



MSD Presentation to Budget & Finance Committee

March 21, 2022



Agenda

1. Overview of MSD System
2. MSD Governance
3. MSD Budgets
4. MSD Programs
 - Wet Weather Improvement Program
 - Sewer Backup Program
 - Customer Assistance Program



Overview of MSD System

MSD: It's All About Clean Water

Our 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.



Our 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.

MSD Service Area

MSD Service Area encompasses 43 of the 49 political subdivisions in Hamilton County, and small parts of Butler, Clermont and Warren Counties.

MSD treats 190 million gallons of wastewater a day

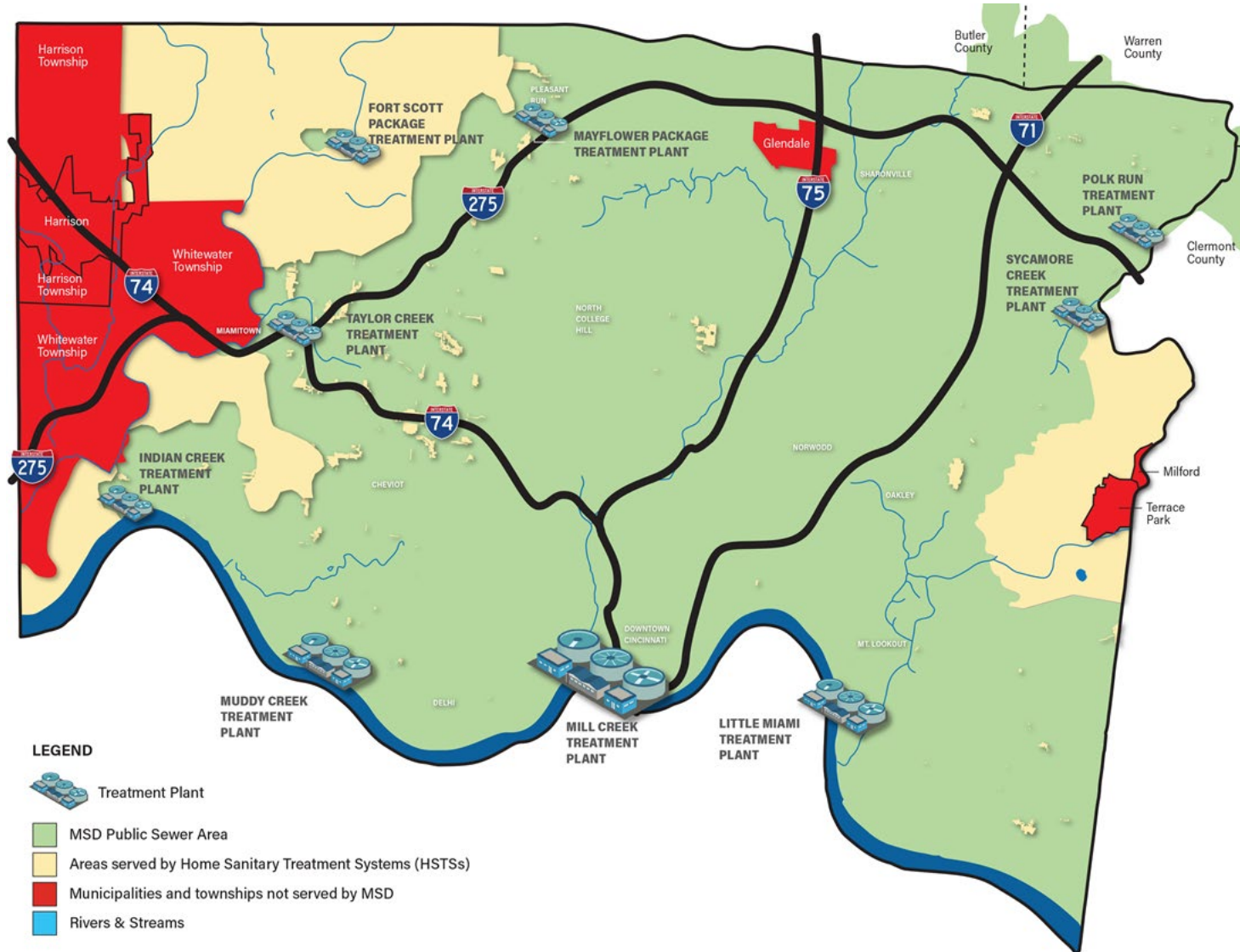


MSD has 9 treatment plants and other assets

MSD maintains more than 3,000 miles of sewer pipe

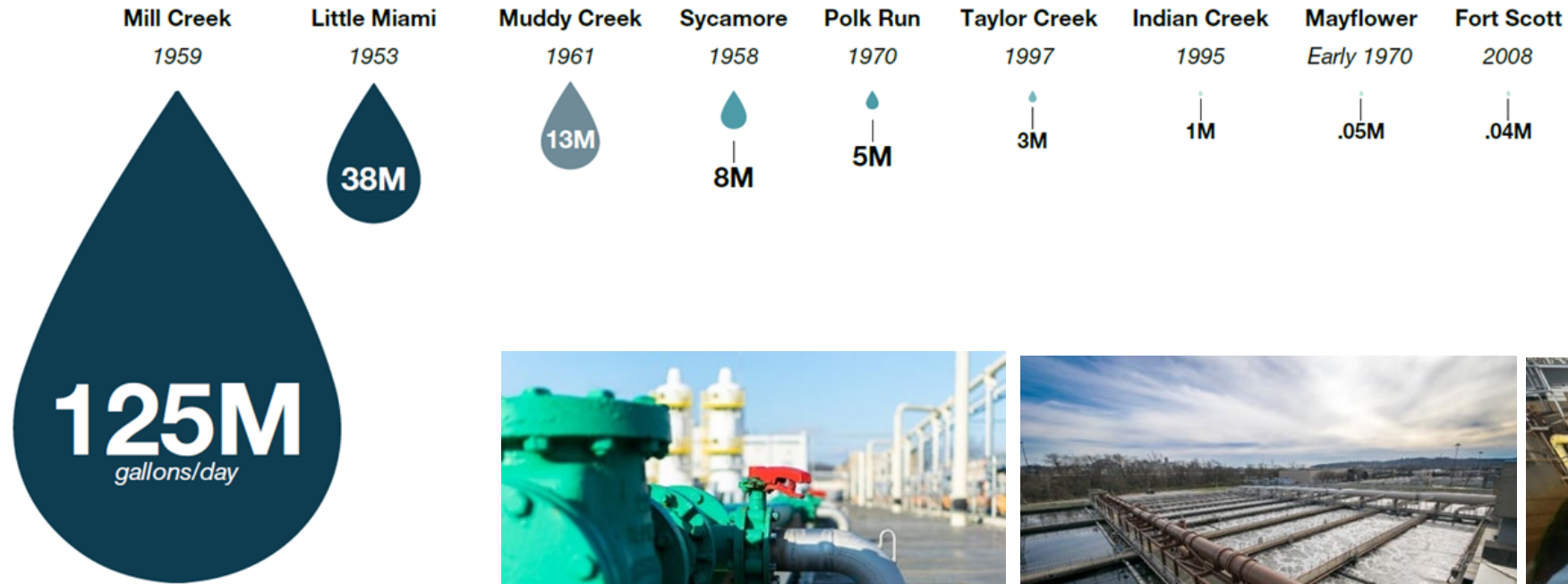


MSD serves >225,000 residential, commercial and industrial customers



MSD Treatment System

Millions of Gallons Treated Per Day





MSD Governance

MSD Governance

City of Cincinnati and Hamilton County executed an agreement in April, 1968

- City joined County's "Sewer District #1", renamed "Metropolitan Sewer District of Greater Cincinnati"
- City sewer system previously managed as a division of City Public Works Department
- Purpose of the 1968 Agreement was to constitute the City as the "sole management agency for the operation and maintenance of the sewer system"
- City provided its **existing** sewer system and three **existing** treatment facilities to the County "for use only"

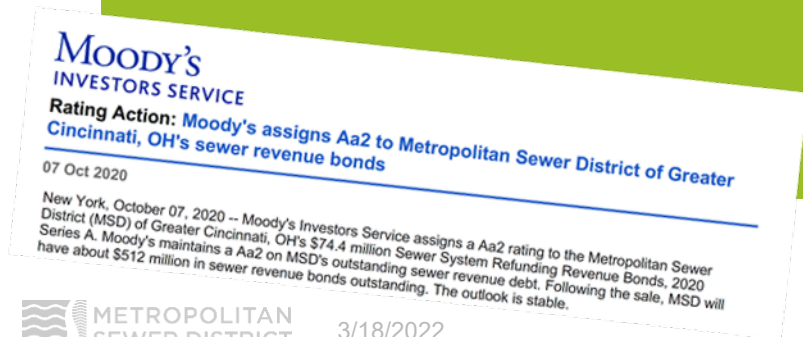
A G R E E M E N T

THIS AGREEMENT, entered into this 12th day of April, 1968 between the City of Cincinnati, Ohio, a municipality (hereinafter referred to as CITY) and the Board of Commissioners of Hamilton County, Ohio (hereinaft

WHEREAS, it is deemed to be in the interest of the City and the County for the Board of County Commissioners to enter into an agreement with the City of Cincinnati wherein the City of Cincinnati would agree to provide a total and complete management service for the operation of the county sewer system; and

MSD Governance

- All MSD employees are City employees. No County personnel are directly employed by the City to provide MSD management, professional, or technical expertise
- The Sewer Department's Chief Engineer is also the Hamilton County Sanitary Engineer
- Finances for MSD are under the purview of the City
 - The City's Financial System (CFS) is used to disburse funds and the City's Procurement Division is used to procure construction, goods, and services
 - Sewer ratepayer funds are restricted use funds and can only be used to benefit the sewer district and not for other purposes
 - Capital financing uses revenue bonds to reimburse MSD capital expenses
 - BOCC approves budgets, appropriates funds, sets rates and adopts rules



Credit Profile		
US\$107.97 mil swr sys rfdg rev bnds (Greater Cincinnati Metro Swr Dist) ser 2019A due 12/01/2034		
Long Term Rating	AA+/Stable	New
Hamilton Cnty, Ohio		
Greater Cincinnati Metro Swr Dist, Ohio		
Hamilton Cnty (Greater Cincinnati Metro Swr Dist) swr		
Long Term Rating	AA+/Stable	Affirmed

MSD Governance

Four amendments to the 1968 Agreement from 1985-2010:

- Bonding and finance modifications (1985 and 1997)
- Federal Consent Decree expenditures and penalties (2002)
- Authority to build storm sewers or other prevention or replacement facility when deemed a cost-effective measure to comply with Federal Consent Decree (2004)

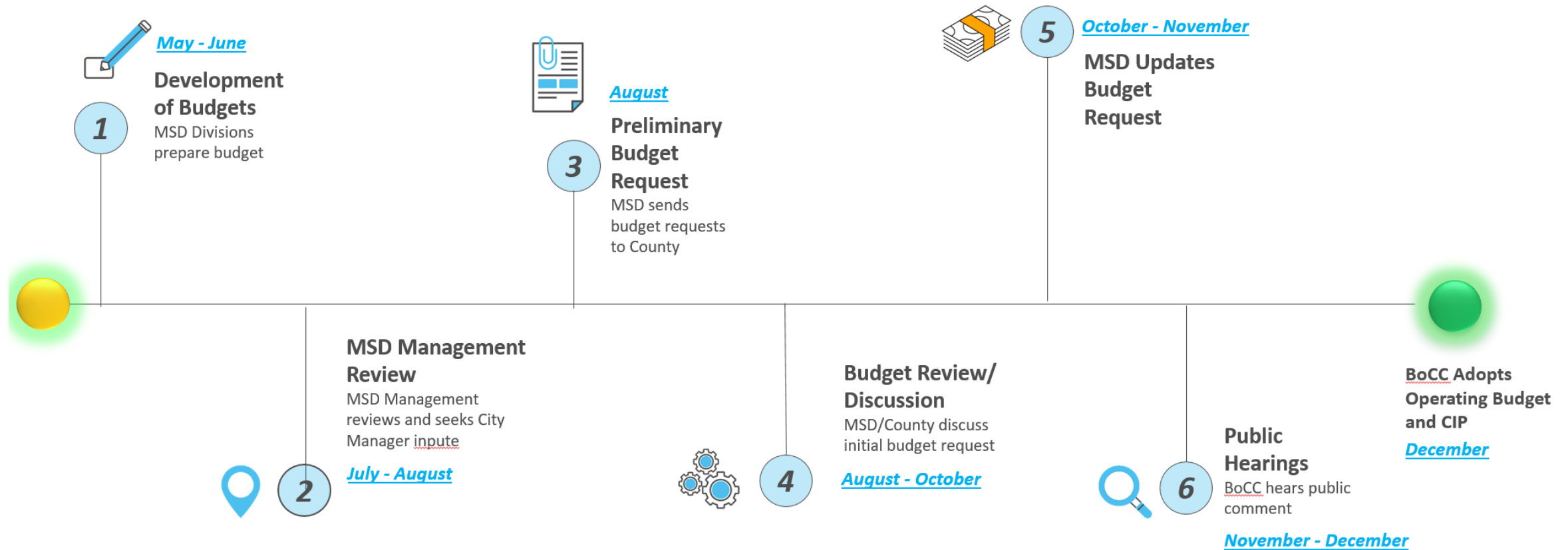
The City and County have been in litigation over their respective sovereign rights regarding MSD:

- Federal District Judge issued order extending the 1968 Agreement (indefinitely)
- Partially resolved conflict as it relates to Consent Decree negotiations



MSD Budgets

MSD Budget Process





Operating Budget

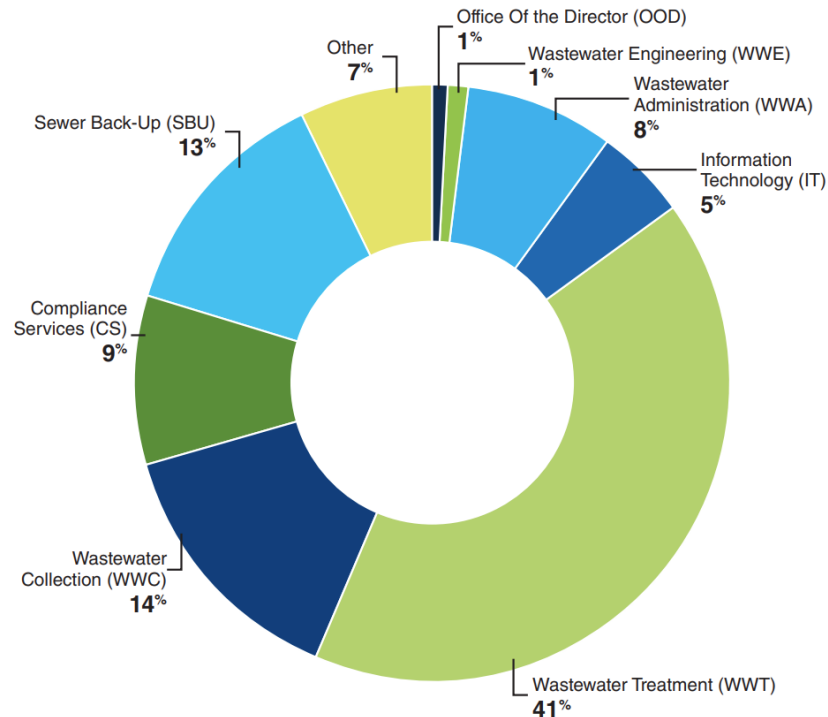
2022 Operating Budget

MSD's approved 2022 Operating Budget is approximately \$231 million.

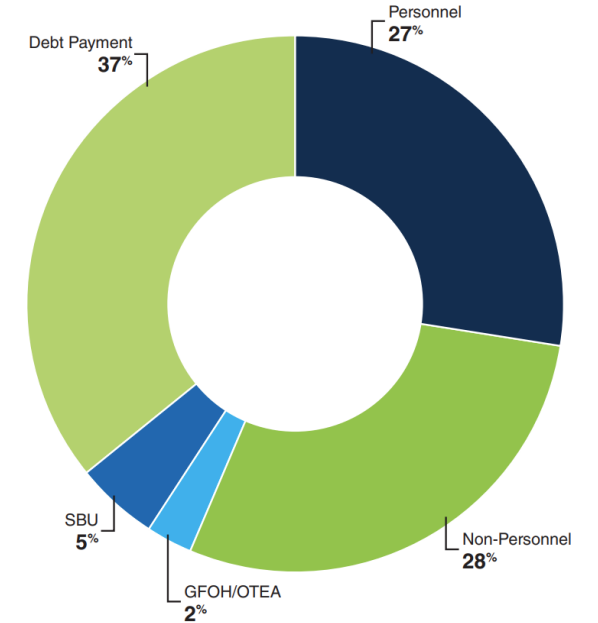
Increase of about \$8.2 million or 3.6% over the 2021 budget due to:

- Rising chemical costs
- Increases to hauling & disposal
- Increased power costs
- Supply chain impacts
- Regulatory Obligations
- O&M of new wet weather assets
- Technology & Cyber Security

Non-Personnel Request by Division



Overall Request by Category



MSD Operations by Division

Wastewater Treatment Division (240 FTEs)

- Licensed plant operators, electricians, machine maintenance, engineers, laborers, crew leaders, plant supervisors, etc.
- Complete operation and maintenance for 9 WWTPs, 9 wet-weather facilities, 97 pump stations
- Annual Recipient of National Awards for compliance with NPDES permits

Wastewater Collection Division (165 FTEs)

- Collection equipment specialists, inspectors, utility techs, maintenance crew leaders, field supervisors, engineers, customer service, etc.
- Planned and emergency maintenance of all sewers and manholes, 24/7 customer service response, green infrastructure management and SBU program management

Compliance Services Division (70 FTEs)

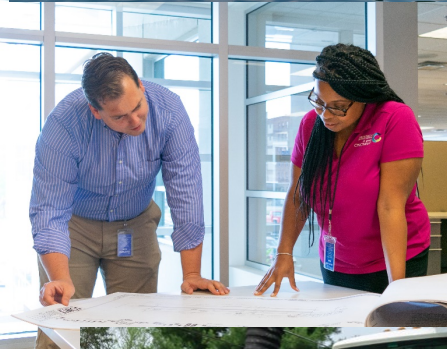
- Chemists, lab techs, engineers, industrial waste investigators, environmental safety specialists, etc.
- Regulatory compliance and reporting, permit renewals, laboratory analysis, overflow monitoring, modeling, commercial and industrial waste program, etc.

Wastewater Engineering Division (100 FTEs)

- Engineers, civil engineering techs, public works inspectors, surveyors, construction ion inspectors, etc.
- Capital program project management, engineering planning, development services including plan review, sewer availability, coordinated site review, etc.

Wastewater Administration/Information Technology/Office of Director (80 FTEs)

- Accountants, accounting techs, administrative specialists, computer systems analysts, IT manager, assistant city solicitor, etc.





Capital Budget

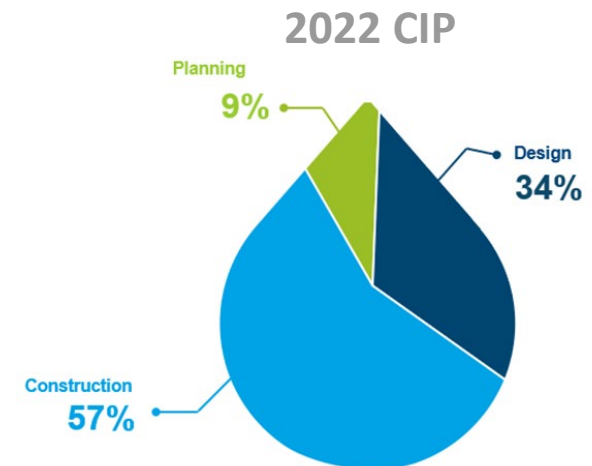
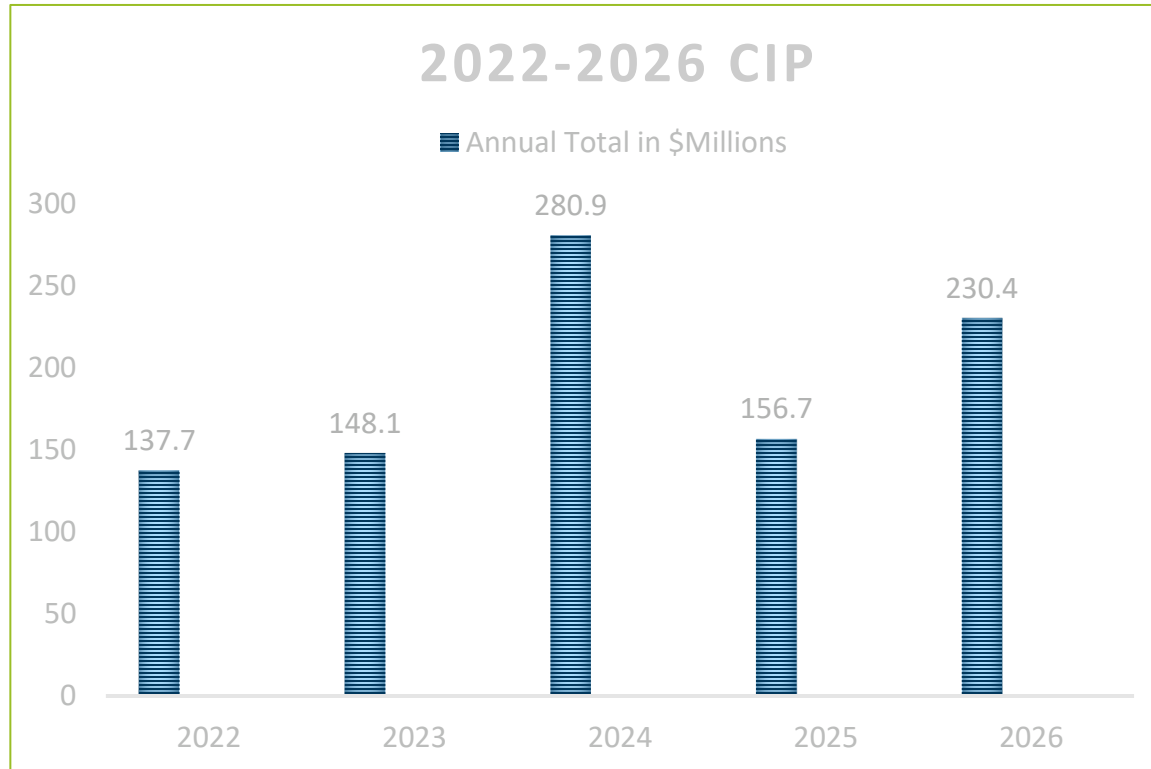
Capital Improvement Plan (CIP)

Each year, MSD proposes a five-year CIP to the County Commissioners.

The capital budget is approved on an annual basis and only funds for the first year of the plan are appropriated.

The 2022-2026 CIP included a 5-year total of \$952 million.

2022 capital budget is \$136 million for 59 specific projects across the planning, design, and construction phases.



Capital Improvement Needs

Industry standard for reinvestment in Assets:

- 2 percent of asset value per year for WWT assets (at least \$26 million per year)
- 1 percent of asset value per year for WWC assets (at least \$82 million per year)
- Current targets given by the County are approximately \$50M asset management

Asset Category	Replacement Value	1% CIP for Collection System and 2% CIP for Treatment
Gravity Sewer	9.5 billion	\$79 - \$95 million
Force Main	\$62 million	\$0.6 million
Pump Station	\$135 million	\$1.3 million
Buildings	\$88 million	\$0.8 million
WWTP	\$1.6 billion	\$26 - \$32 million
Land	\$4 million	N/A
TOTAL	\$11.7 billion	\$108 – \$128 million



Major CIP Project

Little Miami Solids \$167M

Anaerobic wastewater digester (AD) systems break down biodegradable material in the absence of oxygen.

AD will greatly reduce the amount of organic matter that would otherwise be dumped in landfills, or burned in incinerators.

AD process will allow the capture of biogas to be converted into usable energy and ultimately produce a usable end-product.



MSD Programs

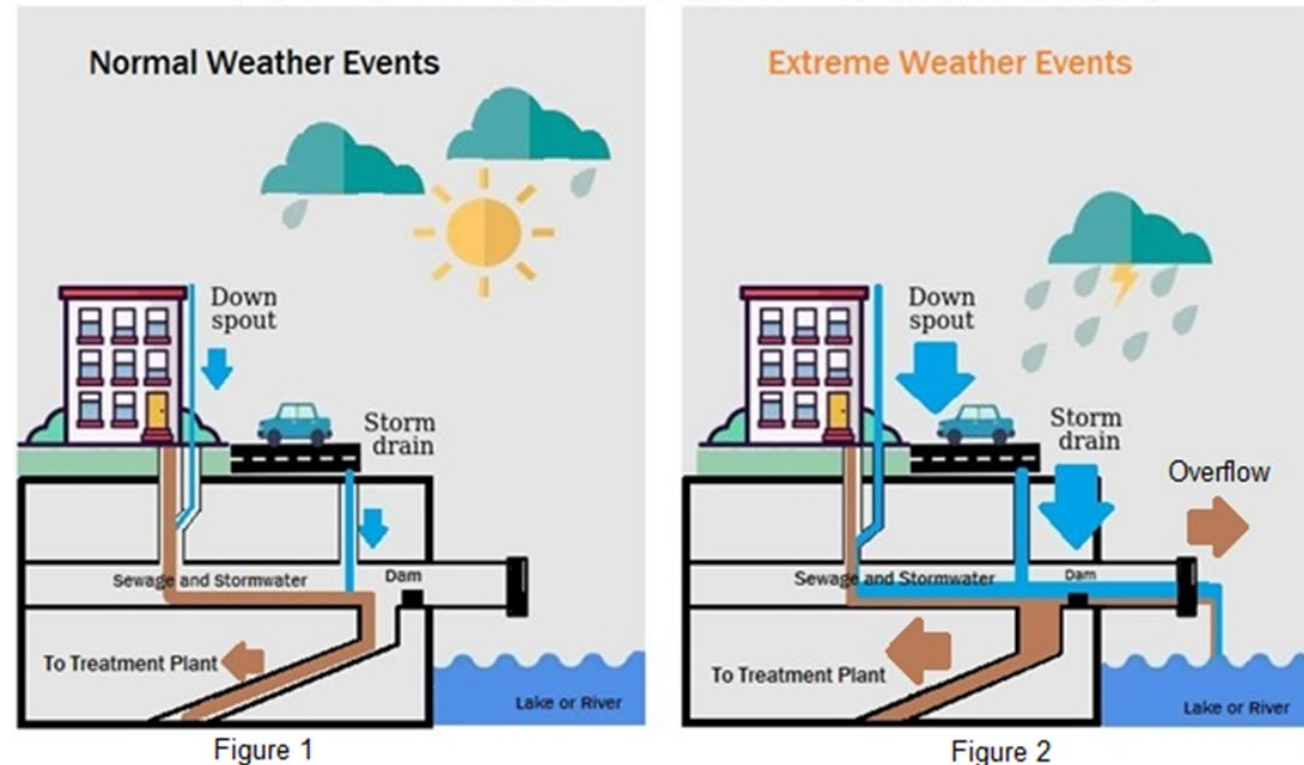


Wet Weather Improvement Program

Wet Weather Improvement Program

- The MSD service area receives about 41 inches of rain annually, equal to about 180 billion gallons of rain.
- About 21 billion gallons of rain enters the combined sewer system. A much smaller amount enters the sanitary sewer system.
- U.S. EPA has mandated that MSD significantly reduce the combined sewer overflows (CSOs) and eliminate sanitary sewer overflows SSOs.

Combined Sewer Overflows



Wet Weather Improvement Program

MSD is reducing or eliminating sewer overflows by using different strategies outlined in the WWIP:

- 💧 **Capacity:** Larger sewers and CSO storage tanks or tunnels
- 💧 **Upgraded Treatment Plants:** Upgraded treatment plants, pump stations, enhanced high-rate treatment facilities
- 💧 **Green Solutions:** Solutions that control stormwater and keep it out of the combined sewer system. These solutions include storm water detention basins, bioswales, stream restoration, bioinfiltration basins, etc.

Phased Approach: Projects completed in phases over multiple years due to its size, complexity, and cost. Measure is “Affordability”



WWIP - Solution for CSOs

- First phase completed in 2020, **133 projects at a cost of \$1 billion**
- The entire program will take **many decades to complete**
- To date, we have eliminated **6 billion gallons** of sewer overflows a year (from 14 billion to 8 billion) & dramatically improved water quality
- Phase 2 under development



WWIP - Solution for CSOs

MSD Vision for the LMCPR:

What if....It met performance standards AND...



...it created a network of community assets that attracted new interest and investment?



...if it left behind open spaces, enhanced streetscapes and opportunities for green building?



...if it served as a model for a sustainable 21st century community?



...it could be more than a sewer project?

vision

Lick Run Greenway is Part of the Revised Original LMCPR

- Lower cost CSO reduction than Default Solution by \$300 million
- Better leave behind for the community
- National Model of Green Infrastructure
- Community/ratepayer support for the Lick Run Alternative



11 NARROW CHANNEL | WET CONDITION, 0.5-INCH RAIN EVENT
LICK RUN WATER LEVEL RENDERING





Sewer Backup Program

Sewer Backup Program

- Established in MSD's Global Consent Decree, requires MSD to respond, investigate, and take action.
- The program covers the backup of wastewater into a building that is the result of incapacity in the sewer system or negligent maintenance or operation of the sewer system.
- The program does not address water in buildings caused by overland flooding not emanating from the MSD system or blockages in private lateral sewer lines.

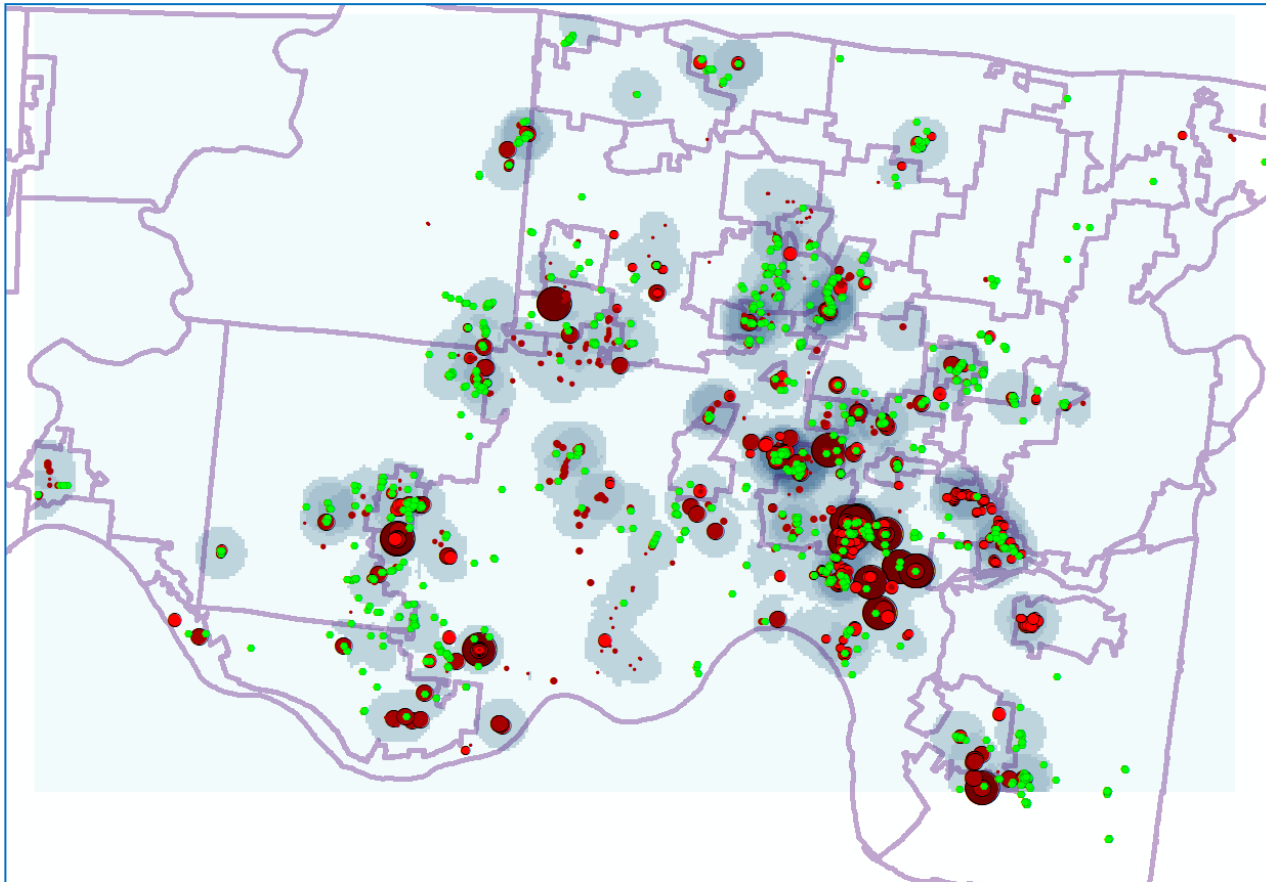


Sewer Backup Program

- If you think you've experienced a sewer backup from the public sewer:
 - Report your backup to MSD asap
 - 352-4900 or sbu.msdbg.org –24/7
- MSD will investigate to determine what caused the backup
- If eligible, customers receive cleaning services and claims reimbursement for damages inside the property
- Customers with recurring backups from lack of capacity in the public sewer are eligible for a prevention device

MSD has spent \$158 million on this program since 2004

Sewer Backup Prevention Program



SBUPP

Total Properties Protected = 1,222

Total Dollars Spent = \$35,700,000

Average SBUPP cost/home = \$45,000

LEGEND

- Heat map SBU response areas (2017 to 7/2020)
- Confirmed capacity related SBU; the larger the red circle, the smaller the storm event that caused the mainline capacity problem (2017 - 2020)
- SBU Prevention Devices Installed since 2004

Sewer Backup Mitigation

MSD looking for other ways to reduce sewer backups:

- Operational controls (currently pilot testing)
- Muddy Creek project using FEMA grant funds to purchase and demolish properties built in a former drainage area
- SBU Mitigation Toolbox

The **vast majority (85%)** of sewer backups investigated by MSD are caused by **private property issues or overland flooding**

- Clogs, blockages, and breaks in private building sewers, and from foundation drains, or internal plumbing

What can you do?

- Regular inspections of your private building sewer
- Learn what **NOT** to flush
- Landscape with care
- Consider purchasing private building sewer insurance



What about flooding?

- Flooding and sewer backups are different!
- Flooding occurs when rainwater travels along the ground or streets and enters buildings through recessed driveways, cracks in foundation walls or gaps in windows/doors
 - Exacerbated by:
 - Development in former drainage basins
 - Impervious pavement
 - Blocked storm drains in streets, blocked gutters and downspouts
 - And lots of rain
- MSD has no jurisdiction over flooding



Customer Assistance Program

Customer Assistance Program

The Customer Assistance Program (CAP) was established to assist eligible low-income senior citizens pay their sewer bills.

Approved eligible customers will receive a 25% discount on their sewer charges (including both the minimum base charge and the commodity charge). Eligibility:

- 65 years of age or older
- Own and live in the residence for which they are paying the MSD sewer bill-sewer bill should be in the applicant's name
- Modified Adjusted Gross Income (MAGI) of no more than \$34,200 for 2021 (combined income of the applicant and their spouse).

In the two years since inception, MSD has enrolled 2,650 customers in the program.

- Statutory change required to expand CAP customer classification below age 65



MSD Revenue & Rates

MSD Rates

MSD charges users to cover its costs:

- Operation and maintenance of MSD assets
- Operating costs associated with required activities such as treatment chemicals, equipment, laboratory, permitting, vehicles, equipment, IT systems, etc.
- Funding of the capital program, including debt service on outstanding bonds and loans, and cash financed capital
- MSD is a not-for-profit entity: budget is “break even” (i.e., revenues = expenses)
- MSD cannot charge for activities MSD is not responsible for conducting; MSD funds are restricted funds
 - Sanitary and combined sewer system
 - National Pollutant Discharge Elimination System (NPDES)
 - CSO/SSO Consent Decree

MSD Rate Structure

Minimum Charge

- Water meter size
- Includes 3 CCF of Volume



Volume Charge

- \$/CCF for volume above 3 CCF of water
- 1 CCF = 100 cubic feet = 748 gallons

No Rate Increase since 2015

- CPI has risen 16% since 2015
- The average user pays \$610/year based on average water usage
- More assets to maintain and more needs to cover to keep things operational
- MSD is evaluating enhancements to its rate structure

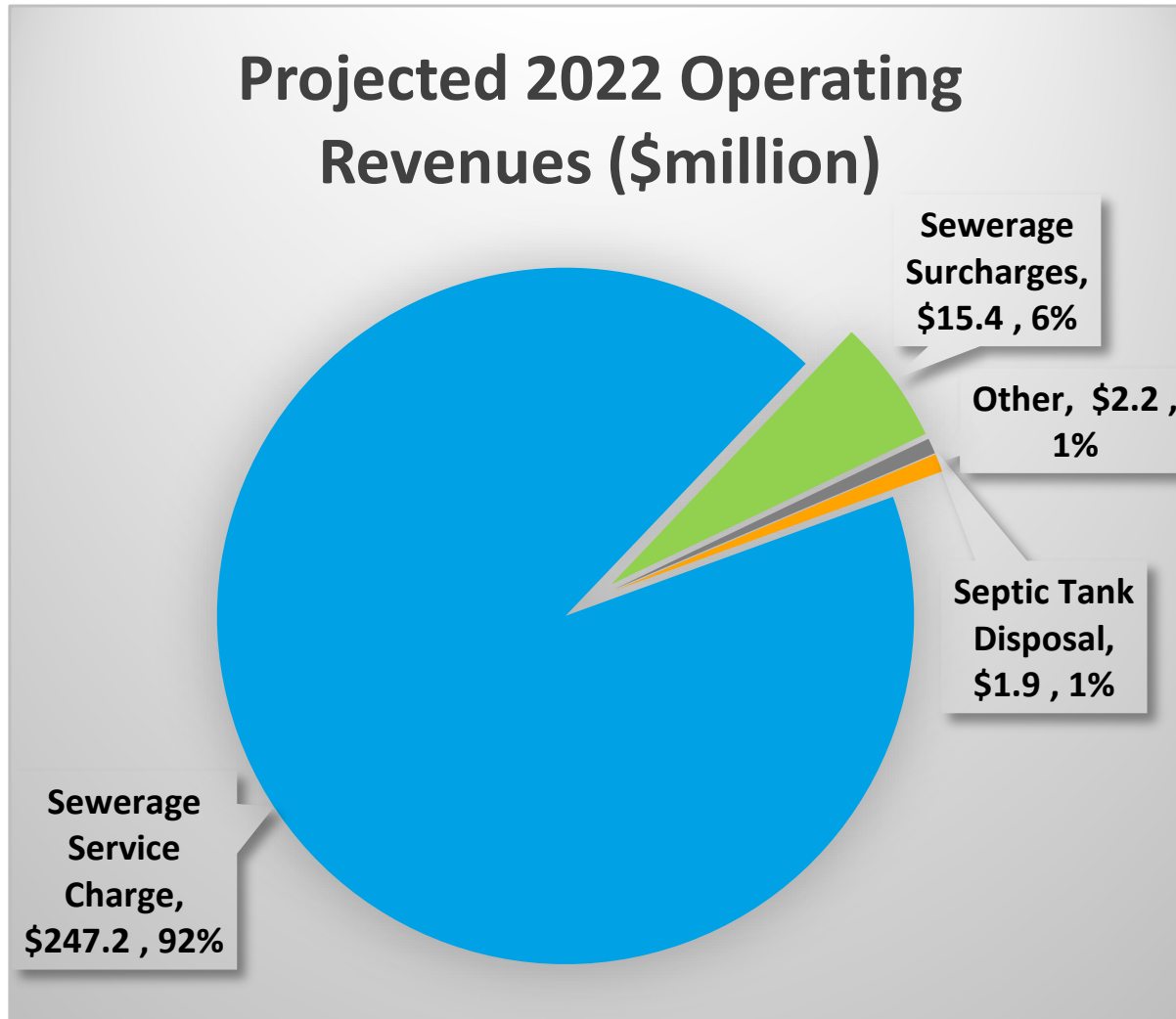
Minimum Base Charges for Residential, Commercial, and Industrial Customers

Meter Size (Inches)	Monthly Bills (\$)	Monthly Bills - 25% CAP Discount (\$)
5/8	39.12	29.34
3/4	50.44	37.83
1	69.15	51.86
1 1/2	117.50	88.13
2	166.44	124.83
3	427.16	320.37
4	707.43	530.57
6	1397.72	1048.29
		1564.19

Commodity Charges for Residential, Commercial, and Industrial Customers³

Monthly Water Usage	Sewer Rate (\$)	Sewer Rate - 25% CAP Discount (\$)
Up to 3 CCF	Included in the minimum base charge	Included in the discounted minimum base charge
Greater than 3 CCF, up to 50 CCF	\$5.879 per CCF	\$4.409 per CCF
More than 50 CCF	\$4.701 per CCF	\$3.526 per CCF

Projected Revenue



Sewerage Service Charge:

Applies to all customers – residential, commercial, industrial – based on water consumption

Sewerage Surcharges:

Commercial and industrial customers may be charged additional fees to cover costs associated with their discharges, including:

- Surcharge rates
- Industrial pretreatment charges



Ask MSD about...

COVID Wastewater Sampling

Smart Sewer System

Rate Restructuring

Updated Detention Rules

Sustainability

It's All About Clean Water

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.

