



2021

METROPOLITAN SEWER DISTRICT OF GREATER CINCINNATI

OPERATING BUDGET REQUEST

December 17, 2020

Hamilton County

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- Commissioner Stephanie Summerow Dumas, Vice-President
- Commissioner Victoria Parks
- Jeff Aluotto, County Administrator



City of Cincinnati

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- Ian McCoy, Information Technology Division Manager
- Andy Rossiter, Wastewater Treatment Superintendent
- Jennifer Richmond, Wastewater Collection Superintendent
- Reese Johnson, Compliance Services Superintendent
- Melissa Niehaus, Watershed Operations Superintendent



MISSION STATEMENT

MSD collects, treats, and manages wastewater from Greater Cincinnati communities, protecting the environment and public health by returning clean water to local rivers and streams.



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From the Director



I am pleased to deliver the draft MSD 2021 Operating Budget Request. The primary purpose of this budget document is to share detailed financial information and operational necessities to support a budget that is in alignment with industry standards for the safe and effective treatment of wastewater and that meets the level of service expectations of our customers and ratepayers. This document also discusses 2021 projected revenues and expenditures and as well as longer-term strategic initiatives.

Each year, early in the second quarter, MSD managers and budget analysts begin identifying the needs for the upcoming year. Through this process, MSD identifies all non-discretionary budget items and carefully weighs future needs to achieve MSD's mission.

Both the Operating and Capital budgets are a compilation of many months of preparation and planning. Internal reviews are conducted to ensure the budgets are well developed and in alignment with industry standards. Strategic goals, performance measures, and compliance requirements are reviewed, and the recommendations are vetted before being incorporated into the budget request. The budget document highlights efforts from the last year as well as priorities for the new year; many of the "new initiatives" are outgrowths from an internally focused MSD Strategic Plan. This pursuit led to the identification and prioritization of goals, and the team created a framework in the areas of customer service, innovation, compliance, public outreach, workforce culture, and internal communication and collaboration. MSD will be working to improve its performance in each area once the plan is finalized into action items. The strategic planning process also included a review and update to MSD's mission, vision, and values statements:

Mission

MSD collects, treats, and manages wastewater from Greater Cincinnati communities, protecting the environment and public health by returning clean water to local rivers and streams.

Vision

Our vision is to provide exceptional customer service to the community, delivered in a manner that is financially responsible, transparent, and cost effective to our ratepayers. As a public utility, MSD is dedicated to organizational and operational excellence.

Values

MSD subscribes to the following values:

- To be Accountable
- To be Ethical
- To be Respectful
- To act with Integrity
- To serve as Stewards of the Environment and Public Health

MSD is committed to continued refinement of this draft budget request and has been available to meet with the Board of County Commissioners (BOCC) and/or County Administration. The MSD public hearing to formally present the recommended budget to the public and the BOCC is Dec. 3rd & 10th. We look forward to an engaging and thorough discussion over the next several months to achieve alignment on the 2021 budget.

Respectfully submitted,

A handwritten signature in blue ink that reads "Diana Christy". The signature is fluid and cursive.

Diana Christy
Executive Director

Kudos & Praise

Going Above and Beyond



I called and talked to a "Brian" and I want your company to know that this gentleman **went far beyond customer service to me.**

He told me he would check and get back and he did just that. was very nice and helpful to me all the way.

Unfortunately he couldn't totally change the decision but just the fact that he took all that time and called me back I just want to say **thank you so much and tell the company what a great employee they have in that gentleman. Not many people seem to go the extra mile anymore.. Please tell him how much I appreciated all he did..!!**

I want to let you know how thankful my family and I were to have one of your crews conduct themselves so professionally as they immediately took action to help resolve the sewage issue in Northside. **Mike Ellis, Willie, Dan, Erica (and probably several others I can't recall) worked tirelessly yet enthusiastically throughout the afternoon and into the night to resolve the issue. You would have been proud to see these hardworking men and women give their all to do their jobs quite expertly to help out a family they'd never met. I, for one, will be spreading the good word about the fine folks out as MSD who clearly know the meaning of a job well done.**

Here's to all the professionals down at MSD. Hip, hip huzzah to you!

I am writing to comment on the **high professionalism of the team that came in response to the sewer back-up at my house.**

When I reported the sewer back up on the phone, **the response team came to my place very fast. They were courteous and knowledgeable and provided me with excellent advice. They quickly located the sewer map for my property and provided me with needed information.** The next day they returned to examine?? the sewer with a camera and again helped me understand my options and next steps.

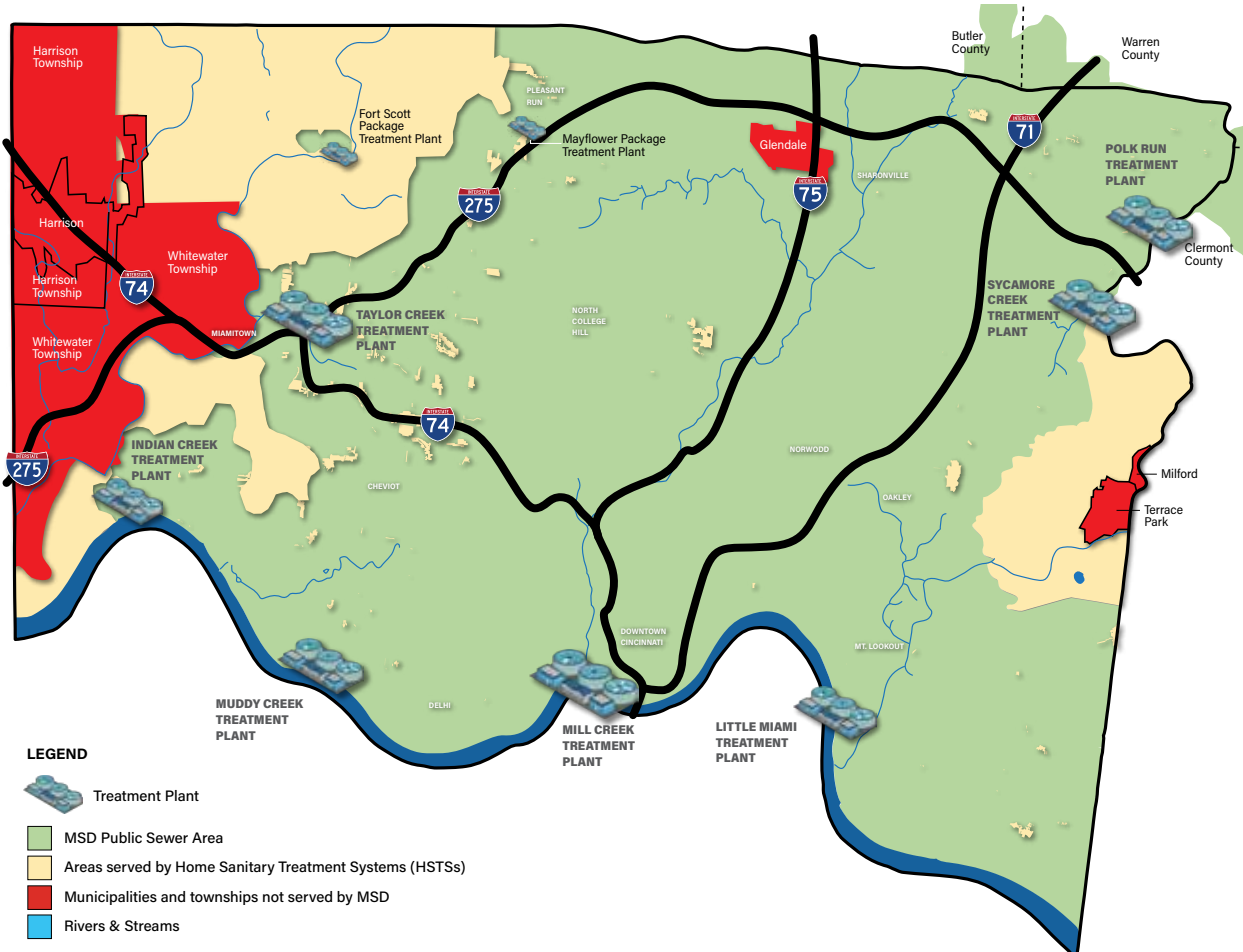


A customer contacted MSD because he had dropped his cell phone in storm inlet. **The Customer Service crew of Jeff Greene and Reggie Gray responded and found that the phone was not on the bottom of the inlet and had apparently slid down the outlet pipe. Jeff then dove the nearby manhole and was able to retrieve the customer's cell phone from the pipe.** Check out the customer's reaction when Jeff emerged from the manhole with the phone in the attached video. Jeff and Reggie probably do not get this type of reaction frequently, but they often do deserve it!

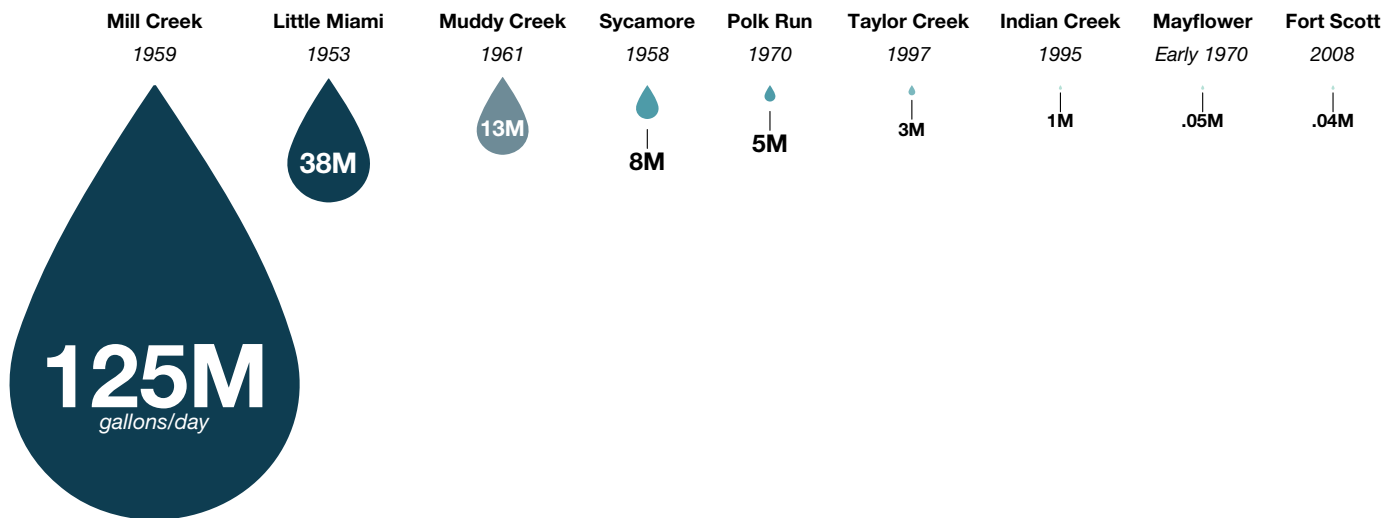
Recently, I called the Metropolitan Sewer District. My basement had water coming from the floor drain backing up into my basement. I thought possibly it had something to do with the fact that I live in an old neighborhood where most underground pipes were laid over 60 years ago. So, I called MSD. Instead of the traditional ladies voice, a recording, or a long wait, **a gentleman answered the phone with a polite smile in his voice, followed by the respect and courtesy which are not often seen or heard, today. "Yes Ma'am," "we are here to assist you". Well, within an hour there were two men working in front of my house.** They knocked on my door in uniform, identified themselves and with the same pleasant respectful voice advised me of the current MSD policies but, continued with advice as to how to correct the problem moving forward.

The problem has since been corrected. However, **the kindness and respect shown to a perfect stranger must be acknowledged. I found out the three gentlemen names and wanted their superiors to know that my one on one experience with these men were excellent and they needed to be awarded for their outstanding customer service to our community.**

"...Eric and I stood at the opened back of the truck and watched one of the BEST displays of team work imaginable. The team was: Chris Dudley, Clarence White, Lamar Reynolds and Anthony Brown. **It was evident that each team member clearly knew their role in the process of preparing the liner as well as its' installation. They worked extremely hard, and as quickly as humanly possible. You could tell that this was not their "first rodeo" together. They gave the distinct impression that they knew what each other's next step in the process was. Not a one of them "missed a beat" throughout the entire liner preparation and installation process.** When the liner had to be installed on a steep hill, Eric and I witnessed every member of the team attempting to steady the liner holder while one team member fed the liner down the hole..."



Millions of Gallons Treated Per Day



The Metropolitan Sewer District of Greater Cincinnati was formed in 1968 as a county sewer district created under Chapter 6117 of the Ohio Revised Code. On April 10, 1968, the City and the County entered into a fifty-year agreement providing for the operation of the District, which has been extended.

The District's chief responsibilities are to provide wastewater collection & treatment services to the majority of Hamilton County and small parts of Warren, Butler, and Clermont counties. The service area includes Cincinnati which is the 64th largest city in the United States, its regional wastewater system is among the largest, most sophisticated, and well run in the County.

The system serves a total service-area-population of more than 811,000 in its 290-square-mile territory. A diverse industrial base--experiencing growth in biotechnology, financial services, and health care--characterizes the economy. Hamilton County is headquarters to eight Fortune 500 companies and three Fortune 1,000 companies. Unemployment was 3.3% in December 2019 compared with the state's 3.8%. The customer base is diverse; the 10 leading water customers accounted for just 4% of fiscal 2019 sewer revenue.

The system serves approximately **226,000** commercial, industrial, residential, and multifamily accounts, as reported in the annual information statement. The collection system includes roughly 3,000 miles of sanitary and combined sewers. Nine wastewater-treatment plants have a design capacity of 225 million gallons per day (mgd). Additionally, MSD operates 9 wet weather facilities, 74 miles of storm sewers and 44 acres of green infrastructure. In 2019, approximately 2 billion gallons of combined sewage was treated at wet weather facilities and approximately 4.2 billion gallons was captured by MSD's real time control operations.



MSD Coordination with the Policy Makers

In order to provide the Policy Makers with the most accurate and up to date information, the MSD Director attends BoCC and City Council meetings. MSD also attends BoCC staff meetings or the Major Projects & Transportation Council Committee meetings to advise policymakers of issues related to the needs of the district. The MSD Director also works with the County & City Administration as needed to provide information needed to facilitate collaboration and cooperation for the benefit of the District. MSD employees are City employees.

MSDGC Background (continued)

Governance

Pursuant to the 1968 Agreement between the City and the County, the City is the sole management agency for the operation and maintenance of the sewer system, subject to the exclusive control and direction of the Board of County Commissioners (BoCC).

Hamilton County		
<p>“The Hamilton County Board of Commissioners (BoCC) which has authority and control of the sewer system of the sewer district shall remain vested in the BoCC including, but not limited to: the major responsibilities of fixing the sewerage servicecharges, adopting Rules and Regulations and approving capital improvement programs and undertaking the necessary legislation.”</p>		
City of Cincinnati		
<p>“As the sole management agency, MSD performs all things necessary to manage and operate the District in an efficient and businesslike manner, which includes the following but is not limited to:”</p>		
ENGINEERING	OPERATION & MANAGEMENT	FINANCE & ACCOUNTING
<p>“Plan, design, contract for & supervise the construction”</p>	<p>“Maintain and operate all sanitary and combined sewers/facilities; including all property”</p>	<p>“Bill and collect sewerage service charges and surcharges and other approved charges, permit fees, license fees; Receive and account for all monies”</p>
<p>“Review and approve the design and construction”</p>	<p>“Issue tap permits for all connections to all sanitary or combined sewers”</p>	<p>“Establish and maintain a cost accounting system for the sewer system”</p>
<p>“Prepare and maintain all sewer records and record drawings”</p>	<p>“Draft all necessary legislation for the sewerage facilities and submit to the BoCC for consideration and approval and/or passage”</p>	<p>“Recommend the method or methods of financing”</p>

MSDGC Background (continued)

Customer Accounts Profile

The District is estimated to be currently serving approximately 226,000 customer accounts based on 2019 billing records. District operating expenses are primarily recovered from revenues collected through a sewer service charges to meet the costs of providing wastewater service. Revenues are derived principally from sewerage service charges, excess strength surcharges, industrial pretreatment, and hauled waste disposal charges. Other revenue sources include the fees from permits and licenses, plan review and inspection fees, connection charges, interest earned from the investment of available funds and other miscellaneous sources.

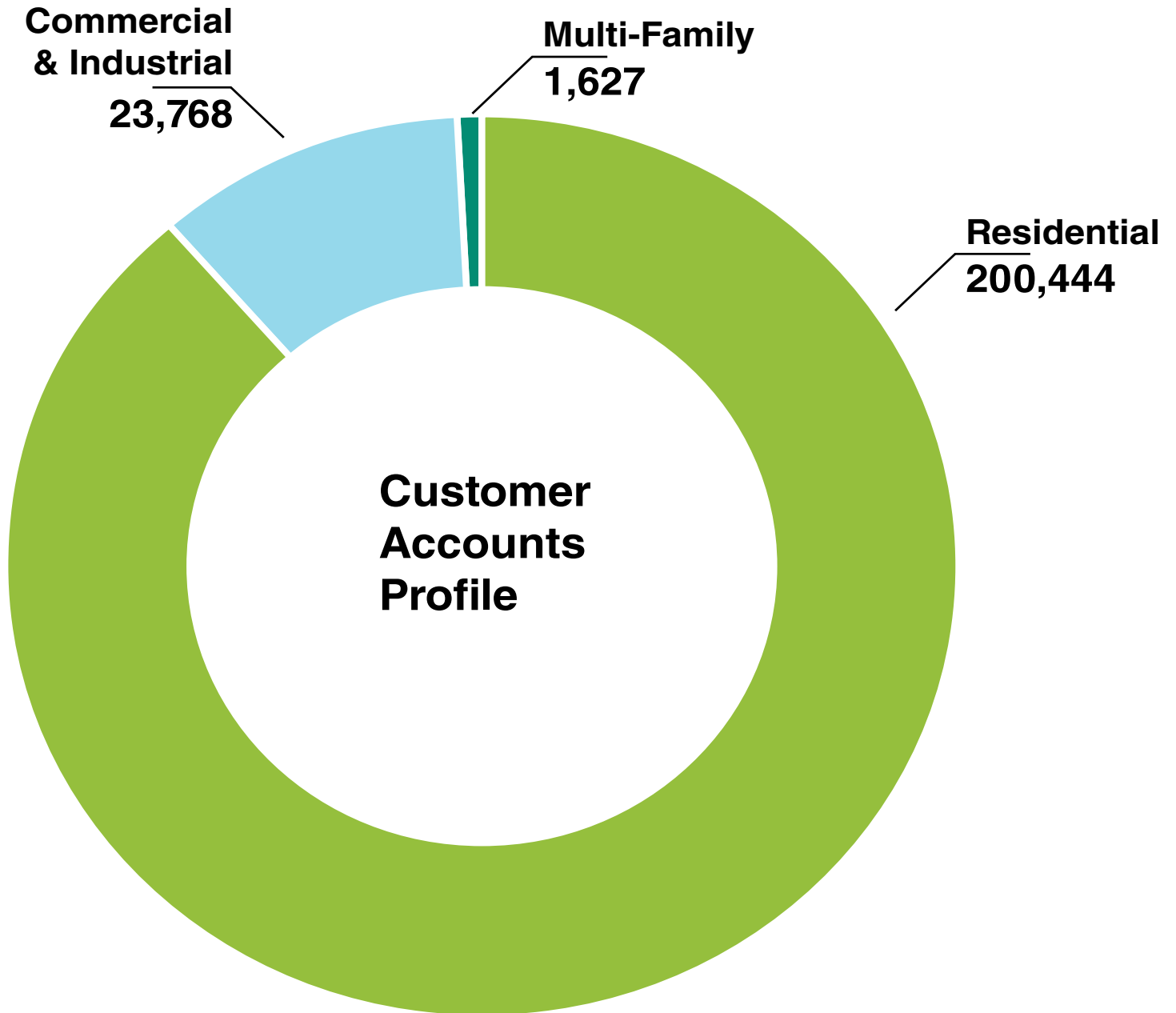
The sewer service charge is billed to customer directly through Greater Cincinnati Water Works (GCWW) for about 75% and the remaining through 9 municipalities within MSD's service area. Charges are based on waste strength, flow volume, and the number of connections. The District's annual revenue requirements consist of operation and maintenance expenses, debt service payments for existing and proposed bonds, annual equipment purchases, and the necessity to generate sufficient excess net operating revenues to maintain desired debt service coverage levels. MSD's delinquency rate is almost 3% which is slightly higher than the long term average of 2.1%.

The chart shows a listing of the largest 25 sewer users within the District's service area in 2019 by revenue collected.

CUSTOMER NAME	Total Usage (CCF) 2019
CINCINNATI METRO HOUSING	1,978,317.99
EMERY OLEOCHEMICALS LLC	1,398,860.00
GENERAL ELECTRIC	1,161,331.14
UNIVERSITY OF CINCINNATI	939,495.31
TRILLIUM PROPERTIES LLC	665,066.57
CHILDRENS HOSPITAL MEDICAL CENTER	638,546.88
PROCTER AND GAMBLE CINCINNATI PLANT	608,239.59
PROCTER AND GAMBLE	561,038.78
METROPOLITAN SEWER DISTRICT	483,120.84
RHODIA INC	440,003.37
JOHN MORRELL AND CO	412,831.94
UNIVERSITY HOSPITAL	337,422.13
GIVAUDAN FLAVORS CORPORATION	317,587.02
SAMUEL ADAMS BREWERY CO LTD	302,510.44
SUN CHEMICAL CO	293,837.39
CAREW REALTY INC	293,332.17
FATH MANAGEMENT	274,849.52
KROGER STORE	268,115.89
RRE WILLIAMSBURG HOLDINGS LLC	261,117.30
DYSTAR HILTON DAVIS INC.	257,775.92
WORNICK TR, RONALD C	238,686.00
RUMPKE SANITARY LANDFILL INC	237,396.41
GOOD SAMARITAN HOSPITAL	213,786.76
THE CHRIST HOSPITAL	210,225.97
ASPEN	208,655.81

MSD is among the top 25 consumers of potable water. MSD is implementing nonpotable water line projects which will reduce our usage and utility costs.

MSDGC Background (continued)



The District's Financial Performance

Standard & Poor's Bond rating of AA+ was affirmed for MSD in 2020. MSD's high financial performance is the result of developing and adhering to financial policies geared toward ensuring the District's continued financial strength. S&P published the general guidelines for governments which are characteristics of sound financial practices normally associated with strong credit quality. The table below demonstrates the MSD's achievement of these standards.

Top Ten S&P Management Attributes	MSD's Performance
1. An established rainy day/budget stabilization reserve.	<p>The District maintains strong liquidity, including the Operating Fund at 60 days of O&M, a construction fund with a balance that fluctuates based on anticipated near-term capital spending, and a reserve fund (Surplus Fund) with an unencumbered beginning of year balance at or above that expected by Rating Agencies for AA rated utilities</p>
2. Regular economic and revenue reviews to identify shortfalls early.	<ul style="list-style-type: none"> • Budget analysts review monthly variance reports • Quarterly Reports are prepared and discussed for both the O&M and Capital Budgets, and presented to the BOCC • Quarterly financial reports are prepared and available for review
3. Prioritized spending plans and established contingency plans for operating budgets.	<ul style="list-style-type: none"> • Annual budget process prioritizes needs • Mid-year, MSD recommends potential budget adjustments to the Board for consideration
4. A formalized capital improvement plan in order to assess future infrastructure requirements.	<ul style="list-style-type: none"> • Annual budget includes a five-year capital improvement program • CIP budget is developed through a robust prioritization process, as well as long-range financing planning to understand impact
5. Long-term planning for all liabilities of a government, including pension obligations, other post-employment benefits and other contingent obligations would be optimal and allow for assessment of future budgetary risks.	<ul style="list-style-type: none"> • Financial statements are presented on the accrual basis of accounting • Revenue and Expenses are recognized in the period earned or incurred
6. A debt affordability model in place to evaluate future debt profile.	<ul style="list-style-type: none"> • The District evaluates CIP funding options to minimize costs to customers and pursues low interest loans through OWDA whenever possible • The remainder of the capital program is funded via the reserve fund (Surplus Fund), with new revenue bond issuances secured as needed • Each year during the budget process, the District prepares a long-range financial plan, including a capital financing plan

Financial Performance (continued)

Top Ten S&P Management Attributes	MSD's Performance
7. A pay-as-you-go financing strategy as part of the operating and capital budget.	<ul style="list-style-type: none"> • The District finances the capital program through a mix of cash and debt. Strong debt service coverage provides the vehicle for cash financing of a portion of the capital program • The District's operating budget is fully funded through annual revenues
8. A multiyear financial plan in place that considers the affordability of actions or plans before they are part of the annual budget.	<ul style="list-style-type: none"> • The District prepares a long-range financial plan each year during the budget process. Plan includes the 5-year period of the CIP budget, plus 5 or more additional years to anticipate future requirements • Recommendations for revenue increases are based on: <ul style="list-style-type: none"> • Minimizing required revenue increases • Levelizing revenue increases to the extent possible • Maintain strong debt service coverage at AA-rated level • Fully fund the capital program through a mix of cash/debt that minimizes cost to customers
9. Effective management and information systems.	<ul style="list-style-type: none"> • The District uses an integrated Cincinnati Financial Systems (CFS) to record income and expense on a cash basis, and a Payroll system (CHRIS) and other program-specific systems that capture and report critical operating information
10. A well-defined and coordinated economic development strategy.	<ul style="list-style-type: none"> • Direct communication between the District and the Board is essential • The District regularly communicates with the BOCC and stakeholders regarding the District's financial decisions and the impact on District customers • The District has an established Small Business Enterprise Program • Rates need to be sufficient to maintain financial strength and resiliency to meet unanticipated needs

Source: Milwaukee MSD

Financial Performance (continued)

In association with the District's recent refunding bond issues, credit agencies reviewed & rated MSD's financial performance and outlook.

- **Standard & Poors** affirmed its AA+ rating of MSD, with a stable outlook citing: "Diverse customer base... Affordable Sewer Rates... and Operational Management Assessment view as good..."
- **Moody's Investor's Services** performed an updated credit analysis of MSDGC in February 2020. MSD was assigned a Aa2 Stable rating by Moodys citing "very large and diverse customer base....unlimited authority to establish MSD user cahrges...long, desmonstrated history of implementing rate adjustments to maintain sound debt service coverage and build health liquidity."

Financial Planning

As a clean water utility for over 50 years MSD has focused its operation on collecting and treating wastewater to reduce pollutant loadings and sewer overflows, and improving water quality throughout Hamilton County.

Despite the progress, there is more work to be done. Aging infrastructure, significant rainfall events and the sewer back up issues coupled with increasing regulatory requirements must continuously be addressed. The remaining wastewater infrastructure, capacity and water quality challenges are more difficult to solve and present our communities with higher cost burdens.

We look to address these future challenges and as clean water utility managers, we strive to be both environmental and financial stewards. We look for a balance between making necessary investments, maintaining rates that are affordable for their most financially-challenged populations, and not placing an undue burden on ratepayers more broadly.

Revenue Projections for 2021

MSD revenue is projected to be \$267 million in 2020, a decline of approx. 3% from billed volume and 15% from surcharges attributed to COVID-19. Revenues of the District required to meet the costs of providing wastewater service to customers is derived principally from sewerage service charges, excess strength surcharges, industrial pretreatment, and septic tank disposal charges. Other revenue sources include the fees from permits and licenses, plan review and inspection fees, connection charges, interest earned from the investment of available funds and other miscellaneous sources. Future revenues are predicated on a no-growth scenario.

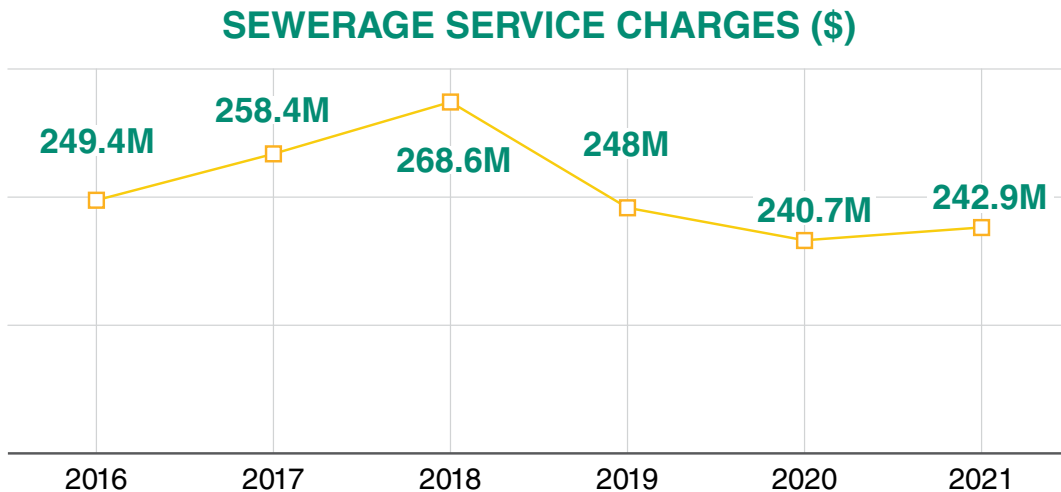
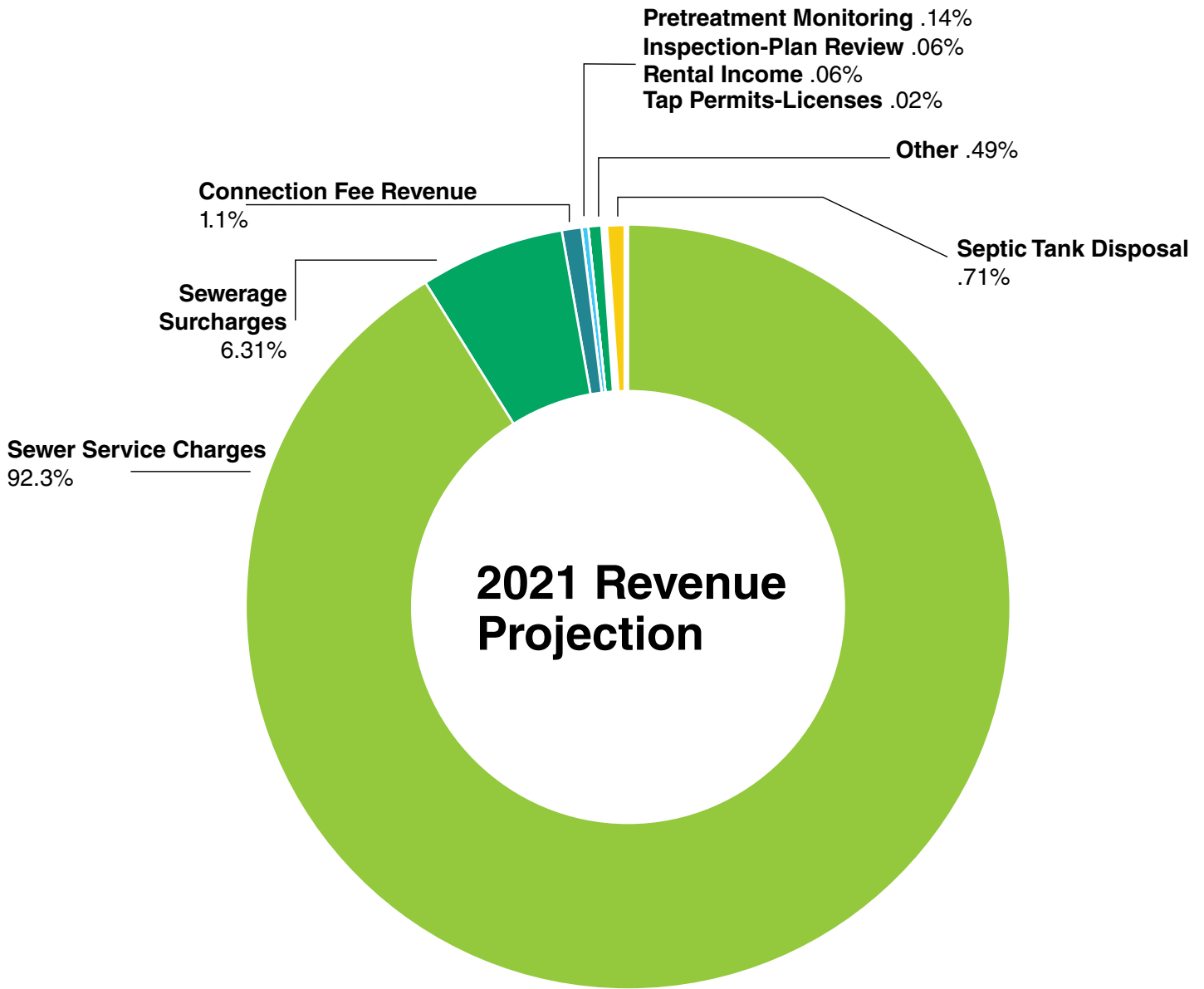
The District covers approximately 290 square miles and encompasses most of Hamilton County and part of three neighboring counties in Southwestern Ohio. MSD provides wastewater collection and treatment to the region and is estimated to currently serving approximately 226,000 customer accounts. The projected number of customers, by customer class, is based on a detailed evaluation of past trends in the number of accounts. The revenue projections assume the number of customers served by the District will remain unchanged during the study period outlined below and in the anticipated rate study.

The District has experienced a trend of declining volume per customer for many years. Declining volume has been common across the U.S., as customers install

higher efficiency appliances and have become more conservation minded. More recently, billed volume has stabilized; however, the COVID-19 Pandemic has impacted the District, with the expectation that billed revenues will be down approximately \$4.5 million in 2020 compared to budgeted revenue. The primary reason for the reduction in billed revenues is significantly lower volume from non-residential customers due to mandated shut-downs and reduced operating levels. As such, for 2020, the District is anticipating an approximate decline of 3.4% from 2019. The District is projecting a partial recovery in 2021, and further recovery in 2022 to 2019 levels. However, due to the uncertainty in the impact and duration of the pandemic, the District will continue to monitor customer billing data and revenues.

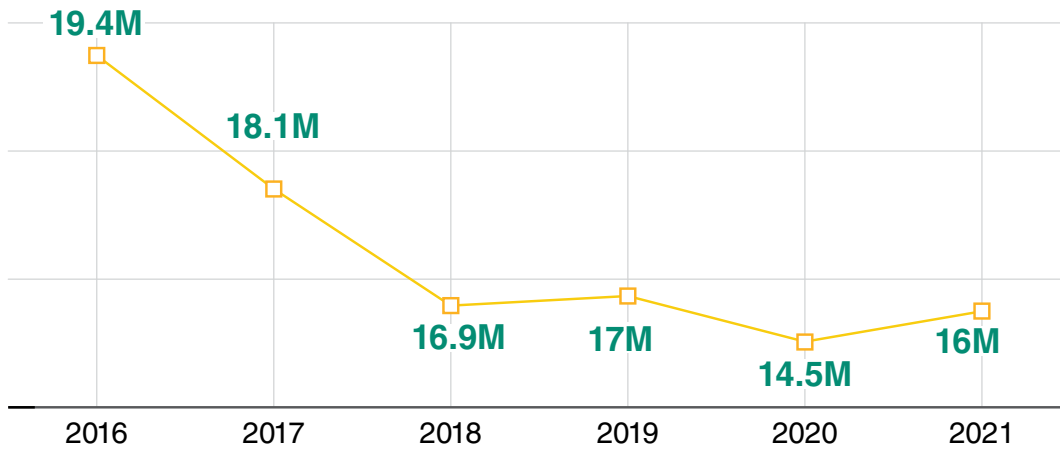
Projected revenues also reflect the District's Customer Assistance Program (CAP). As of mid-2020, MSD currently has approximately 1,700 customers in the CAP, and anticipates a reduction in 2020 revenues of approximately \$190,000. MSD expects enrollment in this program to continue to increase as MSD's outreach efforts continue, and as such, the impact on revenues will continue to grow accordingly in future years.

Revenue Source	2016	2017	2018	2019	Projection 2020	Projection 2021
Sewerage Service Charge	\$249,392,420	\$258,453,963	\$268,547,192	\$247,919,016	\$240,727,829	\$242,859,531
Sewerage Surcharges	\$19,404,753	\$17,992,210	\$16,908,706	\$17,054,508	\$14,496,332	\$15,945,965
Septic Tank Disposal	\$1,679,449	\$1,705,442	\$1,651,326	\$1,901,365	\$1,901,365	\$1,920,379
Pretreatment Monitoring	\$369,962	\$431,200	\$355,415	\$386,173	\$386,173	\$390,035
Rental Income	\$166,416	\$99,150	\$109,450	\$149,200	\$149,200	\$150,692
Tap Permits-Licenses	\$45,380	\$139,036	\$34,170	\$57,144	\$57,144	\$57,715
Inspection-Plan Review	\$154,033	\$202,460	\$153,232	\$359,022	\$153,232	\$154,764
Other	\$30,633,085	\$2,067,920	\$1,446,255	\$1,314,889	\$1,314,889	\$1,328,038
New Tap-in Charges	\$2,742,448	\$2,726,030	\$2,944,764	\$4,036,468	\$2,944,764	\$2,974,212
Interest-Trust Accounts	\$1,761,668	\$2,389,387	\$4,024,402	\$3,298,389	\$2,750,000	\$2,750,000
Build America Bond Discount					\$1,437,985	
Homestead CAP				\$(31,000)	\$(189,500)	\$(266,000)
Total Operating Revenue	\$306,349,615	\$286,206,797	\$296,174,911	\$276,519,246	\$266,986,290	\$268,698,091

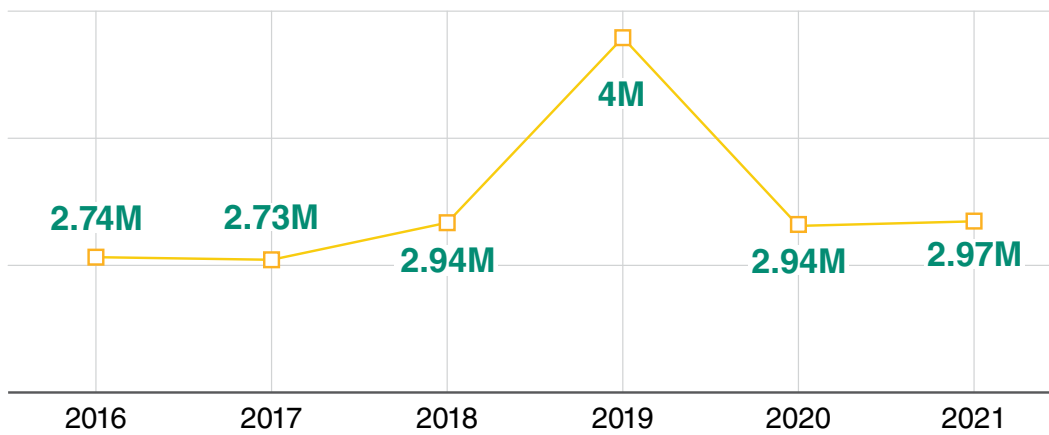


Revenue Projections for 2021

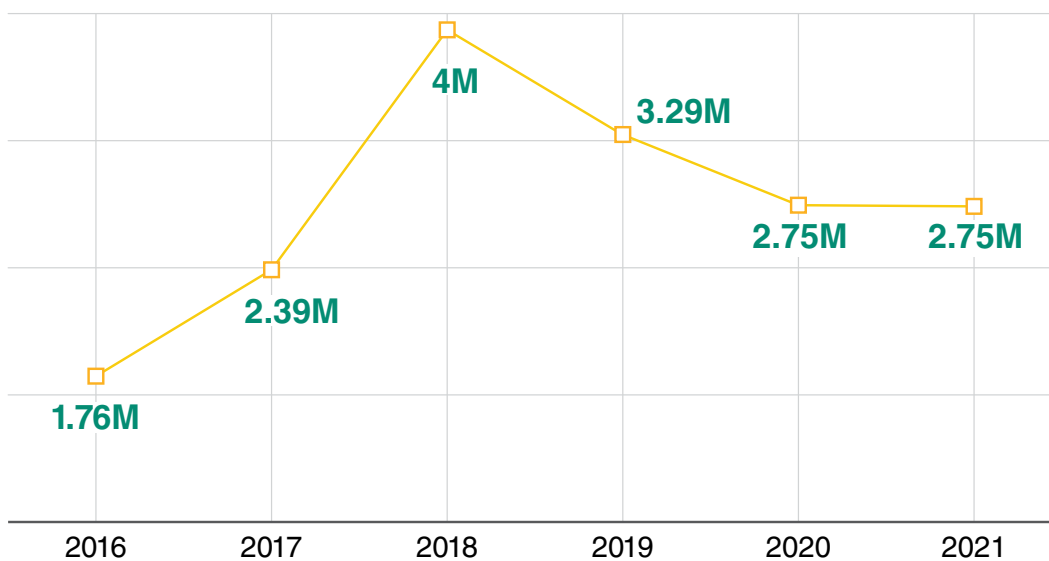
SEWERAGE SURCHARGES (\$)



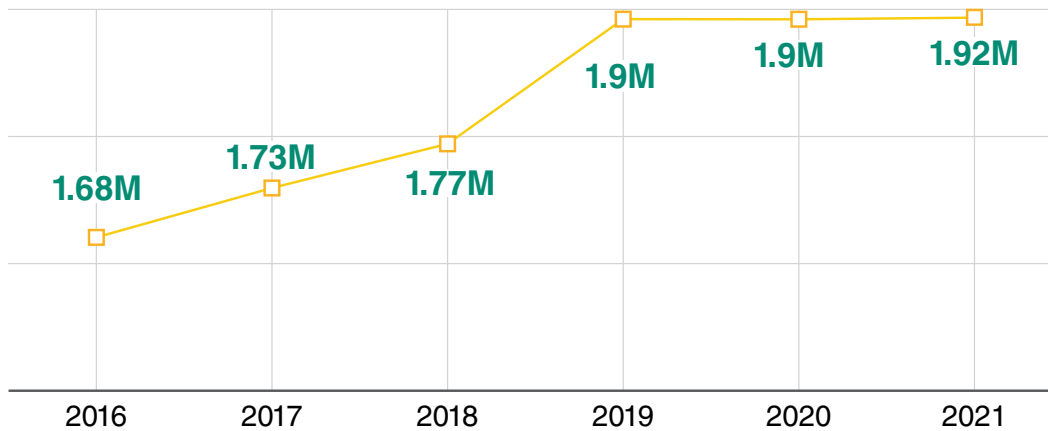
NEW TAP-IN CHARGES (\$)



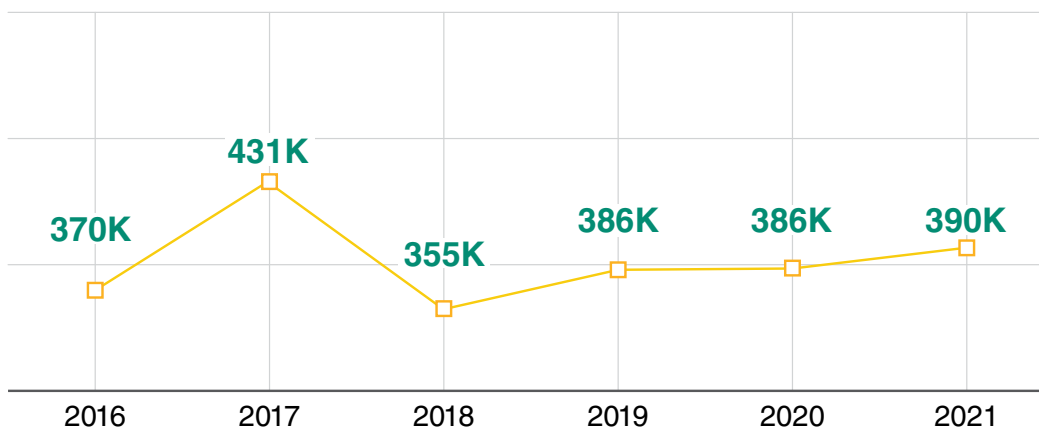
INTEREST FROM TREASURY INVESTMENTS (\$)



SEPTIC AND GREASE TICKETS (\$)



PRETREATMENT MONITORING (\$)



Other Revenue Generation Opportunities for Consideration

MSD offers two options for consideration for Board consideration.

- Revision of Hauled Waste Structure.** Hauled waste is currently charged a uniform fee of \$60/1000 gallons, regardless of the type or strength of waste discharged. A tiered rate structure will be developed for septage, sludge, hauled industrial & grease waste. MSD operations would also benefit by having clean grease hauled separately and this material could be beneficially reused.

MSD plans to explore a revenue generation opportunities relating to bio-fuels that could create revenue and reduce waste at MSD facilities. Phasing in a tiered structure for segregated hauled waste was projected 2 years ago to generate an additional \$1M in revenue annually at full implementation. MSD anticipates having a proposal for Board consideration in mid-2021 and plans to conduct outreach in 2022 and phase in a modified fee structure effective in 2023.

Impervious Surface Fee. MSD has been actively participating on the Impervious Area committee with County Administration and other stakeholders. The committee has been exploring an Impervious Area based charge that was recommended by the Rate Affordability Task Force. Implementing such a fee requires significant forethought, analysis and public outreach. MSD has outlined the issues and considerations to help initiate and further explore this fee development.

2021 Operating Budget Request

Overall Request

MSD's operating budget covers everyday costs to run the wastewater utility in a manner that allows MSD to meet permit requirements and utilize best management practices to operate in an efficient, financial and sustainable way. Some of the larger costs are electricity, chemicals, personnel and repayment of debt.

MSD's budget is primarily divided into personnel, non-personnel, and debt payment. Debt payment is the principal and interest payments on bonds sold to fund the capital improvement program (CIP).

MSD has developed the 2021 budget based on the utility's needs, industry standards and obligations of the District. **This operating budget request represents \$5.1 million increase (2.34%) in operating budget from 2020.** MSD has taken efforts to make some reductions from prior years in order to fund some important initiatives in the operation of the utility.

MSD's 2021 Operating Budget Request, excluding Debt Payment and the Sewer Backup Program (SBU), is \$128.2 million.

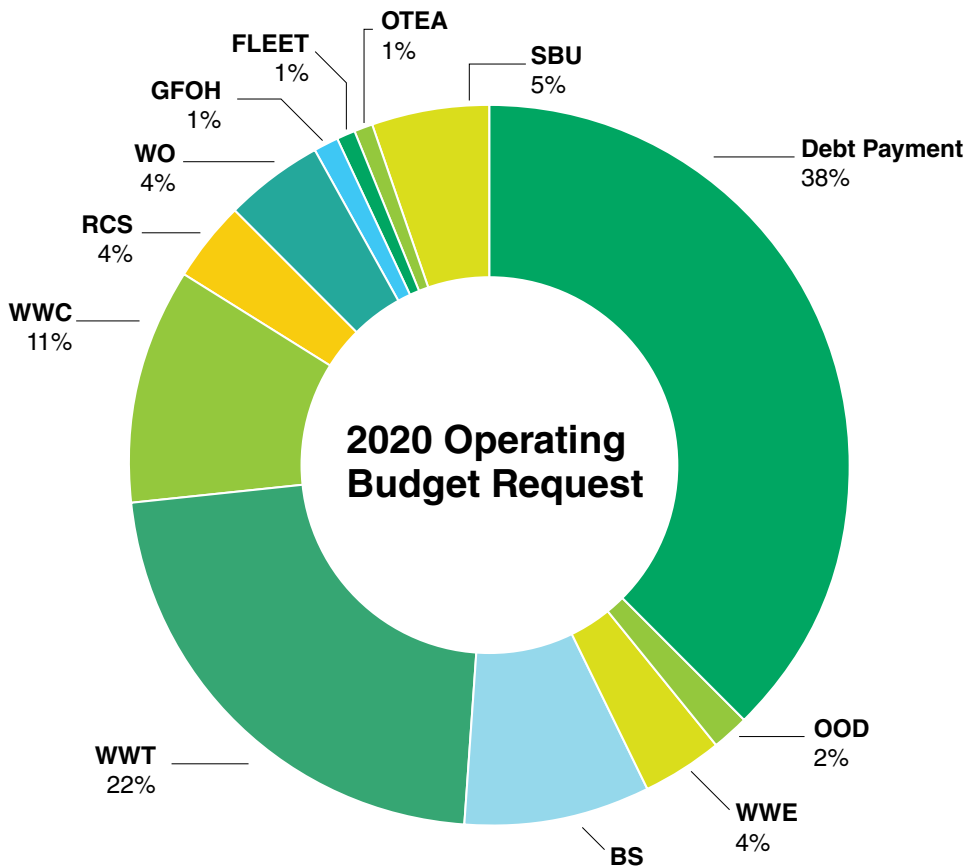
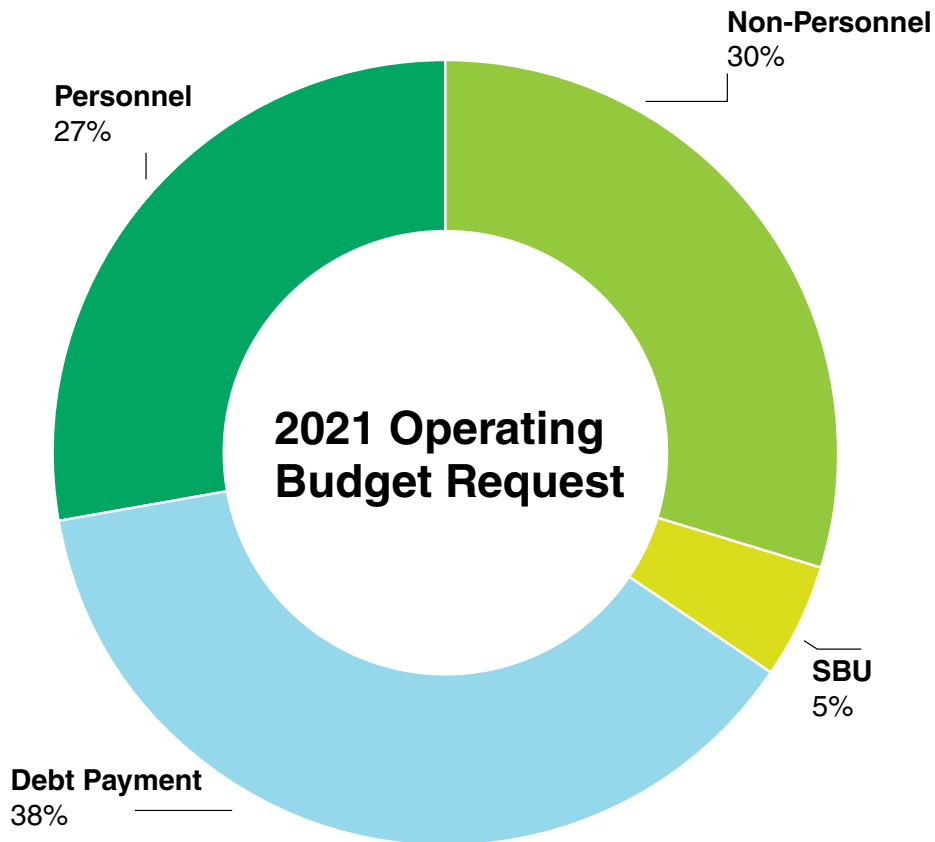
The 2021 Operating Budget Request includes:

- \$83.59 million for debt payment
- \$61.99 million for personnel
- \$60.22 million for non-personnel
- \$5.99 million for Fleet, General Fund Overhead (GFOH) and Office Technology Equipment Allowance (OTEA)
- \$10.99 million for the SBU Program

DEPT.	2021 Request
Personnel	\$61,996,500
Office of the Director	\$2,438,574
Wastewater Engineering	\$8,000,537
Business Services	\$7,087,043
Wastewater Treatment	22,174,453
Wastewater Collection	12,481,170
Compliance Services	5,637,659
Watershed Operation	\$3,248,090
Sewer Backup Program	\$928,974
Non-Personnel (without SBU)	\$60,222,412
Office of the Director	\$1,159,726
Wastewater Engineering	\$879,604
Business Services	\$11,226,906
Wastewater Treatment	\$27,587,099
Wastewater Collection	\$10,414,860
Compliance Services	\$2,555,717
Watershed Operation	\$6,398,500
Other Non-Personnel	\$5,989,535
GFOH	\$2,657,210
FLEET	\$1,777,000
OTEA	\$1,555,325
Grand Total (w/o SBU & Debt Payment)	\$128,208,447
SBU	\$10,993,396
Debt Payment	\$83,586,000
Grand Total	\$222,787,843

2021 Operating Budget Request

Non-Personnel Request by Category and Division



2021 Operating Budget Request

2021 Overall Request vs. 2020 Budget

The Personnel budget increase of approximately \$2.1 million represents 3.5% over 2020 approved budget. The increased personnel costs are:

- \$239K - 2% health care increase
- \$1.41M - 2% COLA increases
- \$695K - 3% Merit increases
- \$1.15M Lump sum retirement benefits

The Non-personnel budget, excluding SBU, is \$3.9M higher or 6.9% than the 2020 adopted budget.

The 2021 debt payment request is \$83.59 million and represents 38% of the overall operation budget request

2020 Approved Budget vs. 2021 Overall Request

DEPT.	2020 Budget	2021 Request	Changes from 2020 Budget to 2021 Request	
Personnel	\$59,900,000	\$61,996,499	\$2,096,499	3.50%
OOD	\$2,356,110	\$2,438,574	\$82,464	3.50%
WWE	\$7,729,987	\$8,000,537	\$270,550	3.50%
WWA	\$6,963,327	\$7,087,043	\$123,716	1.78%
WWT	\$21,260,341	\$22,174,453	\$914,112	4.30%
WWC	\$11,991,469	\$12,481,170	\$489,701	4.08%
CS	\$5,427,690	\$5,637,659	\$209,969	3.87%
WO	\$3,273,517	\$3,248,090	\$(25,427)	-0.78%
SBU	\$897,559	\$928,974	\$31,415	3.50%
Non-Personnel (without SBU)	\$56,300,739	\$60,222,412	\$3,921,673	6.97%
OOD	\$1,015,501	\$1,159,726	\$144,225	14.20%
WWE	\$728,927	\$879,604	\$150,677	20.67%
WWA	\$11,014,461	\$11,226,906	\$212,445	1.93%
WWT	\$26,455,635	\$27,587,099	\$1,131,464	4.28%
WWC	\$8,895,299	\$10,414,860	\$1,519,561	17.08%
CS	\$1,857,263	\$2,555,717	\$698,454	37.61%
WO	\$6,333,653	\$6,398,500	\$64,847	1.02%
Other Non-Personnel	\$5,398,561	\$5,989,535	\$590,974	10.95%
GFOH	\$2,941,761	\$2,657,210	\$(284,551)	-9.67%
FLEET	\$1,101,000	\$1,777,000	\$676,000	61.40%
OTEA	\$1,355,800	\$1,555,325	\$199,525	14.72%
Grand Total (w/o SBU & Debt Payment)	\$121,599,300	\$128,208,446	\$6,609,146	5.44%
SBU	\$9,700,000	\$10,993,396	\$1,293,396	13.33%
Debt Payment	\$86,400,900	\$83,586,000	\$(2,814,900)	-3.26%
Grand Total	\$217,700,200	\$222,787,842	\$5,087,642	2.34%

2021 Operating Budget Request

Non-personnel increases **are largely attributed to:**

- \$2.0M Professional Services
- \$745K Mech. Tools, Sp. Equip & Safe Uniforms
- \$676 K Fleet replacements out of life cycle
- \$458K Chemicals for treatment
- \$472K in Disposal & Cleaning
- \$382K Utility Costs
- \$295K OTEA

The SBU non-personnel budget request is \$10.99 million. The SBU program activities are unpredictable as they are driven by changing rain/storm patterns. MSD cannot reduce spending for this reactive program, mandated by the Federal Consent Decree.

In addition, the SBU budget includes \$1M to develop a pilot program to proactively address SBU prevention

2019 Actual Expenditures vs. 2021 Overall Request

DEPT.	2019 Actual	2021 Request	Changes from 2019 Actual to 2021 Request	
Personnel	\$57,221,013	\$61,996,499	\$4,775,486	8.35%
OOD	\$2,383,589	\$2,438,574	\$54,985	2.31%
WWE	\$7,170,678	\$8,000,537	\$829,859	11.57%
WWA	\$6,654,431	\$7,087,043	\$432,612	6.50%
WWT	\$20,426,743	\$22,174,453	\$1,747,710	8.56%
WWC	\$11,844,938	\$12,481,170	\$636,232	5.37%
CS	\$5,043,304	\$5,637,659	\$594,355	11.79%
WO	\$2,924,487	\$3,248,090	\$323,603	11.07%
SBU	\$772,843	\$928,974	\$156,131	20.20%
Non-Personnel (without SBU)	\$51,215,672	\$60,222,412	\$9,006,740	17.59%
OOD	\$689,055	\$1,159,726	\$470,671	68.31%
WWE	\$645,751	\$879,604	\$233,853	36.21%
WWA	\$10,227,216	\$11,226,906	\$999,690	9.77%
WWT	\$24,820,745	\$27,587,099	\$2,766,354	11.15%
WWC	\$7,738,047	\$10,414,860	\$2,676,813	34.59%
CS	\$1,404,453	\$2,555,717	\$1,151,264	81.97%
WO	\$5,690,405	\$6,398,500	\$708,095	12.44%
Other Non-Personnel	\$4,880,396	\$5,989,535	\$1,109,139	
GFOH	\$2,376,987	\$2,657,210	\$280,223	11.79%
FLEET	\$1,097,359	\$1,777,000	\$679,641	61.93%
OTEA	\$1,406,050	\$1,555,325	\$149,275	10.62%
Grand Total (w/o SBU & Debt Payment)	\$113,317,081	\$128,208,446	\$14,891,365	13.14%
SBU	\$10,002,510	\$10,993,396	\$990,886	9.91%
Debt Payment	\$84,772,321	\$83,586,000	\$(1,186,321)	-1.40%
Grand Total	\$208,091,912	\$222,787,842	\$14,695,930	7.06%

2021 Operating Budget Request

Changes from 2020 Adopted Budget to 2021 Request (Non-Personnel)

	OOD	WWE	WWA	WWT	WWC
2020 Adopted Budget	\$1,015,501	\$728,927	\$11,014,261	\$26,455,635	\$8,895,299
2021 Budget Request	\$1,159,726	\$879,604	\$11,226,906	\$27,587,099	\$10,414,860
Variance (\$)	\$144,225	\$150,677	\$212,645	\$1,131,464	\$1,519,561
Variance (%)	14.2%	20.7%	1.9%	4.3%	17.1%

Main Exp. Type	OOD	WWE	WWA	WWT	WWC
721X Communication	\$1,872	\$441		\$(9,000)	\$829
721X Staff Development	\$(6,000)	\$6,245	\$24,045	\$42,253	
723X Printing & Advertising	\$573	\$441		\$(233)	\$185
724X Utilities		\$8,251		\$326,433	\$2,640
725X Office Machines, Auto, Electr, Bldg, Pumping Services, Technical Repairs		\$(2,309)	\$(30,920)	\$(14,667)	\$34,720
726X Streets, Sewer, Water, Fire Hydrant Services		\$1,000		\$162,907	\$8,586
727X Disposal and Cleaning, Waste Services		\$92,683	\$1,267	\$108,736	\$269,636
728X Professional Services	\$86,000	\$(3,048)	\$245,494	\$(114,450)	\$816,857
7293 Billing & Collection by GCWW			\$126,000		
729X Sundry Services			\$3,000	\$(130,563)	\$1,232
7311 Office Supplies	\$(703)	\$160	\$1,687	\$861	\$598
733X Petroleum, Fuel, Masonry Products		\$227	\$(2,020)	\$6,741	\$21,279
734X Laboratory Supplies		\$49	\$(5,385)	\$1,475	\$109
735X Chemicals				\$523,265	\$545
736X Mech. Tools, Apparel, Supplies, Data Processing		\$1,930	\$(28,322)	\$292,645	\$19,289
737X Cleaning and Household Supplies		\$(12)	\$50	\$31,025	\$4,334
738X Technical Equipment				\$2,766	\$189,223
739X Plumbing & Electrical Machine				\$86,522	\$187,296
741X Software & Licenses and Office Machinery	\$202	\$38,350	\$(61,693)	\$155,577	\$(40,123)
742X Building and Structure Insurane				\$228,287	
7434 Tuition Reimbursement	\$(4,788)	\$(5,787)	\$11,302	\$(6,701)	\$(4,144)
7453,-55 Claims & Refunds					\$299
7452 Subscriptions & Memberships	\$61,649	\$6,527	\$(83,770)	\$1,788	
7459 Sundry Fixed Charges				\$1,650	
7457 Taxes		\$108		\$85	
GFOH					
FLEET					
OTEA					
TOTALS	\$138,805	\$145,255	\$200,735	\$1,697,402	\$1,513,391

CS	WO	GFOH	Fleet	OTEA	Total (w/o SBU)	SBU	Total (with SBU)
\$1,857,263	\$6,333,653	\$2,941,761	\$1,101,000	\$1,355,800	\$61,699,100	\$9,700,000	\$71,399,100
\$2,556,217	\$6,398,500	\$2,657,210	\$1,777,000	\$1,555,325	\$66,212,447	\$10,993,396	\$77,205,843
\$698,954	\$64,847	\$(284,551)	\$676,000	\$199,525	\$4,513,347	\$1,293,396	\$5,806,743
37.6%	1.0%	-9.7%	61.4%	14.7%	7.3%	13.3%	8.1%

CS	WO	GFOH	Fleet	OTEA	Total (w/o SBU)	SBU	Total (with SBU)
	\$(50,000)				\$(55,858)	\$99,803	\$43,944
\$(10,100)					\$56,443	\$12	\$56,455
					\$965	\$99,803	\$100,768
\$919	\$719				\$338,962		\$338,962
\$3,432	\$15,890				\$6,146		\$6,146
	\$(2,995)				\$169,498		\$169,498
\$1,121	\$650				\$474,093		\$474,093
\$802,138	\$225,000				\$2,057,991	\$114,440	\$2,172,431
					\$126,000		\$126,000
\$(88,180)	\$(199,000)				\$(413,511)	\$58,580	\$(354,931)
\$11,377	\$(1,010)				\$12,970	\$9	\$12,978
\$(15,189)	\$2,793				\$13,831		\$13,831
					\$(3,752)		\$(3,752)
	\$(26,493)				\$497,317		\$497,317
\$(6,000)	\$26,700				\$306,242		\$306,242
\$(90)	\$(1,169)				\$34,138		\$34,138
\$(48,860)	\$61,593				\$204,722	\$1,457	\$206,179
\$(1,442)	\$(27,437)				\$244,939		\$244,939
					\$92,313	\$42	\$92,355
					\$228,287		\$228,287
\$(14,585)					\$(24,703)		\$(24,703)
					\$299	\$1,019,038	\$1,019,337
	\$45,000				\$31,194		\$31,194
					\$1,650		\$1,650
					\$193		\$193
		\$(284,551)			\$(284,551)		\$(284,551)
			\$676,000		\$676,000		\$676,000
				\$299,525	\$299,525		\$299,525
\$634,541	\$70,241	\$(284,551)	\$676,000	\$299,525	\$5,091,343	\$1,393,183	\$6,484,526

2021 Operating Budget Request

Changes from 2019 Actual Expenditures to 2021 Budget Request (Non-Personnel)

	OOD	WWE	WWA	WWT	WWC
2019 Actual Exp.	\$689,055	\$645,751	\$10,227,216	\$24,820,745	\$7,738,047
2020 Budget Request	\$1,159,726	\$879,604	\$11,226,906	\$27,587,099	\$10,514,860
Variance (\$)	\$470,671	\$233,853	\$999,690	\$2,766,354	\$2,776,813
Variance (%)	68.3%	36.2%	9.8%	11.1%	35.9%
Main Exp. Type	OOD	WWE	WWA	WWT	WWC
721X Communication	\$(299)			\$1,969	\$37,934
721X Staff Development	\$(3,219)	\$13,971	\$51,599	\$127,697	\$25,812
723X Printing & Advertising	\$(1,485)	\$2,489	\$154	\$(3,047)	\$171
724X Utilities		\$(48,065)		\$(129,487)	\$(175)
725X Office Machines, Auto, Electr, Bldg, Pumping Services, Technical Repairs	\$8,764	\$17,275	\$(84)	\$(45,513)	\$(114,812)
726X Streets, Sewer, Water, Fire Hydrant Services		\$(1,632)		\$54,960	\$(449,583)
727X Disposal and Cleaning, Waste Services	\$2,554	\$51,250	\$4,699	\$855,739	\$222,118
728X Professional Services	\$340,226	\$85,518	\$386,492	\$117,041	\$2,130,400
7293 Billing & Collection by GCWW	\$(153,277)		\$200,000		
729X Sundry Services			\$(2,964)	\$(583,848)	\$52,515
7311 Office Supplies	\$(2,472)	\$4,787	\$(17,340)	\$(11,110)	\$(2,434)
733X Petroleum, Fuel, Masonry Products	\$(632)	\$6,098	\$565	\$130,353	\$(171,471)
734X Laboratory Supplies		\$(54)	\$685	\$72,653	\$7,880
735X Chemicals				\$923,812	\$25,881
736X Mech. Tools, Apparel, Supplies, Data Processing	\$(1,651)	\$13,591	\$22,697	\$418,378	\$253,016
737X Cleaning and Household Supplies	\$201	\$(574)	\$5,100	\$13,877	\$141,045
738X Technical Equipment	\$2,665	\$(6,884)	\$4,090	\$38,505	\$734,260
739X Plumbing & Electrical Machine				\$(58,693)	\$47,905
741X Software & Licenses and Office Machinery	\$11,885	\$76,106	\$143,539	\$871,382	\$42,797
742X Building and Structure Insurane				\$167,027	
7434 Tuition Reimbursement			\$23,641	\$(2,239)	\$(6,314)
7453,-55 Claims & Refunds				\$(1,497)	\$(942)
7452 Subscriptions & Memberships	\$259,166	\$13,457	\$163,072	\$5,871	\$323
7459 Sundry Fixed Charges			\$404	\$140,664	\$(200)
7457 Taxes		\$10,682		\$2,829	
FROH					
FLEET					
OTEA					
TOTALS	\$462,426	\$238,015	\$986,350	\$3,107,322	\$2,976,127

CS	WO	GFOH	Fleet	OTEA	Total (w/o SBU)	SBU	Total (with SBU)
\$1,404,453	\$5,690,405	\$2,376,987	\$1,097,359	\$1,406,050	\$56,096,068	\$10,002,510	\$66,098,578
\$2,560,217	\$6,398,500	\$2,657,210	\$1,777,000	\$1,555,325	\$66,316,447	\$10,993,396	\$77,309,843
\$1,155,764	\$708,095	\$280,223	\$679,641	\$149,275	\$10,220,379	\$990,886	\$11,211,265
82.3%	12.4%	11.8%	61.9%	10.6%	18.2%	9.9%	17.0%
CS	WO	GFOH	Fleet	OTEA	Total (w/o SBU)	SBU	Total (with SBU)
					\$39,604		\$39,604
\$1,661	\$(469)				\$217,052	\$612	\$217,664
\$1,975	\$(292)				\$(37)	\$119,796	\$119,759
\$8,988	\$108,187				\$(60,552)		\$(60,552)
\$116,016	\$94,202				\$75,849		\$75,849
	\$10,538				\$(385,717)		\$(385,717)
\$31,388	\$(33,777)				\$1,133,971		\$1,133,971
\$845,408	\$(619,854)				\$3,285,232	\$(1,398,418)	\$1,886,814
					\$46,723	\$(275)	\$46,448
\$175,416	\$717,983				\$359,102	\$1,259,138	\$1,618,240
\$14,560	\$(4,023)				\$(18,032)	\$329	\$(17,702)
\$24,738	\$17,676				\$7,327		\$7,327
\$(13,098)	\$(2,930)				\$65,137		\$65,137
	\$92,761				\$1,042,454		\$1,042,454
\$(17,989)	\$54,890				\$742,932		\$742,932
\$(9,399)	\$(8,915)				\$141,335		\$141,335
\$26,010	\$104,112				\$902,758	\$77,308	\$980,066
\$(1,761)	\$34,576				\$22,028		\$22,028
\$(30,743)	\$(1,123)				\$1,113,843	\$2,144	\$1,115,987
					\$167,027		\$167,027
\$(9,186)					\$5,902		\$5,902
					\$(2,439)	\$1,020,122	\$1,017,683
\$(7,257)	\$161,521				\$596,153		\$596,153
					\$140,868		\$140,868
					\$13,510		\$13,510
		\$280,223			\$280,223		\$280,223
			\$679,641		\$679,641		\$679,641
				\$249,275	\$249,275		\$249,275
\$1,156,727	\$725,063	\$280,223	\$679,641	\$249,275	\$10,861,168	\$1,080,756	\$11,941,924



“It’s all about Clean Water”

2021 Budget Request by Division

Office of the Director (OOD)



OOD works to align resources and efforts, between and among MSD's divisions to achieve its mission, ensuring the utility is performing the necessary tasks in a fiscally responsible and sustainable manner.

OOD identifies and tracks performance metrics for each division. OOD also develops, communicates and measures organizational goals, implements applicable City and County policies, coordinating the needs of the utility and providing recommendations to the Board of County Commissioners, County Administration and the City Manager.

OOD also oversees and monitors the compliance with the operating permits and consent decree requirements and reporting, legislative needs, special projects, along with internal and external communication efforts. Throughout the year, MSD engages the public and rate payers in many ways as a resource to local organizations, community councils, boards, commissions, municipalities and associations. OOD also oversees staffing plan updates on bi-annual basis.

**legislation | legal | public records | communications
| budget | oversight | community outreach | twitter |
FB | special projects | grants | CAP | strategic plan**

2021 Budget Request by Division

Office of the Director

Highlights from the last year

Utilities face many resource management challenges today and MSD recognizes that forming and cultivating partnerships enables us to solve complex problems. Following industry best practices, MSD identifies partnerships that help address challenges and create opportunities at the regional or watershed level. MSD has many partnerships with community and industry organizations. Partnerships help us to share information, best practices and collaborate towards solutions.

Muddy Creek Hazard Mitigation FEMA/OEMA Grant

In 2019, MSD worked in partnership with Ohio Emergency Management Agency (OEMA) to secure a \$4M grant. The effort, completed by OOD resulted in a favorable benefit cost analysis and a flood routing study. The grant will support the voluntary purchase of approximately 30 properties and is anticipated to be approved with 75% from FEMA and 15% by the OEMA. The majority of the 30 homes, built after the sewer was installed in the 1950, sit below the elevation of the sewer. When heavy rains occur, overland flow mixed with sewage from overflowing manholes create repetitive floods.

The grant dollars were appropriated to Ohio for hazard mitigation of significant storm events and MSD was approved to submit a full application in August 2019 to secure this funding. OEMA indicates that FEMA will provide the award notification before the end of 2020, given delays associated with COVID-19. Following voluntary acquisition, MSD is required to demolish the buildings and regrade the area for more effective stormwater management.

Community Assistance Program (CAP)

Beginning on July 31, 2019 MSD implemented a customer assistance program (CAP) program. CAP is available to seniors ratepayers who reside in their home. As of June 2020 1,625 seniors are benefiting from the new program. The average savings to seniors is about \$11.10/month and on average about \$133/year. MSD has conducted outreach through GCWW and Norwood utility bills as well as the Freestore Foodbank, Maple Knoll Outreach

Services and the City of Cincinnati and Hamilton County outlets. MSD has also used its social media of Facebook and Twitter.

Organizational Coordination

In mid-2019 investigations found that the Mill Creek Interceptor (MCI) was in poor shape in advance of a major construction project at Mill Creek WWTP. If not addressed, it could create a major failure during construction, If done without close coordination, it could have major impacts during the 4 months that the interceptor had to remain dry. OOD facilitated the close coordination among Operating Divisions with Wastewater Engineering to minimize impact.

In this example, OOD's goal was to ensure internal coordination and communication to maximize the collection and treatment of flows, while completing the project in the most efficient manner with no injuries while minimizing overflows and other impacts. The successful coordination from this effort is what OOD strives to cultivate among the organization.

COVID-19 Response & Coordination

OOD coordinated all COVID-19 plans and modifications to protect its workforce and minimize risk. OOD convened a COVID Task Force as well as Policy Committee to manage MSD's response and provide employees with guidance on rapidly changing situation. In the field, MSD prioritized construction projects that could be performed Central Business Districts, including Over the Rhine and other high traffic areas in conjunction with DOTE for paving and other City/Local agencies to coordinate timing and paving jobs. MSD also suspended staff entry into homes/businesses for SBU investigations and developed Return to Work plans that complied with ReStart Ohio and City policies.

2021 Budget Request by Division

Office of the Director

1,016 CUSTOMER INQUIRIES

MSD receives customer service inquiries by phone at (513) 557-3594 and by email at MSD.Communications@cincinnati-oh.gov. We have responded to more than 800 questions and concerns to date about issues ranging from construction projects to sewer backups.

157 OUTREACH EVENTS

MSD is committed to including the community in its projects by hosting outreach events. These events provide information about projects and allow the community to provide vital feedback for MSD services.

125 TWEETS

MSD uses Twitter to provide helpful information to its customers including fun facts, flood awareness tips, and construction updates.

4 COMMUNITY ADVISORY OUTREACH MTGS

MSD sponsors quarterly Mill Creek Community Advisory Panel (CAP) meetings to provide a forum for open dialogue about MSD and the Mill Creek treatment plant, including odor issues and plant activities. CAP members include local residents and representatives from communities/organizations.

30 PRESS RELEASES

MSD issues releases to the media on topics ranging from audit reports to project updates.

70 FACEBOOK POSTS

MSD uses Facebook to provide helpful information to its customers including fun facts, flood awareness tips, and construction updates.

2021 Budget Request by Division

Office of the Director

New Initiatives For Next Year

Strategic Plan Implementation

Kicked off in 2019 and refined through 2020, internal-led teams targeted 6 Strategic Goal Areas: Innovation, Performance Optimization, Communications & Community Engagement, Customer Service, Public Health & the Environment, and Workforce Culture. The outcomes are undergoing review and refinement by the Executive Leadership team and will be finalized in early 2021. The outcomes, while still being finalized are included in the 2021 budget and anticipated to be implemented in 2021-2025.

Property Protection Pilot for SBU

MSD has long said that a more proactive approach is needed to solve SBUs. Proposed as a Pilot Program, MSD will evaluate the feasibility of offering a rebate/incentive to property owners who address sources of infiltration and inflow on their property and incentivize properties in certain “high risk” areas to install a backflow prevention device on the private sewer to proactively protect against surcharges from the public sewer system before a SBU occurs. In this proposed budget, the funding for this OOD-led pilot program is housed in the Sewer back-up Program for \$1M in 2021.

Targeted CAP Outreach

With 1,625 seniors enrolled in the program MSD plans to implement enhanced outreach efforts with a direct mailing and utility bill advertisements to promote the program. In 2021, OOD also plans to have an online application as part of its proposed updated website.

New Website Development & Deployment

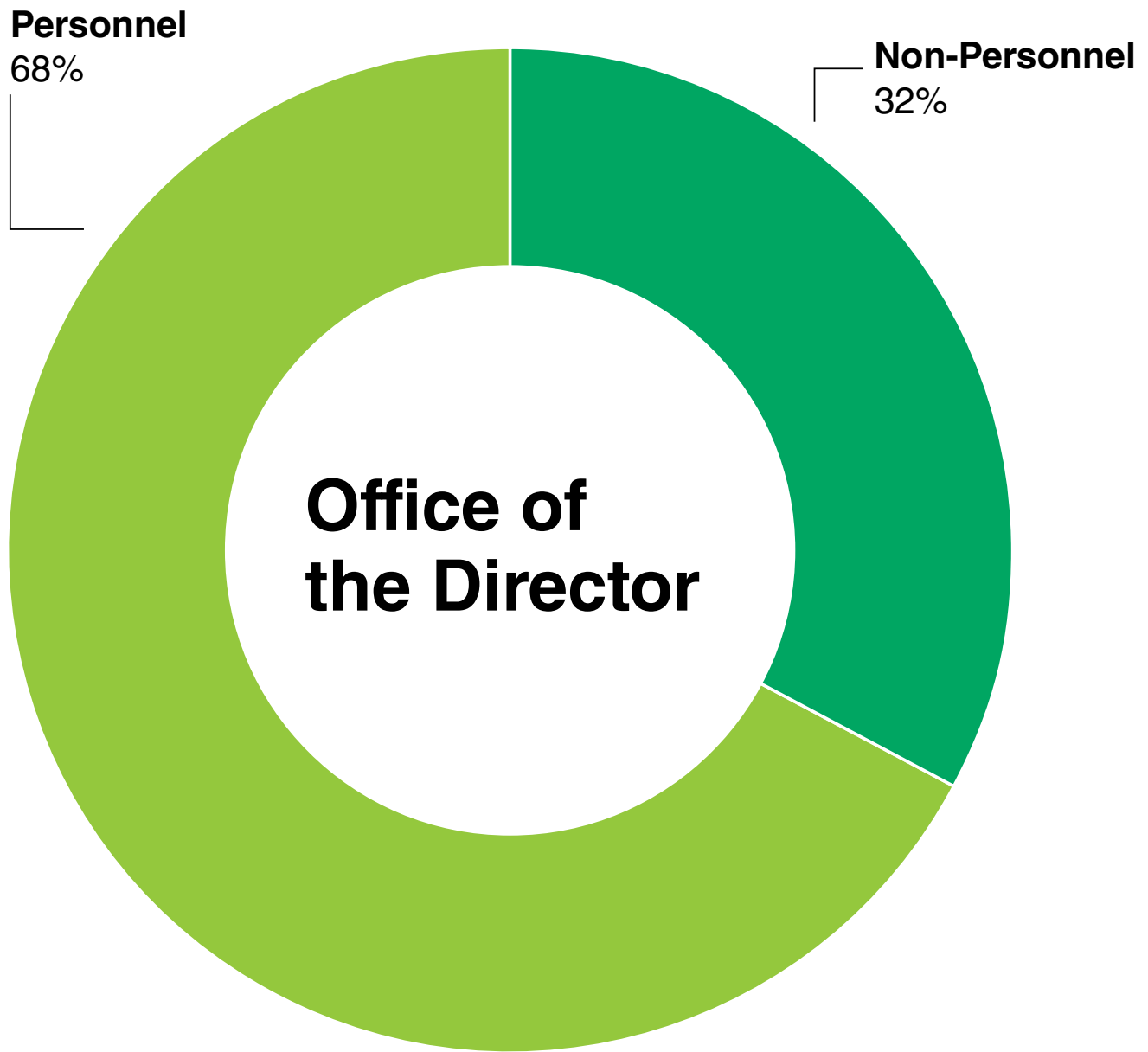
Currently MSD maintains 3 different public facing websites and attempts to consolidate come up short because the technology is over 10 years old and not mobile-friendly, making the user experience difficult and frustrating. The site is hard to navigate and it is difficult for our customers to find relevant information. A new website will consolidate all 3 platforms, allow for better navigation, provide a mobile friendly user experience and a more transparent communication tool for the MSD user. With funding approved, the new website will be completed by the end of 2021.

Continued & Improved Coordination for Positive Organizational Performance

Continued alignment of MSD’s mission by and among the divisions will improve organizational response and customer service. OOD has initiated various steps to enhance how divisions perform and integrate with each other and the information and tools used or developed. In 2021, OOD will continue to provide leadership, guidance and direction to staff and to divisions to improve what and how we implement our work.

2021 Budget Request by Division

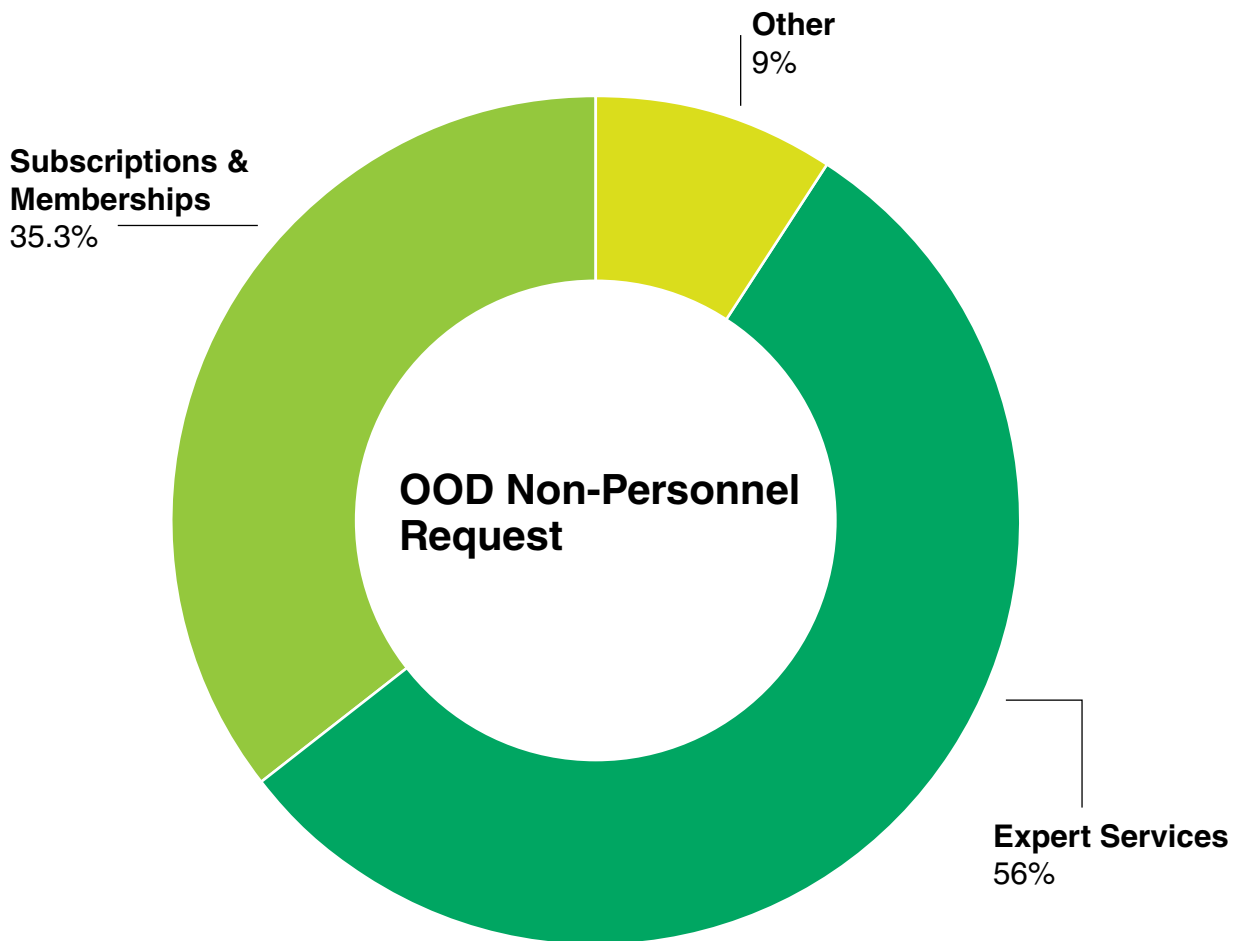
Office of the Director



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020
				%	%
OOD (410)	\$3,072,644	\$3,371,611	\$3,598,300	\$525,656	17.11%
Personnel	\$2,383,589	\$2,356,110	\$2,438,574	\$54,985	2.31%
Non-Personnel	\$689,055	\$1,015,501	\$1,159,726	\$470,671	68.3%

2021 Budget Request by Division

Office of the Director



Overall, the increase to OOD Non-personnel budget is approximately \$79,000

How is OOD Non-personnel spent?

Professional Services

Expert services related to rates, operations & maintenance

- Rate Study & Financial Management Support
- CAP Outreach
- Legal Services
- Website Development & Implementation

Subscriptions & Memberships

Coordinating with community and industry organizations to improve MSD efforts implement best practices, strategize on regulatory affairs and community partnerships.

- National Association of Clean Water Agencies
- US Water Alliance
- Water Research Foundation (WRF)
- Association of Ohio Metropolitan Water Agencies
- Ohio Valley Technical Approval Group
- Ohio WARN
- OKI
- Midwest Regional Sustainability Summit
- Mill Creek Alliance
- Paddlefest
- Great Ohio River Swim
- Regional Stormwater Collaborative
- HCDOES Household Hazardous Waste

2021 Budget Request by Division

Office of the Director

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$144,225.

NEW		
Website Development	MSDGC's website will be updated and enhanced for a better user experience	\$130,000
INCREASED		
Memberships	Nominal increase in some membership dues or subscriptions.	\$9,000
Advertisement & Promotion of CAP	Direct mailing, coordination with utility bills	\$5,000



“It’s all about Clean Water”

2021 Budget Request by Division

Wastewater Engineering



The Wastewater Engineering (WWE) Division implements MSD’s Capital Program to achieve better results with effective program management, controls and project delivery while also assisting the development community with permitting.

The utility’s needs for asset renewal, new regulatory challenges and a long term federal Consent Decree require substantial effort and coordination to effectively implement. WWE gains input from Operating Divisions on actual operating conditions and regulatory concerns to help inform project delivery. The proper planning of the right projects as well as using an asset management system is critical to achieving MSD’s mission.

planning | design | wet weather | GIS | project
managdelement | construction customer service |
surveying | QA/QC | development services

2021 Budget Request by Division

Wastewater Engineering

Highlights From Last Year

State-gating for Enhanced Outcomes

In August 2020, MSD kicked off Stage-gating for CIP projects which is an enhanced project delivery process. Its use at MSD will result in more meaningful and deliberate reviews and checks at critical points in a project's life cycle. It is part of a systematic approach that will help MSD deliver CIP projects and drive consistency to ensure all projects are executed in the same high standard.

Program Management Information (PMIS) System for Improved Decision Making

MSD's new PMIS facilitates the integration of cost and schedule-related information from MSD's various systems. The PMIS is a collection of systems that MSD will use to manage the financial and schedule data of CIP projects. The PMIS is hosted and managed by MSD.

Validation Report of Attachment 2 of the WWIP

MSD completed a "Validation Report" as a review of schedule and costing of updated project related information in response to Regulator feedback on Phase 2. MSD's updated information can help to inform a more achievable next-phase of the Wet Weather Improvement Plan (WWIP).

AMS integration for Facilities & Gravity Sewers

Asset Management System (AMS) implementation provides full integration with the Facilities work order system and the Gravity Sewer Asset Management systems to allow for the consistent ranking and prioritization of all CIP projects across MSD. In 2019 & 2020, WWE turned over several successful asset management or WWIP projects to operations.

2021 Budget Request by Division

Wastewater Engineering

New Initiatives For Next Year

Development of Design Build Process

In 2021 WWE will design, construct and test workflow for Design-Build CIP projects in the new State-gating process. The current workflow only supports the Design-Bid-Build process.

Continued Build Out of Project Delivery System (PDS) Towards Full Implementation

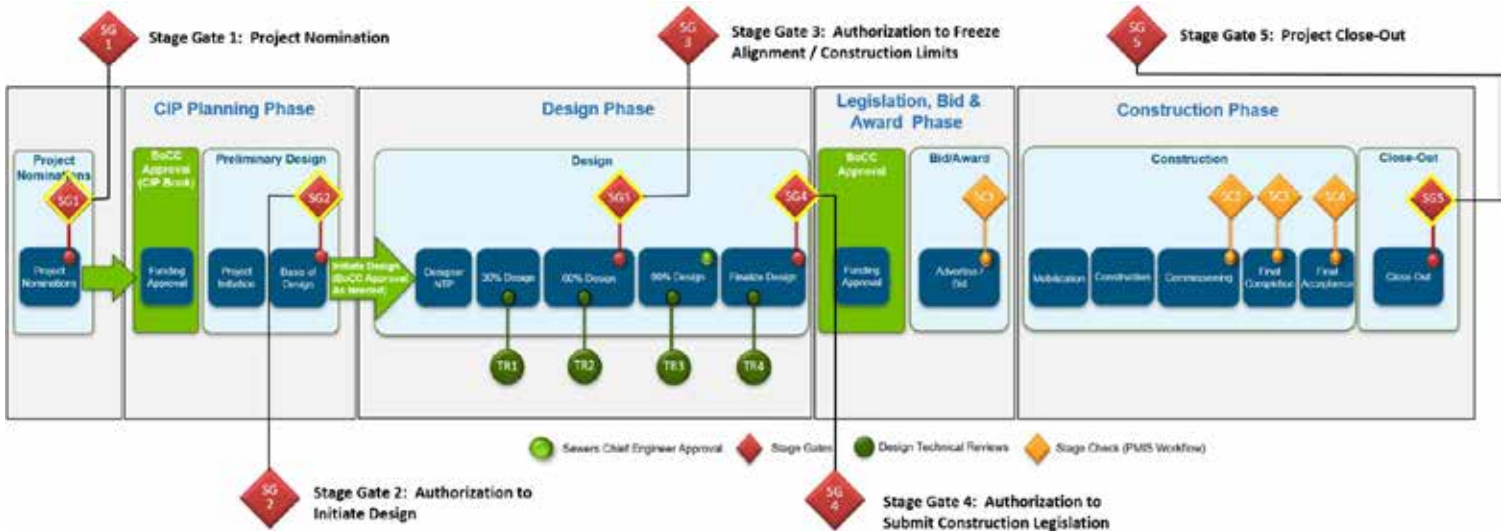
The Program Delivery System (PDS) is a graphical tool, housed within MSD's SharePoint environment, providing a digitally interactive interface that allows users to navigate through project activities and governance requirements. The PDS contains links to processes, procedures, forms and templates.

Continued Build Out of Project Management Information System (PMIS)

The PMIS will integrate CFS, Peoplesoft / iWave, Primavera and e-Builder information and combine it to provide consistent and accurate project-related information. Data will be collected into an SQL data warehouse where Power BI software will be used to produce reporting dashboards and key performance indicators (KPIs).

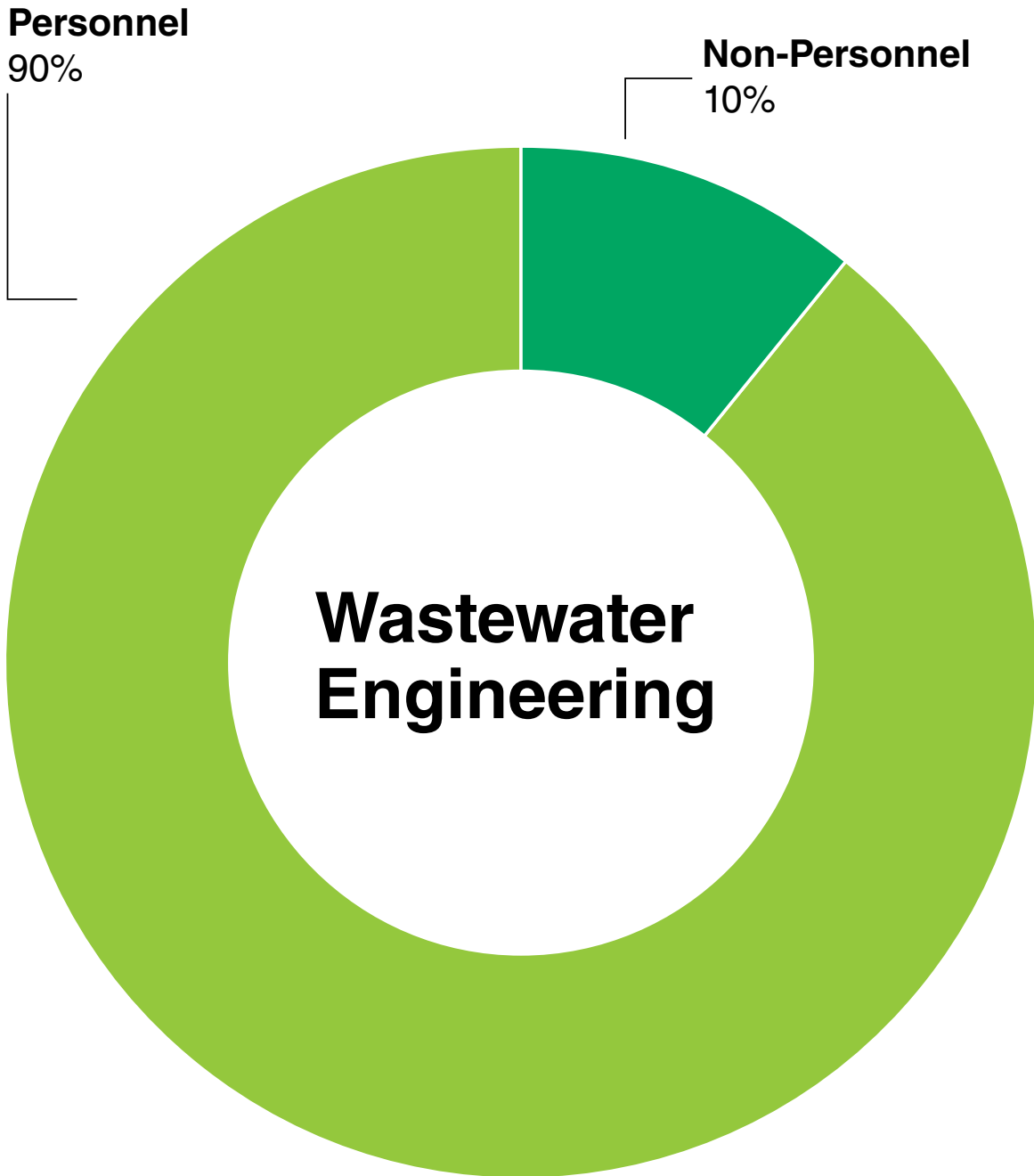
Update and 'Refresh' of MSD Project Administrative Processes and Procedures

MSD will update its Master Program Management Plan (MPMP) to align administrative processes and procedures with recent PDS and PMIS enhancements. In addition to revisions to its Financial Analysis Manual, contract templates, and engineering guidelines, MSD will be enhancing cost and schedule forecasting, document management, and risk management.



2021 Budget Request by Division

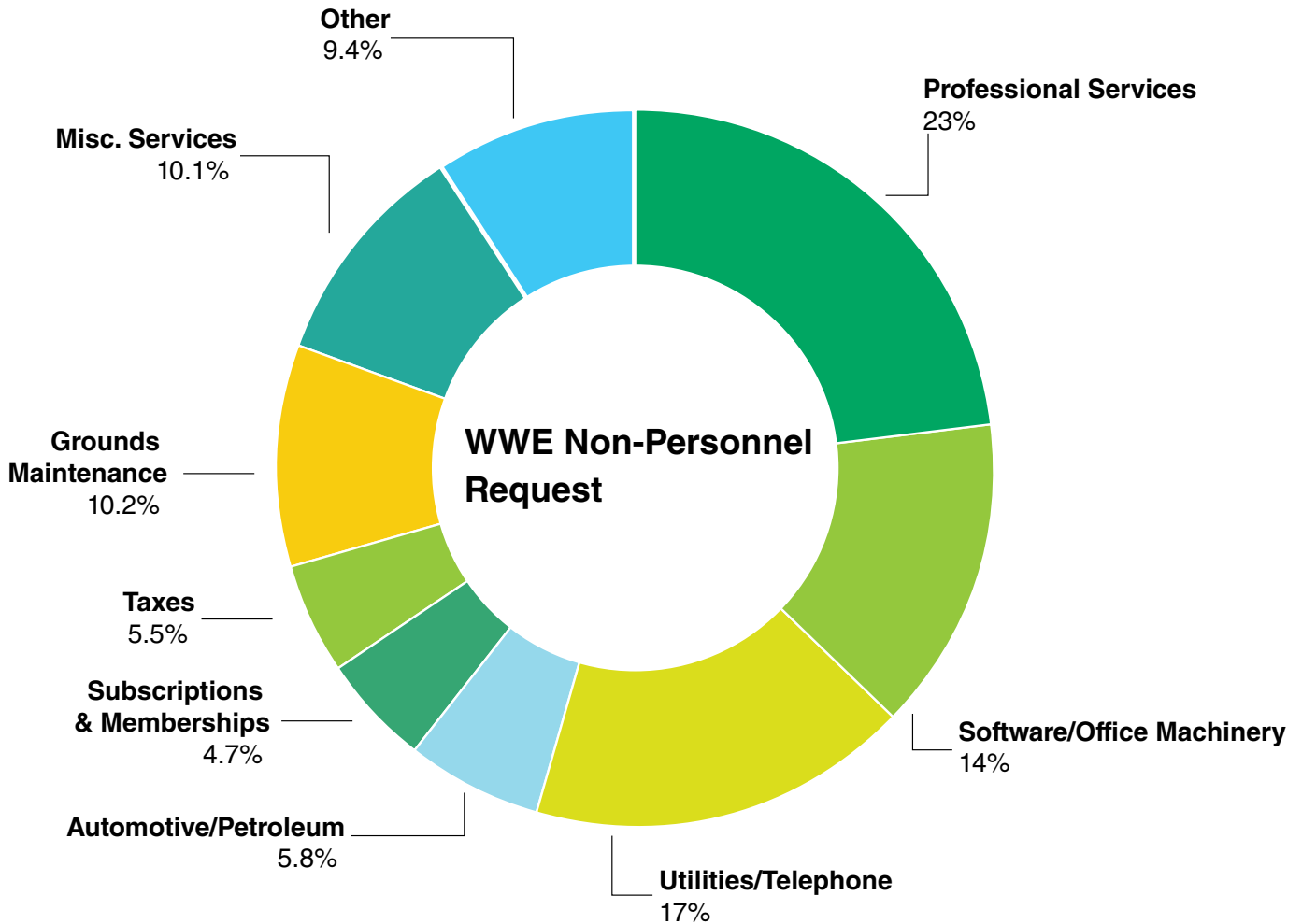
Wastewater Engineering



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020		
				%	%		
WWE (420)	\$7,816,429	\$8,458,914	\$8,880,141	\$1,063,712	13.61%	\$421,227	4.98%
Personnel	\$7,170,678	\$7,729,987	\$8,000,537	\$829,859	11.57%	\$270,550	3.50%
Non-Personnel	\$645,751	\$728,927	\$879,604	\$233,853	36.21%	\$150,677	20.67%

2021 Budget Request by Division

Wastewater Engineering



How is the Non-Personnel Money Spent?

Professional Services

- Memorandum of Understanding reimbursements

Taxes

- Property taxes

Disposal and Cleaning:

- Property maintenance
- Grass cutting

Utilities

- Water
- Natural gas
- Electricity

Software & Licenses, Office Machine

- Kroger lease for 1026 Summer Street (parking lot)
- Copier rental



“It’s all about Clean Water”

2021 Budget Request by Division

Wastewater Engineering

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$150,600.

INCREASED		
Software License	Ebuilder is a cloud-based project manager tool WWE uses to deliver the capital program. Licenses for Engineering; the increase is attributed to adding additional licenses to reach the unlimited licenses tier. This is a one-time cost for WWE and in future years this will be included in IT's maintenance of e-Builder in 2022. Subscription for on-line Cost Estimating software	\$37,000
TRANSFERRED		
Lease	Leasing of parking lot at 1026 Summer Street for MSD Engineering staff and visitors. Lease for Kroger parking lot adjacent to Engineering building. Initial term of contract was through 2018 with 2 one-year renewables. Lease was not budgeted for in the 2020 budget.	\$13,250
TRANSFERRED		
For ROW properties before assets	Lawn care services for MSD owned property in Right-of-way	\$90,000



“It’s all about Clean Water”

2021 Budget Request by Division

Business Services (Administration, Finance & Accounting & Information Tech)

Reorganization Note:
MSD has consolidated Finance & Accounting with Administration. 2021 will be the last year of the F&A division in the MSD budget, as a separate division.



Business Services helps all divisions fulfill MSD’s mission by helping to attract, develop and retain a prepared workforce, while managing utility finances and performing the various accounting functions of the utility.

Administration focuses on workforce development, training and labor relations to support utility operations and employees. Administration also oversees the participation of small businesses in all aspects of contracting with MSD. Finance and Accounting is responsible for the effective management of the financial operations of the District.

As part of the Business Services budget, the IT Division supports all the utility’s business needs with specialized expertise to maintain the databases and infrastructure that supports them.

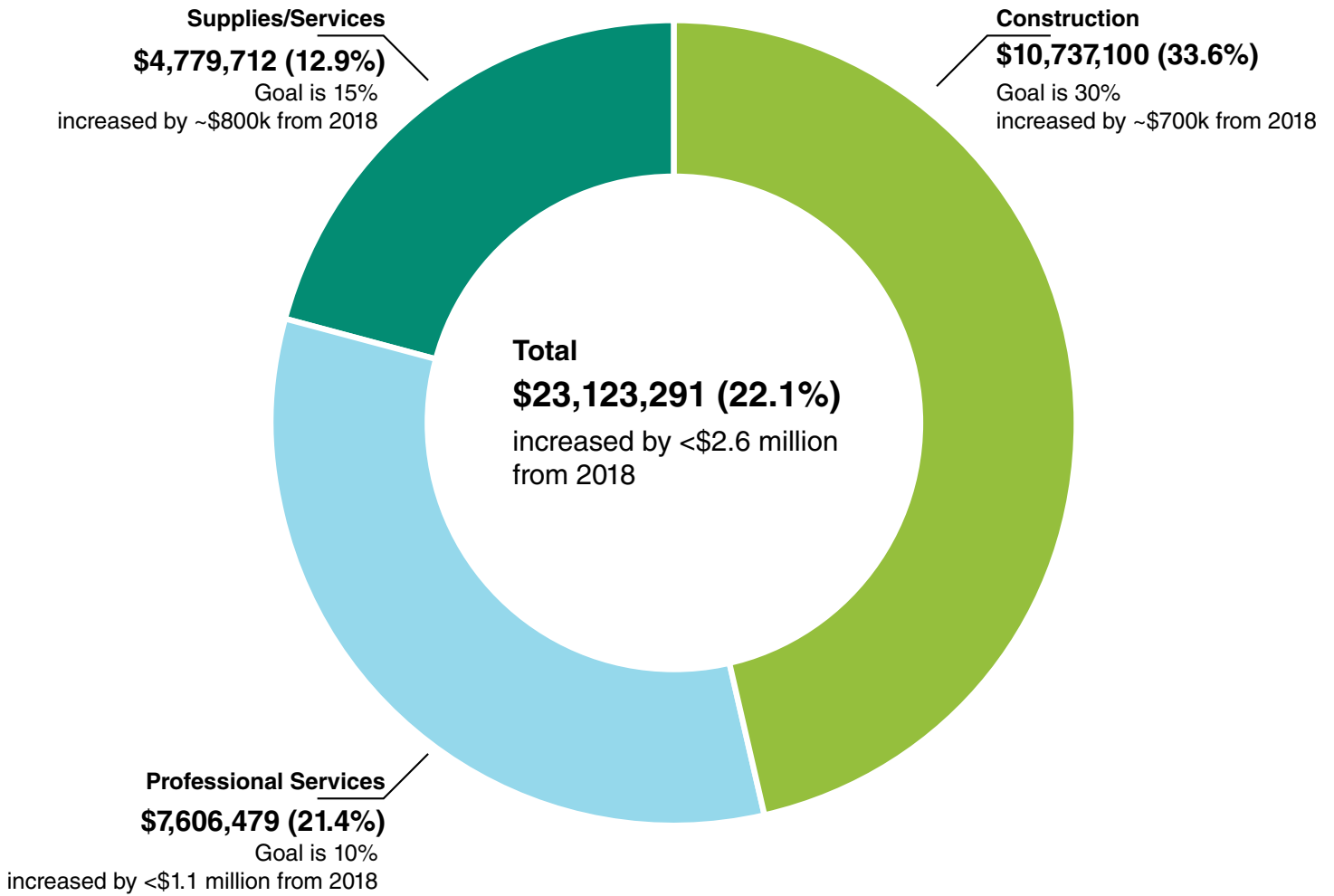
The foundational service component of the MSD IT service stack is the Infrastructure Services team, which consists of datacenter, database, network, telecommunication, service desk and IT procurement services. The infrastructure service team supplies services to the Business Application Services teams and our customers in accordance with an Operational Level Agreement (OLA).

**payroll | datacenter | labor relations | IT development
| Help Desk | training | HR | accounts payable | Small
Business Enterprise | workforce development**

2021 Budget Request by Division

Business Services (Administration, Finance & Accounting & Information Tech)

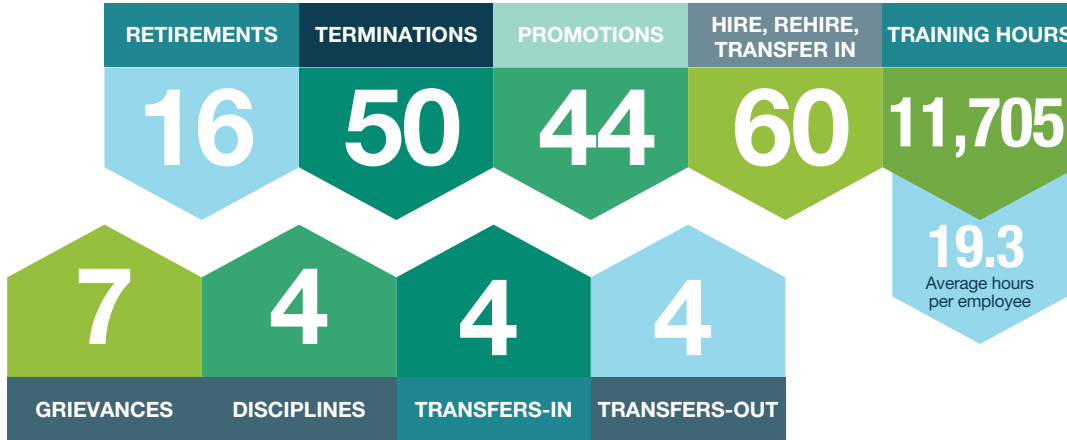
Small Business Enterprise (SBE) Utilization by MSD Operations and Capital Program



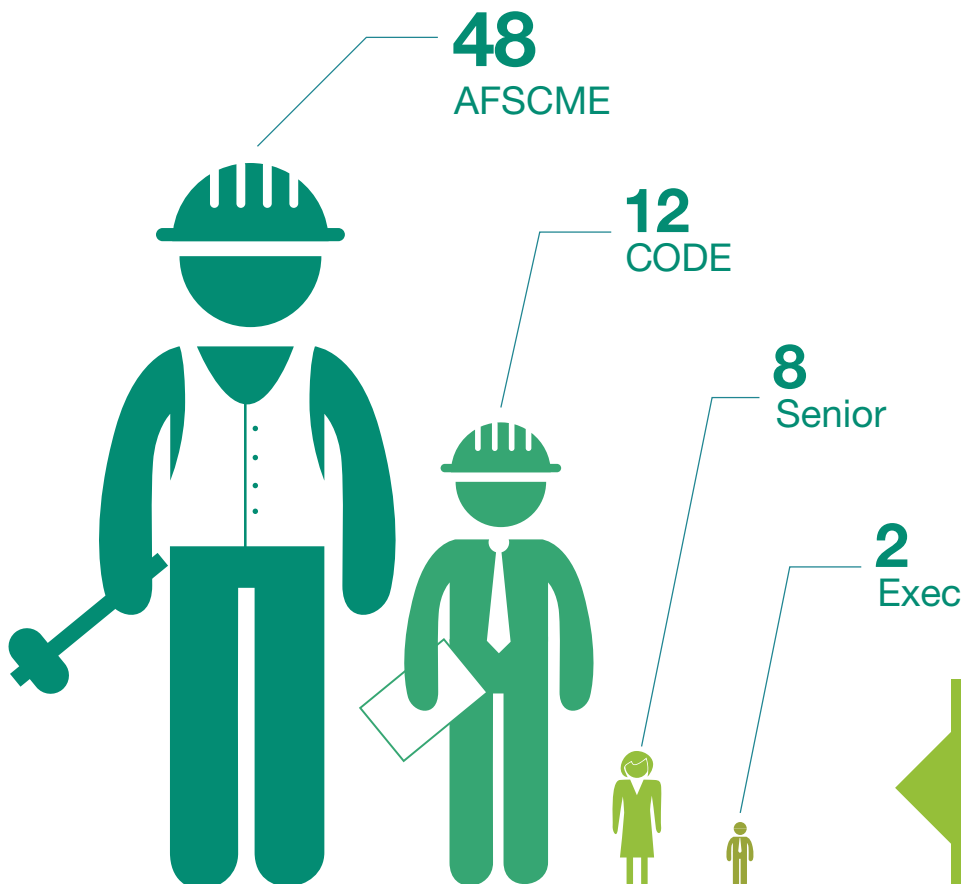
2021 Budget Request by Division

Business Services (Administration, Finance & Accounting & Information Tech)

2020 Employee Stats



2020 Hired or Promoted across all MSD divisions



2021 Budget Request by Division

Business Services (Administration and Finance & Accounting)

Highlights from the last year

Small Business Enterprise Program

MSD's SBE utilization rate increased by 2.6% from prior year with \$23.1M of total spend. MSD's SBE program manager developed tools to track status and help MSD improve its performance and utilization.

Improved internal offerings to share information and training

MSD initiated Learning and Development Team meetings, created a quarterly MSD training bulletin and coordinated bi-monthly MSD New Employee Orientations to streamline information sharing. MSD's Learning and Development (L&D) Team members foster new ideas, develop draft policies (subject to Director approval), and put together procedures, while the Training Learning Liaisons deal with day-to-day tasks.

Consultant Performance Reviews

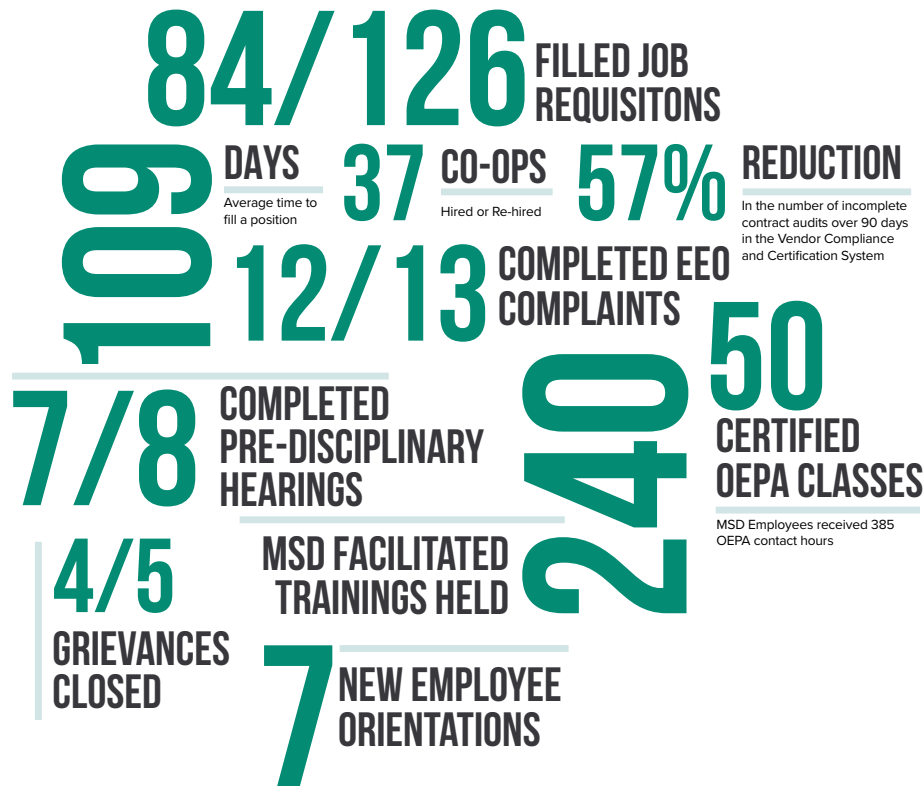
The Administration division performed an analysis of consultant performance reviews. Guidelines and training was offered to divisions on how to better utilize and track reviews for organizational benefit.

Clean Financial Audit from the Ohio State Auditor

In 2020, MSD again received a clean unmodified opinion and no findings from the Ohio State Auditor. The report states in the Auditor's opinion that: "the financial statements present fairly, in all material respects, the respective financial position of the Metropolitan Sewer District of Greater Cincinnati, Hamilton County, Ohio, as of December 31, 2019 and December 31, 2018, and the changes in its financial position and its cash flows for the years then ended in accordance with the accounting principles generally accepted in the United States of America."

MSD Staffing Plan

In 2019, MSD analyzed all staffing needs and resources to develop a Staffing Plan that assisted with prioritization and coordination of filling positions. The Staffing Plan was used to closely track and coordinate between HR and divisions. As a result of streamlined coordination, MSD was able to fill some new positions while keeping personnel spending within the allocated 2020 budget.



2021 Budget Request by Division

Business Services (Information Technology)

Highlights from the last year

Cityworks, Kronos & Sharepoint Upgrades

MSD IT has completed major upgrades of Cityworks for WWC, Kronos for all of MSD, as well as SharePoint. Upgrades of this nature help maintain essential services of the utility from a business requirements, security and continuity of operations and enhanced functionality standpoint.

Remote Functionality

In 2020 the IT staff quickly mobilized and enhanced the ability for MSD's staff to access databases and created workflows to enable engineering, finance and accounting, and other workgroups to effectively work remotely from home. The creation of new workflows, streamlined meetings and data sharing helped to keep the work of MSD flowing, even as a pandemic was and continues to dictate how our work is performed.

Critical Business System Upgrades

In 2019-2020, MSD IT has successfully upgraded critical business systems that support daily operations - Cityworks, Kronos and Sharepoint. MSD has also replaced or upgraded over 80 servers that support the operations to eliminate Cyber Security vulnerabilities and ensure business continuity. IT continues to plan the next phase of server upgrades for necessary upgrades in the coming years.

Windows 10 Upgrades

In 2020, MSD finished a major project of replacing, decommissioning or upgrading 400 workstations to the Windows 10 operating system to ensure continuity of business applications.

Cyber Security Risk Reduction

An important task performed by MSD IT is the completion of improvements and patches to reduce Cyber Security risks.



2021 Budget Request by Division

Business Services (Administration and Finance & Accounting)

New Initiatives For Next Year

Cornerstone, a New Online Training Portal for all MSD Training Needs

Kicked off in 2020, MSD has begun using a new comprehensive training portal and roll out to all of MSD will soon follow. With Cornerstone, employees can log-in or register from any computer for instructor-led or online training courses. Employees will be able to access transcripts and certificates of completion. Managers will be able to assign/approve trainings and the organization can better track organizational training metrics. Job Aids and Workflows were developed in 2020 for ease of implementation and management of the Cornerstone system.



Continued Improvement of Financial Metrics and Reporting

In 2021 MSD will utilize Power Bi to mine financial information and report KPIs. MSD will continue to enhance financial reporting to the BoCC. MSD will continue to provide Quarterly Reports and identify opportunities to discuss critical information with the BoCC and provide recommendations for utility needs. MSD financial management practices will continue to be tracked against industry standards. MSD plans to update its financial policy manual to maintain the AA+ and Aa+ bond rating.

2021 Budget Request by Division

Business Services (Information Technology)

New Initiatives For Next Year

Upgrade of MSD's Document Management System

In 2020, OnBase Foundations will be installed as the latest release of OnBase is reducing support for current versions. With Foundations, we will receive more frequent updates and enhancements in form of enhancement packs. It will make it easy to leverage capabilities and user experiences across the platform and make upgrade as simple as possible.

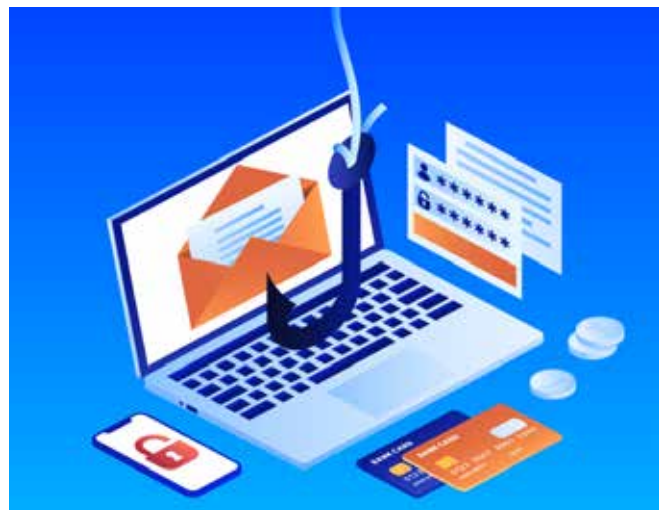
- 3600+ enhancements
- New Product Offerings
- Enhancement to existing modules
- Platform progress toward modernization
- Increase in cloud features, storage and integration option (they pointed out WorkDay, Oracle, mainly ERP systems)

Enhanced Cyber Security Protection

MSD is working in conjunction with ETS to enhance Cyber-Security protection for our mobile and on-site workforce, as well as valuable City assets by providing end-to-end protection from malicious attacks. The project will span multiple years due to the extreme complexity of the City's network and the limited resources everyone is facing due to the pandemic.

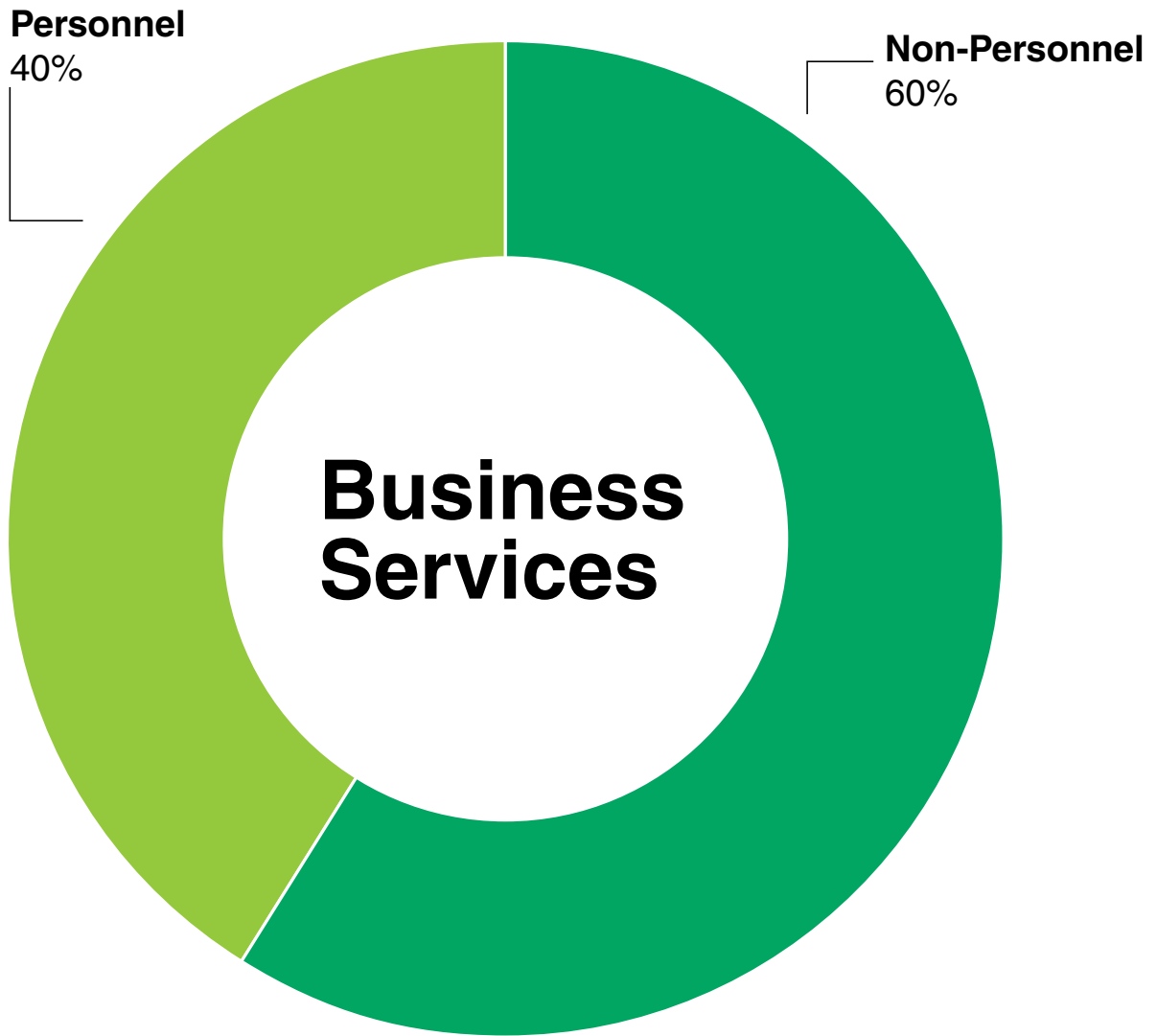
Maximo Upgrade for WWT/WO Work Order System

MSD is currently utilizing a version of Maximo that is no longer supported by IBM and is a critical system of WWT and WOs. Because it is not supported, it cannot be supported without a costly extended pay per incident contract. The upgraded system (to be funded out of WWT budget but implemented by IT) will have more functionality such as an improved user friendly interface, built in mobile access, business intelligence reporting tools, and the MSD will be able to reorganize data to be utilized in a more effective way.



2021 Budget Request by Division

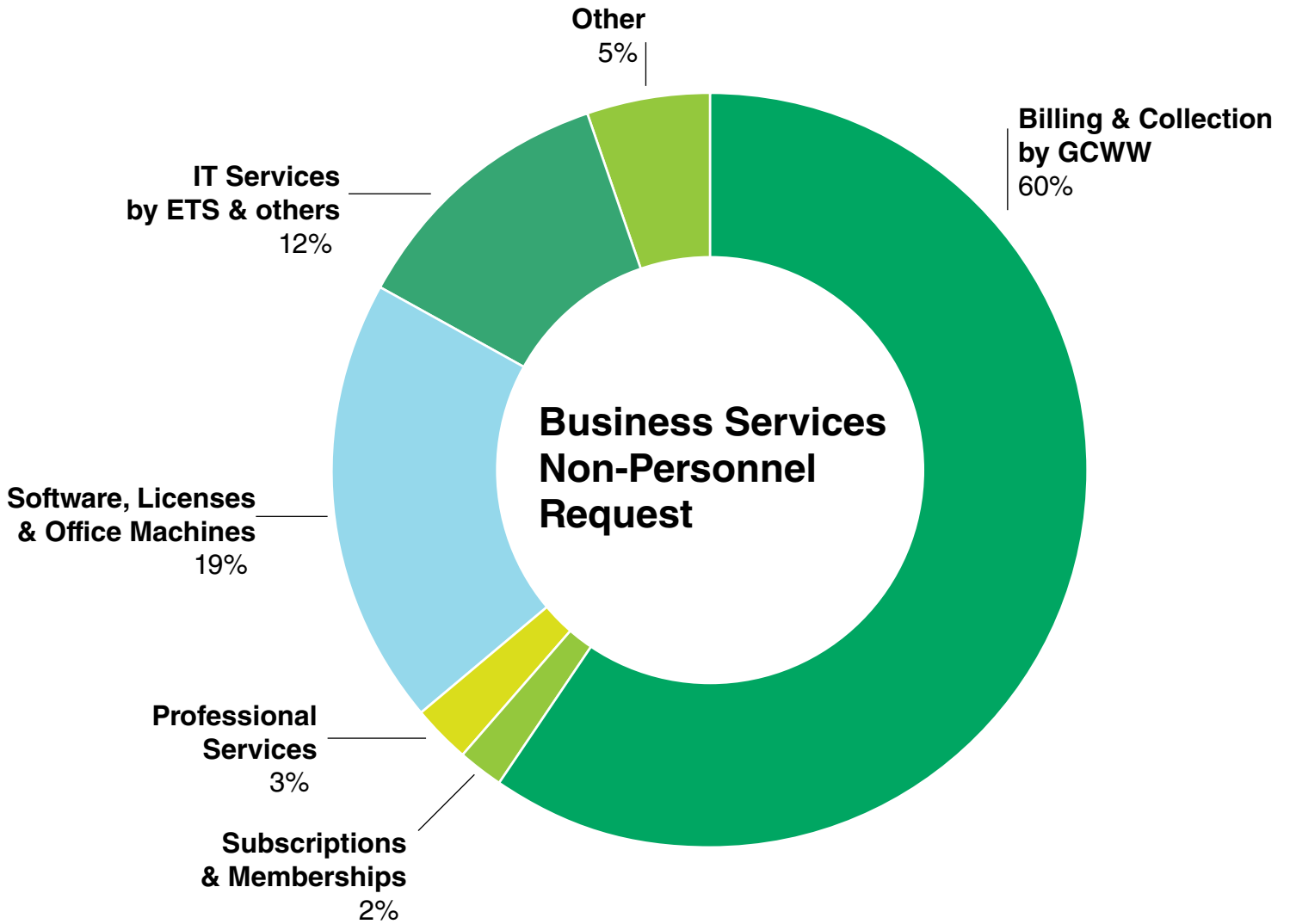
Business Services



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020
				%	%
BS (430)	\$16,881,647	\$17,977,788	\$18,313,949	\$1,432,302	8.48%
Personnel	\$6,654,431	\$6,963,327	\$7,087,043	\$432,612	6.50%
Non-Personnel	\$10,227,216	\$11,014,461	\$11,226,906	\$999,690	9.77%

2021 Budget Request by Division

Business Services



How is the Non-Personnel Money Spent?

Professional Services

- Kronos Upgrade
- Maximo
- Document mgt system
- CyberSecurity Main + Suppt
- GCWW billing + collection

Software & Licenses

- e-Builder
- SBE Memberships
- CAGIS + Permits Plus



“It’s all about Clean Water”

2021 Budget Request by Division

Business Services

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$212,400.

NEW		
Kronos Upgrade Needed	Upgrade MSD's Timekeeping System Kronos needed because Adobe will no longer support Flash by the end of 2020, popular internet browsers will only load Kronos software that uses HTML5.	\$35,000
Maximo Upgrade Needed	Upgrade Maximo Remote Data Tool (portion not included in WWT budget)	\$6,500
e-Builder Licenses	e-Builder enterprise solution, unlimited licenses to support the Project Management Information System (PMIS)	\$67,000
Upgrade of Document Mgt System Needed	Upgrade MSD's Document Management System is needed because OnBase is getting rid of and not going to support a number of versions of their software. The current document management system is clunky and not intuitive, making it difficult to effectively use.	\$50,000
Cyber Security Maintenance Support Needed	Zerto is used by the MSD IT Infrastructure Team to provide business continuity, disaster recovery and backup for virtualized infrastructures and cloud environments. This is for annual maintenance. Per ETS Cyber Security initiatives, all systems must purchase maintenance and/or a support agreement to keep them patched and up to date to mitigate cyber security incidents.	\$50,000
Maintenance Support Needed for AMS	Asset Management System refinements by Arcadis required to allow for maintenance and bug/fixes of the AMS system which provides capital asset/project prioritization.	\$10,000



“It’s all about Clean Water”

2021 Budget Request by Division

Wastewater Treatment



The Wastewater Treatment Division treats and manages wastewater, removing over 97% of pollutants received at nine treatment plants, returning clean water to rivers and streams.

Over 190 million gallons of wastewater is treated each day at MSD facilities by licensed operators and skilled maintenance staff that work around the clock to ensure clean water services are provided to our local communities and area streams.

MSD's operational excellence is recognized nationally for its compliance with National Pollutant Discharge Elimination System (NPDES) permits, distinction in safety and an advanced maintenance program. The continuous treatment of wastewater requires significant resources to ensure the environment and public health is protected.

MSD uses specialized equipment, various databases, electronic workflows and programs such as SCADA & other instrumentation that assists in efficiently treating wastewater, processing solids, and mitigating odors. Electricity and natural gas, chemicals, safety practices and procedures, maintenance and repair of equipment, calibration of instrumentation, and training for our employees are all some of the critical inputs to keeping the processes working optimally.

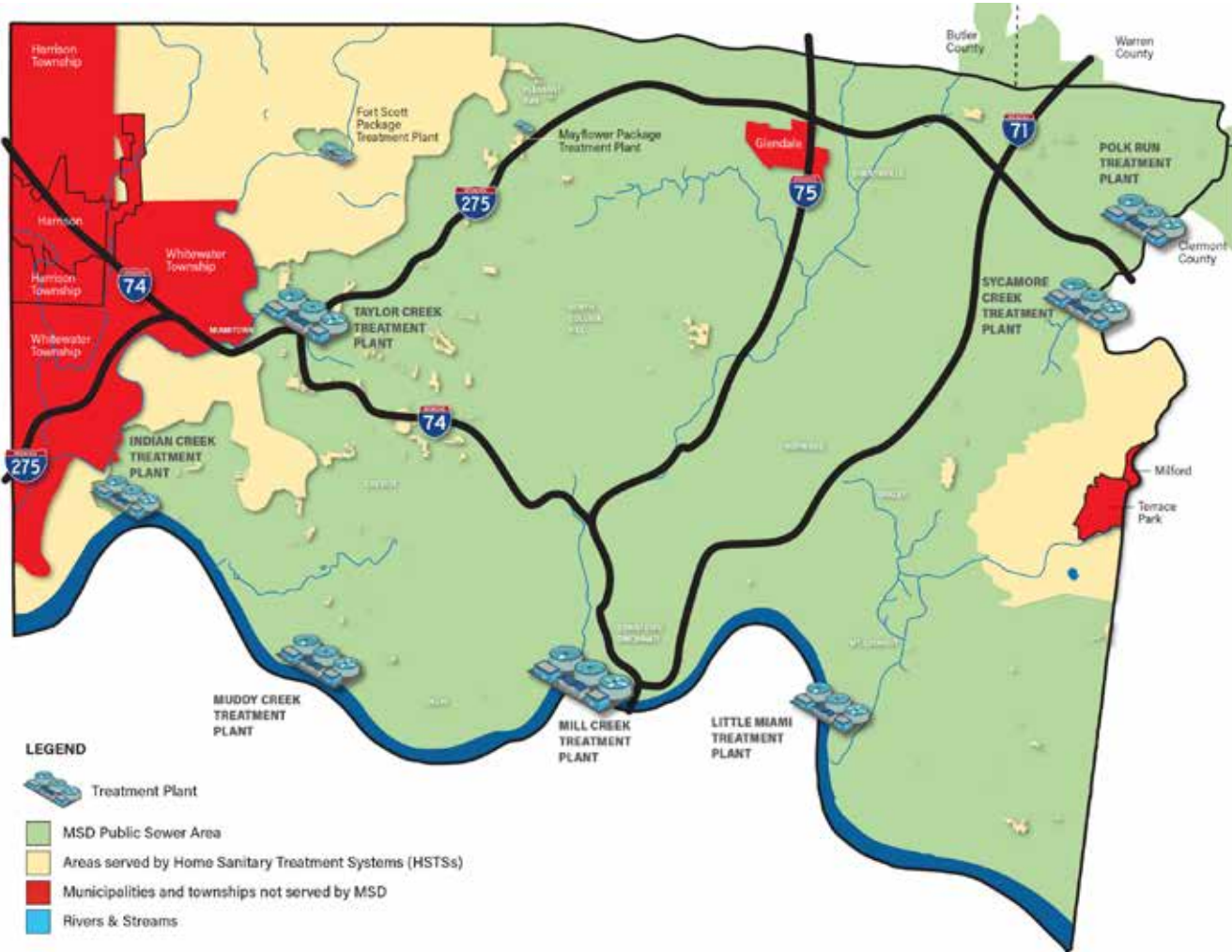
plants | pump stations | aeration | incinerators
bar racks | grit | clarifiers | effluent | influent |
centrifuge lagoon | dewatering | settling | clean water

2021 Budget Request by Division

Wastewater Treatment

MSD Service Area

MSD's service area is outlined in green in the map below with approximate locations provided. The tables outline the amount of flow and solids generated by each plant.



Water Quality Management

MSD WWTP Facility	Total 2018 Volume Treated (MG)	Total 2019 Volume Treated (MG)	Avg Daily 2019 Treated (MG)
Mill Creek	50,958	45,645	125.05
Little Miami	11,000	13,896	38.07
Polk Run	1,750	1,913	5.24
Sycamore Creek	3,157	2,894	7.93
Muddy Creek	5,397	4,810	13.18
Taylor Creek	1,147	1,136	3.11
Indian Creek	382	362	1.0
Ft. Scott		14	0.04
Mayflower	15	17	0.05
TOTAL	73,806	70,686	193.7

2021 Budget Request by Division

Wastewater Treatment

Each day, MSD performs hundreds of monitoring tasks to ensure the facilities are following their NPDES permits - in total, about 2,400 monitoring requirements are performed each month. This data is required by and provided to Ohio EPA, in accordance with the Clean Water Act. MSD reviews and submits timely and accurate reports. Ohio EPA inspects MSD facilities each year.

Eight of MSD facilities (including the largest) facilities are all recipients of 2019 Peak Performance Awards, awarded by the National Association of Clean Water Agencies (NACWA); Ft. Scott was not eligible as it has not been in operation a full calendar year.

Biosolids Management

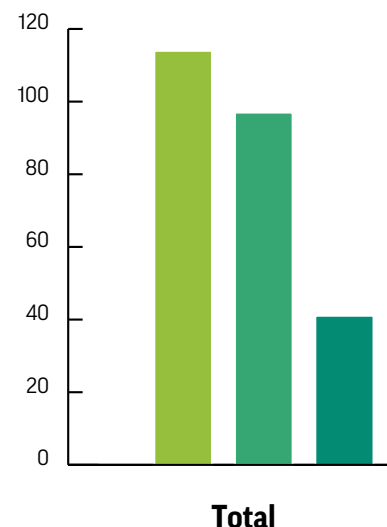
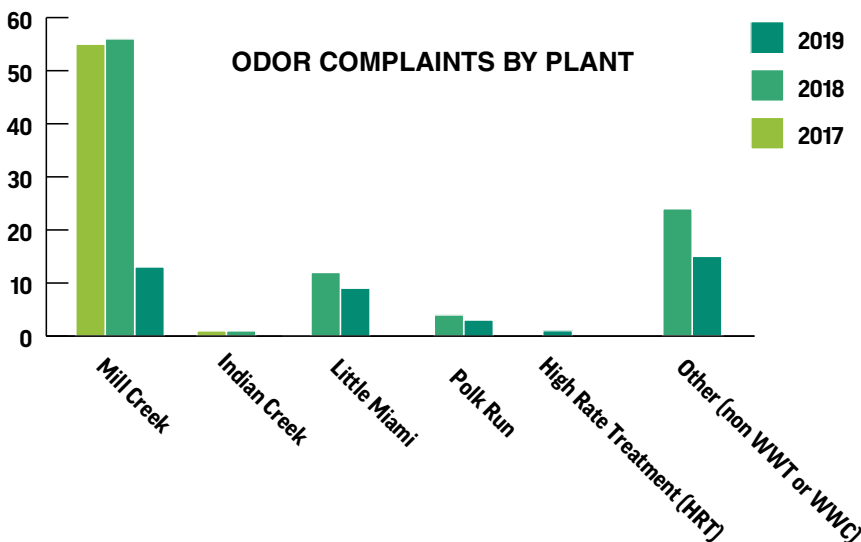
WWT currently disposes biosolids (the solids byproduct from wastewater treatment) by incineration at Mill Creek or by landfilling at Rumpke Landfill. Up until 2016, MSD incinerated solids at the Little Miami for outlying plants but it was decommissioned due to new mercury air emission standards. Now, all solids from the outlying plants are landfilled, which is costly and not environmentally friendly. MSD operates three fluidized bed biosolids incinerators at Mill Creek to dispose of the solids generated at that facility. The incinerators are monitored to ensure proper operation and air quality controls. The facility is subject to numerous performance and emission tests and is routinely inspected.

In 2019, MSD generated 40,332 dry tons of biosolids with 76% of incinerated at Mill Creek WWTP.

Facility	Method of Disposal	Solids 2018 (dry tons)	Solids 2019 (dry tons)
Mill Creek	Incineration	30,198	32,462
Mill Creek	Landfill (WWT Process)	2,476	29.5
Mill Creek	Landfill (Digester cleaning)	518	40.3
Little Miami	Landfill	6,129	5,707
Muddy Creek	Landfill	2,126	2,093

Odor Control

MSD's odor control program focuses on identification and reduction. MSD has refined its operation and management practices to optimize how odor control is performed, linking strategies to certain process areas, maintenance schedules, storage and treatment to minimize odor issues. MSD works to mitigate odors in accordance with the Board's "no offsite odors" and "zero tolerance" policy. MSD maintains an odor report hotline and tracks investigations of each incident and attempts to identify the root cause of the complaint.



2021 Budget Request by Division

Wastewater Treatment

Highlights From Last Year

Mill Creek

Upgraded Plant Influent Odor Control

The Plant Influent and Headworks odor control replaces the old and antiquated ferrous chloride feed system. The new system is more efficient, safe and reliable with a secondary feed line of odor control chemicals to feed primary treatment and a rehabilitated headworks scrubber system. Systems are now linked to SCADA for enhanced performance monitoring & operation.

Engineered Media for Odor Control

The mulch bed odor control at the Gravity Thickeners west bed was replaced with new engineered mulch media. Engineered mulch media has a longer lifecycle than traditional mulch and its use will reduce maintenance time and expenses, saving \$25,000 per year on replacing organic mulch.

More Efficient Dewatering System Improves Performance

A new Dewatering Polymer System is now in operation with fewer risks in solids processing upsets from poor polymer feed issues. The new system saves time and effectively dewateres solids prior to incineration with a high degree of accuracy in the polymer feeding process. The new system ensures reliability and is reducing polymer usage and costs by approximately \$265,000/year.

Digester Cleaning for Storage Tank Rehab

In 2019 & 2020 WWT initiated cleaning to prepare for the retrofit of 4 digesters to be reconfigured for excess storage. MSD contracted the industrial cleaning to remove the built-up of material in the tanks. The tanks continue to take on rainwater. When rainwater enters, putrid odors occur. WWE is currently designing a retrofit for the digesters.

Septage Receiving Station (SRS) Odor Control

The new Odor Control system at the SRS is operational to treat odorous air from the hauled waste receiving area on Gest Street. The new dry media scrubber and discharge line is sized to handle the SRS facility. An e-nose is currently at the location and they are integrated into MSD's Odor Control monitoring system.

Little Miami

Continued Operation through Construction Coordination

The major capital improvement is underway at the grit removal system which reduced wet weather capacity and has challenged operations through 2019 and 2020. Operators managed to maintain effective treatment without any permit violations or flooding the construction site. During the last phase of construction plant flow was restricted to 20 to 25 MGD from the normal maximum of 55 MGD.



2021 Budget Request by Division

Wastewater Treatment

Muddy Creek

Pump Station Repairs & Investigations Ongoing to track the source of inflow

In August 2019 a major failure of the pumps and gates of the Muddy Creek pump station resulted in 4 months of temporary (contracted) pump rental while maintenance staff replaced and rehabbed the pumps and electrical panels. Follow up inspections and repairs of the gates were conducted to aide in operation. The station experiences a large number of overflows on average and operational call outs to investigate, reset or repair station operating equipment due to its age and condition as well as proximity and influence from the Ohio River. In 2019 there were approximately 50 work orders created to address the aging station. In 2020, MSD installed a remote sensor that provides level data which is compared with other system and River level data.

Outlying Plants

The WWT operating and maintenance staff have also been leading several initiatives within the outlying plants to rehab certain system such as Sycamore Disk Filter Replacement. The new filters are stainless steel and will last much longer.

Polk Run has replaced a Raw Sewage Pump (with asset renewal) and rebuilt 6 Raw Sewage Pumps/Grinders.

Taylor Creek is currently rebuilding clarifiers and installed new drain cleanouts and Indian Creek replacing old mixers.

The Fort Scott WWTP was placed into operation in June of 2019 after years of a lack of flow into the plant. The Fort Scott plant employs the Aero-Mod's Sequox process and Aero-Mod's assistance was contracted to assist with the plant start up and to train plant operators.

Specialized Plant Operator classroom trainings resumed

In 2020, MSD resumed Plant Operator classroom trainings, with social distancing to provide new or junior operators with Plant Supervisors provide instruction to supplement operators knowledge of wastewater treatment math, science and technology.



2021 Budget Request by Division

Wastewater Treatment

New Initiatives for 2021

Flame Resistant-rated uniforms

In 2020, MSD planned to modify all uniforms worn by certain plant staff. However, after completing a risk assessment determined that it was best practice to allocate safety related NFPA 70-e uniforms to Wastewater Treatment and Watershed Ops field employees. It was determined that all O&M staff could be subject to an arc-flash within the plant environment. Also include miscellaneous items such as gloves, safety glasses, hard hats, face shields, boots, rain gear, sweat bands, coveralls, cold weather gear, PPE, etc. The Cintas laundering services ensures that apparel is washed appropriately and does impact the material integrity of flame resistant rated apparel.

Odor Monitoring Systems

MSD plans to install 2 calibrated electronic noses (e-noses) at the Little Miami WWTP, similar to the five e-noses are used at Mill Creek. E-noses are used for monitoring and tracking odor sources before they migrate offsite or noticed with other instrumentation. The Little Miami WWTP sits along the Little Miami Bike trail and is a high risk of odor complaints from residents and recreational trail users. With several construction projects planned for Little Miami in the coming years, the e-noses will help MSD respond more quickly than waiting for nearby residents and businesses to call in odor complaints.

Industrial Network Cyber Security Risk Reduction Initiative for SCADA

Everyday, MSD relies on data - data that is shared between SCADA, the plant control systems, and business systems, along with collecting data from the internet. WWT systems are becoming more and more connected and with those sources, there are more risks of significant threat vectors that require risk mitigation. It is incumbent upon the District to follow industry standard and ensure control system and critical operations are protected.

Due to events around the world and the specific targeting of Industrial Control Systems, a security information and event management (SIEM) solution is needed to help protect MSD systems and provide visibility into network events. At its most fundamental level, a SIEM solution would enable MSD to centrally collect data across its

entire network environment to gain real-time visibility into activity that may potentially introduce risk to the control system. Using SIEM technology to achieve visibility into network activity could help MSD address issues before they become a significant financial or operational risk. In addition to the security benefits, a SIEM could also help manage SCADA network assets.

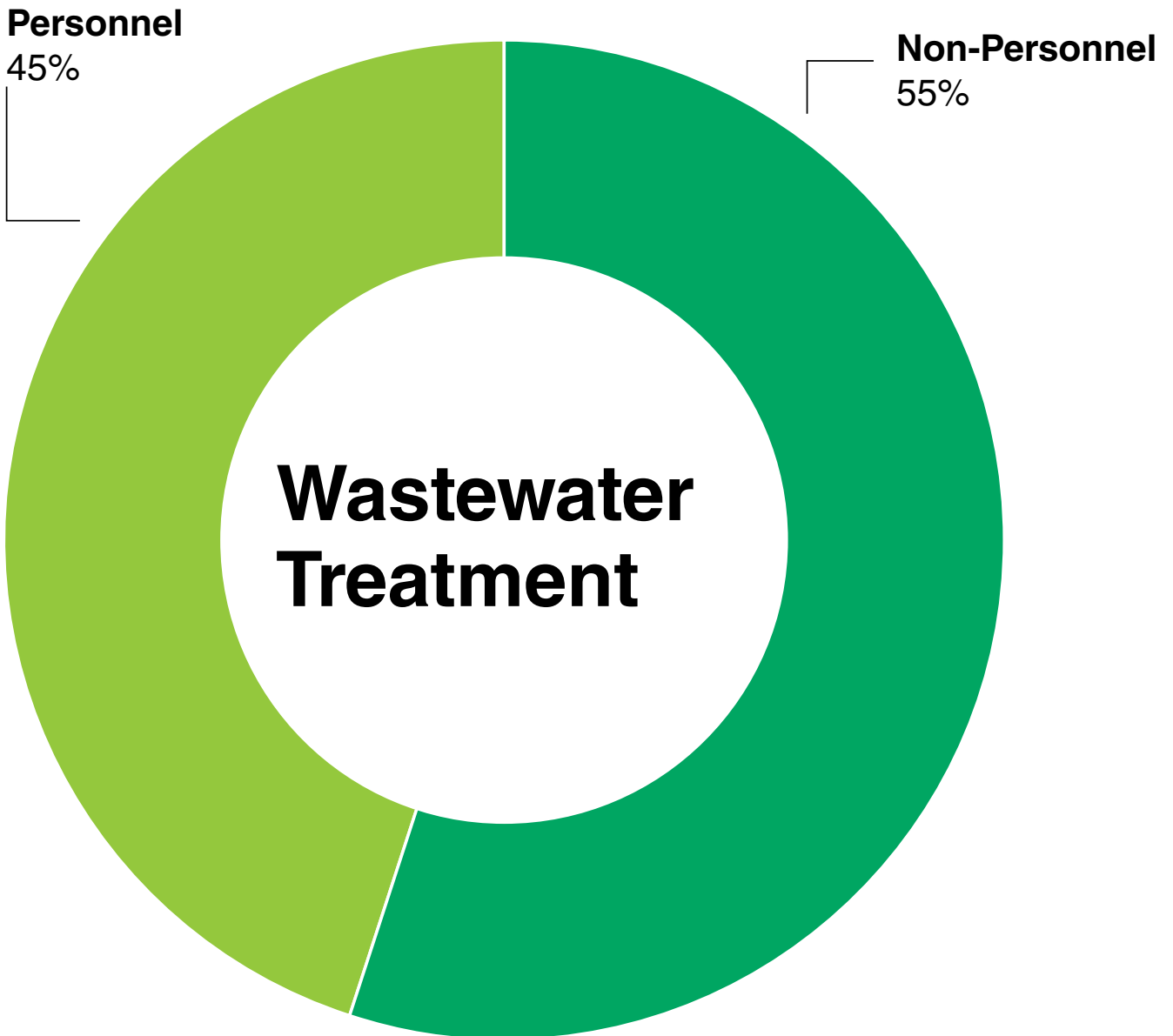
Cincinnati State & WWT to train instrumentation technicians with test Variable Equipment Drives (VFDs)

In 2020, MSD initiated a pilot program with Cincinnati State & WWT to train instrumentation technicians with test Variable Equipment Drives (VFDs) which include multiple devices and scenarios to improve the skills of the workforce to program and repair the instrumentation used through the mechanical and electrical systems. With the success of the instrumentation pilot, MSD plans to purchase more units for 2021.



2021 Budget Request by Division

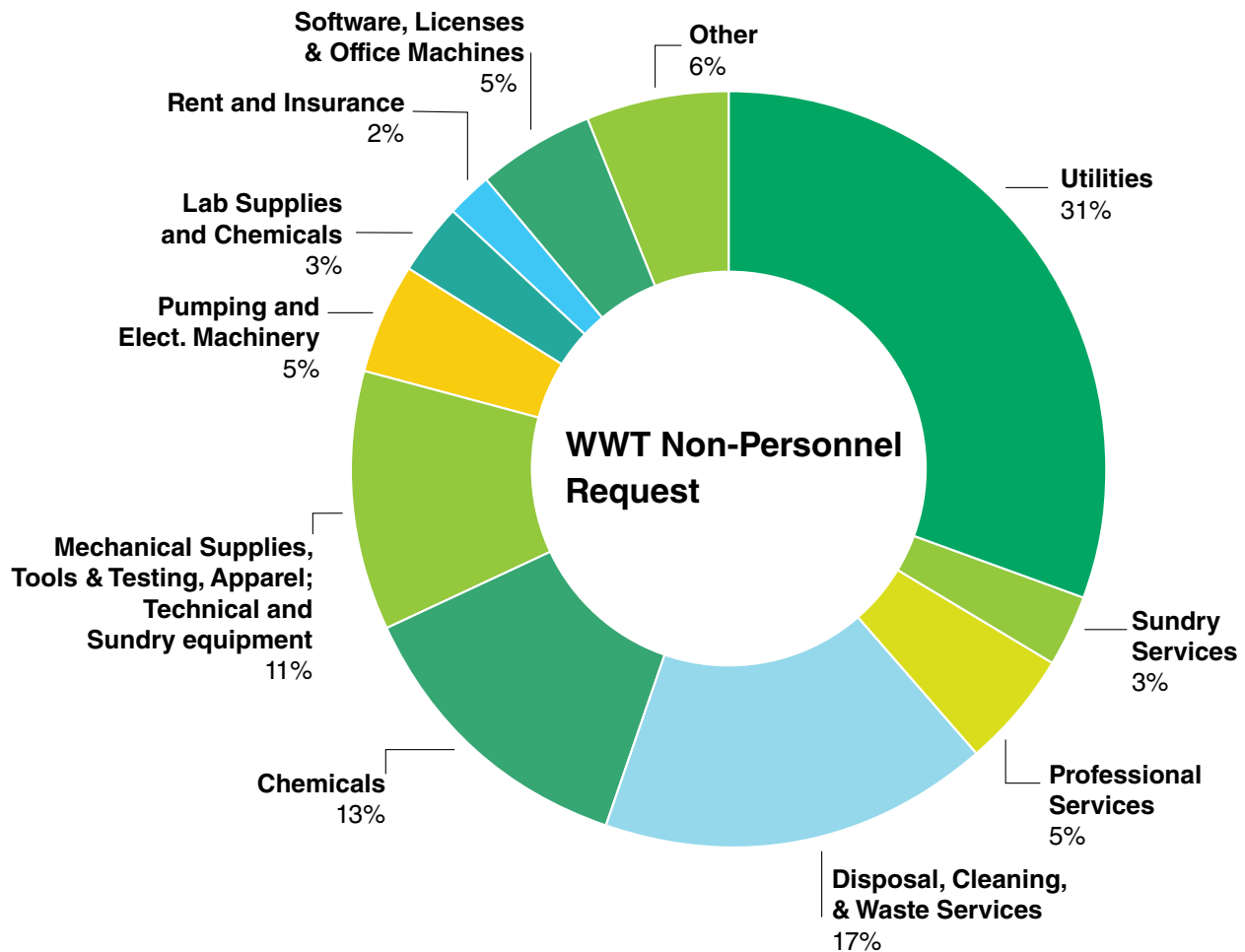
Wastewater Treatment



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020		
				%	%		
WWT (440)	\$45,247,488	\$47,716,066	\$49,761,552	\$4,514,064	9.98%	\$2,045,486	4.29%
Personnel	\$20,426,743	\$21,260,431	\$22,174,453	\$1,747,710	8.56%	\$914,022	4.30%
Non-Personnel	\$24,820,745	\$26,455,635	\$27,587,099	\$2,766,354	11.15%	\$1,131,464	4.28%

2021 Budget Request by Division

Wastewater Treatment



How is the Non-Personnel Money Spent?

Chemicals

- Polymer (for sludge thickening)
- Sodium hypochlorite (for disinfection/odor control)
- Sodium bisulfate (neutralizes sodium hypochlorite prior to effluent discharge into Ohio River)
- Polyaluminum chloride (for high-rate sludge thickening)
- Ferrous chloride (for sludge thickening/odor control)
- PAA for Supplemental Disinfection

Electrical, Building and Pumping

- Sidewalk and driveway repair
- HVAC installation and repair
- Toilet replacement
- Check valve installation
- Roof repair
- Door installation and repair

Sundry

- Expert advice
- Technical support

Disposal and Cleaning

- Liquid and solid sludge hauling
- Screening and grit removal
- Skims removal
- Wet well and tank cleaning

Plumbing and Electrical

- Pumps
- Compressors
- Valves
- Motors

Mechanical Tools

- Gear boxes
- Valves, pipes and fittings
- Hand and electrical tools

2021 Budget Request by Division

Wastewater Treatment

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$1,191,400.

NEW		
Testing Service Needed	Triennial emissions testing of incinerators is due to be performed, estimated to be \$200K from Professional Services. At Muddy Creek centrifuge services with Flottweg are needed to provide replacement parts and rebuild/assistance services as needed for wear and tear of parts/rebuild are needed and budgeted at \$100,000 from Sunday.	\$300,000
Software/Upgrades Needed	<p>The Maximo work order management system used in WWT is no longer supported. The upgrade would enhance mobile Maximo capabilities providing operators and maintenance employees with better tools. Maximo upgrade is \$355,000. This request was requested in December 2019 for FY 2020 budget but funding was not provided to cover this cost. Therefore the Maximo upgrade had to be deferred. The current version is no longer available for support and it must be upgraded in 2021.</p> <p>Cyber security solution for vector threat risk reduction totals to protect SCADA, CEMS, eOps, Skavlik, GE Global, Topview, Tech Connect, totals \$180,000</p> <p>Odor Control Monitoring/Envirosuite addition for 7 e-noses at Little Miami for Odor Control detection and monitoring at \$180,000.</p>	\$597,000
Treatment Chemicals for NEW Mill Creek E.Coli limits	<p>The Mill Creek treatment plant is at risk of not being able to meet its disinfection limits to the Ohio River and requires supplemental disinfection chemicals to ensure that new, more stringent water quality standards will be met to protect recreational users on the Ohio River.</p> <p>In 2020, the new discharge limit went into effect in 2020 and MSD had 4 violations in 2020 and was at risk for not meeting during the recreation season 2020. The addition of PAA could cost an additional \$680k-1.75M/year. Alternatively, a capital project to enhance disinfection system could cost well over \$20M. MSD is evaluating options for feeding the PAA to supplement disinfection and estimates that the cost of PAA to be \$1,500,000 commencing in 2021.</p>	\$1,500,000

2021 Budget Request by Division

Wastewater Treatment

INCREASED		
Utility Costs	Electric costs are projected to increase by about \$300K due to increased usage from having Fort Scott on line for a full year, where as Polk Run electric costs are projected to increase by 10%, Sycamore 15% and 5% at all other locations.	\$100,000-300,000
Hauling and disposal of sludge, cake, and liquid hauling	2% increase projected hauling costs over 2020 for proper hauling and disposal of sludge, cake, and liquid hauling for Little Miami, Muddy Creek, Sycamore, Taylor Creek and Polk Run WWTPs	\$1,500,000
Insurance (Building Structure) Premium	The insurance market has seen increasing trends in premiums – MSD’s premium was to increase by 41% in June 2020. Before renewing, MSD’s conducted research with other utilities and providers, and obtain a new policy provider with lower premiums and comparable coverages. The new provider is \$ 70,000 less than the old provider but the market has increased across the board, necessitating an increase request in 2021.	\$160,000
Building Cleaning (routine and enhanced)	Building Cleaning costs have increased, due to routine and enhanced Covid-related cleaning of bathrooms, buildings and offices, common areas, as well as seasonal window.	\$70,000
Odor Control Chemicals	Ferrous Chlorine (FeCl ₂) is used in the influent at Mill Creek & Little Miami to proactively control odors. FeCl ₂ is now used 365 days at 2400gpd, costing approximately \$482,000. As of June 1, 2020, the contracted price of delivered FeCl ₂ increased from \$0.36/gal to \$0.55/gal due to COVID; contract expires 7/2022	\$200,000
Treatment Chemicals	In 2021, chlorine costs are increasing by 10% above 2020 levels. Chlorine is used for disinfection of wastewater to make it safe during the recreational season as the public recreates in area rivers and streams, boating, fishing and swimming. <ul style="list-style-type: none"> While Chlorine is the only treatment chemical highlighted above, 2 chemicals decreased in 2021. Mill Creek polymer was reduced by \$265,000 and the bio-mulch cost (\$25,000) was eliminated due to the installation of new engineered media. 	\$320,000

2021 Budget Request by Division

Wastewater Treatment

INCREASED		
Mechanical & Plant Supplies	Critical spare parts are needed to mitigate risk of equipment failure, regulatory deviation, and costly operating modes due to unplanned system downtime. Spare parts provide the ability to make the best use of MSD resources.	\$90,000
Uniforms for workplace safety (FR)	For enhanced worker safety and risk reduction, uniforms with arc flash protection for enhanced electrical safety of field/operational/maintenance employees was provided in 2020. This amount is an increased to what was budgeted in 2020.	\$224,000
DEFER TO 2022		
Ash Lagoon Cleaning	Cleaning of the ash from the lagoon. Impact of not fully funding cleaning out the ash lagoons results in increased costs for hauling and odors. The south lagoon is currently online, nearly full and was last cleaned in 2015. The north lagoon was cleaned in 2018/2019 and is ready to be placed online while the south is shut down for routine cleaning. The cleaning is not budgeted every year and budgeted in 2018.	\$1,500,000



“It’s all about Clean Water”

2021 Budget Request by Division

Wastewater Collection



The Wastewater Collection Division collects and manages wastewater from Greater Cincinnati communities, maintains the sewers and responds to requests for service in a timely manner, providing exceptional customer service in a safe and friendly manner.

WWC's Customer Service Group responds to requests for service and also completes scheduled preventive maintenance and cleaning work orders on all of MSD's Combined Sewer Overflow (CSO) structures to minimize overflows, and responds to all overflow alarms generated by MSD's Smart Sewer System, also called the Wet Weather SCADA System.

WWC's Asset Management Group coordinates all "Planned" activities including maintenance, condition assessment, cleaning, repair and rehabilitation. This group utilizes Field Investigation work orders and standardized information to generate asset-specific cleaning, inspection, repair and rehabilitation work orders prioritized by risk. The Asset Management Group utilizes work order data to reprogram maintenance activity needs and priorities.

WWC's Condition Assessment and Cleaning Group is responsible for planned and reactive standardized condition assessments of main sewers, manholes and building sewers in the public ROW. MSD utilizes industry-standard Pipeline Assessment Certification Program (PACP) for main sewers and other industry standards for manholes and building laterals.

WWC operates the combined sewer system in accordance with the CSO NPDES permit and MSD's Sewer Overflow Response Plan (SORP) in order to reduce overflows, keep the system running freely and safely.

**CCTV | interceptors | maintenance | CSO outfalls |
sewers | assets | repairs | condition | work orders |
inspections | SBUs | mechanical | vehicles | cleaning**

2021 Budget Request by Division

Wastewater Collection

Highlights From Last Year

Enhanced Root Cutting Gets Better Results

In 2020 MSD began using chemical root treatment in lieu of mechanical root cutting. The intent is to focus on those areas where roots have been a recurring issue and have a high likelihood of returning to create blockages, backups or overflows. There are currently 468 work orders assigned for Chemical Root Treatment in 2020. With chemical root treatment, MSD can service more sewers at risk of root intrusion than traditional methods.

3,787 Sewer Segments Assessed and 907 Sewer Segments Cleaned in 2019.

As part of initiatives in 2020, WWCs now tracks the “risk value” of these assets at the time the work is completed to better quantify the benefits and value of work performed. This information will be used in upcoming cycles to put a value on risk reduction associated with the completed work orders.

Fewer Contracted Inspectors

In 2020, MSD reduced contractor labor and now has 4 Wastewater Collection Construction Inspectors performing inspections on repairs, rehabilitation and manhole paving projects. In 2021, WWC plans to add one more inspector to continue to improve the ability to perform construction inspection with inhouse inspectors.

Full-scale use of FLIs (Float Level Indicators)

In 2020, MSD began installing FLIs on almost every SBU investigation. On average, WWC has installs about 150 FLIs per month. The benefits of installing FLIs results in more accurate determinations of SBU investigations and differentiates between public and private causes of water in basements. The use of FLIs is now customary for each SBU investigation and they are important tool to help differentiate between overland flow and an SBU. The use of FLIs reduce MSD liability and staff can perform better customer service to help customers understand the problems better.



2021 Budget Request by Division

Wastewater Collection

2 High Risk/High Profile Sewer Failures; Paid for by Emergency Allowance

Winton Lake: What resulted in a costly and complicated repair that shut down the recreation on Winton Lake in May 2019, MSD crews spent several weeks rehabilitating, rootcutting and cleaning up. This job ended up costing \$375,000.

Xavier University: A week before fall semester 2019 started, a sewer manhole located on Dana Avenue collapsed near Xavier's entrance. That manhole was extremely deep and difficult to access, resulted in a significant effort to repair, costing \$880,000 from the Emergency Allowance and requiring significant coordination with Xavier University.

Odor Control

In 2019, WWC investigated almost 400 odor investigations, of which approximately MSD works to mitigate odors in accordance with the Board's "no offsite odors" and "zero tolerance" policy. MSD's odor control program includes a focused effort by WWC to respond and identify any MSD odor sources within the collection system, linking odor control strategies with operations and maintenance schedules to reduce complaints. MSD WWC routinely responds to odors called into 352-4900.

Responding to Requests for Customer Service

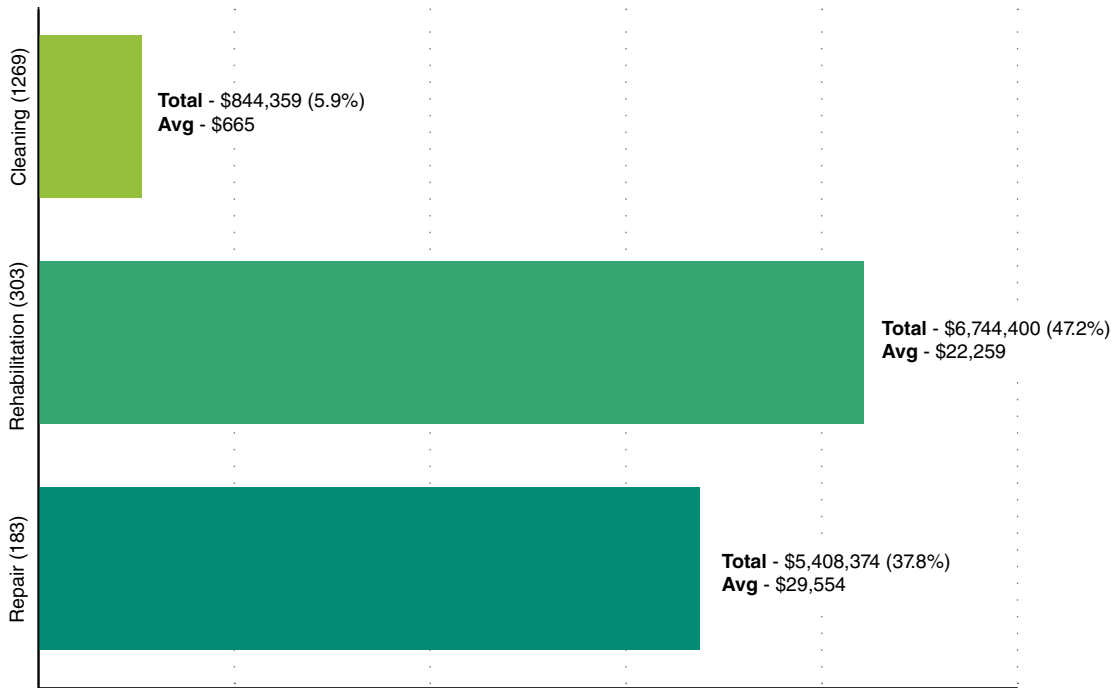
In 2019, MSD customer service responded to 6,033 requests for service. Customer Service Agents/ Dispatchers take service requests, manage the creation of field investigation work orders, dispatch work to field crews, and process work returned by field agents.



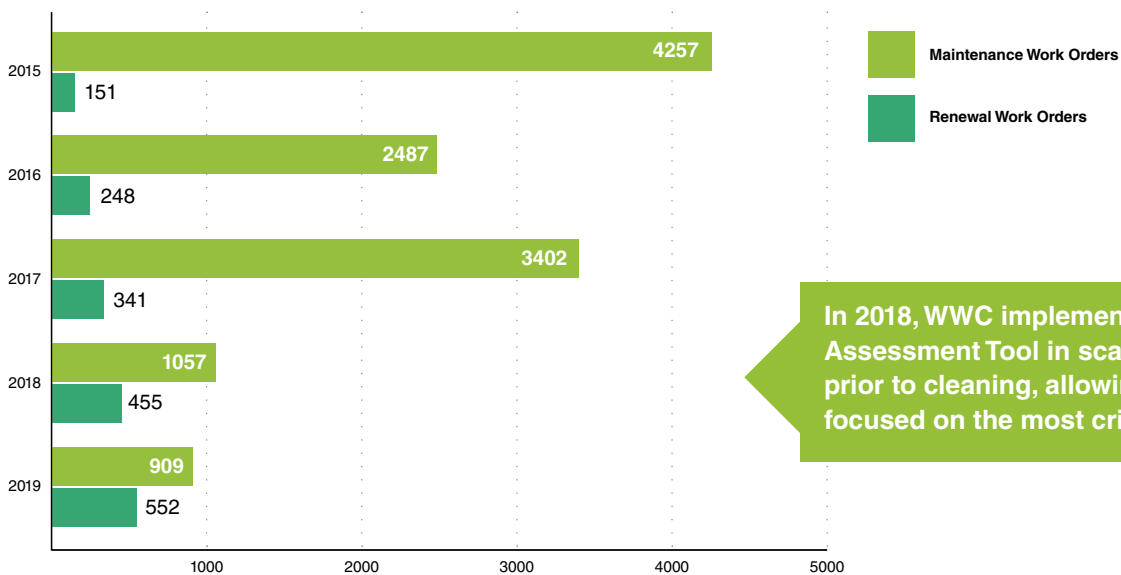
2021 Budget Request by Division

Wastewater Collection

Condition Assessment and Cleaning are covered by the Operating Budget as a maintenance cost. Repair and Rehab are budgeted as a capital expense, paid for out of annual allowances for Main Sewers and Prioritized WWC needs. Main Sewers are defined scope projects and are contracted out. Below is a graphic that shows the number of sewer segments completed for 2020 YTD through October. The graphs that follow show historical maintenance work orders and the number of segments condition assessed YTD through October 2020.



Maintenance and Renewal Work Orders for Sewer Mains



In 2018, WWC implemented a Rapid Assessment Tool in scanning pipe segments prior to cleaning, allowing resources to be focused on the most critical needs.

2021 Budget Request by Division

Wastewater Collection

With an additional \$1M allocated to Condition Assessment & Cleaning in 2021 and future years, MSD would be able to complete most extreme, high and medium risk sewers in 5 years that are due, overdue or never been assessed. Therefore, with this plan, MSD would be caught up on condition assessments by 2025. Low or negligible risk sewers, being lower risks of failure or criticality would be assessed as needed or in later years.

Condition Assessments Completed

Distribution by Risk Bin and Year - full year for 2019, thru October for 2020

Year	thru Oct. 2020		
Risk Bin	Count of Segments	Miles Completed	Condition Assessment Costs
Extreme	254	8.63	\$97,416
High	612	20.91	\$163,869
Medium	892	30.67	\$717,592
Low	553	18.07	\$209,698
Negligible	319	9.99	\$80,505
Total	2630	88.27	\$1,267,949

* Note: 2020 numbers impacted due to some reduction of crews due to COVID-19 reduced workforce

Distribution by Pipe Size Range and Year

Year	thru Oct. 2020		
Risk Bin	Count of Segments	Miles Completed	Condition Assessment Costs
<15"	1381	46.94	\$456,989
15"-24"	720	20.87	\$321,749
27"-36"	183	6.63	\$61,941
38"-48"	107	3.72	\$113,824
49"-80"	170	7.21	\$238,670
80"<	69	2.89	\$75,232
Total	2630	88.27	\$1,267,949

2021 Budget Request by Division

Wastewater Collection

New Initiatives For Next Year

Mobile Training Simulator for Cranes and Heavy Equipment.

Having a rigorous, leading industry training tool such as the simulator would give MSD and other public partners the ability to focus our training resources and provide tools to help employees improve their skills and be assessed for job readiness. The simulator would be housed and managed by WWC's Fleet Services Section. Fleet Services would set up effective, in house training with the simulator for its 20 Motor Equipment Operators (MEOs) and 50-100 plant operators that use the overhead cranes. Such an initiative would improve employee skill set and will allow them to be better prepared for the next level in their career path and reduce the anxiety of operators when it comes to being trained on a new piece of equipment.

Expansion of Condition Assessment & Cleaning (CA&C)

The adage of “an ounce of prevention is worth a pound of cure”, is no truer than in the asset management group of WWC. A high-risk sewer that has not yet failed is much cheaper to fix and repair than something that is failed and quickly becomes exponentially more costly.

Below is an chart of how CA&C is currently scheduled for the next 10 years if a budget of approximately \$6M was set for this work in 2021 and each year to follow.

MSD has rigorous Asset Management System and uses a leading industry Standard Condition Assessment Tool to establish the repair, rehab and maintenance needs and determine the likelihood of failure. MSD also uses Specialized Condition Assessment, such as LiDAR. Laser-profiling and SONAR are utilized to identify wall-loss, shape-loss, and debris quantities, respectively, in larger diameter sewers and sewers with high flow rates. This highly specialized information helps with the planning, design and prioritization of repair, rehabilitation and cleaning of these sewer segments.

Why do we need to know the condition of our assets?

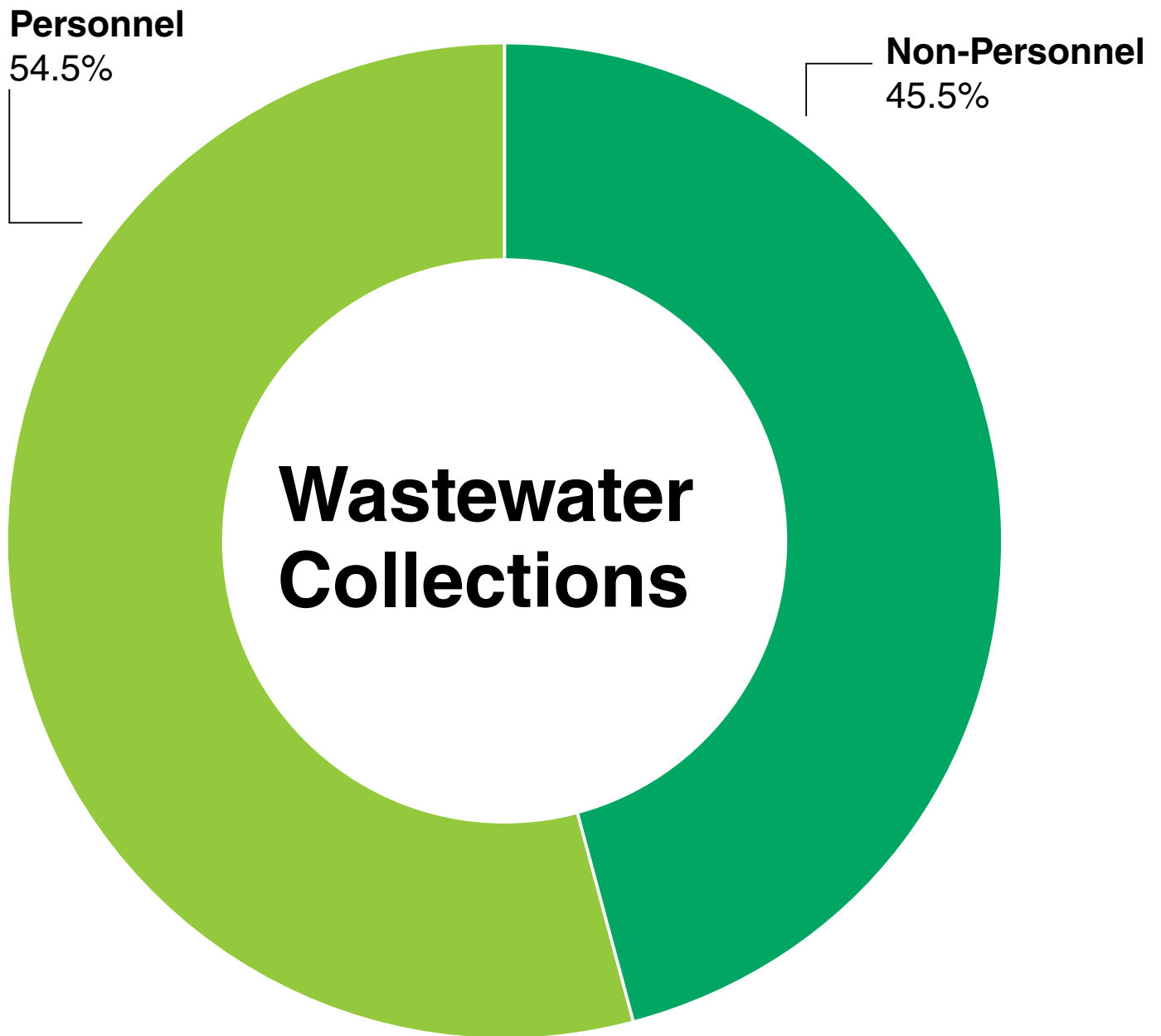
Sewers are critical assets that ensure wastewater is collected and transported to treatment plants and not blocked by roots, grease or other obstructions. When sewers fail, they contribute to road closures, untreated wastewater surfacing on the ground or in homes and an emergency is more costly to repair. Hundreds of sewer segments are high risk large diameter sewers and they are overdue for cleaning. A failure of a large diameter sewer could be catastrophic and upset the ability to maintain sewer service if they are clogged with roots, debris or grease or cracked and missing joints or connections. These are identified in condition assessments which are cheaper to fix as a planned repair than a reactive/emergency failure.



Almost half of MSD's Collection System main sewers have not been condition assessed or cleaned, resulting in increased emergency repair cost. MSD recommends additional funding for Condition Assessments & Cleaning to reduce risk and more costly repairs.

2021 Budget Request by Division

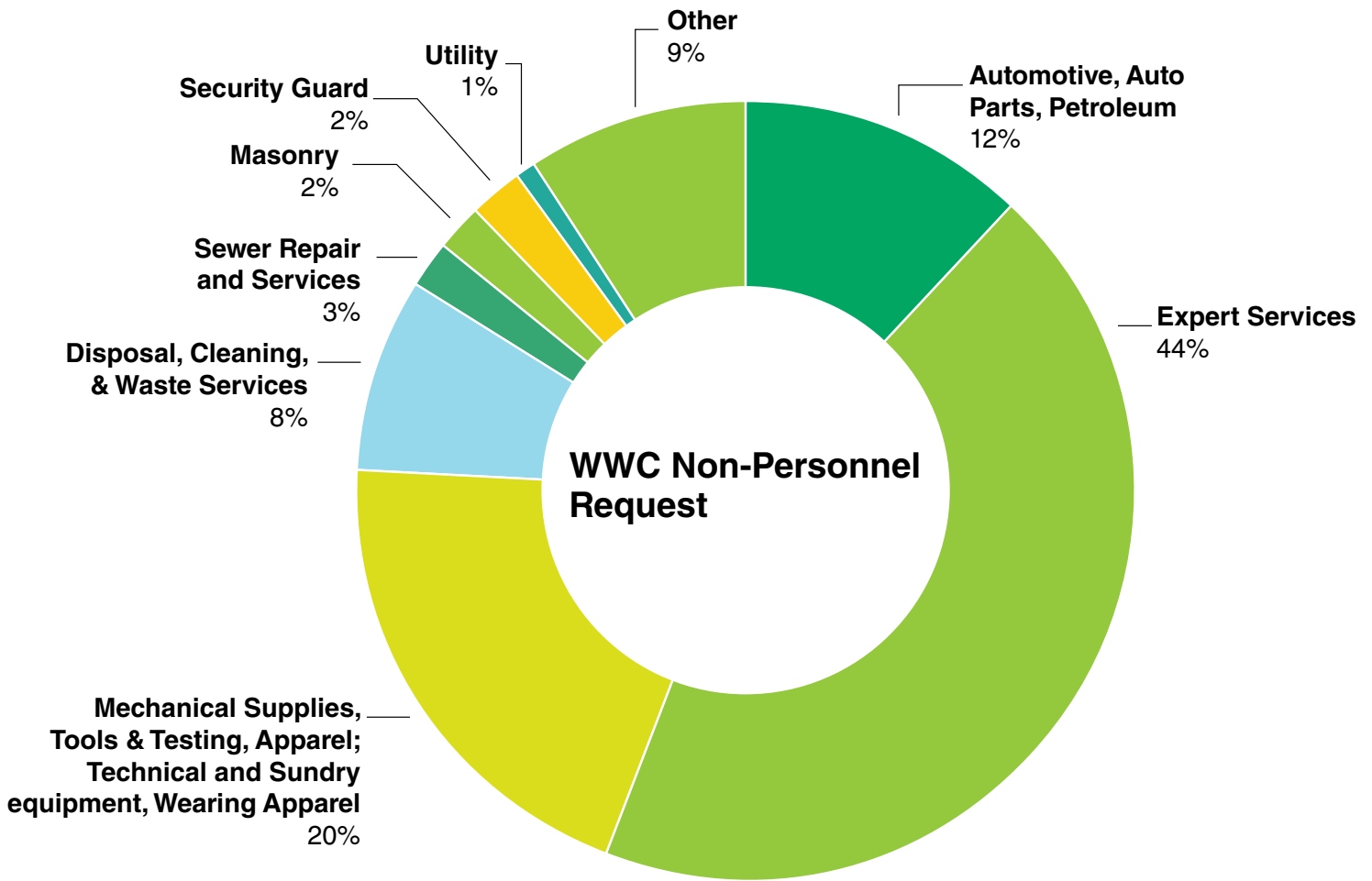
Wastewater Collection



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020		
				%	%		
WWC (450)	\$19,582,985	\$20,886,768	\$22,896,030	\$3,313,045	16.92%	\$2,009,262	9.62%
Personnel	\$11,844,938	\$11,991,469	\$12,481,170	\$636,232	5.37%	\$489,701	4.08%
Non-Personnel	\$7,738,047	\$8,895,299	\$10,414,860	\$2,676,813	34.59%	\$1,519,561	17.08%

2021 Budget Request by Division

Wastewater Collection



How is the Non-Personnel Money Spent?

Petroleum, Fuel Oil

- Concrete/flashfill
- Asphalt
- Propane

Tools, Wearing Apparel

- Flowfininty Wireless, Inc.
- Uniforms
- Pipe locators
- Tool box dividers
- Gloves
- Plant and mechanical supplies
- Surveying equipment

Professional Services

- Condition assessment
- Collection system support
- Call Center services

Technical Equipment

- Plumbing supplies
- IBAK parts
- Vactor truck parts
- Pipe and fittings
- Aquatech flush/vac parts
- Millwork (shelving, counters)

Office Machine, Auto

- Facility maintenance
- Fire extinguisher maintenance
- Auto maintenance

2021 Budget Request by Division

Wastewater Collection

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$1,513,390.

ENHANCED		
Collection System Odor Control	Engineered Odor Control Solutions/H2S Control in wastewater collection system near forcemain discharges, two sites (Pleasant Run East & West) being added causing increase in budget.	\$50,000
Planned Sewer Condition Assessment and Cleaning	Asset Management Program - planned main sewer condition assessment and cleaning of approx. 1000 segments. This cost also includes the following supporting needs of the program: Large Diameter Sewer Inspection, Manhole Inspection Processing and Storage, Condition, Assessment QA/QC Supplementation, & Chemical Root Control	\$1,000,000
INCREASED		
Vehicle GPS Service	Spatial Dispatching/Operation support, Fleet Management, Driver Behavior \$60,000	\$20,000
Disposal	Grit & Spoils disposal from collection system and repair jobs due to additional grit hauling, spoils disposal, and facility dumpsters.	\$100,000
Automotive Equipment Part	Automotive and trailer body accessories, Aquatech flush/vactor truck parts, repairs, and service necessary to specialize new or rehab'd vehicles for WWC services.	\$145,000
INCREASED & ENHANCED		
Technical Repairs	Survey equipment repairs/parts and SeeSnake repairs for investigations and condition assessment of sewers	\$20,000



“It’s all about Clean Water”

2021 Budget Request by Division

Compliance Services



The Compliance Services Division assists with compliance related activities and strategies, regulating industrial & commercial customers, ensuring our workers are safe, and protecting public health and the environment.

CS interfaces between the utility and Regulators for daily operations, and is involved in facility inspections, compliance reporting, violation abatement, and permit renewals. CS has enhanced its coordination efforts with operational divisions to evaluate and recommend compliance strategies, maximize environmental performance and improve public health protection.

CS ensures the MSD's non-residential customers are meeting MSD's Rules and Regulations and MSD's Surcharge Program is implemented fairly and equitably among high strength waste dischargers.

MSD's NELAP-certified laboratory analyzes a wide variety of samples for surface water, sludge and wastewater utilizes and maintains state of the art instrumentation and serves the Hamilton County Environmental Services office and the Cincinnati Health Department for their sampling needs.

Safety at MSD is an organizational responsibility managed within CS. MSD strives to be a workplace with no lost work time. General facility security and emergency preparedness planning efforts are coordinated and internal audits are performed by CS staff. CS staff also serve as liaisons to local and regional emergency response and local environmental teams.

**industrial waste | NPDES | enforcement | samples |
training | guards | permits | emergency response |
security | safety | laboratory | regulatory | compliance**

2021 Budget Request by Division

Compliance Services

Highlights From the Last Year

COVID-19 Sampling of Wastewater

In 2020, the MSD formed a partnership with USEPA and Hamilton County Health Department to conduct COVID-19 sampling as a response to the global pandemic and assist in understanding the connection between the virus, community outbreak and wastewater. Since April 2020, MSD has provided weekly samples from MSD treatment plants and parts of the collection system and had various technical calls with experts helping them understand MSD's wastewater system and community to provide USEPA and the Health Department with information and access to our sewer collection system. This partnership has led to a State-wide focus with MSD and several other utilities collecting data for USEPA and CDC to help determine what clues and advance warning system help public health agencies better understand Coronavirus and put measures in place to protect our populations.

Full-Scale PAA Study Success

MSD completed an internally led study that injected Paracedic Acid (PAA) as a supplemental disinfectant at Mill Creek WWTP to determine its effectiveness of meeting more stringent E.coli permit limits that went into effect in 2020. For several years, MSD has been evaluating the effectiveness of a more cost-effective and safer disinfectant than chlorine. The successful full-scale PAA study now lays the groundwork for a more effective and lower cost solution than adding more chlorine as a longer term solution can get worked into a future capital projects. MSD's WWT 2021 budget includes additional dollars for PAA to ensure compliance with the 2021 recreation season E.coli limit.



eBiz Platform Ready

In preparation for an Ohio EPA requirement for Pretreatment Programs to submit quarterly reports electronically by the end of 2020, MSD's CIW group has successfully integrated its pretreatment databases with the state's Ohio EPA's eBiz platform which has not only improved accuracy but is more efficient in the transmission and storage of the information.

Standardization of Routine Procedures

The Wet Chemistry laboratories at Mill Creek, Little Miami and Taylor Creek WWTPs, provide sample analysis for WWT to assist in real time. Having lab data in real time allows operators to make adjustments to the treatment process to ensure permit compliance. Personnel was reassigned to ensure the most time sensitive analyses are being run in house and 2 personnel are on duty on weekends for shorter sample turn around time and greater safety. iPads are now used and integrated into standardized routine sampling procedures that reduce data entry errors.

110,000 analyses completed

Each day, MSD's Laboratory performs hundreds of sampling tasks to ensure operators have the analytical data they need to meet permit requirements and make operational changes. The Mill Creek laboratory receives on average approximately 19,000 + samples and performs well over 110,000 analyses a year. An independent auditor inspects MSD's NELAP-certified laboratory each year.

Health & Wellness Matters

In 2020, MSD's two fitness centers have re-opened under consolidated management of the Safety Section as another tool to help employees prevent injury and lower stress through physical fitness. The Safety Group spearheaded MSD's internal response to the COVID-19 pandemic, serving as isolation and sanitization team members, helping develop policy, and educating employees on safe practices.

Intentionally planning for Safety Matters

In 2019-2020, MSD conducted 520 hours of Safety training for employees and coordinating specialized training. Forty (40) facility safety audits were performed at MSD facilities to identify & assist divisions risk reduction.

2021 Budget Request by Division

Compliance Services

New Initiatives For Next Year

LOTO/ECPs

A priority for 2021 is to complete Lockout Tagout/Energy Control Procedure (LOTO/ECP) reviews and updates. CS will engage internal and external subject matter experts to draft ECPs and assist with program development and sustainability. The industrial risks associated with its workforce and facilities require additional resources and focus. A LOTO/ECP steering committee will be chartered to discuss the needs, status, schedule and priority, seeing the updates through of this high priority for 2021.

Injury Prevention and Analysis

Safety Group will be enhancing its injury investigations and data analytics from a “what happened” approach to a “why did it happen” mentality, continuing to enhance the culture of safety and help everyone recognize that safety is everyones job.

Surcharge Bill Updates to Improve Customer Service

The Commercial/Industrial Waste Group is planning to upgrade the Surcharge bills so that it results in a more consistent, transparent, and predictable bill for our current and future customers and a more efficient sampling regimen for our staff. Options for online access to customers can be improved. If the Board desires to consider a high strength classification, such a change to the surcharge structure can also be undertaken.

Eastside Laboratories

In 2021, the Polk Run laboratory will be decommissioned and Little Miami’s lab will be refurbished to serve the eastside treatment plants (Little Miami, Sycamore, Polk Run). This facility is larger, safer and more capable of handling the sampling requirements of eastside plants along the registered National Wild and Scenic River.

Enhanced Regulatory Assistance to Divisions

The Environmental Group will continue to lead permit compliance and regulatory strategies such as USTs, RCRA, universal waste, and other applicable standards that govern MSD’s industrial processes. CS will work with divisions to identify strategies to improve or optimize operations.

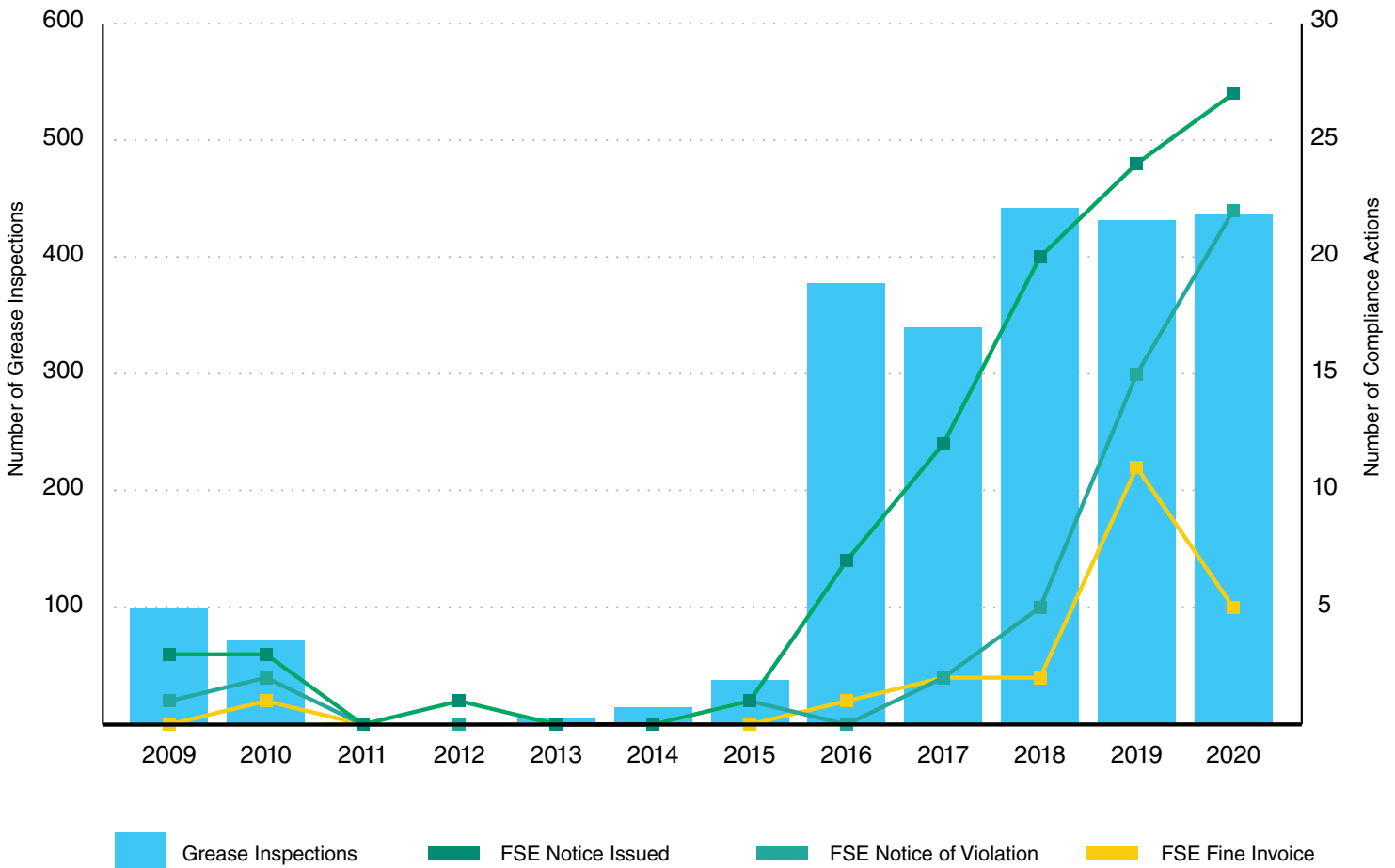
Modified Hauled Waste Fee

Currently a uniform fee regardless of waste strength or source, MSD proposes to implement a tiered-fee structure that can incentivize the segregation of hauled waste to capture “clean FOG” to attract a bio-diesel market. Fees would be lower for residential hauled waste, and higher industrial hauled waste. By having the waste characterized and hauled separately, MSD can more efficiently treat or manage this unique customer class of waste. MSD plans to recommend a new tiered fee structure for Board approval mid-2021 for 2023 implementation. MSD plans to conduct outreach and update management plans of the new fee structure in 2022 once the proposal is vetted and approved.

2021 Budget Request by Division

Compliance Services

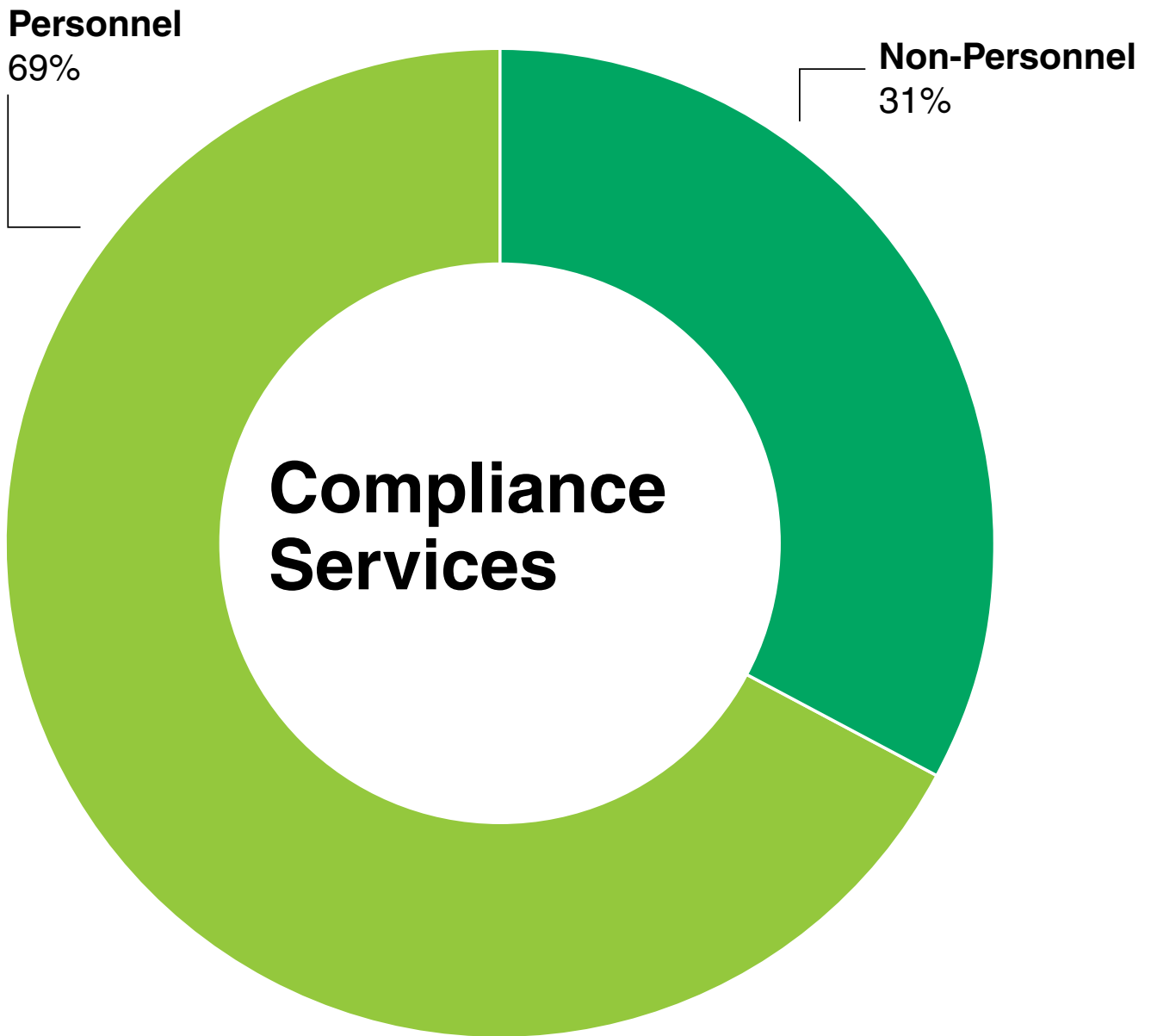
In 2020, MSD formed a partnership for demonstration of a FOG (fats, oils and grease) Separation Process with the University of Cincinnati to demonstrate a reuse process on FOG produced at public WWTPs, as part of a UC grant from the National Science Foundation (NSF).



Grease blockage in sewer on Glenway Avenue caused traffic disruptions in Dec. 2019. The grease was improperly discharged to the sewer by a restaurant. The restaurant was fined for improper disposal. Cost recovery fines were also issued.

2021 Budget Request by Division

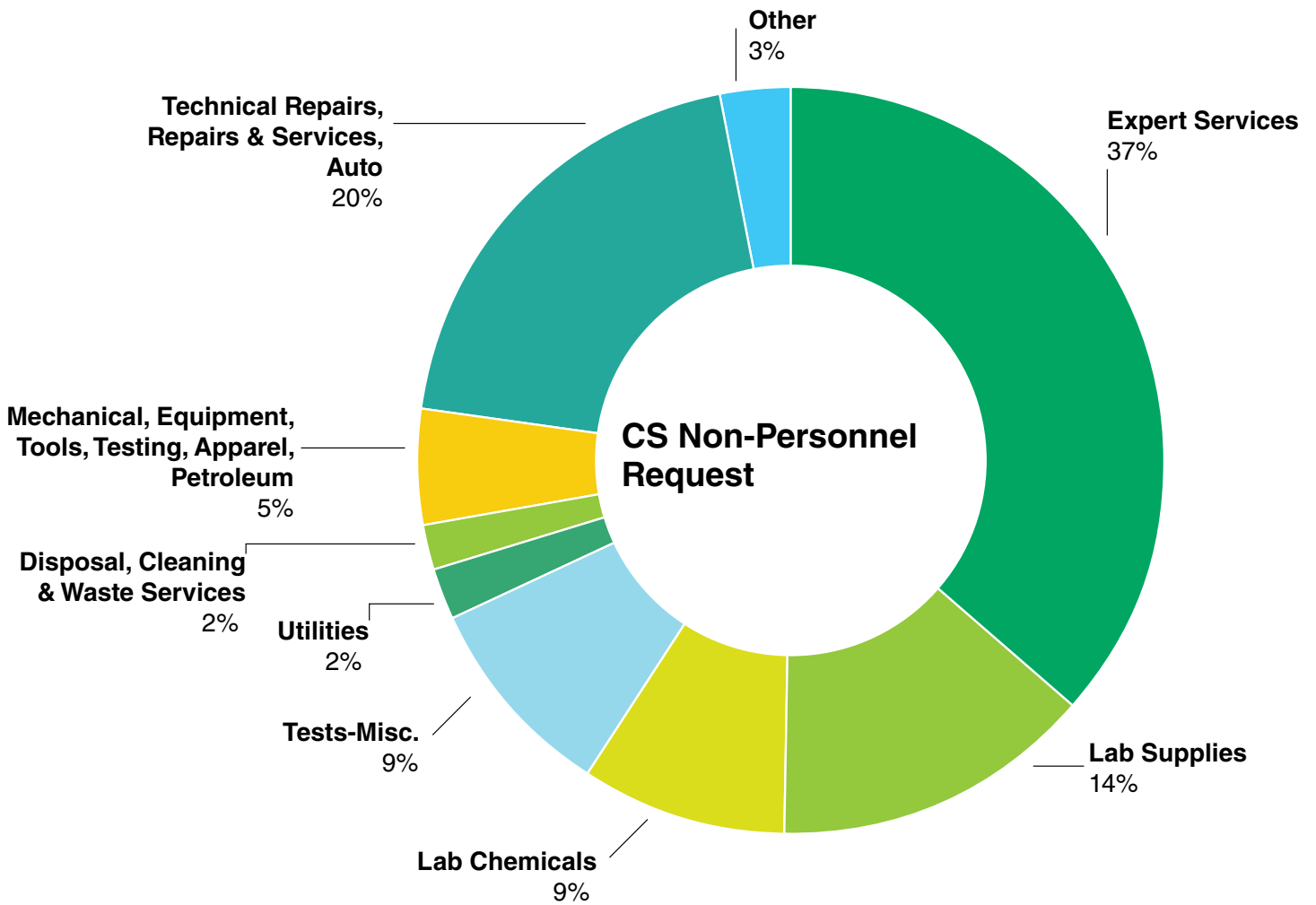
Compliance Services



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020		
				%	%		
CS (460)	\$6,447,757	\$7,284,953	\$8,193,376	\$1,745,619	27.07%	\$908,423	12.47%
Personnel	\$5,043,304	\$5,427,690	\$5,637,659	\$594,355	11.79%	\$209,969	3.87%
Non-Personnel	\$1,404,453	\$1,857,263	\$2,555,717	\$1,151,264	81.97%	\$698,454	37.61%

2021 Budget Request by Division

Compliance Services



How is the Non-Personnel Money Spent?

Laboratory Supplies

- Reagents/chemicals
- Media filters
- PT tests for certification
- Equipment supplies (e.g., tubing, seals)

Sundry/Software

- Research and Development lab projects
- NELAC audits, training and program support
- Pretreatment program enhancements
- Labworks integration from LIMS to eOps & Chemical inventory

Professional Services

- Local limits development
- LOTO/ECPs
- Ohio River Sampling for NPDES permit

Tools

- Gas meters

Technical Equipment Repair

- Scale calibration
- Type of equipment for maintenance:
 - Agilent
 - BOD analyzer
 - Latchat
 - Steris dishwashers
 - Evoqua deionized water supply
 - Horizon
 - UPS (backup battery)

Staff Development

- Documenting Standard Operating Procedures (SOPs) and policies that drive the day-to-day work
- Success planning - prepare job aids for future employees

2021 Budget Request by Division

Compliance Services

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$698,454.

INCREASED		
Lab Supplies	Lab Supplies have increased by approximately 27% , primarily due to COVID-19. It is unclear when and if those additional costs will go back to "normal" but the additional cost for 2021 lab supplies for testing and analysis is estimated to be \$101,000.	\$101,000
NEW		
Professional Services: Local Limits	Potential Local Limit Development for Indian Creek NPDES a permit condition. MSD may be able to perform this inhouse but it will still require sampling and analysis.	\$25,000
Professional Services: Sampling Ohio River	MSD is required to sample the Ohio River per NPDES permits. MSD has historically collected the samples using inhouse resources however, given safety, security and reliability of an MSD boat, MSD has determined that contracting out Ohio River sampling is necessary to reduce missed sampling events and liability associated with dangerous river/sampling conditions	\$55,000
Professional Services: Assistance with LOTO/ ECPs	Lock out Tag out/Energy Control Procedures are needed to reduce the risk of employee hazards in the area of electrical work tasks and is estimated to be performed with expert services.	\$750,000



“It’s all about Clean Water”

2021 Budget Request by Division

Watershed Operations

Reorganization Note:
MSD is distributing the WOs work under WWC, WWT & CS. 2021 will be the last year of WO's division in the MSD budget, as a separate division.



The Watershed Operations Division has operated, maintained and optimized MSD's wet weather facilities to ensure they are doing the most at lowest cost to protect the environment and public health. In 2021, this work will be redistributed among three MSD divisions.

The Watershed Ops created cutting edge tools and technologies that increases MSD wet weather capture to reduce overflows and treats that flow at MSD's Enhanced High Rate Treatment (EHRT), High Rate Treatment and pump stations assets. MSD will manage these assets in WWT.

Performance tracking of all existing and potential overflow locations and MSD's watersheds will continue by leveraging MSD's Smart Sewer System to detect, analyze and report overflow events in accordance with our NPDES permits and Consent Decree requirements within the Compliance Services Division.

Modeling and monitoring is also now part of Compliance Services. Modeling is performed of the wastewater collection system, selected surface water channels and wastewater treatment plants as a compliance and planning tool. MSD continuously improves the accuracy and efficiency of the existing models to assist operations and engineering with project selection or impact analysis. Coordination to collect and disseminate data for organizational needs are performed within Compliance Services too (flow monitors, level sensors, odor sensors and rain gages).

MSD's stormwater control measures(SCM), gray and green infrastructure continue to expand in numbers and complexity with a critical need to have the resources to effectively manage them. SCMs are integrated into WWC.

wet weather | high-rate treatment | rainfall data |
overflows | real-time controls | stormwater | green
storage | sensors | SCADA | regulators

2021 Budget Request by Division

Watershed Operation

Highlights From Last Year

New RTC on-line @Bloody Run

In 2019, MSD brought online Bloody Run RTC and nearly doubled the amount of overflow reduced since 2018 even though the amount of rainfall was slightly higher in 2018. As illustrated in the chart and based on actual level sensor data, the RTCs are providing significant benefit. And, for just the first 6 months of 2020, the RTCs have already exceeded the amount of flow captured compared to 2018, reducing MSD future capital costs and reducing 1.2 Billion gallons from sending untreated combined sewage into the Mill Creek.

Cooper Creek HRT: Continuous Operation through Construction

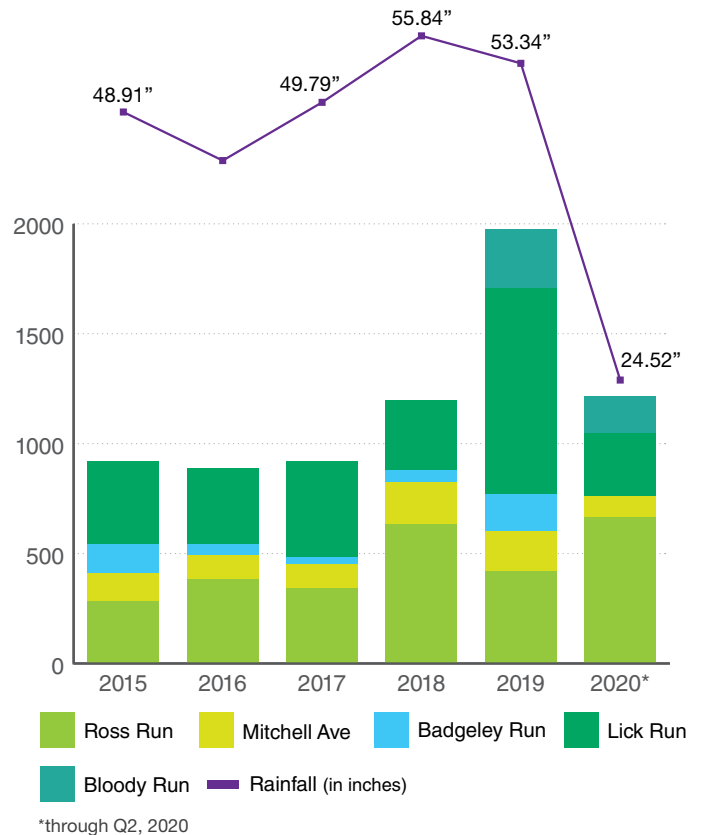
In 2019, while MSD completed the first phase of the Cooper Creek High Rate Treatment Facility (aka SSO 700) construction of a new (4th) storage tank with other ancillary facility improvements Watershed Operations technical and operations staff closely coordinated with the construction team to continue to store and treat wet weather flows from the Reading, Evendale and Blue Ash areas. As a result of the close coordination, very few storms were missed which kept the facility operating throughout the construction. Watershed Ops has built a strong relationship with its internal and external partners to help MSD achieve its goals to maximize collection and treatment of wet weather flows.



Lower Mill Creek Post Construction Monitoring

The LMCPM Post Construction Monitoring has begun data collection. This data will provide the information necessary to quantify the results of \$250M Consent Decree project.

Overflow Reduction by RTC Facilities since 2015



WW EHRT Dynamic Underflow Control

The installation and start-up of CSO-522 Dynamic Underflow Control (DUC) upstream of Werk Westbourne EHRT is reducing overflows. During wet weather, the less concentrated combined flow is diverted into the Werk Westbourne EHRT by the DUC to free up interceptor capacity downstream. The downstream wastewater in the Upper Muddy Creek Interceptor has more sanitary waste than upstream and could create Sanitary Sewer Overflows (SSOs). By sending flow to WW EHRT as a new operational optimization strategy, the DUC is helping to reduce SSOs. DUCs have great potential to reduce the cost of CSO control in many MSD's sewersheds.

2021 Budget Request by Division

Watershed Operation

Wet Weather Operations & Maintenance

For over a year, 3 operators oversee and operate all 3 wet weather treatment/high rate treatment plants and 5 Real Time Control (RTCs) facilities and the Pump Station Group was transferred from WWT to WOs to assist with maintenance. These unique work groups are intimately familiar with MSD's wet weather and pump station facilities and play a critical role during dry weather to perform critical preventative maintenance. Each of these discreet facilities has their own "personality" and nuances of how they operate and what they need before, during and after a wet weather event. The WOs Plant Operation & Maintenance group are nimble and have a wide area of coverage, which varies weekly, closely coordinating among to ensure readiness.

2021 Budget Request by Division

Watershed Operation

New Initiatives For Next Year

Coordinated Control for 2 additional facilities

In 2021 MSD anticipates actively deploying Coordination Control for with Ross Run and Mitchell RTCs. Recent upgrades to the software systems and being evaluated. The next step is to “go live” with coordination of these facilities for wet weather coordinated control with other Mill Creek watershed facilities. This will be implemented by the Compliance Services Division.

Need for in-house Technicians to reduce contracts

A focus area for 2021 is to increase operators and technicians to improve performance at WO Pump Station, & Wet Weather facilities or reduce contracted labor for QA/QC of Remote Monitoring:

- An addition of 2 Wet Weather operators would provide day and night shift coverage for wet weather events and better support operations
- An additional PS group maintenance staff would be better able to complete required preventative maintenance of pump stations and would also facilitate maintenance support for other wet weather facilities. This staffing support would reduce the need to utilize and increase WWT maintenance staff.
- An addition of a technician within Remote Monitoring would help to reduce the reliance on contract services for performing QA/QC of flow monitoring and replacing sensors.

Green Infrastructure: Acreage Tripling for GI in 2021

In 2021, the number of acres of GI will triple that are operated for CSO reduction benefits. In preparation for the increased workload, an initiative began to streamline maintenance work order process. The internal creation of more efficient work order applications in Flowfinity for

field inspections and workorders, and having data move between Cityworks and Flowfinity for quicker internal processing. Work began in 2020 but will not be rolled out and tested until 2021. The Lick Run Greenway facility will be new in 2021 and has many new maintenance tasks for MSD. This will be managed within WWC.

Identifying new Optimization

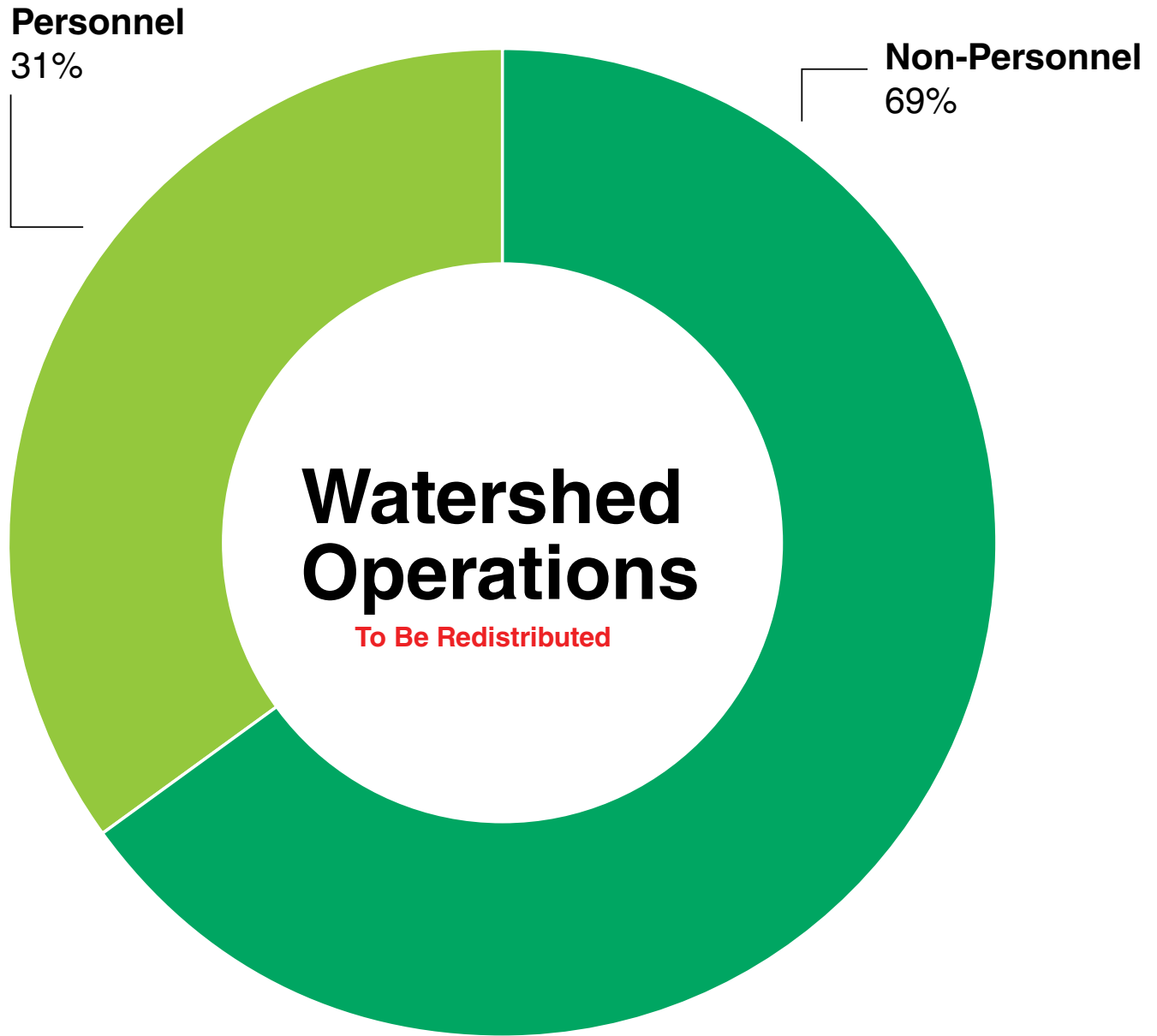
Watershed Ops will be providing ongoing and enhanced monitoring of the Auxiliary Mill Creek Interceptor near the Mill Creek WWTP and continuing wet weather SCADA operations, and in preparation for the LMCPR post construction monitoring, proposed DUCs, and the new diversion chamberer to maximize the use of existing assets to reduce overflow and maximize collection and treatment of wastewater.

MSD is completing a CSO interceptor study of which CSO overflow volumes are affected by changes to other parts of the system and which are only affected by their own basin). This will help operations and engineering ensure better coordination in the future and identify optimization strategies.

Muddy Westbourne HRT and Cooper Creek HRT facilities will resume treatment operations following major facility upgrades.

2021 Budget Request by Division

Watershed Operations

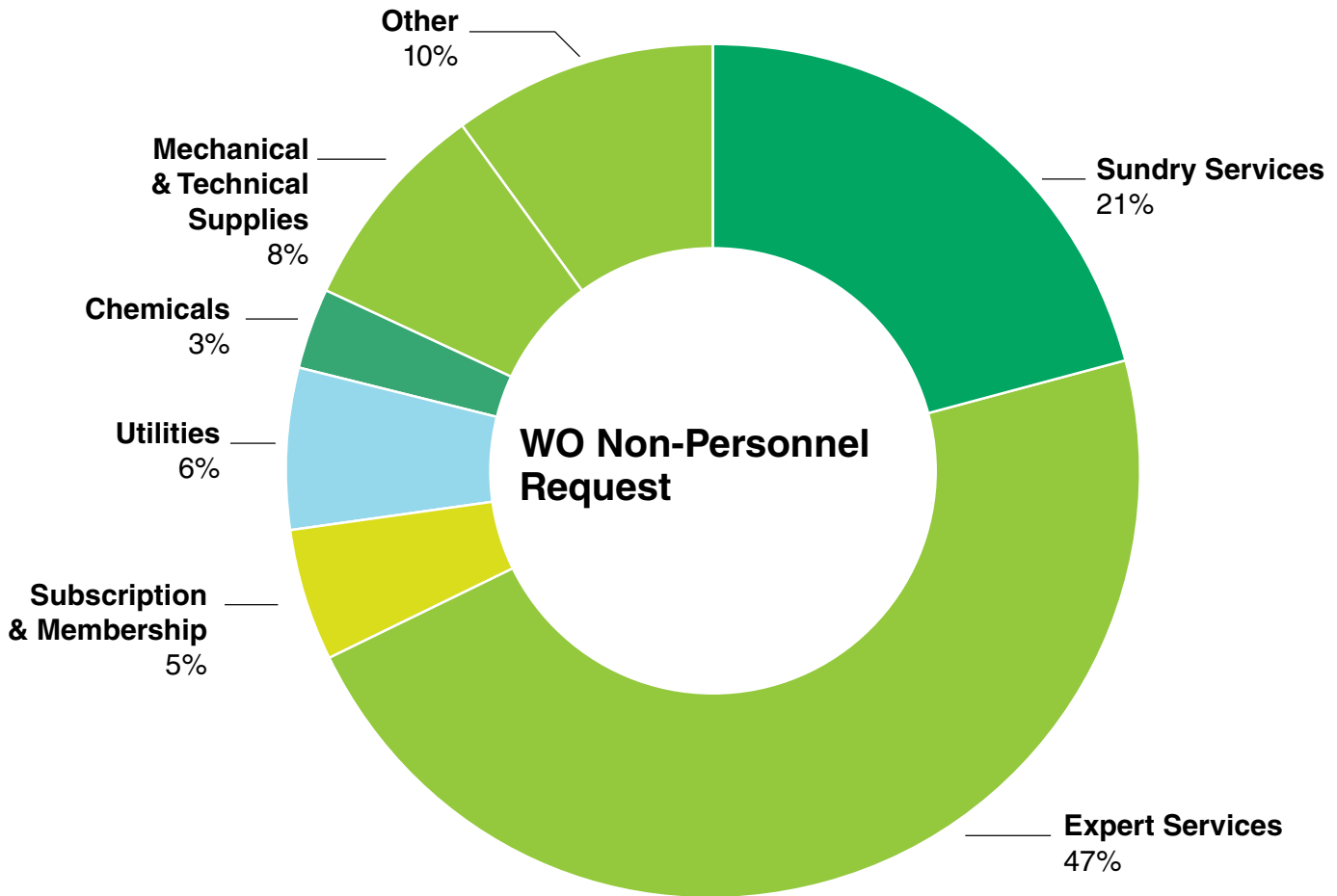


Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020		
				%	%		
WO (470)	\$8,614,892	\$9,607,170	\$9,646,590	\$1,031,698	11.98%	\$39,420	0.41%
Personnel	\$2,924,487	\$3,273,517	\$3,248,090	\$323,603	11.07%	\$(25,427)	-0.78%
Non-Personnel	\$5,690,405	\$6,333,653	\$6,398,500	\$708,095	12.44%	\$64,847	1.02%

Note: In 2021, the WO budget will be distributed to WWT, WWC, and CS, and as such 2021 will be budget neutral.

2021 Budget Request by Division

Watershed Operations



How is the Non-Personnel Money Spent?

Sundry

- Equipment installation and maintenance
- Water quality sampling
- Green infrastructure and wet weather facility maintenance

Subscription Services

- Monthly cellular data
- Monthly radar rainfall data processing

Professional Services

- Specialized data analysis
- Hydraulic modeling
- SCADA system development
- CSO technology testing and data analysis
- Report development and automation

Technical Equipment

- Sewer monitoring equipment
- Stream monitoring equipment
- Plant equipment or parts (e.g., blowers, pumps, controllers)
- Remote telemetry equipment

2021 Budget Request by Division

Watershed Operations

Below are some highlighted increased or new nonpersonnel costs or are costs that were not fully funded in the 2020 budget. It should be noted that MSD has offset these new, increased or continued needs by making reductions from prior year's budget.

The difference between 2020 and 2021 is approximately \$64,800

INCREASED	DIVISION IMPLEMENTING		
Green Infrastructure Maintenance Contracts	WWC	Increased acreage of maintenance of GI; increasing each year.	\$178,000
Maintenance/Sundry Contracts	WWT	Maintenance of Wet Weather Facilities	\$15,000

NEW	DIVISION IMPLEMENTING		
Remote Monitoring	CS	In 2021 MSD has more required sites to review and therefore a nominal cost increase. This Nonpersonnel request can be reduced in future years with filling a supervising tech in flow monitoring for a total of 3 positions in the group.	\$234,000



“It’s all about Clean Water”

2021 Budget Request by Division

Sewer Backup (SBU) Program



The Wastewater Collection Division manages the SBU program, deploys crews to investigate and assistance customers during a very stressful situation. Of all the investigations MSD performs, only about 15% are caused by capacity related mainline sewer issues.

Under the federal Consent Decree, MSD is obligated to offer a Sewer Backup (SBU) program. Under the SBU program, MSD responds to reports of sewage in basement in a timely manner as defined in the Consent Decree. In large storm events, thousands of service requests for investigation can be requested within hours, inundating the MSD response system. This program is extremely unique as no other utility in the County has such a comprehensive program.

**24/7 | cleaning | customer service | damage claims |
reporting | 352-4900 | sewer backups | response |
rain prevention**

2021 Budget Request by Division

Sewer Backup (SBU) Program

Highlights From Last Year

MSD has been operating the SBU Program since 2004 and depending on the rainfall, has spent anywhere from \$3.8M to \$19M in a calendar year. Since inception, MSD has implemented the program as outlined in the Consent Decree. In accordance with the Consent Decree requirements, MSD has spent \$130.3M on investigations and cleaning private property impacted by SBUs, paying damage claims to property owners and installing backup prevention devices.

Of the \$130M, 40% or \$52.1M is attributed to the SBU prevention program. The remaining \$78.2M has been spent on cleaning, investigations and damage claims.

In the last 15 years on average, 15% of the SBUs are determined to be covered under the SBU program. The rest, about 85% of the reports are investigated and determined to be ineligible as they are caused by building lateral failures, blockages stormwater drainage and overland flooding.

After spending \$130 million in the last 16 years, the properties protected with prevention devices under MSD's SBUPP program is less than .01% of all MSD accounts. The "Status Quo" is not a viable approach based on the experience of recent years. MSD recommends considering options to reshape the SBU Program in 2021 with the Board. MSD has identified some options which include a slightly new, more proactive approach to supplement the mandated program response.

Considerations:

- Focus on more prevention, in a multi-prong approach vs. the current reactive approach to cleaning up and installing devices after 2 events in 5 years.
- A long term view is needed to understand what the status quo will provide and how to reshape the effectiveness of the efforts of the utility for the benefit of all ratepayers.

Service Description	2020 through Sept	2019	2018	2017	2016	2015
Sewer Back Up (SBU)						
Sewer Backup (SBU) Investigation Work Orders	3,207	3,610	3,857	5,135	5,850	3,419
SBUs Considered for Cleanups	596	545	648	915	2284	199
SBU Cleanups Performed/Accepted	451	422	531	715	1253	152
Cleanups declined by customer	135	132	117	200	1031	47
Cleanouts Installed at ROW (by MSD Repair Section)	767	860	779	851	1064	1224
Prevention Program						
Properties Contacted	130	162	146	170	170	32
Properties Protected	74	102	100	61	12	15

2021 Budget Request by Division

Sewer Backup (SBU) Program

New Initiatives For Next Year

Property Protection Pilot for SBU

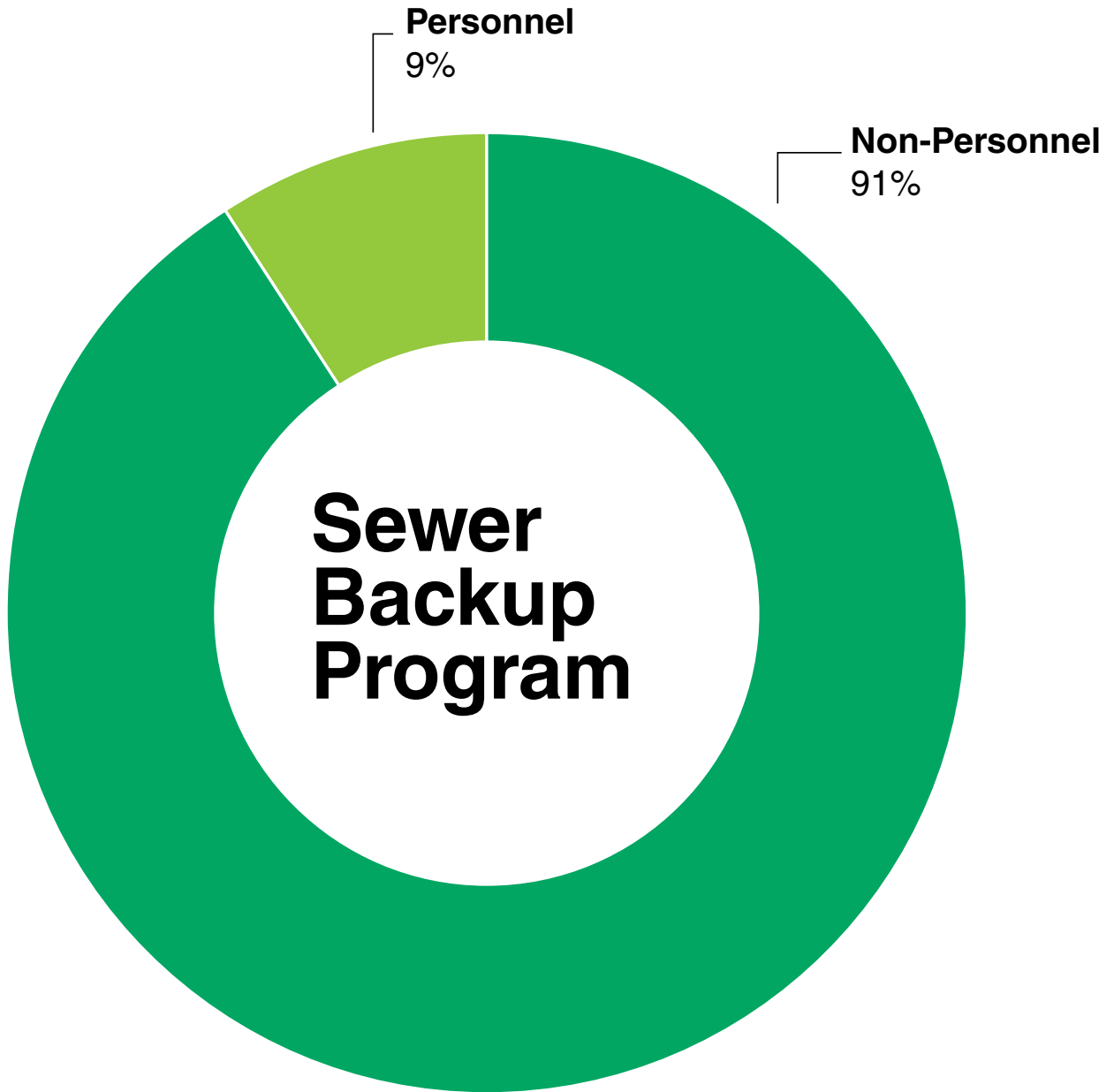
MSD will evaluate the feasibility of offering a rebate/incentive to property owners to address eligible sources of infiltration and inflow or to install a backwater valve on the private sewer service to protect against surcharges on the public sewer system. To support this initiative, MSD is completing an analysis of historical SBU data (mapped area to be provided) to identify high risk areas. The program will be coordinated and implemented through OOD to support the Consent Decree required Sewer back-up Program.

With this pilot program, MSD will explore a rebate structure to offer property owners who meet the requirements of the program.

2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
3,363	4,351	4,250	6,547	5,020	4,806	3,776	3,158	3,109	3,081	3,803
215	390	422	816	480	416	712	552	596	510	444
110	241	270	572	316	278	366	256	285	353	361
105	149	152	244	164	138	323	296	81	157	83
1353	1275	1050								
27	63	70	121	50	90	122	123	142	360	2,373
31	60	53	36	12	22	33	50	169	236	108

2021 Budget Request by Division

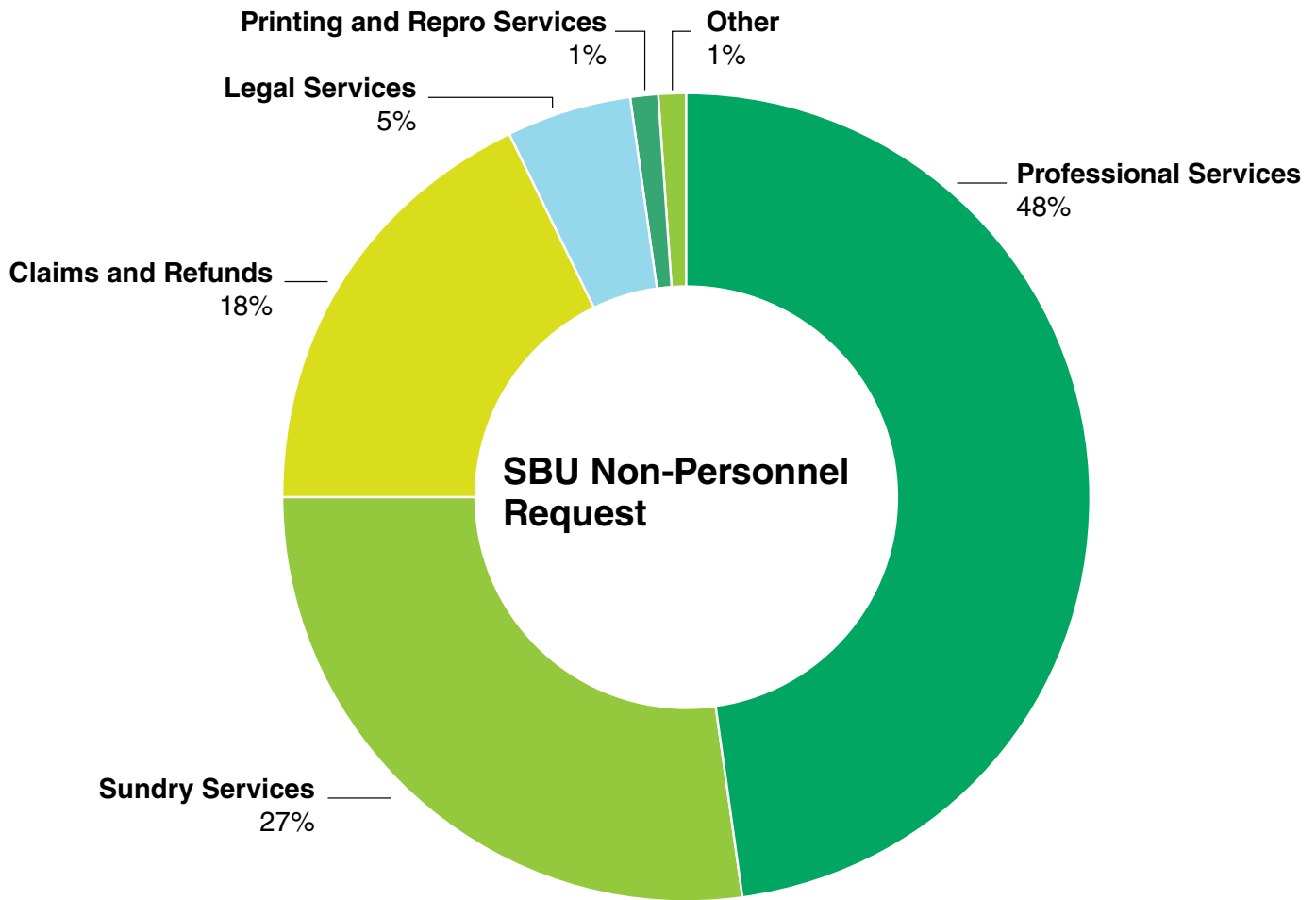
Sewer Backup (SBU) Program



Dept.	2019 Actual	2020 Budget	2021 Request	Changes From 2019	Changes from 2020
				%	%
SBU (480)	\$10,775,353	\$10,597,559	\$11,922,369	\$1,147,016	12.50%
Personnel	\$772,843	\$897,559	\$928,973	\$156,130	3.50%
Non-Personnel	\$10,002,510	\$9,700,000	\$10,993,396	\$990,886	13.33%

2021 Budget Request by Division

Sewer Backup (SBU) Program



How is the Non-Personnel Money Spent?

Professional Services

- Sewer Backup Program (SBU) claims management services
- Legal services
- Call Center services
- SBU Prevention Program design & Construction
- SBU Prevention Program maintenance and service calls
- SBU emergency claims adjuster services

Sundry

- Flood emergency services
- SBU cleanups

Claims

- SBU damage claims

Fleet Request: \$1,777,000

Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle	
1	Replacement	75834	2007	\$81,179	6,025	\$115,279	\$912	Excavator	This unit is used by Asset Renewal to dig down to sewer pipes for repair.
2	Replacement	60996	2006	\$87,422	60,065	\$84,898	\$1,247	Tandem Dump Truck	This tandem dump truck has a seal tight body and its primary used to haul grit to the land fill.
3	Replacement	70962	2007	\$69,374	100,724	\$48,339	\$0	Single axle dump truck	Truck is used to haul spoils from job site to WWC and landfill. Also used to haul gravel, pipe, and dirt to job site.
4	Replacement	70965	2007	\$69,374	91,051	\$49,399	\$947	Single axle dump truck	Truck is used to haul spoils from job site to WWC and landfill. Also used to haul gravel, pipe, and dirt to job site.
5	Replacement	70966	2007	\$69,374	76,819	\$46,813	\$1,196	Single axle dump truck	Truck is used to haul spoils from job site to WWC and landfill. Also used to haul gravel, pipe, and dirt to job site.
6	Replacement	11610	2011	\$131,182	83,111	\$127,800	\$8,400	Roll Off truck	Used to haul sludge from Muddy Creek Treatment Plant and Mill Creek Treatment Plant to the landfill. Also will be used to transport equipment as needed.

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
\$120,000	701X4500000	Asset Repair	Age & Condition	Unit will be 14 years old at the time it is scheduled to be replaced. The current LTD cost is 142% of its original cost.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Delay repair work performed by Asset Renewal.
\$175,000	701X4500000	Heavy Equipment	Age & Condition	This vehicle will be 15 years old at the time it is scheduled to be replaced. The LTD cost are currently 97% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Delay hauling grit for yard to landfill. Reduced utilization.
\$140,000	701X4500000	Asset Repair	Age & Condition	This vehicle will be 14 years old at the time it is scheduled to be replaced. The LTD cost are currently 70% of the original purchase price. Condition of the body is poor.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$140,000	701X4500000	Asset Repair	Age & Condition	This vehicle will be 14 years old at the time it is scheduled to be replaced. The LTD cost are currently 71% of the original purchase price. Condition of the body is poor. The mileage is expected to be over 100,000 when it is replaced.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$140,000	701X4500000	Asset Repair	Age & Condition	This vehicle will be 14 years old at the time it is scheduled to be replaced. The LTD cost are currently 67% of the original purchase price. Condition of the body is poor. Body is in poor condition.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$175,000	701X4420000	WWT Trucking Section	Age & Condition	Truck will be 11 years old at its scheduled replacement time. Current LTD is 97% of the original cost.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.

Fleet Request (continued)

	Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle
7	Replacement	80903	2008	\$56,987	47,807	\$74,968	\$2,058	Contractors dump	Truck is used by ground crews for pulling trailer with mowing equipment, hauling mulch to various locations, clearing snow in the winter months.
8	Replacement	60743	2006	\$19,746	52,221	\$13,887	\$1,293	Pickup with lift gate	Mill Creek uses truck with a lift gate to haul equipment and pick-up parts, send out motors, etc.
9	Replacement	20892	2012	\$59,043	109,116	\$36,684	\$40	Sprinter Van	Used by WWC customer service work group to respond to service request and to visit CSO to perform maintenance.
10	Addition							Sprinter Van	New HVAC employee
11	Replacement	90810	2009	\$34,894	52,221	\$40,938	\$648	Pickup 4x4 with plow, spreader, dump.	Used by Ground crews to pull trailer with mower equipment in the summer and snow removal in the winter.

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
\$82,000	701X4420000	Grounds Crew	Age & Condition	This vehicle will be 13 years old at the time it is scheduled to be replaced. The LTD cost are currently 132% of the original purchase price.	Increased maintenance cost, increases down time for repairs. If truck would go down for any major repairs in the winter months it would increase the time it would take for the ground crews to clear snow.
\$30,000	701X449000	Equipment Maintenance	Age & Condition	Truck will be 15 years old at its scheduled replacement time. Current LTD is 70% of the original cost.	Increased maintenance cost, increase down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$55,000	701X4500000	Customer Services	Age & Condition	At the time it is scheduled to be replaced its mileage will exceed 120,000. Current LTD cost is 62% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Could lead to increased time to respond to customer service call if vehicles is not available. With the current high mileage the changes of needing a major repair is amplified. Reduced utilization.
\$55,000	701x4420000	HVAC		Additional Employee to do HVAC work.	Vehicle will be used by the additional HVCA employee to respond to various MSD facilities to service and repair HVAC System.
\$57,000	701X4490000	Ground crews	Age & Condition	Vehicle will be 12 years old when it is scheduled to be replaced. The current LTD is 117 % of the original purchase price.	Increased maintenance cost, increases down time for repairs. If truck would go down for any major repairs in the winter months it would increase the time it would take for the ground crews to clear snow.

Fleet Request (continued)

	Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle
12	Replacement	2670	2000	\$16,914	1,029	\$17,880	\$413	Forklift	Used to load and unload supplies from delivery trucks.
13	Replacement	2671	2000	\$16,914	1426	22,123	\$0	Forklift	Used to load and unload supplies from delivery trucks.
14	Replacement	50842	2004	\$14,890	51,284	\$14,553	\$180	E250 window van (same as last van except no ladder rack)	Used to meet the Heavy Electric needs at all WWT plants and pump stations. Use to haul tool, parts and crew to job site.
15	Replacement	70833	2007	\$30,100	115,434	\$22,761	\$500	4X4 Extended cab pickup with utility body w/ cover	Unit used to run weekly P.M. routes for remote pump stations. Also responds to after hours call outs and hauls parts & materials as needed.
16	Replacement	60854	2006	\$17,283	95,455	\$22,197	\$261	E250 Van (wants mid size SUV)	Used by MSD Surveyors work group to carry all their surveying equipment and crew to and from job sites.

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
\$35,000	701X4490000	Equipment Maintenance/ Machine Shop	Age & Condition	Unit will be 21 years old at the time it is scheduled to be replace. The current LTD cost is 106 of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$35,000	701X4440000	Plant operators.	Age & Condition	Unit will be 21 years old at the time it is scheduled to be replaced. The current LTD cost is 131% of the original cost.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$30,000	701X4490000	Heavy Electric	Age & Condition	Vehicle will be 17 years old at the time it is scheduled to be replaced. Current LTD cost is 98% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$60,000	701X4490000	Equipment Maintenance	Age & Condition	Vehicle will be 14 years old at the time it is scheduled to be replaced. Current LTD cost is 76% of the original purchase price. Current mileage exceeds 100,000.	Increased maintenance cost, increases down time for repairs, reduced utilization, reduced employees accessibility to transportation to go into the field to perform maintenance and repairs. With the current high mileage the changes of needing a major repair is amplified.
\$38,000	701X4213100	Eng.- Surveyors	Age & Condition	This vehicle will be 15 years old at the time it is scheduled to be replaced. The LTD cost are currently 128% of the original purchase price. Will exceed 100,000 by it's scheduled replacement date.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.

Fleet Request (continued)

Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle
17 Replacement	60912	2006	\$77,175	60,383	\$33,329	\$0	Utility truck chassis	This vehicle is used by Taylor Creek Treatment Plant maintenance personnel to haul personnel, parts and tools to the job site. Vehicle is also set up with a air compressor and crane that is used by the crews to lift pumps and motor they are performing maintenance and repairs on.
							Remount body	
18 Replacement	81931	2008	\$94,900	47,950	\$67,632	\$1,127	Utility truck chassis	This vehicle is used by WWT Equipment Maintenance group personnel to haul personal, parts and tools to the job site. Vehicle is also set up with a air compressor, welder and crane that is used by the crews to lift pumps and motor they are performing maintenance and repairs on. They also have the ability to do repairs that require equipment to be welded.
							Remount Body	

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
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\$63,000	701X4460000	Plant Maintenance/ Taylor Creek	Age & Condition	Truck will be 15 years old at its scheduled replacement time. Chassis only will be replaced. Current LTD is 43% of the original cost.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
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\$10,000

\$75,000	701X4490000	WWT - Heavy Maintenance	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 71 % of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
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\$13,000

Fleet Request (continued)

Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle
19 Replacement	80604	2008	\$22,575	88,396	\$15,409	\$436	SUV	Vehicle is used by WWT Facilities Supervisor to check on all the plants and the work that is being done by his crews. Used to meet up with various contractors at various MSD sites. Used to run HVAC service calls when needed.
20 Replacement	80605	2008	\$20,445	51,576	\$13,456	\$474	SUV	Used by Muddy Creek staff to go to meetings, training, Pump stations and Taylor Creek Treatment Plant.
21 Replacement	80606	2008	\$20,455	60,432	\$15,493	\$654	SUV	Vehicle is used by construction inspector to visit job sites of sewers being repaired by contractors.
22 Replacement	80608	2008	\$20,455	56,643	\$7,010	\$389	SUV	Vehicle is used by construction inspector to visit job sites of sewers being repaired by contractors.
23 Replacement	80610	2008	\$20,455	47,638	\$6,227	\$0	SUV	Vehicle is used by construction inspector to visit job sites of sewers being repaired by contractors.

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
\$27,000	450000	Age & Condition	Age & Condition	At the time of replacement this vehicle will be 13 year old. The current LTD cost for repairs is 68% of the ordinal cost.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$27,000	701X4440000	Muddy Creek - Admin.	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 66% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$27,000	701X4214100	Engineering Management	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 75% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$27,000	701X4214100	Engineering Management	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 34% of the original purchase price.	Increased maintenance cost, increases down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$27,000	701X4214100	Engineering Management	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 30 % of the original purchase price.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.

Fleet Request (continued)

	Replacement or Addition	Repl. No.	Year	Purchase Price	Mileage	L.T.D. Cost	Year to Date	Description	Purpose of Vehicle
24	Replacement	80677	2008	\$22,575	52,222	\$19,145	\$334	SUV	Vehicle is used by construction inspector to visit job sites of sewers being repaired by contractors.
25	Replacement	90669	2009	\$17,939	70,969	\$13,624	\$1,174	SUV	SUV used for Industrial customer inspections and emergency response to environmental spills. Used by an Industrial Investigator.
26	Replacement	42813	2014	\$15,780	9,672	\$22,550	\$1,730	ATV	ATV's are used by crews to haul tools and parts around the treatment plant to do repairs and maintenance.
27	Replacement	42849	2014	\$11,199	488	\$11,898	\$432	Zero Turn Mower	Used to cut grass at various locations.
28	Replacement	52831	2015	\$13,586	529	\$19,936	\$510	Zero Turn Mower	Used to cut grass at various locations.

TOTAL

Est, Cost	Division	Work Group	Reason	Justification	Impact if not replaced
\$27,000	701X4214100	Engineering Management	Age & Condition	Vehicle will be 13 years old when it is scheduled to be replaced. The current LTD is 85% of the original purchase price.	Increased maintenances cost, increase down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$27,000	701X4600000	CS	Age & Condition	Vehicle will be 12 years old when it is scheduled to be replaced. The current LTD is 76% of the original purchase price.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$20,000	701X4420000	WWT Maintenance	Age & Condition	Unit will be 7 years old when it is scheduled to be replaced. The current LTD cost is 143% of the original purchase price.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$20,000	701X4490000	Ground crews	Age & Condition	Unit will be 7 years old when it is scheduled to be replaced. The current LTD cost is 106% of the original purchase price.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.
\$20,000	701X4490000	Ground crews	Age & Condition	Unit will be 6 years old when it is scheduled to be replaced. The current LTD cost is 146 % of the original purchase price.	Increased maintenance cost, increased down time for repairs. Reduced utilization. Crews not having equipment to perform their duties.

\$1,777,000



“It’s all about Clean Water”

2021 Fleet Replacement Justification

Equip. #	Type	Year	Estimated Replacement Cost	Page*
75834	Excavator	2007	\$120,000	3
60996	Tandem Dump Truck	2006	\$175,000	4
70962	Single axle dump truck	2007	\$140,000	5
70965	Single axle dump truck	2007	\$140,000	6
70966	Single axle dump truck	2007	\$140,000	7
11610	Roll Off truck	2011	\$175,000	8
80903	Contractors dump	2008	\$82,000	9
60743	Pickup with lift gate	2006	\$30,000	10
20892	Sprinter Van	2012	\$55,000	11
	Sprinter Van		\$55,000	12
90810	Pickup 4x4 with plow, spreader, dump.	2009	\$57,000	13
2670	Forklift	2000	\$35,000	14
2671	Forklift	2000	\$35,000	15
50842	E250 window van	2004	\$30,000	16
70833	4X4 Extended cab pickup with utility body w/cover	2007	\$60,000	17
60854	E250 Van (wants mid size SUV)	2006	\$38,000	18
60912	Utility truck chassis	2006	\$63,000	19
	Remount body		\$10,000	
81931	Utility truck chassis	2008	\$75,000	20
	Remount Body		\$13,000	
80604	SUV	2008	\$27,000	21
80605	SUV	2008	\$27,000	22
80606	SUV	2008	\$27,000	23
80608	SUV	2008	\$27,000	24
80610	SUV	2008	\$27,000	25
80677	SUV	2008	\$27,000	26
90669	SUV	2009	\$27,000	27
42813	ATV	2014	\$20,000	28
42849	Zero Turn Mower	2014	\$20,000	29
52831	Zero Turn Mower	2015	\$20,000	30
TOTAL			\$1,777,000	

OTEA Request

DEPT.	DESCRIPTION	2021	2022
420	Carpet Updating and Recycling	\$25,000	25,000
431	Network Switch Lifecycle Replacement	\$150,000	\$150,000
431	Datacenter Improvements	\$384,000	\$325,000
431	Desktop/Laptop Lifecycle Replacement	\$190,000	\$100,000
431	Specialty/Security Items		\$0
	IT Total	\$724,000	\$575,000
449	SCADA Annual Server Replacement Program	\$122,400	\$124,848
449	SCADA Disaster recovery replacement (from out of warranty/ end of life equipment)	\$76,500	\$78,030
	WWT Total	\$198,900	\$202,878
450	CDL Truck and Heavy Equipment Simulator	\$225,000	
450	Replacement Sewer Cameras, Launchers and Tractors	\$400,000	\$400,000
450	WWC Original Building - Bathroom Renovations	\$75,000	
450	WWC Yard Equipment Building	\$250,000	
450	High Accuracy GPS Smart Antennas	\$100,000	
450	Replacement Air Release Valves	\$15,000	\$15,000
450	Manhole Inspection Equipment-Cleverscan	\$5,000	\$5,000
450	Replacement Sewer Cleaning Nozzles/Hydraulic Root Cutters	\$50,000	\$50,000
450	Jet Camera Replacements	\$15,000	\$15,000
450	Air compressors for lateral lining process	\$5,000	
450	Lining drums for trenchless lining operations	\$20,000	
450	Lining steamers for trenchless lining operations	\$20,000	
450	Reusable tunnel liner plates for pipe installation	\$155,000	\$160,000
450	Plumbing tap camera equipment	\$10,000	\$10,000
450	Security cameras	\$25,000	

DEPT.	DESCRIPTION	2021	2022
450	Maintenance Shop Furniture	\$40,000	
450	Maintenance Shop Appliances	\$5,000	
450	Replacement of three (3) entry doors	\$25,000	
450	Annex HVAC Roof Top Unit-Floors 1-3, (Replacement)		\$75,000
450	Main Office-Replacement of South Carrier HVAC Unit, (Replacement)	\$12,000	
	WWC TOTAL	\$1,452,000	\$730,000
460	Security Cameras on East Side Plants		
460	RO System		
460	Sampling & Field Analysis Equipment	\$100,000	
460	Carpet		
460	Horizon Replacement Unit	\$35,000	
460	Qualtrax-QC online software	\$35,000	
460	GC/ECD Instrument	\$100,000	
460	Phase contrast microscope w/camera attachment capability	\$26,000	
460	Dishwasher	\$20,000	
	CS TOTAL	\$416,000	\$0
470	Monitoring equipment lifecycle replacement	\$100,000	
470	Spare pumps	\$90,000	
	WO TOTAL	\$190,000	\$0
	GRAND TOTAL	\$3,005,900	\$1,532,878

Debt Service

2020 Debt Payment	Principal	Interest	Total
Revenue Bond	\$31,615,000	\$24,318,041	\$55,933,041
OWDA	\$20,161,049	\$7,327,934	\$27,488,984
Capital Lease (Eng. Bldg.)	\$755,000	\$358,975	\$1,113,975
New Bond Sale			
New OWDA Loans			
TOTAL	\$52,531,049	\$32,004,951	\$83,856,000

Revenue Bond			
2009B BABs - GROSS	Principal	\$5,650,000	
	Interest	\$5,342,000	
	Debt Service		\$10,992,000
2010A	Principal	\$5,635,000	
	Interest	\$253,250	
	Debt Service		\$5,888,250
2010B BABs - GROSS	Principal		
	Interest	\$4,408,291	
	Debt Service		\$4,408,291
2013A	Principal	\$7,765,000	
	Interest	\$7,523,250	
	Debt Service		\$15,288,250
2014A	Principal	\$8,895,000	
	Interest	\$6,218,250	
	Debt Service		\$15,113,250
2015A	Principal	\$3,670,000	
	Interest	\$573,000	
	Debt Service		\$4,243,000
TOTAL	Principal	\$31,615,000	
	Interest	\$24,318,041	
Total Revenue Bond		\$55,933,041	\$55,933,041

OWDA		Jun - 2021	Dec - 2021	Total
3241 Springdale-Sharonville Sewer Replacement	Principal Payment	\$161,245	\$165,002	\$326,247
	Net Interest Payment	\$4,894	\$2,475	\$7,369
3 927 Springdale/Sharonville Sewer, Contract 3	Principal Payment	\$61,176	\$62,247	\$123,423
	Net Interest Payment	\$6,771	\$5,853	\$12,624
3928 Wooster Pike Sewer Phases 2 & 4	Principal Payment	\$232,215	\$236,279	\$468,494
	Net Interest Payment	\$33,635	\$30,152	\$63,788
4067 Miamitown Interceptor Sewer	Principal Payment	\$151,152	\$153,729	\$304,881
	Net Interest Payment	\$19,258	\$16,991	\$36,249
4204 Ludlow Run Relief Sewer	Principal Payment	\$59,918	\$60,922	\$120,840
	Net Interest Payment	\$9,696	\$8,798	\$18,494
4645 Sycamore WWTP Expansion Phases 1 & 2	Principal Payment	\$605,915	\$615,761	\$1,221,677
	Net Interest Payment	\$141,596	\$132,507	\$274,103
4786 Mill Creek WWTP Incinerator Ph. 2 & Sept. Rec. Sta	Principal Payment	\$627,480	\$636,265	\$1,263,746
	Net Interest Payment	\$201,147	\$192,362	\$393,509
4960 Wesselman Rd Interceptor Phase 1-A-3, 1-B	Principal Payment	\$212,816	\$216,328	\$429,144
	Net Interest Payment	\$70,560	\$67,368	\$137,928
5025 Mill Creek WWTP Aerat'n Tank Diffusers Replacement	Principal Payment	\$86,943	\$88,430	\$175,374
	Net Interest Payment	\$25,479	\$24,175	\$49,654
5343 Little Miami WWTP Improvements	Principal Payment	\$120,259	\$122,213	\$242,472
	Net Interest Payment	\$47,250	\$45,447	\$92,697
5585 Mill Creek WWTP Primary Treatment	\$934,458	\$934,458	\$949,643	\$1,884,102
	\$407,445	\$407,445	\$393,428	\$800,873
5586 Mill Creek WWTP Secondary Improvements	Principal Payment	\$827,687	\$840,753	\$1,668,440
	Net Interest Payment	\$350,600	\$338,538	\$689,138

Debt Service (continued)

OWDA		Jun - 2021	Dec - 2021	Total
5773 Dry Run Area Sewers Phases 1 & 2	Principal Payment	\$153,662	\$155,598	\$309,260
	Net Interest Payment	\$48,733	\$46,797	\$95,531
5775 Little Miami Sludge Handling	Principal Payment	\$106,148	\$107,559	\$213,707
	Net Interest Payment	\$37,694	\$36,282	\$73,977
5948 Lower Mill Creek Partial Remedy #10145660	Principal Payment			
	Net Interest Payment			
5957 Dry Run Area Sewers Phases 1 & 2 Contact B	Principal Payment	\$86,565	\$87,898	\$174,463
	Net Interest Payment	\$37,359	\$36,061	\$73,420
5964 Little Miami & Muddy Creek WWTPs Blower Upgrade	Principal Payment	\$247,564	\$251,290	\$498,854
	Net Interest Payment	\$117,103	\$113,389	\$230,492
6005 Mill Creek WWTP Raw Sewage Pump Station	Principal Payment	\$220,040	\$223,429	\$443,469
	Net Interest Payment	\$94,964	\$91,663	\$186,628
6134 Upper Duck All Wet Weather Improvement Plan	Principal Payment	\$63,564	\$64,454	\$128,019
	Net Interest Payment	\$37,005	\$36,115	\$73,120
6135 Flow Monitoring & Modeling	Principal Payment	\$101,504	\$102,925	\$204,430
	Net Interest Payment	\$38,248	\$36,826	\$75,074
6136 Westwood Northern Sewer Separation	Principal Payment	\$71,813	\$72,818	\$144,631
	Net Interest Payment	\$32,714	\$31,708	\$64,422
6137 Wesselman Rd Sewer Phase 2A Contract1	Principal Payment	\$49,669	\$50,364	\$100,033
	Net Interest Payment	\$17,771	\$17,076	\$34,847
6138 Sagebrush Ln., et al Local Sewer	Principal Payment	\$74,939	\$75,988	\$150,926
	Net Interest Payment	\$26,813	\$25,764	\$52,577
6139 Wet Weather Program Mgmnt & Support Serv.	Principal Payment	\$392,870	\$398,370	\$791,240
	Net Interest Payment	\$148,036	\$142,536	\$290,572

OWDA		Jun - 2020	Dec - 2020	Total
6377 Muddy Creek WWTP Primary Skimming/Sludge Removal	Principal Payment	\$69,080	\$69,923	\$139,004
	Net Interest Payment	\$25,604	\$24,761	\$50,366
6378 Muddy Creek WWTP Electrical Upgrades	Principal Payment	\$120,682	\$122,155	\$242,837
	Net Interest Payment	\$44,730	\$44,730	\$89,460
6398 CSO 525 Mt. Airy Grating Sewer Sep. Contract 1	Principal Payment	\$50,303	\$50,859	\$101,161
	Net Interest Payment	\$15,905	\$15,349	\$31,254
6399 Little Miami WWTP Planning	Principal Payment	\$148,322	\$149,917	\$298,239
	Net Interest Payment	\$48,112	\$46,498	\$94,610
6646 Queen City Ave Sewer Separation Phase 1	Principal Payment	\$163,122	\$165,789	\$328,912
	Net Interest Payment	\$82,222	\$79,776	\$161,998
6650 Mill Creek WWTP Blower Energy Efficiency Upgrade	Principal Payment	\$243,686	\$247,670	\$491,356
	Net Interest Payment	\$134,251	\$130,595	\$264,846
6653 Sewer Relining Trenchless Technology	Principal Payment	\$188,610	\$191,694	\$380,304
	Net Interest Payment	\$95,070	\$92,241	\$187,310
7059 SCADA System Installs and Upgrades	Principal Payment	\$282,778	\$109,849	\$392,627
	Net Interest Payment	\$285,888	\$106,738	\$392,627
7200 Muddy Creek WWTP Grit Replacement	Principal Payment	\$104,986	\$106,083	\$211,068
	Net Interest Payment	\$38,423	\$37,326	\$75,749
7202 Eastern and Delta Sewer Separation Phase 3	Principal Payment	\$97,937	\$98,936	\$196,873
	Net Interest Payment	\$34,854	\$33,855	\$68,709
7204 Daly Road Sewer Replacement	Principal Payment	\$128,817	\$130,131	\$258,948
	Net Interest Payment	\$45,843	\$44,529	\$90,373
7311 Indian Creek WWTP Services Upgrades	Principal Payment	\$166,724	\$168,125	\$334,849
	Net Interest Payment	\$51,172	\$49,771	\$100,943

Debt Service (continued)

OWDA		Jun - 2021	Dec - 2021	Total
7350 Sunset & Rapid Run Area Sewer Separation	Principal Payment	\$182,945	\$184,473	\$367,418
	Net Interest Payment	\$55,771	\$54,244	\$110,015
7459 Muddy Creek WWTP Dewatering, Skimming Removal	Principal Payment	\$178,275	\$179,442	\$357,717
	Net Interest Payment	\$42,860	\$41,692	\$84,552
7463 White Street Avenue Sewer Separation	Principal Payment	\$103,094	\$103,770	\$206,864
	Net Interest Payment	\$24,785	\$24,110	\$48,895
7537 Werk & Westbourne EHRT	Principal Payment	\$919,284	\$926,041	\$1,845,325
	Net Interest Payment	\$268,571	\$261,814	\$530,385
7539 Mt Airy Forest Sewer Replacement	Principal Payment	\$145,976	\$147,107	\$293,083
	Net Interest Payment	\$43,816	\$42,684	\$86,500
7726 Wyoming & Minion Avenues Sewer Separation CSO	Principal Payment	\$68,215	\$68,215	\$136,430
	Net Interest Payment	\$-	\$-	\$-
7778 Lick Run Valley Conveyance System NRD CSO	Principal Payment		\$1,655,888	\$1,655,888
	Net Interest Payment		\$853,139	\$853,139
7899 Mill Creek WWTP Dewatering Polymer System Repl	Principal Payment	\$124,133	\$125,213	\$249,345
	Net Interest Payment	\$46,901	\$45,821	\$92,722
7900 CSO 181	Principal Payment	\$87,864	\$88,629	\$176,493
	Net Interest Payment	\$33,197	\$32,433	\$65,631
CB004 TRENCHLESS TECHNOLOGY	Principal Payment			
	Net Interest Payment			
CB13A TRENCHLESS TECHNOLOGY	Principal Payment	\$35,130		\$35,130
	Net Interest Payment	\$527		\$527
CB21N SSO 612 REMOVAL	Principal Payment	\$5,207	\$5,207	\$10,415
	Net Interest Payment			\$-
CB29E TRENCHLESS TECHNOLOGY	Principal Payment	\$13,663	\$13,868	\$27,531
	Net Interest Payment	\$1,501	\$1,296	\$2,797

OWDA		Jun - 2020	Dec - 2020	Total
CB903 TRENCHLESS TECHNOLOGY	Principal Payment			
	Net Interest Payment			
11240000 Lick Run Valley Conveyance System	Principal Payment			
	Net Interest Payment			
8189 Glenview Pump Station Upgrade	Principal Payment	\$17,586	\$17,775	\$35,361
	Net Interest Payment	\$8,816	\$8,627	\$17,442
Principal Payment		\$9,296,024	\$10,865,025	\$20,161,049
Net Interest Payment		\$3,383,591	\$3,944,343	\$7,327,934
Total		\$12,679,615	\$14,809,368	\$27,488,984

Tables

Table 1: 7415 Office Machinery

Unit	Description	Name/Model	Vendor
410X1000	Copier Rental		Prosource
			OOD Total
420x0000	Copier Rentals and overages	WEEC and Print shop copiers/printers/scanners	Prosource
			WWE Total
430X3000	Copier Rental	Konica 558 and 368	Prosource
			WWA Total
442x0000	Copier Rental		ProSource
443x0000	Copier Rental		ProSource
444x0000	Copier Rental		ProSource
445x0000	Copier Rental		ProSource
446x0000	Copier Rental		ProSource
447x0000	Copier Rental		ProSource
449	Copier Rental		Prosource
			WWT Total
450X0000	Copier Rental		Prosource
			WWC Total
460x1000	Copier Rental	Millenium	Millenium
			CS Total
480x0000	Copier Rentals and overages		Prosource
			SBU Total
7415 - Office Machinery Total			

2020 Budget	2021 Request	2022 Projection	2023 Projection
\$10,100	\$10,302	\$10,508	\$10,718
\$10,100	\$10,302	\$10,508	\$10,718
\$85,850	\$87,200	\$88,508	\$89,835
\$85,850	\$87,200	\$88,508	\$89,835
\$6,903	\$13,623	\$13,760	\$14,035
\$6,903	\$13,623	\$13,760	\$14,035
	\$14,746.00	\$15,040.92	\$15,341.74
	\$3,055.00	\$3,116.10	\$3,178.42
	\$1,580.00	\$1,611.60	\$1,643.83
	\$1,110.00	\$1,132.20	\$1,154.84
	\$1,600.00	\$1,632.00	\$1,664.64
	\$1,083.00	\$1,104.66	\$1,126.75
\$1,941	\$0	\$0	\$0
	\$23,174	\$23,637	\$24,110
\$13,837	\$14,114	\$14,396	\$14,684
\$13,837	\$14,114	\$14,396	\$14,684
\$13,914	\$14,192		
\$13,914	\$14,192	\$0	\$0
\$2,102	\$2,144	\$2,208	\$2,275
\$2,102	\$2,144	\$2,208	\$2,275
\$95,553	\$162,342	\$96,787	\$97,755

Tables (continued)

Table 2: 7418 Software & License

Unit	LGL_NM	ACTG_LN_DSCR
410X1000 OOD	(blank)	MSD portion of the Open Counter Software
420X0000 WWE	LEICA GEOSYSTEMS INC	Software Maintenance/Support
420X0000 WWE	Ebuilder	Software Maintenance and Licensing
WWE TOTAL		
430X3000 BS		LMS support
		B2KNOW/LCP
BS TOTAL		
431X1000 IT	24/7 Systems	Tango
431X1000 IT	Azteca	CityWorks
431X1000 IT	Bi-Cycle	Bi-Cycle
431X1000 IT	Citrix	XenDesktop and Netscaler
431X1000 IT	Computational Hydraulics	PCSWMM
431X1000 IT	Dell	Adobe CLP
431X1000 IT	Dell	Compellent SAN System 24158/24159
431X1000 IT	Dell	Compellent SAN System 24160/24161
431X1000 IT	Dell	Compellent SAN System 49712/49713
431X1000 IT	Dell	Dell PowerVault ML6000
431X1000 IT	Dell	Dell R720, Force 10 and N4000
431X1000 IT	Dell	Dell R730 PowerEdge Server
431X1000 IT	Dell	Dell S4000 Switch
431X1000 IT	Dell	MicroSoft SA for VLA
431X1000 IT	DLT	AutoCad
431X1000 IT	e-Builder	e-Builder

2018	2019	2020 (as of 6/4)	2021 Request	2022 Projection	2023 Projection
	\$3,125.00		\$4,708.00		
	\$3,264.00		\$4,000.00	\$4,000.00	\$3,500.00
		\$127,493.50	\$33,000.00	IT takes budget in 2022	
	\$3,264.00	\$127,493.50	\$37,000.00	\$4,000.00	\$3,500.00
			\$2,500.00	\$2,550.00	\$2,601.00
			\$10,000.00	\$10,200.00	\$10,404.00
			\$12,500.00	\$12,750.00	\$13,005.00
\$21,830.00	\$21,830.00	\$22,266.60	\$22,711.93	\$23,166.17	\$23,629.49
\$90,130.00	\$90,130.00	\$90,130.00	\$91,932.60	\$93,771.25	\$95,646.68
\$11,551.00	\$11,895.00	\$12,250.00	\$12,495.00	\$12,744.90	\$12,999.80
\$22,500.00	\$22,561.64	\$5,625.00	\$5,737.50	\$5,852.25	\$5,969.30
\$7,840.00	\$7,840.00	\$7,996.80	\$8,156.74	\$8,319.87	\$8,486.27
\$15,605.51	\$13,464.75	\$13,734.05	\$14,008.73	\$14,288.90	\$14,574.68
\$49,487.10	\$50,157.07	\$50,342.01	\$51,348.85	\$52,375.83	\$53,423.34
\$43,453.57	\$51,652.81	\$52,685.87	\$53,739.58	\$54,814.38	\$55,910.66
	\$26,599.82	\$31,227.17	\$31,851.71	\$32,488.75	\$33,138.52
		\$7,817.60	\$7,973.95	\$8,133.43	\$8,296.10
	\$47,884.27	\$48,987.92	\$49,967.68	\$50,967.03	\$51,986.37
\$21,427.23	\$16,954.11	\$17,293.19	\$17,639.06	\$17,991.84	\$18,351.67
	\$2,741.20	\$2,796.02	\$2,851.94	\$2,908.98	\$2,967.16
\$102,445.26	\$79,192.78	\$80,776.64	\$82,392.17	\$84,040.01	\$85,720.81
\$25,705.20	\$25,087.73	\$25,589.48	\$26,101.27	\$26,623.30	\$27,155.77
\$49,763.50		\$65,301.60	\$132,000.00	\$134,640.00	\$137,332.80

Tables (continued)

Table 2: Software & License (cont.)

Unit	LGL_NM	ACTG_LN_DSCR
431X1000 IT	Enfo Tech	iPacs
431X1000 IT	ESRI	ArcGIS Online
431X1000 IT	Flow Science	FLOW-3D
431X1000 IT	Flowfinity Wireless	Flowfinity
431X1000 IT	Gray Matters	Historian
431X1000 IT	Hydromantis	GPS-X
431X1000 IT	IBM	Maximo
431X1000 IT	Inflection Point Solutions	OMSCConnect
431X1000 IT	Innovyze	InfoMaster
431X1000 IT	JMS	RCM WorkSaver
431X1000 IT	Johnson Controls	C-Cure
431X1000 IT	Kronos	Kronos
431X1000 IT	Kronos	Kronos Support
431X1000 IT	Labworks	LIMS
431X1000 IT	Latitude Geographics	GeoCortex
431X1000 IT	MathWorks	MatLab
431X1000 IT	OARNet	vCenter and vSphere
431X1000 IT	OCG	Zerto
431X1000 IT	Ogis	ExaGrid EX4000
431X1000 IT	Ogis	ControlPoint
431X1000 IT	Ogis	Sage
431X1000 IT	Ogis	Oracle Database
431X1000 IT	Ogis	PeopleSoft and Primavera
431X1000 IT	Ogis	Toad DBA

2018	2019	2020 (as of 6/4)	2021 Request	2022 Projection	2023 Projection
\$50,230.00	\$50,230.00	\$51,234.60	\$52,259.29	\$53,304.48	\$54,370.57
\$72,038.00	\$72,500.00	\$73,950.00	\$75,429.00	\$76,937.58	\$78,476.33
\$12,800.00	\$12,800.00	\$13,056.00	\$13,317.12	\$13,583.46	\$13,855.13
\$249,600.00	\$249,600.00	\$254,592.00	\$259,683.84	\$264,877.52	\$270,175.07
	\$99,025.04	\$103,025.65	\$105,086.16	\$107,187.89	\$109,331.64
\$6,874.00	\$6,874.00	\$6,874.00	\$7,011.48	\$7,151.71	\$7,294.74
\$262,381.50	\$288,618.15	\$317,479.40	\$323,828.99	\$330,305.57	\$336,911.68
\$16,000.00	\$6,000.00	\$6,120.00	\$6,242.40	\$6,367.25	\$6,494.59
\$9,000.00	\$22,950.00	\$23,944.00	\$24,422.88	\$24,911.34	\$25,409.56
\$4,598.00	\$4,598.00	\$4,800.00	\$4,896.00	\$4,993.92	\$5,093.80
\$9,936.00	\$6,599.00	\$6,730.98	\$6,865.60	\$7,002.91	\$7,142.97
\$46,054.66	\$47,960.72	\$48,919.93	\$49,898.33	\$50,896.30	\$51,914.23
	\$21,600.00	\$21,600.00	\$22,032.00	\$22,472.64	\$22,922.09
\$49,761.00	\$49,761.00	\$49,956.00	\$50,955.12	\$51,974.22	\$53,013.71
\$6,200.00	\$7,500.00	\$7,725.00	\$7,879.50	\$8,037.09	\$8,197.83
\$3,420.00	\$3,420.00	\$3,488.40	\$3,558.17	\$3,629.33	\$3,701.92
\$39,386.79	\$34,330.07	\$34,249.15	\$34,934.13	\$35,632.82	\$36,345.47
			\$50,000.00	\$51,000.00	\$52,020.00
		\$17,000.00	\$17,340.00	\$17,686.80	\$18,040.54
\$5,275.00	\$6,013.00	\$6,133.26	\$6,255.93	\$6,381.04	\$6,508.66
		\$3,885.00	\$3,962.70	\$4,041.95	\$4,122.79
\$88,085.00	\$95,619.00	\$102,656.47	\$104,709.60	\$106,803.79	\$108,939.87
\$45,250.00	\$47,952.09	\$48,911.13	\$49,889.35	\$50,887.14	\$51,904.88
	\$3,453.00	\$3,522.06	\$3,592.50	\$3,664.35	\$3,737.64

Tables (continued)

Table 2: Software & License (cont.)

Unit	LGL_NM	ACTG_LN_DSCR
431X1000 IT	Ogis	ShareGate
431X1000 IT	Ogis	SolidWorks
431X1000 IT	Ogis	ChangeGear
431X1000 IT	Open Text	RightFax
431X1000 IT	P-Card	FlowMaster
431X1000 IT	P-Card	On Screen Takeoff
431X1000 IT	P-Card	DataSplice
431X1000 IT	P-Card	Solufy
431X1000 IT	P-Card	MPSH
431X1000 IT	PCM	DUO
431X1000 IT	PCM	Ivanti (formerly Shavlik)
431X1000 IT	PCM	Bartender
431X1000 IT	PCM	Veeam Agent
431X1000 IT	Penninsular	PipeTech
431X1000 IT	PerkinElmer	LIMSLink
431X1000 IT	ProSource	OnBase
431X1000 IT	ProSource	OnBase Mobile Access iPad
431X1000 IT	ProSource	OnBase PDF Framework
431X1000 IT	Sharon Bowles	e-Man Compliance
431X1000 IT	Vertiv Services	Leibert UPS Support Renewal
431X1000 IT		Veeam Backup
431X1000 IT	Arcadis	AMS
431X1000 IT	SIMPLEXGRINNELL LP	C-Cure annual support

2018	2019	2020 (as of 6/4)	2021 Request	2022 Projection	2023 Projection
	\$3,995.00	\$4,074.90	\$4,156.40	\$4,239.53	\$4,324.32
\$4,390.00	\$4,390.00	\$4,477.80	\$4,567.36	\$4,658.70	\$4,751.88
		\$15,540.00	\$15,850.80	\$16,167.82	\$16,491.17
\$3,178.59	\$3,241.60	\$3,306.43	\$3,372.56	\$3,440.01	\$3,508.81
\$1,475.00	\$1,510.00	\$1,540.20	\$1,571.00	\$1,602.42	\$1,634.47
	\$2,000.00	\$2,040.00	\$2,080.80	\$2,122.42	\$2,164.86
	\$2,507.00	\$2,557.14	\$2,608.28	\$2,660.45	\$2,713.66
	\$992.25	\$1,012.10	\$1,032.34	\$1,052.98	\$1,074.04
\$1,000.00	\$1,000.00	\$1,000.00	\$1,020.00	\$1,040.40	\$1,061.21
	\$18,000.00	\$17,500.00	\$17,850.00	\$18,207.00	\$18,571.14
\$4,986.66	\$5,212.20	\$5,316.44	\$5,422.77	\$5,531.23	\$5,641.85
\$298.00	\$1,152.12	\$1,175.16	\$1,198.67	\$1,222.64	\$1,247.09
\$14,999.76	\$2,500.00	\$2,345.00	\$2,391.90	\$2,439.74	\$2,488.53
\$10,764.00	\$11,064.00	\$11,285.28	\$11,510.99	\$11,741.21	\$11,976.03
\$4,410.00	\$4,410.00	\$4,498.20	\$4,588.16	\$4,679.93	\$4,773.53
\$32,020.46	\$34,465.48	\$34,626.68	\$35,319.21	\$36,025.60	\$36,746.11
		\$873.21	\$890.67	\$908.49	\$926.66
	\$2,901.77	\$2,959.81	\$3,019.00	\$3,079.38	\$3,140.97
\$2,055.00	\$1,106.25	\$1,128.38	\$1,150.94	\$1,173.96	\$1,197.44
\$51,599.00		\$52,000.00	\$53,040.00	\$54,100.80	\$55,182.82
			\$40,000.00	\$40,800.00	\$41,616.00
			\$10,000.00	\$10,200.00	\$10,404.00

Tables (continued)

Table 2: Software & License (cont.)

Unit	LGL_NM	ACTG_LN_DSCR
431X1000 IT	SOFTWARE HOUSE INTERNATIONAL	(blank)
431X1000 IT	TELOG INSTRUMENTS INC	Enterprise Annual Software Maintenance, 20% of total, per yr
431X1000 IT	(blank)	ArcView Annual Maintenance - MSD
431X1000 IT	(blank)	MSD CAGIS Edge (Permits Program) Maintenance
431X1000 IT	(blank)	MSD CAGIS Consortium Capital Budget Billing
431X1000 IT	(blank)	MSD CAGIS Consortium Operating Billing
431X1000 IT	(blank)	MSD Source Fund Portion of 2018 Data Center Infrastructure Replacement Project Account 180912
IT TOTAL		
441X0000	Maximo	Maximo upgrade (assuming upgrade does not take place in 2020). If decide to go to cloud with Maximo, this amount may not be sufficient, but City (GCWW, Pub Svc, MSD) may go to cloud collectively which may reduce the costs. Cost could be reduced in keep Maximo on-site.
449X0000	Vmware	VMware service agreement extension
449X0000	Thin Manager	Maintenance support thin manager
449X0000	Cisco	Cisco License
449X0000	CEMS	Service contract for CEMS
449X0000	Microsoft Software Assurance	Microsoft software assurance
449X0000	Kepware Support	Kepware support
449X0000	eOps	eOps service contract
449X0000	Shavlik	Shavlik
449X0000	GE global Care	GE Global care
449X0000	TopView	TopView
449X0000	Techn Connect	Tech Connect for rockwell
449X0000	Log Rythmn	Due to increasing need for shard data between SCADA, the plant control systems, and business systems, along with collecting data from the internet, our systems are becoming more and more connected. These connections present significant threat vectors that needs risk mitigation to ensure the control system is protected.

2018	2019	2020 (as of 6/4)	2021 Request	2022 Projection	2023 Projection
\$4,774.00	\$4,774.00				
\$24,944.78					
\$39,990.00	\$46,080.00				
\$77,586.00					
\$927,458.00	\$235,291.00				
\$2,644,557.57	\$1,991,986.92	\$1,913,929.71	\$2,117,600.67	\$2,159,952.68	\$2,203,151.74

			\$350,000.00		
			\$10,000.00	\$10,200.00	\$10,404.00
			\$150,000.00	\$153,000.00	\$156,060.00
			\$12,000.00	\$12,240.00	\$12,484.80
			\$15,000.00	\$15,300.00	\$15,606.00
			\$75,000.00	\$76,500.00	\$78,030.00
			\$14,000.00	\$14,280.00	\$14,565.60
			\$10,000.00	\$10,200.00	\$10,404.00
			\$3,000.00	\$3,060.00	\$3,121.20
			\$200,000.00	\$204,000.00	\$208,080.00
			\$15,000.00	\$15,300.00	\$15,606.00
			\$45,000.00	\$45,900.00	\$46,818.00
			\$180,000.00	\$36,000.00	\$36,720.00

Tables (continued)

Table 2: Software & License (cont.)

Unit	LGL_NM	ACTG_LN_DSCR
449X0000	Envirosuite	Envirosuite (adjusted up 10% in case th 2 new e-noses are installed in 2020)
449X0000	Tango	Tango
440 WWT		
450X0000 WWC	MangoApps inc.	"Software business license ETS approval- MSG0111707 Request RITM0017598 attached"
450X0000 WWC	Ogis Communication Group Inc	SOFTWARE LICENSE
450X0000 WWC	Parker Software Inc	SOFTWARE
450X0000 WWC	PENINSULAR TECHNOLOGIES	PIPETECH SCAN SOFTWARE LICENSES
450X0000 WWC	(blank)	Aspect licenses for MSD paid by GCWW
450X0000 WWC	Leica	Annual Customer Care Package (CCP) warranty on software
450X0000 WWC	Genetec	Security Camera System
450 WWC		
460X0000 CS	PerkinElmer Health Sciences, Inc.	Expert System Software
460x4000 CS	LabWorks	LW Instrument interface NGII
460x4000 CS	LabWorks	LW Chemical Inventory
460x4000 CS	LabWorks	LW- eOPS upgrade
460 CS		
470X0000 WO	GRAY MATTER SYSTEMS, LLC	SCADA Licensing & Support
470 WO		
GRAND TOTAL		

2018	2019	2020 (as of 6/4)	2021 Request	2022 Projection	2023 Projection
			\$62,000.00	\$63,240.00	\$64,504.80
			\$25,000.00	\$25,500.00	\$26,010.00
			\$1,166,000.00	\$684,720.00	\$698,414.40

\$199.95

		\$75,475.00	\$22,800.00	Annual maintenance fee (\$12,000) plus \$10,800 for data storage - storage fee will increase yearly	
	\$17,719.95	\$18,369.27	\$18,799.66		
		\$20,000.00	\$20,000.00	\$20,000.00	\$20,000.00
			\$5,000.00	\$5,000.00	\$5,000.00
\$199.95	\$17,719.95	\$113,844.27	\$66,599.66	\$25,000.00	\$25,000.00

\$29,160.00

			\$23,500.00		
			\$15,725.00		
			\$39,225.00		

\$19,919.97

\$19,919.97

\$2,644,757.52	\$2,016,095.87	\$2,175,187.45	\$3,443,633.33	\$2,886,422.68	\$2,943,071.14
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Tables (continued)

Table 3: 7452 Subscriptions

Unit (e.g. 410X1000)	Items	firm that will provide the services , if known
410X1000	Membership dues	NACWA - (NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES)
410X1000	AOMWA annual dues	
410X1000	Confluence Water Tech Innovation Cluster	
410X1000	WERF Project IP Toolbox	
410X1000	MILL CREEK WATERSHED COUNCIL	
410x1000	Wastewater industry research projects and initiatives	Water Research Foundation
410X1000	Paddlefest Sponsorship	Outdoor Adventure Clubs of Greater Cincinnati, Inc.
410X1000	Household Hazardous Waste Program	HAMILTON COUNTY
410X1000	Regional Storm Water Collaborative Dues	HAMILTON CTY SOIL WTR CO DIST
410X1000	Annual Research for Wastewater Utilities	WATER ENVIRO RESEARCH FOUNDATI
410X1000	US Water Alliance Membership	U.S. Water America Alliance
410X1000	TAG???	TAG
	OOD Total	
420X0000	OUPS	
420X0000	WEF (30 staff * \$111)	Water Environment Federation
420X0000	Other memberships (70 staff @ 100)	
420X0000	Professional Land Surveyors of Ohio Membership (QAQC)	
420X0000	Cincinnati Business Courier 3-year renewal (Construction)	Cincinnati Business Courier
420X0000	Periodicals and Reference books (Development Services)	
420X0000	Estimating Cost Software	Equipment Watch
	WWE Total	
430X1000	NFBPA Amanda & Contract Compliance Association	A. Gray, H. Cooper and New Staff
430X2000	HR SHRM Membership	
430X2000	Tools to Succeed	
430X3000	Misc. Subscriptions and Memberships (GFOA, NFBPA, etc...), Governmental Finance periodicals	

2020 Budget	2021 Request	2022 Projection	2023 Projection	scope of services & reason the services are needed
\$32,390	\$35,000	\$36,000	\$36,720	
\$23,400	\$24,000	\$24,480	\$24,970	
\$25,000	\$25,000	\$25,000	\$25,000	
\$5,000	\$5,000	\$5,000	\$5,000	
\$80,000.00	\$80,000.00	\$80,000.00	\$80,000.00	
	\$58,000	\$58,000	\$58,000	
\$2,500	\$2,500	\$2,500	\$2,500	
\$12,600	\$12,871	\$13,000	\$13,260	
\$26,000	\$26,000	\$26,000	\$26,000	
\$90,000	\$90,000	\$90,000	\$90,000	
\$30,000	\$30,000	\$30,000	\$30,000	
\$21,269	\$21,269	\$21,269	\$21,269	
\$348,159	\$409,640	\$411,249	\$412,719	
\$23,000	\$26,000	\$26,000	\$26,000	utility locating service
\$3,330	\$3,330	\$3,330	\$3,330	
\$7,000	\$7,000	\$7,000	\$7,000	
\$600	\$600	\$600	\$600	
\$200	\$200	\$200	\$200	Cincinnati Business news on development
\$543	\$570	\$543	\$543	
	\$3,500	\$3,500	\$3,500	online subscription for cost estimating of project tasks
\$34,673	\$41,200	\$41,173	\$41,173	
\$0	\$600			
\$1,596	\$1,596			
\$200	\$200			Tina Barwick
\$959	\$1,000			

Tables (continued)

Table 3: Subscriptions (cont.)

Unit (e.g. 410X1000)	Items	firm that will provide the services , if known
430X5000	SHRM Membership - V. Moore	SHRM Membership - V. Moore
430X5000	ATD Membership - V. Moore National & Local	ATD Membership - V. Moore
430X5000	Toastmasters International- 25 Ees	Toastmasters International- 25 Ees
430X5000	Misc. Toastmaster, SHRM, ATD events	
	WWA Total	
431x1000	DocuSign	ETS
431x1000	DTV Cloud Hosting	
431x1000	Online Learning	CustomGuide
431x1000	CAGIS County Permits	ID Bill - CAGIS
431x1000	OMSCconnect	Inflection Point Solutions
431x1000	AlertFind	MessageOne
431x1000	AirWatch	OARNet
431X1000	Cable Service	P-Card
431X1000	DataSplice Mobile	P-Card
431X1000	Domain Name (MSDGC)	P-Card
431X1000	GoToMeetings	P-Card
431X1000	Norex	P-Card
431X1000	PMI Membership (Ian McCoy)	P-Card
431X1000	SHRM	P-Card
431X1000	ThinkAutomation	P-Card
431X1000	WS_FTP	P-Card
431X1000	OnBase Premium Education	ProSource
431X1000	WEF Membership (Ian McCoy)	WEF
431X1000	SVN Subscription	SVN
431X1000	Cornerstone LMS	Cornerstone
	IT Total	

2020 Budget	2021 Request	2022 Projection	2023 Projection	scope of services & reason the services are needed
\$700	\$700			
\$303	\$303			
\$1,010	\$1,010			
\$1,212	\$1,212			
\$5,980	\$6,621	\$0	\$0	
\$0.00	\$3,724.35	\$3,798.84	\$3,874.81	OnBase Electronic Signatures
\$0.00	\$15,000.00	\$15,300.00	\$15,606.00	Cloud Service
\$9,495.00	\$9,684.90	\$9,878.60	\$10,076.17	Self Serve Training
\$80,000.00	\$81,600.00	\$83,232.00	\$84,896.64	
\$1,530.00	\$1,560.60	\$1,591.81	\$1,623.65	Online Maintenance Manuals
\$20,471.40	\$20,880.83	\$21,298.44	\$21,724.41	Messaging Service
\$12,084.00	\$12,325.68	\$12,572.19	\$12,823.64	Mobile Device Management
\$442.00	\$450.84	\$459.86	\$469.05	City Cable
\$2,078.23	\$2,119.79	\$2,162.19	\$2,205.43	Maximo Remote Data Tool
\$739.00	\$753.78	\$768.86	\$784.23	
\$696.00	\$709.92	\$724.12	\$738.60	
\$3,009.00	\$3,069.18	\$3,130.56	\$3,193.17	
\$151.98	\$155.02	\$158.12	\$161.28	
\$102.00	\$104.04	\$106.12	\$108.24	
\$561.00	\$572.22	\$583.66	\$595.34	
\$178.50	\$182.07	\$185.71	\$189.43	FTP Service
\$3,168.12	\$3,231.48	\$3,296.11	\$3,362.03	
\$95.00	\$96.90	\$98.84	\$100.81	
\$0.00	\$1,000.00	\$1,020.00	\$1,040.40	
\$0.00	\$45,000.00	\$45,900.00	\$46,818.00	
\$134,801.23	\$202,221.60	\$206,266.04	\$210,391.36	

Tables (continued)

Table 3: Subscriptions (cont.)

Unit (e.g. 410X1000)	Items	firm that will provide the services , if known
441x0000	Training/conference	WEF, SWOWEA
442x0000	Certification classes and degree programs	Cincinnati State
442x0000	WEF Memberships	
443x0000	Professional memberships	
444x0000	WEF Memberships	
445x0000	Memberships	
446x0000	WEF Memberships	
447x0000	WEF Memberships	
449x0000	Planning	
449x0000	Mis. Licenses	
449x0000	Memberships and subscription fees	
	WWT Total	
450x0000	NAFA Membership	NAFA
450x0000	NAFA Membership	NAFA
450x0000	APWA Membership	APWA
450x0000	NTEA	NTEA

2020 Budget	2021 Request	2022 Projection	2023 Projection	scope of services & reason the services are needed
	\$940	\$959	\$978	WEF, SWOWEA, same as pervious year
	\$1,224	\$1,248	\$1,273	Certification classes to obtain state licenses for operators. Also various persons taking classes for degree programs offerings by Cinti State. 3 year average 1,242
	\$1,300	\$1,326	\$1,353	WEF Memberships
	\$650	\$663	\$676	SWOWEA and instrumentation memberships
	\$1,200	\$1,224	\$1,248	WEF Memberships
	\$500	\$510	\$520	WEF and ISA memberships
	\$400	\$408	\$416	WEF Memberships
	\$200	\$204	\$208	WEF Memberships
	\$400	\$408	\$416	- SMRP
	\$1,000	\$1,020	\$1,040	- Misc. Licenses (5 @ 200)
	\$2,000	\$2,040	\$2,081	"Fees for membership and subscriptions. Includes WEF, OWEA, ISA, SMRP, Chlorine Institute"
\$0	\$9,814	\$10,010	\$10,210	
\$600	\$600	\$612	\$624	Membership with NAFA gives us a lot of resources to help manage the fleet more efficiently. (Rob Sizemore)
\$600	\$600	\$612	\$624	Membership with NAFA gives us a lot of resources to help manage the fleet more efficiently. (Steve Noble)
\$600	\$300	\$306	\$312	Membership with APWA gives us a lot of information as to how other governments run their fleets, what they have done that worked and didn't work, and information on bench marking. Great networking. (Rob Sizemore)
\$300	\$400	\$408	\$416	Membership with NTEA gives us a lot of information as to how other governments run their fleets, what they have done that worked and didn't work, and information on bench marking. Great networking. (Rob Sizemore)

Tables (continued)

Table 3: Subscriptions (cont.)

Unit (e.g. 410X1000)	Items	firm that will provide the services , if known
450x0000	Professional Land Surveyors of Ohio -Membership	PLSO
450x0000	WEF/OWEA Membership	WEF
450x0000	AWWA	AWWA
WWC Total		
460x1000	WEF/OWEA Membership	
460x4000	American Chemical Society (ACS)	
460x1000	Online publications	
460x5000	Safety Certifications	
460x5000	Asbestos Certification	
CS Total		
470x4000	Remote Monitoring - Radar Rainfall	Vieux and Assoc.
470x4000	Data transmission and security	Ayekka
WO Total		
480x0000	SBUPP - Mechanical Maintenance	Queen City Mechanicals
480x0000	SBUPP - Design Services	Various
480x0000	SBUPP - Construction Services	Various
480x0000	SBU Program Surveys and Communication	ETC
SBU Total		
Total Request		

2020 Budget	2021 Request	2022 Projection	2023 Projection	scope of services & reason the services are needed
\$215	\$225	\$230	\$234	Membership - Gene Weber
	\$550	\$561	\$572	Annual cost for WWC Staff membership
\$200	\$200	\$200	\$200	Annual membership
\$2,515	\$2,875	\$2,929	\$2,983	
\$5,515	\$5,515	\$5,515	\$5,515	
\$1,692	\$1,692	\$1,692	\$1,692	
\$2,000	\$2,000	\$2,000	\$2,000	
\$505	\$505	\$505	\$505	
\$800	\$800	\$800	\$800	
\$10,511	\$10,512	\$10,512	\$10,512	
\$85,000	\$85,000			Calibrated radar rainfall data needed for modeling, overflow reporting, and public notifications.
\$194,000	\$240,000			Data transmission and security for all field equipment
\$279,000	\$325,000	\$0	\$0	
\$770,000	\$785,400	\$801,108	\$817,130	Preventive Maintenance and Service Calls for MSD owned SBUPP equipment
\$1,305,617	\$1,331,729	\$1,358,364	\$1,385,531	Professional Design Services for new SBUPP Installations
\$3,000,000	\$3,060,000	\$3,121,200	\$3,183,624	Construction of SBUPP systems on private property
\$90,000	\$91,800	\$93,636	\$95,509	3rd Party Customer Surveys for SBU Program and development of Videos/customer Outreach Materials
\$5,165,617	\$5,268,929	\$5,374,308	\$5,481,794	
\$5,981,256	\$6,276,813	\$6,056,446	\$6,169,782	