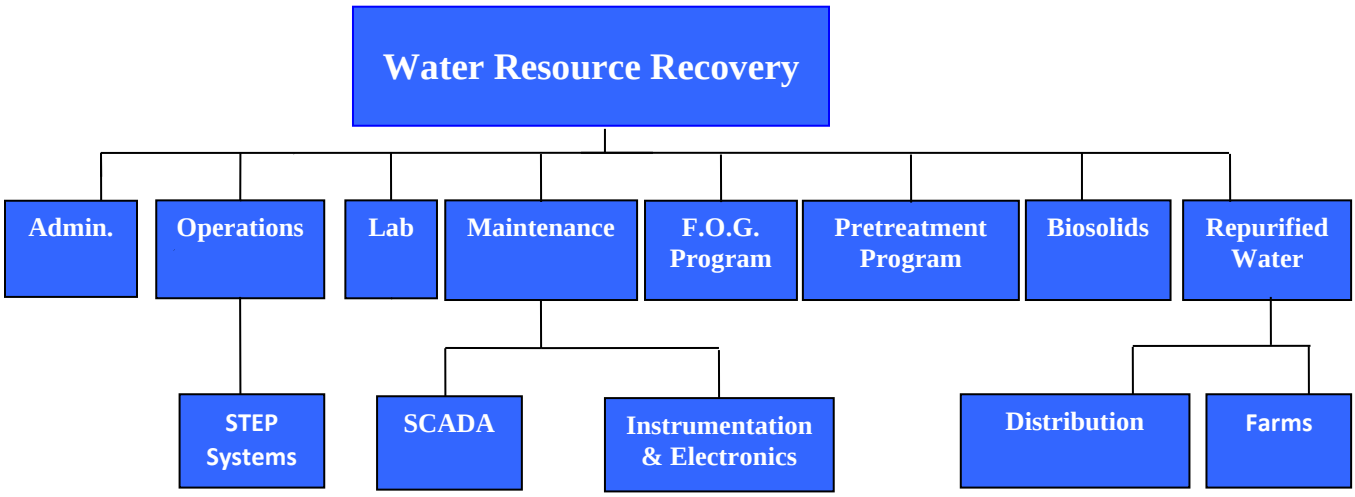
The Murfreesboro WRRF is the heart of an operation which begins with an expansive wastewater collection system that is regulated by Pretreatment and Fat, Oils, and Grease programs. The operation's process is complete when the high quality effluent water is either discharged into West Fork Stones River or put to beneficial reuse. The reuse portion of the operation includes an expanding network of over 26 miles of reuse water lines, public irrigation sites, two Department owned farms totaling over 600 acres (pictured), and two storage towers with a combined capacity of two million gallons.

The WRRF, located at 2032 Blanton Drive, was constructed in four phases beginning in 1995. The final phase was recently commissioned in the Fall of 2017, increasing the permitted design flow capacity to 20 million gallons per day. The 50% plant expansion provides for the City's rapid population growth.

The WRRF provides primary treatment with fine step screens and vortex grit removal. Secondary treatment is a carefully controlled multi-stage biological process that includes various microorganisms metabolizing ammonia ultimately into Nitrogen gas and other microorganisms accumulating Phosphorus. This takes place in anoxic basins for denitrification, oxidation ditches for nitrification, and six clarifiers. The water then flows through thirteen deep-bed sand filters for the removal of fine solids and is disinfected with ultraviolet light. Lastly, the water is oxygen enriched by submerged aerators.

In 2001 the Murfreesboro WRRF was recognized by the Greater Nashville Regional Council with the Local Government award for Excellence in Wastewater Facilities and by the American Council of Engineering Companies of Tennessee with the Engineering Excellence Award. In 2011& 2015 the plant received the Tennessee's Beneficial Reuse of Effluent Award from the Kentucky-Tennessee Water Environment Association. In 2015 MWRRF received the Outstanding Performance Award (or "Plant of the Year") from The Tennessee Water and Wastewater Association. MWRRF will receive the Operational Excellence Award at the 2020 Kentucky-Tennessee Water Professionals Conference for the 8th year in a row.

ORGANIZATION CHART



IMPLEMENTATION OF COUNCIL PRIORITIES

RESPONSIBLE BUDGETING

- Prioritize the EUM Attribute of Financial Viability by maximizing value for the City on all projects and purchases.
- Proactively plan Capital Improvements for at least the next five years.

IMPROVE ECONOMIC DEVELOPMENT

- Maintaining pretreatment services that are welcoming to new and prospective industries.
- Providing sufficient repurified water to meet customers' needs without any service interruptions.
- Providing a high quality product that will attract repurified water consumers.

ESTABLISH STRONG CITY BRAND

- Participating in public outreach to educate students and citizens.
- Conduct facility tours to promote stakeholder understanding and civic engagement.
- Providing immediate, friendly response to customer inquiries and first call resolution to complaints.

EXPAND INFRASTRUCTURE

- Sustaining adequate capacity to meet wastewater customers' treatment needs.
- Continue pilot Dryer study and plan for eventual large scale drying of all dewatered sludge.

MAINTAIN PUBLIC SAFETY

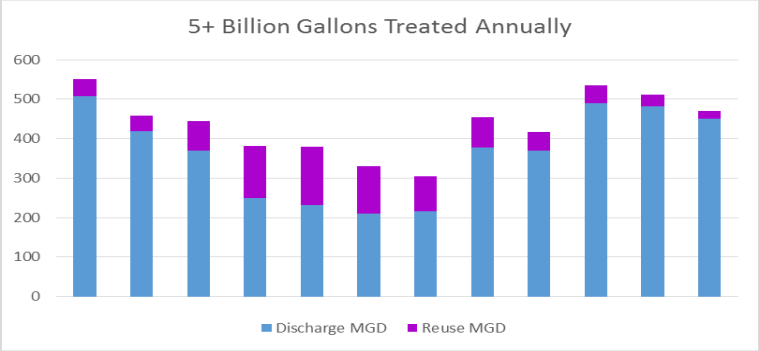
- Safeguarding neighborhoods and the environment through the employment of a highly trained staff of scientists, master electricians and mechanics, management information systems specialist, and treatment experts dedicated to producing high-quality water.
- Produce an excellent quality of water that enhances the West Fork Stones River for safe public use, beautiful scenery, and thriving aquatic life.

FY 2020/21 DEPARTMENT GOALS

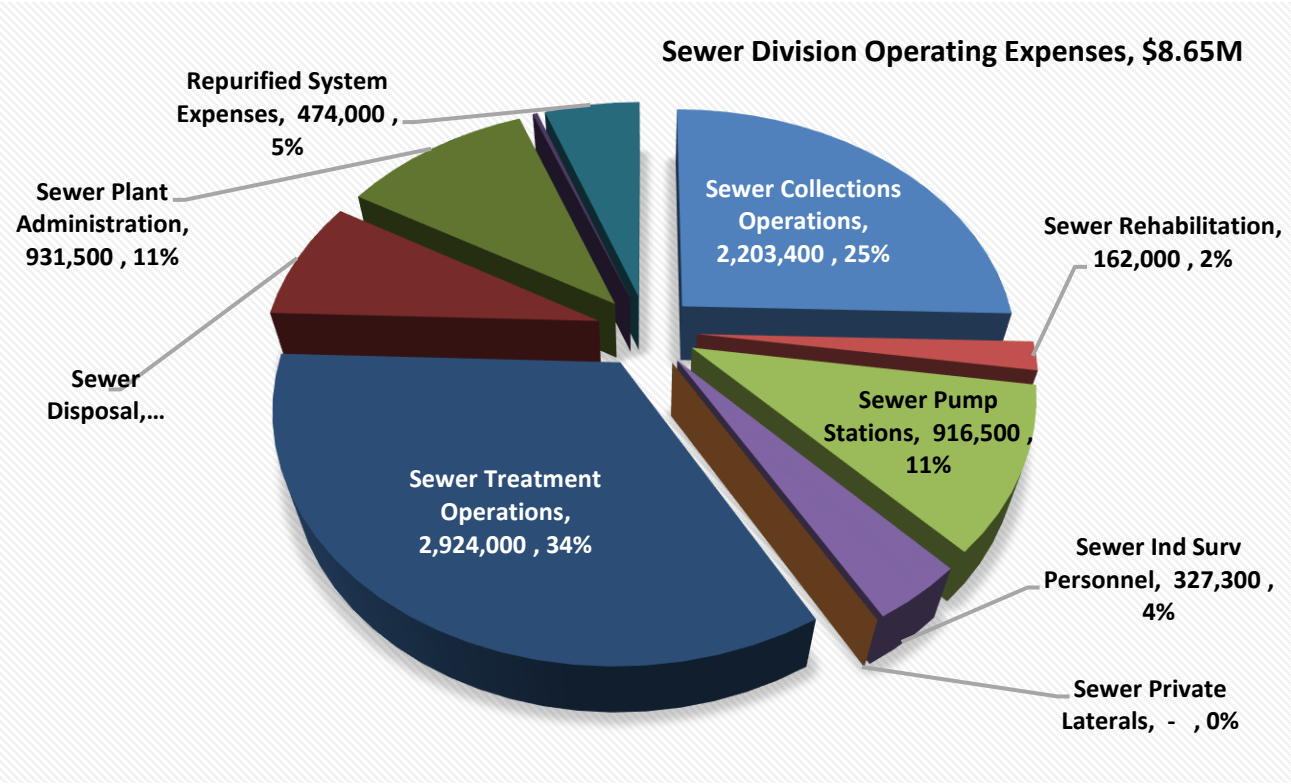
- Operational excellence with a 100% wastewater effectiveness rate.
- All plant operators to become TDEC Grade IV Wastewater Treatment certified.
- Install wet chemistry nutrient meters and improve phosphorus removal.
- Conduct Small Scale Dryer study to produce Class A EQ Biosolids.
- Successfully pass the DMR-QA Study 40 analysis.
- Prepare for potential Wastewater Laboratory certification.
- Streamline services for new and potential industrial customers.
- Maintain a good rapport with all industrial users.
- Increase quality control measures for grease control equipment services.
- Explore new methods to reduce F.O.G. accumulations in the collections system.
- Improve preventative and predictive maintenance measures.
- Install additional irrigation units at the Coleman and Jordan farms.

KEY PERFORMANCE MEASURES

FY 2020



- 1,000+ Trips to the Landfill
- 20,000+ Tons of Biosolids Hauled
- Another – ACCIDENT FREE - year


Sewer Division Operating Expenses, $8.65M
Repurified System Expenses, 474,000 , 5%
Sewer Plant Administration, 931,500 , 11%
Sewer Disposal,…
Sewer Collections Operations, 2,203,400 , 25%
Sewer Rehabilitation, 162,000 , 2%
Sewer Pump Stations, 916,500 , 11%
Sewer Treatment Operations, 2,924,000 , 34%
Sewer Ind Surv Personnel, 327,300 , 4%
Sewer Private Laterals, - , 0%

DEBT SERVICE (CAPITAL OUTLAY)

Murfreesboro has two outstanding loans issued through the variable rate debt program managed by the Tennessee Municipal Bond Fund. Loan ID 50279 has a budgeted debt service of $578K in FY2021, with loan maturity in FY2023. Loan ID 50368 has a budgeted debt service of $2.8M for FY2021, with loan maturity in FY2027. The two variable rate obligations total approximately $20.3 million and represent 24% of the Department's current outstanding debt at June 30, 2020. At the time of MWRD budget preparation, the City of Murfreesboro is in the process of refinancing these variable rate loans with fixed rate financing, thereby eliminating the potential volatility of the variable rate loans.

The Department has two Revenue and Tax Bond (2013 & 2016C) issues. The 2013 issue has annual debt service of $3.8M through FY2021. The 2016C issue has annual debt service of $3.1M through FY2026. Tax and Revenue Bond debts total $17.99M at June 30, 2020, representing approximately 21% of the Department's debt.

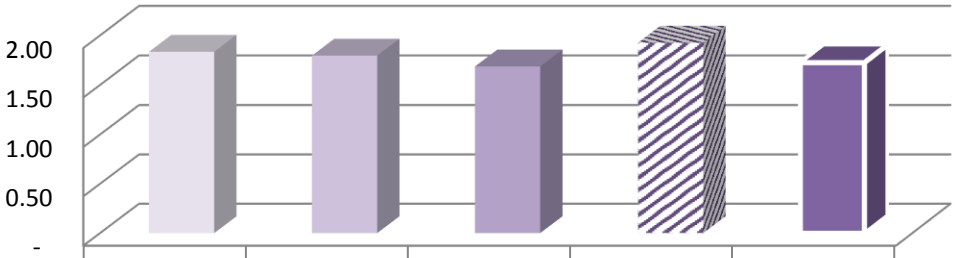
The Department entered into three Clean Water, State Revolving Fund (SRF) Loan agreements in the fall of 2012 (see table below). Loans 2012-306, 2013-317 and 2012-303 totaled $37 million in available proceeds. Debt forgiveness on the loans totaled $2.87 million, resulting in a maximum of $34.13 million in debt. Interest is at 1.01%. Final loan proceeds were approximately $24.2 million. Loan 2013-317 has an annual debt service of $199K through FY2035. Loans 2012-306 and 2012-303 have a combined annual debt service of $1.1M through FY2036.

On October 9, 2014 the Department was awarded $4,000,000 and $32,500,000 SRF loans for the expansion of the Sinking Creek Wastewater Treatment Plant from 16.0 MGD to 24.0 MGD (see table below). The loans are 20-year term with a fixed interest rate of 1.38%. The $4 million loan has an annual debt service of $228K through FY2036. The $32.5M loan was amortized in November 2017, with a final loan amount of $29.7M and an annual debt service of $1.69M through FY2038.

State of Tennessee SRF loans account for approximately $48M in debt at June 2020, representing 55% of the Department's debt.

One of MWRD's financial policies is to maintain a Debt Coverage Ratio (funds available for debt coverage divided by capital outlay) of 1.2 or greater. The following graph is a summary of MWRD's FY20 Debt Coverage Ratio summary:

DEBT COVERAGE RATIO

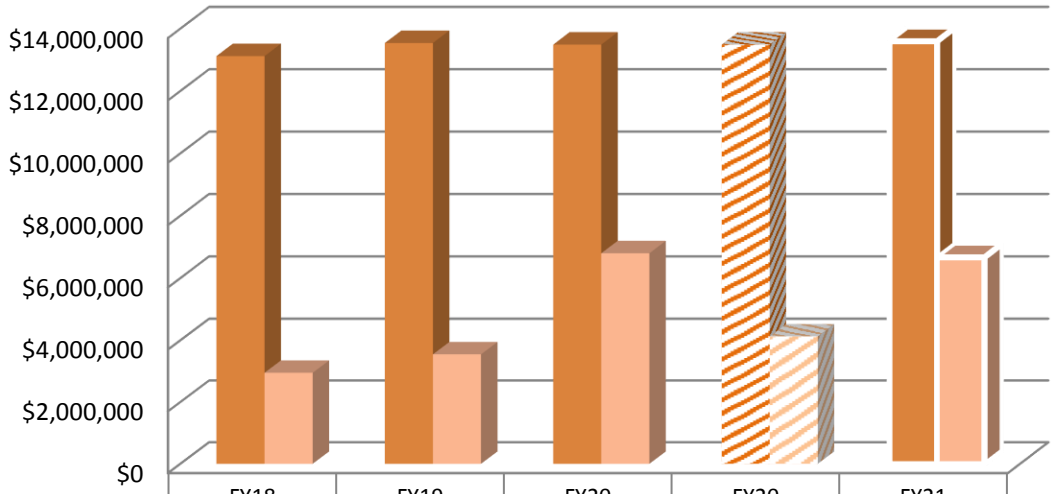


	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
DCR (Goal = >1.2)	1.83	1.80	1.69	1.93	1.72

MURFREESBORO WATER RESOURCES DEPARTMENT
FY21 BUDGET

DEBT SERVICE	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
BOND DEBT SERVICE	-	-	-	-	-
INTEREST EXP TMBF 2003	55,803	57,238	60,000	60,000	60,000
INTEREST EXP TML 2006	457,095	510,343	520,000	520,000	520,000
INTEREST EXP 2009 REFUND	242,250	123,750	-	-	-
INTEREST EXP 2013 REFUNDING	191,792	145,279	97,464	97,464	49,100
INTEREST EXP 2016 REFUNDING	662,000	657,000	652,000	652,000	528,500
INTEREST SRF 2012-303 PS	68,292	64,836	61,344	61,344	57,900
INTEREST SRF 2013-317 FM	31,248	29,544	27,828	27,828	26,100
INTEREST SRF 2012-306 HW	118,596	112,584	106,524	106,524	100,500
INTEREST SRF 2016 4D #1	50,412	47,904	45,384	45,384	42,900
INTEREST SRF 2016 4D #2	415,652	396,222	370,188	370,188	351,700
PRINCIPAL TML 2003	471,000	486,000	502,000	502,000	518,000
PRINCIPAL TML SERIES 2006	2,051,000	2,144,000	2,240,000	2,240,000	2,341,000
REVENUE AND TAX BOND 2009	2,370,000	2,370,000	-	-	-
PRINCIPAL 2013 REFUNDING	3,600,000	3,650,000	3,695,000	3,695,000	3,745,000
PRINCIPAL 2016 REFUNDING	100,000	100,000	2,470,000	2,470,000	2,585,000
PRINCIPAL SRF 2012-303 PUMP ST	340,932	344,112	347,328	347,328	350,600
PRINCIPAL SRF 2013-317 FORCE MN	168,552	170,124	171,708	171,708	173,400
PRINCIPAL SRF 2012-306 HEADWORKS	591,972	597,504	603,084	603,084	608,800
PRINCIPAL SRF 2016 4D #1	179,748	182,100	184,476	184,476	186,900
PRINCIPAL SRF 2016 4D #2	952,792	1,350,360	1,333,992	1,333,992	1,351,500
DEBT SERVICE	**13,119,136**	**13,538,900**	**13,488,320**	**13,488,320**	**13,596,900**

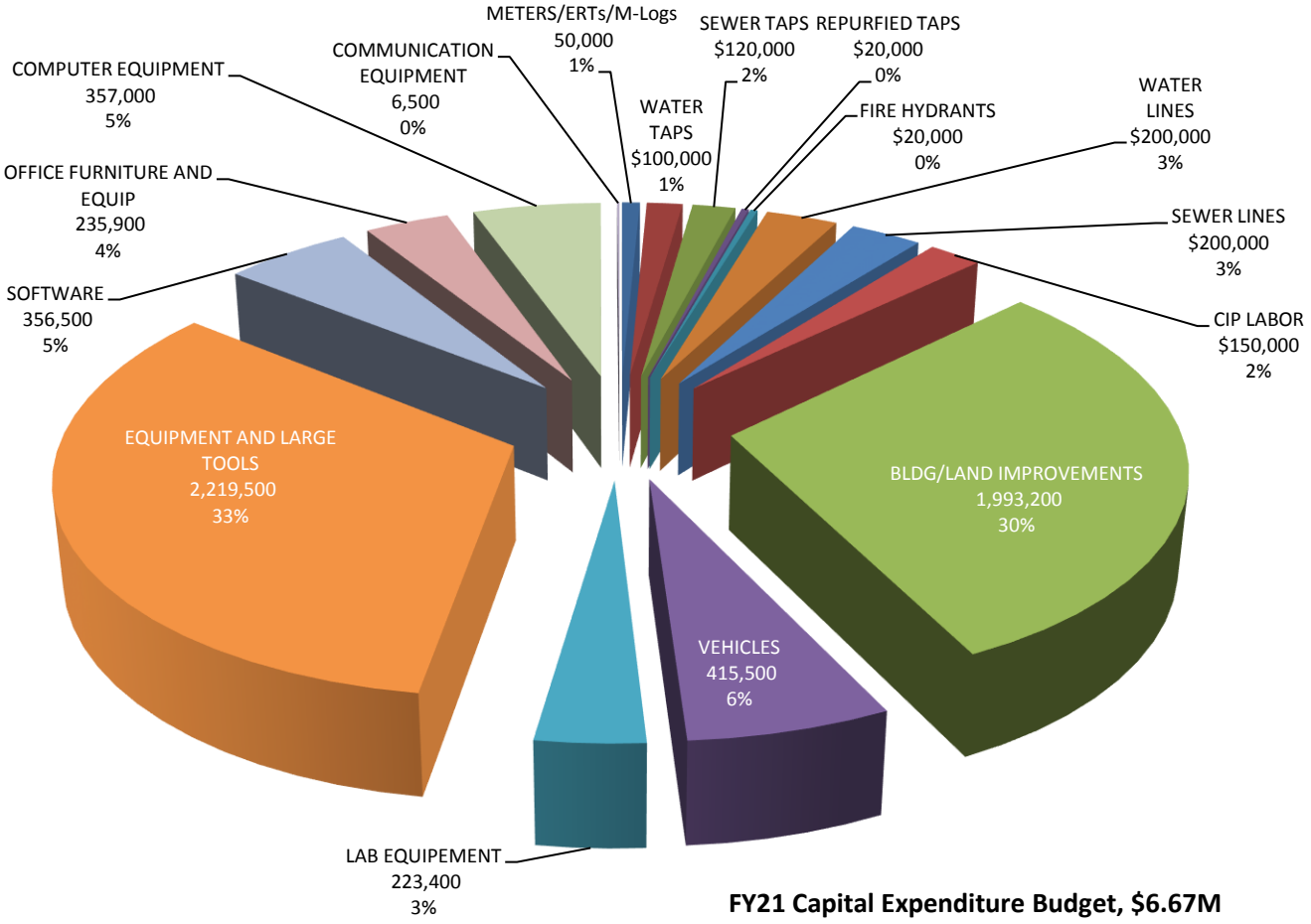
CAPITAL OUTLAY (DEBT SERVICE) & CAPITAL EXPENDITURES



	FY18 ACTUAL	FY19 ACTUAL	FY20 BUDGET	FY20 PROJECTION	FY21 BUDGET
DEBT SERVICE	$13,119,136	$13,538,900	$13,488,320	$13,488,320	$13,596,900
CAPITAL EXPENDITURES	$2,947,643	$3,546,406	$6,797,741	$4,128,439	$6,667,500

RATE FUNDED CAPITAL EXPENDITURES

Rate Funded Capital Expenditures are infrastructure and equipment that is funded from the user rates. It includes vehicles replacement, treatment equipment, water meters, fire hydrants, and allowances for water, sewer and sewer rehabilitation projects constructed with Department crews. The goal is to annually fund over $5.0M in Rate Funded Capital Expenditures.



FY21 Capital Expenditure Budget, $6.67M

WORKING CAPITAL RESERVES

Working Capital is Department cash available to fund Department projects less any secured cash reserves and after obligations in various work orders.

MWRD is projecting $48.98M in Operating Cash available to pay for capital projects as of March 31, 2020. "Available" funds are those funds designated above that has been committed to current or pending projects and above the secured twelve (12) month minimum balance of operating and maintenance expenses.

EFFECTIVE UTILITY MANAGEMENT

Financial Viability

MWRD WORKING CAPITAL ACCOUNT SUMMARY

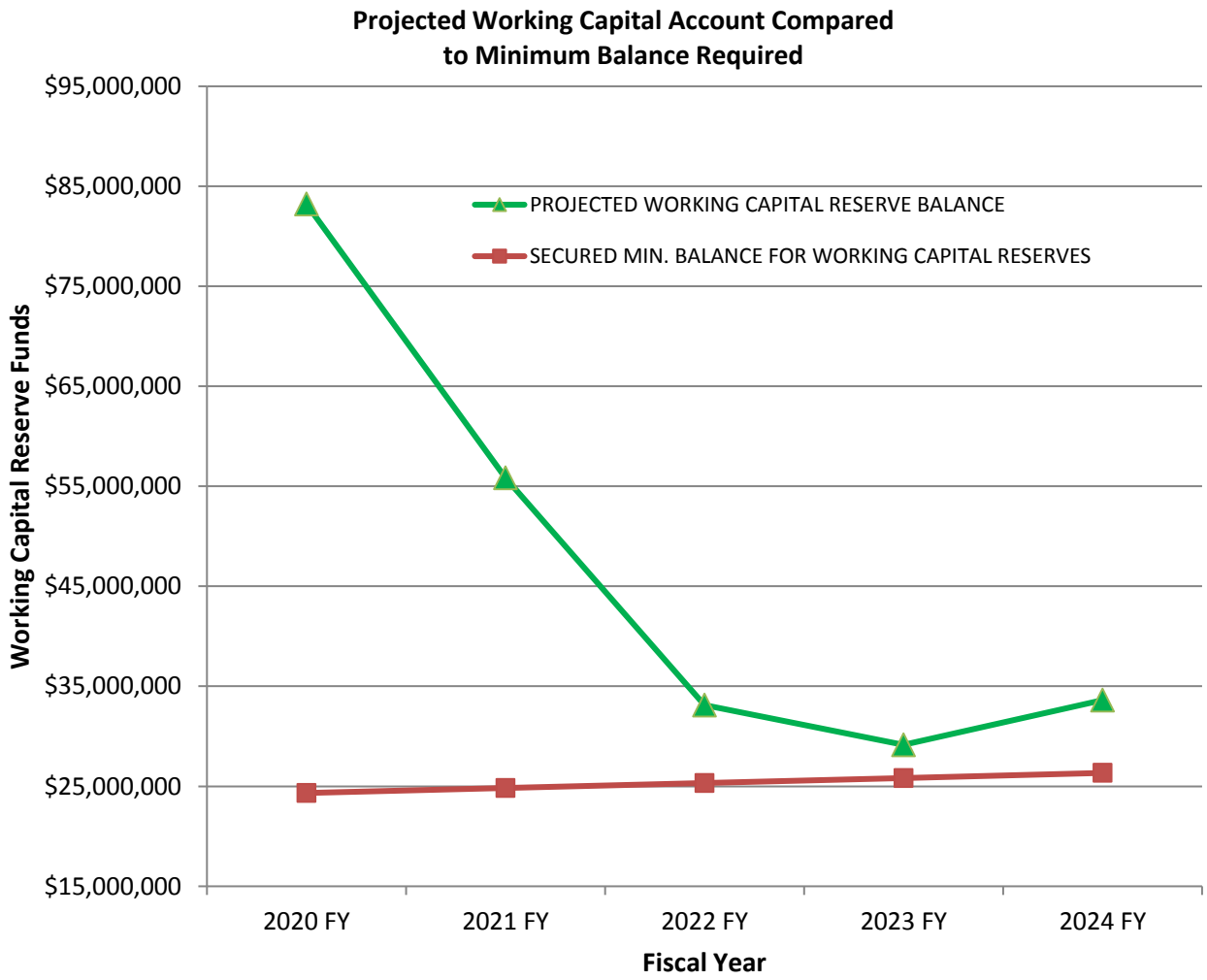
ESTIMATED Working Capital at 3/31/20		
Board Designated (System Dev, Assessments, etc) as of 6/30/19	$ 34,445,773	
Undesignated Excess Funds as of 6/30/19	48,028,398	
Estimated Reserve Revenue thru 12/31/19	5,513,624	
Estimated Reserve Expenditures thru 12/31/19	(3,405,718)	
		$ 84,582,077
COMMITTED Reserves at 3/24/20		**$ 11,042,061**
BALANCE of Working Capital at 4/28/20 after COMMITMENTS		**$ 73,310,216**
ESTIMATED UNCOMMITTED Working Capital Reserves as of April 28, 2020		**$ 73,310,216**
SECURED FY19-20 Operating and Maintenance Expenses		**$ 24,331,276**
UNASSIGNED Working Capital Funds (Est. Uncommitted - Secured)		**$ 48,978,940**

Outstanding commitments in work orders approved by the Board and Council to be funded from obligations of existing Secured Cash in the amount of approximately $11.04M.

The Board adopted a policy to keep an equivalent of one-year operating expense as a secured reserve. For FY21 this minimum balance will be $24,363,800. This results in an increase of $32,524 and reduces the estimated available cash (working capital) for future projects to $48,946,416. The following table shows a pro forma forecast of the available working capital fund through FY24 based on projected tap revenue, sinking fund revenue from rates, enhanced AMI revenue and anticipated projects funded with cash on hand (i.e., working capital reserves).

SECURED AND OPERATING CASH

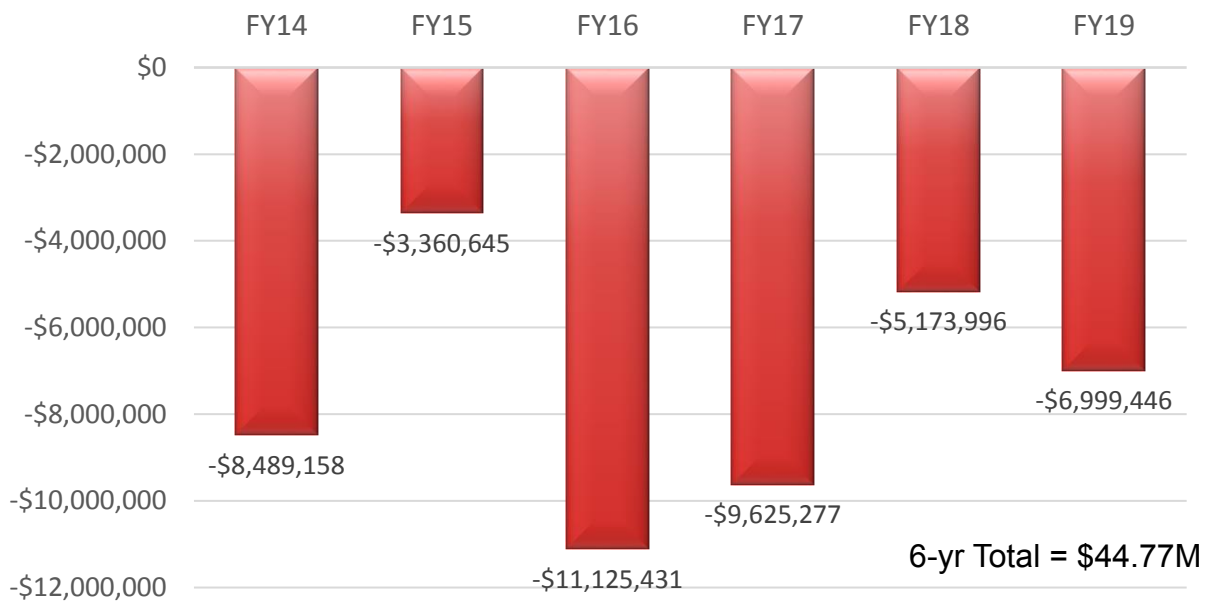
PROJECT	2019-2020 2020 FY	2020-2021 2021 FY	2021-2022 2022 FY	2022-2023 2023 FY	2023-2024 2024 FY
PROJECTED RESERVE FUND BALANCE REVENUE (TAPS)	$8,000,000	$7,650,000	$7,650,000	$7,650,000	$7,650,000
SINKING FUND DEPOSITS TO RESERVES FROM RATES	$2,375,000	$3,375,000	$2,375,000	$2,375,000	$2,375,000
SECURED MIN. BALANCE FOR WORKING CAPITAL RESERVES	$24,331,276	$24,363,800	$24,851,076	$25,348,098	$25,855,059
PROJECTED WORKING CAPITAL RESERVE BALANCE	$83,220,668	$55,995,668	$33,420,668	$29,595,668	$34,220,668
FUNDS ABOVE SECURED MINIMUM BALANCE	**$58,889,392**	**$31,631,868**	**$8,569,592**	**$4,247,570**	**$8,365,609**



The following table itemizes the capital projects anticipated to be funded with the Department's working capital reserves (i.e., cash on hand).

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 Rehabiliation - 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**

Reserve Expenditure Totals FY14-FY19



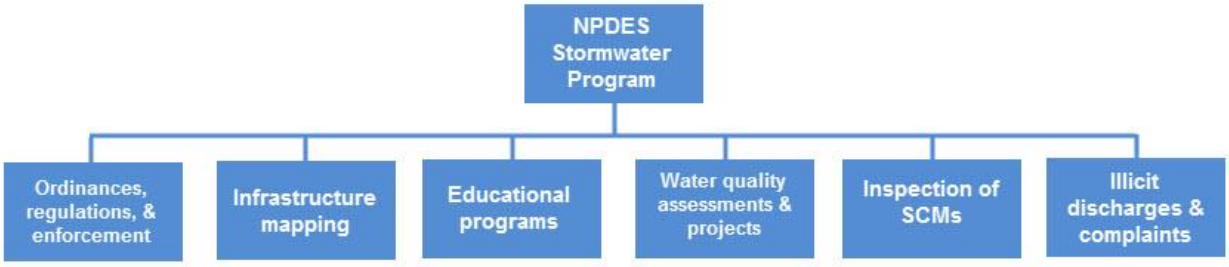
Reserve Balance Trend FY14-FY19

STORMWATER

DEPARTMENT SUMMARY

The NPDES Stormwater Program refers to aspects of stormwater management required under a Federally mandated and State-issued National Pollutant Discharge Elimination System (NPDES) permit for the discharge of stormwater runoff from the municipal separate storm sewer system (MS4). The goal of the program is clean stormwater runoff discharged to local streams. This is accomplished through education of residents and business operators in pollution prevention, through good management of city operations, and through ordinances and requirements designed to prevent or capture pollutants in stormwater runoff both during and after construction in areas of new development and redevelopment.

ORGANIZATIONAL CHART



IMPLEMENTATION OF COUNCIL PRIORITIES

RESPONSIBLE BUDGETING

- To accomplish compliance with federal and state stormwater program standards
- To maintain, rehabilitate and improve storm sewer system and maintain clean streets
- Based on monitoring of program operations, on metrics and on priorities

IMPROVE ECONOMIC DEVELOPMENT

- Promote green infrastructure (vegetation) as part of stormwater quality management practices
- Provide flexibility in development standards as allowed under NPDES regulations
- Continue to streamline administrative and field procedures, providing clarity and simplicity

ESTABLISH STRONG CITY BRAND

- Clearly stated and communicated ordinances and standards
- Clear and understandable forms and submittal requirements for development projects
- Web-based and social media news, stories, and information on the City's stormwater program

EXPAND INFRASTRUCTURE

- Retrofits to City's stormwater system that capture pollution to prevent entry to streams
- Stormwater quality standards that encourage simple, practicable and long-term reliable stormwater management designs

MAINTAIN PUBLIC SAFETY

- Educate the public on stormwater pollution prevention (oils, litter, herbicides, pet waste)
- Monitor, and develop strategies to improve, water quality of local streams
- Maintain integrity of storm sewer system
- Prompt response and resolution of complaints and functional problems

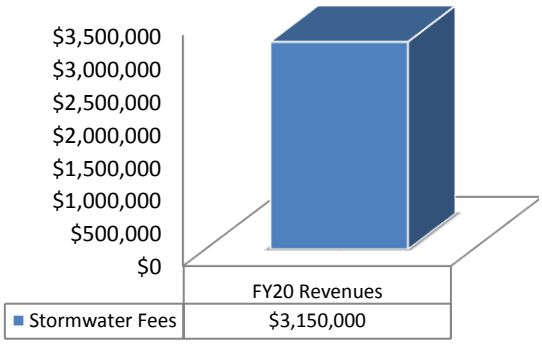
FY 2021 DEPARTMENT GOALS

- Update stormwater ordinance to comply with current TDEC standards and 2019 TDEC audit (erosion and sediment control, stream buffers, post-construction runoff standards)
- Enforcement response policy and procedures to 90% complete
- Progress on retrofitting places in downtown area with stormwater rain gardens (curb extensions, planter boxes); involve stakeholders and potential maintenance partners
- Continued inspection of installation of stormwater control measures so that standards are met
- To reach a total of 125 inspections of existing stormwater control measures
- Continued mapping and improving of stormwater GIS database
- Formulate and submit proposal for a Green Grants program
- Create check list for assessing the value of hydrologic features on undeveloped land
- Stormwater management plan (SWMP) to 90% complete

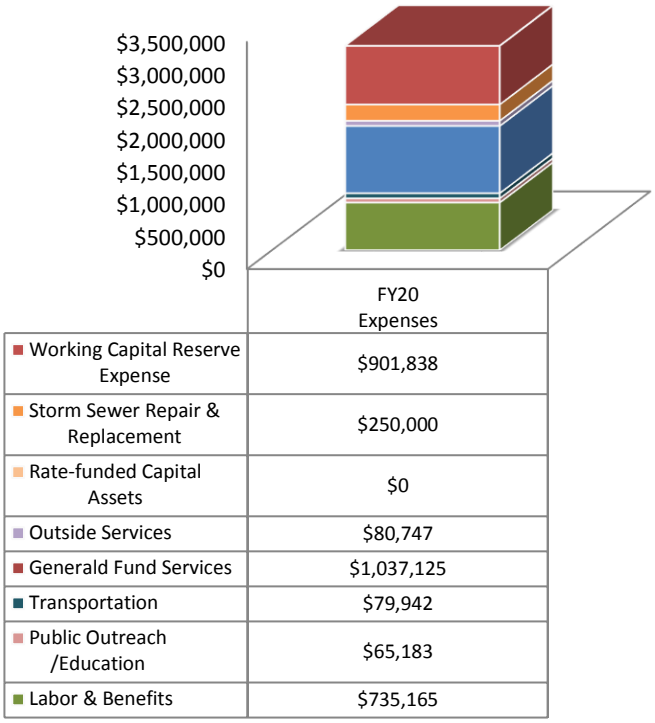
BENCHMARKING MEASURES

- Operational counts (e.g., number of plans, permits, agreements, inspections; elimination of illicit discharges; and quantities of sediment removed from system)
- Number of persons reached and contacted with education on water resources and stormwater
- Water quality measurements from sampling of streams (chemical, biological, habitat)
- Reduction of errors and unnecessary steps in administrative processes

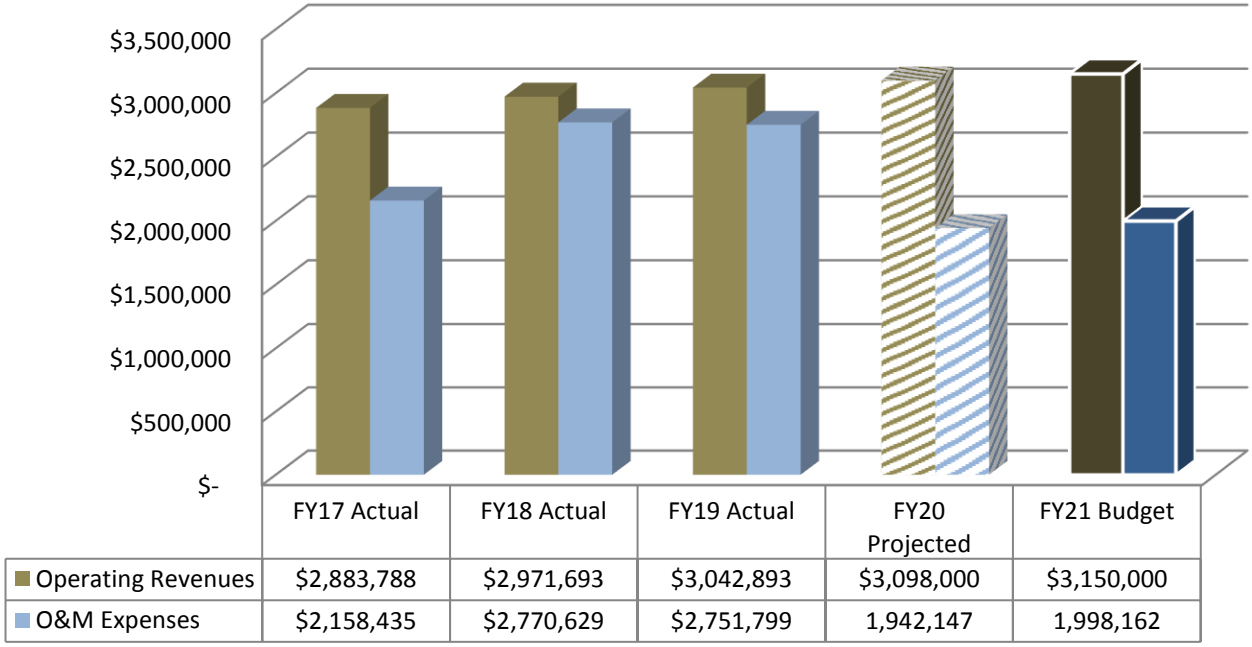
FY21 Revenues, $3.15M



FY21 Expenses, $3.15M



Stormwater Revenues & Expenses



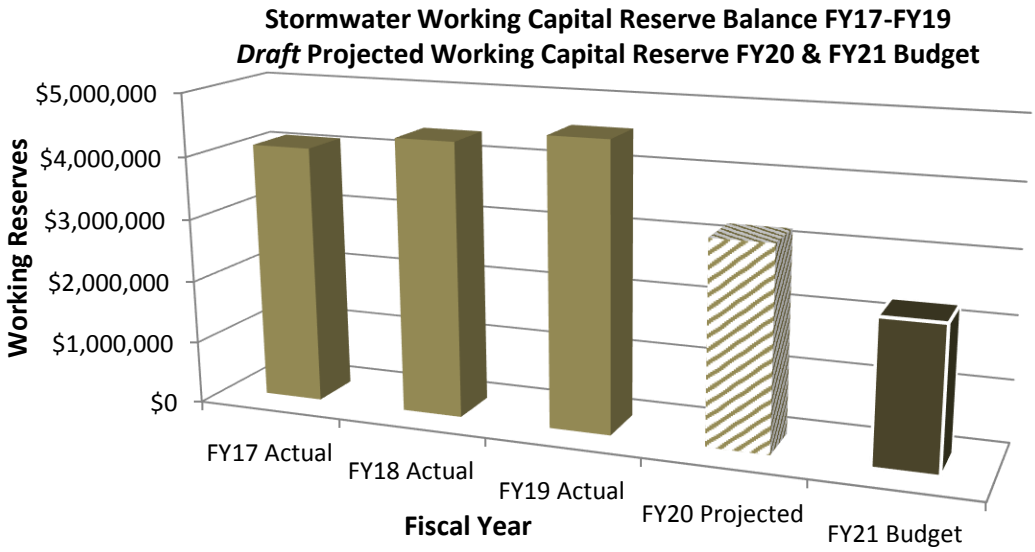
Preliminary Draft STORMWATER FUND
FY21 Budget
FY20 Projected, FY22-FY24 Pro Forma

	FY20 Projected	FY21 Budget	FY22 Pro Forma	FY23 Pro Forma	FY24 Pro Forma
REVENUE					
Stormwater Fees	$3,098,000	$3,150,000	$3,100,000	$3,150,000	$3,150,000
EXPENDITURES					
Labor	$484,193	$498,719	$513,681	$529,091	$544,964
Taxes/Benefits	$229,559	$236,446	$243,539	$250,845	$258,371
City Reimbursement - Engineering	$469,873	$483,969	$498,488	$513,442	$528,846
City Reimbursement - Legal	$25,000	$25,000	$25,000	$25,000	$25,000
City Reimbursement - Street Dept.	$512,773	$528,156	$544,000	$560,320	$577,130
City Reimbursement - Other	$0	$0	$0	$0	$0
Consulting Services - MTSU	$50,000	$50,000	$50,000	$50,000	$50,000
Consulting - Other	$29,851	$30,747	$31,669	$32,619	$33,598
Transportation	$77,613	$79,942	$82,340	$84,810	$87,355
Public Outreach/Adv	$20,299	$20,908	$21,535	$22,181	$22,847
Other Expenses	$42,986	$44,275	$45,604	$46,972	$48,381
Total Operating Expenses	$1,942,147	$1,998,162	$2,055,857	$2,115,282	$2,176,491
Rate-funded Capital Assets	$215,000	$0	$350,000	$350,000	$350,000
Storm Sewer Repair & Replacement	$250,000	$250,000	$250,000	$250,000	$250,000
TOTAL EXPENDITURES	$2,407,147	$2,248,162	$2,655,857	$2,715,282	$2,776,491
EXCESS REVENUES	$690,853	$901,838	$444,143	$434,718	$373,509
WORKING CAPITAL RESERVES					
Beginning Balance	$4,562,058	$3,217,911	$2,279,749	$2,133,893	$2,243,610
Additions	$690,853	$901,838	$444,143	$434,718	$373,509
Deductions - CIP	-$2,035,000	-$1,840,000	-$590,000	-$325,000	-$325,000
Deductions - Participation	$0	$0	$0	$0	$0
Ending Balance	$3,217,911	$2,279,749	$2,133,893	$2,243,610	$2,292,120
3 mos Reserved Operating Expenses	$485,537	$499,540	$513,964	$528,821	$544,123

CAPITAL IMPROVEMENTS – STORMWATER

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

NO.	PROJECT	Originator	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	TOTAL
			2020 FY	2021 FY	2022 FY	2023 FY	2024 FY	
			Projected	*Budget*	*Pro Forma*	*Pro Forma*	*Pro Forma*	
	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**



SYSTEM INFRASTRUCTURE REPORT 3/31/20

The following are totals of System features whose locations have been collected with GPS and moved to their correct location in GIS.

Water Distribution System

Feature	Count	# GPS Located	% Located
Meters	27,276	27,276	100%
MWRD Hydrants	3,514	3,514	100%
Valves	9,727	9,424	96.9%
Blowoffs	489	459	93.9%
CUD Hydrants	2,828	2,828	100%
CUD Hydrant Valves	2,756	2,756	100%
Totals	**46,590**	**46,257**	**99.3%**

Water Line Footage: 447.15 miles

The majority of the water lines are 8" or greater (339.44 mi. or 75.9%) and the majority are made of PVC or Ductile Iron (332.25 mi. or 74.3%) Water Service Area = 35.61 mi²

Sewer Collection System

Feature	Count	# GPS Located	% Located
Manholes	16,121	16,083	99.8%
Pumpstations	42	42	100.0%
Cleanouts	40,023	33,171	82.9%
Industrial Monitors	21	20	95.2%
Totals	**56,207**	**49,316**	**87.7%**

Gravity Sewer Footage: 648.90 miles
Force Main Footage: 36.18 miles

The majority of the gravity sewer lines are 8" or greater (646.46 mi. or 99.6%) and are made of PVC or Ductile Iron (567.86 mi. or 87.5%)

Reclaimed Water System

Feature	Count	# GPS Located	% Located
Valves	291	290	99.7%
Meters	181	181	100%
Totals	**472**	**471**	**99.8%**

Reclaimed Water Line Footage: 27.26 miles

Storm-Water Collection System

Feature	Count	# GPS Located	% Located
Junction Boxes	16,765	16,575	98.9%
Headwalls / Wingwalls	6,972	6,881	98.7%
Discharge Points	679	620	91.3%
Detention Basins	529	490	92.6%
Totals	**24,945**	**24,566**	**98.5%**

Storm Water Collection Footage: 704.84 miles and consists of 367.63 miles of Conduit flow; 331.61 miles of Open Channel flow; and 6.60 miles of Culvert flow

General Totals for the Past Month (March)

41– Construction Plans/Plats/DVDs submitted for approval (New Plans & Revisions)

4 – ACA's sent (construction project finalized)

Murfreesboro Water and Sewer / Stormwater
Capital Budget 2020-2021

DESCRIPTION	FY21 BUDGET
METERS/ERTs/M-Logs	50,000
WATER TAPS	100,000
SEWER TAPS	120,000
REPURFIED TAPS	20,000
FIRE HYDRANTS	20,000
WATER LINES	200,000
SEWER LINES	200,000
SEWER REHAB CONSTRUCTION	
CIP LABOR	150,000
Subtotal	**860,000**
STEP SYSTEM	
STEP Equipment	-
	-
WATER	
Structures & Improvements	929,200
Land Improvements	104,000
Lab Equipment	73,500
Meters / Meter Vaults	-
Office Furniture & Equipment	176,400
Computer Equipment	13,000
Software	181,000
Vehicles	-
Equipment & Large Tools	729,000
Communication Equipment	1,500
Subtotal	**2,207,600**
WASTEWATER	
Structures & Improvements	707,000
Land Improvements	9,000
Lab Equipment	149,900
Office Furniture & Equipment	12,000
Computer Equipment	169,500
Software	39,000

DESCRIPTION	FY21 BUDGET
Vehicles	155,500
Equipment & Large Tools	1,042,500
Communication Equipment	5,000
Subtotal	**2,289,400**
REUSE	
Computer Equipment	
Equipment & Large Tools	104,000
Subtotal	**104,000**
O&M	
Structures & Improvements	229,000
Land Improvements	10,000
Office Furniture & Equipment	11,000
Computer Equipment	86,000
Software	-
Vehicles	225,000
Equipment & Large Tools	327,600
Communication Equipment	-
Subtotal	**888,600**
AMI	
Structures & Improvements	-
Office Furniture & Equipment	-
Computer Equipment	3,500
Vehicles	35,000
Equipment & Large Tools	13,000
Communication Equipment	-
Subtotal	**51,500**
CUSTOMER SERVICE	
Office Furniture & Equipment	24,000
Computer Equipment	23,000
Software	60,000
Communication Equipment	
Subtotal	**107,000**
ENGINEERING	
Structures & Improvements	5,000

DESCRIPTION	FY21 BUDGET
Office Furniture & Equipment	3,500
Computer Equipment	41,500
Software	10,000
Vehicles	-
Equipment & Large Tools	3,400
Communication Equipment	-
Subtotal	**63,400**
INSPECTORS	
Office Furniture & Equipment	-
Computer Equipment	-
Vehicles	-
	-
ADMIN	
Office Furniture & Equipment	9,000
Computer Equipment	20,500
Software	66,500
Communication Equipment	-
Subtotal	**96,000**
TOTAL	**6,667,500**

DETAILED BUDGET ITEMIZATION