

2019 Operations and Maintenance and Capital Budgets



Milwaukee Metropolitan Sewerage District
Milwaukee, WI

Milwaukee Metropolitan Sewerage District 2019 Budget

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Recent District Awards and Honors

2018

- Historic Milwaukee 2018 Remarkable Milwaukee Honoree
- Milwaukee Riverkeeper Estabrook Dam Award
- Rivers, Trails, and Conservation Assistance Program Partner Excellence Award
- B2GNow Collaboration Award
- GFOA Distinguished Budget Presentation Award
- GFOA Certificate of Achievement for Excellence in Financial Reporting
- NACWA Peak Performance Award

2017

- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- Leading Utilities of the World Award
- 2017 Wisconsin Local Corporation of the Year Award

2016

- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- NACWA Water Resources Utility of the Future Award
- Gathering Waters – Policymaker of the Year Award
- NACWA Peak Performance Award

2015

- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- NACWA Water Resources Utility of the Future Award
- 2015 ACEC Engineering Excellence Award
- NACWA Peak Performance Award

2014

- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- American Public Works Association 2014 Project of the Year Award
- 2014 Public/Private Partnership Award
- 2014 Governmental Partner of the Year Award
- NACWA Peak Performance Award

2013

- Business Council – Strategic Partner of the Year Award
- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- APWA – Environment Project of the Year Award
- NACWA Peak Performance Award

2012

- ACEC Awards for Milwaukee County Grounds and 27th Street ISS (Deep Tunnel) Extension Projects
- NACWA Peak Performance Award
- GFOA Certificate of Achievement for Excellence in Financial Reporting
- GFOA Distinguished Budget Presentation Award
- NACWA Public Information and Education Award
- Honor from the Housing Authority of the City of Milwaukee
- 2012 United States Water Prize – US Water Alliance
- Community Partner Award



GOVERNMENT FINANCE OFFICERS ASSOCIATION

*Distinguished
Budget Presentation
Award*

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**Milwaukee Metropolitan Sewerage District
Wisconsin**

For the Fiscal Year Beginning

January 1, 2018

Christopher P. Morrill

Executive Director

The Government Finance Officers Association of the United States and Canada (GFOA) presented a Distinguished Budget Award to the Milwaukee Metropolitan Sewerage District, Milwaukee, WI for its annual budget for the fiscal year beginning January 1, 2018. In order to receive this award, a governmental unit must publish a budget that meets program criteria as a policy document, as an operations guide, as a financial plan, and as a communications device. This award is valid for one year only. We believe our current budget continues to conform to program requirements, and we are submitting it to GFOA to determine its eligibility for another award.



PARTNERS FOR A CLEANER ENVIRONMENT

Milwaukee Metropolitan Sewerage District
2019 Operations & Maintenance and Capital Budgets
Table of Contents

Budget Message from the Executive Director	i
Combined Summary for Operations & Maintenance and Capital Budgets	1
Background, Statistical, and Supplemental Information	1
The District's Financial Performance	8
Financial Planning	9
Budget Review and Adoption Calendar	10
District Fund Structure and Comparison of Budgets	11
Combined Summary of Expenses and Revenues	13
2035 Vision & Strategic Plan	15
Operations & Maintenance Budget Summary	21
District-wide Organization Chart	25
Staffing Summary	26
Revenues and Expenditures	28
Operations & Maintenance Long-Range Forecast	30
Sources of Funds	31
Funding Summary	31
User Charge Billings	32
Milorganite® Sales	33
Interest Income	34
Other Income	34
Household Hazardous Waste Collection Program.....	35
Industrial Waste Pretreatment Program	35
Equipment Replacement Fund.....	37
IWPP Stabilization Fund.....	37
User Charge Stabilization Fund	38
Surplus Returned	38
Divisions	39
Commission	39
Office of the Executive Director.....	41
Legal Services.....	45
Finance.....	49
Technical Services.....	53
Planning, Research, and Sustainability.....	57
Water Quality Protection.....	61
Community Outreach and Business Engagement.....	65
Information Technology Services.....	69
Other Expenditures	73
Fringe Benefits.....	74
Charges to Capital.....	75
Unallocated Reserve.....	75
Capital Budget	79
Capital Budget Summary	79
Capital Budget Overview.....	80
2019 Capital Budget Summary of Revenues and Expenditures.....	82

Milwaukee Metropolitan Sewerage District
2019 Operations & Maintenance and Capital Budgets
Table of Contents

Long-range Financing Plan.....	83
Uses of Funds.....	84
Capital Sources of Funds/Revenues	87
Actual and Projected Tax Levies	88
Non-member Billings	89
District Bonds and Notes	90
Loans	91
Interest and Other Income	91
Federal, State Aid, and Grants	91
Debt Service Sinking Funds	92
Water Reclamation Facilities	
Water Reclamation Facilities Overview	93
Jones Island Water Reclamation Facility Project Descriptions	
Primary Treatment	95
Secondary Treatment.....	97
Advanced Treatment.....	97
Solids Processing.....	98
General Projects.....	104
South Shore Water Reclamation Facility Project Descriptions	
Primary Treatment	108
Secondary Treatment.....	109
Advanced Treatment.....	111
Solids Processing.....	112
General Projects.....	114
Interplant Pipeline Project Descriptions	
Interplant Pipeline.....	119
Landfill Gas Pipeline Project Descriptions	
Landfill Gas Pipeline	121
Conveyance Facilities	
Conveyance Facilities Overview.....	123
Conveyance Facilities Project Descriptions	
MIS Subsystem 1 – South Shore Main Branch.....	125
MIS Subsystem 2 – Southwest Branch	125
MIS Subsystem 3 – Northwest Branch	127
MIS Subsystem 4- Northeast Branch.....	127
MIS Subsystem 5 – North Side High Level Branch.....	128
MIS Subsystem 6- South Side High Level Branch	129
MIS Subsystem 7 – Low Level Branch	122
General Interceptor Sewer System.....	131
Inline Storage System Project Descriptions	
Combined Sewer Overflow Structures.....	134
Central Control Room Project Descriptions	
Conveyance System Central Control	136

Milwaukee Metropolitan Sewerage District
2019 Operations & Maintenance and Capital Budgets
Table of Contents

Watercourse and Flood Management Projects

Watercourse and Flood Management Overview	137
Watercourse and Flood Management Project Descriptions	
Milwaukee River Watershed.....	142
Menomonee River Watershed	146
Root River Watershed.....	153
Kinnickinnic River Watershed	154
Oak Creek Watershed.....	159
General Watercourse Projects	160

Other Projects

Other Projects Overview	163
Other Projects Project Descriptions	
Facilities Management	164
Facilities Planning.....	167
Workforce & Business Development Resource Program.....	171
Information Technology Software Systems	172
Financial Planning	173
Risk Management Program.....	173
General Other Projects	174
Green Infrastructure Projects.....	174

Debt Service

Debt Service Overview	177
District General Obligation Bonds	179
Clean Water Fund Program Loans.....	181
Intergovernmental Loan	182

Appendices

Glossary	183
Pay Grade, Salary, and Wage Information.....	193
Capital Line Item Budget	198



PARTNERS FOR A CLEANER ENVIRONMENT



January 14, 2019

Commissioners:

I am pleased to submit the Milwaukee Metropolitan Sewerage District's 2019 Operations & Maintenance and Capital Budgets. The primary purpose of this budget document is to provide information about financial and operational planning through both of its budgets. As such, the document discusses both 2019 revenues and expenditures and longer-term initiatives. The budget provides direction for management and staff. Budget staff monitor the effectiveness of the budget throughout the year and provide status reports on a quarterly basis.

In addition to financial information, the budgets also document policies and priorities of MMSD as well as its recently approved 2019-2021 strategic plan. During 2018, the District undertook a strategic planning process with internal staff and external stakeholders and did an in-depth evaluation of ten trends including population, political environment, regulations, workforce, technology, one water management, customer expectations, financial constraints, energy/reuse, and the District's risk profile. This evaluation led to the identification and prioritization of goals, and the team created a framework with goals in the areas of financial strength, infrastructure management, climate resilience, watershed cooperation, public engagement and awareness, workforce excellence, and internal communication and collaboration. Staff will be working to improve its performance management system related to the new strategic plan.

The process also included a review and update to its vision, mission and values statements:

MMSD Mission

MMSD envisions a healthier, cleaner, resilient region.

MMSD Vision

MMSD protects public health and the environment through world-class, cost-effective water resource management, leadership, and partnership.

MMSD Values

Stewardship, Integrity, Quality, Collaboration, Diversity, Innovation

The following pages of the budget provide a roadmap to both high-level and detailed budgetary information in 2019. Both budgets were prepared to meet the objectives of the Commission in terms of affordability to customers.

In the Operations and Maintenance budget, the 2019 user charge billings increase 1.22% compared to a projected 4% in the prior year's forecast. The 1.22% increase is achieved in part by the return of a significant surplus from the 2017 budget.

In the capital budget, the tax levy for 2019 is increased 1.75% compared to a 4% increase that was projected for 2019 purposes in the prior year's long-range financing plan. The limited tax levy increase is primarily managed through a close look at project priorities. In addition, the financing plan allows a strategic use of debt financing to ensure inter-generational equity while still maintaining the District's compliance with policy objectives including 25% cash financing and well below debt capacity limitations. The net impact is that \$77.8 million in District GO Bonds and Clean Water Fund Loan Program proceeds and a net \$99.8 million in expenditures were added over six years as part of the long-range financing plan.

The budgets continue to fund the critical needs of existing system infrastructure and ensure permit compliance, and the 2019 budget will likely be the final budget before the 2050 Facilities Plan is completed. The financial planning process creates a framework to accommodate the expenditure needs that will be identified as we move forward. In addition, the 2019 budgets expand upon the District's goal of creating synergies between grey and green infrastructure by increasing the funding available to eligible municipalities in its Green Solutions program.

Throughout the 2019 budget document, you will find discussion of many of the factors that impact the District to provide perspective and context to financial changes implemented in the budget, and many budgeted initiatives included in the division or project sections.

Highlights of the 2019 Capital Budget

The 2019 Capital Budget is \$202.4 million. The 2019 tax levy increases 1.75% from the 2018 level. This compares to a 4% increase projected for 2019 one year ago. The long-range financing plan includes a tax levy increase of 4% for each year from 2020 through 2024. This is consistent with tax levy projections for that period from one year ago.

Highlighted expenditures include:

- Drying and Dewatering facilities rehabilitations, replacements and improvements: \$8.6 million
- Basin H MIS PCB Remediation and Rehab
- Interplant Sludge Pipeline Improvements
- Western Milwaukee Flood Management
- Kinnickinnic River Flood Management
- Green Solutions

The District's 2019 Capital Budget is based on its cornerstone financial objectives that provide sound long-term financial planning. These include limiting outstanding debt to no more than 2.5% of equalized value, while State Statutes allow up to 5%. In the 2019 long-range financing plan, debt outstanding was at the highest level in 2018 at 1.35%, and this is far below the policy provision of 2.5%. In addition, the District provides that six-year total project expenditures are financed with an average 25% cash financing over six years.

The great majority of capital expenditures are rehabilitation, replacement or improvement of existing District facilities and infrastructure, at over \$460.3 million over the six-year plan. This is followed by extensive expenditures planned for watercourse and flood management improvements at \$176.1 million. The District also funds various capital programs that provide unique funding mechanisms to partner with municipalities served to lower overall system costs. Finally, as noted earlier, the District's 2050 Facilities Plan and Green Infrastructure Plan are underway and will have significant impact on future budgets once the recommendations are finalized. The details of all capital projects can be found within the capital account sections of the capital budget.

Highlights of the 2019 Operations & Maintenance Budget

The 2019 Operations & Maintenance (O&M) Budget expenditures total \$104.7 million. In the O&M Budget, the 2019 user charge billings increase is 1.22%, which is below the projected 4% user charges billings increase as forecast in the 2018 budget. Overall expenditures are increasing 2.7%, or \$2.7 million. A significant portion of the increase relates to the first full year of the extension agreement with Veolia Water-Milwaukee, as well as ensuring adequate funding for machinery and equipment replacement that does not meet the capital budget funding criteria.

In addition to user charge billings, the District has other operating revenue sources. The District's second largest O&M revenue source is from Milorganite[®] net revenue. The Milorganite[®] net revenue in the 2019 O&M Budget is projected to be \$10 million, an 11% increase from the 2018 O&M Budget. The District's projected revenue from interest income is \$1 million, an 186% increase from the 2018 budgeted level, and revenue from Other Income decreases \$1 million from the 2018 budgeted level – primarily due to one-time reimbursements in 2018, to \$866,000. The District also administers two cost recovery programs: the Industrial Waste Pretreatment Program (IWPP) projected at \$1.0 million and the Household Hazardous Waste Collection Program (HHW) projected at \$1.2 million. In addition to the above-mentioned revenue sources, the District returns any available surplus from prior fiscal years and has available reserves on an as-needed basis. In 2019, the \$6.0 million surplus from the 2017 budget which is returned.

In closing, while 2019 will be a bridge to the future, aggressive implementation of existing projects and programs is essential. The District's 2019 budgets accomplish this by supporting operational needs, providing needed capital improvements, promoting new initiatives, and continuing strong financial management. The District looks forward to partnering with others in the region as we move forward protecting water quality and building resilient futures together.

Respectfully submitted,



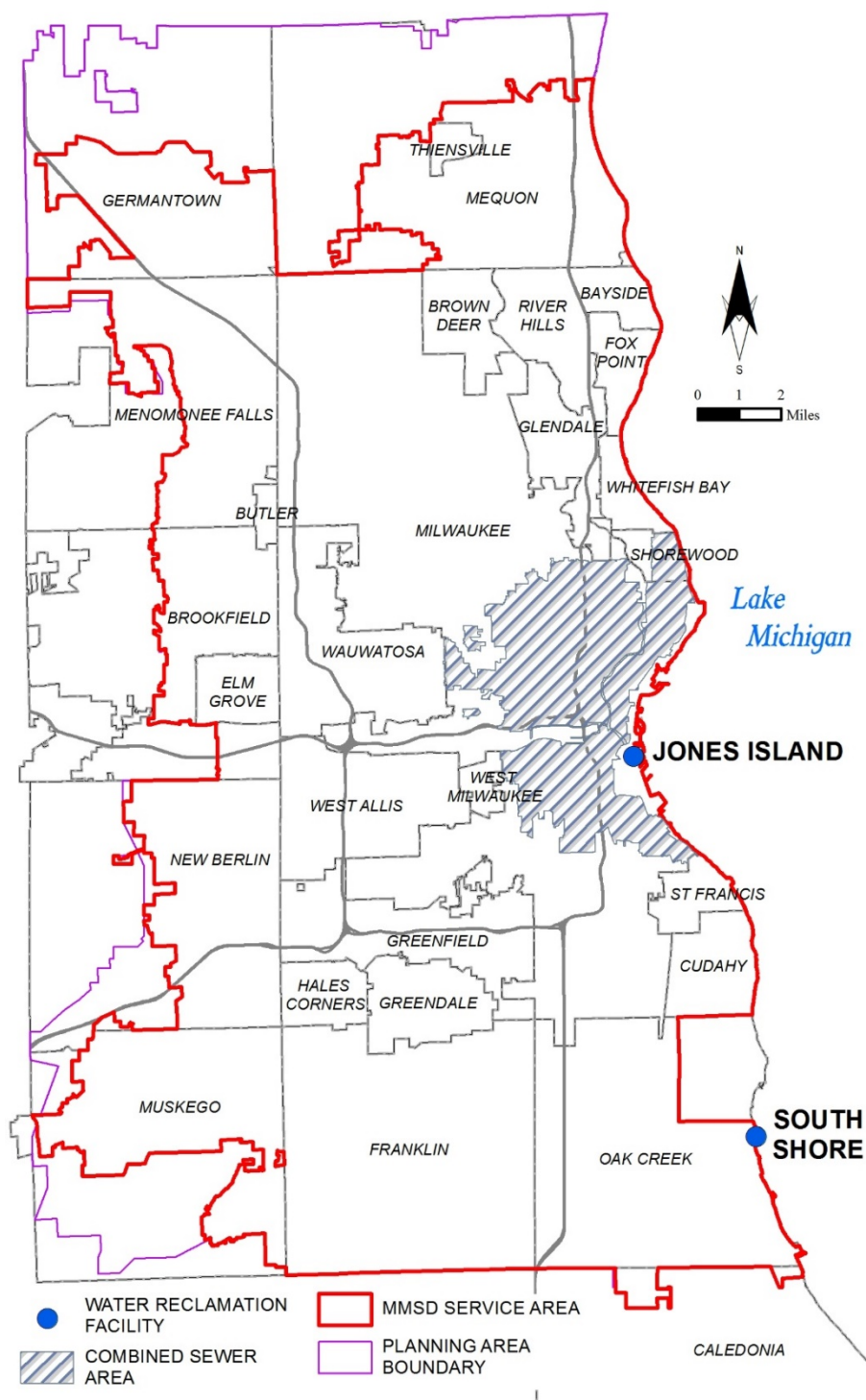
Kevin L. Shafer, P.E.
Executive Director

"When we work together as a Region, we succeed as a Region"



PARTNERS FOR A CLEANER ENVIRONMENT

Background, Statistical and Supplemental Information



The Milwaukee Metropolitan Sewerage District is a state chartered, governmental agency providing wastewater services for 28 municipalities with a population of about 1.1 million people. The District's chief responsibilities are to provide water reclamation services and to maintain and improve watercourses for nearly all of Milwaukee County, Wisconsin, and portions of municipalities in surrounding counties. While Milwaukee is the 31st largest city in the United States, its regional wastewater system is among the largest, most sophisticated, and well run in the country. The District's 412-square-mile planning area includes all cities and villages (except the City of South Milwaukee) within Milwaukee County and 10 municipalities in the surrounding counties of Ozaukee, Washington, Waukesha, and Racine. About 26 square miles, or six percent of the District's planning area, have combined sewers. Approximately 323 square miles, or 78 percent of the planning area, are separate sewer area. The remaining 63 square miles, or 15 percent of the planning area, are considered unsewered; they are within the planning area but have not yet been added to the District's service area.

A 4,033-mile system of local collector sewers and a 302-mile system of District intercepting and main sewers convey wastewater to the two District-owned water reclamation facilities. Additionally, the District owns six miles of combined sewers, 24 miles of near surface collectors, as well as, 25 miles of Inline Storage and seven miles of remote storage that store and convey wastewater for the region.

Wastewater treatment within the District's service area is provided at two District-owned water reclamation facilities. One is the Jones

Island Water Reclamation Facility, which began operations in 1925. The other is the South Shore Water Reclamation Facility, which began operations in 1968. On average, the two water reclamation facilities collect and treat more than 200 million gallons of wastewater each day, and, with a daily capacity of 600 million gallons, they return clean, clear water to Lake Michigan.

In 1926, Jones Island was the first wastewater facility to recycle biosolids by producing an organic fertilizer known as Milorganite®. This commercial fertilizer is sold throughout the United States and Canada for home lawn care as well as for golf courses, country clubs, and other professional grounds.

Governance

The District's governing body is the Milwaukee Metropolitan Sewerage Commission, which is composed of 11 members. Seven commissioners are appointed by the Mayor of the City of Milwaukee, and are subject to confirmation by the Common Council. Four commissioners are appointed by the Intergovernmental Cooperation Council of elected officials of cities and villages in the District other than the City of Milwaukee. The Commission establishes and enforces District policies in compliance with statutory responsibility and directs and controls budgetary, administrative, procedural, operational and informational support for the District.

The Commission has two standing committees: the Policy, Finance and Personnel Committee and the Operations Committee. In general, the Policy, Finance and Personnel Committee has jurisdiction over establishment of District policy, financial planning, budget recommendations, award of contracts not related to conveyance, storage and treatment, reporting and audits, personnel matters, labor relations, legal matters and legislation, and public information policies. The Operations Committee has jurisdiction over the operation of the wastewater collection and treatment systems, industrial pretreatment, and contract and bid awards for the District's conveyance, storage and treatment projects.

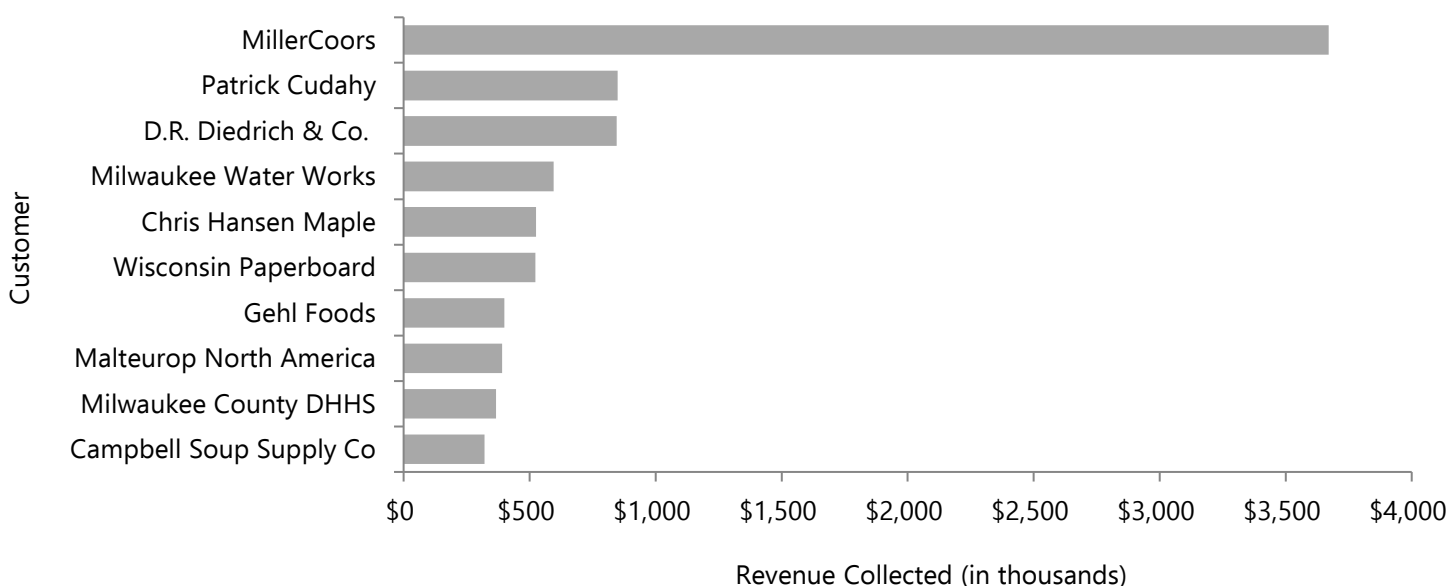
Operations

In early 1998, the District approved a ten-year public private partnership agreement with United Water Services (UWS) for operating the District's two water reclamation facilities, bio-solids management, and field operations. The agreement with UWS saved District ratepayers more than \$164 million over the term of the contract. On December 3, 2007, a second ten-year contract was executed with Veolia Water Milwaukee (VWM) effective March 1, 2008. In 2016, the District executed a ten-year extension of the VWM contract, and the extension agreement will begin in March 2018 through February 2028. The VWM contract provides the District with the lowest cost option to maintain, operate, and manage the District's water reclamation facilities, collection, and conveyance system.

Funding the Operating Budget

District operating expenses are primarily recovered from District customers through a sewer service charge. The sewer service charge is billed to each municipality within the District's service area based on waste strength, flow volume, and the number of connections. The Environmental Protection Agency (EPA) and Wisconsin Department of Natural Resources (DNR) have approved the District's user charge system. The following table shows a listing of the ten largest sewer users within the District's service area in 2017 by revenue collected.

Top Ten Sewer Users in 2017

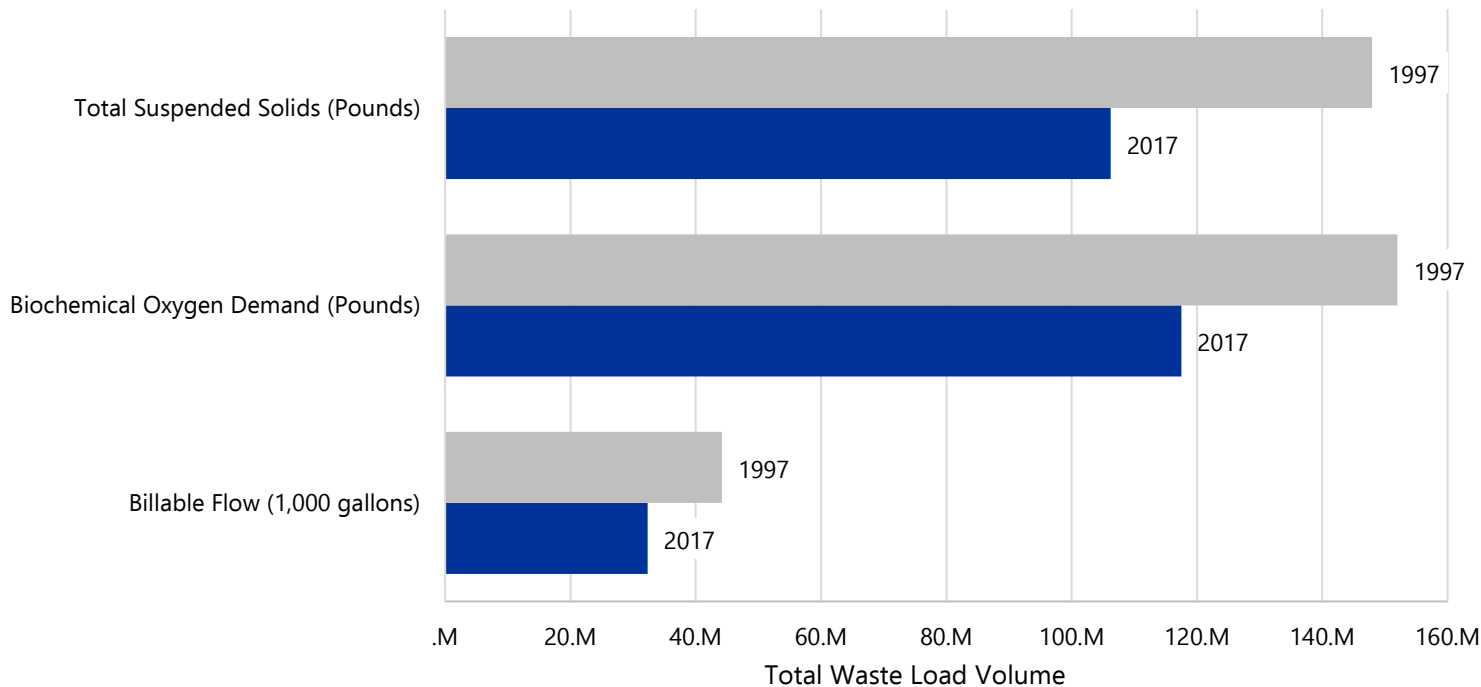


Source: 2017 Comprehensive Annual Financial Report

Waste Loads and the Customer Base

The District calculates user charges based on four billing parameters: flow (\$/1,000 gallons), biochemical oxygen demand (BOD lbs.), total suspended solids (TSS lbs.), and connections to the sewer system. Since 1997, the District has seen an overall drop in the volume of TSS, BOD, and billable flow. Using waste load data reported in the 2017 Comprehensive Annual Financial Report (CAFR), from 1997 to 2017, the waste load parameters show a 28 percent decline in TSS, a 23 percent decline in BOD, and a 27 percent decline in flow among all customers.

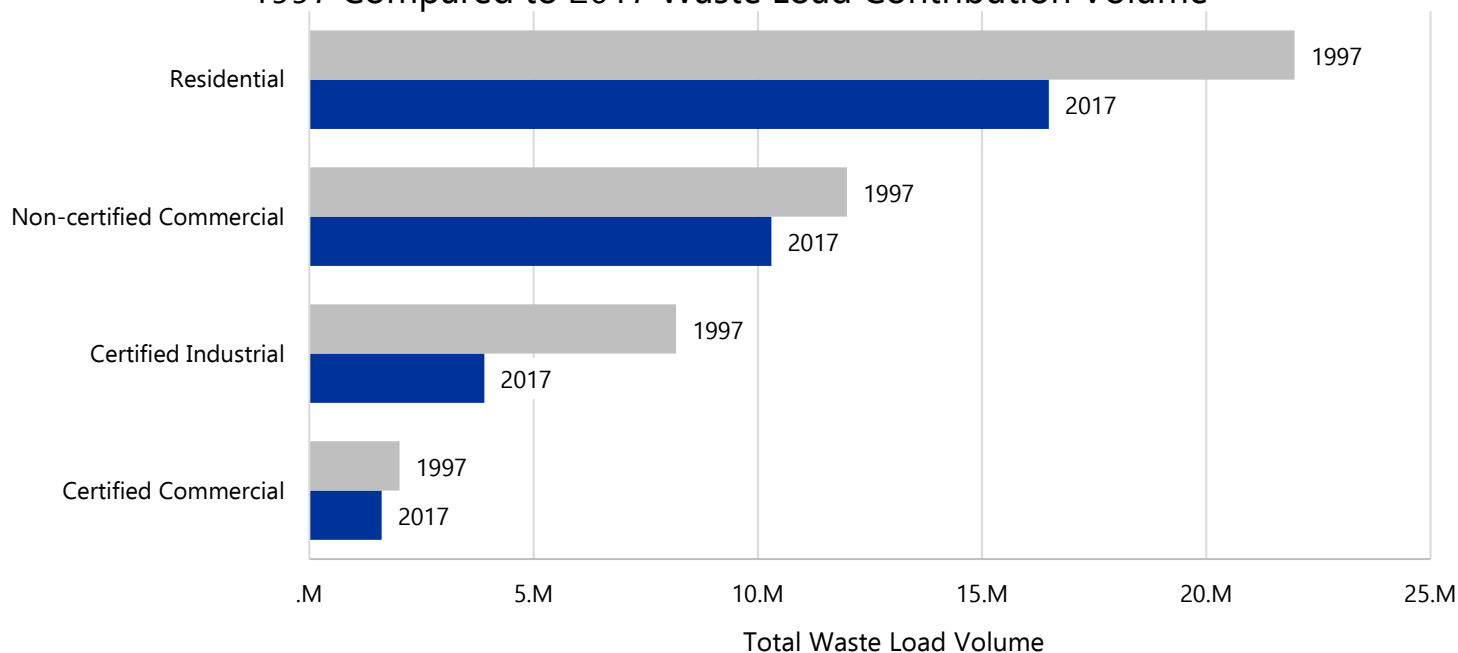
1997 Compared to 2017 Waste Load Parameters Volume



Source: 2017 Comprehensive Annual Financial Report

The billing parameters from each of the four customer classes: residential, non-certified commercial, certified industrial, and certified commercial has continued to decline over the last two decades.

1997 Compared to 2017 Waste Load Contribution Volume

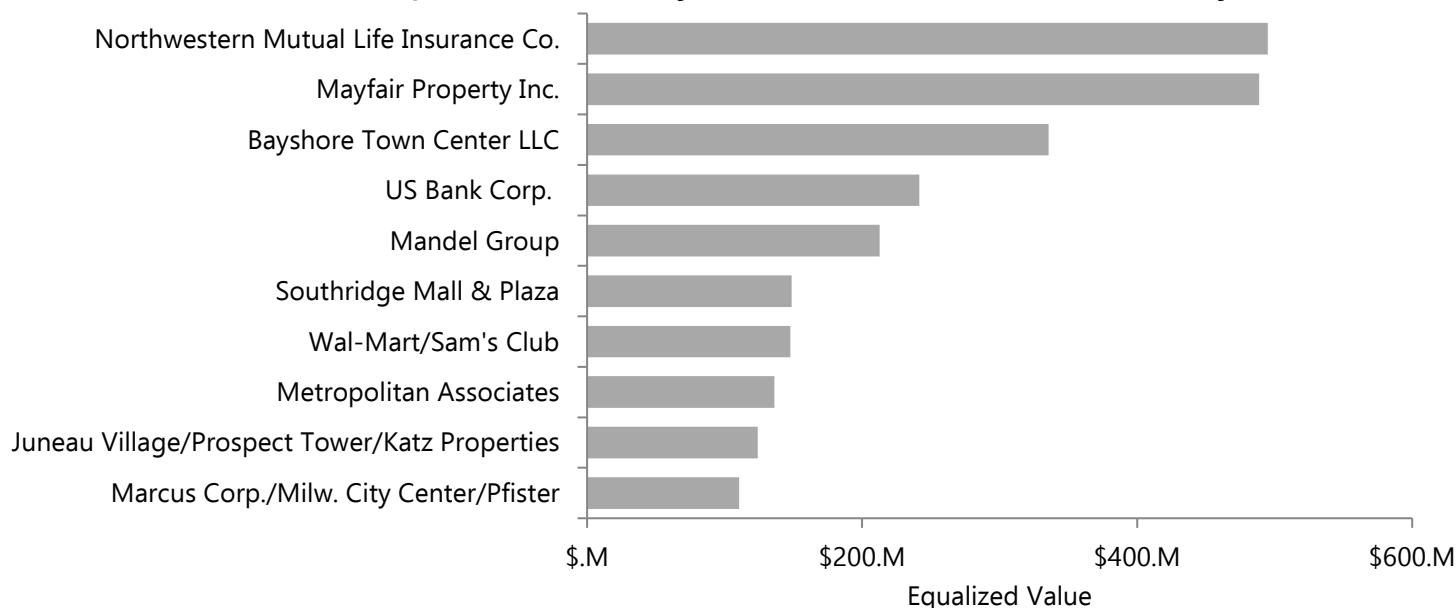


Source: 2017 Comprehensive Annual Financial Report

Funding the Capital Budget

The District finances its capital budget through an ad valorem tax upon the taxable property within the District's boundary. In addition to debt service, the tax levy primarily funds acquisition and improvement of land, property or facilities to enhance sewerage services to the District's service area.

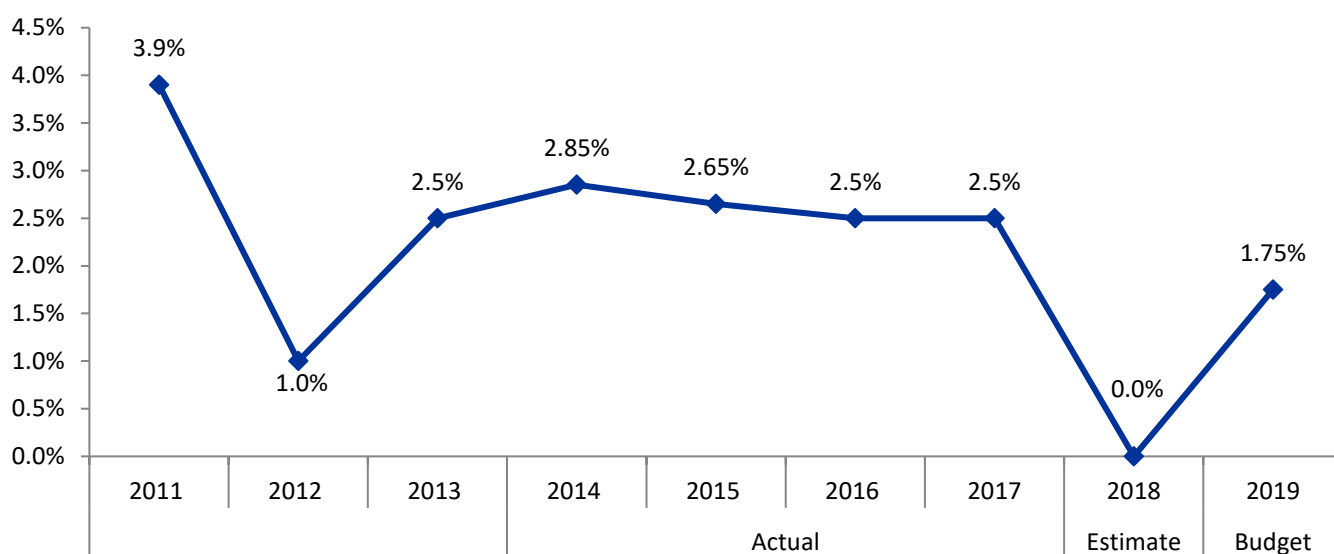
2017 Top Ten Tax Payers for Milwaukee County



Source: 2017 Comprehensive Annual Financial Report

In general, a tax levy requires a two-thirds vote of all District Commissioners and is uniformly levied based on equalized value. The following chart shows the change in tax levy rate from 2011 to the 2019 budget.

2011-2019: Percent Change in Tax Levy



If resolutions authorizing full funding of the local share of the District's Capital Budget are not adopted by the Commission by October 15 of any year, then the Commission may, by simple majority, raise up to \$40 million by direct tax levy in addition to any amount required to meet the District's general obligation indebtedness.

Wisconsin statutes authorize the District to finance capital improvements through the issuance of debt including general obligation bonds or notes, bond anticipation notes, and revenue anticipation notes. Issuance of bonds and notes requires a vote of two-thirds of all Commissioners. However, a vote of three-fourths of all Commissioners is required for emergency borrowing.



District Performance

In order to ensure the District is meeting its mission to cost-effectively protect the quality of the region’s water resources, the District measures and monitors its performance in the percent of wastewater that is captured and treated. The percent capture measures how much wastewater the District captures and treats by year, versus the amount that the District releases from its sewers to the area waterways untreated during heavy rain storms to prevent basement backups. The table to the right shows the District’s past performance in capturing and treating wastewater.

In 2018 to-date, the District captured and treated **98.1%** of wastewater before returning it to the waterways.

Year	Percent captured and treated
2018 to-date	98.1%
2017	99.9%
2016	99.8%
2015	98.9%
2014	99.5%
2013	98.5%
2012	99.9%
2011	99.5%
2010	96.2%
2009	98.3%
2008	95.1%
2007	99.2%

Other Statistical Information

The District annually evaluates local and national economic trends including price indices, property values, unemployment rates, personal income, and industrial growth rates. The economic trends help the District determine what an affordable user charge rate is for its customers and in turn, future revenue and expenditures.

Price Indices

Consumer Price Index

Year	US	Milwaukee-Racine
2017-2018 (1 st half)	2.1%	
2016-2017	2.1%	2.0%

Source: United States Department of Labor, Bureau of Labor Statistics

The District uses price indices to establish or benchmark annual contractual rate increases for some multi-year contracts. The Consumer Price Index (CPI), measures the change in the cost of a bundle of goods and services paid by consumers. In 2017, the national CPI increased 2.1 percent over 2016, and in Milwaukee CPI increased 2.0 percent. National CPI for the first half of 2018 is has increased 2.1

percent over the first half of 2017. Both the national and the state economy show signs of improvement through improved consumer spending, a recovering housing sector, and healthy exports growth.

Employment Cost Index

Year	US
2017-2018 (1 st half)	2.7%
2016-2017	2.5%

The Employment Cost Index (ECI) is a quarterly measure of the change in the price of labor, defined as compensation per employee hour worked. The index measures changes in the cost of compensation not only for wages and salaries, but also for a list of benefits.

Construction Cost Index and Building Cost Index

Year	Average	Average
	CCI	BCI
2017	3.9%	3.5%
2016	2.3%	3.0%
2015	2.3%	2.4%

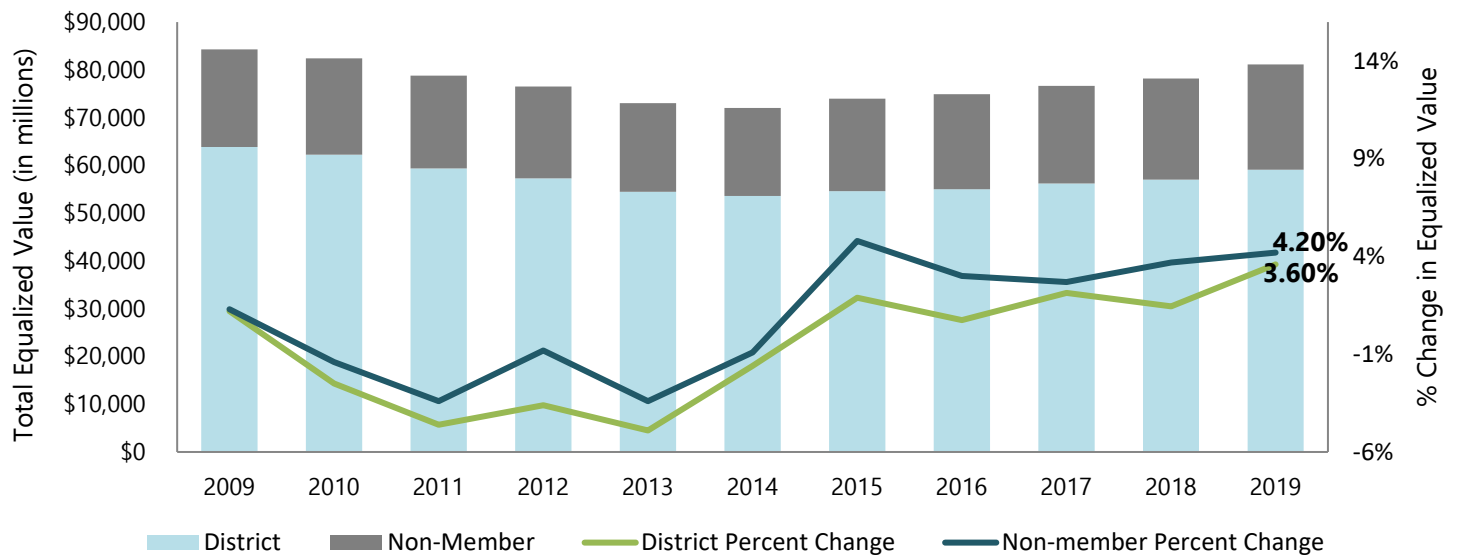
The District also uses construction price indices to plan its capital expenditures. The Engineering News Record (ENR) is a magazine that publishes cost data for 20 major U.S. cities. The Construction Cost Index (CCI) and the Building Cost Index (BCI) measure the change in construction costs. Both indices have a materials and labor component. The CCI can be used where labor costs are in high proportion of total costs, whereas the BCI is useful for structures.



Property Values

Property values are one of the region's most critical indicators of economic health. According to the Greater Milwaukee Association of Realtors, home prices in the seven-county Milwaukee region through the third quarter of 2018 rose 7.5 percent. Compared to the third quarter of 2017, sale prices for homes have increased by an average of \$18,515 across the region. In Milwaukee County, sales prices average \$188,564 for the third quarter.¹

2009-2019: Change in Equalized Value



The District levies taxes on households based on equalized property values to fund its capital projects. Equalized values are calculated annually to ensure statewide fairness and equity in distributions based on property values. In 2019, the total equalized values in the District's service area are estimated to increase approximately 3.6 percent for member communities and increase 4.2 percent for non-member communities.

Unemployment Rate

Annual Unemployment Rate

Year	US	WI	Milwaukee-Waukesha-West Allis MSA
2018 First Half	3.9%	2.9%	3.8%
2017	4.4%	3.3%	3.6%
2016	4.9%	4.2%	4.5%

Statewide, the non-seasonally adjusted unemployment rate in July 2018 is 2.9 percent, down from 3.3 percent in 2017. The unemployment rate in the Milwaukee-Waukesha-West Allis metropolitan statistical area is slightly higher than the state and lower than the national rate.

Source: For national, Wisconsin, and Milwaukee-Waukesha-West Allis MSA data: U.S. Bureau of Labor Statistics (July 2018).

Personal Income

Personal income is the total income of all persons from all sources. The following table shows annual changes in personal income for the United States, Wisconsin, and the Milwaukee Area.

Personal Income Percent Change (Annual)

Year	US	WI	Milwaukee-Waukesha-West Allis
2018 Q2	4.5%	3.2%	
2017	4.4%	2.6%	
2016	4.6%	1.9%	1.4%

According to the US Bureau of Economic Analysis, personal income increased 4.5 percent in the second quarter of 2018. Income trends in Milwaukee have been healthy and median household income is close to the US average.

Source: US Bureau of Economic Analysis

¹ Williams, Nick. "Sale prices for homes across Milwaukee region rose 7.5% in 3Q." *Milwaukee Business Journal Sentinel*, 16 October 2018,

The District's Financial Performance

Credit rating agencies repeatedly award high ratings to the District. Such highly acclaimed financial performance is the result of developing and adhering to financial policies geared toward ensuring the District's continued financial strength. Each bond rating agency has published guidelines and examples of sound financial practices normally associated with strong credit quality. One example of such a list is the Standard and Poor's Top 10 Management Characteristics. The table below demonstrates the District's achievement of these standards.

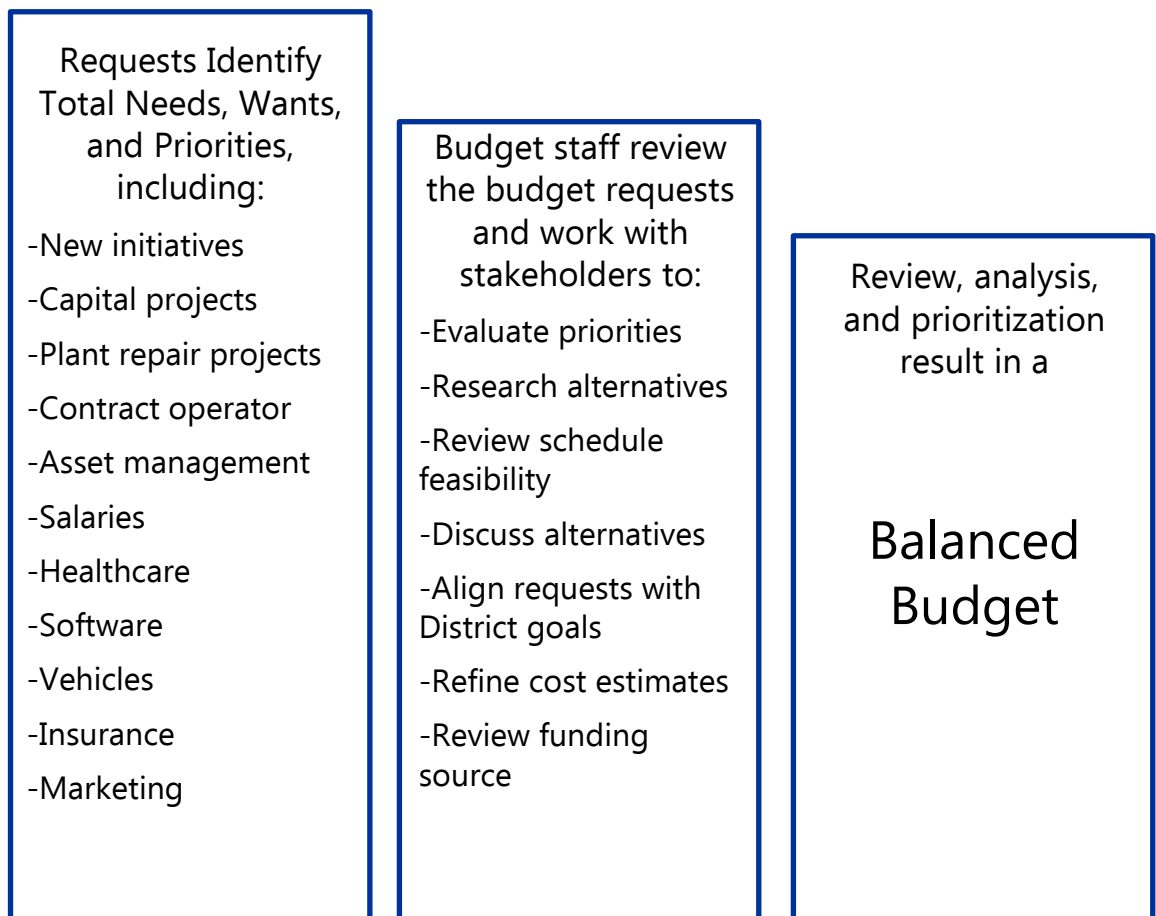
Top Ten Management Characteristics			District Performance
1	An established rainy day/budget stabilization reserve.	✓	<ul style="list-style-type: none"> The District maintains two reserve funds: the User Charge Stabilization Fund and the Equipment Replacement Fund
2	Regular economic and revenue reviews to identify shortfalls early.	✓	<ul style="list-style-type: none"> Cost center managers review monthly variance reports Quarterly variance reviews are prepared and discussed for both the O&M and Capital Budgets Quarterly financial statements are prepared and distributed
3	Prioritized spending plans and established contingency plans for operating budgets.	✓	<ul style="list-style-type: none"> Annual budget process prioritizes needs. Annual operating contingency established through the Unallocated Reserve.
4	A formalized capital improvement plan in order to assess future infrastructure requirements.	✓	<ul style="list-style-type: none"> Annual budget includes a six-year capital improvement program, including a long-range financing plan.
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. Expenses are recorded when liabilities are incurred. Since 1993, the District has recorded and disclosed its unfunded obligations for retiree health and life insurance.
6	A debt affordability model in place to evaluate future debt profile.	✓	<ul style="list-style-type: none"> The District's intent is to keep outstanding debt to no more than 2.5 percent of its equalized property value. The 2.5 percent limit is half of the amount allowed by Wisconsin Law. No more than 15 percent of its outstanding general obligation bonds are in variable rate form. Advance refunding for economic savings is undertaken only when net present value savings of at least two percent of refunded debt can be achieved.
7	A pay-as-you-go financing strategy as part of the operating and capital budget.	✓	<ul style="list-style-type: none"> Capital Budget complies with a 25 percent cash financing objective. The District has never issued debt to fund its O&M expenditures.
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 Capital Budget includes a Long-Range Financing Plan. Budget staff prepare a six-year forecast of revenues and expenditures for internal decision making.
9	Effective management and information systems.	✓	<ul style="list-style-type: none"> The District uses an integrated core financials management system 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"> The District regularly communicates with member communities and the top 20 industrial users regarding the District's financial decisions and the impact on District customers. The District's user charge and tax rates are competitive on a national basis. The District fully supports its Small, Women-, and Minority Owned Business Enterprise procurement policy. The District provides a Workforce and Business Development Resource Program. The District uses a local workforce preference policy whenever applicable.

Financial Planning

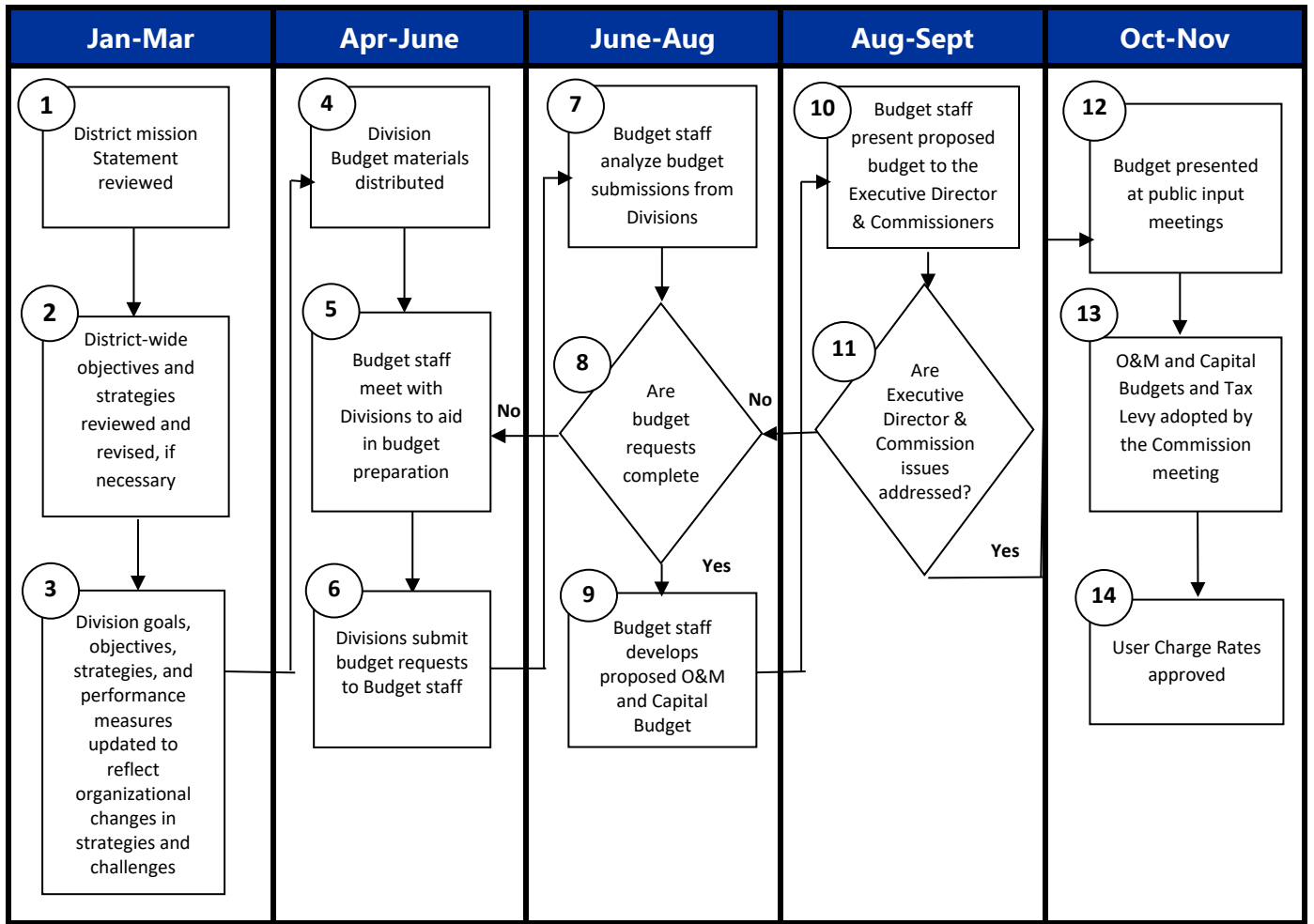
Just as strategic planning identifies objectives and strategies, financial planning identifies financing scenarios and alternatives for the strategic programs and other action items. A long-term forecast is prepared for both the Operations and Maintenance (O&M) and the Capital Budgets.

The Budgeting Process

First, the Budget staff begin financial planning by developing preliminary scenarios for anticipated revenues and expenditures and make a recommendation to the Executive Director regarding funds that will be available in the upcoming year for expenditures funded through the O&M Budget. At the same time, projections of capital spending and new capital project requests are identified by the requesting divisions. These capital expenditures are incorporated into a similar process to ensure that priorities are identified and financial goals are achieved. Both the O&M and Capital budgets are analyzed over the summer, and proposed budgets are developed for the Executive Director to present to the Commission for adoption. Requested amendments to the proposed documents are reviewed and incorporated if the Commission approves them. The budgets and tax levy are adopted in October or November. The user charges are adopted in November. The following graphic depicts the District's budget planning process and shows the linkage between strategic planning and financial planning.



Budget Review & Adoption Calendar



DATE	TIME	ACTIVITY
Monday, April 30, 2018	3:00 p.m.	Budget Kick-Off
Friday, May 25, 2018	5:00 p.m.	Budget Requests Due
Throughout May and June		Staff analyze requests and begin to develop long-range financing plan and forecast
Monday, June 25, 2018	9:00 a.m.	Capital and Operations & Maintenance Budget update to Commission
Monday, July 23, 2018	9:00 a.m.	Capital and Operations & Maintenance Budget update to Commission
Friday, September 7, 2018	9:00 a.m.	Distribute Budget to Commissioners
Monday, September 24, 2018	6:00 p.m.	Public Hearing on Budgets
Monday, October 1, 2018	5:00 p.m.	Budget Amendments Due
Monday, October 8, 2018	8:30 a.m.	Public Hearing on Budgets
Monday, October 15, 2018	12:30 p.m.	User Charge Ad Hoc Committee meets
Monday, October 22, 2018	9:00 a.m.	Commission Adopts Budgets & Tax Levy Adopted
Monday, November 19, 2018	9:00 a.m.	User Charge Billing Rates Set

District Fund Structure

The District prepares its financial statements and budgets on an enterprise fund basis. The District's operating expenses are funded within the Operations and Maintenance (O&M) Budget, and the long-term capital expenditures are funded within the Capital Budget. The funding sources for the two budgets are different.

The District's enterprise fund is used to account for operations that are 1) financed and operated in a manner similar to a private business enterprise – where costs of providing public goods or services on a continuing basis are financed or recovered primarily through user charges and cost recovery programs, and 2) for which the District relies on taxes, non-member billings, federal and state aid, loans, and District-issued bonds which support the capital improvements program.

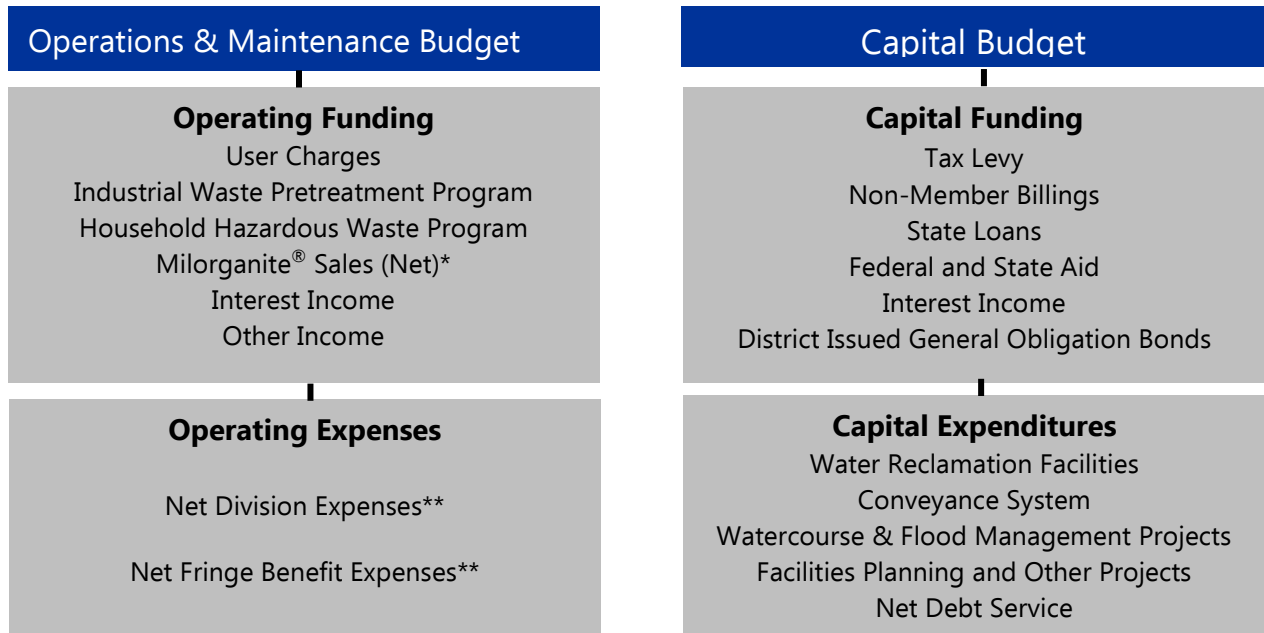
The District, in accordance with Generally Accepted Accounting Principles (GAAP), reports categories of net position that indicates the accessibility of funds. As it does not use governmental funds, there is no fund balance as this term does not apply to enterprise funds. The equity of full-accrual statements, as an enterprise fund, is referred to as net assets, or per GASB 63, Net Position.

The District's net position consists of investment in capital assets, along with restricted and unrestricted balances. Restricted balances consist of constraints placed on net position that are legally restricted by outside parties or by law through constitutional provisions or enabling legislation. Unrestricted balances consist of net position that does not meet the definition of restricted or net investment in capital assets.

As of December 31, 2017, per the District's most recent audited Comprehensive Annual Financial Report, the District has a total net position for its enterprise fund of \$2.5 billion. Of this amount:

- \$2.5 billion is investment in capital assets net of accumulated depreciation and outstanding debt (the debt is reduced by the unspent debt proceeds) on these assets;
- \$58.3 million is restricted for the District's capital improvement projects and programs (see capital budget for further explanation on capital programs);
- \$12.2 million is restricted for debt service, and
- \$14.7 million is restricted for replacement of qualified machinery and equipment and is required to be maintained by federal and state regulatory agencies.
- (\$6.7 million) is in unrestricted. The negative amount for unrestricted is the result of the District electing to fund its long-term liability related to post-retirement health and life insurance as it comes due rather than when it is incurred. The total long-term liability related to this benefit was \$46.1 million at December 31, 2017, with an unfunded actuarial accrued liability of \$172.1 million, amortized as a level dollar amount and over 20 years.

Enterprise Fund Accounting for Budgets



* Milorganite® revenue is reported net of discounts, rebates, fees, discount, freight, etc.

** Net operating expenses are reported after charges to the capital budget have been subtracted.

Operations and Maintenance & Capital Budgeting

Item	Operations and Maintenance	Capital
Sources of Funds	User Charges, Net Revenue from Milorganite [®] sales, Interest Income, Surplus Applied, User Charge Stabilization Fund Applied, and other operating income.	Tax Levy and Nonmember Billings, Loans and Bonds, Federal and State Aid, Interest and Other, Uses of Funds on Hand, and all other capital income.
Use of Funds	Net Division Expenses and All Other Operating Expenses.	Total Project & Program Expenses and Net Debt Service.
Budgetary Basis of Accounting	Actual revenues and expenses are recorded on a full accrual basis in accordance with Generally Accepted Accounting Principles. Revenues and expenses are budgeted on a full accrual basis, with the exception of capital outlays. These are budgeted as an expense in the year incurred, but capitalized and depreciated for financial reporting purposes.	For financial reporting, actual revenues and expenses are recorded on a full accrual basis in accordance with Generally Accepted Accounting Principles. Revenues are budgeted on a cash basis. Because the Capital Budget serves as a financing plan, it is important to plan when revenues are received rather than when they are earned.
Basis for Expenses	Expenditures for repairs and maintenance on assets, which allow these assets to continue to be used during their originally established useful life; including those expenditures that do not extend the life of the asset at least 10 years or are less than \$25,000. This includes costs of controlling, operating, managing or maintaining the sewerage system. Projects occur on District owned areas do not require a conservation easement.	Costs of acquiring, purchasing, adding to, leasing, planning, designing, constructing, extending and improving all or any part of a sewerage system and of paying principal, interest or premiums on any indebtedness incurred for these purposes if a project is greater than \$25,000. If a green infrastructure project is to occur on areas not District owned, a minimum 10-year conservation easement on the property will be required.
New	Service life is less than 10 years.	Improvement and a life greater than 10 years. Installation of equipment or components that have new or improved materials and/or provide new or improved technology. Existing assets are no longer supported by the manufacturer so an in-kind replacement is unavailable.
Replacement	The Equipment Replacement Fund may be used for machinery and equipment with a cost greater than \$25,000 and a service life between 10 and 20 years.	Cost greater than or equal to \$25,000 and a service life greater than 20 years for a replacement in-kind asset. Work & expenditures of major system assets or components that will extend the life of an asset funded originally from the capital budget for an additional 10 years or greater.

2019 Combined Summary of Revenues and Expenditures

(Dollars in Thousands)

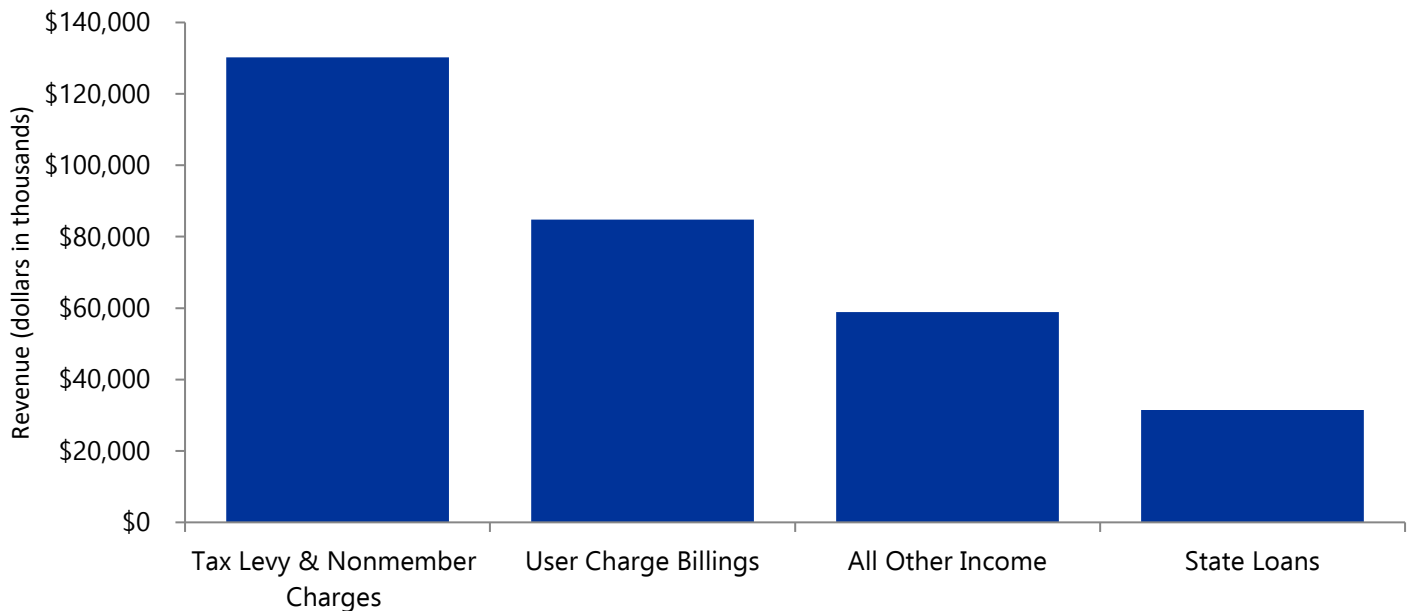
	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Adopted Budget	% Change from 2018 Adopted
Operations & Maintenance						
User Charge Billings	\$76,155	\$83,751	\$83,116	\$84,771	\$1,021	1.22%
Milorganite® Sales (Net)	10,272	9,000	10,000	10,000	1,000	11.1%
All Other Operating Income	4,553	4,389	4,489	4,135	(254)	-5.8%
User Charge Stabilization Fund Applied (or Contribution)	(4,165)	(2,465)	(2,465)	0	2,465	-100.0%
Equipment Replacement Fund Applied (or Contribution)	(27)	(175)	(175)	(300)	(125)	71.4%
IWPP Fund Applied (or Contribution)	0	0	0	59	59	100.0%
Surplus Applied	7,831	7,466	7,466	6,027	(1,439)	-19.3%
Total Operations & Maintenance Funding	94,620	101,966	102,431	104,693	2,727	2.7%
Capital						
Tax Levy	98,380	98,380	98,380	100,102	1,722	1.75%
Non-member Billings	30,877	30,172	30,669	30,146	(26)	-0.1%
Federal and State Aid	1,921	1,812	3,257	1,631	(181)	-10.0%
State Loans	12,850	31,514	17,307	31,514	(0)	0.0%
Interest and Other Income	10,056	1,497	3,760	1,249	(248)	-16.6%
District Bonds	86,155	0	0	0	0	0.0%
Use of (Additions to) Available Funds	(55,975)	36,117	18,454	37,733	1,616	4.5%
Total Capital Funding	184,264	199,492	171,827	202,374	2,882	1.4%
Total Funding	\$278,884	\$301,457	\$274,258	\$307,067	\$5,610	1.9%
Expenditures						
Operations & Maintenance						
Net Division Expenditures	\$76,598	\$87,246	\$84,143	\$89,966	\$2,720	3.1%
Net Fringe Benefit Expenditures	11,995	11,776	10,167	11,726	(50)	-0.4%
Unallocated Reserve	0	2,943	0	3,000	57	1.9%
Total Operations & Maintenance Expenditures	\$88,593	\$101,966	\$94,311	\$104,693	\$2,727	2.7%
Capital						
Water Reclamation Facilities	22,797	48,260	29,086	44,898	(3,362)	-7.0%
Conveyance Facilities	7,551	9,726	6,736	8,055	(1,671)	-17.2%
Watercourse & Flood Mgmt Projects	10,963	10,164	10,164	14,534	4,370	43.0%
Other Projects & Programs	18,356	22,428	14,248	25,388	2,960	13.2%
Debt Service	124,596	108,913	111,593	109,499	586	0.5%
Total Capital Expenditures	184,264	199,491	171,827	202,374	2,883	1.4%
Total Expenditures	\$272,857	\$301,457	\$266,138	\$307,067	\$5,610	1.9%

2018 estimate is as of third quarter 2018 for O&M numbers, and second quarter 2018 for capital budget numbers.

Note, totals may not appear to add due to rounding.

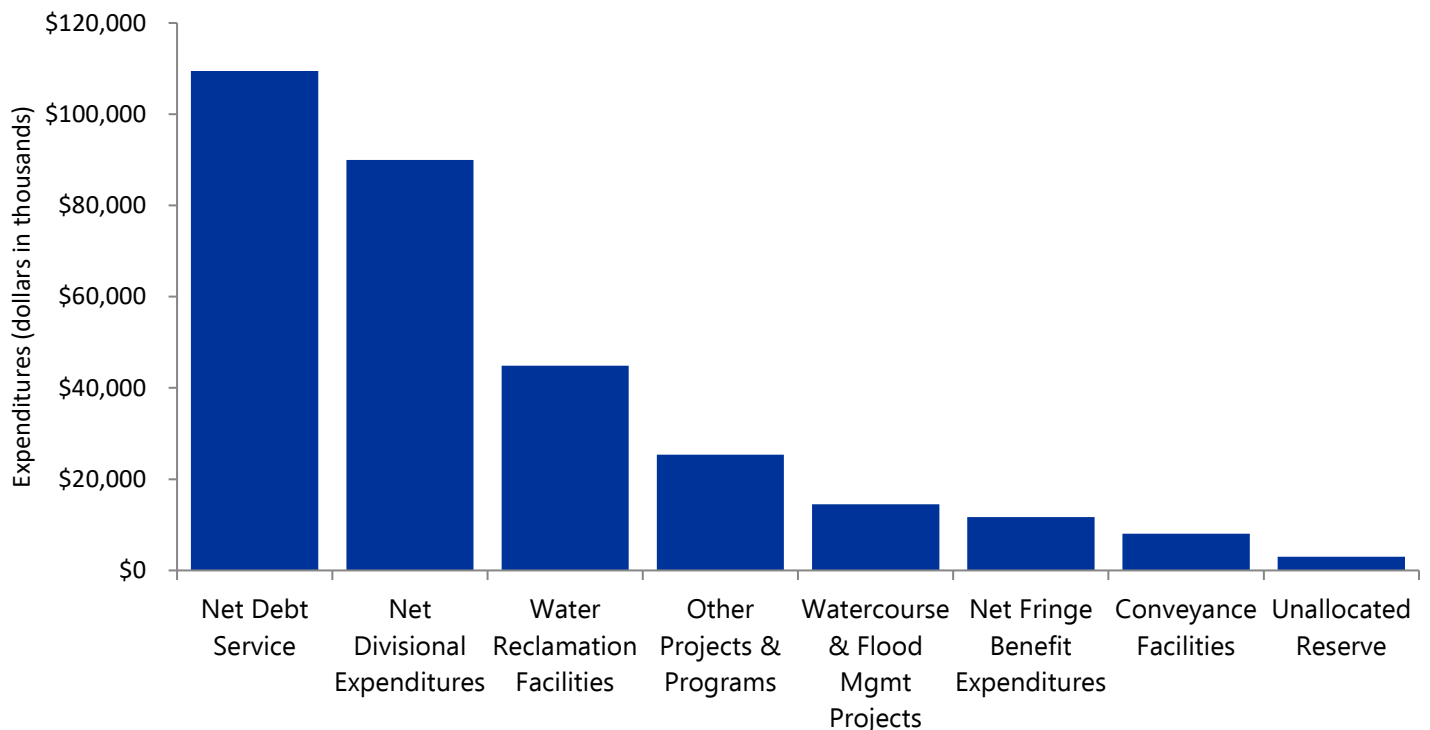
The District’s 2019 combined budget totals approximately \$307.1 million. As seen in the following chart, the primary sources of funds in the 2019 combined budgets are the tax levy, non-member billings, and user charge billings.

2019 Combined Summary of Revenue



On the expenditure side, the Capital Budget again comprises the majority of the 2019 combined budget with net debt service, water reclamation facilities, conveyance, watercourse and flood management, and other projects and programs project expenditures totaling 65.9 percent. The net divisional and fringe benefit expenditures, which include operations of the District facilities, are 33.1 percent of the combined expenditures.

2019 Combined Summary of Expenditures



Funding by Community

Community	2019 Tax Levy	2019 User Charge	2019 Combined	2019 Household Hazardous Waste Program	2019 Total Billings to Communities
District Members					
Bayside	\$1,122,190	\$262,966	\$262,966	\$6,474	\$1,391,630
Brown Deer	1,586,980	897,582	897,582	15,324	2,499,886
Cudahy	1,628,490	2,190,479	2,190,479	26,601	3,845,570
Fox Point	1,935,161	413,583	413,583	9,630	2,358,374
Franklin	6,650,847	2,440,439	2,440,439	48,013	9,139,299
Glendale	3,089,017	1,080,936	1,080,936	17,886	4,187,839
Greendale	2,377,321	902,435	902,435	20,373	3,300,129
Greenfield	4,859,829	2,343,425	2,343,425	46,891	7,250,145
Hales Corners	1,136,507	521,489	521,489	9,928	1,667,924
Milwaukee	44,970,979	48,367,011	48,367,011	737,498	94,075,488
Oak Creek	5,566,398	2,708,794	2,708,794	42,128	8,317,320
River Hills	773,454	107,938	107,938	2,622	884,014
Shorewood	2,645,507	839,601	839,601	18,173	3,503,281
South Milwaukee	-	-	-	30,433	30,433
St. Francis	987,868	636,386	636,386	10,951	1,635,205
Wauwatosa	10,182,172	3,727,774	3,727,774	70,376	13,980,322
West Allis	6,305,977	4,378,088	4,378,088	92,711	10,776,776
West Milwaukee	486,892	980,702	980,702	5,865	1,473,459
Whitefish Bay	3,796,061	824,646	824,646	20,074	4,640,781
Total District Members	\$100,101,650	\$73,624,274	\$73,624,274	\$1,231,951	\$174,957,875
Non-member Communities*					
Brookfield	\$3,767,023	\$1,132,086	\$4,899,109	-	\$4,899,109
Butler	339,914	361,337	701,251	-	701,251
Caledonia	44,041	30,292	74,333	-	74,333
Elm Grove	1,507,328	379,274	1,886,602	-	1,886,602
Germantown	2,949,605	1,701,085	4,650,690	-	4,650,690
Menomonee Falls	5,094,046	2,287,388	7,381,434	-	7,381,434
Mequon	5,953,059	1,403,412	7,356,471	-	7,356,471
Muskego	3,785,158	1,325,933	5,111,091	-	5,111,091
New Berlin	6,092,220	2,188,781	8,281,001	-	8,281,001
Thiensville	459,577	221,115	680,692	-	680,692
Nonmember Communities**	\$29,991,971	\$11,030,703	\$41,022,674	\$0	\$41,022,674
Other		\$116,304	\$116,304		\$116,304
Total Communities	\$130,093,621	\$84,771,281	\$214,864,902	\$1,231,951	\$216,096,853

*Non-member communities capital billing is an ad valorem charge not a tax levy.

**Represents the actual charges. Final determination of property values occurs after Budget adoption and causes a slight discrepancy from the budgeted amount listed in the Combined Summary of Revenues and Expenditures.

Comparison of Budgeted User Charges

Community	2018	2019	2019		
	Budget	Budget	Residential	Commercial	Industrial
District Members					
Bayside	\$259,525	262,966	\$210,606	\$52,360	\$0
Brown Deer	\$884,667	897,582	\$473,785	\$396,949	\$26,848
Cudahy	\$2,175,045	2,190,479	\$750,820	\$367,122	\$1,072,537
Fox Point	\$409,321	413,583	\$313,097	\$100,486	\$0
Franklin	\$2,417,181	2,440,439	\$1,333,999	\$833,166	\$273,274
Glendale	\$1,087,732	1,080,936	\$504,393	\$493,202	\$83,341
Greendale	\$873,699	902,435	\$642,879	\$258,924	\$632
Greenfield	\$2,319,261	2,343,425	\$1,260,816	\$1,076,979	\$5,630
Hales Corners	\$515,145	521,489	\$292,438	\$229,051	\$0
Milwaukee	\$47,740,615	48,367,011	\$23,361,328	\$15,990,940	\$9,014,743
Oak Creek	\$2,620,744	2,708,794	\$1,267,286	\$1,029,794	\$411,714
River Hills	\$97,629	107,938	\$84,871	\$23,067	\$0
Shorewood	\$776,905	839,601	\$484,167	\$355,434	\$0
St. Francis	\$633,507	636,386	\$350,715	\$254,114	\$31,557
Wauwatosa	\$3,606,900	3,727,774	\$2,032,025	\$1,125,114	\$570,635
West Allis	\$4,373,936	4,378,088	\$2,370,625	\$1,415,450	\$592,013
West Milwaukee	\$1,042,639	980,702	\$138,718	\$261,992	\$579,992
Whitefish Bay	\$795,698	824,646	\$683,992	\$140,654	\$0
Total District Members	\$72,630,149	73,624,274	\$36,556,560	\$24,404,798	\$12,662,916
Nonmember Communities					
Brookfield	\$1,089,391	1,132,086	\$836,123	\$295,759	\$204
Butler	\$440,381	361,337	\$70,302	\$47,951	\$243,084
Caledonia	\$29,111	30,292	\$30,192	\$100	\$0
Elm Grove	\$366,903	379,274	\$298,395	\$80,879	\$0
Germantown	\$1,781,376	1,701,085	\$619,066	\$454,828	\$627,191
Menomonee Falls	\$2,200,796	2,287,388	\$1,461,969	\$627,777	\$197,642
Mequon	\$1,407,618	1,403,412	\$978,168	\$415,123	\$10,121
Muskego	\$1,269,562	1,325,933	\$1,039,369	\$242,494	\$44,070
New Berlin	\$2,144,655	2,188,781	\$1,329,900	\$697,266	\$161,615
Thiensville	\$213,632	221,115	\$121,845	\$99,270	\$0
Total Nonmember Communities	\$10,943,425	\$11,030,703	\$6,785,329	\$2,961,447	\$1,283,927
Other	\$177,039	116,304	\$0	\$0	\$116,304
Total Communities	\$83,750,613	\$84,771,281	\$43,341,889	\$27,366,245	\$14,063,147

2035 Vision

In 2010, the Executive Director proposed, and the Commission adopted the 2035 Vision that states “MMSD envisions a healthier Milwaukee region and a cleaner Lake Michigan”. The 2035 Vision has two key elements: 1) Integrated Watershed Management and 2) Climate Change Mitigation/Adaptation with an emphasis on Energy Efficiency.

1. Integrated Watershed Management

An integrated approach to watershed management must be established that responds to inter-jurisdictional opportunities and limitations. This will be accomplished by continuing MMSD's pursuit of excellent permit performance at its water reclamation facilities, preventing problems through its ongoing maintenance programs, and improving upon the capital investments made within MMSD's service area.

2. Climate Change Mitigation/Adaptation with an emphasis on Energy Efficiency

Becoming more efficient and renewable with energy usage will help MMSD adapt to changing climate, but it must also consider that climate change may have significant impacts on the District in ways beyond energy usage. As the global climate changes, there are likely to be changes within the hydrosphere.

The 2035 Vision drives annual initiatives and project selection as the District works to achieve the Vision's goals.

Goal	How are we doing?
Integrated Watershed Management	
Zero sanitary sewer overflows	In 2018, we've had three to-date.
Zero combined sewer overflows	In 2018, we've had six to-date.
Zero homes in the 100-year floodplain	2,550 removed to-date, 1,267 to go
Acquire an additional 10,000 acres of river buffers through Greenseams®	3,647 acres of the 10,000 goal to-date
Use green infrastructure to capture the first 0.5 inch of rainfall	Goal = 740 million gallons Status = 39.9 million gallons or 5% towards the goal
Harvest the first 0.25 gallon per square foot of area of rainfall	Goal = 630 million gallons Status = 2.6 million gallons or 0.4% towards the goal
Energy Efficiency and Climate Mitigation & Adaptation	
Meet 100% of MMSD's energy needs with renewable energy sources	We meet approximately 33.5% of our needs with renewable sources
Meet 80% of MMSD's energy needs with internal, renewable sources	We meet approximately 33.5% of our needs with internal, renewable sources

2019-2021 Strategic Plan

Every three years the District undertakes a strategic planning process to adopt a three-year strategic plan that will establish direction, increase accountability, and aid in decision-making. The strategic plan identifies actions the District can take in the short-term to help achieve the 2035 Vision. Over the course of 2018, District staff created, and the Commission adopted, the 2019-2021 Strategic Plan. The planning process involved input from both internal and external stakeholders. A core team of staff created a vision, mission, and goals for the plan, as well as strategies and measures to achieve the goals in the next three years. The following pages display the strategic framework that will help guide investment, allocate resources, and provide a structure for annual reviews to assure that long-term goals and objectives are achieved.

STRATEGIC FRAMEWORK

VISION

MMSD envisions a healthier,
cleaner, resilient region.

MISSION

MMSD protects public health
and the environment through
world-class, cost-effective
water resource management,
leadership, and partnership.

VALUES

Essential to our success is our
commitment to:

Stewardship
Integrity
Quality
Collaboration
Diversity
Innovation

GOALS



FINANCIAL STRENGTH

Exercise good stewardship of public funds
and maintain strong financial position



INFRASTRUCTURE MANAGEMENT

Manage all assets to optimal performance



CLIMATE RESILIENCE

Protect our environment and improve the
region's ability to respond to climate change



WATERSHED COOPERATION

Identify and implement opportunities to
improve watershed collaboration



PUBLIC ENGAGEMENT AND AWARENESS

Authentically engage the public regularly
and effectively



WORKFORCE EXCELLENCE

Be an employer of choice that attracts,
develops, and retains an outstanding and
mission-driven workforce



INTERNAL COMMUNICATION & COLLABORATION

Improve internal connectivity

MEASURES

- Maintain strong bond ratings
- Comply with District debt policy
- Ensure that annual financial audits indicate no material weaknesses in internal controls
- Adopt balanced budgets that comply with reserve policies

- Ensure 100% compliance with applicable regulations and O&M contracts
- Reduce the risk of flooding to 1% annual probability or less for 50 structures
- Pilot use of asset management system for 2020 capital budget

- Implement 10 million gallons of green infrastructure annually
- Increase uptime over 2018 levels for equipment using non-fossil fuel energy sources
- Implement a full year of use of Scope 5 energy and emissions tracking database to establish a baseline

- 90% of the 28 District municipalities have signed the intergovernmental cooperation agreement
- Complete one Nine Key Elements Plan in the Milwaukee Watershed

- Develop and implement outreach plan
- Increase social media engagement by 20% over all platforms annually
- Increase the number of facility tours and classroom visits by 5% annually
- Increase the number of website hits across the three websites annually

- Increase the number of work groups with formal training plans
- Maintain non-retirement retention rate
- Increase employee satisfaction levels

- improve employee attitudes regarding communication and collaboration

STRATEGIES

1. Maintain, implement, and enhance the long-range financial plan
2. Implement capital and O&M billing rates that ensure adequate funding for expenditures and reserves
3. Implement and apply sound financial and accounting policies and procedures
4. Ensure effective and judicious fiscal management of operating and capital funds
5. Maximize outside funding opportunities

6. Advance a robust, innovative asset management program
7. Exceed regulatory requirements
8. Develop and implement protections to mitigate risk

9. Reduce energy use and convert to renewable energy sources
10. Implement relevant tasks from the Regional Resilience Plan
11. Increase green infrastructure and protect green places

12. Educate and connect with partners on the benefits of working within nature's boundaries
13. Spearhead implementation of common sense approaches to watershed improvements

14. Understand and appropriately engage our audiences
15. Integrate our engagement resources and activities
16. Empower staff to be MMSD ambassadors

17. Increase workplace diversity through targeted recruitment efforts and workforce development initiatives
18. Ensure workforce stability through training and development and succession planning
19. Increase employee engagement

20. Identify and improve collaborative initiatives
21. Evaluate existing internal communications and implement improvements





Milwaukee Metropolitan Sewerage District

260 West Seeboth Street
Milwaukee WI 53204

Date Adopted: October 22, 2018

Adopting the Operations and Maintenance Budget for the 2019 Fiscal Year

RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the 2019 Operations and Maintenance Budget, providing the total expenditures of \$104,692,517 to be funded by \$84,771,281 in user charge billings, \$10,000,000 in Milorganite® net sales, \$1,000,000 in interest income, \$865,945 in other income, \$1,231,951 in Household Hazardous Waste Collection Program revenue, \$1,037,000 in Industrial Waste Pretreatment Program revenue, and the return of \$6,027,340 from the 2017 Operations and Maintenance surplus, is hereby adopted, with a \$300,000 contribution to the equipment replacement fund and applying \$59,000 from the Industrial Waste Pretreatment Program stabilization fund anticipated.

I, Anna Kettlewell, Commission Secretary of the Milwaukee Metropolitan Sewerage District, do hereby certify that the above is a true and correct copy of Resolution No. 18-107-10, adopted by the Milwaukee Metropolitan Sewerage Commission at a meeting held on 10/22/2018.





2019 Operations & Maintenance Budget

The Operations & Maintenance (O&M) Budget provides a framework to implement and accomplish District priorities that support its mission of environmental stewardship and sustainability. The majority of the Operations & Maintenance Budget is targeted towards operations of wastewater reclamation facilities and controlling point and non-point sources of pollution. This budget enables the District to continue its high standard of performance in protecting water resources at levels higher than permit requirements.

REVENUES

In the 2019 O&M Budget, the District anticipates \$104.7 million in sources of funds. This includes user charge billings, net revenue from Milorganite® fertilizer sales, interest and other income, two cost recovery programs, the return of a 2017 surplus, and the use of reserves. The primary source of revenue for O&M expenditures is the user charge billings. In 2019, user charge billings are budgeted at \$84.8 million, a 1.22 percent increase from the 2018 budget.

In the 2019 O&M Budget, total revenue increases \$2.7 million or 2.7 percent from the 2018 budget.

EXPENDITURES

A majority of the District's expenditures are related to the Veolia Water Milwaukee (VWM) contract for operations and maintenance of District water reclamation facilities and conveyance system. The VWM operations and maintenance fee comprises approximately 45.4 percent of the 2019 O&M Budget. In addition to the contract cost, the District is also responsible for 75 percent of all energy costs under this contract. Combined with the utility fee paid to VWM, energy expenditures are approximately 9.5 percent of the O&M Budget.

Total expenditures are increasing 2.7 percent over the 2018 budgeted level, with the bulk of the increase attributable to the first full year of the extension agreement for Veolia Water operating contract.

Capital Expenditures Impact on the Operating Budget

The District undertakes life-cycle costing in the analysis of capital projects. This includes, when possible, what the change in the O&M costs will be following the completion of each capital project, and carefully considering those costs in deciding which projects move forward in the Capital Improvement Program (CIP). When CIP undertakes new initiatives or new technologies, it is more likely to result in new O&M expenditures or incremental changes to ongoing O&M expenditures. Many capital projects replace or improve existing infrastructure and might have minimal change to the O&M budget. In capital project summaries, the O&M impact section will describe the changed condition, start date, and annual budget impact.

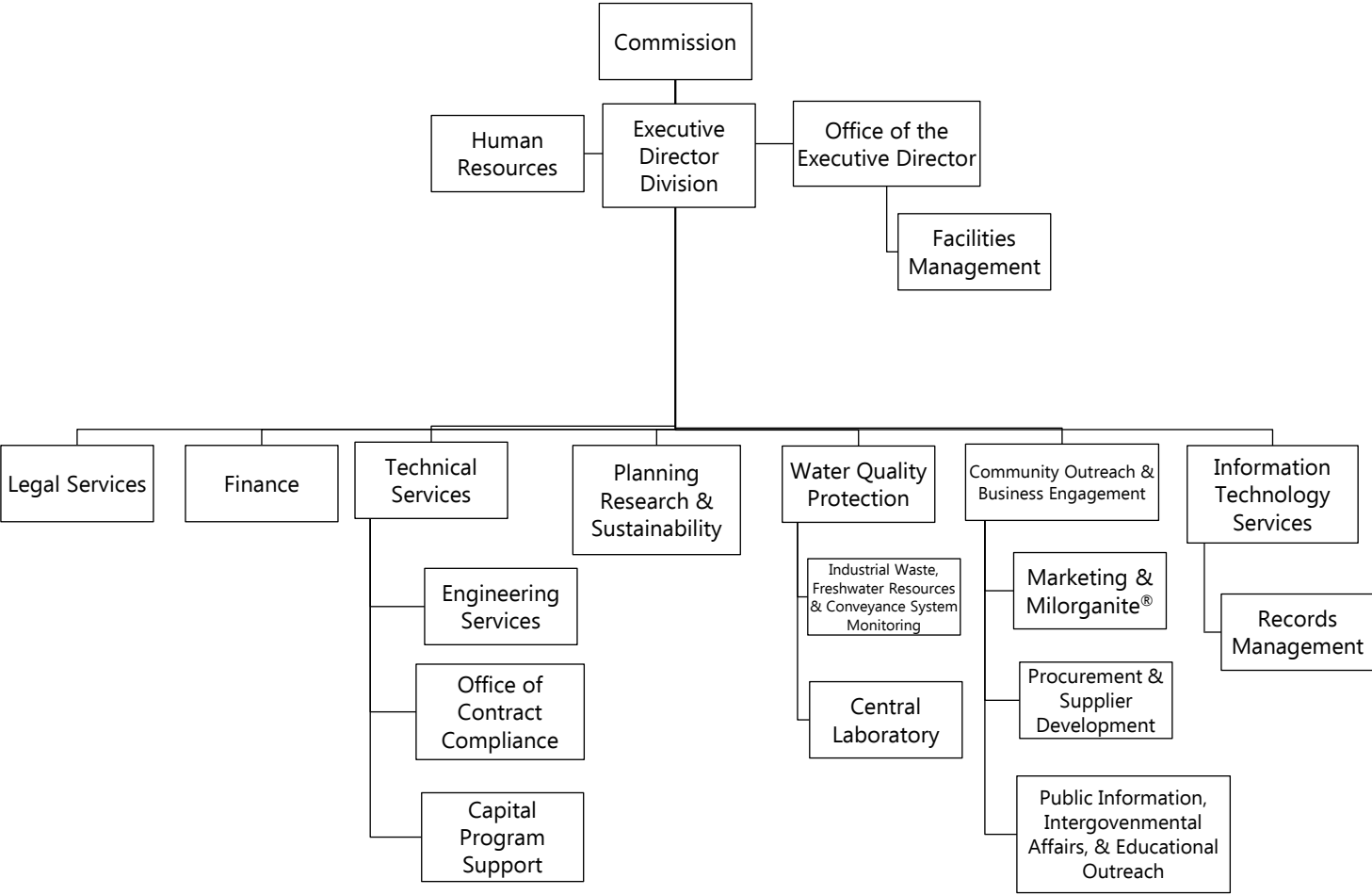
O&M expenditures resulting from the completion of capital projects may be budgeted in expenditures for the Veolia Water Milwaukee contract or in District division budgets.

Guide to the 2019 O&M Budget

Concluding the O&M Summary are a series of charts and graphs providing an overview of the 2019 O&M Budget's organizational structure and staffing levels, District revenues and expenditures, and division and cost center expenditures. The Sources of Funds section discusses each of the District's O&M revenues. The Budget describes each revenue source's historical data, changes in funding levels, and trends that affect the revenue source. The Division Summaries discuss the District's operating divisions: the Commission, the Office of the Executive Director; Legal Services; Finance Division; Technical Services Division; Planning, Research, & Sustainability Division; Water Quality Protection Division; the Division of Community Outreach and Business Engagement; and Information Technology Services. These summaries provide the detail of the division's structure, mission and services, budgeted expenditures, and staffing levels. The final section, Other Expenditures, provides detailed information about the District's Fringe Benefits, Division Expense Adjustments, and the Unallocated Reserve.

Milwaukee Metropolitan Sewerage District Organizational Chart

Below is the District’s organization chart with position counts for each cost center. The following pages offer additional detail on changes to authorized staffing by division; each division’s narrative also includes a detailed explanation to personnel costs and changes.



Summary of Authorized Staffing by Division

Divisions	2017 Budget	2018 Budget	2019 Budget	Change from 2018
Commission	0	0	0	0
Office of the Executive Director ¹	2	5	7	2
Human Resources	4	4	4	0
Information Technology Services	20	0	0	0
Facilities	3.5	4	4	0
Executive Director	29.5	13	15	2
Information Technology Services	0	20	20	0
Records ²	0	0	3	3
Information Technology Services	0	20	23	3
Legal Services	8	7	7	0
Records ³	4	4	0	(4)
Legal Services	12	11	7	(4)
Finance ⁴	19	20	19	(1)
Finance	19	20	19	(1)
Office of Contract Compliance ⁵	8	8	9	1
Capital Program Support ⁶	41	38	37	(1)
Engineering Services ⁷	23	21	20	(1)
Technical Services	72	67	66	(1)
Planning, Research & Sustainability ⁸	23	21	23	2
Planning, Research & Sustainability	23	21	23	2
Industrial Waste & Conveyance Monitoring	39	39	39	0
Central Laboratory ⁹	22	22	23	1
Water Quality Protection	61	61	62	1
Marketing and Milorganite®	7	6	6	0
Procurement & Supplier Development ¹⁰	8	8	7	(1)
Public Information, Intergov. Affairs, and Educational Outreach ¹¹	7	7	6	(1)
Community Outreach & Business Engagement	22	21	19	(2)
Total District	238.5	234	234	0

Note: Commissioners are not included in this table

Explanation of Changes to Authorized Staffing by Division

1. In 2019, four positions join the Office of the Executive Director cost center. Two Graphics Designer positions from the Public Information, Intergovernmental Affairs, and Educational Outreach cost center move to the Office of the Executive Director. One Receptionist position moves from the Procurement & Supplier Development cost center. One Senior Fellow Treasurer position is created to help with cross training and succession planning. Two Senior Project Manager positions transfer from the Office of the Executive Director cost center to the Planning, Research and Sustainability division. The Commission Secretary/Executive Administrator position is retitled Chief Administrative Officer/Commission Secretary and coordinates administrative functions including overseeing reception services, graphics services, and the fleet vehicles.
2. In the 2019 Budget, the Records Management cost center transfers from the Legal Services division to the Information Technology Services division. One vacant Records Technician position is eliminated.
3. In the 2019 Budget, the Records Management cost center transfers from the Legal Services division to the Information Technology Services division. One vacant Records Technician position is eliminated.
4. In the 2019 Budget, one vacant Accountant – Limited Term Employee that was created in the 2018 budget to help with succession planning efforts is eliminated.
5. In mid-2018, one Senior Project Manager position authorized in the Capital Program Support cost center is transferred to the Office of Contract Compliance and filled as a Project Engineer to help manage material capital repair and replacement projects. And one vacant and funded Engineering Aide position was converted and funded to a Survey Technician.
6. In mid-2018, one Senior Project Manager position authorized in the Capital Program Support cost center is transferred to the Office of Contract Compliance and filled as a Project Engineer to help manage material capital repair and replacement projects.
7. In 2019, the Engineering Services cost center eliminated one vacant Project Engineer position.
8. In 2019, two Senior Project Manager positions transfer from the Office of the Executive Director cost center to the Planning, Research and Sustainability division.
9. In 2019, one Lab Technician position is created in the Central Laboratory cost center to help with required testing.
10. One Receptionist position moves from the Procurement & Supplier Development cost center.
11. Two Graphics Designer positions from the Public Information, Intergovernmental Affairs, and Educational Outreach cost center move to the Office of the Executive Director. To offset the decrease, one Outreach Coordinator Limited Term Employee position is created to help with grant-funded work.

As position duties change, Human Resources has a process to review and recommend changes. Any changes to positions are approved by the Policy, Finance and Personnel Committee of the Commission.

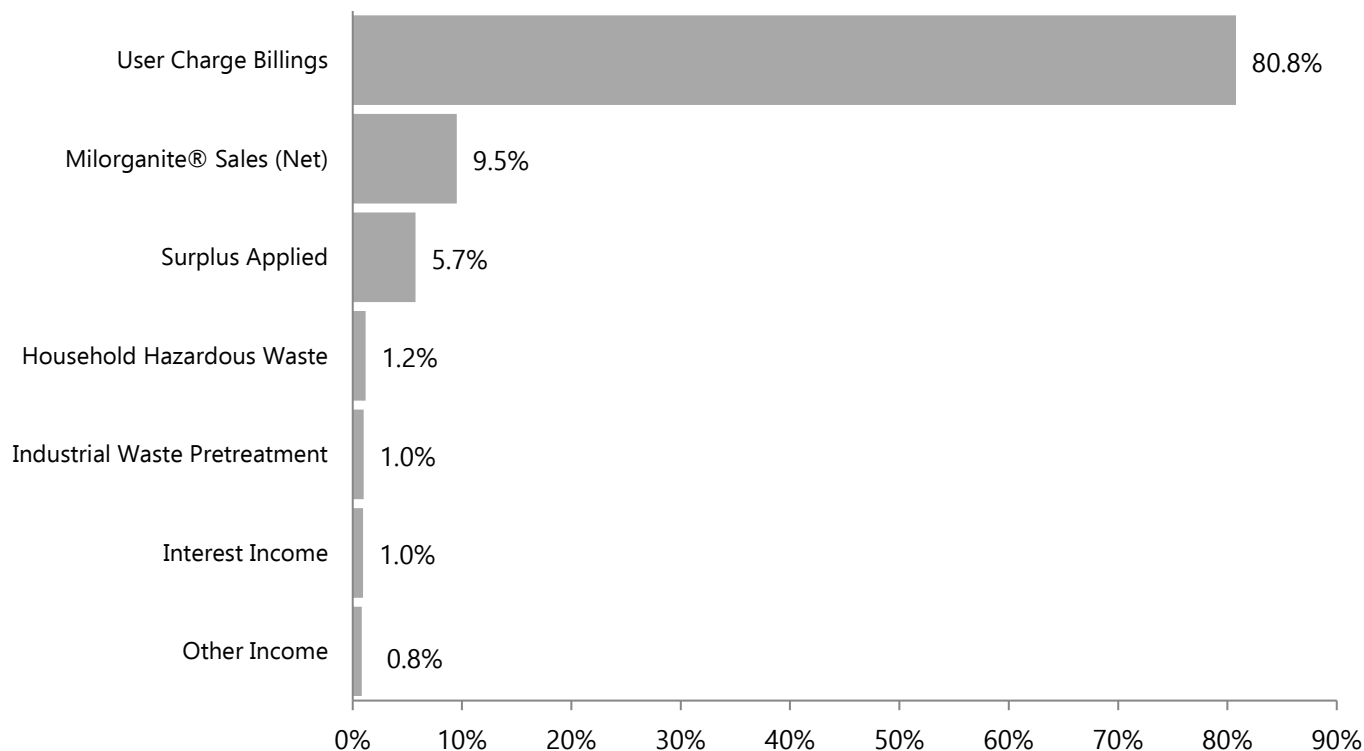
2019 O&M Revenues and Expenditures

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Adopted Budget	% Change from 2018 Adopted Budget
Revenues						
User Charge Billings	\$76,155,044	\$83,750,613	\$83,115,613	\$84,771,281	\$1,020,668	1.22%
Milorganite® Sales (Net)	10,272,367	9,000,150	10,000,000	10,000,000	999,850	11.1%
Interest Income	420,038	350,000	750,000	1,000,000	650,000	185.7%
Other Income	1,987,470	1,903,300	1,603,300	865,945	(1,037,355)	-54.5%
Household Hazardous Waste	1,229,203	1,212,440	1,212,440	1,231,951	19,511	1.6%
Industrial Waste Pretreatment	916,773	923,411	923,411	1,037,000	113,588	12.3%
Total Operating Revenue	90,980,896	97,139,915	97,604,765	98,906,177	1,766,263	1.8%
Reserves and Surplus						
Equipment Replacement Fund						
Applied (or Contribution)	(27,038)	(175,000)	(175,000)	(300,000)	(125,000)	71.4%
User Charge Stabilization Fund						
Applied (or Contribution)	(4,165,000)	(2,465,000)	(2,465,000)	0	2,465,000	-100.0%
IWPP Stabilization Fund						
Applied	0	0	0	59,000	59,000	100.0%
Surplus or Deficit Applied	<u>7,831,369</u>	<u>7,465,849</u>	<u>7,465,849</u>	<u>6,027,340</u>	<u>(1,438,509)</u>	<u>-19.3%</u>
Total Reserves and Surplus	3,639,331	4,825,849	4,825,849	5,786,340	960,491	19.9%
Total Funding	\$94,620,227	\$101,965,764	\$102,430,614	\$104,692,517	\$2,726,754	2.7%
Expenditures						
Divisions						
Commission	197,602	232,082	212,216	236,282	4,200	1.8%
Office of the Executive Director	6,024,461	2,981,760	2,693,921	3,157,588	175,828	5.9%
Information Technology Services	0	4,251,839	4,888,076	4,915,969	664,130	15.6%
Legal Services	1,294,767	1,219,486	1,135,582	895,012	(324,474)	-26.6%
Finance	2,570,887	2,754,677	2,780,254	2,731,956	(22,721)	-0.8%
Technical Services	62,709,734	69,939,640	70,258,334	69,965,341	25,702	0.0%
Planning, Research &						
Sustainability	2,605,184	3,795,537	3,768,477	4,291,123	495,586	13.1%
Water Quality Protection	5,535,885	6,144,677	5,950,579	6,823,794	679,118	11.1%
Community Outreach and						
Business Engagement	6,490,849	6,730,740	6,510,042	7,063,211	332,471	4.9%
Fringe Benefits	16,169,645	15,522,610	14,036,505	15,215,820	(306,790)	-2.0%
Charges to Capital	(15,006,117)	(14,550,663)	(14,351,392)	(13,603,579)	947,084	-6.5%
Net Division Expenditures	\$88,592,897	\$99,022,384	\$97,882,593	\$101,692,517	\$2,670,134	2.7%
Unallocated Reserve	0	2,943,380	0	3,000,000	56,620	1.9%
Total Expenditures	\$88,592,897	\$101,965,764	\$97,882,593	\$104,692,517	\$2,726,754	2.7%

2018 Estimate is as of Q3 2018. Note, totals may not appear to add due to rounding.

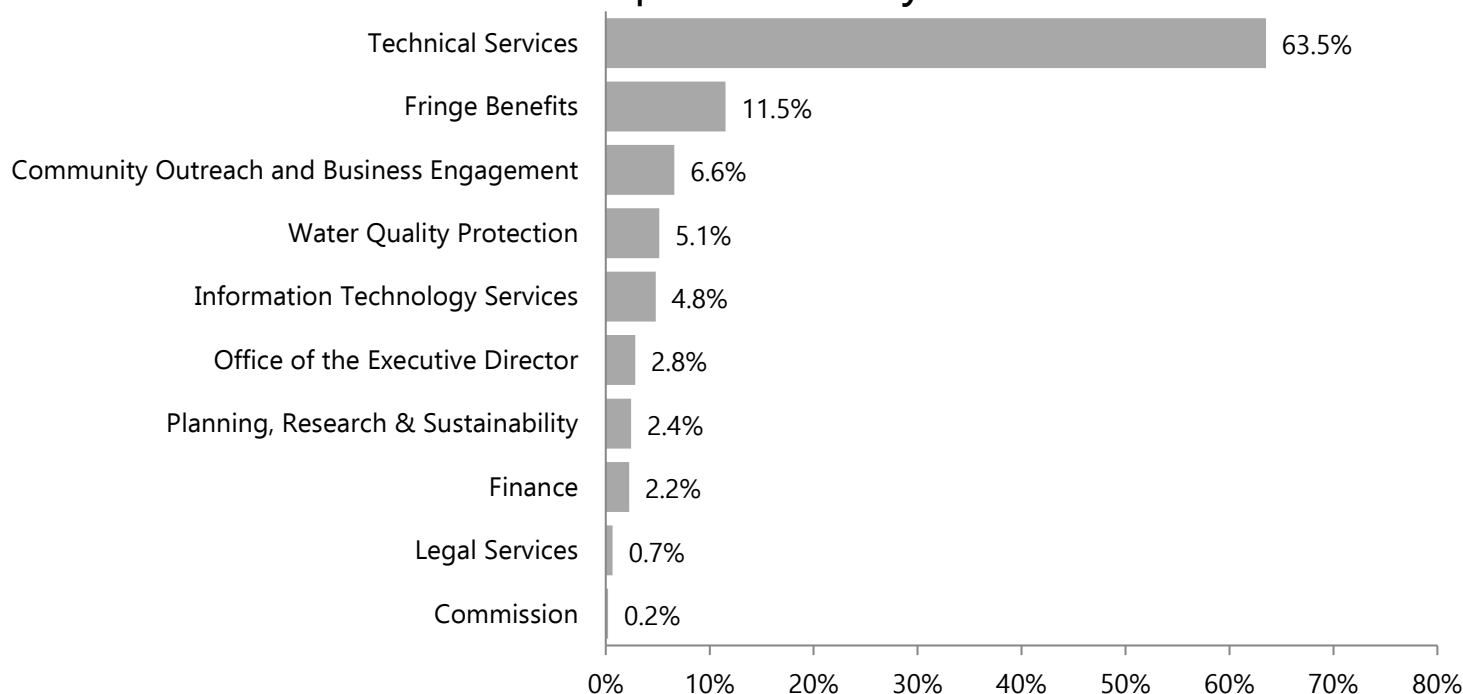
The District's 2019 O&M Budget totals approximately \$104.7 million. For operating revenue, as seen in the following chart, user charge billings comprise the majority of O&M revenues, followed by net Milorganite® sales, the surplus applied from 2017. Additional details on the revenues by category may be found in the *Sources of Funds* section.

2019 Operating Revenue by Category



On the expenditure side, the Technical Services Division accounts for 64.7 percent of the 2019 O&M Budget. The Technical Services Division includes the Veolia Water Milwaukee contract for operations and maintenance of the District and reclamation facilities.

2019 Expenditures by Division



Operations and Maintenance Long-Range Forecast

	2018 Adopted Budget	2019 Budget	2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast
Revenues							
User Charge Billings	83,750,613	84,771,281	86,950,247	89,137,666	91,389,338	93,656,177	96,031,095
Milorganite® Sales (Net)	9,000,150	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
Interest Income	350,000	1,000,000	1,250,000	1,250,000	1,250,000	1,250,000	1,250,000
Other Income	1,903,300	865,945	750,000	757,500	765,075	772,726	780,453
Household Hazardous Waste	1,212,440	1,231,951	1,244,271	1,250,492	1,256,745	1,263,028	1,269,343
Industrial Waste Pretreatment	923,411	1,037,000	1,042,185	1,042,185	1,042,185	1,042,185	1,042,185
Total Operating Revenue	97,139,915	98,906,177	101,236,703	103,437,842	105,703,342	107,984,116	110,373,076
Reserves and Surplus							
Equipment Replacement Fund Applied (or Contribution)	(175,000)	(300,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)
User Charge Stabilization Fund Applied (or Contribution)	(2,465,000)	0	5,200,000	400,000	1,200,000	1,300,000	1,900,000
IWPP Stabilization Fund Applied	0	59,000	0	0	0	0	0
Surplus or Deficit Applied	7,465,849	6,027,340	2,943,380	3,030,000	2,193,230	2,090,546	2,134,247
Total Reserves and Surplus	4,825,849	5,786,340	7,943,380	3,180,000	3,143,230	3,140,546	3,784,247
Total Revenues	101,965,764	104,692,517	109,180,082	106,617,842	108,846,573	111,124,662	114,157,323
Expenditures							
Divisions							
Commission	232,082	236,282	241,007	245,827	250,744	255,759	260,874
Office of the Executive Director	2,981,760	3,157,588	3,220,740	3,285,155	3,350,858	3,417,875	3,486,233
Information Technology Services	4,251,839	4,915,969	4,731,368	4,825,996	4,922,516	5,020,966	5,121,385
Legal Services	1,219,486	895,012	912,912	931,171	949,794	968,790	988,166
Finance	2,754,677	2,731,956	2,786,595	2,842,327	2,899,174	2,957,157	3,016,300
Technical Services	69,939,639	69,965,341	75,567,265	73,132,997	74,845,357	76,598,207	78,392,513
Planning, Research & Sustainability	3,795,537	4,291,123	4,376,946	3,964,485	4,043,774	4,124,650	4,207,143
Water Quality Protection	6,144,677	6,823,794	6,654,270	6,787,355	6,923,102	7,061,565	7,202,796
Community Outreach and Business Engagement	6,730,740	7,063,211	7,204,475	7,348,565	7,495,536	7,645,447	7,798,356
Fringe Benefits	15,522,610	15,215,820	15,367,978	15,521,658	15,676,874	15,833,643	16,387,821
Charges to Capital	(14,550,662)	(13,603,579)	(14,076,705)	(14,358,239)	(14,645,403)	(14,938,311)	(14,942,641)
Net Division Expenditures	99,022,384	101,692,517	106,986,852	104,527,296	106,712,326	108,945,747	111,918,944
Unallocated Reserve	2,943,380	3,000,000	2,193,230	2,090,546	2,134,247	2,178,915	2,238,379
Total Expenditures	101,965,764	104,692,517	109,180,082	106,617,842	108,846,573	111,124,662	114,157,323
User Charge Billings Increase		1.22%	2.5%	2.5%	2.5%	2.5%	2.5%

Note, totals may not appear to add due to rounding.

Sources of Funds

In 2019, the District's estimated revenue is \$104.7 million compared to the 2018 budgeted level of \$102 million. The \$2.7 million increase represents a 2.7 percent increase from the 2018 budget.

The District's primary source of funds is user charge billings. The District also has other sources of funds for the O&M Budget:

- Net sales of Milorganite® fertilizer
- Interest Income
- Other Income
- Cost recovery programs: Household Hazardous Waste and Industrial Waste Pretreatment Program
- Reserves
- Prior year's surplus

Each source of funds is further explained in the following pages. The table below presents a summary of the sources of funds the District expects in the 2019 O&M Budget.

2019 Funding Summary

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
User Charge Billings	\$76,155,044	\$83,750,613	\$83,115,613	\$84,771,281	\$1,020,668	1.22%
Milorganite® Sales (Net)	10,272,367	9,000,150	10,000,000	10,000,000	999,850	11.1%
Interest Income	420,038	350,000	750,000	1,000,000	650,000	185.7%
Other Income	1,987,470	1,903,300	1,603,300	865,945	(1,037,355)	-54.5%
Household Hazardous Waste	1,229,203	1,212,440	1,212,440	1,231,951	19,511	1.6%
Industrial Waste Pretreatment	916,773	923,411	923,411	1,037,000	113,588	12.3%
Total Operating Revenues	\$90,980,896	\$97,139,915	\$97,604,765	\$98,906,177	\$1,766,263	1.8%
Equipment Replacement Fund	(27,038)	(175,000)	(175,000)	(300,000)	(125,000)	71.4%
User Charge Stabilization Fund	(4,165,000)	(2,465,000)	(2,465,000)	0	2,465,000	-100.0%
IWPP Stabilization Fund Applied	0	0	0	59,000	59,000	100.0%
Surplus or Deficit Applied	7,831,369	7,465,849	7,465,849	6,027,340	(1,438,509)	-19.3%
Total Reserves and Surplus	\$3,639,331	\$4,825,849	\$4,825,849	\$5,786,340	\$960,491	19.9%
Total Funding	\$94,620,227	\$101,965,764	\$102,430,614	\$104,692,517	\$2,726,754	2.7%

Note, totals may not add due to rounding. 2018 estimate is as of Q3 2018.

User Charge Billings

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
User Charge Billings	\$76,155,044	\$83,750,613	\$83,115,613	\$84,771,281	\$1,020,668	1.22%

User charge billings are the primary source of revenue for the District's operating budget. The District bills each of the 28 municipalities within its service area based on waste strength, quantity, and number of connections of its users. The municipalities, in turn, directly bill their residential, commercial and industrial users. The municipalities are required to settle with the District within 45 days from the date the municipality receives the wholesale bill from the District regardless of collections. The District's user charge system has been approved by the Environmental Protection Agency and the Wisconsin Department of Natural Resources. Such approval is a condition for grants and loans from these agencies.

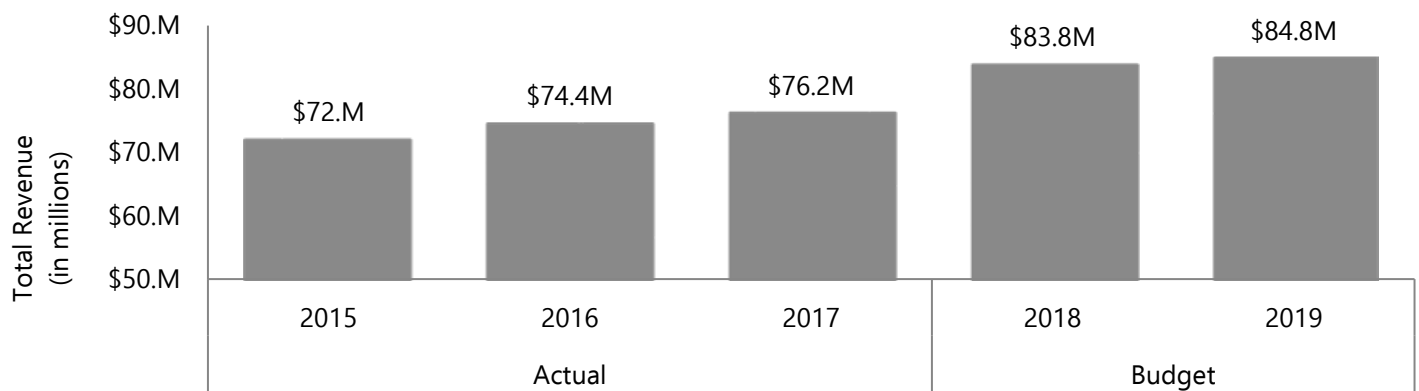
In 2019, the District budget includes a 1.22 percent increase over the 2018 budgeted user charge billings

How Rates Are Set

Sewer user charge rates are developed annually as part of O&M Budget preparation. As the Executive Director's proposed O&M Budget is prepared, Finance staff determine proposed sewer user charge rates in accordance with District Rules and Regulations as described in the Cost Recovery Procedures Manual. The user charge billing system allocates the total user charge billings to municipalities in proportion to each user's contribution to total wastewater loading into the conveyance system. This allocation is based on total waste load received and four billing parameters: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), billable flow, and connections. Over the last two decades, there has been a significant decline in total waste load, largely due to the loss of industrial users and the increase in water conservation efforts by residential and industrial users. Each municipality's bill reflects the amount due from each user class – residential, commercial and industrial.

An Ad Hoc User Charge Committee meets to review the proposed user charge rates and recommends rates for adoption by the Commission. The District's Commission approves an O&M Budget in October and user charge rates in November, to be reflected in municipal billings for the following fiscal year, beginning in January.

2015 Actual to 2019 Budget: User Charge Billings



Milorganite® Sales (Net)

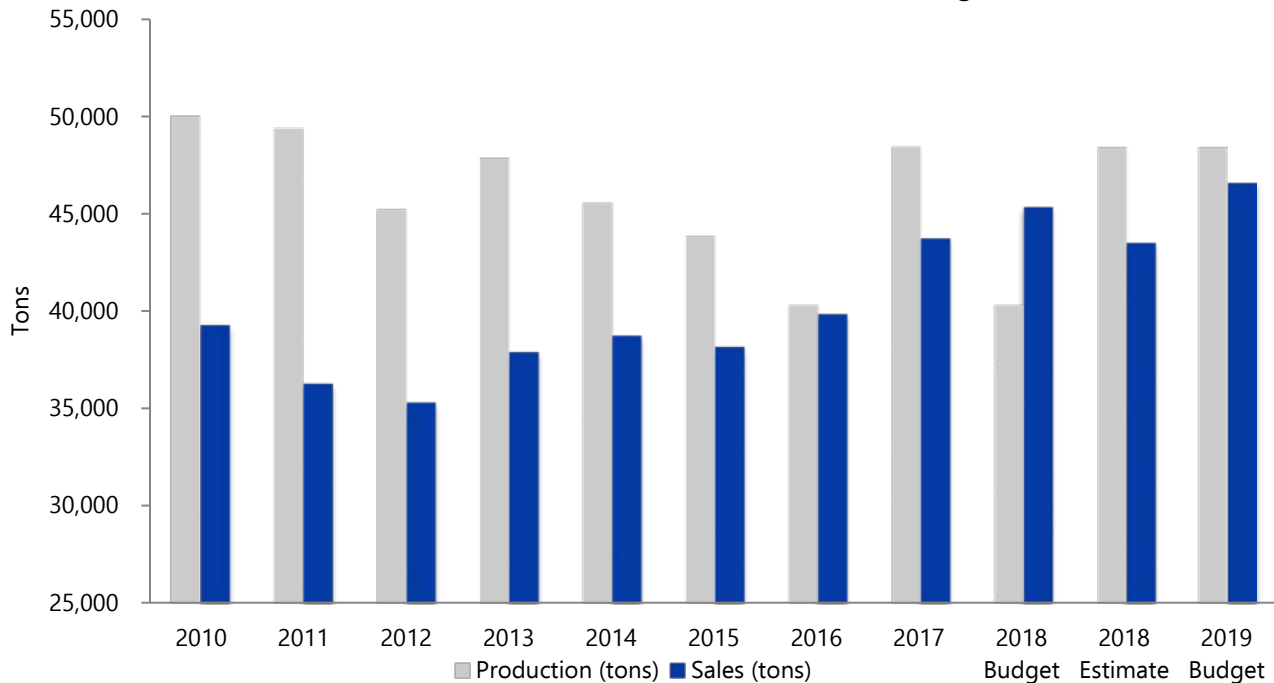
Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Milorganite® Sales	\$10,272,367	\$9,000,150	\$10,000,000	\$10,000,000	\$999,850	11.1%



Milorganite® is a premier organic fertilizer on the market offering a line of all-natural, pesticide-free products. Milorganite® production is currently the most cost-effective solution for disposal of biosolids from the wastewater treatment process at the Jones Island and South Shore Water Reclamation Facilities. The Milorganite® market consists of a professional class of customers, including golf courses around the country, and a retail class of customers, including popular “big box” and warehouse stores that sell to homeowners and gardeners. To address the needs of each market, Milorganite® fertilizer comes in several particle size formulations, including Greens Grade and Classic, and is sold in a variety of packaging sizes to accommodate the needs of both professional golf courses and residential gardeners.

In 2019, the budgeted net Milorganite® revenue is \$10 million. In 2019, the budgeted weighted-average net sales price per ton including discounts and agriculture application is \$218.34, an increase from \$206.90 in the 2018 Budget. The actual average sale price may be higher or lower than the budgeted price depending on actual product sales. Sales in 2019 are estimated to be approximately 48,393 tons. The following chart provides a historical perspective of production and sales tonnage of Milorganite®.

2010-2019 Production and Sales Tonnage



To dispose of product that does not meet specifications, or when the District has excess product, the District has entered into agreement with several agricultural distributors to place product in non-competitive markets.

Interest Income

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Interest Income	\$420,038	\$350,000	\$750,000	\$1,000,000	\$650,000	185.7%

Total Interest Income projected for the 2019 O&M Budget is \$1,000,000, which represents a 185.7 percent change from the 2018 budgeted level. An average interest rate of 2 percent on approximately \$50 million in investments is projected for 2019.

Currently, as the District's long-term investments mature, reinvestment opportunities are available at interest rates that are consistent with the low rates in the previous year. These low rates are a result of efforts by the Federal Reserve to help improve the economy.

Other Income

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Other Income	\$1,987,470	\$1,903,300	\$1,603,300	\$865,945	(\$1,037,355)	-54.5%

Other Income is budgeted at \$865,945 in the 2019 Budget. Other Income includes the following sources of funds: District lease revenue, contributions from Veolia Water Milwaukee for Material Capital Repairs and Replacements, reimbursements from Veolia Water Milwaukee for laboratory services, gain or loss from sale of fixed assets, grants, insurance premium refunds, claims and settlements, and miscellaneous. Other income decreases \$1,037,355 or 54.5 percent from the 2018 budgeted level, because the 2018 budget included a one-time assumption of \$700,000 in insurance claim reimbursements as well as a \$590,000 grant from the Wisconsin Department of Natural Resources to rehabilitate the habitat along the Kinnickinnic River. The decrease in Other Income is partially offset by an increase in Veolia Water Milwaukee contributions for repair and replacements in accordance with the operating contract; the contributions are projected to increase from \$375,000 in 2018 to \$400,000 in 2019. Other Income includes grant funding of \$100,000 for work done by the Community Outreach and Business Engagement division.

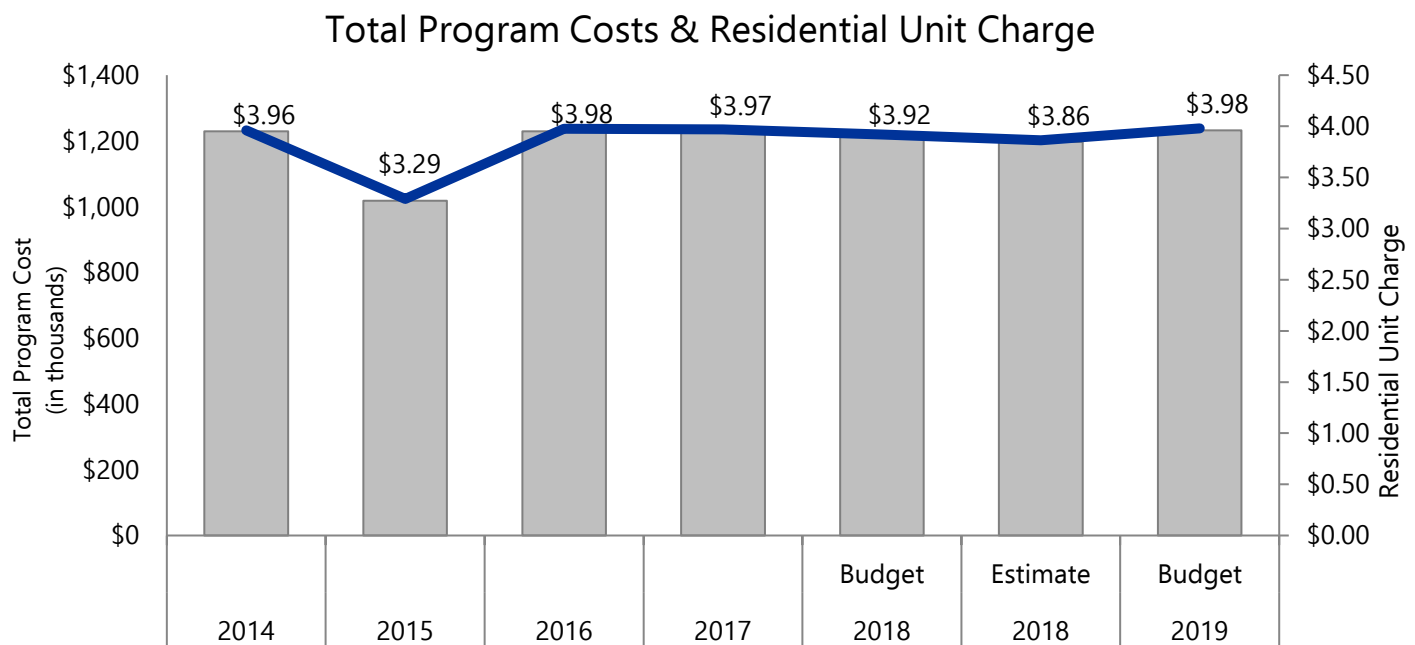
Household Hazardous Waste Collection Program

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Household Hazardous Waste Collection Program	\$1,229,203	\$1,212,440	\$1,603,300	\$1,231,951	\$19,511	1.6%

The Household Hazardous Waste (HHW) collection program was created in 1996, in conjunction with the Intergovernmental Cooperation Council to fulfill the public need for proper household hazardous waste collection and disposal. Properly disposing of hazardous wastes through the program benefits both water quality and overall public health.

The HHW Program is a cost-recovery program for District residents. Charges to participating communities for the Household Hazardous Waste program produce revenues. Charges for 2019 will be based on actual 2019 expenditures and billed to communities in spring of 2020. Program costs are determined by both the volume of waste collected and the type of waste, as more toxic substances are more expensive to dispose of.

The following graph illustrates historical trends of the program.



The 2019 Household Hazardous Waste program total revenue is projected to be \$1,231,951, an increase of 1.6 percent from the 2018 budgeted level. The estimated cost per residential unit is \$3.98 which is a \$0.06 increase from the 2018 budgeted level.

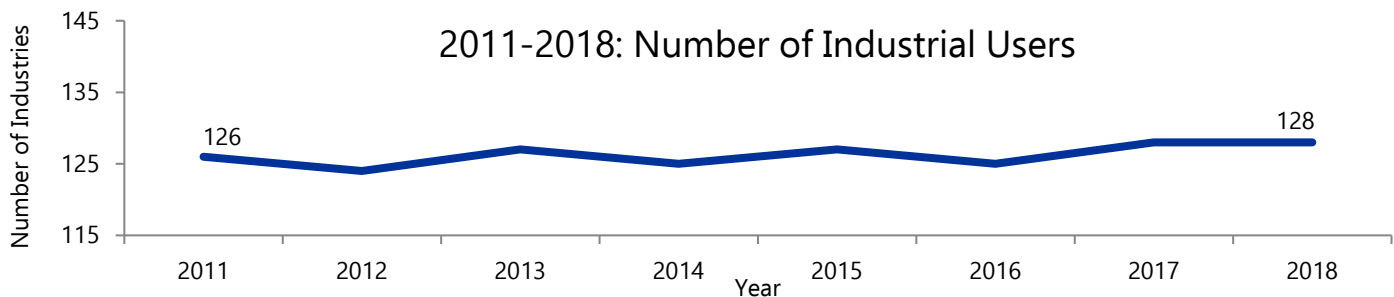
Industrial Waste Pretreatment Program

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Industrial Waste Pretreatment Program	\$916,773	\$923,411	\$923,411	\$1,037,000	\$113,588	12.3%

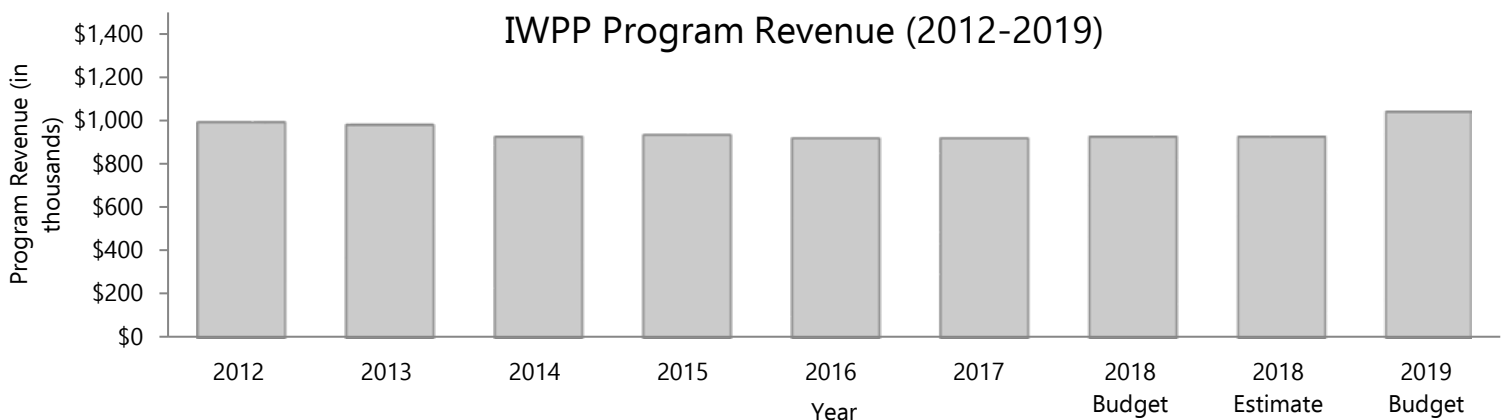
The Industrial Waste Pretreatment Program (IWPP) protects the effluent wastewater and biosolids products by prohibiting or limiting the discharge of certain pollutants. The District's Wisconsin Pollutant Discharge Elimination System (WPDES) permit requires that the District implement the IWPP. The Department of Natural Resources originally approved the District's program in 1983. The District enforces both local limits which are self-imposed by the District, and federal standards, which are limits established for various categories of industry by the U.S. Environmental Protection Agency. The program also ensures that industrial users pay user charges in proportion to their use of the sewerage system.

The IWPP is a cost recovery program, wherein revenues reflect actual expenditures. Three types of activities generate IWPP expenses: program administration, sampling and monitoring, and laboratory analysis. Program administration includes time spent by Industrial Waste Engineers developing policies and rules, drafting permits, inspecting facilities, analyzing regulatory and user charge data, taking enforcement action, providing technical assistance, and preparing reports. Sampling and monitoring costs include the cost of time spent by the staff in collecting data and monitoring pollutants. Laboratory analysis costs include the costs of testing the sample for its chemical make-up. The Cost Recovery Procedures Manual annually establishes industrial surcharges and fees for sample collection and analysis. These rates are used as a basis of making revenue estimates for laboratory services incurred as part of the Industrial Waste Pretreatment Program.

The number and complexity of significant industrial users are the dominant factors affecting IWPP costs. As the local economy evolves away from large-scale manufacturing, both the number and complexity of significant industrial users decreases. As seen in the graph below, since 2011 the number of significant industries has held fairly constant.



The following chart displays the IWPP revenue from 2012 to 2019. In the 2019 O&M Budget, IWPP revenue is estimated to increase 16.3 percent to \$1,037,000, because of the amount of District staff labor spent on the program. The 2019 budgeted level also includes \$127,000 to make up for the program's deficit in 2017.



Reserves

The District has two reserves for its Operations and Maintenance Budget: the User Charge Stabilization Fund and the Equipment Replacement Fund. The use of reserves helps to reduce or mitigate volatility in the District's primary O&M revenue source, the user charge billings. The use of reserves is analyzed in each budget year. Moreover, there could be years in which the District needs to contribute to the reserve funds to ensure that they comply with policy.

Equipment Replacement Fund

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Equipment Replacement Fund						
Applied (or Contribution)	(\$27,038)	(\$175,000)	(\$175,000)	(\$300,000)	(\$125,000)	71.4%

The Equipment Replacement Fund (ERF) is a state-mandated reserve that is equal to 5 percent of the value of equipment owned by the District (Wisconsin Administrative Code, section NR-128.03 (18)). The District periodically conducts a fixed asset study that reviews all of the machinery and equipment with a value of \$25,000 or greater and a service life of between 10 and 20 years. The total value of machinery and equipment from this study set the initial net asset value of the equipment replacement fund. Each year, the value of assets within the ERF changes due to projects that are completed resulting in new assets that meet the criteria and therefore increase the ERF or existing assets are decommissioned that decrease the value of assets within the ERF.

On January 1, 2018, the value of assets within the ERF is \$299.2 million, and the required restricted fund balance is \$15.0 million. The District anticipates a \$15.1 million balance at year-end 2018.

As capital projects are completed, it is estimated the minimum required balance will increase. In 2019, the District includes a \$300,000 contribution to the ERF to remain in compliance with the 5 percent limit.

Applying reserves allows the increase to user charge billings to be lowered in a given year, while contributing to those funds is in effect an expenditure and would require additional user charge billings. An evaluation of the ERF will be undertaken to determine whether reductions could be made to avoid future contributions.

IWPP Stabilization Fund

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
IWPP Stabilization Fund						
Applied (or Contribution)	\$0	\$0	\$0	\$59,000	\$59,000	100.0%

The District has an IWPP Stabilization Fund used to stabilize IWPP rates. In 2019, the District applies \$59,000.

User Charge Stabilization Fund

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
User Charge Stabilization Fund						
Applied (or Contribution)	(\$4,165,000)	(\$2,465,000)	(\$2,465,000)	\$0	\$2,465,000	-100.0%

The District Commission established the User Charge Stabilization Fund in 1998 to help the District avoid large increases or decreases in the User Charge billings.

Commission policy requires that the fund balance be no less than 2.5 percent of the current year's revenues. The District anticipates making no changes to the user charge stabilization fund in 2019. The projected balance as of 1/1/2019 is \$14.3 million and the expected balance as of 12/31/2019 is \$14.3 million, both of which exceed the required minimum balance.

Applying reserves allows the increase to user charge billings to be lowered in a given year, while contributing to those funds is in effect an expenditure and would require additional user charge billings.

User Charge Stabilization Fund Summary

Balance of Fund as of 1/1/2018	\$11,811,953
2018 Net Contributions	\$2,465,000
2018 Estimated Balance as of 12/31/2018	\$14,276,953
Balance of Fund as of 1/1/2019	\$14,276,953
2019 Net Contributions	\$0
Anticipated Balance as of 12/31/2019	\$14,276,953
Minimum Required per Commission Policy	\$2,618,063
Remaining Available Fund Balance	\$11,658,890

Surplus Returned

Source of Funds	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Surplus Returned	\$7,831,369	\$7,465,849	\$7,465,849	\$6,027,340	(\$1,438,509)	-19.3%

The Operations & Maintenance Budgets are set for a one-year period. In any given year, the actual expenditures and revenues likely will vary somewhat from the budgeted amounts. This variance could be due to work or project timing, expenditures that are deemed unnecessary during the year, unanticipated pricing changes, revenues that either exceed or fail to meet expectations, or an unused unallocated reserve. At the end of the year, the favorable and unfavorable variances are accumulated into a funding surplus or deficit. If there is a budget surplus, those funds are either carried forward by Commission action into the next budget year, or they are applied as a source of funds to a future budget year, as follows.

In compliance with 40 CFR 35.929-2 (b) for application of surplus/deficit, the District determines the surplus or deficit attributable to each sewer user charge billing parameter (Flow, BOD, TSS, Connections) at the end of each fiscal year. The surplus or deficit is applied to user charge billing rates in the budget two years after the fiscal year that created it, in compliance with federal and state regulations.

In the 2019 budget, the District returns the 2017 surplus, or \$6,027,340. The surplus is \$1,438,509 less than that applied to the 2018 budget, resulting in a 19.3 percent decrease from the 2018 budgeted level.

Commission

Division Summary

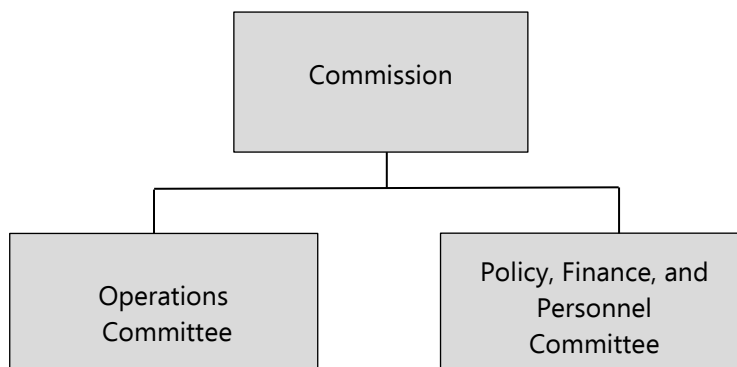
The Commission is the governing body and establishes District policies in compliance with statutory responsibility. The Commission directs and controls budgetary, administrative, procedural, operational, and informational support for the District.

BACKGROUND AND OVERVIEW

The Commission is comprised of 11 members: seven appointed by the Mayor of the City of Milwaukee, subject to Common Council confirmation; and four appointed by the MMSD Executive Council of the Intergovernmental Cooperation Council (ICC), which is comprised of chief elected officers of the cities and villages in the District other than the City of Milwaukee. From the City of Milwaukee, three are elected officials and each serve a one-year term. The other four members are citizen appointees from Milwaukee and each serve a three-year term. The four Commission members from the ICC include three elected officials and one citizen; all four ICC-appointed members serve a three-year term. No Commissioner may serve more than nine consecutive years.

The Commission is charged with the responsibility of establishing policies for the District. The Commission consists of two standing committees: the Policy, Finance and Personnel Committee and the Operations Committee. Matters discussed by the committees include financial planning, budget recommendations, reporting and audits, personnel matters and labor relations, legal and legislation, public information policies, collection/treatment/disposal compliance, industrial development and pretreatment, and the award of contracts.

In support of the 2035 Vision, the Commission sets policy direction to ensure that the District practices integrated watershed management, reduces its greenhouse gas emissions and plays a leading role in mitigating the potential impacts of climate change.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Commissioners	11.0	11.0	11.0
Total Positions	11.0	11.0	11.0

Note, Commissioners are not included in the District's FTE count.

ACCOMPLISHMENTS

- Timely prepared and distributed agendas and minutes for Committee and Commission meetings

Through formal meetings, the Commission hears requests from staff, individual residents, and interest groups on a number of issues. They then must make decisions that best respond to the community's needs and support the District's vision. The Commission provides the leadership to deliver important services that protect public health and support the vitality of the area's waterways.

2019-2021 Strategic Plan Vision:

MMSD envisions a healthier, cleaner, resilient region.



Thanks to the Commission's leadership and direction, in 2018, the District once again received the NACWA Peak Performance Awards for the commitment, innovation and achievements in the clean water industry.

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Fixed Assets	-	-	-	-	-	0.0%
Personal Services	109,263	119,207	119,207	119,207	-	0.0%
Contractual Services	87,461	110,275	92,209	114,475	4,200	1.8%
Materials & Supplies	878	2,600	800	2,600	-	0.0%
Gross Division Total	\$197,602	\$232,082	\$212,216	\$236,282	\$4,200	1.8%
Charges to Capital	-	-	-	-	-	-
Net Division Total	\$197,602	\$232,082	\$212,216	\$236,282	\$4,200	1.8%

BUDGET COMMENTS

- Contractual services budget includes funding for Commissioners to travel to meetings, graphic printing services, publishing official notices, the District's annual financial audit, and transcription services.

Office of the Executive Director

Division Summary

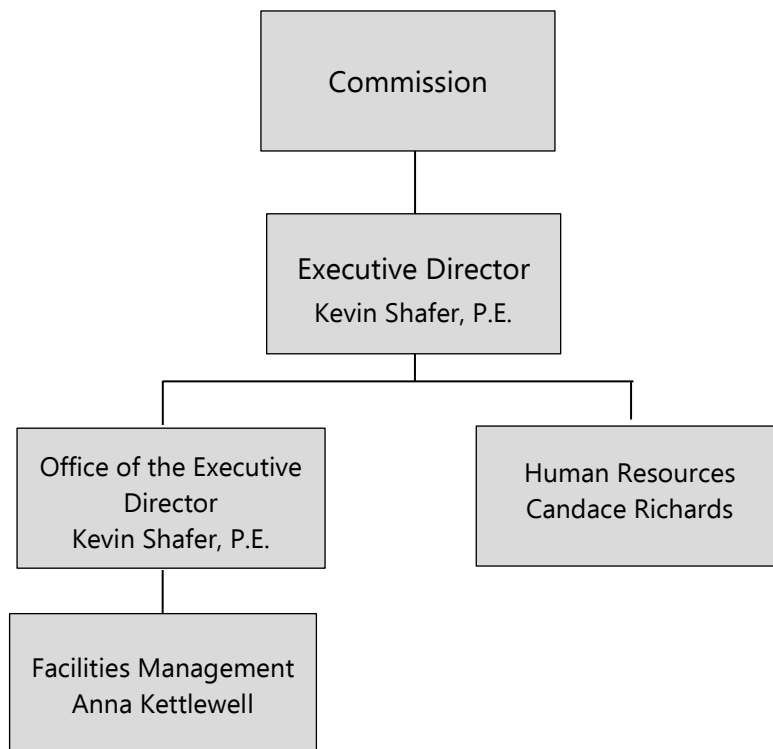
The Executive Director is appointed by the Milwaukee Metropolitan Sewerage District Commission and serves as the District's Chief Executive Officer. The Executive Director provides organizational leadership to implement Commission policies that ensure the District meets its customers' needs in a cost-effective manner.

THE OFFICE OF THE EXECUTIVE DIRECTOR:

Provides organizational leadership for the division and District. The cost center oversees general administration of District business, including reception services and graphic design services.

HUMAN RESOURCES: Manages employee benefits, compensation, labor relations, recruitment, affirmative action and diversity, unemployment compensation, work-study, organizational training and development, and other human resource policies and procedures.

FACILITIES MANAGEMENT: Helps provide a clean and safe work environment. The cost center also manages the District's mail and Headquarters building's heating, ventilation, air conditioning, electrical services and plumbing. The cost center maintains the Headquarters buildings and grounds and focuses on environmentally-friendly, energy-efficient, sustainable, and cost-effective ways of operating the District's facilities. The cost center also manages the District's fleet.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Office of the Executive Director			
Executive Director	1.0	1.0	1.0
Senior Project Manager II	1.0	2.0	1.0
Senior Fellow - Finance	0.0	0.0	1.0
Senior Project Manager	1.0	0.0	0.0
Chief Administrative Officer / Commission Secretary	1.0	1.0	1.0
Senior Project Manager - Non. PE	1.0	1.0	0.0
Administrative Assistant	0.0	0.0	1.0
Graphics Designer	0.0	0.0	2.0
Human Resources			
Human Resources Manager	1.0	1.0	1.0
Senior Human Resources Generalist	1.0	1.0	1.0
Human Resources Generalist	1.0	1.0	1.0
Human Resources Coordinator	1.0	1.0	1.0
Facilities Management			
Facilities Supervisor	1.0	1.0	1.0
Facilities Technician II	1.0	2.0	2.0
Facilities Technician I	1.5	1.0	1.0
Total Positions	12.5	13.0	15.0

ACCOMPLISHMENTS

- Completed the rebuild of the front entrance of the headquarters building to be both Americans with Disabilities Act compliant and environmentally friendly as it reduces the amount of snow melt salt required.
- Completed improvements to the headquarters workspaces and made laboratory improvements.
- Health appraisals included employee spouses to assess and teach healthy lifestyle choices.
- Hosted 21 work study students including two students from Tuskegee University as a partnership program with the Water Council.
- Onboarded 12 new employees.

In 2018, the District completed its 2019-2021 Strategic Plan. The Plan's mission states: **"MMSD protects public health and the environment through world-class cost-effective water resource management, leadership, and partnership"** The Division supports the goals of the plan as well as Effective Utility Management described in the *Ten Attributes of Effectively Managed Utility* by recruiting, developing, and retaining a workforce that is motivated and adaptive, and establishing a participatory, collaborative organization dedicated to innovation.

The 2019-2021 Strategic Plan recognizes that essential to our success is our commitment to:

- ✓Stewardship
- ✓Integrity
- ✓Quality
- ✓Collaboration
- ✓Diversity
- ✓Innovation

NEW INITIATIVES

- Implementing the 2019-2021 Strategic Plan
- Talent Development program

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Executive Director	626,858	889,622	796,796	1,045,320	155,698	17.5%
Information Services	3,598,579	-	-	-	-	0.0%
Human Resources	875,869	983,155	933,337	1,002,831	19,676	2.0%
Facilities Management	923,155	1,108,982	965,031	1,109,437	455	0.0%
Gross Division Total	\$6,024,461	\$2,981,760	\$2,695,165	\$3,157,588	\$175,828	5.9%
Charges to Capital	(473,042)	(595,144)	(353,086)	(285,300)	309,844	-52.1%
Net Division Total	\$5,551,419	\$2,386,616	\$2,342,078	\$2,872,288	\$485,673	20.3%

USES BY EXPENDITURE TYPE

Fixed Assets	70,016	-	-	-	-	0.0%
Personal Services	3,156,140	1,637,009	1,494,743	1,879,168	242,158	14.8%
Contractual Services	2,568,269	1,250,700	1,103,393	1,126,526	(124,175)	-9.9%
Materials & Supplies	230,036	94,050	97,028	151,895	57,845	61.5%
Gross Division Total	\$6,024,461	\$2,981,760	\$2,695,165	\$3,157,588	\$175,828	5.9%
Charges to Capital	(473,042)	(595,144)	(353,086)	(285,300)	309,844	-52.1%
Net Division Total	\$5,551,419	\$2,386,616	\$2,342,078	\$2,872,288	\$485,673	20.3%

BUDGET COMMENTS

- Two Graphics Designer positions and an Administrative Assistant position transferred from the Community Outreach and Business Engagement division.
- A Senior Project Manager II position and a Senior Project Manager – Non-PE position transferred to the Planning, Research and Sustainability division.
- Added a Senior Fellow – Finance position to help with cross training and succession planning.
- In 2019, the Facilities Management budget includes funding for fuel for the District's fleet vehicles, driving the increase in materials and supplies in 2019.

GOALS

- Providing world-class leadership in water resource management
- Provide leadership and direction in achieving the 2035 Vision and 2019-2021 Strategic Plan
- Increase workplace diversity through targeted recruitment efforts
- Ensure workforce stability through training and development
- Increase employee engagement
- Manage headquarters and laboratory assets to optimal performance

CHALLENGES

- How do we replace veteran staff when they retire?
- Educating employees to become informed healthcare consumers

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Total Budgeted FTE	238.5	234	234
New Hire Opportunities	23	15	10
% of minority employees	18%	18%	18%
% of female employees	40%	40%	40%
Number of graphics services requests	698	597	700
Number of facilities maintenance requests	N/a	760	775



Legal Services

Division Summary

The purpose of the Legal Services Division is to provide legal advice, strategy, and support to the Commission, Executive Director, and District staff to enable legally sound governmental and business decisions and their effective implementation.

Legal Services The division was created by the Milwaukee Metropolitan Sewerage District Commission in 1978. The Division conducts all of the District's legal business and provides specialized legal expertise in the District's major areas of operations, including environmental, construction and contract, government finance, municipal relations, and human resources. The Division provides ongoing support to District operations by advising the Commission, Executive Director, and staff on programs and policies to ensure that District operations are consistent with legal requirements. The Division also represents the District in all litigation and claims by or against the District, either as primary legal counsel or in overseeing outside legal counsel. Each matter is assigned to a specific staff attorney to assess possible District liability, preserve evidence, identify witnesses, and provide ongoing claim monitoring activities. During the risk identification process, the Legal Services Division provides advice to the Commission and District management regarding the alternative courses of action. The Legal Services Division also provides timely advice and opinions to support District business operations and to avoid legal problems. This includes legal review and input for water and air pollution permits, compliance reporting, planning reports, and contract drafting.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Director of Legal Services	1.0	1.0	1.0
Senior Staff Attorney	2.0	2.0	2.0
Staff Attorney	3.0	2.0	2.0
Paralegal Administrator	1.0	1.0	1.0
Administrative Assistant	1.0	1.0	1.0
Information Governance Manager	1.0	1.0	0.0
Records Information Management Technician	3.0	3.0	0.0
Total Positions	12.0	11.0	7.0

**Note, in the 2019 budget, the Records Management cost center moves to the Information Technology Services cost center.*



Former site of the Estabrook Dam

ACCOMPLISHMENTS

- Worked with Milwaukee County and the City of Milwaukee to accomplish removal of the Estabrook Dam, resolving a long standing environmental and safety issue.
- Assisted in the preparation and submittal of the District's Risk Based Work Plan to remove PCB contaminated sediments, which was approved by US EPA, resulting in significant cost savings to MMSD; and continues to obtain insurance reimbursement for clean up costs.
- Provided ongoing legal advice to staff regarding requirements for the necessary acquisition of property interests in green infrastructure projects and participated in the development of a funding plan needed to meet the stormwater retention goal of the District's 2035 Vision.

NEW INITIATIVES

- Assist with contract negotiation for a second landfill gas supply agreement with Waste Management in the effort to increase somethienergy cost savings and reduce the region's carbon footprint.

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Legal Services	992,349	914,782	837,907	895,012	(19,770)	-2.2%
Records Management	281,418	304,704	297,675	-	(304,704)	-100.0%
Gross Division Total	\$1,273,767	\$1,219,486	\$1,135,582	\$895,012	(\$324,474)	-26.6%
Charges to Capital	(297,004)	(316,267)	(240,090)	(216,226)	100,041	-31.6%
Net Division Total	\$976,763	\$903,219	\$895,492	\$678,787	(\$224,432)	-24.8%
USES BY EXPENDITURE TYPE						
Fixed Assets	-	-	-	-	-	0.0%
Personal Services	860,201	920,531	919,252	719,787	(200,744)	-21.8%
Contractual Services	380,779	254,655	172,280	173,025	(81,630)	-32.1%
Materials & Supplies	32,787	44,300	44,050	2,200	(42,100)	-95.0%
Gross Division Total	\$1,273,767	\$1,219,486	\$1,135,582	\$895,012	(\$324,474)	-26.6%
Charges to Capital	(297,004)	(316,267)	(240,090)	(216,226)	100,041	-31.6%
Net Division Total	\$976,763	\$903,219	\$895,492	\$678,787	(\$224,432)	-24.8%

*Note, in the 2019 budget, the Records Management cost center moves to the Information Technology Services cost center.

BUDGET COMMENTS

- Personnel Services budget decrease due to three funded positions in the Records Management cost center transferring to the Information Technology Services Division.
- Funding in contractual services includes outside counsel, experts, and lobbying. Contract services also includes funding for legal research providers, membership subscriptions and dues.
- The 2019 budgeted level for charges to capital decreases by \$100,041 from the 2018 budgeted level, resulting in an increase to the O&M budget, due to a reduced number of capital projects requiring legal review.

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Resolve outstanding claims as quickly and cost effectively as possible	100%	100%	100%
Settlements are resolved for amounts that do not exceed the District's exposure or that adequately recover damages	100%	100%	100%
Review replies to requests for open records	100%	100%	100%
Provide regulatory guidance for Milorganite® and all permit matters	100%	100%	100%

GOALS

- Ensure timely and correct legal advice to enable staff to achieve 100% compliance with regulations and O&M contract
- Continue to provide legal counsel and representation to minimize claims and litigation; and to prevail in litigation matters where District is involved

CHALLENGES

- Lead the effort to negotiate the updated discharge permit
- Navigation of complex real estate transactions



Finance

Division Summary

The District is committed to providing quality services in the most cost-effective manner. The Finance Division provides financial management and financial analysis necessary for efficient operations and prudent decision making. To that end, Finance staff are involved in major organizational decisions the District undertakes by analyzing the cost and benefit of each option being considered.

BUDGET PREPARATION AND ADMINISTRATION:

Development of the annual Capital and Operations & Maintenance Budgets based on review and prioritization of all District organizational budget requests from divisions, related to contract operations, and from asset management; financial analysis of new programs or changes, recommendation on expenditures and revenues for the upcoming year to achieve organizational goals; monitoring budget variances and recommending strategies for issues and communicating status throughout the given budget year.

FINANCIAL PLANNING: Preparation and management of both Capital and Operations & Maintenance forecasts of future years' revenues and expenditures; development and analysis of revenue and expenditure assumptions for out-year projections, scenario analysis for various initiatives and programs to determine the impact on the financial plan.

PERFORMANCE MANAGEMENT SYSTEM: Develop and maintain the District's organizational performance management system with performance metrics tied to the Strategic Plan, performance indicators from core operations or budgeted initiatives, related benchmarks, and trend analysis on various organizational goals and performance. Goals are set annually, tracked throughout the year, and annual performance is reported to the Commission.

TREASURY AND CASH MANAGEMENT: Oversight of all treasury and cash management activities and strategies to ensure compliance with statutes, Commission policy, the greatest rate of return allowable, as well as the lowest cost of transactions.

DEBT MANAGEMENT: Planning of all General Obligation and Clean Water Fund Program loan debt issuances, any special circumstance debt financing, and administration of related debt service payments.

ACCOUNTING, FINANCIAL REPORTING, BILLINGS, AND PAYROLL: Administration of the user charge billings system that assigns charges to customers, as well as creates all billings for tax levy, non-member charges, and other District programs. Management of payroll and accounting transactions including accounts payable, accounts receivable, inter-fund and general ledger. Monthly financial reporting and preparation of the annual financial report.

GRANTS MANAGEMENT: Administration of all grants and reimbursements to ensure properly documented compliance as well as timely receipt of funds.

RISK MANAGEMENT: Management of the risks of accidental loss associated with property, liability and workers compensation exposures. Risk management includes safety, security and insurance coverage for all District construction and operations activities.

REAL ESTATE: Administration of the District's real estate transactions including land and easement acquisitions, facility leases, and management of existing property rights.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Director of Finance / Treasurer	1.0	1.0	1.0
Deputy Director of Finance	1.0	1.0	1.0
Controller	1.0	1.0	1.0
Supervisor of Revenue and Fixed Assets	1.0	1.0	1.0
Supervisor of Payroll and Accounts Payable	1.0	1.0	1.0
Risk Manager	1.0	1.0	1.0
Real Estate Specialist	1.0	1.0	1.0
Safety Advisor	1.0	1.0	1.0
Management and Budget Analyst III	2.0	2.0	2.0
Audit and Loan Administrator	1.0	1.0	1.0
Real Estate Generalist	1.0	1.0	1.0
Accountant	1.0	2.0	1.0
Payroll Specialist	1.0	1.0	1.0
Safety and Risk Management Specialist	1.0	1.0	1.0
Account Specialist	3.0	3.0	3.0
Administrative Assistant	1.0	1.0	1.0
Total Positions	19.0	20.0	19.0

ACCOMPLISHMENTS

- 2017 Financial Statements received an unqualified opinion from the District's auditors
- Managed the issuance and sale of \$13.8 million in Clean Water Fund Loans to finance four capital projects that are included in the 2018 capital budget.
- Automated the process of purchasing card expenses to make the process more efficient.
- Renewed District annual insurance policies with an overall decrease in premiums.
- Revised several Commission and Administrative policies improving internal controls.
- Received the Government Finance Officers Association Certificate of Achievement for Excellence in Financial Reporting and Distinguished Budget Presentation Award.

NEW INITIATIVES

- Pursue new enterprise resource planning software system
- Explore subsidized interest Clean Water Fund Loan financing for green infrastructure
- New 2019-2021 Strategic Plan
- Pursue new real estate tracking software

In 2018, the Finance division led the effort to create the District's new 2019-2021 Strategic Plan with the objectives of the Ten Attributes of an Effectively Managed Utility and Five Keys to Management Success – known as Effective Utility Management and seen on the right, in mind.



SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Fixed Assets	-	-	-	-	-	0.0%
Personal Services	1,603,165	1,690,637	1,636,796	1,675,846	(14,791)	-0.9%
Contractual Services	947,363	1,045,690	1,124,693	1,036,885	(8,805)	-0.8%
Materials & Supplies	20,369	18,350	18,765	19,225	875	4.8%
Gross Division Total	\$2,570,897	\$2,754,677	\$2,780,254	\$2,731,956	(\$22,721)	-0.8%
Charges to Capital	(440,553)	(348,898)	(491,645)	(451,875)	(102,977)	29.5%
Net Division Total	\$2,130,344	\$2,405,779	\$2,288,609	\$2,280,081	(\$125,698)	-5.2%

BUDGET COMMENTS

- In 2019, one vacant Accountant – Limited Term Employee position is eliminated. The Accountant – Limited Term Employee position was created in the 2018 budget to help with succession planning.
- In 2019, the charges to capital budgeted level increases by 29 percent from the 2018 budgeted level, a decrease to the O&M Budget, based off of 2017 and 2018 year-to-date actual experience.

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Bond ratings - Fitch ratings	AAA	AAA	AAA
Bond ratings - Moody's Investors Service	Aa1	Aa1	Aa1
Bond ratings - Standard & Poor's	AA+	AA+	AA+
% of operating reserve that meets or exceeds level set by policy	100%	100%	100%
# of significant internal control deficiencies or material weaknesses from internal audit	0	0	0
Receive GFOA Distinguished Budget Award	Yes	Yes	Yes

GOALS

- Maintain, implement and enhance the long-range financial plan
- Maximize outside funding opportunities
- Continue to minimize cost of risk
- Expand workload and performance measures reporting and alignment with the District's strategic goals and budget process

CHALLENGES

- Service affordability
- Aging infrastructure
- Balancing concerns of both member and non-member communities
- Managing staff turnover



Technical Services

Division Summary

The mission of the Technical Services Division (TSD) is to protect the environment and promote public health and safety by providing for flood mitigation, wastewater conveyance, and wastewater treatment through managing the design and construction of capital projects. The Division also manages contracts to operate and maintain the District's watercourse, conveyance, landfill gas pipeline, and water reclamation facilities. The Technical Services Division has primary responsibility for the development, implementation, and management of most of the District's capital improvement program. The Division provides oversight and management of the operations and maintenance contracts that operate and maintain the District's water reclamation facilities, conveyance system, watercourse system, and landfill gas pipeline. Specifically related to this objective are capital projects from the 2020 Facilities Plan, Veolia Water Milwaukee (VWM) contract, and Watercourse System Improvement Plans.

OFFICE OF CONTRACT COMPLIANCE:

Oversees contract operations of the District's wastewater reclamation facilities, conveyance system, and landfill gas pipeline. The cost center manages the operation and maintenance contract with VWM, the contracts for the landfill gas pipeline, and landfill gas supply. They also work on power supply and energy management, including working with We Energies and purchasing natural gas hedges.

ENGINEERING SERVICES: Oversees design and engineering services of capital upgrades, including rehabilitation of existing and additions to District facilities. Most work is related to the water reclamation facilities, conveyance system, and watercourse system. In addition, this cost center manages all watercourse planning and maintenance contracts.

CAPITAL PROGRAM SUPPORT: Manages the development and administration of the Division's Capital Improvement Program, including forecasting project costs and schedules throughout the District's six-year planning horizon and beyond. The cost center provides construction management and contract administration services for Capital and O&M funded contracts, and oversees the District's geographic and facilities information systems programs. Finally, the cost center protects underground District assets throughout the District's service area via participation in the Diggers Hotline one-call system and provides surveying services for a variety of District functions including capital projects, asset protection, real estate and GIS.



DIVISION STAFFING

	2017	2018	2019
Position Title	Budget	Budget	Budget
Engineering Design Manager	1.0	1.0	1.0
Section Manager	3.0	3.0	3.0
Senior Project Manager II	1.0	2.0	2.0
Senior Project Manager - Electrical	1.0	1.0	1.0
Senior Project Manager	16.0	15.0	15.0
Project Manager - Electrical	1.0	1.0	1.0
Project Engineer	2.0	1.0	1.0
Administrative Coordinator	0.0	0.0	1.0
Technical Services Coordinator	1.0	1.0	1.0
Administrative Assistant	2.0	2.0	0.0
Director of Technical Services	1.0	1.0	1.0
Capital Program Support Manager	1.0	1.0	1.0
Construction Support Manager	1.0	1.0	1.0
Surveying Services Supervisor / Sr Project Mgr	1.0	1.0	1.0
GIS Supervisor	1.0	1.0	1.0
Project Controls Supervisor	1.0	1.0	1.0
GIS Analyst	1.0	1.0	1.0
Project Engineer	1.0	1.0	1.0
Project Controls Analyst	1.0	1.0	1.0
Administrative Assistant	1.0	1.0	1.0
Senior GIS Data Coordinator	1.0	1.0	1.0
Survey Crew Chief	3.0	4.0	4.0
Lead Inspector	1.0	0.0	0.0
GIS Data Coordinator	2.0	2.0	2.0
CAD Coordinator	1.0	1.0	1.0
Cost and Schedule Specialist	1.0	1.0	1.0
Engineering Aide	15.0	14.0	11.0
Survey Technician	1.0	0.0	0.0
GIS Technician	1.0	1.0	1.0
CAD Technician	1.0	1.0	1.0
Manager of Contract Compliance	1.0	1.0	1.0
Contract Compliance Assistant Manager	1.0	1.0	1.0
Contract Compliance Administrator	3.0	3.0	3.0
MCRR Project Engineer	2.0	2.0	2.0
Administrative Coordinator - Office of Contract Compliance	1.0	1.0	1.0
Total Positions	72.0	67.0	66.0

ACCOMPLISHMENTS

- Reached Substantial completion on 10 Projects including the Martha Washington Drive/Upper Parkway 18-inch Metropolitan Interceptor Sewer (MIS) Rehabilitation, Conveyance Gate Rehabilitation Phase 3, JI Pressure Relief Panel Replacement, Aeration Basin Concrete Rehabilitation Phase 2, and Estabrook Dam Removal.
- Capital project total costs stayed within budget
- Significant progress made on implementation of new capital program management software

NEW INITIATIVES

- BIM pilot project to to more efficiently access facility and asset information
- Investigate options to improve material capital repair and replacement (MCRR) completion timelines

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Engineering Services	2,890,284	5,044,146	3,176,187	2,689,886	(2,354,261)	-46.7%
Capital Program Support	2,822,454	3,022,171	2,831,382	3,257,093	234,923	7.8%
Office of Contract Compliance	56,996,996	61,873,323	64,250,765	64,018,362	2,145,039	3.5%
Gross Division Total	\$62,709,734	\$69,939,640	\$70,258,334	\$69,965,341	\$25,701	0.0%
Charges to Capital	(5,781,820)	(5,924,580)	(5,357,602)	(5,387,211)	537,369	-9.1%
Net Division Total	\$56,927,914	\$64,015,060	\$64,900,732	\$64,578,130	\$563,070	0.9%
USES BY EXPENDITURE TYPE						
Fixed Assets	556,262	767,004	788,694	595,100	(171,904)	-22.4%
Personal Services	5,167,365	5,587,760	5,367,218	5,808,283	220,523	3.9%
Contractual Services	56,880,333	63,524,026	64,066,657	63,527,958	3,932	0.0%
Materials & Supplies	105,774	60,850	35,765	34,000	(26,850)	-44.1%
Gross Division Total	\$62,709,734	\$69,939,640	\$70,258,334	\$69,965,341	\$25,701	0.0%
Charges to Capital	(5,781,820)	(5,924,580)	(5,357,602)	(5,387,211)	537,369	-9.1%
Net Division Total	\$56,927,914	\$64,015,060	\$64,900,732	\$64,578,130	\$563,070	0.9%

BUDGET COMMENTS

- Fixed assets includes funding for eight vehicles, survey equipment and replacement equipment for the treatment plants in the 2019 budget.
- One vacant and unfunded Project Engineer position is eliminated and one vacant and unfunded Engineering Aide was changed to a Survey Technician and funded.
- The operating contract with Veolia Water Milwaukee totals \$47.7 million. The increase in contractual services is primarily due to the first full year of the new operating contract terms.
- Charges to capital decrease by \$537,369, resulting in an increase to the O&M Budget, from the 2018 budgeted level based on the 2018 year-to-date experience and year-end projection.

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Achieve 3.5 or greater CMAR score for JI	4.00	3.50	3.50
Achieve 3.5 or greater CMAR score for SS	3.79	3.50	3.50
O&M expenditures stay within budget	100%	99%	100%
Capital expenditures stay within budget	100%	100%	100%
Total Digger's Hotline tickets assessed	20,875	20,057	20,800
Digger's Hotline requests processed by WI State Statute timelines	100%	100%	100%
% Wastewater captured & treated	99.9%	98.1%	100%

GOALS

- Pilot use of asset management system for 2020 capital budget
- Exceed regulatory requirements
- Complete and implement high priority capital projects
- Further implementation of capital program software
- Reduce the number of structures in the floodplain

CHALLENGES

- Additional regulatory requirements from the new WPDES permit
- Delayed real estate transactions slow project advancement

The CMAR is a self-evaluation tool that evaluates the wastewater treatment system for problems or deficiencies; it evaluates the treatment system performance in different categories. Each water reclamation facility and associated conveyance system receives a score from 0 to 4, with 4 being the highest score.



Planning, Research & Sustainability

Division Summary

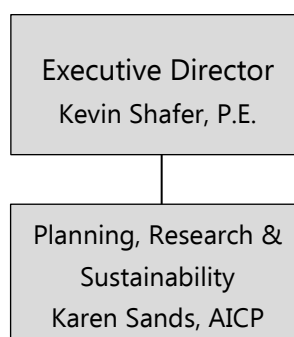
The Division conducts long-range, system-level facilities planning; analyzes potential alternatives for improving the District's capital projects, existing facilities, programs and operating procedures. The Division also manages District assets to provide defined levels of service at the lowest life-cycle costs while maintaining an acceptable level of risk. The Division oversees research that benefits and advances decision-making. Finally, the Division works to move the District toward sustainability in all facets of the District's operations by optimizing the use of green infrastructure, furthering renewable, recyclable, eco-friendly materials, and reducing energy consumption and emissions from fossil fuels.

PLANNING: The Planning group leads the District's long-range efforts to forecast future needs. It also serves as the main point of contact for municipalities, and manages the District's sewer design rules and the surface water & stormwater rule. Planning supports other Divisions and District-wide decision-making with: future development forecasting; data gathering; system modeling; and root-cause analysis. The District's current facilities planning effort is considering full build-out of the planning area using a ground-breaking asset management approach.

ASSET MANAGEMENT: The District's Asset Management Program is part of Planning's efforts to manage infrastructure, facilities, equipment and other assets to achieve organizational objectives. Asset management aims to: use assets to provide defined levels of service; maintain a level of risk acceptable to the organization; and achieve service level and risk objectives at the lowest life-cycle cost. Asset management analyzes business processes, data, information systems and organizational resources in planning, design, construction, operations, and maintenance.

RESEARCH: The research group works with industry partners and universities to conduct sound research to maximize operating efficiencies, reduce the District's carbon footprint and energy consumption, identify renewable energy opportunities, implement new, more efficient technologies, and mitigate threats to current District operations.

SUSTAINABILITY: In addition to meeting regulatory requirements, the District is committed to implementing sustainable practices that have a positive impact on the environment. Since 2010, the Planning, Research & Sustainability Division has led the District's efforts to achieve sustainability in all facets of the District's operations by optimizing the use of renewable, recyclable, and eco-friendly materials, reducing energy consumption and emissions from fossil fuels, and otherwise leading efforts to attain the 2035 Vision.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Director of Planning, Research, and Sustainability	1.0	1.0	1.0
Manager of Engineering Planning	1.0	1.0	1.0
Manager of Sustainability	0.0	0.0	1.0
Plants Program Manager	1.0	1.0	1.0
Asset Management Program Director	1.0	1.0	1.0
Senior Project Manager II	1.0	1.0	1.0
Planning Services Supervisor	1.0	0.0	0.0
Environmental Research Manager	1.0	1.0	1.0
Senior Project Planner	0.0	0.0	1.0
Senior Project Manager	2.0	2.0	3.0
Senior Project Manager - Non-PE	1.0	1.0	2.0
Hydraulic Modeler & Analyst II	1.0	1.0	1.0
Civil Engineer	0.0	0.0	0.0
Project Manager	5.0	5.0	3.0
Project Engineer	1.0	1.0	1.0
Asset Management Analyst I	2.0	2.0	0.0
Asset Management Analyst II	0.0	0.0	2.0
Neighborhood Outreach Coordinator	1.0	1.0	1.0
Quality Assurance Inspector	1.0	1.0	1.0
Engineering Aide	1.0	0.0	0.0
Administrative Coordinator	1.0	1.0	1.0
Total Positions	22.0	21.0	23.0



Local college students install a rain garden as part of the summer work study program.

ACCOMPLISHMENTS

- Awarded over \$2.1 Million in Green Infrastructure Partnership Program
- Rebranded the Green Infrastructure Center of Excellence as the Fresh Coast Resource Center
- Continued progress on the PPI/I program
- MMSD Municipal Portal serves as a single-point for all submittals and municipal information
- Scope 5 energy and greenhouse gas tracking system completion

NEW INITIATIVES

- New strategic plan for the Fresh Coast Resource Center
- Stormwater tree program
- Adopting the Resilience Plan
- Adopting the 2050 Facilities Plan
- Odor assessment study
- Implementing new modeling software for the conveyance system

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Fixed Assets	-	-	-	-	-	0.0%
Personal Services	1,701,698	1,877,066	1,800,072	2,124,485	247,419	13.2%
Contractual Services	891,888	1,901,903	1,944,768	2,093,538	191,635	10.1%
Materials & Supplies	11,598	16,568	23,637	73,100	56,532	341.2%
Gross Division Total	\$2,605,184	\$3,795,537	\$3,768,477	\$4,291,123	\$495,586	13.1%
Charges to Capital	(1,684,679)	(1,655,454)	(1,672,872)	(1,806,162)	(150,708)	9.1%
Net Division Total	\$920,505	\$2,140,083	\$2,095,605	\$2,484,961	\$344,878	16.1%

BUDGET COMMENTS

- Added a Manager of Sustainability to help implement green infrastructure projects.
- A Senior Project Manager transferred from the Office of the Executive Director division to help implement the resiliency plan, neighborhood outreach for sustainable water resource practices, and green infrastructure.
- Increased funding for the construction phase of the lighting upgrade in the Jones Island Drying and Dewatering building. The project will replace old inefficient lighting with new energy efficient technology.
- Funding for a consultant to complete an odor assessment at the Jones Island Water Reclamation Facility.
- Additional funding for materials and supplies as the rain barrel program funding moves into the division from the Community Outreach & Business Engagement division.

GOALS

- Gain public adoption of green infrastructure
- Advance a robust, innovative asset management system
- Implement relevant tasks from the Regional Resilience Plan
- Implement the use of Scope 5 energy and emissions tracking database

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Submit all division-related WDNR reports in a timely fashion	Yes	Yes	Yes
Total gallons of green infrastructure installed	4.1M	3.8M	10.0M
Total customers at the Fresh Coast Resource Center	2,659	1,871	1,500
Percent of capital budget spent on research	0.9%	1.2%	1.0%
Percent of stormwater plan review completed within 10 days of first submittal, within 20 days of resubmittal	100%	100%	100%
Percent of sewer plans reviewed within 60 days	100%	100%	100%

CHALLENGES

- When we make plans, how do we engage the public in relevant ways?
- Additional regulatory requirements from the new WPDES permit
- Maintaining productive relationships with both member and non-member communities
- Monitoring growth and change in the service area



Water Quality Protection

Division Summary

The Division monitors point and non-point source pollution, conveyance system performance, and water quality in Lake Michigan and local rivers. This Division also provides laboratory services to meet the needs of the District. The Division contains five functional groups: Central Laboratory, Conveyance System Monitoring, Field Monitoring, Industrial Waste Pretreatment, and Freshwater Resources Monitoring.

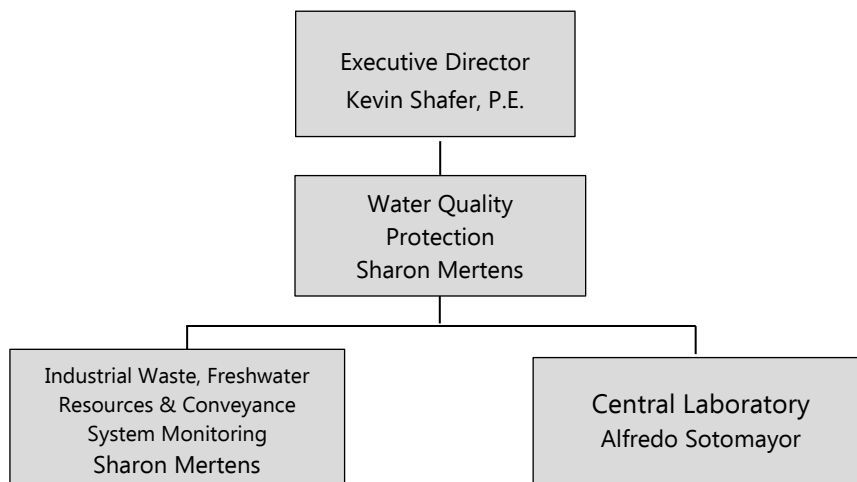
CENTRAL LABORATORY - The laboratory provides quality testing services to meet the District's needs for environmental, product and process testing. The Lab supports the District's permit under the Wisconsin Pollution Discharge Elimination Systems (WPDES), the Industrial Waste Pretreatment Program (IWPP), Freshwater Resources Monitoring, Planning, Milorganite® marketing, plant operations and District projects. The laboratory is accredited to perform regulatory environmental compliance testing and is the only municipal laboratory in the state to have achieved accreditations under the National Environmental Laboratory Accreditation Program (NELAP). The laboratory also holds certification from the Wisconsin Department of Natural Resources and the Wisconsin Department of Agriculture, Trade and Consumer Protection.

CONVEYANCE SYSTEM MONITORING - The District has over 300 various sensors, gauges and meters that are temporarily or permanently installed throughout the service area to measure levels, flows, rain, toxic gases and a variety of other parameters. This group is responsible for analyzing and reporting the data as well as regulatory reporting of conveyance and groundwater data. This group is also responsible for retrieval and quality review of monitoring data from the water reclamation treatment facilities as well as the conveyance system for internal and external customers.

FIELD MONITORING - This group supports the District's need for sample collection, field measurements and flow monitoring in the conveyance system and industrial settings. Their duties include calibration and maintenance of select monitoring equipment.

INDUSTRIAL WASTE PRETREATMENT - This group is responsible for implementation and enforcement of the point source pollution control standards through the mandated Industrial Waste Pretreatment and Mercury Reduction Programs. They work primarily with industries; however, for mercury reduction, the engineers also work with dental offices, schools, and health care facilities. This group is also responsible for the administration of the user charge verification and billing activities.

FRESHWATER RESOURCES MONITORING - This group makes field measurements and collects surface water samples from nearly 100 locations throughout the Milwaukee area watersheds. They are responsible for the preparation of regulatory and program specific reports regarding this data. The water quality data are used to assess the impact of the conveyance system, treatment plant operations and District projects on local waterways.

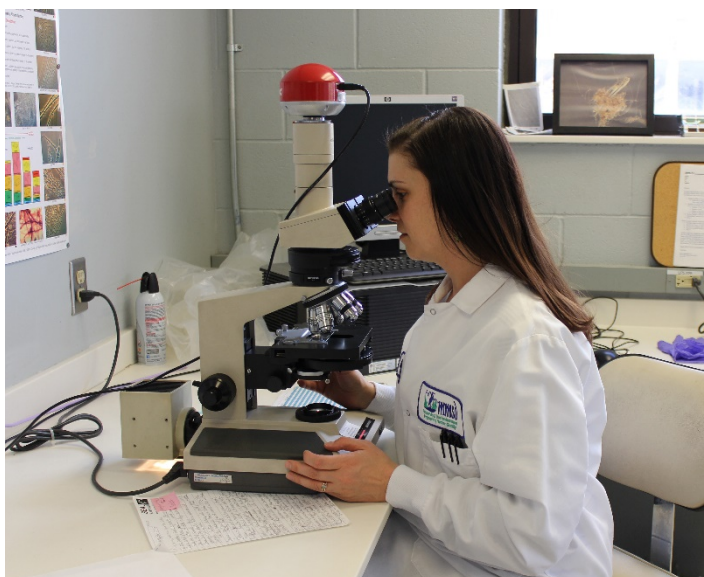


DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Director of Water Quality Protection	1.0	1.0	1.0
Water Resources Program Manager	1.0	1.0	1.0
General Supervisor of Field Monitoring	2.0	2.0	2.0
Freshwater Resources Monitoring Supervisor	1.0	1.0	1.0
Conveyance Systems Data Supervisor	1.0	1.0	1.0
Senior Industrial Waste Engineer	2.0	2.0	2.0
Water Resources Specialist	4.0	4.0	4.0
Monitoring/Sampling Specialist	8.0	8.0	8.0
System Monitoring Data Analyst	3.0	3.0	3.0
Monitoring/Sampling Shop & Field Technician	1.0	1.0	1.0
Monitoring/Sampling Technician	14.0	14.0	14.0
Administrative Coordinator	1.0	1.0	1.0
Laboratory Manager	1.0	1.0	1.0
Laboratory Team Supervisor	2.0	2.0	2.0
Laboratory Project Manager	1.0	1.0	1.0
Quality Assurance Specialist	1.0	1.0	1.0
Laboratory Microbiologist	1.0	1.0	1.0
Laboratory Chemist	3.0	3.0	3.0
LIMS Systems/Database Analyst	1.0	1.0	1.0
Laboratory Technician	10.0	10.0	11.0
Administrative Assistant	1.0	1.0	1.0
Laboratory Helper	1.0	1.0	1.0
Total Positions	61.0	61.0	62.0

ACCOMPLISHMENTS

- Surface Water Quality Report on mmsd.com in user friendly format
- IWPP and Field Monitoring Staff identified and helped to eliminate source of unusual Milorganite® odor
- Lab conducted a special pathogen study for Milorganite® for EPA and DNR
- The Industrial Waste Pretreatment Program revamped its industrial inspection procedures to get comprehensive information and provide more information to industries



NEW INITIATIVES

- New WPDES permit requirements
- Dental Amalgam Federal rule changes to the District's discharge rule
- Upgraded area velocity and level instrumentation
- Proceed with permitted groundwater well abandonment
- S. 13th Street facility upgrades

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Central Laboratory	2,282,115	2,492,163	2,406,360	2,562,642	70,479	2.8%
Industrial Waste & Conveyance Monitoring	3,282,270	3,652,513	3,544,219	4,261,152	608,639	16.7%
Gross Division Total	\$5,564,385	\$6,144,677	\$5,950,579	\$6,823,794	\$679,118	11.1%
Charges to Capital	(1,769,442)	(1,566,713)	(1,966,912)	(1,591,382)	(24,669)	1.6%
Net Division Total	\$3,794,943	\$4,577,963	\$3,983,667	\$5,232,412	\$654,449	14.3%
USES BY EXPENDITURE TYPE						
Fixed Assets	88,410	260,211	192,711	218,000	(42,211)	-16.2%
Personal Services	4,320,467	4,657,504	4,657,504	4,871,131	213,627	4.6%
Contractual Services	487,610	554,246	461,570	600,755	46,509	8.4%
Materials & Supplies	667,898	672,716	638,794	1,133,909	461,193	68.6%
Gross Division Total	\$5,564,385	\$6,144,677	\$5,950,579	\$6,823,794	\$679,118	11.1%
Charges to Capital	(1,769,442)	(1,566,713)	(1,966,912)	(1,591,382)	(24,669)	1.6%
Net Division Total	\$3,794,943	\$4,577,963	\$3,983,667	\$5,232,412	\$654,449	14.3%

BUDGET COMMENTS

- Funding included in fixed assets for two vehicles, a replacement BOD analyzer, an autoanalyzer, a liquid filling dispenser, and a sample receiving refrigerator for the Lab.
- Added a Lab Technician to help with the additional testing needs required by the WPDES permit.
- 2019 budget includes upgrades to 13th Street facility and the Pelagos overhaul.
- Funding included in materials and supplies to replace 175 modems for the flow monitors.

GOALS

- Active training and succession planning to ensure workforce stability.
- Improved collaboration and communication between functional groups and with other divisions.

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Number of survey days for freshwater quality monitoring completed	82	83	82
Number of days of the skimmer on the water	128	111	110
Compliance with DNR reporting requirements for complete and timely submittals	100%	100%	100%
Laboratory analyses meet regulatory-driven hold time requirements.	100%	100%	100%
Related permit data are subjected to an internal review within the constraints of permit deadlines, including the investigation of outlier data.	100%	100%	100%

CHALLENGES

- Additional regulatory requirements from the new WPDES permit
- Regulatory reporting requirements have gotten far more labor intensive.



Community Outreach & Business Engagement

Division Summary

The Community Outreach and Business Engagement division is responsible for providing a host of oversight and support functions aimed at maximizing the use of District resources, while adhering to statutory, Commission, and administrative policies in carrying out District business. Community Outreach and Business Engagement provides procurement services, workforce and business development, public information and outreach, and marketing of Milorganite®, procurement services. The Community Outreach and Business Engagement Division develops and maintains strategically effective relationships with a broad range of publics, including customers, stakeholders, governments, news and social media, youth education, related organizations and employees.

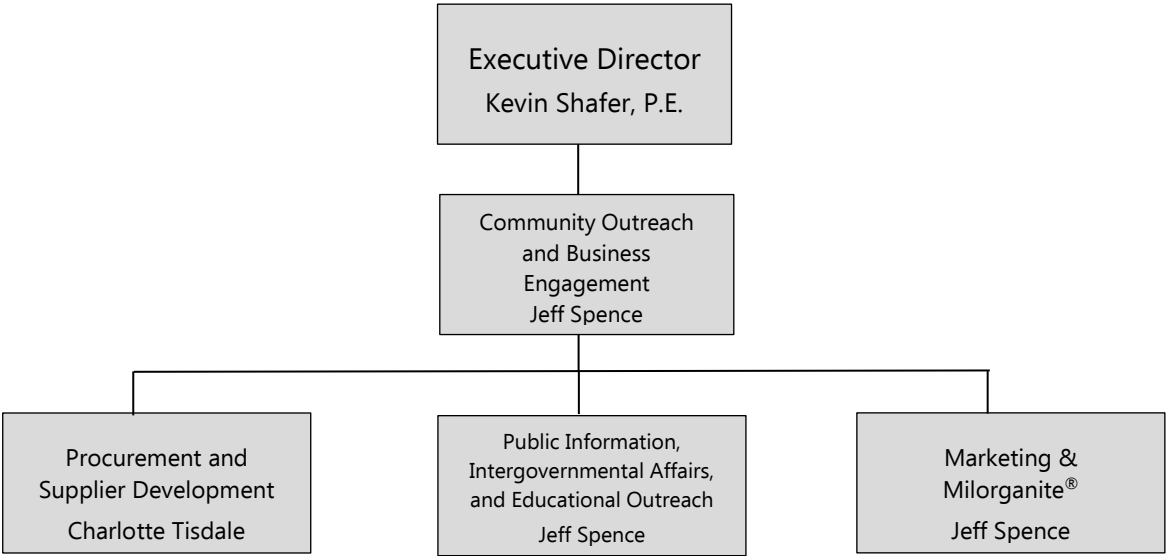
PROCUREMENT AND SUPPLIER

DEVELOPMENT: Serves as the contracting authority of the District. The cost center conducts open, fair, and timely procurement processes founded upon the best practices in public purchasing. Additionally, the cost center is responsible for managing the Small, Women, Minority, and Veteran-owned Business Enterprises (SWMBE) program, the Workforce and Business Development Resource program, and the District fleet.

PUBLIC INFORMATION, INTERGOVERNMENTAL AFFAIRS, AND EDUCATIONAL OUTREACH:

Creates and distributes timely, accurate and relevant information to the public and other audiences. Finally, the cost center manages the Household Hazardous Waste Collection Program, which help minimize storm water pollution.

MARKETING AND MILORGANITE®: Manages the Milorganite® program through coordination of its sales and marketing activities in an increasingly competitive fertilizer market.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Procurement & Supplier Development			
Procurement and Business Development Manager	1.0	1.0	1.0
Procurement Supervisor	1.0	1.0	1.0
SWMBE Coordinator	3.0	2.0	2.0
Procurement Specialist	2.0	2.0	2.0
Administrative Coordinator / Procurement	1.0	1.0	1.0
Receptionist	1.0	1.0	0.0
Public Info., Intergov. Affairs, & Educ. Outreach			
Intergovernmental Coordinator	1.0	1.0	1.0
Public Information Manager	1.0	1.0	1.0
Program Manager - Greenseams®	1.0	1.0	1.0
Outreach Program Coordinator	2.0	2.0	3.0
Graphics Designer	2.0	2.0	0.0
Marketing & Milorganite®			
Director of Community Outreach and Business			
Engagement	1.0	1.0	1.0
Sales and Marketing Manager	1.0	1.0	0.0
Sales and Marketing Manager - LTE	1.0	0.0	0.0
Agronomist	1.0	1.0	1.0
Marketing Specialist	1.0	1.0	1.0
Strategic Accounts Specialist	0.0	0.0	1.0
Customer Services Coordinator	2.0	2.0	2.0
Total Positions	23.0	21.0	19.0

ACCOMPLISHMENTS

- Rebranded the Green Infrastructure Center of Excellence as the Fresh Coast Resource Center
- Collected and disposed of over 1.1 million pounds of household hazardous waste
- Hosted the annual supplier diversity symposium
- Successful contest for new pictures on Milorganite® bags drew in over 1,300 submissions
- Continued the Adopt-a-River program

NEW INITIATIVES

- Anti-plastics campaign
- New non-plastic bags for Milorganite®
- Connect Capital grant
- Increased social media presence



District outreach includes hosting Washington High School students for career day.

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Procurement and Supplier Development	647,753	735,654	649,990	608,246	(127,408)	-17.3%
Public Info/Intergovt Affairs / Educational Outreach	2,127,984	2,282,870	2,149,412	2,181,203	(101,667)	-4.5%
Marketing & Milorganite®	3,715,112	3,712,216	3,710,640	4,273,763	561,547	15.1%
Gross Division Total	\$6,490,849	\$6,730,740	\$6,510,042	\$7,063,211	\$332,471	4.9%
Charges to Capital	(385,045)	(400,295)	(397,474)	(347,760)	52,535	-13.1%
Net Division Total	\$6,105,804	\$6,330,445	\$6,112,568	\$6,715,451	\$385,006	6.1%
USES BY EXPENDITURE TYPE						
Fixed Assets	30,822	28,000	33,401	0	(28,000)	-100.0%
Personal Services	1,722,421	1,776,437	1,668,093	1,651,174	(125,263)	-7.1%
Contractual Services	3,975,767	4,210,227	4,066,741	4,651,903	441,676	10.5%
Materials & Supplies	761,839	716,076	741,808	760,134	44,058	6.2%
Gross Division Total	\$6,490,849	\$6,730,740	\$6,510,042	\$7,063,211	\$332,471	4.9%
Charges to Capital	(385,045)	(400,295)	(397,474)	(347,760)	52,535	-13.1%
Net Division Total	\$6,105,804	\$6,330,445	\$6,112,568	\$6,715,451	\$385,006	6.1%

BUDGET COMMENTS

- Two Graphics Designers and one Receptionist position transferred to the Office of Executive Director division.
- One Outreach Coordinator Limited Term Employee is created in the Public Information, Intergovernmental Affairs and Educational Outreach cost center to help with grant-funded work.
- In the Marketing and Milorganite® cost center, the contract services for the offsite packaging contract increases by \$367,192, and the packaging supplies budget increases by \$139,558 over the 2018 budgeted level due to increased demand for retail product, and a change in both bag size and material.
- Fuel for the fleet is budgeted in the Facilities Management cost center beginning in 2019.

GOALS

- Better integrate all forms of communication to deepen relationships with targeted audiences
- Improve the organization's capacity to use social media platforms
- Utilize the relationship management software to improve relationships with targeted audiences

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Small business enterprise participation	6.3%	12.1%	5%
Women-owned business enterprise participation	3.9%	4.6%	2%
Minority-owned business enterprise participation	10.5%	6.2%	13%
Total Milorganite® revenue	\$10.3M	\$10.0M	\$10.0M
Total Milorganite® tons sold	45,349	43,392	43,392
Greenseams® acres acquired	214	64	50

CHALLENGES

- Producing Milorganite® in an increasingly regulated market
- Decentralized internal communication functions impact extent and quality of external communications



Information Technology Services

Division Summary

The Division conducts all of the District's information technology business including telecommunications and provides specialized expertise to assist in many of the District's major areas of operations, including environmental monitoring, construction and contracts, government finance, procurement, human resources and records.

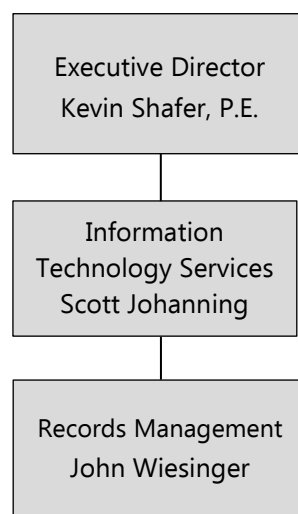
OPERATIONS: The technical staff support the Districts computer, mobile, printing, phones, backup and patching services. They respond to technical support incidents and service requests ensuring District employees and contractors are able to meet their own obligations.

APPLICATIONS: The Division ensures data integrity within District supported applications and acts as a main support channel to external supported applications such as software as service.

INFRASTRUCTURE: The District's back-end infrastructure consists of these services: Networking, WIFI, Servers, Database, Data Storage, Telecommunication and Wireless Communications (SCADA). The Division leverages District services to ensure technology infrastructure remains as uninterrupted as possible.

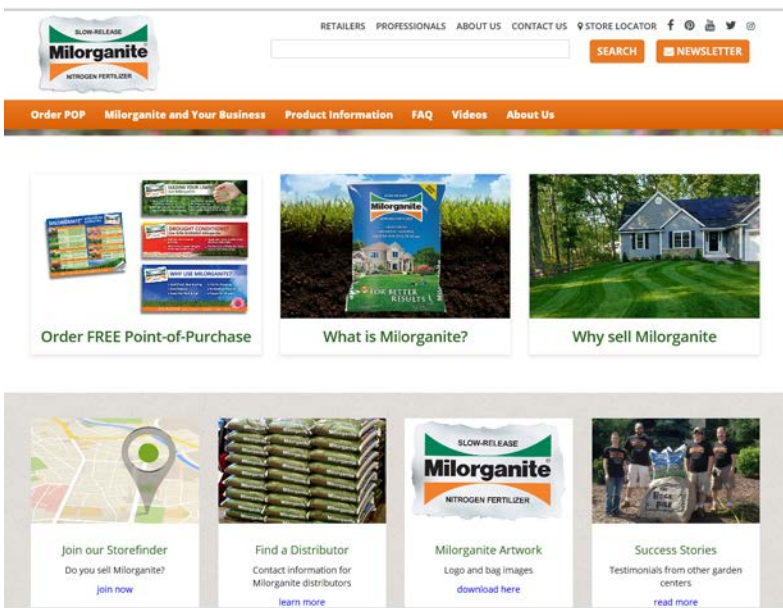
SECURITY: Cyber security is a top concern for the Division with continuous monitoring of the District's technology infrastructure for security threats. They collaborate with Risk Management to assess threats and provide cyber security expertise to the rest of the District.

RECORDS MANAGEMENT: The Records Management Department's mission is to develop, implement, and manage a district-wide, comprehensive, integrated, systematic Records Management Program designed to comply with Wisconsin Public Records laws. The Records Management Program focuses on the preservation of the District's official records and informational assets (both paper and electronic) by providing direction, to all divisions and departments, for the management, access, retention, storage, protection, and disposition of those assets.



DIVISION STAFFING

Position Title	2017 Budget	2018 Budget	2019 Budget
Director of Information Systems	1.0	1.0	1.0
Systems & Data Warehouse Supervisor	1.0	1.0	1.0
Application Development Supervisor	1.0	1.0	1.0
Data Center Supervisor	1.0	1.0	1.0
Security Administrator	1.0	1.0	1.0
Information Technology Project Leader	1.0	1.0	1.0
Senior Systems Analyst	5.0	4.0	4.0
Senior Data Warehouse Analyst	1.0	1.0	1.0
ArcSDE Specialist	1.0	1.0	1.0
Asset Management Database Coordinator	1.0	1.0	1.0
Data Center Specialist	1.0	1.0	1.0
Network Specialist	1.0	1.0	1.0
Systems Analyst	0.0	1.0	1.0
Web Applications and Site Developer	1.0	1.0	1.0
Desktop Technician	3.0	3.0	3.0
Information Governance Manager	0.0	0.0	1.0
Records Information Management Technician	0.0	0.0	2.0
Total Positions	20.0	20.0	23.0



Milorganite (R) PoP Website

ACCOMPLISHMENTS

- Deployed a new District wide application to manage service requests, incidents, and problems.
- Contracted a formal Security Assessment at the end of 2017, which includes: Penetration testing of ICS network managed by Veolia; Health Insurance Portability and Accountability Act (HIPAA) Gap Analysis; General IT Risk and Vulnerability Assessment and Critical Infrastructure guidelines and best practices.
- IT trained Marketing staff to use the point-of-purchase (POP) marketing system and are now more than six months into utilizing the fully functioning automated POP application.
- P-card system fully implemented

NEW INITIATIVES

- IT Division restructured the individual teams to match the primary services
- IT Infrastructure team collaborated with Veolia IT to consolidated isolated systems at Jones Island into a common network fiber ring with enhanced monitoring and improved redundancy.

SUMMARY OF OPERATING EXPENDITURES

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
USES - OPERATING EXPENSES						
Information Services	-	4,251,839	4,416,111	4,610,688	358,850	8.4%
Records Management	-	-	0	305,281	305,281	100.0%
Gross Division Total	\$0	\$4,251,839	\$4,416,111	\$4,915,969	\$664,130	15.6%
Charges to Capital	-	-	-	(27,893)	(27,893)	100.0%
Net Division Total	\$0	\$4,251,839	\$4,416,111	\$4,888,076	\$636,237	15.0%
USES BY EXPENDITURE TYPE						
Fixed Assets	-	47,000	-	-	(47,000)	-100.0%
Personal Services	-	1,818,299	1,818,299	2,032,293	213,994	11.8%
Contractual Services	-	2,179,580	1,983,174	2,368,644	189,064	8.7%
Materials & Supplies	-	206,960	614,638	515,032	308,072	148.9%
Gross Division Total	\$0	\$4,251,839	\$4,416,111	\$4,915,969	\$664,130	15.6%
Charges to Capital	-	-	-	(27,893)	(27,893)	100.0%
Net Division Total	\$0	\$4,251,839	\$4,416,111	\$4,888,076	\$636,237	15.0%

Note, prior to 2018, the Information Technology Services was budgeted in the Office of the Executive Director division. Beginning in 2019, the Records Management cost center is budgeted in the Information Technology division rather than the Legal Services division.

BUDGET COMMENTS

- The Personnel Services account increases due to the addition of three staff members in the Records Management cost center transferring from the Legal Services division to the Information Technology Services division in 2019.
- The \$2,368,644 for contractual services funds software licenses and maintenance, software consultants, and hardware maintenance. Also funding is included for the offsite storage of physical records.
- The \$515,032 in materials and supplies includes funding for new and replacement hardware and software purchases, including replacing network switches and staff desktops, laptops, and smartphones.
- In 2019, the charges to capital budget increases (a greater credit to the Operations and Maintenance budget) over the 2018 budgeted level due to the Records Management cost center joining the division.

GOALS

- Cyber security education for all employees
- Upgrade the financial system and voice infrastructure; both solutions will improve collaboration, data sharing and reduce complexity.

CHALLENGES

- Managing cyber security risks and continued implementation of measures recommended from the security assessment
- Implement a data architecture and governance strategy to improve data sharing, collaboration and e-records management.

WORKLOAD INDICATORS

	2017 Actual	2018 Estimate	2019 Target
Software and hardware replacement schedules are updated annually	100%	100%	100%
Annually evaluate how new software systems interact with existing software systems	100%	100%	100%



Other Expenditures

Fringe Benefits

The fringe benefits accounts cover the cost of providing insurance benefits to active employees including medical, dental, vision, life, and disability insurance, unemployment and workers' compensation, Social Security and Medicare, as well as the City of Milwaukee's Employee Retirement System contributions. Retiree benefits funded through the fringe benefit account include health and life insurance.

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Retirement System Contribution	\$3,577,123	\$2,703,547	\$3,429,455	\$3,450,000	\$746,453	27.6%
Group Health Insurance	4,199,073	4,562,191	3,097,334	3,404,169	(1,158,022)	-25.4%
Group Life Insurance	263,887	258,605	276,964	302,830	44,225	17.1%
Worker's Compensation Insurance	60,688	120,000	92,984	120,000	-	0.0%
Social Security	1,352,743	1,430,263	1,379,791	1,442,775	12,511	0.9%
Unemployment Compensation Insurance	6,762	10,000	29,188	10,000	-	0.0%
Group Dental Insurance	180,867	175,000	191,283	238,210	63,210	36.1%
Disability Insurance	44,307	50,000	40,888	50,000	-	0.0%
Active Employee Subtotal	\$9,685,450	\$9,309,606	\$8,537,886	\$9,017,983	(\$291,623)	-3.1%
Group Health Insurance - Retiree	6,287,052	5,969,323	5,289,702	\$5,926,685	(42,639)	-0.7%
Group Life Insurance - Retiree	197,143	243,680	208,916	\$271,152	27,472	11.3%
Retiree Subtotal	\$6,484,195	\$6,213,003	\$5,498,619	\$6,197,837	-\$15,167	-0.2%
Fringe Benefit Total	\$16,169,645	\$15,522,610	\$14,036,505	\$15,215,820	(\$306,790)	-2.0%

RETIREMENT SYSTEM CONTRIBUTION

The District is a member agency of the City of Milwaukee Employee's Retirement System (CMERS). CMERS is funded through two methods: employer contributions and member (employee) contributions. In 2013, CMERS adopted policy for the employer contributions to create a budget stabilization method of funding. The change requires that employers make contributions to the system for a five-year period based on a set percent of payroll regardless of any individual year's funding ratio, versus doing an annual review of funding status compared to funding thresholds as was done in the past. This allows predictability for budgeting for all agencies participating in the retirement system. The first five-year period will conclude in 2018. In 2019, the rate is 8.77 percent of payroll. The District will also make payment to CMERS for former District staff who transitioned first to the UWS contract and are still employed with Veolia Water until their retirement. In addition to the employer contribution, District staff make member contributions through payroll deductions. For all staff hired before 1/1/2014, the deduction is 5.5 percent of payroll. For staff hired on or after 1/1/2014, the deduction is 4 percent; the change relates to plan design changes adopted by CMERS beginning 1/1/2014. The 2019 estimate also assumes an expense to ensure the District's obligation is fully funded.

HEALTH CARE

The District is self-funded for active and some retiree health care. The cost of health care is offset by active and some retiree contributions. In order to protect the District from volatile expenditures related to catastrophic claims, the District subscribes to a stop loss policy that takes effect after \$150,000 has been paid in claims for a single member. Since 2005, the District has averaged just over two members reaching the stop loss threshold each year. In 2019, plan design changes will be implemented and resulting savings are anticipated in the budgeted level.

Active Employees The 2019 budgeted level is budgeted \$1,158,022 lower than the 2018 budget level after considering the 2017 actual expenditures and the 2018 year-end projection. The 2018 year-end projection is increased 6.5 percent based on the recommendation of the District's benefit consultant.

Retirees The District funds its retiree healthcare obligation on a pay as you go basis. The 2019 budgeted level is relatively similar to the 2018 budgeted level after considering the past three-year actual experience and the 2018 year-end projection. Again, the 2018 year-end projection is increased 6.5 percent based on the recommendation of the District's benefit consultant.

OTHER FRINGE BENEFITS

In 2019, active employee dental insurance increases 36 percent to reflect new insurance rates. Life insurance is budgeted based off of the premium the District pays on both active employee salaries and retiree salaries. The 2019 budget increases over the 2018 adopted budget level to include the new salaries.

WELLNESS COMMITTEE Rising health care costs have prompted many organizations to look for new ways to lower expenses. One way to lower costs is to improve the health of the District's workers. Healthy people cost less, are more productive, and contribute more to the District's performance. Workplace wellness programs offer ways to help people get healthy and stay healthy. The Wellness Committee helps individuals practice healthy lifestyles and change unhealthy habits to reduce their risks of developing high-cost health problems.

The goal of a workplace wellness program is to encourage employees and their families to adopt and practice healthy lifestyles to improve their physical and mental well-being. The goal is achieved by making the work environment a place where:

- Healthy behaviors are promoted, encouraged and supported
- Employees have easy access to programs to help them make better lifestyle choices
- Employees have the opportunity to practice healthy lifestyle behaviors



The Wellness Committee supported employees in running the Run 4 Water MKE 5K charity run/walk.

Charges to Capital

Charges to capital reflect adjustments to cost center operating expenses, including indirect charges and laboratory charges for work performed for capital projects and facilities planning purposes, and expenditures under the Veolia Water Milwaukee operating contract that relate to the Capital Improvement Program. These accounts are designed to offset operating expenses and appropriately transfer the expenses. In 2019, charges to capital decrease 6.5 percent from the 2018 level.

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Direct Charges to Capital	(4,071,376)	(4,111,851)	(4,143,807)	(3,904,353)	207,498	-5.0%
Indirect Charges to Capital	(9,674,162)	(9,176,568)	(9,459,980)	(9,031,226)	145,342	-1.6%
Charges to Veolia	(796,470)	(750,000)	(269,995)	(200,000)	550,000	-73.3%
Charges to Capital – Other	(464,109)	(512,244)	(477,611)	(468,000)	44,244	-8.6%
Charges to Capital - Total	(15,006,117)	(14,550,663)	(14,351,392)	(13,603,579)	947,084	-6.5%

DIRECT CHARGES TO CAPITAL From 2018 to 2019, direct charges to capital decrease by 5.0 percent, based off of more work qualifying for O&M funding. Direct charges relate to District labor hours associated with work on capital projects.

INDIRECT CHARGES TO CAPITAL The District's indirect rate assigns costs chargeable to capital projects and allocates indirect costs on the basis of direct salaries and wages. Indirect costs are costs that are not identified specifically with a particular unit process or final cost objective, including administrative support costs and fringe benefits. The final capital projects indirect cost rate is audited each year by the District's outside auditor and a carry-forward adjustment is made for any surplus or deficit of funds recovered from the indirect cost rate.

CHARGES TO CAPITAL - VEOLIA In 2019, Veolia will continue to work on a number of District projects and charge its staff time to the Capital Budget. With the changes in the extension of the operating contract, in 2019, Charges to Capital - Veolia decrease by 73.3 percent from than the 2018 level.

CHARGES TO CAPITAL - OTHER These costs include lab analyses for capital projects. The District projects a similar workload in 2019 from the 2018 level.

Unallocated Reserve

The Unallocated Reserve fund provides a reserve for unanticipated or increased expenses that may arise during the year. The District's Commission must authorize the use of funds from the Unallocated Reserve. Once approved, funds are then transferred from the Unallocated Reserve to specific cost center line item accounts rather than being expended directly.

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018 Budget
Budgeted Unallocated Reserve	\$0	\$2,943,380	\$0	\$3,000,000	\$56,620	1.9%

The 2019 budgeted level is approximately 2.95 percent of net division expenditures, complying with policy requiring the Unallocated Reserve to be budgeted between 2.0 percent and 3.5 percent of net division expenditures. The 2019 budgeted level is relatively comparable to the 2018 budgeted level.





Milwaukee Metropolitan Sewerage District

260 West Seeboth Street
Milwaukee WI 53204

Date Adopted: October 22, 2018

Adopting the Capital Budget for the 2019 Fiscal Year

RESOLVED, by the Milwaukee Metropolitan Sewerage Commission, that the Executive Director's 2019 Proposed Capital Budget, setting forth:

- Total Project Cost estimates for 231 capital projects totaling \$1,418,298,832;
- Anticipated revenues and available funds of the District for capital purposes of \$102,272,000 and the anticipated capital expenditures of the District of \$202,374,000 resulting in a net local share of \$100,102,000 for the fiscal year ending December 31, 2019; and
- The Six-year Long-range Financing Plan, including \$783,372,000 in project expenditures and \$656,403,000 in debt service expenditures for a combined total of \$1,439,775,000 in capital expenditures from 2019 through 2024. The capital expenditures are expected to be funded from \$663,972,000 in tax levies; \$183,675,000 in non-member billings; \$243,000,000 in District-issued General Obligation bonds and notes; \$332,062,000 in state loans; \$10,153,000 in federal and state aid and grants; \$6,557,000 in interest and other income; and \$355,000 in available funds on hand for a combined total of \$1,439,775,000

is hereby adopted.

I, Anna Kettlewell, Commission Secretary of the Milwaukee Metropolitan Sewerage District, do hereby certify that the above is a true and correct copy of Resolution No. 18-108-10, adopted by the Milwaukee Metropolitan Sewerage Commission at a meeting held on 10/22/2018.





Capital Budget

The Capital Budget funds the District's investment in long-term assets supporting the District's mission to cost-effectively protect the quality of the region's water resources.

Capital Improvement Program and the Long-Range Financing Plan

Expenditures funded through the Capital Budget are typically for multi-year projects; therefore, planning is a critical facet of the District's capital budgeting process. As such, the District prepares a Capital Improvement Program (CIP) to ensure that the District appropriately plans for future capital needs. The CIP includes all known projects and identifies their start and end-dates by phase. As new projects are identified each year, they are included in the CIP. Depending on priorities and financial constraints, projects in the CIP may be advanced or delayed to meet objectives. Projects included in the CIP are primarily identified through the District facilities plans, watercourse and flood management, asset management and annual requests, and cost reimbursement capital programs. These are described below.

2020 FACILITIES PLAN – ADAPTIVE IMPLEMENTATION SCHEDULE In 2007, the District completed a ten-year facilities plan to address future population, land use, and wastewater asset needs within the District's service area, using the watershed approach, to identify capital improvements necessary for wastewater, conveyance, treatment, and watercourse and flood management needs through 2020. The adaptive plan process allows for revised recommendations should greater growth than anticipated occur.

WATERCOURSE AND FLOOD MANAGEMENT There are six watersheds within the District's service area: the Kinnickinnic River, Lake Michigan Tributary Drainage, the Menomonee River, the Milwaukee River, Oak Creek, and the Root River. The District has discretionary authority to perform flood mitigation on these waterways. This work includes rehabilitation and removal of concrete, deepening and widening of channels for flood management purposes, and construction of detention basins, pumping stations, and levees.

ASSET MANAGEMENT AND ANNUAL REQUESTS Each year as new issues are identified by the District, new projects may be added to the CIP.

COST REIMBURSEMENT CAPITAL PROGRAMS The District administers several capital programs that provide funding for municipal work that benefits the District's system, some of which include municipal cost reimbursement programs.

Projects in the CIP reflect current cost and scope estimates as of a point in time in the individual project's life cycle. The current cost estimate for individual projects is expressed in the budget-year dollars.

Long-Range Financing Plan

The long-range financing plan approved by the Commission identifies the level of funding from each source for capital expenditures for the period 2019 through 2024. The District's long-range financing plan uses projections that are preliminary and may change. The District believes that it has identified the major capital projects expected to be required to comply with current statutes and regulations applicable to the District and the services it provides and further believes that, in the absence of significant changes to these statutes and regulations, the current projections will be sufficient to allow the District to meet its mandates and fulfill its statutory requirements.

The following objectives are the cornerstone of the District's long-range financing plan:

- 25 percent average cash financing of project expenditures over the six-year financing plan
- Outstanding debt no more than 2.5 percent of equalized property value
- Consistency with the implementation of current approved facility plan

The 2019 long-range financing plan estimates \$783,372,000 in project expenditures and \$656,403,000 in debt service expenditures for a combined total of \$1,439,775,000 in capital expenditures from 2019 through 2024.

2019 Capital Budget

Revenues/Funding

The main sources of revenue for the capital program are the tax levy and ad valorem-based billings to non-member communities. The 2019 Capital Budget includes a tax levy increase of 1.75 percent as compared to a 4.0 percent increase projected in the long-range financing plan in the 2018 Capital Budget. In addition, the District receives funding through low-interest Clean Water Fund Program (CWFP) loans and issues its own general obligation bonds to finance capital expenditures. In 2019, debt financing provides 11.2 percent of overall funding of capital project expenditures. Other sources of funds include federal and state aid, interest income, and the use of available funds on hand.

The property tax rate for the 2019 Capital Budget is \$1.69 per thousand dollars of equalized valuation. Equalized values for District is 3.6 percent in 2019 and averages 2.5 percent for the remaining years in the six-year plan. For nonmember communities, equalized values are projected to increase 4.2 percent in 2019 and 3.4 percent thereafter.

Expenditures/Disbursements

The District has four capital expenditure accounts: Water Reclamation Facilities, Conveyance Facilities, Watercourse and Flood Management, and Other Projects and Programs. In the 2019 Capital Budget, Water Reclamation Facilities and Conveyance Facilities comprise 20 percent and 12 percent, respectively, of the budget. Watercourse and Flood Management projects total 12 percent of expenditures, and Other Projects and Programs total 10 percent of expenditures.

The largest portion of the District's capital disbursement in the six-year plan is for debt service payments. In the 2019 Capital Budget and debt service payments are 46 percent of expenditures and disbursement.

For further detail on the District's capital expenditures and disbursements, please see the Uses of Funds section of this Capital Summary, each capital account section, and the Debt Service section.

Impact on the Operating Budget

The District undertakes life-cycle costing in the analysis of capital projects. This includes identifying, when possible, what the change in O&M costs will be following the completion of each capital project. These analyses are useful not only for decision-making to select the lowest life-cycle cost option among competing alternatives, but also for properly forecasting expenditure changes to be included in future O&M budgets. Operating and maintenance costs should be carefully considered in deciding which projects move forward in the CIP.

The majority of the District's CIP is focused on the improvement, replacement, or a rehabilitation of existing water reclamation and conveyance infrastructure rather than the construction of new facilities to expand capacity. As such, it is often the case that replacements do not result in changes from the current level of budgeted O&M expenditures. In project summaries, the O&M impact will be stated as "no significant impact".

When the District CIP undertakes new initiatives or new technologies, it is more likely to result in new O&M expenditures or incremental changes to ongoing O&M expenditures. Sometimes the project could result in avoided costs or savings, such as the Landfill Gas Project. In CIP project summaries, the O&M impact section will describe the changed condition, start date, and annual budget impact.

In addition, the District's capital budget includes capital programs which support the District's capital infrastructure and mission through improvements to municipal or privately-owned infrastructure. In such cases, the District's capital expenditures would generally not result in changes to the current level of O&M expenditures (as the resulting improvements are not operated or maintained by the District) but instead help to preserve the capacity and long-term cost-effective operation of the District's system.

Highlights of the 2019 Capital Budget

The highlights of the 2019 Capital Budget and long-range financing plan include:

- Rehabilitation and replacement of existing facilities
 - Drying and Dewatering Facilities
 - Basin H MIS PCB Remediation and Rehab
 - Interplant Sludge Pipeline Improvements
- Landfill Gas
 - Waste Management Metro landfill gas treatment system
 - Dryer burner conversion to landfill gas
- Watercourse
 - Western Milwaukee
 - Kinnickinnic River Projects
- 2050 Facilities Plan Completion
- Fresh Coast Solutions – Phase 2
- Green Solutions



Guide to the 2019 Capital Budget

The 2019 Capital Budget is divided into seven sections: Summary, Capital Sources of Funds, Water Reclamation Facilities, Conveyance, Watercourse and Flood Management, Other Projects and Programs, and Debt Service. The Summary section provides an overview of Capital Budget sources and uses of funds and discusses how capital project estimates are made and refined during the life-cycle of a capital project. Sources of Funds provides additional detail on each source and related budget assumptions. The following four sections organize the capital accounts and describe all projects funded in 2019, as well as any changes in project scope or total project cost from the 2018 Adopted Capital Budget. In the 2019 Capital Budget, the estimated cost of each project is expressed in current dollars. An escalation factor of 2.0 percent for future years cost is included in a separate capital project account. The final section provides information on the District's debt obligations and debt service payments.

2019 Capital Budget Summary of Revenues and Expenditures (in thousands)

	2017 Actual	2018 Adopted Budget	2018 Estimate	2019 Capital Budget	Change from 2018 Budget	% Change from 2018 Budget
Revenues						
Tax Levy	98,380	98,380	98,380	100,102	1,722	1.75%
Non-member Communities	30,877	30,172	30,669	30,146	(26)	-0.1%
Interest and Other Income	10,056	1,497	3,760	1,249	(248)	-16.6%
Federal and State Aid	1,921	1,812	3,257	1,631	(181)	-10.0%
CWFL Loans	12,850	31,514	17,307	31,514	(0)	0.0%
District Bonds and Notes	86,155	0	0	0	0	0.0%
Bond Premium	0	0	0	0	0	-
Total Revenues	240,239	163,375	153,373	164,642	1,267	0.8%
Available Funds						
Use of (Additions to) Available Funds	(55,975)	36,117	18,454	37,733	1,616	4.5%
Total Revenues and Available Funds	<u>\$184,264</u>	<u>\$199,492</u>	<u>\$171,827</u>	<u>\$202,374</u>	<u>\$2,882</u>	1.4%
Expenditures						
Capital Program Group						
Water Reclamation Facilities	22,797	48,260	29,086	44,898	(3,362)	-7.0%
Conveyance Facilities	7,551	9,726	6,736	8,055	(1,671)	-17.2%
Watercourse and Flood Management Projects	10,963	10,164	10,164	14,534	4,370	43.0%
Other Projects	18,356	22,428	14,248	25,388	2,960	13.2%
Total Capital Program Group Expenses	59,668	90,578	60,234	92,875	2,297	2.5%
Debt Services Payments						
From Tax Levy and Available Funds	100,011	97,183	99,863	103,106	5,923	6.1%
Reserved in Debt Service Fund	24,585	11,730	11,730	6,393	(5,337)	-45.5%
Debt Service	124,596	108,913	111,593	109,499	586	0.5%
Total Expenditures	<u>\$184,264</u>	<u>\$199,492</u>	<u>\$171,827</u>	<u>\$202,374</u>	<u>\$2,882</u>	1.4%
Tax Rate per \$1,000 of Equalized Value	\$1.75	\$1.73	\$1.73	\$1.69	(\$0.04)	-2.0%

Note: The sum of rounded components may not equal the total due to rounding

2019 Capital Budget

Long-Range Financing Plan

(Dollars in thousands)

	Estimate 2018	Six-Year Capital Improvements Program						Six-Year Total
		2019	2020	2021	2022	2023	2024	
Beginning balance	\$96,310	\$77,856	\$40,123	\$93,954	\$46,969	\$103,806	\$73,564	\$77,856
Tax levy	98,380	100,102	104,106	108,270	112,601	117,105	121,789	663,972
Non-member Billings	30,669	30,146	31,324	29,217	33,591	31,318	28,079	183,675
Interest & other	3,760	1,249	860	1,290	850	1,303	1,004	6,557
Federal and State Aid	3,257	1,631	1,655	1,679	1,704	1,729	1,754	10,153
CWF Loans	17,307	31,514	67,897	70,115	72,391	54,602	35,543	332,062
District Bonds/Notes	0	0	91,000	0	70,000	0	82,000	243,000
Total revenues	153,373	164,642	296,842	210,572	291,137	206,057	270,169	1,439,419
Use of (Additions to)								
available funds	18,454	37,733	(53,831)	46,985	(56,836)	30,241	(3,936)	355
Total sources	171,827	202,374	243,011	257,557	234,301	236,298	266,233	1,439,775
Less								
Water Reclamation Facilities	29,086	44,898	59,798	40,054	32,926	40,315	65,535	283,526
Conveyance Facilities	6,736	8,055	25,293	39,806	50,366	34,783	18,533	176,835
Watercourse & Flood Mgmt	10,164	14,534	20,256	33,898	23,953	33,880	49,589	176,111
Other Projects / Programs	14,248	25,388	25,220	25,499	23,949	22,787	24,056	146,899
Projects / Programs	60,234	92,875	130,567	139,258	131,193	131,765	157,714	783,372
Existing MMSD GO debt service	38,579	35,104	34,931	34,984	27,601	22,424	22,425	177,469
Existing CWFL debt service	71,322	72,387	71,390	68,047	54,355	52,845	51,915	370,940
Other Debt Service	1,693	1,692	1,692	1,691	1,691	1,691	1,690	10,147
Future CWFL Debt Service	0	316	2,657	6,940	11,371	15,717	18,931	55,932
Future MMSD GO debt service	0	0	1,775	6,637	8,089	11,856	13,558	41,914
Debt service	111,593	109,499	112,444	118,299	103,108	104,533	108,519	656,403
Total uses	171,827	202,374	243,011	257,557	234,301	236,298	266,233	1,439,775
Ending balance	\$77,856	\$40,123	\$93,954	\$46,969	\$103,806	\$73,564	\$77,500	\$77,500
Tax rate / \$1000	\$1.73	\$1.69	\$1.72	\$1.74	\$1.77	\$1.80	\$1.82	
% Change in Tax Levy	0.00%	1.75%	4.0%	4.0%	4.0%	4.0%	4.0%	
Annual % cash financing	0%	66%	-22%	50%	-9%	59%	25%	26.6%
G.O. debt at year-end	\$813,196	\$760,556	\$832,774	\$811,079	\$877,341	\$855,083	\$892,361	
Debt as % of Eq. Value	1.35%	1.21%	1.29%	1.22%	1.28%	1.21%	1.22%	

Notes

1. 2019 beginning balance is net of \$35.6M reserved for capital reimbursement programs: Private Property I/I and Green Solutions.
2. Tax levy growth limited to 1.75% for 2019 and 4% thereafter. To achieve tax rates shown, available working capital is placed in a debt service fund to abate the tax levy as necessary.
3. Change in District equalized value is 3.6% in 2019 and averages 2.5% thereafter; and change in non-member equalized value averages 4.25% in 2019 and 3.4% thereafter.
4. Investment of available funds at 1.7%.
5. Future District bond issues structured as 20-year level debt service at 3.65% in 2019 and 4.15% through 2024.
6. Future Clean Water Fund Loan debt service assumed at 55% of District bond rate, or 2.01% to 2.28% from 2019 through 2024.

Uses of Funds

The Capital Budget funds capital expenditures and disbursements in four project-related capital expenditure accounts and debt service. The District defines a capital expenditure and disbursement as the costs of acquiring, purchasing, adding to, leasing, planning, designing, constructing, extending, and improving all or any part of a sewerage system and of paying principal, interest or premiums on any indebtedness incurred for these purposes. In 2019, the District plans to spend \$92.9 million on capital projects. This represents a 2.5 percent increase from the 2018 budgeted level of \$90.6 million. Of the total 2019 capital budget, the District will spend \$44.9 million on Water Reclamation Facilities; \$8.1 million on Conveyance Projects; \$14.5 million on Watercourse and Flood Management Projects; and \$25.4 million on Other Projects and Programs. Debt service for principal and interest payments on District bonds and State Clean Water Fund Program loans increases by 0.5 percent from 2018 budgeted level, to \$109.5 million.

Capital Projects and Capital Programs

Capital projects include any of several activities which are integrally related to and may result directly in the creation of or modifications to a District asset. Such activities include, but are not limited to, feasibility studies, facilities planning studies, engineering and design studies and plans, and actual construction. A single project may consist of one or more of these activities and may or may not include construction.

A capital program, on the other hand, is a program that provides funding to the municipalities the District serves so that the municipality may do work that is mutually beneficial to both entities. The District administers several capital programs that provide funding for municipal work that benefits the District's system, some of which include municipal cost reimbursement programs.

Project Identification In the past the District used Primavera Project Management software to plan and track the progress of the Capital Improvement Program. Currently a project is underway to move to a new subscription-based software solution. Both systems make use of a project numbering system, and these project numbers are used throughout the budget. In order to facilitate the use of the new software some existing projects have been renumbered and are identified as such in the project descriptions.

Project Descriptions For each project with anticipated expenditures in 2018, there is a description included in this document. Each of these projects also includes a table with summary information indicating the start and finish dates. Note that these dates represent the achievement of a major milestone, such as substantial completion, and funds may be included after these dates for close-out or other activities.

Inflation and Cost Estimates All projects listed in the 2019 Capital Budget reflect current (2018) dollars, with an escalation factor of 3.5 percent. The total project cost includes all estimated costs for activities to complete a single project. Depending on the total project cost, the inflationary impact may appear as a significant dollar increase. Inflation assumptions are included as a capital expenditure for each capital account in the years 2019-2024 to provide a reflection of overall expenditures to be financed in the out-years of the long-range financing plan. The methodology used is seventy-five percent of projected increases in the Consumer Price Index, although comparisons were made to other indices including the Engineering News-Record index for construction costs. This approach recognizes that a significant amount of project expenditures are committed in prior years. Moreover, project scope and schedule changes in out-years allow a degree of flexibility in the estimates. The 2019 Capital Budget includes each capital project's total project cost in a table with each project description. The policy provides emphasis on project expenditure control for the total project cost. Projects in the financing plan have been included based on current cost and scope estimates. As these projects progress through their project life cycle, refinements are made to cost and scope.

An individual project's total project cost may also increase as inflationary impacts are accounted for in future budget requests. A project's stage in its life cycle will determine the impact of inflation. As an example, a project that is under construction has an inflation factor built into the construction contract, whereas a project under design will likely have cost increases solely associated with inflation of labor and material costs. The overall cost of the Capital Improvement Program will not be impacted by this annual adjustment, as noted above, inflation is accounted for in total in each capital account, not by project. The current stage of a project within its life cycle is indicated by a basis of estimate. Each project in the Capital Improvement Program uses a basis of estimate, as defined below.

CE – Conceptual Estimate
BE – Bid / Award Estimate

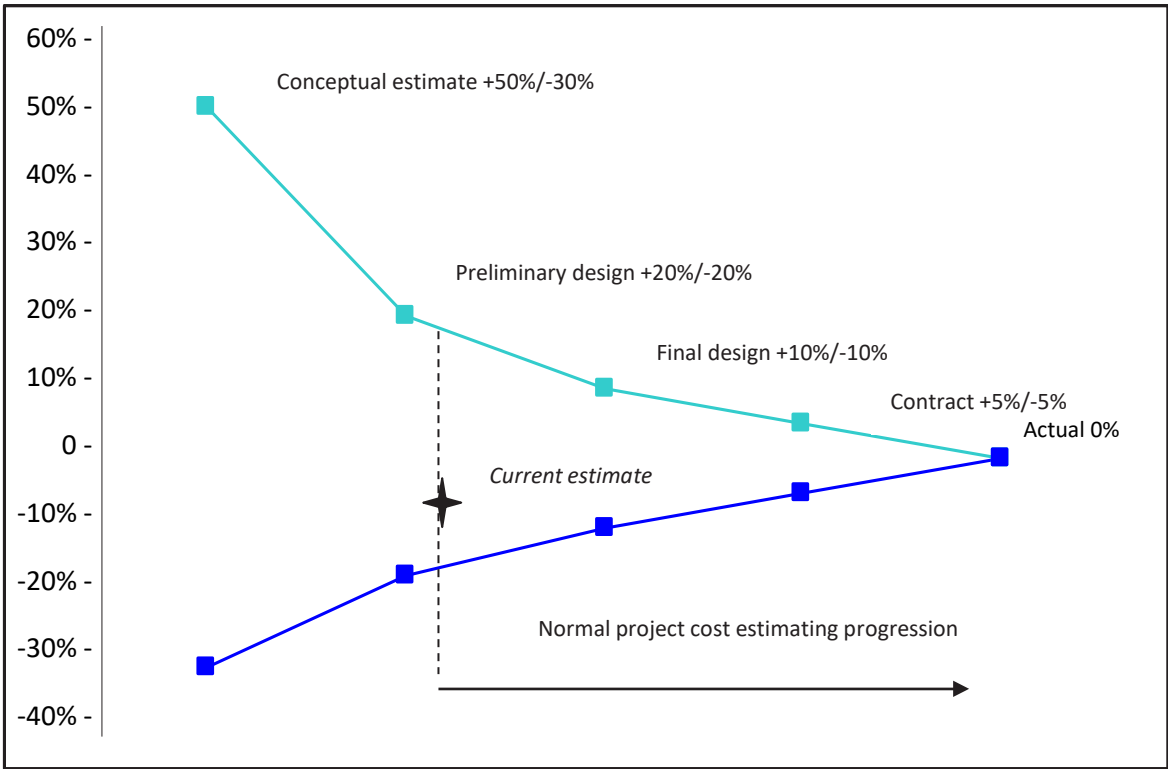
IP – In Progress Estimate
DE – Design Estimate

PE – Preliminary Engineering Estimate

As projects move through the project life-cycle, cost estimates become more refined. Cost estimates for capital projects can change dramatically for a variety of reasons. A project may be conceived in a facilities plan or by District staff with an initial cost estimate. As the project is further defined, the cost estimate may change as refinements are made, actual quantities of materials needed for the project are determined, and site conditions are more thoroughly investigated. Even after construction contracts are awarded actual construction costs may change through contract modifications for differing site conditions, contaminated soils, and field conditions that are different than anticipated in the design. Industry standards for a conceptual estimate, for example, indicate that the final construction amount may be 50 percent higher or 30 percent lower than the estimate. As the project is more developed, the cost estimates become more accurate. After the construction award is made, the average project's final cost may be between plus or minus 5 percent of the original estimated total project cost, including the amount of the construction contract award.

Project Life Cycle Impact on Total Project Cost Estimate

Expenditure Estimate Phase Fluctuation

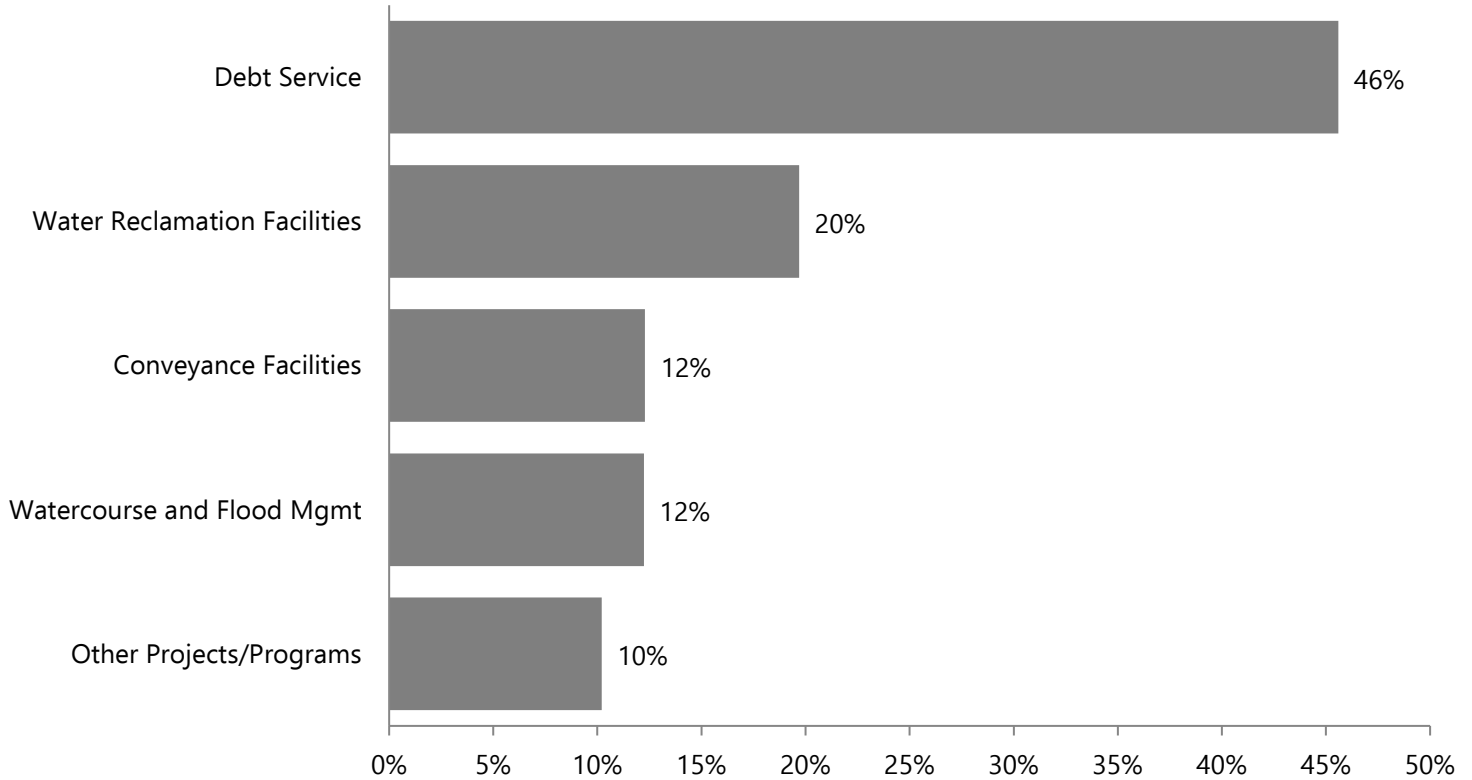


Debt Service

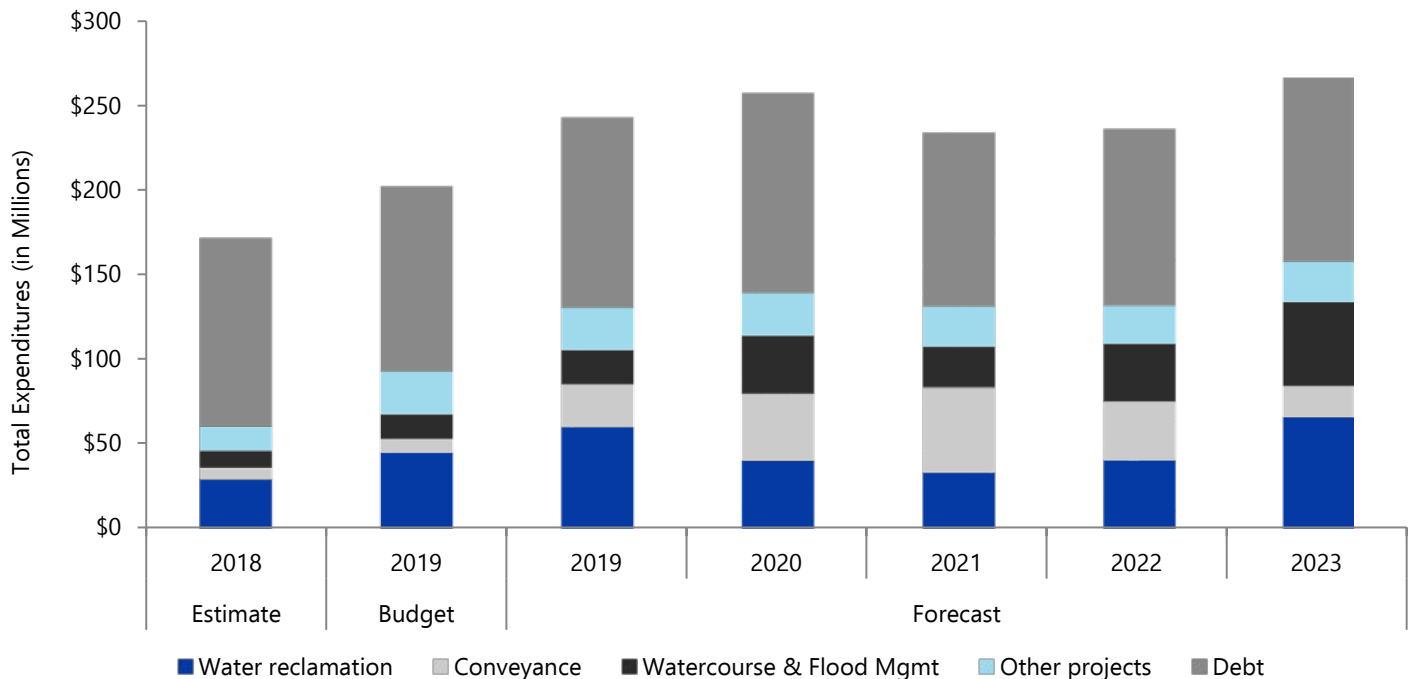
For each District-issued general obligation bonds, notes, or low-interest loan from the Clean Water Fund Program, State law requires the District to levy an irrevocable, direct annual tax in an amount sufficient to pay the principal and interest on the bonds, notes, or loans for the following year. The tax levy needed to fund the debt service may be reduced in any year by the amount of any surplus money in the Debt Service Fund available to pay debt service. Gross debt service to be paid in 2019 is estimated to be \$109.5 million, all of which is for tax supported obligations.

For more information about Debt service, please refer to the *Debt Service* section in the Capital Budget.

Total Uses of Funds
2019 – 2024 Capital Improvement Program
\$1,439,775,000



2018-2024: Capital Improvement Program Expenditures and Disbursements



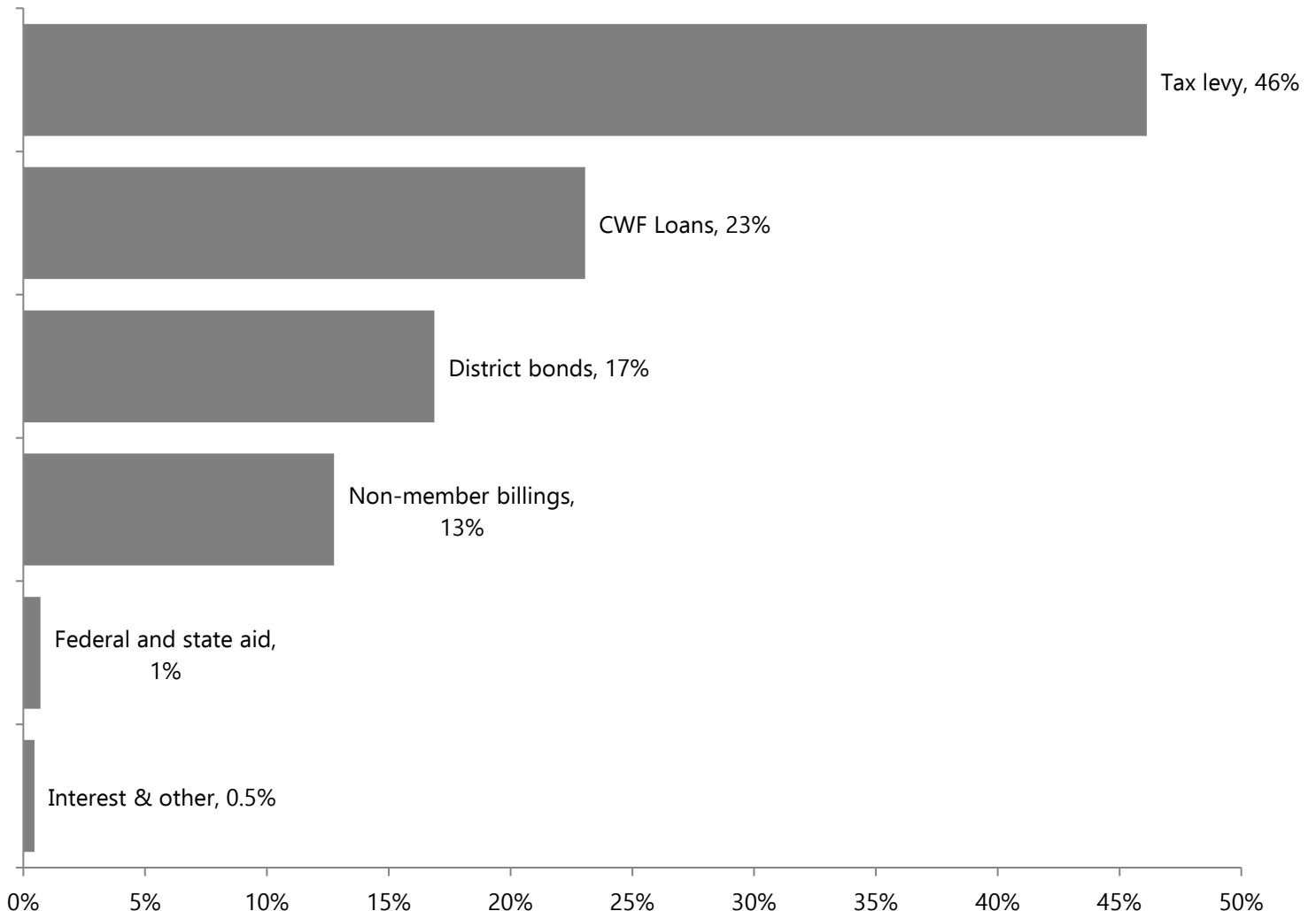
Capital Sources of Funds/Revenues

The District uses a variety of sources to fund the capital program with an objective 25 percent average cash financing of project expenditures over the six-year financing plan, and outstanding debt no more than 2.5 percent of equalized property value for member communities.

The District's primary source of revenue is the tax levy. Other sources of funding and revenue for the Capital Budget include:

- Non-member billings
- Federal and State Aid
- Interest and other income
- Loans
- Bonds
- Debt Service Sinking Fund and Other Available Funds

Total Sources of Funds 2019 – 2024 Long-Range Financing Plan \$1,439,775,000



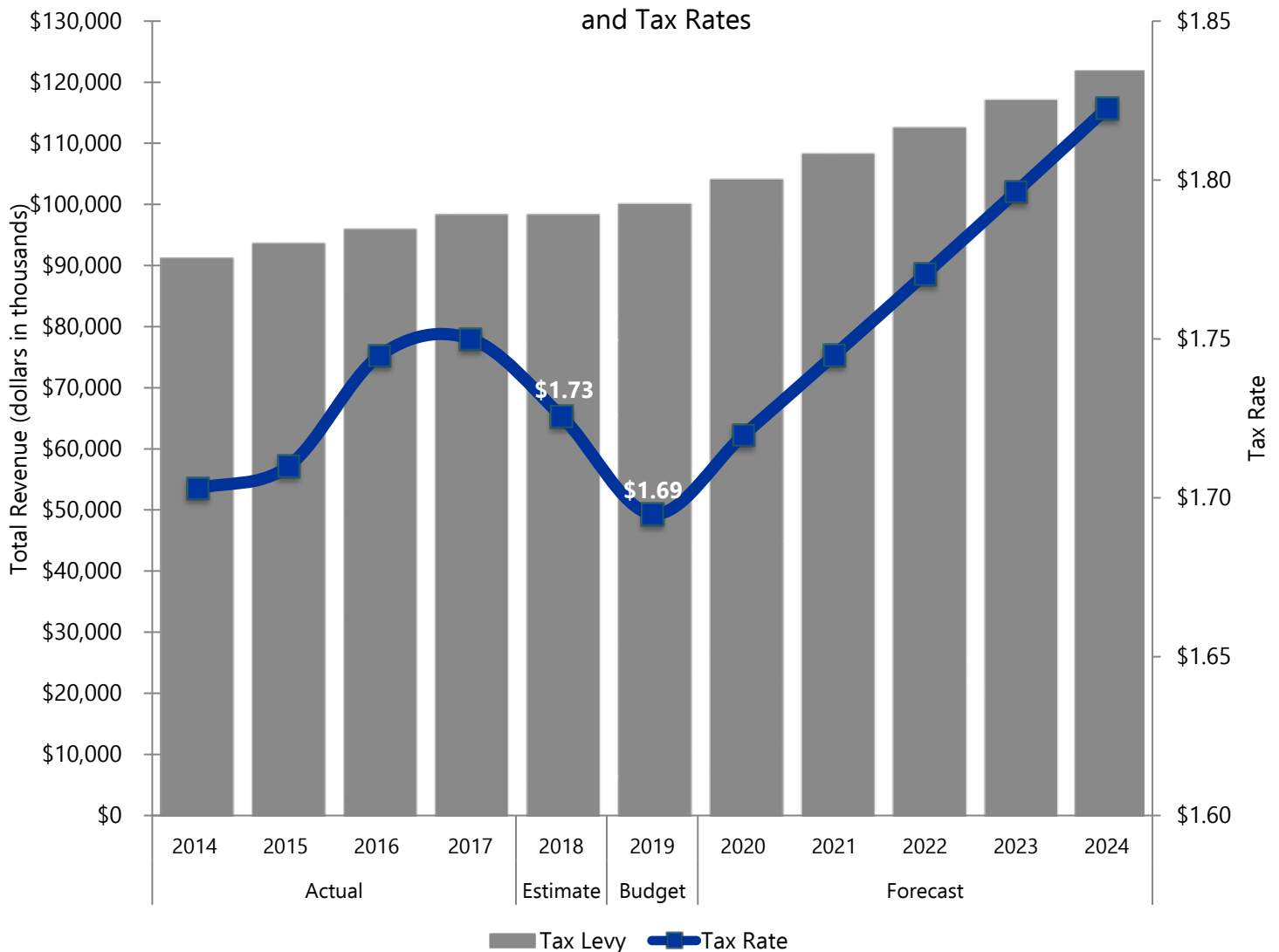
Tax Levy

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
Tax Levy	\$98,380	\$98,380	\$98,380	\$100,102	\$1,722	1.75%

The tax levy is the main source of revenue for the capital program and is used to finance the acquisition, extension, planning, design, construction, adding to or improvement of land, waters, property, or facilities for sewerage purposes, and to pay principal and interest on bonds, notes, or loans as provided in the fiscal year capital budget. The tax is levied upon all taxable property in the District (as equalized for State purposes), pursuant to Sec. 200.55(6), Stats., a non-repealable, direct annual tax in an amount sufficient to pay the principal of and interest on the District-issued bond or notes or low-interest loans from the Clean Water Fund Program for the following year. The District's tax levy is carried on to the tax roll of each city, town, or village wholly or partially within the boundaries of the District and collected in addition to all other taxes and in the same manner and at the same time, all as provided by law and in addition to all other State taxes. In any given year, the amount of any surplus funds in the Debt Service Fund available to pay debt service is used to reduce the tax levy.

In 2019, the tax levy is \$100.1 million, a 1.75% increase from the 2018 budgeted level. The tax levy results in a tax rate of \$1.69; a decrease of \$0.04 per \$1,000 of equalized value from \$1.73 per \$1,000 for 2018.

2014-2024: Actual and Projected Tax Levies
and Tax Rates



Non-member Billings

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
Non-member billings	\$30,877	\$30,172	\$30,669	\$30,146	(\$26)	-0.1%

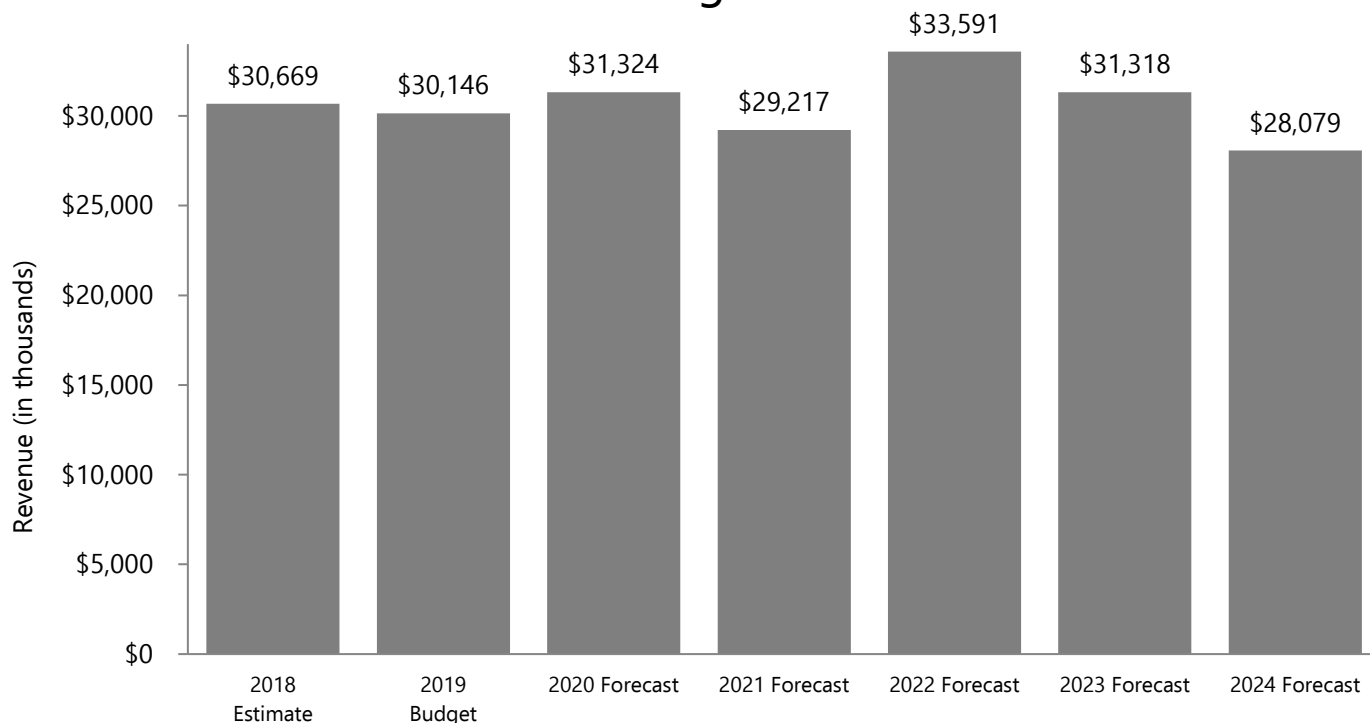
Non-member billings come from ten communities outside the District's legal boundary but within the District's service area. Non-member communities are billed a capital charge in place of levying a property tax. Non-member communities receive a billing rate credit for watercourse and flood management projects to which those communities are not tributary. In September 2017, the Commission approved a policy change to allow financial billing credits to non-member communities that opt out of the District's green infrastructure (GI) program.

In 2019, non-member billings are budgeted at approximately \$30.1 million, a decrease of \$0.3 Million or 0.1 percent from the 2018 budgeted level.

Non-member communities receive a billing rate credit for watercourse and flood management expenditures to which those communities are not tributary. Beginning in 2018, eight municipalities have opted out of District green infrastructure programs, and if a municipality elects that option then green infrastructure expenditures are not done in that municipality and it also receives a green infrastructure credit. Once a non-member municipality opts out of the District's green infrastructure initiatives and requests the green infrastructure credit, it will remain in effect until the non-member municipality requests to opt back in. On an annual basis a non-member municipality may elect to opt back in. Once a municipality opts back in, it cannot opt back out in future years.

The chart below shows non-member billings and the impact of the watercourse credit and green infrastructure credit estimate. As watercourse expenditures on non-tributary watercourses or green infrastructure program expenditures increase, the estimated credit also increases. Watercourse expenditures are forecast to increase in 2020-2024. See *Watercourse and Flood Management* and *Other Projects* capital account sections for further detail.

2018 - 2024 Non-member billings revenue



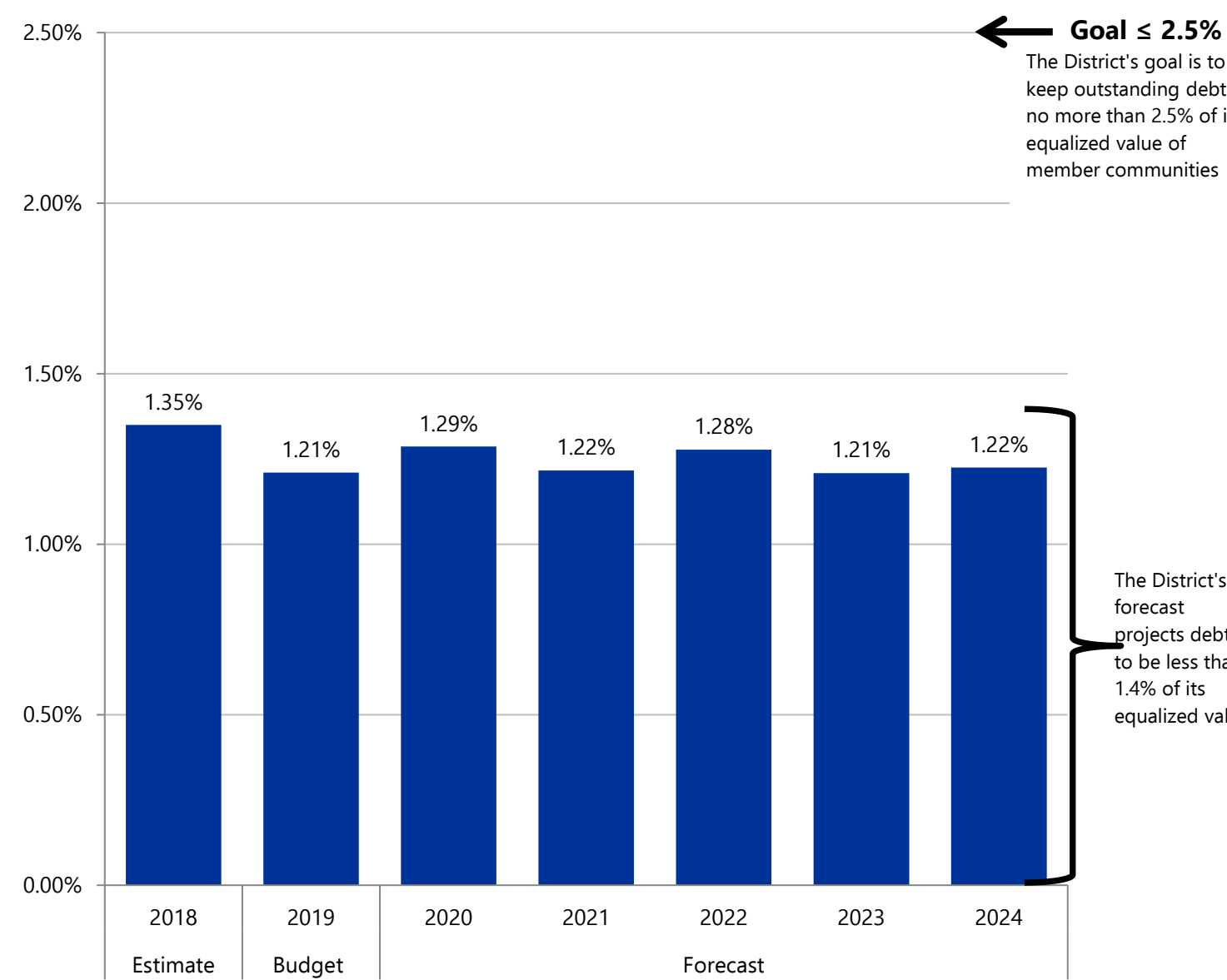
District Bonds & Notes

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
District Bonds & Notes	\$86,155	\$0	\$0	\$0	\$0	0.0%

Per Commission Policy 1-73.18, Debt Policy, the District intends to keep outstanding general obligation debt to 50 percent of the limit prescribed by the State of Wisconsin Statute, Section 67.03 which has a limit of 5 percent of the equalized valuation of the taxable property within the District. Also, the District shall maintain debt funding levels consistent with its credit objectives and long-range financing plan. The District typically issues 20-year, level payment, long-term debt in the form of its own general obligation bonds or notes.

In 2019, the District does not plan to issue any new bonds or notes.

2018-2024: Debt as a % of Equalized Value



Loans

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
Loans	\$12,850	\$31,514	\$17,307	\$31,514	(\$0)	0.0%

Debt sold directly to the State of Wisconsin will be used when the District undertakes capital projects that are eligible to receive below-market rate loans from the State of Wisconsin Clean Water Fund Program, established under section 144.21 and 144.2415 of Wisconsin Statutes, that provides low-interest loans for the construction of wastewater treatment works, non-point source pollution projects and estuary projects. In addition, and situationally contingent, the District may use other sources of loans that may provide zero or reduced-rate benefits for certain projects, such as energy efficiencies.

In 2019, the District expects to receive approximately \$31.5 million from State Clean Water Fund Program loans to fund capital projects and an additional \$300.5 million from 2020 through 2024.

Interest and Other Income

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
Interest and Other	\$10,056	\$1,497	\$3,760	\$1,249	(\$248)	-16.6%

The District earns interest by investing its available cash balance. Per Commission Policy 1-73.17, Investment Policy, the District may invest funds in accordance with all District policies, State statutes, and Federal regulations to achieve preservation of capital and protection of investment principal, sufficient liquidity levels, appropriate levels of diversification, and attachment of a market rate of return no less than the Local Government Investment Pool Fund. The investment of available funds is budgeted at 1.7 percent.

Other income may include revenues from the sale of capital assets, or project-specific payments from private or public sources, and credit payments from the federal government for the District's \$50 million Build America Bond (BAB) issues.

Federal and State Aid and Grants

Source of Funds (in thousands)	2017 Actual	2018 Budget	2018 Estimate	2019 Budget	Change from 2018 Budget	% Change from 2018
Federal and State Aid and Grants	\$1,921	\$1,812	\$3,257	\$1,631	(\$181)	-10.0%

The District seeks grant opportunities from a variety of federal and state sources to fund capital projects.

In 2019, the District expects to receive approximately \$1.6 million in state aid for tax exempt computers.

Debt Service Sinking Funds

In accordance with section 67.11 (1) of the Wisconsin Statutes the District is required to establish and maintain a debt service fund for the payment of principal and interest on bonds and notes used in financing its capital improvements program. The District maintains a separate account for each of its own outstanding debt issues and one account for debt obtained through the State of Wisconsin Clean Water Fund Loan Program.

Annually, State law requires the District to levy an irrevocable tax sufficient in amount to pay the principal and interest on the debt as it comes due in the following year. Taxes collected from this levy are placed into the debt service fund account and used to pay the annual debt service. The required tax levy may be abated, or reduced, in any year by the fund balance available in the Debt Service Fund. Earnings from the investments in the debt service fund accounts, remain, until used, a part of the debt service fund accounts.

Money shall not be withdrawn from a debt service fund and used for any purpose other than the purpose for which the fund was created until that purpose has been accomplished. After all of the outstanding debt has been paid and retired, any balance in any debt service fund account may be transferred out and used as directed by the Commission.

The source of funds for the District's Debt Service Fund are as follows:

- funds raised by taxation for the purpose of making principal and interest payments on District obligations,
- the premium on District issued bonds/notes that have been sold above par value and accrued interest,
- all moneys accruing to the borrowed money fund which are not needed, and which obviously cannot be needed for the purpose for which the money was borrowed,
- funds from working capital for the purpose of abating the annual tax levy for purposes of the subsequent fiscal year. State law requires the District to levy an irrevocable, direct annual tax in an amount sufficient to pay the principal of and interest on the bonds or notes for the following year for each District-issued bond or low interest loan from the Clean Water Fund Program. The required tax levy may be abated by the transfer of working capital or reduced, in any year by the surplus fund balance available in the Debt Service Fund.

Gross debt service to be paid in 2019 for tax supported obligations is estimated to be \$107,806,977. Gross debt service is reduced by surplus funds in the Debt Service Fund, resulting in net debt service of \$106,495,000. The requested transfer of \$6,393,350 from working capital to the Debt Service Fund would further reduce net debt service and the required tax levy to \$100,101,650, which is a 1.75% increase from last year's levy.

Calculation of Transfer from Working Capital to Debt Service Fund to Fund General Obligation Debt Service

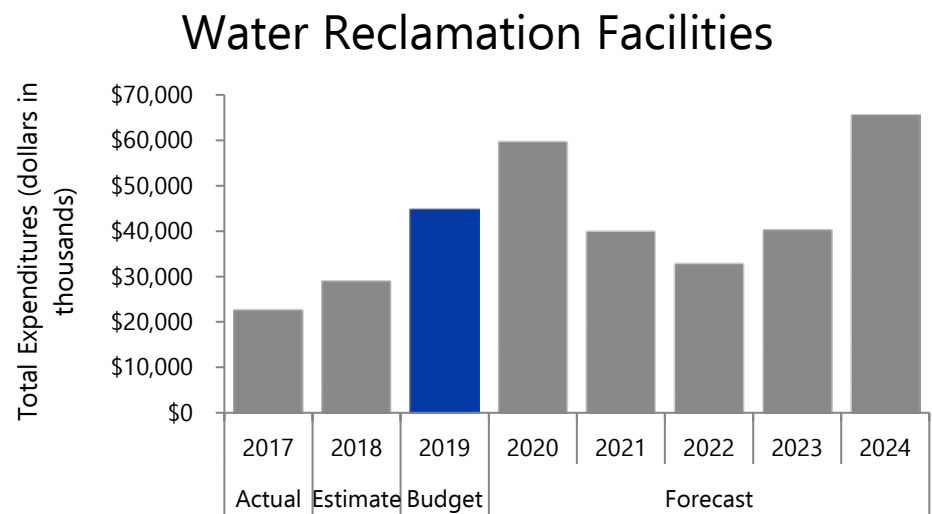
	Gross Debt Service	Less Surplus in Debt Service Fund	Net Debt Service
District General Obligation Bonds and Notes	\$35,103,732	\$328,732	\$34,775,000
Clean Water Fund Loans	\$72,387,245	\$983,245	\$71,404,000
New Clean Water Fund Loans	\$316,000	\$0	\$316,000
Total Debt Service Sinking Fund	\$107,806,977	\$1,311,977	\$106,495,000
Intergovernmental Loan - Ryan Creek*	\$1,692,163		
Total Debt Service	\$109,499,140		
Less Tax Levy (1.75% increase from prior year)			\$100,101,650
Transfer from Working Capital			\$6,393,350

*This loan is not secured with pledge of tax levy



Water Reclamation Facilities

The District operates two water reclamation facilities through a contract with Veolia Water Milwaukee. The facilities provide sewage treatment services for 18 cities and villages within the District’s legal boundary and to all or parts of 10 municipalities outside Milwaukee County.



Jones Island Reclamation Facility

Located on a peninsula in the Milwaukee harbor, the Jones Island Water Reclamation Facility is the oldest operating activated sludge plant in the country. Because of its historic leadership in wastewater treatment, the facility has been designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers and has been placed on the National Register of Historic Places. The plant was originally constructed in 1925, with a capacity of 85 million gallons per day (MGD). After expansions in 1935 and 1952, the treatment capacity increased to 200 MGD. With the completion of the Water Pollution Abatement Program (WPAP) in 1994, the daily maximum design flow at Jones Island for full secondary treatment is 300 MGD. The peak (hourly) design capacity for full secondary treatment is approximately 330 MGD; full capacity with 60 MGD in-plant diversion is 390 MGD. Current average daily flows to the plant are 112 MGD.

Wastewater treatment at Jones Island consists of primary treatment, secondary treatment, advanced treatment, and solids processing. In the primary treatment phase, wastewater is held in large circular tanks called clarifiers to allow heavier solids to settle to the bottom and lighter solids to float to the top. After removal of the solids, the water flows to the secondary or biological activated sludge process that uses bacteria and other microorganisms to consume soluble pollutants in the water. The wastewater then flows to the secondary clarifiers where the biosolids are removed for the production of Milorganite®, an organic fertilizer. In the advanced treatment process, clear water is chlorinated to kill any harmful bacteria. Before being discharged to Lake Michigan, any remaining chlorine is removed by adding a neutralizing chemical to ensure no fish toxicity.

South Shore Reclamation Facility

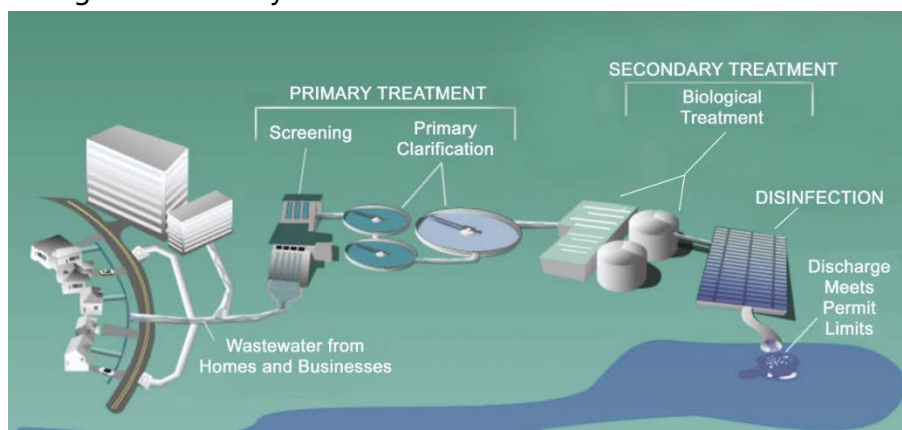
Located to the south of Jones Island in Oak Creek, the South Shore Water Reclamation Facility was constructed in 1964 as a primary treatment facility with a capacity of 60 MGD. The plant was expanded in 1974, to include secondary treatment, advanced treatment involving phosphorus removal and nitrification to remove ammonia. The design capacity of South Shore is 250 MGD Maximum Day and 300 MGD Peak Hour. Current average daily flows to the plant are 100 MGD, mostly from the southern and western portions of the District service area. Sludge generated by the South Shore treatment process is either pumped via the interplant pipeline to Jones Island for processing into Milorganite® or sent to digesters at either Jones Island or South Shore for anaerobic digestion. The digestion process destroys up to 50 percent of the solids and produces methane gas used to provide electricity for the plant.

Interplant & Landfill Gas Pipelines

An interplant pipeline connects the Jones Island and South Shore Water Reclamation Facilities. The landfill gas pipeline is responsible for transporting landfill gas from its source to the Jones Island Facility for use. The use of landfill gas is in place of natural gas and provides the District reductions in the emissions of greenhouse gases.

The 2019 Capital Budget includes \$44.9 million for work on various water reclamation facility projects. Please refer to project detail on the following pages for information on each project's purpose, scope, cost estimate and impact on the O&M budget.

Sewage Treatment System



Source: EPA

Jones Island Water Reclamation Facility

Primary Treatment

Primary treatment at Jones Island involves preliminary and primary treatment of incoming wastewater. Preliminary treatment removes large and untreatable material such as wood, rags, sand, and grit. Next, the preliminary-treated water is collected in large tanks, called primary clarifiers, which allows heavier solids to settle to the bottom of the tanks and lighter solids to float to the top. The goal of the process is to effectively remove material that can damage downstream equipment and solids that cannot be treated biologically.

ID #:	Name:	Phase	Start	Finish	Cost
J01013	Preliminary Facility Electrical Upgrade	Design	Feb-19	Nov-20	\$555,991
		Construction	Mar-21	Apr-23	\$4,029,068
		Post-Constr.	Jun-23	Oct-23	\$6,266
		Total			\$4,591,325
		Previously Approved Total			\$3,998,455
		Increase/(Decrease)			\$592,870

Project Description

The purpose of this project is to design and construct electrical system upgrades to replace the existing systems in the preliminary treatment facility due to updated design standards. The project scope includes the Influent Wet Well Area, Influent Operating Area, Low Level Pump Drive Area, Ramp Area, High Level Pump Drive Area and Screenings Area. The change in total project cost is due to increased labor and construction costs with the scope addition of replacement of screw pump motors which are associated with this project. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J01019	JI Force Main Assessment	Prelimin. Eng	Apr-17	Aug-20	\$737,060
		Total			\$737,060
		Previously Approved Total			\$650,007
		Increase/(Decrease)			\$87,053

Project Description

The purpose of this project is to ensure integrity of a critical force main utilized to convey inline storage system discharge to the JI WRF. The project scope includes an engineering analysis of the existing condition of the 72-inch ductile iron force main via accurate and comprehensive measurement of the current pipe wall thickness and an assessment of the rates of corrosion along with recommendation of corrective actions as necessary. The change in total project cost is due to inflation and reflection of actual bid awarded for engineering work. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J01021	Grit Basin Equipment Replacement	Prelimin. Eng	Jul-18	Nov-18	\$50,795
		Design	Feb-19	Sep-19	\$162,801
		Construction	Jan-20	Mar-21	\$1,154,738
		Post-Constr.	Apr-21	Jul-21	\$5,337
		Total			\$1,373,671
		Previously Approved Total			\$1,189,935
		Increase/(Decrease)			\$183,736

Project Description

The purpose of this project is to improve the preliminary treatment process of grit removal. Grit is inorganic material such as sand and gravel, which if not removed from the wastewater, can cause excessive wear on downstream process equipment. A total of six grit basins, each with a grit mechanism, collect and remove grit from the wastewater by settling the grit to the bottom of the basin, then pumping the grit from the basin for offsite disposal. The scope of the project is to replace Grit Mechanisms #1, #3, #4, #5, and #6, which have experienced significant corrosion and wear. Replacements at each grit basin include a drive tube, suction tube, drive system, and controls. In addition, this project includes grit pump improvements at all six grit basins to reduce downtime and improve reliability. The change in total project cost is due to adding a preliminary engineering phase to evaluate available grit pumping technologies and select the best technology for the application at Jones Island. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J01024	Harbor Siphon Structures & Adjacent Asset Modifications	Design	Feb-18	Dec-18	\$471,830
		Construction	Mar-18	Aug-19	\$4,762,200
		Post-Constr.	Aug-19	Feb-20	\$5,432
		Total			\$5,239,462
		Previously Approved Total			\$1,500,000
		Increase/(Decrease)			\$3,739,462

Project Description

The purpose of this project is to restore and maintain the structural integrity of the Harbor Siphon structures, the associated sewers, and the Inline Storage System (ISS) Force Main. The scope of the project includes excavation to expose existing sewers and ISS Force Main and to identify the source of wastewater that is being discharged, grout injection, and installation of internal pipe seals at leaking joints. Site investigation provided results and recommendations for restoration. The contractor will install piling, underpin structures, sewers, and the ISS Force Main. This project was created by Commission action in March 2018, before the full scope of work was known. The change in total project cost is due to the better understanding of scope requirements which now include installation of piles and underpinning of the associated assets to mitigate future settlement. No significant operating budget impact is expected.

Jones Island Water Reclamation Facility

Secondary Treatment

After the solids are removed in Primary Treatment, wastewater flows to the secondary or biological activated sludge process. In this process, primary treated effluent and return activated sludge are mixed (mixed liquor), and large amounts of air are pumped into this mixture to permit bacteria and other microorganisms to consume soluble oxygen-demanding pollutants in the water. The pollutants are broken down to mainly cell mass, carbon dioxide and water. This mixed liquor is then routed through the secondary settling basins where the biological solids settle.

ID #:	Name:	Phase	Start	Finish	Cost
J02012	Aeration System Diffusers Replacement	Prelimin. Eng	Jun-15	Dec-19	\$163,252
		Design	Oct-20	Mar-22	\$458,710
		Construction	May-22	Jun-23	\$3,091,742
		Post-Constr.	Jul-23	Apr-24	\$6,096
		Total			\$3,719,800
		Previously Approved Total			\$3,614,750
		Increase/(Decrease)			\$105,050

Project Description

The purpose of this project is to improve the efficiency of the JIWRP aeration system by reducing overall air requirements while maintaining adequate mixing and treatment. The project scope consists of the design and construction of improvements to reduce energy consumption in the aeration system. Improvements may include modifications to the diffusers in the aerated channels and aeration basins, addition of dissolved oxygen and/or ammonia probes for automated air flow control, or other types of changes to reduce energy usage. The change in total project cost is due to inflation. This project is expected to have a positive operating budget impact because of the reduced energy usage.

ID #:	Name:	Phase	Start	Finish	Cost
J02013	East Plant RAS Header and Pump Replacement	Design	Jul-15	Oct-17	\$337,119
		Construction	Jan-18	Mar-19	\$1,563,616
		Post-Constr.	Apr-19	Dec-19	\$4,000
		Total			\$1,904,735
		Previously Approved Total			\$1,873,545
		Increase/(Decrease)			(\$31,190)

Project Description

The purpose of this project is to ensure the integrity and capacity of Return Activated Sludge (RAS) processing within the Secondary Treatment process. The project scope is to design and construct the replacement of the 48-inch, 140-foot-long east plant RAS steel discharge header pipe and replacement of three other RAS pumps. The existing pipeline has experienced multiple failures and is not operating at full capacity. Capacity constraints in the process may impact effluent quality and the ability to meet the District's WPDES effluent permit limits. The decrease in total project cost is due to updated cost estimates and a change in construction labor needs. No significant operating budget impact is expected.

Jones Island Water Reclamation Facility

Advanced Treatment

The biologically treated water enters the final treatment process in preparation for discharge into Lake Michigan. During this process, sodium hypochlorite is used to disinfect the water. Disinfection is the selective destruction of disease-causing organisms including bacteria, viruses, and amoebic cysts. After chlorination, sodium bisulfite is fed into the waste stream to remove any chlorine residuals. Chlorine removal is necessary to ensure fully treated water is not toxic to fish. This fully treated wastewater, or plant effluent, is discharged into Lake Michigan.

There are no active projects in 2019.

Jones Island Water Reclamation Facility

Solids Processing

Biosolids are removed in the primary and secondary clarifiers and must be further processed and disposed of for beneficial reuse. Jones Island uses a state-of-the-art process for waste solids to produce an environmentally safe fertilizer, Milorganite®, which is marketed for public use. Milorganite® is composed of a blend of biosolids (sludge) from both Water Reclamation Facilities.

The solids processing includes these individual processes necessary for Milorganite®: blending, thickening, dewatering, drying, warehousing, and shipping. Blending is the process of mixing the biosolids from different sources to form a uniform consistency for the downstream thickening units. Thickening and dewatering both minimize the moisture content of the biosolids. After dewatering, biosolids are dried in a rotary drying unit. The dried biosolids go through a screening process to size the product to Milorganite® specifications. The Milorganite® is then stored in silos before shipping to customers or to the contracted packaging facility. Much like any production process, there are leftover materials or scrap. The leftover dried sludge from the production of Milorganite® must be disposed of or reused.

ID #:	Name:	Phase	Start	Finish	Cost
J04035	Greens Grade Train Replacement and Redundant Train Evaluation	Design	Jun-18	Sep-19	\$666,780
		Construction	Jan-20	Dec-21	\$2,563,319
		Post-Constr.	Jan-22	Dec-22	\$5,602
		Total			\$3,235,701
		Previously Approved Total			\$1,799,501
		Increase/(Decrease)			\$1,436,200

Project Description

The purpose of this project is to address the Milorganite® greens grade classification product train that has reached the end of its useful life and in need of replacement along with an engineering analysis regarding the location of the greens grade screening process. The project scope includes design and installation of a higher capacity train and an evaluation of the need for a redundant greens grade train for movement of product. The engineering analysis will determine if the greens grade screening should be moved from the first floor to a higher floor which could provide capital and energy savings. The increase in total project cost is due to the additional scope of the redundant train evaluation, the engineering analysis for the screening location change and updated construction cost estimate. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04037	Thickened Sludge Improvements	Prelimin. Eng	Oct-15	Feb-16	\$3,913
		Design	Jun-18	Dec-18	\$289,689
		Construction	Mar-19	Oct-19	\$302,798
		Total			\$596,400
		Previously Approved Total			\$1,309,206
		Increase/(Decrease)			(\$712,806)

Project Description

The purpose of this project is to identify and implement sludge thickening improvements to achieve improved percent total solids blended sludge feed to the belt filter presses (BFPs) in the D&D facility, thereby reducing the heat energy required to produce Milorganite®. The project is also intended to improve the reliability of pumping thickened activated sludge (TAS) to the blended sludge tank feeding the BFP. Project scope includes procurement of fifth TAS pump as a spare with evaluation of integrating the fifth pump into the TAS piping network and an engineering analysis of alternative TAS piping. Finally, the project will evaluate polymer storage capacity improvements for the gravity belt thickeners (GBTs) at JI. The change in total project cost is due to revised scope as the project removed the design and construction of a fifth GBT at Jones Island because calculations performed under project J04037 suggest that adding a fifth GBT is not needed if other thickening improvements are implemented at South Shore. No significant operating budget impact is expected.

The main goal of sludge thickening is to reduce the sludge volume by removing as much water content as possible.

ID #:	Name:	Phase	Start	Finish	Cost
J04038	D&D Dryers Guillotine Gate Replacement	Design	Jan-19	Feb-20	\$400,022
		Construction	May-20	Jul-21	\$5,464,289
		Post-Constr.	Aug-21	Jan-22	\$11,845
		Total			\$5,876,156
		Previously Approved Total			\$2,593,754
		Increase/(Decrease)			\$3,282,402

Project Description

The purpose of the project is to make extensive repairs to equipment associated with the dryer waste heat guillotine gates and supply valves at the D&D facility. The gates and supply valves isolate and modulate the waste heat supplied to the dryers. The project scope includes the design and construction of the replacement of the twelve waste heat supply valves and nine guillotine gates. The increase in total project cost is due to the addition of the design and construction of the waste heat supply valves, which was not originally part of the scope. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04040	D&D Freight & Passenger Elevator Rehab	Design	Sep-15	Feb-17	\$187,286
		Construction	May-17	Oct-18	\$2,526,537
		Post-Constr.	Nov-18	Mar-19	\$12,000
		Total			\$2,725,823
		Previously Approved Total			\$2,680,822
		Increase/(Decrease)			\$45,001

Project Description

The purpose of this project is to ensure the safety of personnel and equipment specifically regarding the passenger and freight elevators. The project scope is to design and repair Passenger Elevator #1 and Freight Elevator #2. The elevators are used by staff, for public tours, and to move large maintenance equipment. The change in total project cost is due to an increase in construction and post-construction labor estimates. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04046	D&D Induced Draft Fan Energy Conservation	Design	Dec-16	Jul-18	\$197,548
		Construction	Oct-18	Dec-20	\$1,268,765
		Post-Constr.	Feb-21	Jun-21	\$5,385
		Total			\$1,471,698
		Previously Approved Total			\$1,520,664
		Increase/(Decrease)			(\$48,966)

Project Description

At JIWRf, the Dewatering and Drying Facility is equipped with twelve large rotary dryers that heat dry dewatered biosolids to produce Milorganite®. Each dryer is equipped with a dedicated fan, with the purpose to provide the energy necessary to move the dryer exhaust gas through the dryer exhaust system and maintain a negative pressure in the dryer. The purpose of this project is to realize electrical energy savings. Energy savings can be achieved by adding a variable frequency drive (VFD) at each dryer. Adding a VFD will provide for the ability to control the speed, volume, and pressure output of each fan to match system needs, resulting in reduced energy consumption. The existing motors driving the fans have been in continuous service for over 20 years and are not compatible with VFDs. This project will replace the motors and guide vanes on the twelve induced draft fans that maintain the negative pressure within the Milorganite® drying system with new motors and VFDs. The decrease in total project cost is due to refined design cost estimates. The project is expected to have a positive operating budget impact of approximately \$87,000 annually due to the increased energy efficiency.

ID #:	Name:	Phase	Start	Finish	Cost
J04050	Dryer Feed and Discharge Screw Replacement	Design	Jul-16	Sep-17	\$384,156
		Construction	Jan-18	Jun-20	\$3,965,430
		Post-Constr.	Jul-20	Dec-20	\$21,620
		Total			\$4,371,206
		Previously Approved Total			\$5,219,918
		Increase/(Decrease)			(\$848,712)

Project Description

The purpose of this project is to improve the efficiency and reliability of biosolid processing equipment to allow the equipment to work at the designed capacity and ensure maximum production of Milorganite®. The current equipment has reached the end of its useful life. The unreliability of the current equipment has begun to negatively impact Milorganite® production. The scope of the project includes replacing the dryer mixer feed screw conveyors, rehabbing dryer feed screw conveyors, and replacing dryer discharge screw conveyors. Deflagration venting required by NFPA code will be installed in all replacement dryer mixer feed screws, all the rehabbed dryer feed screws, and all twelve dryer discharge screws. The decrease in total project cost is due to the belt cleaners being replaced in the O&M budget. No significant operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
J04051	Main Recycle Air Belt Feed Screw Replacements	Design	Apr-16	Feb-17	\$127,220
		Construction	May-17	May-18	\$549,787
		Post-Constr.	Aug-18	Nov-18	\$5,514
		Total			\$682,521
		Previously Approved Total			\$699,623
		Increase/(Decrease)			(\$17,102)

Project Description

The purpose of the project is to ensure the main recycle air belt feed screw conveyors are efficient, reliable, and maintain biosolids processing capacity. The Jones Island Water Reclamation Facility Dewatering and Drying (D&D) Facility has been in service since 1994 and converts sludge to Milorganite® product. The Milorganite® production process includes twelve rotary sludge dryers used to heat-dry dewatered biosolids producing Milorganite®. The dried biosolids are transported from the dryers to other processes within the D&D Facility using various conveyors. Conveyors throughout the D&D Facility are experiencing various degrees of wear, which leads to breakdown of the equipment. This condition results in inefficient and unreliable biosolids conveyance equipment and reduced Milorganite® production. To ensure that the D&D Facility continues to process biosolids and create Milorganite®, the District has been developing and implementing multiple projects to replace these conveyors. The project's scope includes replacing the main recycle air belt feed screw conveyors in the D&D Facility and adding a deflagration, or explosion relief, venting system. This equipment has reached the end of its expected useful life of 20 years. Further, this project will mitigate damage to property and the potential of human injury in the event of an explosion and adhere to NFPA code by adding deflagration venting. The change in total project cost is due to refined cost estimates. No significant operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
J04052	Milorganite® Facilities Improvements Phase IV	Design	Jul-16	Apr-18	\$472,974
		Construction	Jun-18	Dec-19	\$5,352,669
		Post-Constr.	Jan-20	Apr-20	\$15,000
		Total			\$5,840,643
		Previously Approved Total			\$5,813,586
		Increase/(Decrease)			\$24,057

Project Description

The purpose of this project is to improve the efficiency and reliability of biosolid processing. Equipment that is operating in poor condition reduces the facility's capacity to transport biosolids efficiently, which affects Milorganite® production. This project will replace four screw conveyors, five bucket elevators, two drag conveyors and six slide gates. In addition, the project will restore the air handling capacity and redundancy of air supply unit #32, which was placed out of service due to age and cost prohibitive repair and will replace the recycle bin vent baghouse which is non-functional. The increase in total project cost is due to refined cost estimates for construction. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04057	Dryer Exhaust Duct Header Replacement	Design	Feb-19	Jul-20	\$305,923
		Construction	Nov-20	Jul-22	\$2,447,609
		Post-Constr.	Sep-22	Jan-23	\$4,986
		Total			\$2,758,518
		Previously Approved Total			\$2,562,443
		Increase/(Decrease)			\$196,075

Project Description

The purpose of this project is to ensure reliable operation of the D&D dryer exhaust duct. The scope of the project includes design and construction of replacing the 36-inch to 96-inch diameter dryer exhaust duct header suspended adjacent to and above the 7th Floor of the D&D Facility. The change in total project cost is due to an increase in labor cost estimates. There is a positive operating budget impact as this project was originally to be a repair and funded via the operating budget. However, replacement of the duct has been discovered to be less expensive and will result in greater performance and useful life.

ID #:	Name:	Phase	Start	Finish	Cost
J04060	Sludge Cake Transport & Feed Conveyors Replacement	Design	Feb-18	Jun-19	\$470,030
		Construction	Oct-19	Oct-21	\$6,580,846
		Post-Constr.	Dec-21	Apr-22	\$7,367
		Total			\$7,058,243
		Previously Approved Total			\$4,395,251
		Increase/(Decrease)			\$2,662,992

Project Description

The purpose of this project is to improve the reliability of solids processing equipment in D&D and minimize dryer outages. Project scope includes replacement of six sludge cake transport belt conveyors, six sludge cake feed belt conveyors, water pumps, and other associated equipment. All the belt conveyors, originally installed in 1992, have ongoing issues with corrosion and worn belt scrapers, belts, rollers, bearings, and pulleys. Continued reliability of sludge cake handling equipment is critical to allow the processing and removal of solids from the plant treatment process. Unreliable sludge cake conveying equipment increases the risk of safety incidents due to dryers quickly heating up, the risk of increased cost of processing solids, and risks to permit compliance. The project scope includes evaluation and potential modifications to improve the ability to measure the amount of sludge cake entering the dryers. The project scope includes modification of the dryer product temperature control system to incorporate the sludge cake measurement system. The increase in total project cost is due to the engineering consultant contract expenses being more than anticipated and updated construction cost estimates. Operating budget impacts will take the form of corrective and preventative maintenance savings which, since 2009, have totaled approximately \$440,000.

ID #:	Name:	Phase	Start	Finish	Cost
J04061	D&D Programmable Logic Controller 5 Upgrades	Design	Feb-19	Nov-20	\$508,369
		Construction	Mar-21	Jul-23	\$6,942,971
		Post-Constr.	Sep-23	Feb-24	\$7,633
		Total			\$7,458,973
		Previously Approved Total			\$7,634,526
		Increase/(Decrease)			(\$175,553)

Project Description

The purpose of this programmable logic controller (PLC) replacement project is to maintain control system reliability and to avoid equipment downtime in the Dewatering and Drying (D&D) Facility. This will allow for continued processing of biosolids, which is critical to meeting permit conditions. The original equipment manufacturer no longer provides replacement parts for the existing PLC equipment. Therefore, replacement parts are limited on the open market and are costly to procure. The scope of the project includes replacement of 66 Allen-Bradley PLC-5s in the D&D facility with newer model PLCs. Associated hardware that is compatible with the new control platform will also be replaced including alarm annunciators, I/O modules, loop controllers, communication modules, network connections, racks, and power supplies. Specific work tasks include procuring the PLC hardware, programming of the new PLCs, installation of the hardware, on-site commissioning of the new control platform. The functionality of the existing control platform will be replicated in the new platform. The decrease in total project cost is due to reduced labor cost estimates. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04065	D&D First Stage Classification Equipment Replacement	Design	Jul-18	Jul-19	\$476,924
		Construction	Nov-19	Nov-21	\$5,396,440
		Post-Constr.	Dec-21	Mar-22	\$5,654
		Total			\$5,879,018
		Previously Approved Total			\$5,786,747
		Increase/(Decrease)			\$92,271

Project Description

The purpose of this project is to ensure reliability of first stage classification equipment. The project scope includes design and construction of replacement equipment. The first stage classification system is the equipment in which classifies Milorganite® based on the diameter of the bead size that is developed in the dryer process. Oversized product is milled down and returned to the dryers. Undersized product must be sent back to the dryers to grow larger bead sizes. The first stage classification equipment is the only method by which undersized and oversized bead sizes are separated from the Classic sized product. The change in total project cost is due to a change in labor estimates. The operating budget will result in potential gains as a result of this project as increased Milorganite® production would allow for increased sales and higher revenues.

ID #:	Name:	Phase	Start	Finish	Cost
J04066	Milorganite® Dust Suppressant System Upgrades	Design	Jul-19	Jul-20	\$106,759
		Construction	Oct-20	May-22	\$590,287
		Post-Constr.	Jul-22	Oct-22	\$5,728
		Total			\$702,774
		Previously Approved Total			\$686,355
		Increase/(Decrease)			\$16,419

Project Description

The purpose of this project is to upgrade the mineral oil dust suppressant system at the Milorganite® Storage Facility loadout area, which reduces the dust off the product during transport, packaging, and handling. The project scope will replace and upgrade the existing dust suppressant system which also includes relocating the new system indoors, providing a spill containment area, replacing the existing storage tank, providing related electrical and control upgrades, and replacing gear pumps, strainers, heaters, and piping. The increase in total project is due to inflation. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04067	D&D South Cake Loadout System	Planning	Mar-18	May-18	\$1,911
		Design	Nov-18	Sep-19	\$118,521
		Construction	Jan-20	Sep-20	\$559,326
		Post-Constr.	Nov-20	Feb-21	\$4,515
		Total			\$684,273
		Previously Approved Total			\$631,226
		Increase/(Decrease)			\$53,047

Project Description

The purpose of this project is to provide a means for continued processing of all biosolids through Dewatering and Drying (D&D) Facility if long term dryer outages are encountered. The current loadout chute on the north side of the building is not capable of handling all biosolids, so the additional loadout chute on the south side of the building will enable processing of all biosolids. The project scope includes design and construction of new belt filter press (BFP) cake conveyers and diversion chutes in the southwest corner of the 2nd floor of the D&D Building. The increase in total project is due to inflation, as well as the addition of construction administrative expenses not included in 2018. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
J04068	Equalization and Blend Tank Odor Removal	Design	Mar-18	Feb-19	\$120,143
		Construction	Jul-18	Feb-20	\$546,739
		Post-Constr.	Apr-20	Aug-20	\$4,785
		Total			\$671,667
		Previously Approved Total			\$337,750
		Increase/(Decrease)			\$333,917

Project Description

The purpose of this project is to reduce Jones Island Water Reclamation Facility odor sources by restoring the Equalization and Blend (E/B) tanks odor control system. The scope of this project will design and install replacements to odorous air piping and valves in the E/B facility that have failed or reached the end of their useful service life. Replacements will be designed for a 20-year life and provides new activated carbon in the odor control system to remove odors. This project was originally approved by Commission action 18-036-3. This project is expected to increase the annual Operations and Maintenance cost to provide and maintain activated carbon media in the odor control system.

General Projects

Projects grouped into this category are projects that do not fit into the other water reclamation processes. The types of projects can be associated with:

ENERGY DISTRIBUTION – electrical generation and distribution, hot water and steam generation, and distribution and process air generation

BUILDINGS AND GROUNDS IMPROVEMENTS – capital improvements to non-process buildings and other improvements such as roads and utilities

NONSPECIFIC Instrumentation and Control

COSTS ASSOCIATED with litigation for non-current capital projects

ALL OTHER nonspecific items

ID #:	Name:	Phase	Start	Finish	Cost
J06032	Jl Geotechnical Structural Analysis	Prelimin. Eng	Apr-15	Jun-20	\$1,176,607
		Total			\$1,176,607
		Previously Approved Total			\$1,176,607
		Increase/(Decrease)			\$0

Project Description

The purpose of this project is to evaluate the structural condition of the many buildings and tanks at the Jones Island Water Reclamation Facility. The project will conduct an engineering and field investigation of the structural condition of the various facilities at Jones Island, concentrating on the facilities that are supported with 100-year-old wood pile foundations. There is no change in total project cost. There is no operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
J06054	ISS Crane Rehabilitation	Design	Jun-15	Jun-17	\$373,141
		Construction	Jul-17	May-19	\$1,527,002
		Post-Constr.	Jun-19	Oct-19	\$5,098
		Total			\$1,905,241
		Previously Approved Total			\$1,905,967
		Increase/(Decrease)			(\$726)

Project Description

The purpose of this project is to replace and upgrade components of the Inline Storage System (ISS) crane to improve system performance during high flow events and worker safety. The purpose of the crane is to remove the solids that accumulate on the bar screens prior to the flow entering the ISS pump intake header. The scope of this project is to replace and upgrade the crane motors, braking systems, crane superstructure, cab, ISS bar screen vertical shaft cover, and the clamming bucket related to the ISS crane. The crane has been operating in a harsh environment for over 20 years and is experiencing reliability and safety issues. The scope also includes the study of the effectiveness of two fans that exhaust sewer gas from the ISS. The fans have reached the end of their useful life. Sewer gas presents a safety hazard when staff are deployed in the ISS for inspection and maintenance. Before replacing the fans, the study will determine the proper sizing by measuring the air input points in the system. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:		Cost
J06056	Turbine Extended Service Agreement	Total	\$13,445,724
		Previously Approved Total	\$15,474,830
		Increase/(Decrease)	(\$2,029,106)

Project Description

The purpose of this project is to improve the reliability of the plant electrical system and minimize the financial impact associated with landfill gas turbine outages. The scope of this project is the capital portion, 75 percent of costs, of a ten-year contract with Solar Turbines Inc., which will complete engine and major engine component replacement on the District's three landfill gas turbines. The landfill gas turbines are designed to provide power for the plant electrical system and minimize the amount of power purchased from WE Energies providing District rate payers a significant annual savings. The change in total project cost is due to an anticipated year-five renegotiated price and escalation factor per a provision in the 10-year contract. The operating budget impact includes 25 percent of the costs of the ten-year agreement with Solar Turbines, Inc. The O&M portion of the agreement covers: 1) routine maintenance, washing, and inspection services; 2) remote monitoring of engine operating parameters and diagnostic evaluation of the parameters to detect abnormal conditions and address them early; 3) repairs and parts replacement; 4) unlimited unscheduled visits; and 5) unlimited technical support.

ID #:	Name:	Phase	Start	Finish	Cost
J06061	Dryer Conversion for Additional LFG	Prelimin. Eng	Jan-14	Mar-17	\$293,743
		Design	Oct-15	May-18	\$925,730
		Construction	Dec-18	Apr-22	\$7,987,849
		Post-Constr.	May-22	Sep-22	\$8,937
		Total			\$9,216,259
		Previously Approved Total			\$9,284,383
		Increase/(Decrease)			(\$68,124)

Project Description

The purpose of the project is to improve the cost-effectiveness of solids processing. The project scope is to implement a dryer burner system capable of utilizing landfill gas (LFG) as a fuel source to take advantage of a potentially increasing volume of LFG. The project scope includes the design and construction of the selected system. The change in total project cost is due to the construction contractor expense decreasing; rather than converting ten dryer burners, the contractor will convert eight dryer burners. The project also will help ensure compliance with meeting Class A biosolids/WPDES permit and air permit requirements through changes to the Milorganite® product temperature monitoring system. The project is expected to have a positive operating budget impact as a result of the utilization of LFG, a lower-cost fuel option.

ID #:	Name:	Phase	Start	Finish	Cost
J06064	Gaseous Fire Suppression Systems	Design	Jul-15	Jul-17	\$264,529
		Construction	Oct-17	Sep-19	\$651,303
		Post-Constr.	Jan-20	Oct-20	\$14,214
		Total			\$930,046
		Previously Approved Total			\$867,626
		Increase/(Decrease)			\$62,420

Project Description

The purpose of this project is to ensure the reliability of wastewater treatment control and improve employee safety. The project scope is to evaluate, design and install a gaseous fire suppression system in three control rooms at JIWRf. The previously installed Halon fire suppression system in these rooms has been removed or is no longer functioning. Fire in these staffed rooms poses a direct safety risk to personnel. Fire damage potential in each of these rooms is estimated to range from \$175,000 to \$2,500,000. This damage would disrupt operations and solids handling, potentially resulting in permit violations or increased costs of solids disposal. The increase in total project cost is due to additional anticipated labor costs. The operating budget impact is not known at this time.

ID #:	Name:		Cost
J06065	Rolling Stock & Other Equipment	Total	\$7,505,825
		Previously Approved Total	\$7,505,041
		Increase/(Decrease)	\$784

Project Description

The purpose of this project is to provide a mechanism to replace and purchase various minor rolling stock and equipment at Jones Island that meet the criteria for capital budget financing but do not require extensive cost and schedule management. The project scope will vary each year as existing projects are completed, and new projects are added. Currently active or anticipated spending includes several equipment replacements within the Dewatering and Drying Building as well as turbine building control room switchgear replacement. The change in total project is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
J06066	Power System Improvements	Prelimin. Eng	Jun-14	Sep-18	\$425,559
		Design	May-19	Apr-20	\$101,207
		Construction	Oct-17	Oct-21	\$844,785
		Post-Constr.	Nov-21	Mar-22	\$7,500
		Total			\$1,379,051
		Previously Approved Total			\$752,291
		Increase/(Decrease)			\$626,760

Project Description

The purpose of this project is to improve the overall reliability and safety of the JIWRP power supply. The project scope includes design and construction for replacement of protective relays in switchgear lineups in buildings 286, 263, and 289. It is expected that the replacement relays will extend the useful life of the plant power distribution by at least 20 years. The change in total project cost is due to the addition of the protective relay upgrade. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
J06069	JI Building Roof Replacement - Phase 3	Design	Feb-18	Feb-19	\$431,638
		Construction	May-19	Feb-20	\$3,942,019
		Post-Constr.	Mar-20	Mar-21	\$5,097
		Total			\$4,378,754
		Previously Approved Total			\$4,540,429
		Increase/(Decrease)			(\$161,675)

Project Description

The purpose of this project is to repair and where applicable replace ten roofs at Jones Island Water Reclamation Facility. The project scope includes full work for replacement as well as condition assessment reviews. The decrease in total project cost is due to the quantity of roofs requiring replacement less than originally budgeted. Operating budget impact is unknown at this time.

ID #:	Name:	Phase	Start	Finish	Cost
J06073	Harbor Siphons Area Settlement Mitigation	Design	Jan-17	Dec-22	\$203,301
		Construction	Jan-17	Dec-22	\$310,412
		Total			\$513,713
		Previously Approved Total			\$513,713
		Increase/(Decrease)			\$0

Project Description

The purpose of this project is to mitigate issues associated with settlement in the area of the former Harbor Siphons project on Jones Island. Thawing of a freeze wall installed on Jones Island to facilitate construction of the Harbor Siphons project (C07010) is expected to be ongoing for the next 20+ years. Thawing of the freeze wall is causing settlement of District assets in the immediate project area and beyond. The scope of this project is to mitigate settlement issues as they arise. This includes mitigating electrical duct bank settlement issues as well as additional funding to mitigate as of yet unknown asset settlement which is expected to occur in the future. There is no change in total project cost. Operating budget impact is unknown at this time.

ID #:	Name:	Phase	Start	Finish	Cost
J06075	2018 JI Capital Equipment Rehabilitation/Replacement	Construction	Dec-17	Dec-24	\$8,005,464
		Total			\$8,005,464
		Previously Approved Total			\$8,008,000
		Increase/(Decrease)			(\$2,536)

Project Description

The purpose of this project is to provide a mechanism to replace and purchase various minor rolling stock and equipment at Jones Island that meet the criteria for capital budget financing but do not require extensive cost and schedule management. The project scope will vary each year as existing projects are completed, and new projects are added. Currently active or anticipated spending includes several equipment replacements within the Dewatering and Drying Building as well as turbine building control room switchgear replacement. The change in total project is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
J06076	Turbine Waste Heat Expansion Joint 12 & 13 Replacement	Design	Jun-18	Dec-18	\$103,531
		Construction	Apr-19	Dec-19	\$376,574
		Post-Constr.	Feb-20	May-20	\$5,244
		Total			\$485,349
		Previously Approved Total			\$485,350
		Increase/(Decrease)			(\$1)

Project Description

The purpose of this project is to ensure the integrity and reliability of the waste heat system between the JIWRf gas turbines and the Milorganite® dryers. The scope of this project includes replacement of two waste heat expansion joints and modification of duct supports adjacent to the new expansion joints to allow the duct to expand and contract consistently when it heats or cools. Expansion joint failure creates a safety issue and requires that the waste heat system be shut down until repairs are made. The change in total project is de minimus. No impact on the operating budget is anticipated.

ID #:	Name:	Cost
J99003	Operator Contribution to CIP	Six-Year Forecast Total
		Total
		\$300,000
		\$300,000

Project Description

The operating contract with VWM includes provisions for VWM to participate in current and planned District capital projects. The scope of this project includes VWM work in reviewing the annual capital budget, reviewing and creating requests for new projects, attending meetings, and participation in the implementation of capital projects. Operator Contribution to Capital Improvement Program accounts do not have an approved total project cost. The 2019 expenditures are budgeted at \$50,000; the six-year long-range financing plan includes \$300,000. No significant operating budget impact is expected.

South Shore Water Reclamation Facility

Primary Treatment

Primary treatment involves preliminary and primary treatment of influent flows. Preliminary treatment removes large and untreatable material such as wood, rags, sand, and grit. Primary treatment then collects the preliminary-treated water in large tanks, called clarifiers, to allow heavier solids to settle to the bottom of the tanks and lighter solids to float to the top. The goal of the process is to effectively remove material that can damage downstream equipment and most solids that cannot be treated biologically.

ID #:	Name:	Phase	Start	Finish	Cost
S01009	Scum System Improvements	Prelimin. Eng	Sep-12	Sep-16	\$208,377
		Design	Mar-18	Jan-19	\$127,684
		Construction	May-19	Apr-20	\$681,015
		Post-Constr.	May-20	Nov-20	\$8,236
		Total			\$1,025,312
		Previously Approved Total			\$1,685,024
		Increase/(Decrease)			(\$659,712)

Project Description

The purpose of this project is to improve reliability of the primary scum handling system. The project scope will replace select primary scum piping fittings to improve flow, provide cleaning access points at select locations along the primary scum piping system, and design and construct the necessary changes to automate the primary scum handling system. The scope also includes a pilot project to investigate the ability of glass-lined ductile iron pipe to reduce the scum accumulation on the pipe wall. The decrease in total project cost is due to refined cost estimates in the construction phase. No operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S01013	Primary Clarifier Overhaul	Design	Jun-20	Jan-22	\$841,999
		Construction	Apr-22	Oct-26	\$13,316,307
		Post-Constr.	Dec-26	Apr-27	\$18,270
		Total			\$14,176,576
		Previously Approved Total			\$0
		Increase/(Decrease)			\$14,176,576

Project Description

The purpose of this project is to ensure performance and reliability in removing scum and solids from the influent wastewater. The project scope consists of two alternatives: design and construction of the removal and in-kind replacement of Primary Clarifier (PC) Nos. 1-16, or design and construction of the removal and in-kind replacement of only eight out of the 16 PC units. Conditions of the existing equipment include warped scum beaches, warped and misaligned longitudinal and cross collectors, and corroded drives. The project will ensure reliable operation with regards to scum and solids removal. This is a new project. The first alternative will have no operating budget impact while the second alternative will have a savings of \$2.6M a year.

South Shore Water Reclamation Facility

Secondary Treatment

After removal of the solids, the primary-treated water flows to the secondary or biological activated sludge process. This process, called aeration, pumps large amounts of air into the water to permit bacteria and other microorganisms to consume soluble oxygen-demanding pollutants in the aerated water. The pollutants are broken down to mainly cell mass, carbon dioxide, and water. Prior to the introduction of air, an iron salt (pickle liquor or ferric chloride) is added to the water for phosphorus removal. The biologically treated flow is again routed through the secondary clarifier settling basins where the biological solids and the phosphorus precipitate settle and the liquid overflows to the next water reclamation process.

ID #:	Name:	Phase	Start	Finish	Cost
S02008	Preliminary and Secondary Capacity Improvements	Planning	Mar-10	Dec-10	\$13,200
		Prelimin. Eng	Feb-12	Jul-17	\$1,636,946
		Design	Oct-16	Feb-19	\$636,391
		Construction	May-19	Aug-22	\$1,378,003
		Post-Constr.	Feb-23	Feb-24	\$21,760
		Total			\$3,686,300
		Previously Approved Total			\$3,570,300
		Increase/(Decrease)			\$116,000

Project Description

The purpose of this project is to cost-effectively increase the capacity of SS, which will reduce the risk of sanitary sewer overflows (SSOs), combined sewer overflows (CSOs), and basement backups. The scope includes completing the preliminary engineering work of the preliminary and secondary hydraulic improvement projects recommended in the SS Capacity Analysis report (S06014). The scope includes design and construction of clarifier and aeration basin modifications, along with other secondary treatment improvements. The increase in total project cost is due to increased labor estimates and changes in schedule. Additional operations and maintenance costs related to new instruments in the secondary clarifiers will begin in 2019 and will be approximately \$2,500 per year.

ID #:	Name:	Phase	Start	Finish	Cost
S02012	Biological Phosphorous Removal	Prelimin. Eng	Mar-14	Apr-17	\$310,436
		Design	Dec-19	Apr-26	\$600,836
		Construction	Jul-26	Mar-28	\$3,949,512
		Post-Constr.	Apr-28	Aug-28	\$13,661
		Total			\$4,874,445
		Previously Approved Total			\$4,736,769
		Increase/(Decrease)			\$137,676

Project Description

The purpose of this project is to improve the effectiveness of phosphorus removal of the secondary treatment process in order to comply with current and future phosphorous limits in the WPDES permit. The project scope is to evaluate, engineer, design and construct the necessary provisions at SS to replace the existing chemical phosphorus removal system by employing enhanced biological phosphorus removal. The increase in total project cost is due to inflation and design labor. The project is anticipated to have a positive operating budget impact as a result of increased energy efficiency and a decrease in chemical use.

Phosphorus removal is necessary to meet effluent permit requirements.

ID #:	Name:	Phase	Start	Finish	Cost
S02013	Aeration Galleries RAS Header Piping Rehab	Design	Feb-16	Jun-17	\$489,504
		Construction	Oct-17	Oct-19	\$2,295,639
		Post-Constr.	Jan-20	Jul-20	\$6,507
		Total			\$2,791,650
		Previously Approved Total			\$2,758,108
		Increase/(Decrease)			\$33,542

Project Description

The purpose of this project is to ensure the integrity of the secondary treatment process by replacing return activated sludge (RAS) piping to the aeration basins. The project scope is to replace RAS branch piping, fittings, and components between the RAS discharge header and each of the 28 aeration basins. Due to age and corrosion, sections of piping and components have required significant corrective action. If RAS piping and components are unable to provide service to the aeration basins, then plant capacity will be reduced, which may result in permit violations. Leakage into open gallery areas could result in worker safety issues. The project scope includes addition of two RAS pumps for system redundancy. The project also includes replacement of two existing RAS suction header isolation valves. The increase in total project cost is due to staff labor budget increases. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S02015	Aeration Basin Diffuser Replacement	Prelimin. Eng	Dec-19	Jun-20	\$5,928
		Design	Oct-24	Jul-25	\$1,929,384
		Construction	Apr-26	Jun-30	\$24,299,745
		Post-Constr.	Jan-31	Apr-31	\$6,964
		Total			\$26,242,021
		Previously Approved Total			\$25,430,880
		Increase/(Decrease)			\$811,141

Project Description

The purpose of this project is to replace the diffusers and piping as the equipment reaches the end of its useful service life such that South Shore WRF may continue to aerobically treat wastewater. The project scope includes design and construction for the removal and replacement of the aeration diffusers and piping in all twenty-eight (28) aeration basins. This includes removal of existing ceramic plate containers and diffusers, removal of the existing membrane diffusers, and the construction of a new membrane diffuser system. The increase in total project cost is due to the added planning phase to better define the project requirements. The impact on the operating budget is unknown.

South Shore Water Reclamation Facility

Advanced Treatment

The biologically treated wastewater enters the final treatment process in preparation for discharge into Lake Michigan. Here, sodium hypochlorite is used to disinfect the treated water. Disinfection is the selective destruction of disease-causing organisms including bacteria, viruses, and amoebic cysts. After chlorination, sodium bisulfite is mixed with the chlorine treated water to remove any chlorine residuals. Removal of chlorine is necessary to ensure no fish toxicity. The water reclamation process is complete, and the fully treated water meets all U.S. Environmental Protection Agency and Wisconsin Department of Natural Resources requirements. Plant effluent is then discharged into Lake Michigan.

ID #:	Name:	Phase	Start	Finish	Cost
S03003	Post-Secondary Capacity Improvements	Design	Sep-16	Mar-20	\$885,813
		Construction	Jul-20	Sep-22	\$775,305
		Post-Constr.	Sep-22	Aug-23	\$29,782
		Total			\$1,690,900
		Previously Approved Total			\$1,860,00
		Increase/(Decrease)			(\$169,100)

Project Description

The purpose of this project is to increase the hydraulic capacity of the SSWRF to reduce the risk of SSOs, CSOs, and basement backups. The scope includes design and construction of hydraulic capacity improvements for the post-secondary processes as recommended by a preliminary engineering study completed under Project S02008. The project scope includes disinfection system improvements to pumps, piping and mixing. The decrease in total project cost is due to the removal of the effluent flow measurement system and backup generator system from the project scope. The new effluent flow measurement system was provided under Project S02008 and the backup generator system is now under review as part of the 2050 Facilities Plan. Increases to the operating budget, not expected to be incurred until after 2022, include costs for chemical and energy for flows over 300 MGD. However, these could potentially be offset in operating cost decreases due to improved chemical mixing strategies.

South Shore Water Reclamation Facility

Solids Processing

The waste activated sludge from South Shore's secondary clarifiers is pumped to dissolved air flotation thickening, and then to Jones Island for Milorganite® production. Biosolids from the primary clarifiers are pumped to the anaerobic digesters. Anaerobic digestion is used to stabilize the biological activity and reduce the biosolids volume. The volatile organics in the bio-solids are converted to gas by bacteria that live and grow in the anaerobic environment and destroy up to 30 percent of the solids. Gas produced by this process fuels engines and heats the digesters. Once treated, the stabilized solids are either sent to JI or conditioned with chemicals and thickened with a centrifuge or gravity belt thickener. The thickened sludge may be pumped to Jones Island for Milorganite® production or dewatered into a filter cake and is disposed of in a licensed landfill.

ID #:	Name:	Phase	Start	Finish	Cost
S04010	Thickening Process Capacity Enhancements	Prelimin. Eng	Jul-15	Dec-17	\$77,338
		Design	Dec-19	Jun-21	\$446,503
		Construction	Oct-21	Dec-22	\$2,433,041
		Post-Constr.	Feb-23	Dec-23	\$8,021
		Total			\$2,964,903
		Previously Approved Total			\$2,943,230
		Increase/(Decrease)			\$21,673

Project Description

The purpose of this project is to increase process capacity and flexibility between treatment facilities by increasing solids handling capacity at SSWRF. This project is an outcome of the most recent draft of the Biosolids Facilities Plan and Addendum 4 of the 2020 Facilities Plan. The project scope includes preliminary engineering to evaluate cost effectiveness of primary sludge pumping, design and construction of two additional meters of gravity belt thickening capacity, and removal of all decommissioned centrifuge systems. The increase in total project cost is due to inflation. The impact on the operating budget is unknown at this time.

ID #:	Name:	Phase	Start	Finish	Cost
S04012	Plate and Frame Press Control Upgrade	Design	Oct-18	Dec-21	\$25,291
		Construction	Jun-19	Mar-21	\$735,564
		Post-Constr.	Apr-21	Dec-21	\$7,000
		Total			\$767,855
		Previously Approved Total			\$6,441,688
		Increase/(Decrease)			(\$5,673,833)

Project Description

The purpose of this project is to upgrade the plate and frame press control system to provide safe and reliable dewatering at the intended design capacity, to protect MMSD assets, and to improve operational efficiency. The SSWRF plate and frame presses serve as a back-up solids dewatering system in the event the Dewatering and Drying Facility at JIWRf is not available to process biosolids. The change in total project cost is due to the plate and frame press repair work deemed restoration and therefore to be funded via the operations and maintenance budget leaving scope of control upgrade only in the capital project. The operating budget impact of the restoration work is \$325,000.

ID #:	Name:	Phase	Start	Finish	Cost
S04024	Digester Gallery Piping Rehab	Planning	Nov-14	Jul-19	\$177,541
		Prelimin. Eng	Jan-20	Jan-22	\$1,054,434
		Total			\$1,231,975
		Previously Approved Total			\$1,197,815
		Increase/(Decrease)			\$34,160

Project Description

The purpose of this project is to identify high risk pipes for which a failure could lead to extensive service disruptions, safety concerns, or environmental damage. The project scope is to provide the best engineering approach to assess the condition of the 5,500 feet of digester gas piping, to evaluate the probability of failures, and to develop an approach for preventing future pipe failures at SSWRF. The change in total project cost is due to refined estimates. No significant impact on the operating budget is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S04030	Aeration Basin Concrete Rehab - Phase III	Design	Jul-18	Jul-19	\$239,256
		Construction	Oct-19	Jun-21	\$2,421,112
		Post-Constr.	Jul-21	Dec-21	\$5,645
		Total			\$2,666,013
		Previously Approved Total			\$2,182,865
		Increase/(Decrease)			\$483,148

Project Description

The purpose of this project is to extend the life of the aeration basins, increase worker safety, and reduce risk of air diffuser damage due to falling concrete. The concrete has significant spalling as a result from freeze thaw cycles during the winter months. This spalling has structurally compromised the cast-in-place guard railing around the basins. The scope consists of removing and rehabilitating failing concrete walls on five aeration basins. Included is removal and re-galvanizing existing poured in place guard railing, and installation of the rails bolted down with a kickplate for flexibility and safety in future maintenance. The increase in total project cost is due to design and construction labor, inflation, and basin 21 being added to the scope. No operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
S04031	Digester Gas Treatment System	Design	Jan-16	Sep-18	\$832,744
		Construction	Feb-18	Jul-19	\$3,935,653
		Post-Constr.	Aug-19	Nov-19	\$6,706
		Total			\$4,775,103
		Previously Approved Total			\$4,875,507
		Increase/(Decrease)			(\$100,404)

Project Description

The purpose of this project is to reduce the cost of maintenance and improve the reliability of the SSWRF engines and boilers. The concentrations of the digester gas constituents directly impact the maintenance cost and reliability of the engines and boilers. Increasing the reliability of the system will decrease the amount of electricity or natural gas that the District must purchase. The project will move the District closer to attaining the 2035 Vision. The project scope provides comprehensive digester gas treatment to remove conventional constituents of concern including moisture and siloxanes. The major scope items include: interim digester gas conditioning evaluation; design and construction of gas compression, moisture removal and siloxane treatment; provide the ability to isolate existing abandoned gas equipment; replace an existing, underground 18-inch diameter gas supply line; related structural, mechanical, electrical, site and instrumentation & control work. The decrease in total project cost is due to the construction costs being less than anticipated. The project is anticipated to have a favorable impact on the operating budget as the District will not have to overhaul the engines as often, and the District will not have to purchase as much electricity or natural gas.

The anaerobic digestion system reduces primary sludge mass and produces digester gas. Digester gas is normally combusted in engine generators and boilers to produce electricity and heat for plant consumption. This reduces the District's energy costs, is a renewable energy source, and contributes to the District's 2035 Vision energy goals.

ID #:	Name:	Phase	Start	Finish	Cost
S04034	High Strength Waste Mixing Improvements	Design	Apr-19	Jun-20	\$65,757
		Construction	Sep-20	Nov-21	\$271,799
		Post-Constr.	Jan-22	May-22	\$5,779
		Total			\$343,335
		Previously Approved Total			\$334,849
		Increase/(Decrease)			\$8,486

Project Description

The purpose of this project is to reduce energy costs and help the District achieve energy independence. The project scope consists of design and construction of improvements to the high strength waste (HSW) mixing system. The improvements will allow the district to effectively process a wider range of HSW materials. The increase in total project cost is due to inflation. The project is anticipating a positive budget impact due to the revenue that could be gained from tipping fees and increased energy production.

ID #:	Name:	Phase	Start	Finish	Cost
S04035	Digester 6 & 8 Mixer Replacement	Design	Oct-18	Mar-19	\$216,251
		Construction	Jun-19	Oct-20	\$2,048,392
		Post-Constr.	Dec-20	Sep-21	\$11,212
		Total			\$2,275,855
		Previously Approved Total			\$0
		Increase/(Decrease)			\$2,275,855

Project Description

The purpose of this project is to replace eight mixers in anaerobic digesters 6 and 8 at SSWRF and complete all associated work to ensure adequate mixing. The project scope includes replacement of the digester mixers with draft tube or linear motion mixers, installation of two new pressure relief/flame arrestor valves, removal and disposal of sludge, cleaning, and related structural, mechanical, electrical and control work. This is a new project. No impact to operating budget is anticipated.

General Projects

Projects grouped into this category are projects that do not fit into the other reclamation facility processes. The types of projects can be associated with:

ENERGY DISTRIBUTION – electrical generation and distribution, hot water and steam generation and distribution, digester gas distribution, and process air generation

BUILDINGS AND GROUNDS IMPROVEMENTS – capital improvements to non-process buildings and other improvements such as roads and utilities

NONSPECIFIC Instrumentation and Control

COSTS ASSOCIATED with litigation with non-current capital projects

ALL OTHER nonspecific items

Projects included in the budget in this area will improve operations, most notably in the upgrade of the instrumentation and control equipment that will help better control the water reclamation process and make use of existing capacity.

ID #:	Name:	Phase	Start	Finish	Cost
S06015	SS Geotechnical Structural Analysis	Prelimin. Eng	Jan-19	Jul-20	\$481,278
		Total			\$481,278
		Previously Approved Total			\$470,699
		Increase/(Decrease)			\$10,579

Project Description

The purpose of this project is to evaluate the structural condition of the many buildings and tanks at the South Shore Water Reclamation Facility. The project will conduct an engineering and field engineering analysis of the structural condition of the various facilities at South Shore. The goal of the project is to assess if any structural deterioration has occurred. The change in total project cost is due to refined estimates. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S06019	Replace W3 Flushing Water Pumps	Design	Feb-15	Feb-18	\$284,695
		Construction	May-18	Oct-19	\$1,122,575
		Post-Constr.	Nov-19	May-20	\$5,645
		Total			\$1,412,915
		Previously Approved Total			\$1,414,662
		Increase/(Decrease)			(\$1,747)

Project Description

The purpose of this project is to ensure the reliability of the South Shore W3 water system. The project scope is to design, construct, and install the replacement of eight W3 water pumps. The W3 water system is non-potable water used in the treatment process for cooling water, maintenance, and chemical dilution. The scope includes separating the fire protection water service in the preliminary treatment facility from the process water to be in conformance with plumbing code, and evaluation of fire protection flow rate requirements. The decrease in total project cost is due to adjusted labor estimates. A positive operating budget impact is expected as a result of increased energy efficiency.

ID #:	Name:	Phase	Start	Finish	Cost
S06022	Building 326 Site Improvements	Design	Feb-15	Mar-18	\$194,730
		Construction	Jul-16	Mar-19	\$563,979
		Post-Constr.	Jun-19	Sep-19	\$4,974
		Total			\$763,683
		Previously Approved Total			\$939,941
		Increase/(Decrease)			(\$176,258)

Project Description

The purpose of the project is to reduce flood risk and resultant damages to Building 326 at the SSWRF. The scope of this project is to remove two double pedestrian doors and two single pedestrian doors and replace them with floodproof doors. In addition, two existing garage overhead doors openings will be modified to allow for stop plank installation during a flood event. The decrease in total project cost is due to the cost of construction being less than anticipated. There is no impact to the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
S06027	Tunnels Concrete Rehabilitation	Design	Jan-16	Jul-19	\$412,633
		Construction	Nov-18	Oct-19	\$3,584,776
		Post-Constr.	Jun-20	Oct-20	\$10,000
		Total			\$4,007,409
		Previously Approved Total			\$3,107,981
		Increase/(Decrease)			\$899,428

Project Description

The purpose of this project is to rehabilitate the condition of the deteriorated SSWRF tunnels and conduits within to ensure effective and efficient plant operations. These tunnels, constructed in the 1960s and the 1980s, house all of the process, utility piping, electrical power distribution, and control wiring for the lower portion of SS. Water infiltration into these tunnels damage the assets housed within, damage the tunnel itself, and can cause employee safety issues. Damage to the assets within the tunnel can lead to process outages, inefficient operations, and ineffective wastewater treatment. The increase in total project cost is due to added scope of electrical investigation and additional rehabilitation work. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S06028	Control Center Relocation and Gaseous Fire Suppression Systems	Prelimin. Eng	Aug-15	Mar-16	\$41,078
		Design	Jun-16	Jul-17	\$211,842
		Construction	Oct-17	Sep-19	\$1,122,140
		Post-Constr.	Jan-20	Oct-20	\$14,041
		Total			\$1,389,101
		Previously Approved Total			\$1,471,291
		Increase/(Decrease)			(\$82,190)

Project Description

The purpose of this project is to improve the reliability of critical treatment process computer equipment currently located in the central control building at SS. Hydrogen sulfide from the surrounding clarifiers and from basement sludge pumping enters the control and server room areas, causing corrosion issues with electronic equipment. Constant exposure to the hydrogen sulfide has resulted in numerous repairs to critical electronic equipment including servers, hard drives, and computer circuit boards. The scope of this project includes removal of laboratory fixtures and equipment, asbestos removal, construction of a new control room, server room, additional office, and HVAC improvements at the SS administration building. Also included is the expansion of the SS fiber communications network and installation of an emergency generator system. This project also includes construction of gaseous fire suppression systems in two control rooms. The decrease in total project cost is due actual costs less than budgeted. No significant operating budget impact is expected. The operating budget is impacted by the cost of operation of the gaseous fire suppression systems estimated at \$4,000 annually.

ID #:	Name:	Phase	Start	Finish	Cost
S06029	Med Voltage Switchgear Replacement	Design	Oct-15	Jun-17	\$438,632
		Construction	Sep-17	Sep-19	\$3,313,238
		Post-Constr.	Nov-19	Mar-20	\$7,275
		Total			\$3,759,145
		Previously Approved Total			\$3,747,894
		Increase/(Decrease)			\$11,251

Project Description

The purpose of this project is to improve the reliability of the South Shore electrical power system. The project scope is to design and install a replacement to the medium voltage switchgear. This equipment is the heart of the SS electrical system as it provides power, through several substations, to the great majority of the facility. The project also includes replacement of one motor control center. The increase in total project cost is due to increased design and construction expenses. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S06032	SS Rolling Stock & Other Equipment	Construction	Nov-14	Apr-19	\$3,820,974
		Total			\$3,820,974
		Previously Approved Total			\$3,820,055
		Increase/(Decrease)			\$919

Project Description

The purpose of this project is to provide a mechanism to replace and purchase various minor rolling stock and equipment at South Shore that meet the criteria for capital budget financing but do not require extensive cost and schedule management. The project scope will vary each year as existing projects are completed, and new projects are added. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
S06033	Motor Control Center Replacements Phase 1	Design	Mar-16	Nov-17	\$440,991
		Construction	Jan-18	Oct-19	\$2,935,174
		Post-Constr.	Dec-19	Apr-20	\$6,240
		Total			\$3,382,405
		Previously Approved Total			\$3,349,130
		Increase/(Decrease)			(\$33,275)

Project Description

The purpose of this project is to replace 17 motor control centers (MCC) at South Shore that are over 40 years old and have reached the end of their useful life. The current motor control centers are beginning to fail. The MCCs will include power monitoring equipment with networking to monitor energy usage. The project scope also includes improvements in the MCC replacement areas related to NFPA 820. The decrease in total project cost is due to refined cost estimates. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
S06034	Building Roof Replacement Phase III	Design	Feb-18	Feb-19	\$314,432
		Construction	May-19	Feb-20	\$2,187,066
		Post-Constr.	Mar-20	Mar-21	\$5,128
		Total			\$2,506,626
		Previously Approved Total			\$2,461,887
		Increase/(Decrease)			\$44,739

Project Description

The purpose of this project is to review roof conditions and subsequently recommend and preform replacements at SS. The scope of this project includes condition assessments, replacement design, and construction on the roofs of four buildings. The increase in total project cost is due to actual design contract costs and inflation adjustments. At this time there is not any operating budget impact, however, if an outcome of the assessments is that only minor repair work is required this would be funded via the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
S06038	2018 SS Capital Equipment Rehabilitation/Replacement	Construction	Jan-18	Dec-24	\$8,407,091
		Total			\$8,407,091
		Previously Approved Total			\$8,407,065
		Increase/(Decrease)			\$26

Project Description

The purpose of this project is to provide a mechanism to replace and purchase various minor rolling stock and equipment at South Shore that meet the criteria for capital budget financing but do not require extensive cost and schedule management. The project scope will vary each year as existing projects are completed, and new projects are added. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
S06039	Building Roof Replacement Phase IV	Design	Jul-18	Jun-19	\$320,879
		Construction	Sep-19	Jul-20	\$2,670,333
		Post-Constr.	Aug-20	Oct-20	\$5,129
		Total			\$2,996,341
		Previously Approved Total			\$3,756,032
		Increase/(Decrease)			(\$759,691)

Project Description

The purpose of this project is to review roof conditions and subsequently recommend and preform replacements at SS. The scope of the project includes a site inspection, condition assessment and recommendations for the five roofs to be replaced (Buildings S326, S340, S356, S357, and S387). The project will then proceed with developing bid documents and with construction of the roof replacements. The change in TPC is due to modifications to the number of buildings included in the project scope and further refinement of estimated costs. At this time, there is not any operating budget impact however if an outcome of the assessments is that only minor repair work is required this would be funded via the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
S06040	SS Network Optimization	Design	Oct-17	Apr-18	\$17,870
		Construction	May-18	Jun-19	\$425,943
		Total			\$443,813
		Previously Approved Total			\$443,812
		Increase/(Decrease)			\$1

Project Description

The purpose of the project is to update equipment to current technology, improve control system reliability, performance, and ease of use. The scope of this project is to replace all SCADA network servers and switches at SS with new hardware. The SCADA network architecture will be updated to reduce network complexity and reduce the amount of hardware. The change in total project cost is de minimus. There is no operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
S06043	SS Buffer Zone	Design	Oct-18	Dec-18	\$39,641
		Construction	Mar-19	Jun-19	\$116,847
		Total			\$156,488
		Previously Approved Total			\$0
		Increase/(Decrease)			\$156,488

Project Description

The purpose of this project is to add a tree land improvement to act as a buffer for development in the area. This is a new project. There is no operating budget impact.

ID #:	Name:	Cost
S99003	Operator Contribution to CIP	Six-Year Forecast Total
		\$300,000
		Total
		\$300,000

Project Description

The operating contract with VWM includes provisions for VWM to participate in current and planned District capital projects. The scope of this project includes VWM work in reviewing the annual capital budget, reviewing and creating requests for new projects, attending meetings, and participation in the implementation of capital projects. Operator Contribution to Capital Improvement Program accounts do not have an approved total project cost. The 2019 expenditures are budgeted at \$50,000; the six-year long-range financing plan includes \$300,000. No significant operating budget impact is expected.

Interplant Pipeline

A 12-mile pipeline that connects the Jones Island and South Shore water reclamation facilities allows the transfer of sludge between the water reclamation facilities. This interplant pipeline aids in the production of Milorganite® because waste activated sludge and digested sludge can be conveyed to Jones Island where Milorganite® is produced. The primary sludge from Jones Island can be either sent to digestion or to South Shore solids handling facilities then to either farm fields or sanitary landfills for final disposal outside of the plant.

ID #:	Name:	Phase	Start	Finish	Cost
P01005	Interplant Pipeline Improvements - Phase II	Design	Apr-16	Oct-20	\$1,720,086
		Construction	Feb-17	Jun-23	\$14,955,736
		Post-Constr.	Aug-23	Feb-24	\$7,591
		Total			\$16,683,413
		Previously Approved Total			\$14,936,235
		Increase/(Decrease)			\$1,747,178

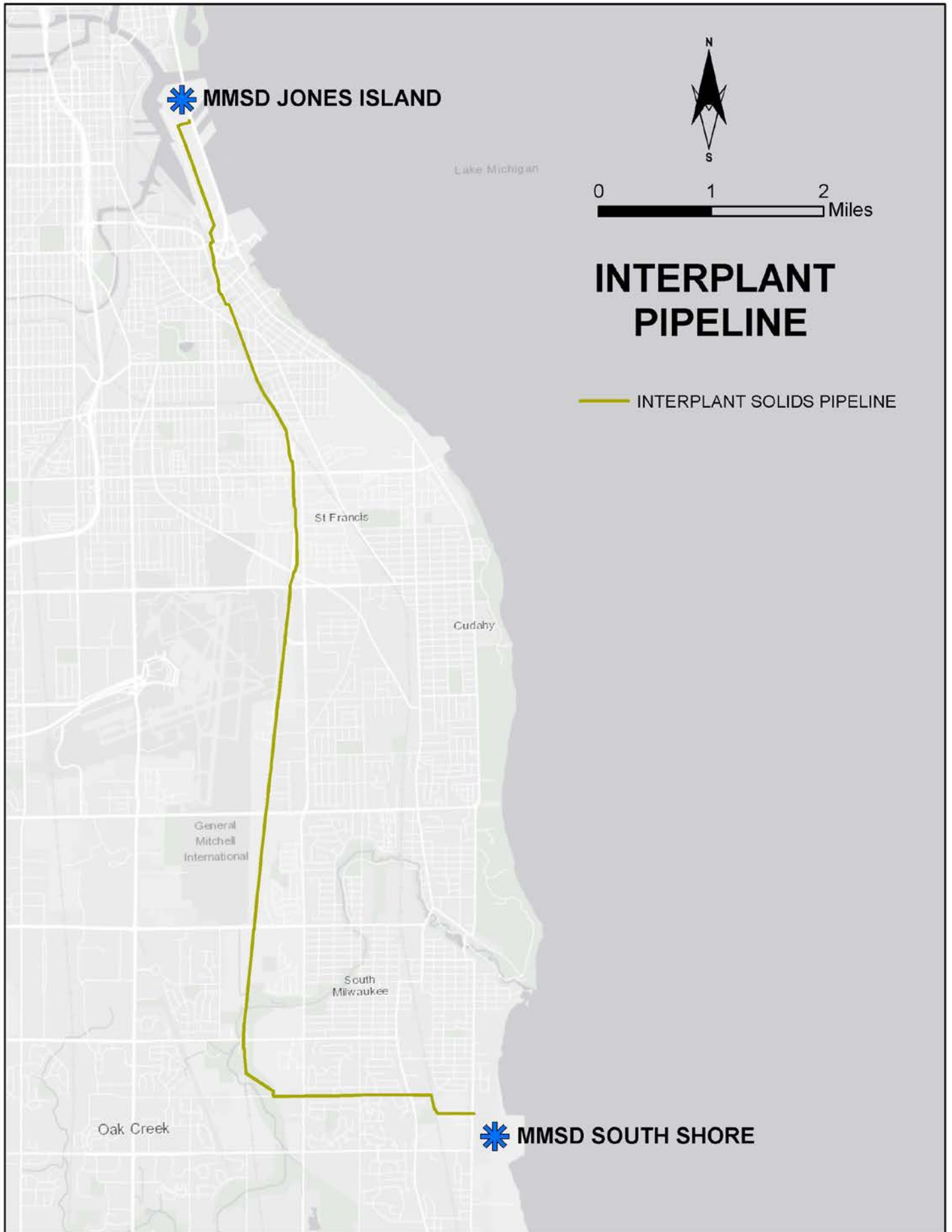
Project Description

The interplant solids system (IPS) consists of two pump stations and four pipelines that allows transfer of solids between Jones Island and South Shore for the purpose of maximizing Milorganite® production, bio-gas production and other bio-solids environmentally sustainable recycling methods. The purpose of this project is to ensure capacity and operational flexibility for solids processing between Jones Island and South Shore. This project will replace key system components such as pumps, motors, variable frequency drives, magnetic flow meters, valves, and piping at the Jones Island IPS Pump Station, the South Shore IPS Station and the IPS Valve Vaults located between the two facilities. The project will also restore the cathodic protection system for the IPS pipelines along their entire length between the two water reclamation facilities. Cathodic protection is used to minimize corrosion of buried infrastructure. The project will also restore capacity and reduce energy consumption of the IPS system by increasing the pump capacity and reducing the pump pressure by cleaning and pigging the IPS pipelines. The IPS is over 20 years old and much of its support equipment has reached the end of its useful life. The increase in total project cost is due to the added scope of replacement of valves, replacement of gravity belt thickener waste activated sludge feed piping, asbestos abatement and updated cost estimates. The associated cleaning costs of the pipeline are included in the operations and maintenance budget.

ID #:	Name:	Phase	Start	Finish	Cost
P01006	Replace IPS Pipes within South Shore WRF Property	Design	Jan-19	Apr-20	\$344,830
		Construction	Jul-20	Aug-22	\$2,584,282
		Post-Constr.	Sep-22	Jan-23	\$9,099
		Total			\$2,938,211
		Previously Approved Total			\$3,579,302
		Increase/(Decrease)			(\$641,091)

Project Description

The purpose of the project is to ensure the continued use of the Interplant Solids Pipeline on the South Shore Water Reclamation Facility property. The Interplant Solids Pipeline at SSWRF has experienced several breaks in recent years due to severe external corrosion. Replacement of the pipelines is necessary to reduce the risk and frequency of pipeline breaks. The decrease in total project cost is due to decreased labor and design cost estimates. No operating budget impact is anticipated at this time.



Landfill Gas Pipeline

ID #:	Name:	Phase	Start	Finish	Cost
P02003	LFG Pipeline Pigging Station	Prelimin. Eng	Jan-16	Feb-18	\$222,744
		Design	May-18	Nov-18	\$247,149
		Construction	May-19	Sep-20	\$1,820,734
		Post-Constr.	Dec-20	Apr-21	\$7,390
		Total			\$2,298,017
		Previously Approved Total			\$950,502
		Increase/(Decrease)			\$1,347,515

Project Description

The purpose of the project is to evaluate locations, design and construct a two-way pigging station for the south end of the landfill gas pipeline located at College Avenue. Gas pipeline material transition points require a pigging station for cleaning and inspection of the pipe because of the different inside diameters of the two materials. A pigging station includes piping, valves, and appurtenances to either launch or receive a cleaning or inspection device (pig). The purpose is to have the ability to inspect and maintain the pipeline, which is required by the Wisconsin Public Service Commission. The increase in total project cost is due to changing the material of the pigging station to steel, which is more expensive than high-density polyethylene (HDPE) piping, and increased design and construction expenses. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
P02004	Landfill Gas System - Metro Landfill	Design	Jul-16	Aug-19	\$924,509
		Construction	Dec-19	Dec-20	\$11,219,433
		Post-Constr.	Jan-21	Oct-21	\$10,394
		Total			\$12,154,336
		Previously Approved Total			\$11,361,684
		Increase/(Decrease)			\$792,652

Project Description

The purpose of the project is to treat gas from the Waste Management Metro Landfill and deliver it to the District's landfill gas (LFG) pipeline for use at JI. The project will construct a new LFG treatment and conveyance facilities at Waste Management Metro Landfill. LFG is a source of energy for producing electricity for plant purposes and heat to produce Milorganite® at JIWRP. LFG is a renewable fuel, and its use at Jones Island in place of natural gas results in operational cost savings and an overall reduction in greenhouse gases. The increase in total project cost is due to increased cost estimates for District labor, consultant engineering and inflation. The project is expected to have a positive operating budget impact due to lower costs than natural gas.

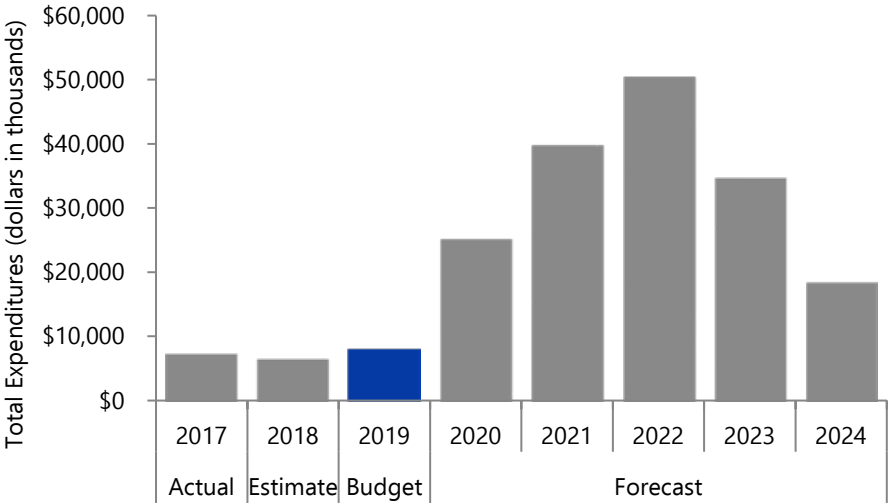




Conveyance Facilities

The District owns and operates an extensive system of sanitary sewers used to collect, convey, and in some cases, store wastewater originated by local sewer systems. The local sewer systems are operated and maintained by governments within the District and those contracted with the District. Wastewater generated from households and businesses flows to the local systems, is collected by the District's system, and is conveyed to the District's two Water Reclamation Facilities. The budget divides the District's conveyance system into three components: the Metropolitan Interceptor Sewer System, the Inline Storage System, and the Central Control System.

Conveyance Facilities



Metropolitan Interceptor Sewer System

The District's Metropolitan Interceptor Sewer (MIS) system, a network of sanitary sewers, is operated and maintained through a contract with Veolia Water Milwaukee (VWM). The purpose of the MIS system is to intercept wastewater from local sanitary and combined sewer systems within the service area. Wastewater within the MIS system is subsequently conveyed to either the Jones Island or South Shore Water Reclamation Facilities.

The MIS system is divided into seven subsystems for purposes of flow monitoring analysis and system control. In the combined sewer area where both sanitary and storm water systems are combined, the MIS subsystem consists of a high-level and a low-level sewer system. The low-level system provides service to the low-lying areas along the Milwaukee, Menomonee, and Kinnickinnic rivers. Flow in both high and low-level systems is conveyed by gravity to either of two siphon chambers (East Erie Street or East Bruce Street) and is then conveyed via a double-barreled siphon to a wet well at Jones Island.

Flows can also be diverted between the subsystems for conveyance to either Jones Island or South Shore. Moreover, flows can be diverted to the Inline Storage System, a large storage facility underground. Diversion of flow between subsystems is accomplished by manually operating gates and flow diversion devices or by operator initiation from the District's Central Control System.

Inline Storage System

The Inline Storage System (ISS), or Deep Tunnel System, consists of 21.4 miles of tunnels 300 feet underground and can store up to 432 million gallons of wastewater. The cornerstone of the Water Pollution Abatement Program (WPAP), the ISS became fully operational in 1994. The Northwest Side Relief Sewer (NWSRS) went on-line in early 2006. This storage tunnel is 7.1 miles long, 20 feet in diameter and adds 89 million gallons of storage capacity to the existing system, for a total of 494 million gallons. The ISS and NWSRS store peak wastewater flows that temporarily exceed the capacity of either the Water Reclamation Facilities or the MIS system. The system is designed to substantially reduce the number of bypasses and the discharge of untreated or partially treated wastewater into Lake Michigan and area streams.

During wet weather periods, the MIS system surcharges when the hydraulic capacity of the system has been reached. When this happens, pressure causes the flow to seek a free outfall. Under the original MIS system design, this outfall (also referred to as an overflow) flowed into area rivers and Lake Michigan. Since completion of the WPAP, when the system becomes surcharged the near-surface collector system conveys excess flows to the ISS via a series of 24 drop shafts. The ISS system was designed to eliminate overflows from the separated sewer area and to greatly reduce overflows in the combined sewer area. The ISS was designed to capture most, but not all, of the flows caused by extreme wet weather events.

Central Control System

Using continuous and intermittent monitors, flows within the MIS system and the local sewer system are monitored. Continuous monitors are permanently installed in over 300 locations and primarily use a wireless communication system to transmit data back to the District's Central Control System. Intermittent monitors are temporarily installed and rely on field crews to retrieve the data.

Along with monitoring flow data, the Central Control System allows remote operation of the conveyance system. A single operator can divert flow from one subsystem to another, from one water reclamation facility to another or to the ISS. The goal of the Central Control System is to ensure that water reclamation facility and conveyance capacity is utilized in the most efficient manner.

The 2019 Capital Budget includes \$8.0 million for work on various conveyance projects. Please refer to project detail on the following pages for information on the project purpose, scope, cost estimate and impact on the O&M budget.

Subsystem 1 – South Shore Main Branch

Metropolitan Interceptor Sewer System

Subsystem 1 is located in the southern part of Milwaukee County. While some areas of Subsystem 1 can be diverted to either the Jones Island or South Shore Water Reclamation Facilities, a majority of flows are tributary to South Shore. Municipalities that discharge to Subsystem 1 are the cities of Cudahy, Franklin, Greenfield, Milwaukee, Oak Creek, St. Francis, and West Allis, and Village of West Milwaukee.

There are no projects for this subsystem in 2019.

Subsystem 2 – Southwest Branch

Metropolitan Interceptor Sewer System

Subsystem 2 is located on the south side of the planning area and its flows are tributary to South Shore. The communities discharging to this subsystem are the cities of Franklin, Greenfield, Milwaukee, Muskego, New Berlin, Oak Creek and West Allis, the villages of Caledonia, Greendale, and Hales Corners.

ID #:	Name:	Phase	Start	Finish	Cost
C02008	Force Main Rehabilitations	Prelimin. Eng	Jan-10	Jul-20	\$2,820,271
		Design	May-10	Jan-12	\$12,570
		Total			\$2,832,841
		Previously Approved Total			\$2,506,150
		Increase/(Decrease)			\$326,691

Project Description

The purpose of this project is to replace failed sections of the force main associated with the Franklin/Muskego pump stations and where applicable perform replacements. Earlier phases included inspection of force mains as the force mains have not been inspected since they were put into service 25 years ago. The District will replace sections of pipe that have significant wall loss and confirm the inspection results. The increase in total project cost is due to revised cost estimates following further engineering analysis. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
C02009	Franklin/Muskego Gravity MIS Chemical Addition	Planning	Jan-19	Sep-20	\$380,600
		Prelimin. Eng	Aug-20	Dec-21	\$181,396
		Design	Dec-21	Jun-22	\$187,950
		Construction	Sep-22	Jan-23	\$517,068
		Post-Constr.	Feb-23	Jun-23	\$5,674
		Total			\$1,272,688
		Previously Approved Total			\$872,517
		Increase/(Decrease)			\$400,171

Project Description

The purpose of this project is to reduce the odors and hydrogen sulfide levels in the Southwest Interceptor and develop a protocol for hydrogen sulfide (H₂S) issues throughout the MIS system. The scope consists of the recommendations for H₂S mitigation in the Southwest Interceptor and other MIS to reduce odors, corrosion, and potential health risks due to hydrogen sulfide gas production. The District will need an analysis of H₂S and its impact on the MIS. The change in total project cost is to add scope for a preliminary engineering phase to review and analyze H₂S and odors in the MIS system and develop best practices for mitigating the gas. No impact on operating budget anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
C02011	Force Main Greenfield Park Rehabilitation Project	Design	Feb-19	Nov-19	\$340,236
		Construction	Mar-20	Nov-20	\$1,306,641
		Post-Constr.	Dec-20	Apr-21	\$10,013
		Total			\$1,656,890
		Previously Approved Total			\$1,611,108
		Increase/(Decrease)			\$45,782

Project Description

The purpose of this project is to address the rehabilitation, replacement, and long-term monitoring plan for the Greenfield Park Force Main based on the final recommendations from project C02008. Several locations of the Greenfield Park Force Main pipe have been identified that may have an accelerated corrosion rate. This project is to identify potential issues and prevent any leaks and consequently SSOs that may occur if the pipe repair is not addressed. The change in total project cost is due to inflation. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
C02012	10 th Avenue MIS Lateral Reconstruction	Design	Jan-19	Apr-19	\$13,380
		Construction	May-19	Aug-19	\$79,554
		Post-Constr.	Sep-19	Sep-19	\$5,677
		Total			\$98,611
		Previously Approved Total			\$0
		Increase/(Decrease)			\$98,611

Project Description

The purpose of this project is a result of the installation of a MMSD interceptor sewer. The scope is to restore the five 6-inch lateral crossings and one 8-inch City of Oak Creek sewer crossing over an MIS to their original vertical alignments. The current sewers have sags in them, which was caused by construction methods and settlement in previous years. This is a new project. There is no anticipated impact on the operating budget.

Subsystem 3 – Northwest Branch

Metropolitan Interceptor Sewer System

Subsystem 3, serving the western part of the service area can have most of its flow diverted to either water reclamation facility. A small portion of the area is tributary to South Shore only. Municipalities that discharge to Subsystem 3 are the cities of Brookfield, Mequon, Milwaukee, New Berlin, Wauwatosa, and West Allis; and the villages of Butler, Elm Grove, Germantown, and Menomonee Falls.

There are no active projects for this subsystem in 2019.

Subsystem 4 – Northeast Branch

Metropolitan Interceptor Sewer System

Subsystem 4 is located in the central and northeast parts of the planning area. Some flows in Subsystem 4 can be diverted to either water reclamation facility. Flow that cannot be diverted is tributary to South Shore. Municipalities served by Subsystem 4 are the cities of Glendale, Mequon, Milwaukee, Wauwatosa and West Allis; and the villages of Bayside, Brown Deer, Fox Point, River Hills, and Thiensville.

ID #:	Name:	Phase	Start	Finish	Cost
C04010	Mill/Green Bay/Green Tree MIS Relief	Planning	Jan-16	Dec-18	\$2,000,902
		Design	Sep-19	Dec-20	\$5,748,993
		Construction	May-21	Dec-22	\$37,740,659
		Post-Constr.	Dec-22	Jun-23	\$141,631
		Total			\$45,632,185
		Previously Approved Total			\$52,302,078
		Increase/(Decrease)			(\$6,669,893)

Project Description

The purpose of this project is to reduce SSOs and provide conveyance relief to the 72-inch MIS from West Green Tree Road and North River Road at Bypass Structure BS0404 to West Mill Road and North Sydney Place at Diversion Chamber DC0409. In both 2014 and 2015, overflows occurred at BS0404 while the ISS was available for inflows from this area. This is an indication that enough development has occurred to cause a need for conveyance enhancement or relief of the 72-inch MIS downstream of BS0404. The scope of this project includes a hydraulic evaluation to determine a solution that will address the 72-inch MIS, as well as, other known conveyance issues on the northeast side of the District's service area. Cost estimates for this project were based on conveyance relief for 8,300 linear feet of 108-inch sewer and twelve manholes with depths between 20 and 50 feet. The decrease in total project cost is due to refined construction cost estimates. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
C04011	Martha Washington Dr. MIS Segment Rehabilitation	Design	Oct-17	Jan-18	\$54,616
		Construction	Apr-18	Aug-18	\$295,142
		Post-Constr.	Oct-18	Mar-19	\$5,070
		Total			\$354,828
		Previously Approved Total			\$354,605
		Increase/(Decrease)			\$223

Project Description

The purpose of this project is to investigate the MIS segment, develop bid documents, and construct either replacement, cured in place lining, or pipe bursting of five MIS segments so roots can no longer cause blockages. The project includes evaluation and determination of the actual length of pipe needing rehabilitation. This project will reduce the risk of SSOs from an 18-inch MIS near Martha Washington Drive in Wauwatosa and will extend the service life by 50 years. The change in total project cost is de minimus. No significant operating budget impact is expected from this project.

Subsystem 5 – North Side High Level Branch

Metropolitan Interceptor Sewer System

Subsystem 5 is located in the northeastern part of Milwaukee County. Most of this subsystem's flows are tributary to Jones Island. Flow from River Hills and portions of Glendale can be diverted to South Shore. Municipalities discharging within Subsystem 5 are the cities of Glendale, Mequon, and Milwaukee; and the villages of Brown Deer, River Hills, Shorewood, and Whitefish Bay.

ID #:	Name:	Phase	Start	Finish	Cost
C05041	Basin H MIS PCB Remediation and Rehabilitation (C016)	Design	Jan-06	Aug-20	\$1,365,054
		Construction	Nov-06	Aug-23	\$5,900,195
		Post-Constr.	Jun-23	Dec-23	\$33,874
		Total			\$7,299,123
		Previously Approved Total			\$6,489,281
		Increase/(Decrease)			\$809,842

Project Description

The purpose of the project is to reduce the risk of a sanitary sewer overflow due to the failure of the Basin H MIS and provide a cost-effective service life of an additional 50 years or more. The project scope is to design and implement rehabilitation of the MIS located in Basin "H" of the Central MIS sewer system. The MIS runs roughly adjacent to the Milwaukee River from Auer Avenue to Hampton Avenue northward and from Auer Avenue to Milwaukee Street southward. This project includes removing poly chlorinated biphenyl (PCB) contaminants, installing joint seals and repairing longitudinal cracks in pipe segments, and rehabilitating manholes to provide additional 50-years of service life. The increase in total project cost is due to the addition of environmental engineering oversight to the project. The operating budget will be impacted by costs to remove PCBs in areas of the MIS that are not be rehabilitated. Insurance reimbursements are anticipated to partially offset the PCB removal costs.

ID #:	Name:	Phase	Start	Finish	Cost
C05051	Edgewood MIS Extension	Prelimin. Eng	Jan-17	May-18	\$39,650
		Design	Jan-19	Oct-19	\$616,247
		Construction	May-20	Mar-21	\$7,384,716
		Post-Constr.	Aug-21	Dec-21	\$8,482
		Total			\$8,049,095
		Previously Approved Total			\$6,817,209
		Increase/(Decrease)			\$1,231,886

Project Description

The purpose of the project is to improve the hydraulic condition at the connection between the local sewer and the District facilities. This improvement will reduce the likelihood of basement backups in the Village of Shorewood and City of Milwaukee. The project scope will construct approximately 1,650 feet of 66-inch near surface collector sewer in East Edgewood Ave. Five new structures will be constructed with this project. Reducing water levels in the area will result in a greater level of service to the municipalities. The increase in total project cost is due to refined cost estimates. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
C05053	River Road MIS & Glendale Sewer	Design	May-19	Dec-20	\$1,123,000
		Construction	Apr-21	Aug-23	\$37,634,000
		Post-Constr.	Aug-23	Jan-24	\$10,000
		Total			\$38,767,000
		Previously Approved Total			\$0
		Increase/(Decrease)			\$38,767,000

Project Description

The purpose of this project is to improve the hydraulic capacity of the District's North Shore MIS by replacing the Milwaukee River MIS north of Green Tree Road with the proposed River Road MIS. The existing Milwaukee River MIS surcharges and reaches critical elevations during large rain events and has led to overflows at the Range Line Road Pump Station. The project scope includes design and construction of approximately 11,800 feet of 36- to 42-inch diameter MIS in a new alignment. The scope also includes design and construction of 7,000 feet of 15- and 18-inch Glendale sewers, and approximately 1,500 feet of small diameter local and private sewers that eventually are to be transferred to the City of Glendale and approximately 7,600 feet of small diameter local sewers that eventually are to be transferred to the Village of River Hills. This is a new project. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
C05055	BS0503 Facility Upgrades	Planning	Jan-19	Nov-19	\$118,878
		Total			\$118,878
		Previously Approved Total			\$0
		Increase/(Decrease)			\$118,878

Project Description

The purpose of this project is to reduce the risk of SSOs at BS0503 which is located at 35th Street and Roosevelt. The project scope includes a planning study to determine improvements that will reduce wastewater levels in the MIS in the vicinity of BS0503. The planning study will result in recommendations for design and construction improvements. This is a new project. No significant operating budget impact is expected from this project.

Subsystem 6 – South Side High Level Branch

Metropolitan Interceptor Sewer System

Subsystem 6 is located in the southern half of Milwaukee County. Some areas of Subsystem 6 can be diverted to either the Jones Island or South Shore Water Reclamation Facilities. Some areas are tributary only to Jones Island and some only to South Shore. Municipalities that discharge to Subsystem 6 are the cities of Cudahy, Greenfield, Milwaukee, St. Francis, and West Allis, and the Village of West Milwaukee.

There are no active projects for this subsystem in 2019.

Subsystem 7 – Low Level Branch

Metropolitan Interceptor Sewer System

Subsystem 7 in the east central portion of Milwaukee County consists of the combined sewer service area of Milwaukee and some scattered separate sanitary sewer areas surrounding it. These flows are tributary to Jones Island only. The Municipalities discharging to Subsystem 7 are the cities of Milwaukee and St. Francis and the Village of West Milwaukee.

ID #:	Name:	Phase	Start	Finish	Cost
C07036	Siphons Assessment/Inspection	Prelimin. Eng	Sep-19	Apr-21	\$1,833,339
		Total			\$1,833,339
		Previously Approved Total			\$1,778,444
		Increase/(Decrease)			\$54,895

Project Description

The purpose of this project is to provide a condition assessment of identified siphon pipes. Phase one of this project is to determine which siphons need to be replaced or have a major rehab. The project scope includes an investigation of pipe wall thickness, assessment of rates of corrosion or other forms of degradation of pipe strength, and recommendations of actions to be taken. Many of the siphons are 70 to 90 years old and consist of concrete or cast-iron pipe. There is comparatively little known about the existing condition of these siphons, particularly cast iron and monolithic concrete siphons built before the 1940s. The District will have a better understanding of its siphons pipes in terms of condition, failure mechanism and location, specific inspection techniques, and analysis of risk avoidance regarding permit violations in the event of a failure. The change in total project cost is due to inflation. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
C07037	South Shore Force Main Assessment	Prelimin. Eng	Aug-17	Sep-20	\$989,423
		Total			\$989,423
		Previously Approved Total			\$988,668
		Increase/(Decrease)			\$755

Project Description

The purpose of this project is to investigate the South Shore Force Main pipe to determine the risk of leaks leading to a sewerage overflow and it is part of a capital planning effort that will identify capital improvements to the SS Force Main. The project scope includes preliminary engineering of the force main including capacity review non-destructive review of the condition of the pipe and design of the required inspection of the pipe based on the analysis. The project will provide the location of potential corrosion along the force main pipe alignment as well as a prioritization of the anomalies observed. The change in total project cost is de minimus. The operating budget impact is not known at this time.

General Interceptor Sewer System

Metropolitan Interceptor Sewer System

Projects grouped in this category are projects that benefit the overall Interceptor Sewer System or cannot be attributed to a single subsystem.

ID #:	Name:	Phase	Start	Finish	Cost
C98044	MIS Abandonment	Design	Sept-14	Jan-23	\$115,000
		Construction	Sept-14	Dec-22	\$1,068,863
		Total			\$1,183,863
		Previously Approved Total			\$1,183,863
		Increase/(Decrease)			\$0

Project Description

The purpose of this project is to reduce the total length of sewers that the District is responsible for by abandoning sewers that are no longer necessary. Abandoning unnecessary MIS segments reduces I/I into the District's system, maintenance costs associated with these sewers, and the likelihood of overflows. This project consists of sewer abandonments in multiple locations including:

- In North Sherman, north of Dean;
- Along and under the Menomonee River near 84th Street (extended);
- In Oregon (Menomonee Special wood sewer) from Water Street to 5th Street;
- In West Dickinson;
- West Center St;
- 1st/Water/Seeboth;
- Kinnickinnic River Parkway;

The reconstruction costs associated with the abandonments and the locations qualify the work to be funded as part of the capital budget. The project is expected to have a positive operating budget impact as reducing the amount of I/I that must be treated as well as reducing the amount of sewer that requires periodic maintenance costs should reduce O&M costs.

ID #:	Name:	Phase	Start	Finish	Cost
C98047	Access Hatch Covers	Design	Dec-12	Dec-12	\$13,764
		Construction	Jan-13	Dec-22	\$1,788,040
		Total			\$1,801,804
		Previously Approved Total			\$1,801,805
		Increase/(Decrease)			(\$1)

Project Description

The purpose of this project is to improve the reliability of conveyance facility assets. The project scope is to design and construct replacement access hatch covers throughout the conveyance system. Hatch covers are typically installed along with new sewers for the purpose of providing ongoing access to conveyance facilities for the purpose of maintenance and monitoring. The useful life of a hatch cover is typically less than the typical sewer and thus requires a more frequent replacement schedule. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
C98052	Miscellaneous Sewer Rehab	Design	Mar-19	Mar-22	\$115,824
		Construction	Jul-22	Nov-22	\$311,213
		Post-Constr.	Jan-23	May-23	\$5,672
		Total			\$432,709
		Previously Approved Total			\$423,836
		Increase/(Decrease)			\$8,873

Project Description

Approximately 75 miles of MIS has been identified that currently functions primarily as local municipal sewer. Discussions with the appropriate municipalities regarding the transfer of these sewers from the District to the local municipality is ongoing. Bringing these sewer segments up to at least a National Association of Sewer Service Companies (NASSCO) 3 rating would allow the municipality some assurance that the segments should have at least another 20 years of service life. This is one of the conditions needed to obtain municipal approval of the transfer of these sewers from the District to the municipality. The scope includes addressing all identified NASSCO 4 and 5 defects in the segments of MIS that may have ownership transferred to a local municipality. This effort is being coordinated with the District's Asset Management Program (AMP). When sewers receive condition ratings of 4 or 5, the AMP develops plans to rehabilitate or replace the sewers. The increase in total project cost is due to refined cost estimates and inflation. As specifically identified, future costs will be added to the project. The project is expected to have a positive operating budget impact as the reduction in inspection, operation, maintenance, and replacement/lining of facilities are no longer needed.

ID #:	Name:	Phase	Start	Finish	Cost
C98053	Conveyance Gate Rehab, Phase 4	Design	Jan-16	Mar-17	\$385,344
		Construction	Jun-17	Aug-18	\$2,602,300
		Post-Constr.	Aug-18	Feb-19	\$7,344
		Total			\$2,994,988
		Previously Approved Total			\$3,009,271
		Increase/(Decrease)			(\$14,283)

Project Description

The purpose of this project is to ensure the reliability and effectiveness of controlling flow within the District's conveyance system to maximize wastewater treatment and minimize sewerage overflows and basement backups. The project scope is to design and construct the rehabilitation of nine gate systems at drop shaft sites and diversion chambers within the District conveyance system. The work will include, as applicable, the gate position indicators, gate actuators, and gates used in the operation of the conveyance system. The change in total project cost is due to revised construction cost estimates. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
C98054	Force Main Cathodic Protection	Planning	Oct-19	May-21	\$769,400
		Total			\$769,400
		Previously Approved Total			\$755,050
		Increase/(Decrease)			\$14,350

Project Description

The purpose of this project is to assess where potentially stray current interference from other utility metallic pipes such as gas, water, electric, telephone, oil, or railway could be located as hot spots within the District's metallic pipe network. When hot spots are identified, a combined effort will be established with all pipeline utility owners at each of the individual sites to coordinate efforts and to eliminate the effect of stray current interference, which will reduce the possibility of external corrosion. The change in total project cost is due to inflation. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
C98055	Conveyance Equipment Replacement	Construction	Jan-17	Dec-22	\$600,000
		Total			\$600,000
		Previously Approved Total			\$600,000
		Increase/(Decrease)			\$0

Project Description

The purpose of the project is to provide budgeted funding for conveyance system equipment replacements. Project scope is variable and is based on the need for conveyance system equipment replacements that arise. Projects are generally replacement in nature and do not need significant design that would cause the work to be managed as a stand-alone project. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
C98056	Conveyance System Modeling Software Improvements	Prelimin. Eng	Jan-18	Aug-23	\$2,556,464
		Total			\$2,556,464
		Previously Approved Total			\$2,484,284
		Increase/(Decrease)			\$72,180

Project Description

The purpose of this project is a system-wide calibration of sewer flows in the conveyance system and conveyance model improvements. It will also include an evaluation of the I/I and conveyance capacity verification from the 2050 FP. New models will need to be developed or existing models will need to be improved to incorporate more flexibility and functionality, removing dependence on additional programs to represent the MMSD ISS operating strategy. The change in total project cost is due to inflation. Two major tasks (model review/recommendations and annual model maintenance) under this project will be funded by the O&M budget and are not included in the capital costs. The tasks begin in 2018 and will be incurred through the end of the project.

ID #:	Name:	Cost
C99002	Operator Contribution to CIP	Six-Year Forecast Total
		\$300,000
		Total
		\$300,000

Project Description

The operating contract with VWM includes provisions for VWM to participate on current and planned District capital projects. The scope of this project includes VWM work in reviewing the annual Capital Budget, reviewing and creating requests for new projects, attending meetings, and participation in the implementation of capital projects. Operator Contribution to CIP accounts do not have an approved total project cost. The 2019 expenditures are budgeted at \$50,000; the six-year long-range financing plan includes \$300,000. No significant operating budget impact is expected from this project.

ID #:	Name:	Cost
C99004	Allowance for DOT Reimbursements	Six Year Forecast Total
		\$1,000,000

Project Description

This project represents the District's share of costs associated with WisDOT relocation of MMSD assets located within WisDOT right-of-way in the Zoo Interchange Project. This account has \$200,000 in 2019 and \$1 million in the six-year forecast. No significant operating budget impact is expected from this project.

Inline Storage System

Combined Sewer Overflow Structures

Combined Sewer Overflow (CSO) Structures are used when flows exceed storage, conveyance, and treatment system capacity. When the system is filled to capacity, it is designed to overflow into Milwaukee-area rivers and Lake Michigan. Therefore, these structures only become necessary in an extreme wet weather event. During such an event, rainwater enters the system at a greater rate than the system design. To avoid an immediate public health issue of wastewater in basements and system damage, excess flows are allowed to discharge from the Inline Storage System and the MIS system via the CSO Structures.

ID #:	Name:	Phase	Start	Finish	Cost
I03008	CSO102 Rehabilitation - Humboldt	Planning	Jul-14	Nov-15	\$25,799
		Design	May-19	Feb-20	\$273,414
		Construction	May-20	Jan-21	\$974,364
		Post-Constr.	Feb-21	Jun-21	\$6,369
		Total			\$1,279,946
		Previously Approved Total			\$1,142,929
		Increase/(Decrease)			\$137,017

Project Description

The purpose of this project is to extend the useful life of District conveyance assets. The project scope includes the design and construction of rehabilitating 250 linear foot of 72-inch cast-in-place concrete pipe combined sewer outfall that discharges to the Milwaukee River near Humboldt Avenue. A condition assessment identified significant cracking, numerous holes with soil visible, and significant infiltration. The change in total project cost is due to updated labor cost assumptions. No significant impact on operating budget is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
I06001	NS12 Collector System Improvements	Prelimin. Eng	Jan-16	Apr-17	\$172,509
		Design	Jun-17	Apr-19	\$821,537
		Construction	Sep-19	Sep-21	\$15,416,592
		Post-Constr.	Nov-21	May-22	\$18,300
		Total			\$16,428,938
		Previously Approved Total			\$8,557,236
		Increase/(Decrease)			\$7,871,702

Project Description

The purpose of this project is reduce the risk of combined sewer overflows (CSO) and wastewater discharged to grade, all related to the NS12 collector system. The improvements were recommended as part of the root cause analysis for CSO145. This project will help prevent future unintended CSOs and surface flooding as a result of blown manhole covers. The scope of this project will include the construction of two new structures, 140 feet of 84-inch pipe, and level and flow monitoring equipment. The increase in total project cost is primarily due to increased design and construction phase cost estimates as a result of a different course of action chosen requiring more than originally estimated tunneling, manholes, and structures. No significant operating budget impact is expected from this project.

ID #:	Name:	Phase	Start	Finish	Cost
I98003	Miscellaneous Outfall Improvements	Design	Mar-18	Feb-19	\$91,844
		Construction	Jun-19	Dec-19	\$176,371
		Total			\$268,215
		Previously Approved Total			\$215,124
		Increase/(Decrease)			\$53,091

Project Description

The purpose of this project is to allow more capacity in the 36-inch MIS to be utilized before an overflow would occur, reduce the risk of a SSO at SSO 243, reduce the risk of collapse of the unused pipe at outfall SSO 237, provide access to the buried structure at outfall SSO 234, and reduce I/I that is entering the brick portion of MH BS0304D at outfall SSO 242. The project scope includes preparation of design and associated bid documents and construct the improvements at four SSOs. The change in total project cost is due to inflation and scope refinement. No significant operating budget impact is expected from this project.

Central Control System

Conveyance System Central Control

The Central Control System allows remote operation of the conveyance system. The system design and operation are focused on maximizing the effectiveness and efficiency of storing and conveying wastewater to the Water Reclamation Facilities to avoid surcharging. A single operator uses incoming flow data and software-produced data to determine if flow should be diverted from one Metropolitan Interceptor Sewer (MIS) subsystem to another or to the ISS.

ID #:	Name:	Phase	Start	Finish	Cost
K01012	Conveyance SCADA Upgrade	Prelimin. Eng	Nov-13	Jan-15	\$112,212
		Design	Jun-15	Mar-18	\$1,492,282
		Construction	Mar-16	Apr-20	\$6,062,149
		Post-Constr.	May-20	Oct-20	\$10,000
		Total			\$7,676,643
		Previously Approved Total			\$7,692,451
		Increase/(Decrease)			(\$15,808)

Project Description

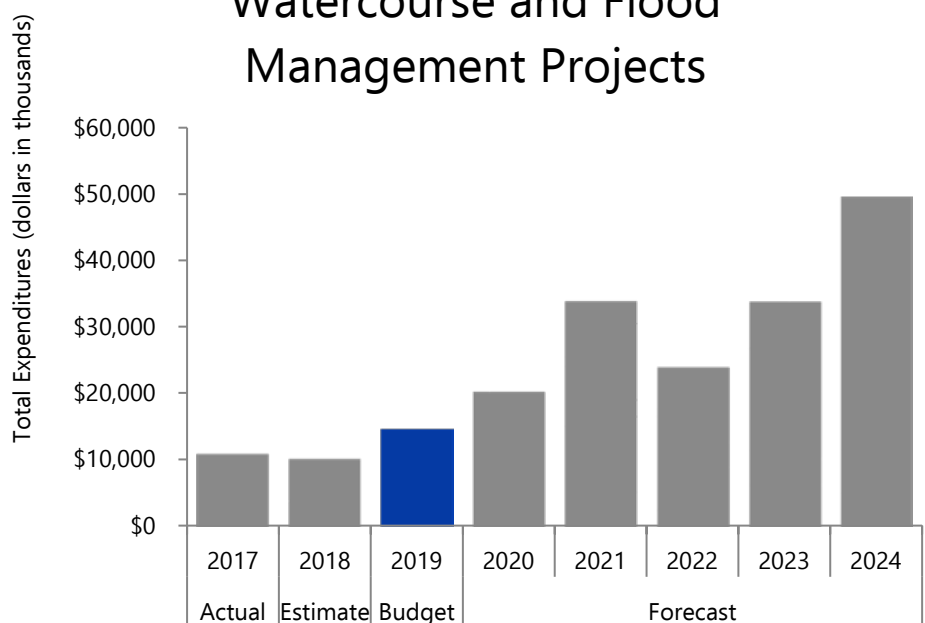
The purpose of this project is to upgrade the Conveyance Supervisory Control and Data Acquisition (SCADA) communication system that has reached the end of its useful service life. This project will provide a more reliable, flexible, and expandable system with lower life cycle cost. SCADA system operation is critical to properly operate the conveyance system and to reduce the risk of overflows and basement backups. The project scope is to evaluate alternatives, design, and construct the replacement SCADA system. The conveyance SCADA system allows a single operator to use incoming flow data and software-produced data to determine if flow should be diverted from one MIS subsystem to another or to the ISS. New hardware and software systems will first be demonstrated on non-critical portions of the system, and, when proven, will then be deployed to replace the entire system. The change in total project cost is due to updated construction cost estimates. The operating budget impact is not known at this time.



Watercourse and Flood Management

There are six watersheds within the District's service area: Kinnickinnic River, Lake Michigan Tributary Drainage, Menomonee River, Milwaukee River, Oak Creek, and Root River. The District has discretionary authority to maintain these waterways. In the past, work has included: rehabilitation and removal of concrete, removal of sediment and flow-imposing objects, and widening floodplains for flood management purposes.

Watercourse and Flood Management Projects



Flooding and erosion of these watercourses threaten public health and private property. Consequently, there is significant public interest in flood management and abatement. Because watersheds boundaries do not necessarily follow municipal boundaries, reducing the risk of flooding requires looking at the watershed as a whole, including the complete river system and its tributaries.

The District is responsible for reducing the risk of flooding for two reasons. First, managing flooding promotes efficient use of the sewerage system by reducing infiltration and inflow. Second, a regional government is the most appropriate entity to address watershed issues that involve multiple municipalities. A watershed is an area of land where all of the water, on the surface and underground, drains to a common place such as a lake, river, or ocean. The District's authority to reduce the risk of flooding is in Wis. Stats., sec. 200.31(1).

In the mid-1980s, the District requested that the Southeastern Wisconsin Regional Planning Commission (SEWRPC) recommend watercourses for District action. In response, SEWRPC prepared both a policy plan and a system plan. Considerations favoring District action were (1) the watershed included multiple municipalities, (2) the watershed had a potential for significant harm from the regional flood, and (3) the watershed had a history of investment by the District's predecessors. The goal was to separate issues that should be addressed locally from issues that needed regional action. In 2001, the District codified the recommendations in MMSD Rules, Chapter 13. Chapter 13 lists the watercourses where the District may take action. Municipalities may petition the District's Commission to add watercourses to the list. District action is discretionary and limited to abating the most severe floods. Listing does not guarantee any particular level of protection. Notably, municipalities are responsible for abating smaller floods and flooding associated with watercourses that are not listed.

In 1998, the District and local municipalities began the planning process for the development of an updated Watercourse System Management Plan. Flood abatement alternatives have been developed for each of the six watersheds. Phase I of the planning process incorporated the results of past planning efforts such as the 1990 Watercourse System Plan developed by the SEWRPC as well as new technical information on land use, peak stormwater flows, estimated damages, and other hydrologic and hydraulic information.

The process has solicited input from affected municipalities and other stakeholders, including the Wisconsin Department of Natural Resources (WDNR), the Wisconsin Department of Transportation, Milwaukee County, SEWRPC, and environmental groups. Meetings with stakeholders in each watershed focused on data gathering, problem identification, and the development and prioritization of potential structural and nonstructural alternatives for flood management. Phase I was completed in 2000. Phase II of the process has allowed area residents to comment on the design and location of recommended structural and nonstructural flood management measures.

In addition, the District established a Watercourse Policy Advisory Group to recommend policy on the District's responsibility relating to flood management. Recommendations were reported to and approved by the Commission in April 1998 regarding the relationship between municipal stormwater management and District flood management activities, funding responsibilities, procedures for project prioritization, and policies for potential interim projects and riparian management.

The 2019 Capital Budget includes \$14.5 million for work on various watercourse projects. Please refer to project detail on the following pages for information on each project's purpose, scope, cost estimate, and impact on the O&M budget.

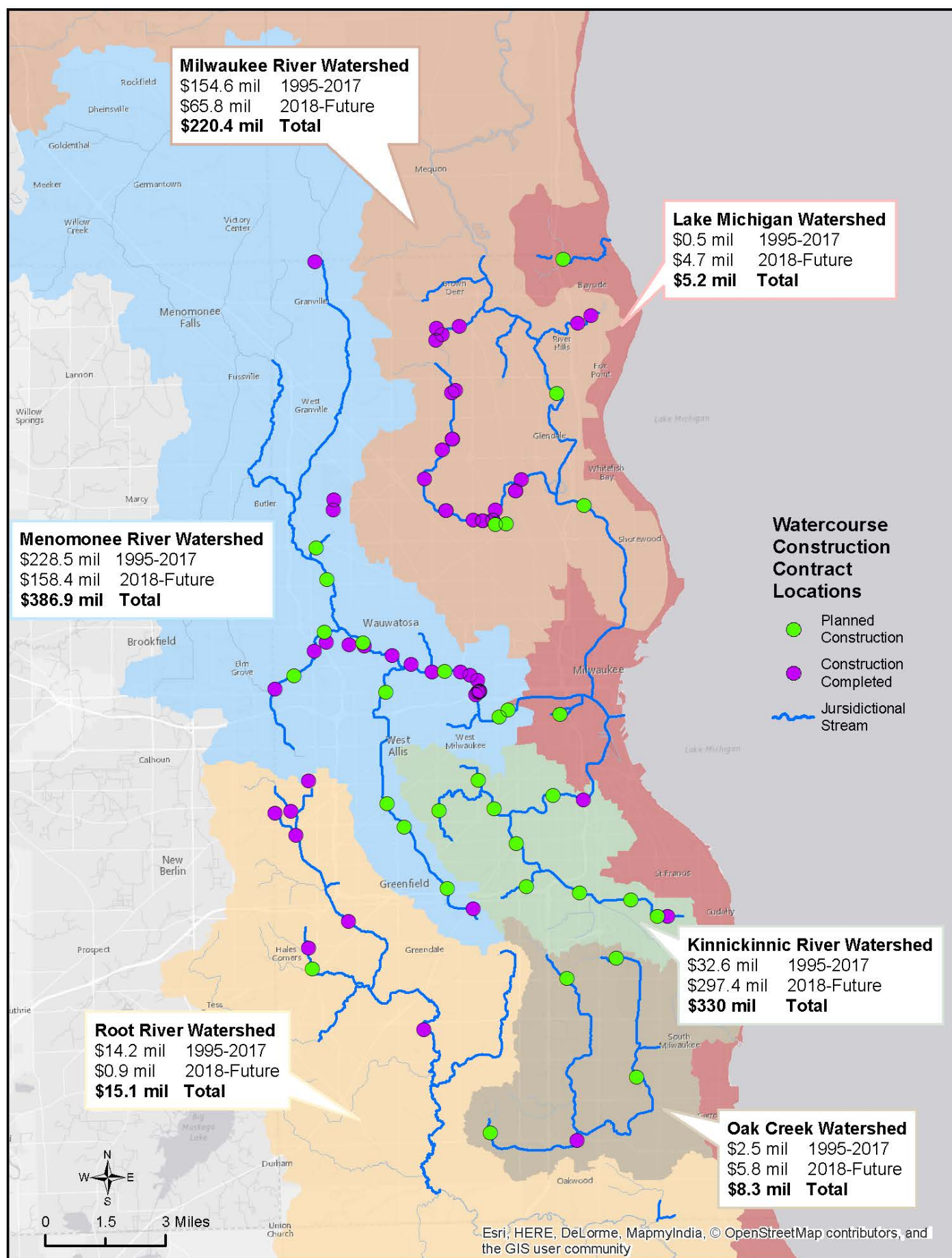
Because watersheds
boundaries do not
necessarily follow
municipal boundaries,
reducing the risk of
flooding requires
looking at the
watershed as a whole.



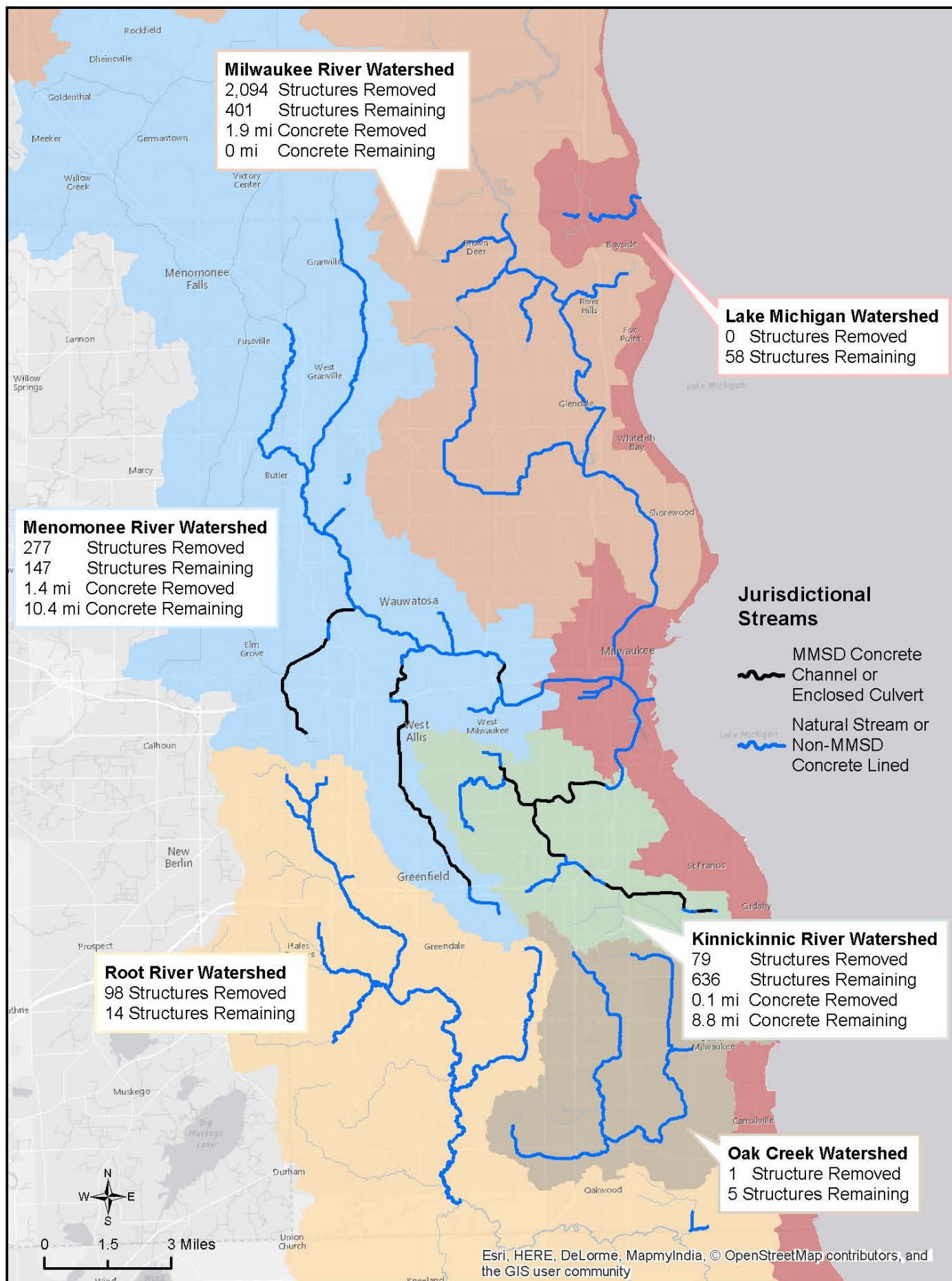
The District has spent approximately \$433 million since 1995 on removing structures from the floodplain and concrete on concrete-lined channels. The District plans to spend another \$533 million in order to make the watersheds safer and to reduce the risk of flooding. Below is a table showing the District's involvement on each of the six watersheds.

1995 - 2018				2019 - Future		
Watershed	Spending (in millions)	# of structures no longer in the floodplain	Miles of concrete lined channel removed	Spending (in millions)	# of structures remaining in the floodplain	Miles of concrete lined and enclosed channel remaining
Milwaukee River	\$154.6	2,095	1.9	\$65.8	400	0
Lake Michigan	\$0.5	0	0	\$4.7	58	0
Menomonee River	\$228.5	277	1.4	\$158.4	147	10.4
Kinnickinnic River	\$32.6	80	0.1	\$297.4	635	8.8
Root River	\$14.2	98	0	\$0.9	14	0
Oak Creek	\$2.5	3	0	\$5.8	3	0
Total	\$432.9	2,550	3.4	\$533.0	1,267	19.2

1995 - Future: Total District spending on flood management and concrete removal, by watershed



1995 - Future: Number of structures removed, by watershed



Milwaukee River Watershed

The Milwaukee River Watershed drains an area of about 700 square miles within Fond du Lac, Dodge, Sheboygan, Ozaukee, Washington, and Milwaukee counties. The Milwaukee River is nearly 100 miles in length, although only a small portion of the mainstream is under District jurisdiction. Approximately 25 percent of the watershed is developed, mainly within Milwaukee County. Preliminary engineering estimates 400 structures are within the one percent annual probability floodplain of the Milwaukee River mainstem and tributaries as detailed below.

The 13-mile portion of the mainstem of the Milwaukee River which is under District jurisdiction includes the reach from the Milwaukee County boundary at County Line Road downstream to the former North Avenue Dam located 1,000 feet south of East North Avenue. Preliminary engineering estimates 386 structures are within the one percent annual probability floodplain.

The District also has jurisdiction over the following tributaries of the Milwaukee River:

- Lincoln Creek, which is approximately nine miles long, drains 20 square miles and is located in the City of Milwaukee, the Village of Brown Deer, and the City of Glendale. An estimated 2,025 structures are no longer within the one percent annual probability floodplain with completion of the Lincoln Creek project in 2002.
- Southbranch Creek, which drains an area of approximately three-square miles. About 54 percent is within the Village of Brown Deer, 44 percent is within the City of Milwaukee, and 2 percent is within the Village of River Hills. Since the District completed flood management projects within this watershed, there are no structures within the one percent annual probability floodplain.
- Indian Creek, which drains an area of about three-square miles. Approximately 6 percent is within the City of Glendale, 12 percent is within the Village of Bayside, 47 percent is within the Village of Fox Point, and 35 percent is within the Village of River Hills. Since the completion of the flood management projects within this watershed, there are no structures within the one percent annual probability floodplain.
- Beaver Creek, which drains an area of about four-square miles. Approximately 43 percent of the area is within the City of Milwaukee and 57 percent is within the Village of Brown Deer. There are an estimated 13 structures within the one percent annual probability floodplain.
- Brown Deer Park Creek, which drains an area of about two square miles. Approximately 71 percent is within the City of Milwaukee, 14 percent is within the City of Glendale, and 15 percent is within the Village of Brown Deer. There is an estimated one structure within the one percent annual probability floodplain.



ID #:	Name:	Phase	Start	Finish	Cost
W10001	Milwaukee River Flood Mgt	Planning	Mar-04	Jan-26	\$706,932
		Prelim. Eng.	Jan-26	Jan-32	\$46,588,623
		Total			\$47,295,555
		Previously Approved Total			\$45,712,639
		Increase/(Decrease)			\$1,582,916

Project Description

The purpose of this project is to reduce the risk of flooding to structures along the Milwaukee River within the District's jurisdiction. The project scope consists of planning and engineering to develop and implement flood risk reduction in jurisdictional areas of the Milwaukee River in Milwaukee County. The current project costs reflect the flood risk reduction for approximately 387 remaining structures by floodproofing, elevation, or acquisition. The increase in total project cost is due to additional costs for surveying, acquisition, floodproof planning, and consultant management. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W10002	Estabrook Dam Removal	Design	Oct-16	Aug-17	\$770,452
		Construction	Dec-17	Jun-18	\$1,437,233
		Post-Constr.	Jul-18	Oct-21	\$122,315
		Total			\$2,330,000
		Previously Approved Total			\$2,777,364
		Increase/(Decrease)			(\$447,364)

Project Description

The purpose of this project is to provide the benefits of flood risk reduction for at least 50 structures located in the floodplain, and to improve water quality, habitat, fish passage, river aesthetics and reduce sediment accumulation by removing the Estabrook Dam. The Estabrook Dam (Dam) was located 1,500 feet downstream of the Port Washington Road Bridge. It created an impoundment of approximately 100 acres stretching two miles upstream. The Dam was in a deteriorated condition and was under orders by the Wisconsin Department of Natural Resources (WDNR) to be either repaired or removed. The project scope consisted of complete removal of the dam. The dam was removed in 2018. The decrease in total project cost is due to construction bids being lower than anticipated as well as revised staff labor costs. The Estabrook Dam Removal project received up to \$2.3 million in grants including \$2 million from Wisconsin Department of Natural Resources (WDNR) which is funded through then EPA Great Lakes Restoration Initiative program, \$250,000 from the Fund for Lake Michigan, and \$50,000 from the WDNR Municipal Dam Grant Program. No significant operating budget impact is expected.



ID #:	Name:	Phase	Start	Finish	Cost
W10004	Milwaukee River Planning Study – Capitol to Silver Spring	Planning	Nov-17	Dec-20	\$890,389
		Total			\$890,389
		Previously Approved Total			\$475,000
		Increase/(Decrease)			\$415,389

Project Description

The purpose of this project is to identify possible planning level solutions to fish passage, recreational low-flow issues, sediment accumulation and possible flood risk reduction for the area of the Milwaukee River between Capitol Drive and Silver Spring Drive. The project scope includes a feasibility study conducted by USACE in cooperation with the District. The District's role will be to assist with data collection/inventory, assist with working with external organizations, provide partial funding and assist with development of alternatives. The increase in total project cost is due to updated labor costs to facilitate the USACE feasibility study. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W11030	North 30th Street Corridor Wet Weather Relief - East	Design	Jun-14	Oct-16	\$3,794,475
		Construction	Mar-16	Aug-18	\$10,748,019
		Post-Constr.	Sep-18	Sep-23	\$174,302
		Total			\$14,716,796
		Previously Approved Total			\$14,703,629
		Increase/(Decrease)			\$13,167

Project Description

The purpose of the project is to reduce recurring property and economic damage incurred in the North 30th Street Industrial Corridor due to limitations in District owned combined sewer and City of Milwaukee owned stormwater conveyance capacity during the one percent annual probability storm event. The project will also reduce sewer overflows that result from the limited stormwater conveyance capacity. The project scope is to design and construct two of three planned stormwater detention basins along the 4200 and 4400 blocks of N. 30th Street in the City of Milwaukee, the related piping connecting the basins in N. 30th Street, and discharge piping to existing storm infrastructure in W. Roosevelt Drive and N. 27th Street. The basins ultimately drain to Lincoln Creek. Total storage is currently estimated to be 40 million gallons. The 30th Street Industrial Corridor has reported over \$30 million in damage from previous storms. The City is sharing the cost of the project. This scope is consistent with the District's Integrated Regional Stormwater Management Program. The change in total project cost is due to refined construction cost estimates. The operating budget impact is not known at this time.

Once the project is complete, the basins are estimated to store **40 million** gallons.

ID #:	Name:	Phase	Start	Finish	Cost
W11031	North 30th Street Corridor Wet Weather Relief - West	Design	Oct-15	May-24	\$4,813,477
		Construction	Jun-16	Sep-26	\$23,299,944
		Post-Constr.	Apr-18	Nov-31	\$417,434
		Total			\$28,530,855
		Previously Approved Total			\$24,030,062
		Increase/(Decrease)			\$4,500,794

Project Description

The purpose of the project is to reduce recurring property and economic damage incurred in the North 30th Street Industrial Corridor due to limitations in District owned combined sewer and City of Milwaukee owned stormwater conveyance capacity. The project will also reduce sewer overflows that result from the limited stormwater conveyance capacity. The project scope will construct the third of three planned stormwater basins and conveyance system improvements west of the railroad tracks on the former Bee Bus Lines property. Design and construction of the west stormwater basin as well as conveyance piping to the basin and discharge piping to Lincoln Creek is planned to occur in 2023-26 (Phase 2). Phase 2 will also include collaborative construction with the City of Milwaukee of a fourth stormwater basin on District owned property at 4044 N. 31st St. and stormwater conveyance from the railroad underpass located between N. 31st St. and N. 35th St. on W. Capitol Drive. The increase in total project cost is due to the addition of the District's share of Phase 2. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
W13002	Indian Creek Improvements	Planning	Oct-16	Jun-21	\$155,513
		Prelimin. Eng	Apr-18	May-23	\$123,023
		Total			\$278,536
		Previously Approved Total			\$77,000
		Increase/(Decrease)			\$201,536

Project Description

The purpose of the project is to perform planning and preliminary engineering to develop alternatives to reduce the risk of flooding along Indian Creek. The scope also includes invasive species removal. The project scope includes geomorphic and sediment analyses as well as a study to reduce flood risk. The study will also include public outreach efforts. The change in total project cost is due to the added planning and preliminary engineering phases. No operating budget impact is anticipated.

Menomonee River Watershed

The Menomonee River Watershed drains an area of approximately 136 square miles. Communities in this watershed include the cities of Brookfield, Greenfield, Mequon, Milwaukee, New Berlin, Wauwatosa, West Allis and the villages of Butler, Elm Grove, Germantown, Greendale, Menomonee Falls, and West Milwaukee. Most of the lower two-thirds of the watershed are nearly fully developed in Milwaukee, Wauwatosa, West Allis, Elm Grove, and Brookfield. Significant developable land still exists in Mequon, Menomonee Falls, and Germantown. Major tributaries to the Menomonee River within Milwaukee County include Underwood Creek, Honey Creek, Grantosa Creek, Little Menomonee River, Woods Creek, South Branch of Underwood Creek, and Schoonmaker Creek. There are an estimated 147 structures within the one percent annual probability floodplain. Completed projects have removed 277 structures from the one percent annual probability floodplain.

ID #:	Name:	Phase	Start	Finish	Cost
W20018	Concordia Avenue	Prelimin. Eng	Apr-12	Sep-18	\$194,074
		Design	Mar-15	Feb-24	\$3,765,209
		Construction	Apr-16	Dec-27	\$998,998
		Total			\$4,958,281
		Previously Approved Total			\$3,899,830
		Increase/(Decrease)			\$1,058,451

Project Description

The purpose of this project is to reduce the flood risk for 11 properties and 12 residential structures from the one percent annual probability floodplain in the vicinity of the Menomonee River Parkway and Concordia Avenue. The project scope is to either floodproof or to purchase and remove the 12 residential structures. The increase in total project cost is due to increase in the number of remaining structures by three from nine to a total of 12 structures. Any impact on the operating budget impact is unknown at this time.

ID #:	Name:	Phase	Start	Finish	Cost
W20021	Menomonee River Stream Management - CR	Design	Jan-10	Jan-11	\$763,367
		Construction	May-13	Nov-14	\$4,744,386
		Post-Constr.	Dec-16	Dec-19	\$68,490
		Total			\$5,576,243
		Previously Approved Total			\$5,576,244
		Increase/(Decrease)			(\$1)

Project Description

The purpose of this project is to improve aquatic habitat and eliminate the migratory fish passage barrier for 17 miles of the Menomonee River and 20 miles of tributary streams. The project scope was to remove of 3,700 feet of concrete from the bed of the Menomonee River in two phases. Project W20021 was the first phase and included design and construction of the upper 1,100 feet with the steepest gradient and highest velocities. Pools and riffles with a rock substrate replaced the concrete liner. The project construction phase was completed in 2016. Project W20023 was the second phase and included design and construction of the lower 2,600 feet of the channel. The change in total project cost is de minimus. No significant operating budget impact is expected. This project was awarded grants totaling \$1,303,000 from the Fish and Wildlife Service and EPA Great Lakes Restoration Initiative.

Pools are an area of the stream characterized by deep depths and slow current.

Riffles are an area of stream characterized by shallow depths with fast turbulent water.

ID #:	Name:	Phase	Start	Finish	Cost
W20023	Phase II Menomonee River Stream Mgt	Design	Dec-12	Aug-14	\$221,938
		Construction	Oct-14	Aug-16	\$2,790,773
		Post-Constr.	Sep-16	Dec-20	\$137,356
		Total			\$3,150,067
		Previously Approved Total			\$3,079,999
		Increase/(Decrease)			\$70,068

Project Description

The purpose of this project is to improve aquatic habitat, reduce public safety risk, and replace deteriorating assets. The project scope was to design and construct replacement of concrete channel liner with a more natural channel for approximately 2,600 linear feet of channel. The concrete channel liner was also approaching its estimated life expectancy and needed to be replaced in the near future. USACE financed 65 percent of the project costs, up to a maximum contribution of \$5 million. The project construction phase was completed in 2016. The increase in total project cost is due to an extended schedule and the anticipated USACE required fish monitoring tasks in both 2019 and 2020. No operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
W20027	Western Milwaukee Phase 2A	Design	Apr-14	Nov-14	\$579,044
		Construction	Feb-15	Dec-15	\$1,500,561
		Post-Constr.	May-16	Jun-21	\$85,036
		Total			\$2,164,641
		Previously Approved Total			\$2,197,954
		Increase/(Decrease)			(\$33,313)

Project Description

The purpose of this project, along with project W20017, W20028, and W20029, is to protect an estimated 62 structures from the one percent annual probability floodplain along the Menomonee River in the Western Milwaukee corridor. These projects are a component of the Phase II Watercourse Management Plan for the Menomonee River Watershed, which revealed overbank flooding in the vicinity of West State Street on the west side of Milwaukee. The project scope is to design and construct a floodplain levee and daylight the culvert containing Schoonmaker Creek on the old Sears Warehouse property. The floodplain levee will be constructed along State Street and will tie into the Hart Park levee previously constructed by the District. Daylighting the culvert and excavation of the Sears property will lower the floodplain. The combination of these activities will remove six properties from the one percent annual probability floodplain. The decrease in total project cost is due to refined cost estimates. No operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
W20028	Western Milwaukee Phase 2B	Design	Oct-17	Jun-19	\$2,371,084
		Construction	Sep-19	Dec-24	\$22,119,984
		Post-Constr.	Dec-24	Feb-30	\$815,921
		Total			\$25,306,989
		Previously Approved Total			\$22,140,551
		Increase/(Decrease)			\$3,166,438

Project Description

The purpose of this project, along with project W20017, W20028, and W20029, is to protect an estimated 62 structures from the one percent annual probability floodplain along the Menomonee River in the Western Milwaukee corridor. These projects are a component of the Phase II Watercourse Management Plan for the Menomonee River Watershed, which identified overbank flooding in the vicinity of West State Street on the west side of Milwaukee. This project will complete the levee system in the corridor that starts just west of Hart Park at West State Street at the upstream end and extends east to US Highway 175. The project scope is to design and construct a continuation of the floodplain levee and floodwall along West State Street, east from the N. 59th and State Pump Station to tie in to high ground just east of the USH 175 overpass. Approximately 2,000 feet of earthen levee and 1,200 feet of floodwall will be designed and constructed under this project, as well as 360 feet of 90" storm sewer with inlet and outlet structures. The increase in total project cost is due to additional planning level labor costs to reflect additional survey effort and an updated cost estimate to both complete a levee and floodwall system between 59th and State and the existing levee at the former Central Redi-Mix site, and to address flood risk reduction for nine structures not protected by the levee system. Additional O&M will be required for vegetation maintenance after the five-year maintenance schedule post-construction (estimated as 2026) occurs. This project will add additional levee and floodwall lengths to the District's infrastructure which will require inspection and maintenance, starting no earlier than 2022.

ID #:	Name:	Phase	Start	Finish	Cost
W20029	Western Milwaukee Real Estate & Environmental Assessment	Design	Apr-14	Dec-26	\$8,484,815
		Construction	Apr-14	Nov-22	\$214,528
		Post-Constr.	Jul-14	Jan-22	\$5,634
		Total			\$8,704,977
		Previously Approved Total			\$8,531,915
		Increase/(Decrease)			\$173,062

Project Description

The purpose of the project, along with project W20017, W20027, and W20028, is to protect an estimated 62 structures from the one percent annual probability floodplain along the Menomonee River in the Western Milwaukee corridor. These projects are a component of the Phase II Watercourse Management Plan for the Menomonee River Watershed, which revealed overbank flooding in the vicinity of West State Street on the west side of Milwaukee. The project scope is to support to the Western Milwaukee and Hart Park projects, both of which provide protection for impacted structures from the one percent probability flood along the Menomonee River. The Commission approved an acquisition plat, allowing the purchase of 16 individual property rights from ten property owners. To date, 13 of the 16 property rights have been purchased. The scope also includes demolition of structures purchased as part of the property rights acquisition. The increase in total project cost is due to current acquisition estimates. No operating budget impact is anticipated.

ID #:	Name:	Phase	Start	Finish	Cost
W20031	Menomonee River Estuary Study	Planning	Oct-15	Nov-18	\$270,400
		Prelimin. Eng	Nov-18	Jul-20	\$197,108
		Total			\$467,508
		Previously Approved Total			\$367,401
		Increase/(Decrease)			\$100,107

Project Description

This project is a watercourse management planning study for the Menomonee River estuary between S. 29th Street and Canal Street, which is the river-dominated section of the estuary. Approximately 20 structures have been preliminarily identified within the floodplain of the Menomonee River Estuary based on recent updated SEWRPC floodplain mapping. The increase in total project cost is for additional expenditures in the planning phase to include alternative evaluation analyses. No operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W21006	Phase II - Underwood Creek Reach 1, Phase II - CR	Design	Sep-13	Dec-16	\$1,292,165
		Construction	May-16	Oct-18	\$5,758,348
		Post-Constr.	Oct-18	Feb-24	\$162,670
		Total			\$7,213,183
		Previously Approved Total			\$7,538,875
		Increase/(Decrease)			(\$325,692)

Project Description

The purpose of the project is to reduce public safety risk, provide wetland mitigation, improve aquatic habitat, and to satisfy WDNR and USACE requirements for the Milwaukee County Grounds Floodwater Management Facility project. The project scope includes the design and construction of removing approximately 4,400 linear feet of concrete channel liner on Underwood Creek from Canadian Pacific Railway Bridge to the confluence with the Menomonee River, and replacing it with a bioengineered channel. The project will construct a series of pools and riffles in a low-flow channel to enhance the natural functions of Underwood Creek. The project also includes reconstructing channel in areas where the riparian floodplain was lowered to recreate a more aesthetic and natural watercourse corridor. The project maintains the current level of flood management. The District will partner with USACE who will finance 65 percent of the project costs, up to a maximum contribution of \$10 million. The decrease in total project cost is due to the total construction costs being less than anticipated. In the first five years after construction is complete, the contractor is responsible for vegetation maintenance and establishment; after the fifth year, the District is responsible for maintaining the grounds which will impact the operation and maintenance budget.

Bioengineering is the combination of biological, mechanical, and ecological concepts to control erosion and stabilize soil through the use of vegetation or a combination of vegetation and constructed materials.

ID #:	Name:	Phase	Start	Finish	Cost
W21007	Underwood Creek Reach 2 - CR	Prelimin. Eng	Jan-15	May-26	\$7,978,313
		Design	Oct-26	Jan-28	\$1,187,081
		Construction	Apr-28	May-31	\$11,288,175
		Post-Constr.	Jun-31	Jul-36	\$46,432
		Total			\$20,500,001
		Previously Approved Total			\$20,500,000
		Increase/(Decrease)			\$1

Project Description

The purpose of this project is to reduce public safety risk, provide wetland enhancement, and improve aquatic habitat of segments of both the Underwood Creek and South Branch Underwood Creek upstream of Mayfair Road to approximately Greenfield Avenue. The project scope includes a feasibility study of 12,400 lineal feet of Underwood Creek and South Branch of Underwood Creek that will recommend how to best remove the concrete channel lining and rehabilitate the area. This project will provide the District with a data-intensive study of this segment of the streams with 50 percent of the cost covered by the USACE. Additionally, it is the first necessary step in the determination of whether there is federal interest in the project. If this is the case, the USACE will provide 65 percent of the total project design and construction costs for the segment of Underwood Creek and South Branch Underwood Creek. The change in total project cost is de minimus. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W24005	Honey Creek Watercourse Mgmt. Plan & BMPs	Prelimin. Eng	Dec-09	Jun-20	\$326,012
		Total			\$326,012
		Previously Approved Total			\$311,360
		Increase/(Decrease)			\$14,652

Project Description

The purpose of the project is to identify any structures along Honey Creek that may be at risk of flooding and to restore the channel to a more natural condition. This project scope consists of updating an existing planning study to incorporate recently revised SEWRPC floodplain maps. This updated planning study will identify flooding areas within the District's jurisdiction, provide a recommended alternative that will remove approximately 12 structures from the floodplain and incorporate channel rehabilitation, and perform a construction cost estimate of the recommended alternative. The increase in total project cost is due to refined cost estimates. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W24006	Honey Creek USACE Habitat Improvement Feasibility Study	Prelimin. Eng	Jun-15	Jan-19	\$600,000
		Total			\$600,000
		Previously Approved Total			\$600,000
		Increase/(Decrease)			\$0

Project Description

The purpose of this project is to assist USACE as a Non-Federal Sponsor with a feasibility study of the segment of Honey Creek located between the confluence with the Menomonee River and I-94. This project will provide the District with a data-intensive study of this segment of Honey Creek with 50 percent of the cost covered by the USACE. Additionally, it is the first necessary step in the determination of whether there is federal interest in the project. If this is the case, the USACE will provide 65 percent of the total project design and construction costs for this segment of Honey Creek. The concrete lining of a 5,500-linear foot segment of this project between Wisconsin Avenue to I-94 is a District asset that has reached the end of its useful life. This feasibility study will potentially lead to federal funding of a portion of the removal costs and overall rehabilitation of this segment of Honey Creek. Project scope was revised by adjusting the study length by extending the downstream boundary to the Menomonee River for an extension of approximately 2,400 feet and a revised total study length of 10,300 feet. There is no change in total project cost. No operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W24007	Honey Creek Reach 1 Concrete Removal – Portland Ave. to I-94	Design	Mar-19	Dec-20	\$416,760
		Construction	Apr-21	Nov-22	\$10,712,787
		Post-Constr.	Jan-23	Jan-28	\$88,569
		Total			\$11,218,116
		Previously Approved Total			\$13,478,978
		Increase/(Decrease)			(\$2,260,862)

Project Description

The purpose of this project is to improve the aquatic habitat of Honey Creek Reach 1 and improve safety by slowing down the flow velocities during extreme rain events. The concrete channel liner within the project reach was installed in 1967 and is approaching the end of its useful life. The project scope includes replacing approximately 5,500 linear feet of the District-owned concrete lined channel from W. Wisconsin Avenue upstream to I-94 with a more naturalized channel. It also includes 4,800 feet of channel from Wisconsin Avenue downstream to the Menomonee River which contains 1,250 feet of County-owned concrete lined channel between Currie Avenue and Wisconsin Avenue. This is a USACE Partnership project with the Feasibility Phase located in Project W24006. The decrease in total project cost is due to an incorrect construction cost estimate for previous totals. Any impacts on the operating budget are expected to begin in 2023 and would be ongoing site maintenance costs.

ID #:	Name:	Phase	Start	Finish	Cost
W28001	Schoonmaker Creek	Planning	Dec-13	Feb-20	\$282,695
		Prelimin. Eng	Feb-26	May-28	\$738,873
		Design	Oct-29	May-31	\$1,093,182
		Construction	Sep-31	Sep-33	\$8,030,523
		Post-Constr.	Nov-33	Jan-35	\$110,582
		Total			\$10,255,855
		Previously Approved Total			\$10,011,490
		Increase/(Decrease)			\$244,365

Project Description

The purpose of the project is to reduce the risk of flooding for structures and roadways within the Schoonmaker Creek watershed. The District assumed jurisdiction of Schoonmaker Creek for flood abatement purposes. Forty-six structures are within the one percent annual probability floodplain. The project scope is to evaluate and recommend solutions to resolve stormwater drainage issues and out of bank flooding that can be implemented by the municipalities and the District, and the design and construction of the recommended solution. The change in total project cost is due to inflation and updated labor estimates. There is no anticipated operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
W28002	Daylighting Schoonmaker Creek	Construction	Apr-15	Dec-15	\$4,900,839
		Post-Constr.	May-16	Jun-21	\$233,699
		Total			\$5,134,538
		Previously Approved Total			\$5,168,736
		Increase/(Decrease)			(\$34,198)

Project Description

The purpose of the project is to reduce the number of flooded structures in the Menomonee River watershed. The project scope includes Schoonmaker Creek daylighting. Major elements of the project include the construction of approximately 1,000 feet of earthen levee; removal of approximately 500 feet of concrete box culvert conveying Schoonmaker Creek; channel construction; 110 feet of two-cell box culvert construction and outfall with flap gates; Menomonee River bank reconstruction; grading, topsoil, planting of vegetation and vegetation maintenance. The decrease in total project cost is due to construction being completed under budget. No significant operating budget impact is expected.

Daylighting is the redirection of a stream into an above-ground channel, with the goal of restoring a stream of water to a more natural state.

ID #:	Name:	Phase	Start	Finish	Cost
W29002	Burnham Canal	Design	Jul-12	Nov-24	\$774,176
		Construction	Oct-19	May-26	\$6,664,077
		Post-Constr.	Jun-26	Jul-31	\$244,543
		Total			\$7,682,796
		Previously Approved Total			\$8,993,748
		Increase/(Decrease)			(\$1,310,952)

Project Description

The purpose of this project is to transform the Burnham Canal into a wetland to reduce risk of exposure to existing contaminated sediments, improve aquatic and wildlife habitat, improve water quality, and provide recreational and educational opportunities. The scope consists of filling the Burnham Canal (from the I-43/I-94 overpass to the west end of the canal) to cap existing contaminated sediments and restore 6.7 acres of wetlands. The west half of the canal is a Superfund site due to contaminated sediments, and Miller Compressing Co. (MCC) is the responsible party. The USEPA has issued a Record of Decision for MCC to install a cap over the contaminated sediment. The District and MCC are developing an updated agreement whereby MCC would install the cap as well as the additional material to create the wetland base between S. 11th Street and the west end of the canal. The project design was performed by USACE with funding for the local cost share provided by the Fund for Lake Michigan. The District worked WDNR to obtain GLRI funding from USEPA for the construction of the base of the wetland east of S. 11th Street and in late September the WDNR received \$4 million in grant funding for the project. The WDNR will enter into an agreement with the District to use the funding to pay the District's labor and expenses necessary to construct the wetland base. The District and WDNR will continue to work to secure USEPA funding for the final construction of the wetland. The decrease in total project cost is due to updated construction cost estimates and the removal of the cost to construct the wetland base west of S. 11th Street which Miller Compressing is projected to construct. This results in additional staff project management costs. The operating budget will be impacted after the project is completed with ongoing monitoring of the cap functionality and wetland maintenance.

Project benefits include:

- improving public awareness of the functions and values of wetlands in an area where wetlands are absent
- improving fish and wildlife habitat,
- improving access for recreation and education

Root River Watershed

The Root River Watershed drains an area of about 197 square miles. Approximately 72 square miles are within the District and District service area. There are 59 square miles within Milwaukee County, 32 are within the City of Franklin, six within the City of Greenfield, one within the City of Milwaukee, eight within the City of Oak Creek, three within the City of West Allis, five within the Village of Greendale, and three within the Village of Hales Corners. There are 13 square miles within Waukesha County, nine within the City of New Berlin and four within the City of Muskego. According to 1990 SEWRPC land use data, approximately 80 percent of the upper watershed located within Milwaukee County and Waukesha County is currently developed, with significant developable land remaining in the communities of Franklin, Oak Creek, New Berlin, and Muskego. There are an estimated 16 structures currently identified as remaining within the one percent probability floodplain. Completed projects have removed 96 structures from the one percent probability floodplain.

ID #:	Name:	Phase	Start	Finish	Cost
W34002	Phase 2 Root River W. Branch Flood Management Study	Planning	Nov-19	Dec-21	\$48,975
		Total			\$48,975
		Previously Approved Total			\$48,138
		Increase/(Decrease)			\$837

Project Description

The purpose of this project is to help identify structures at an increased flood risk, identify alternatives to reduce these flood risks, and develop planning level costs associated with the alternatives. SEWRPC has preliminarily identified under Project W34001 two structures at an increased flood risk on the West Branch Root River. The project scope consists of conducting a planning level study of the West Branch Root River using the revised floodplain maps. The change in total project cost is de minimus. No operating budget impacts are anticipated.

Kinnickinnic River Watershed

The Kinnickinnic (KK) River Watershed drains an area of about 26 square miles. There are six major streams in the watershed, all of which are under District jurisdiction: the KK River, Lyons Park Creek, Wilson Park Creek, South 43rd Street Ditch, Villa Mann Creek, and Villa Mann Creek Tributary. The watershed has a significant number of miles of concrete lined channels and there are an estimated 636 structures within the one percent annual probability floodplain. Completed projects have removed 79 structures from the one percent annual probability floodplain. Projects funded in 2019 will help reduce the risk of flooding to properties in the KK River Watershed.

ID #:	Name:	Phase	Start	Finish	Cost
W40002	KK River Real Estate Decon. /Demo. & Pulaski Park	Prelimin. Eng	Oct-06	Dec-20	\$8,427,866
		Design	Jul-14	Feb-18	\$14,734,731
		Construction	May-18	Mar-20	\$9,524,461
		Post-Constr.	Mar-20	Mar-25	\$254,097
		Total			\$32,941,155
		Previously Approved Total			\$32,934,325
		Increase/(Decrease)			\$6,830

Project Description

The purpose of this project is to reduce the flood risk for over 300 structures located in the one percent annual probability floodplain between S. 6th Street and S. 16th Street and improve public safety and aquatic and riparian habitat along 1,600 feet of the Kinnickinnic River within Pulaski Park. The project scope includes the acquisition and removal of 83 residential structures between S. 6th Street and S. 16th Street. The property is needed to widen the channel cross section from 60 ft. to 200 ft. The wider channel will improve the passage of flood flows through this section and reduce the risk of flooding to the 300 homes and businesses within the adjacent neighborhood. The design and construction of the reconstructed channel as well as associated bridge and utility work is included in the project scope for W40012. The project scope also includes replacing the concrete lined channel in Pulaski Park with a more naturalized channel design and providing flood storage. Both the channel and the flood storage will be constructed within Milwaukee County's Pulaski Park. The District and County have developed an agreement for the project. As part of the agreement, the District will replace park features impacted by the reconstruction of the KK River channel and flood storage areas. These include a pedestrian bridge, basketball courts, playground, trails, and other natural areas. The project scope includes the design and construction of these improvements. The change in total project cost are due to inflation. Specific impacts to the operating budget will be determined after the channel rehabilitation method has been selected.

ID #:	Name:	Phase	Start	Finish	Cost
W40007	KK River Reach 3 - CR	Prelimin. Eng	Oct-06	Dec-20	\$8,427,866
		Design	Jul-14	Feb-18	\$14,734,731
		Construction	May-18	Mar-20	\$9,524,461
		Post-Constr.	Mar-20	Mar-25	\$254,097
		Total			\$13,692,981
		Previously Approved Total			\$13,160,950
		Increase/(Decrease)			\$532,031

Project Description

The purpose of this project is to reduce flood risk on the Kinnickinnic (KK) River for St. Luke's Hospital and over 20 structures located in the 1 percent annual probability floodplain in the vicinity of S. 31st Street and W. Manitoba Ave. The project scope is to remove concrete channel lining and replace with natural channel design and increase the hydraulic capacity of the W. KK River Parkway Bridge east of S. 31st Street. The concrete lining is 50 years old and is reaching the end of its useful life. For the channel naturalization work, the District will partner with USACE who will finance 65 percent of the project costs, up to a maximum contribution of \$10 million. The increase in total project cost is due to primarily due to inflation. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
W40009	Jackson Park	Design	Nov-18	Nov-22	\$1,446,334
		Construction	Mar-23	Jul-27	\$37,207,442
		Post-Constr.	Aug-27	Aug-32	\$127,580
		Total			\$38,781,356
		Previously Approved Total			\$37,540,406
		Increase/(Decrease)			\$1,240,950

Project Description

The purpose of this project is to reduce flood risk on KK River as well as mitigate increased flood flows from proposed recommendations for the KK River (W40002), Lyons Park Creek (W41001), and the S. 43rd Street Ditch (W42003) projects. Over 350 residential and commercial structures are in the one percent annual probability floodplain within these areas. The project's purpose also improves public safety and aquatic and riparian habitat conditions. The project scope consists of lowering Milwaukee County land in Jackson Park to create 150 acre-feet of flood storage, incorporating improvements and/or additional park assets to compensate the County for the park area and assets impacted as part of this project, and removing concrete channel lining (700 feet) and enclosed culverts, lowering the floodplain and naturalizing the channel within Jackson Park. The change in total project cost is due to construction cost updates. The impacts to the operating budget will be determined following the development of future intergovernmental cooperation agreements between the District and Milwaukee County for ongoing site maintenance.

ID #:	Name:	Phase	Start	Finish	Cost
W40010	KK River Watershed	Prelimin. Eng	Jul-17	Jul-24	\$3,490,280
		Total			\$3,490,280
		Previously Approved Total			\$3,201,174
		Increase/(Decrease)			\$289,106

Project Description

The purpose of this project is to refine recommendations that are ultimately expected to reduce flood risk to over 660 residential and commercial structures located in the one percent annual probability floodplain. The project scope consists of two preliminary engineering studies. The first preliminary engineering study refines the Kinnickinnic River Watershed Flood Management Plan recommendations for Jackson Park and the 43rd Street Ditch. The second preliminary engineering study refines the Kinnickinnic River Watershed Flood Management Plan recommendations on Wilson Park Creek (except between W. Layton Avenue and the Canadian Pacific Railway located east of South 13th Street), Villa Mann Creek and Lyons Park Creek. Each preliminary engineering study includes the development of Master Park Plans for Milwaukee County for Jackson Park and Wilson Park, respectively. The increase in total project cost is due refined cost estimates and increased labor estimates. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
W40011	KK River I-94 to Becher	Prelimin. Eng	Jun-14	Jan-19	\$420,505
		Design	Aug-25	Feb-27	\$1,177,008
		Construction	Jun-27	Jul-30	\$16,287,426
		Post-Constr.	Aug-30	Aug-35	\$275,748
		Total			\$18,160,687
		Previously Approved Total			\$17,605,213
		Increase/(Decrease)			\$555,474

Project Description

The purpose of the project is to reduce the flood risk for 27 commercial, industrial, and residential structures located in the updated one percent annual probability floodplain. The project will also improve water quality and aquatic and riparian habitat conditions within a degraded section of the KK River between the I-94/43 Freeway Overpass and West Becher Street. The later is a recommended project in the WDNR's Remedial Action Plan (2016) to remove the Area of Concern designation from the Milwaukee Estuary. The District performed the KK River I-94 to Becher Street Feasibility study through a grant funded by the National Oceanic and Atmospheric Association's Great Lakes Habitat Program to define the project scope for improving the water quality and habitat conditions. The project scope includes improving the ability of the river to support habitat, providing supplemental oxygen, improving the quality of the adjacent land by removing invasive species, and increasing the hydraulic capacity at the S. 1st Street, W. Lincoln Ave, and W. Becher Street bridges to mitigate floodplain impacts. The WDNR received funding from the USEPA and developed an agreement with the District to utilize the funding to implement the first phase of the feasibility study recommendations. This included the construction of habitat features, removal of invasive species and conducting an aeration pilot study. The District and WDNR will seek additional funding to cover all District labor and expenses for the design and construction of the remaining feasibility study recommendations. The first phase of this work was budgeted under the operating budget as the District will not be constructing assets to be owned by the District. Following the completion of the flood management study, the District will evaluate whether future phases of the work are completed under the operating or capital budgets. The increase in total project cost is due to inflation.

ID #:	Name:	Phase	Start	Finish	Cost
W40012	KK River - 6th to 16th St.	Design	Jan-19	Dec-21	\$2,654,738
		Construction	Mar-22	Nov-25	\$37,690,257
		Post-Constr.	Nov-25	May-31	\$311,068
		Total			\$40,656,063
		Previously Approved Total			\$41,464,308
		Increase/(Decrease)			(\$808,245)

Project Description

The purpose of the project is to reduce flood risk on the KK River for over 300 residential and commercial structures located in the one percent annual probability floodplain between S. 6th Street and S. 16th Street. The project also improves public safety (i.e. reduce drowning risk) and improves aquatic and riparian habitat conditions. The project scope consists of widening the channel corridor from a width of 60 feet to approximately 200 feet within the project area to improve the passage of flood flows. Acquisition and removal of 83 homes and modifications to City bridges and utilities are required to create the wider channel section. The project also replaces over 4,000 linear feet of District-owned concrete channel lining with a more naturalized channel between S. 6th Street to S. 16th Street. This will be a newly approved project however the project scope was originally included in project W40002. The design, construction, and post-construction of the improvements to the channel, bridges, and utilities are now managed under W40012. The acquisition and removal of the structures between S. 6th Street and S. 16th Street is managed under W40002. The decrease in total project cost is due to the relocating 1,240 feet of sewer scope moving to project W40016. There is no operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
W40016	KK River Sewer Modifications	Design	Feb-19	Jan-20	\$358,000
		Construction	May-20	Nov-20	\$3,377,999
		Post-Constr.	Jan-21	Jun-21	\$6,000
		Total			\$3,741,999
		Previously Approved Total			\$0
		Increase/(Decrease)			\$3,741,999

Project Description

The purpose of this project is to protect over 300 residential and commercial structures located in the 1% annual probability floodplain. As part of the KK River flood risk reduction project, a City of Milwaukee sewer at 8th Street and the KK River needs to be lowered. The project scope includes the design and construction of 1,240 feet of 24" sewer and associated manholes from 8th Street and the KK River to 6th Street and Cleveland Avenue. Additionally, the relocation of DS-168 to the new, widened river bank. This is a new project. The impact on the operating budget is unknown currently.

ID #:	Name:	Phase	Start	Finish	Cost
W41001	KK River Flood Management - Lyons Creek (W026)	Prelimin. Eng	Jan-11	Jun-20	\$419,587
		Design	May-03	Dec-24	\$909,215
		Construction	Oct-25	Jun-27	\$12,916,782
		Post-Constr.	Jun-27	Jun-32	\$137,402
		Total			\$14,382,986
		Previously Approved Total			\$13,736,802
		Increase/(Decrease)			\$646,184

Project Description

The purpose of the project is to reduce flood risk on the Lyons Park Creek for 66 residential and commercial structures located in the one percent annual probability floodplain and reduce roadway flood depths on two major arterial roads: W. Oklahoma Avenue and S. 60th Street. The project scope consists of increasing the culvert capacity under S. 57th St, W. Stack Drive and W. Cleveland, adding two bypass culverts under Oklahoma Ave, and removing approximately 3,000 linear feet of concrete channel lining and replacing it with a lowered floodplain and naturalized channel. The US Army Corps of Engineers (USACE) will perform a feasibility study under the USACE's Section 206 program to determine if there is a federal interest. USACE and District will enter into a partnership agreement to perform feasibility study. The District will fund 50 percent of the feasibility study costs that exceed \$100,000. USACE plans to start the study in spring/summer 2019. If USACE and District move forward with this project, USACE would fund 65 percent of the design and construction cost. The increase in total project cost is due to refined construction cost estimates and inflation. There is no operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
W41003	Lyons Park Creek Streambank Stabilization	Design	Jul-18	May-19	\$117,748
		Construction	Sep-19	Jan-20	\$275,694
		Post-Constr.	Feb-20	May-22	\$27,521
		Total			\$420,963
		Previously Approved Total			\$420,963
		Increase/(Decrease)			\$0

Project Description

The purpose of this project is to make needed improvements to a streambank segment on District owned riparian land to Lyons Park Creek, tributary to the Kinnickinnic River in the City of Milwaukee at the upstream jurisdictional limit of Lyons Park Creek (W. Forest Home Avenue and W. Morgan Avenue). An approximate 100-foot streambank segment on this District-owned land is eroding. This erosion has resulted in undermining of and damage to a City of Milwaukee alley, and the creek is encroaching upon an adjacent residential property. There is no change in total project cost. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W45002	Wilson Park Creek Reach 3 - CR	Prelimin. Eng	Sep-08	Jul-18	\$1,938,670
		Design	Oct-18	Sep-23	\$2,713,832
		Construction	Feb-21	Oct-25	\$24,109,089
		Post-Constr.	Oct-22	Dec-30	\$463,703
		Total			\$29,225,294
		Previously Approved Total			\$28,330,790
		Increase/(Decrease)			\$894,504

Project Description

The purpose of the project is to reduce flood risk on Wilson Park Creek in the vicinity of S. 6th Street and W. Armour Avenue for over 60 residential and commercial structures located in the one percent annual probability floodplain. The project will improve public safety, reduce flood related health risks, and improve aquatic and riparian habitat. The project also replaces 2,800 linear feet of concrete channel lining with a more naturalized channel. The concrete lining is a District asset that was installed in the 1960s and is reaching the end of its useful life. The project scope consists of: constructing a 190-acre-foot (62 MG) flood storage basin in open land behind the Central Steel & Wire facilities; increasing the capacity of the culverts at S. 5th Street and at S. 6th Street; removing the concrete channel lining and replacing with a natural channel design; and reconstructing 2,200 feet of non-concrete lined stream channel to increase flood storage and improve the stream and riparian habitat. The increase in total project cost is due to the acquisition or floodproofing of two structures. No significant operating budget impact is expected.

Oak Creek Watershed

The Oak Creek Watershed drains an area of about 28 square miles. Approximately 64 percent of the area is within the City of Oak Creek, 9 percent in the City of Franklin, 4 percent in the City of Cudahy, 10 percent in the City of Milwaukee, 1 percent in the City of Greenfield, and 12 percent in the City of South Milwaukee. An estimated 13 structures are within the one percent annual probability floodplain.

ID #:	Name:	Phase	Start	Finish	Cost
W50005	Oak Creek Flood Management - Floodproofing/Acquisition	Planning	Apr-09	Mar-19	\$318,727
		Design	Oct-12	Dec-27	\$7,066,635
		Total			\$7,385,362
		Previously Approved Total			\$6,605,160
		Increase/(Decrease)			\$780,202

Project Description

The purpose of this project is to reduce the risk of flood damage to six structures within the one percent probability floodplain. The project scope consists of the design and construction of voluntary floodproofing of four commercial structures and the acquisition of two residential structures in the Oak Creek watershed. The increase in total project cost is due to property acquisition cost change and the extended schedule. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W50006	Oak Creek Watershed Restoration Plan	Planning	Oct-15	Apr-22	\$343,323
		Total			\$343,323
		Previously Approved Total			\$343,229
		Increase/(Decrease)			\$94

Project Description

The purpose of this project is to conduct a study to yield data needed to plan and implement future improvements to the watershed area. The project scope will be to support SEWRPC to develop a restoration plan for the Oak Creek watershed. It will focus on areas such as water quality, recreational access and use, habitat conditions, and targeted stormwater drainage and flooding issues. The increase in total project is de minimus. The operating budget impact is not known at this time.

General Watercourse Projects

Projects grouped into this category are projects that do not fit into the various watersheds. The types of projects can be associated with: various studies for planning future watercourse projects; projects that protect or restore natural drainage to prevent future flooding; all other nonspecific items. Projects funded in 2019 will also identify and map floodplains.

ID #:	Name:	Phase	Start	Finish	Cost
W91001	Phase II Corridor & SEWRPC Studies	Planning	Dec-99	Jan-01	\$36,431
		Prelimin. Eng	Mar-01	Mar-23	\$2,733,585
		Design	Dec-99	Apr-00	\$14,023
		Total			\$2,784,039
		Previously Approved Total			\$2,762,288
		Increase/(Decrease)			\$21,751

Project Description

The purpose of this project is to develop tools that will assist the District in removing structures from the one percent probability floodplain. The project scope consists of developing a Corridor Study involving compilation of historic and existing inventory information on all the major streams within the District's Service Area. The floodplain mapping is used by District staff and municipalities as they plan projects and reduce flood risk. The maps will assist in identifying flooding problem areas within Milwaukee County and will help in setting funding priorities. The project is being completed by SEWRPC staff. The change in total project cost is due to additional time for potential surveying requests by SEWRPC. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
W96001	Fresh Coast Implementation	Planning	Nov-15	Dec-20	\$7,213,080
		Total			\$7,213,080
		Previously Approved Total			\$7,629,021
		Increase/(Decrease)			(\$415,941)

Project Description

The purpose of this project is to provide stormwater capture and infiltration at aggressive, targeted levels to keep stormwater out of sanitary and combined sewers and reduce the risk of basement backups. Additionally, this project will provide the District with information related to green infrastructure effectiveness (stormwater capture capacity in gallons and water quality benefits), costs, feasibility, and maintenance. The green infrastructure installations completed through this project will have a minimum of ten-year easements and demonstrate progress toward implementing the MMSD's Regional Green Infrastructure Plan. The project is to provide capital-eligible projects with cost-share partnership funding to capture and hold/infiltrate stormwater where it is shown to be an efficient means of reducing the risk of basement backups. The decrease in total project cost is due to the removal of partnership program projects that have not materialized. Future projects are funded via G98004. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
W97003	GMRCPP - Greater Milwaukee Regional Conservation Partnership Program	Planning	Jan-15	Dec-21	\$4,992,443
		Total			\$4,992,443
		Previously Approved Total			\$4,735,063
		Increase/(Decrease)			\$257,380

Project Description

The purpose of this project is to work with agricultural producers and landowners to place voluntary easements on undeveloped, privately owned properties along streams, shorelines and wetlands in areas expected to have major growth in the next 20 years. This limited-time, innovative flood management program permanently protects key lands containing water-absorbing soils. The Milwaukee River Watershed Conservation Partnership was awarded U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Regional Conservation Partnership Program cost-share allocations of \$1.5 million for the Milwaukee River Watershed. Through collaboration with MRWCP project partners, MMSD's Working Soils® Program will support the acquisition of eight agricultural easements across 800 acres. The District anticipates receiving \$1 million from NRCS as cost-share reimbursement after the District has paid for each easement in full. The increase in total project cost is the due to refined cost estimates. The operating budget impact is not known at this time.

ID #:	Name:	Cost
W97004	Greenseams® Phase 2	Six-Year Forecast Total
		\$7,200,000

Project Description

The purpose of this project is to purchase and restore lands with water absorbing hydric soils which help to manage stormwater reducing the risk of future flooding problems. Benefits of this program include protecting natural wetlands, riparian corridors, and wooded properties as a cost-effective way to keep water on the land where it falls as well as conserving the natural functionality of wetlands and floodplains to help to ensure that the District's capital investments in flood management do not become overtaken, ineffective, and obsolete. There are multiple secondary benefits such as replenishing aquifers, preserving wildlife habitat, contributing to air and water quality, and preserving diversity of native species.

The project scope is to acquire land intended to assist in the prevention of future flooding issues in four of Milwaukee's watersheds and includes the purchase of linkages or gaps within existing corridors protecting linear greenways along or tributary to jurisdictional waterways. The District either purchases or acquires conservation easements for privately owned parcels consisting of hydric soils in order to prevent these environmentally important properties from being developed. The project, which includes the Menomonee River, Root River, Oak Creek, and Milwaukee River watersheds will support activities to research, identify, acquire, maintain, preserve, and defend natural flood storage on lands within the greater Milwaukee metropolitan area. Since the program began, a total of 3,689 acres have been preserved. The District works collaboratively with non-profits, land trusts, governmental agencies, and municipal staff to identify properties in high priority areas, pool resources together, and to contact landowners. Some of these partners are able to own and become the steward of these properties, saving the District time and maintenance costs.

The Greenseams® Program is a capital program and does not have an approved total project cost. The 2019 expenditures are budgeted at \$1.2 million; the six-year long-range financing plan includes \$7.2 million. In terms of operating budget impact, Greenseams® is a capital program which supports the District's capital infrastructure by reducing the risk of flooding and keeping excess water out of the District's conveyance system. Consequently, the District's capital expenditures on the program generally do not result in changes to the current level of O&M expenditures (as the land is not operated or maintained by the District) but instead help to preserve the capacity and long-term cost-effective operation of the District's system.

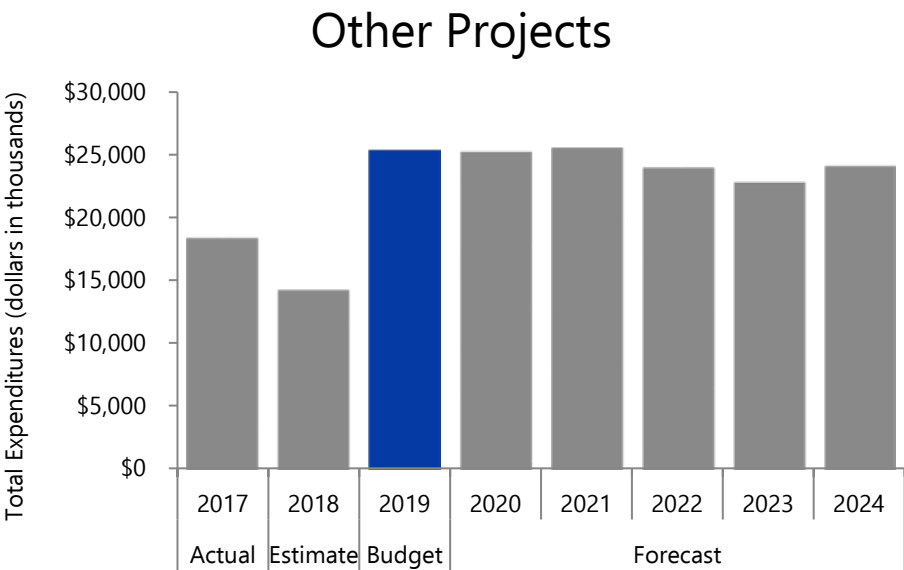




Other Projects and Programs

Other Projects is a budgetary grouping of projects that supports overall District planning, management, and infrastructure assets and investments. These projects typically precede design and construction work, providing a solid foundation for future projects in the Water Reclamation Facilities, Conveyance Facilities, and Watercourse Projects capital program groups.

The 2019 Capital Budget includes \$25.4 million for work on Other Projects. Please refer to project detail on the following pages for information on each project’s purpose, scope, cost forecast and impact on the O&M budget.



Facilities Management

Facilities Management capital projects are those projects that are related to providing structural upgrades or replacements at District headquarters, Central Laboratory, and other land and building assets.

ID #:	Name:	Phase	Start	Finish	Cost
M01007	KK River Flushing Station Improvements	Planning	Jan-11	Oct-15	\$597,657
		Prelimin. Eng	Jun-20	Jul-21	\$2,853,974
		Design	Nov-21	May-23	\$1,850,301
		Construction	Sep-24	Sep-26	\$10,444,824
		Post-Constr.	Jan-27	Jul-27	\$119,236
		Total			\$15,865,992
		Previously Approved Total			\$15,865,991
		Increase/(Decrease)			\$1

Project Description

The purpose of this project is to determine if the Kinnickinnic River Flushing Station and associated flushing tunnel should be maintained or demolished. The project includes an evaluation of the Kinnickinnic River Flushing Tunnel operation for use as CSO storage. Detailed design and construction is also included in the project and will be based on both recommendations from the planning-level evaluation and from recommendations by the 2050 Facilities Plan. Project scope includes the structural rehabilitation of 7,200 feet of 144" diameter, 18" thick brick pipeline and construction of flow control structures. The change in total project costs is de minimus. There will be a negative impact on the operating budget since two additional flow control structures would require regular maintenance. Additionally, the Kinnickinnic River flushing tunnel would have to be maintained.

ID #:	Name:	Phase	Start	Finish	Cost
M01019	Safe Atmosphere Monitoring	Planning	Jan-13	Aug-18	\$659,862
		Prelimin. Eng	Sep-18	Jul-19	\$149,614
		Construction	Nov-19	Mar-20	\$471,702
		Total			\$1,281,178
		Previously Approved Total			\$1,280,785
		Increase/(Decrease)			\$393

Project Description

The purpose of this project is to provide a comprehensive evaluation of actual field hazards and conditions so that future improvements can be prioritized in the most important areas with highest potential for fire and explosion risk. This project will evaluate actual field hazards and conditions that will allow the District to make recommendations for facilities improvements to mitigate or prevent the risk of potential fires and explosions. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M01023	Wharf Wall Improvements	Prelimin. Eng	Jan-14	Jun-14	\$328,231
		Design	Jun-14	Nov-15	\$310,408
		Construction	May-15	Oct-16	\$943,393
		Post-Constr.	Oct-16	Mar-20	\$38,946
		Total			\$1,620,978
		Previously Approved Total			\$1,620,594
		Increase/(Decrease)			\$384

Project Description

The purpose of this project is to stabilize the wharf wall on the southwest corner of District Headquarters and to extend its useful life. The project scope includes rehabilitating the ground support system along approximately 160 feet of wharf wall which includes realignment of the wharf wall, installation of new tie rods, transport and disposal of contaminated excavated materials to a licensed landfill, placement of lightweight aggregate backfill and granular backfill, and site restoration. The change in total project cost is de minimus. No significant operating budget impact is expected.

ID #:	Name:	Phase	Start	Finish	Cost
M01029	HQ North Wharf Wall System Restoration	Planning	Nov-16	Dec-17	\$167,495
		Design	Jul-18	Jul-19	\$249,895
		Construction	Nov-19	Nov-20	\$1,798,571
		Post-Constr.	Dec-20	Feb-21	\$8,990
		Total			\$2,224,951
		Previously Approved Total			\$3,250,063
		Increase/(Decrease)			(\$1,025,112)

Project Description

The purpose of the project is to ensure the long-term stability of the remaining areas of wharf wall on District HQ property. The scope of the project includes rehabilitation of the wharf wall's structural support systems and associated site restoration. The decrease in total project cost is due to the reduced required level of effort in the design and construction phases of the project. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M01032	N. 44th Street Property Restoration (Miller Park Area)	Design	Jan-19	Jan-20	\$335,956
		Construction	Apr-20	May-21	\$1,500,668
		Post-Constr.	Jun-21	Oct-21	\$26,555
		Total			\$1,863,179
		Previously Approved Total			\$1,821,829
		Increase/(Decrease)			\$41,350

Project Description

The purpose of this project is to rehabilitate an existing MMSD property adjacent to the Menomonee River, returning it to a more natural state, thus improving riparian habitat. The scope of the project includes demolition of an aging District building, remediation of environmental contamination issues and riparian habitat improvements. The increase in total project cost is due to inflation. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M01033	4044 N. 31st Street Demolition/Deconstruction	Design	Apr-18	Aug-18	\$168,297
		Construction	Jan-19	Sep-19	\$1,016,417
		Post-Constr.	Oct-19	Feb-20	\$6,489
		Total			\$1,191,203
		Previously Approved Total			\$1,723,755
		Increase/(Decrease)			(\$532,552)

Project Description

The purpose of the project is to reduce on-going costs related to maintenance and risk for District-owned property located at 4044 N. 31st Street. The scope consists of performing a limited pre-deconstruction hazardous materials assessment, and deconstruction or demolition of the building. The property consists of a one- and part-story industrial building constructed in multiple contiguous sections, with a gross building area of +/- 65,600 square feet on two acres. The work at this property includes disconnection and abandonment of utilities, removal of an underground storage tank, removal of asbestos-containing materials if present, and other regulated materials prior to deconstruction or demolition, placement of fill, regrading to maintain site surface drainage patterns, and surface restoration. The decrease in total project cost is due to refined cost estimates. The operating budget will be impacted once the project is complete with costs for routine vegetation maintenance and snow removal.

ID #:	Name:	Phase	Start	Finish	Cost
M01034	HQ Parking Lot Solar Powered Electric Vehicle Charging Stations	Design	Jul-19	Nov-19	\$47,194
		Construction	Mar-20	Apr-20	\$562,262
		Post-Constr.	Jun-20	Jul-20	\$3,441
		Total			\$612,897
		Previously Approved Total			\$599,289
		Increase/(Decrease)			\$13,608

Project Description

The purpose of this project is to implement a solar powered system to charge the District's electric vehicles (EVs). This project will help the District increase its energy efficiency, increase the generation of renewable energy, reduce greenhouse gas emissions at its facilities, and help to meet the 2035 Vision. The change in total project cost is due to inflation. The impact on the operating budget is unknown at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M01035	HQ and Lab Facility Improvements	Construction	Jan-19	Dec-23	\$2,394,000
		Total			\$2,394,000
		Previously Approved Total			\$0
		Increase/(Decrease)			\$2,394,000

Project Description

The purpose of this project is to address a number of capital improvements needed at the District's headquarters and laboratory buildings. Due to the age of the buildings, some structures and equipment need to be replaced because continued maintenance is not as effective as replacement. In 2019, the project includes funding to replace the roofs on both buildings as well as replace the unit that provides power and cooling to the critical data center applications. This is a new project.

Facilities Planning

Facilities Planning is an ongoing process addressing all District facilities. The process includes: 1) evaluation of data reflective of system conditions before and after major system upgrades to validate the performance expectations of previous facility improvements, 2) data collection to provide a consistent time series of data adequate for evaluation of system performance, and 3) modeling and evaluation of the real-time operation of the systems constructed under a Facilities Plan. Ultimately, assumptions made under a facilities plan must be evaluated on an on-going basis to determine if and when facilities plan-identified projects should be built as planned.

The District's capital improvement program is primarily driven by a facilities plan that is formalized and published roughly every ten years. Once the plan is formally published, staff routinely analyze and evaluate the plan to ensure that the recommendations and projects are current. The development of the plan requires ongoing data collection and analysis as well as staff resources. The projects associated with this effort address plan development, data gathering, and data analysis issues. Activities funded in the 2019 Capital Budget will identify and plan future improvements to District facilities.

ID #:	Name:	Phase	Start	Finish	Cost
M03029	Water Quality Studies	Planning	Apr-06	Jun-20	\$5,871,209
		Total			\$5,871,209
		Previously Approved Total			\$5,789,799
		Increase/(Decrease)			\$81,410

Project Description

The purpose of this project is to fund research for improving water quality in the Greater Milwaukee Watersheds. The studies are a resource for the continued evaluation and implementation of the District's 2020 FP and soon-to-be-complete 2050 FP. The studies are designed to answer specific questions or needs of the District as they pertain to planning and capital improvement requirements, and to help the District stay in front of new technologies that can save money and increase efficiencies. The increase in total project cost is due to an extended schedule. Studies not meeting capital funding criteria are funded in the O&M budget.

ID #:	Name:	Phase	Start	Finish	Cost
M03037	2050 Facilities Planning - Ultimate Build-out	Planning	Oct-13	Sep-19	\$10,199,278
		Total			\$10,199,278
		Previously Approved Total			\$8,475,681
		Increase/(Decrease)			\$1,723,597

Project Description

The purpose of this project is to ensure the District facilities will address future needs in a sustainable and cost-effective manner. The project scope covers the District's facilities to meet the Clean Water Act, permit requirements, 2035 Vision goals, and ultimate build out of the District's planning area. This effort uses an asset management format and will result in a facilities plan (FP) consisting of four asset management plans for treatment, conveyance, watercourse, and green infrastructure. This effort is required to update and replace the 2020 FP as a result of the District's WPDES permit requirement, issued in 2013. The original project schedule has been delayed due to additional time required to obtain and develop population and land use data from MMSD customer municipalities. Scope changes involve various system modeling analyses requiring additional model runs, and additional evaluations for green infrastructure analysis. The increase in total project cost is due to the scope changes. There is no anticipated impact on the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
M03051	Alternative Energy Planning	Planning	Jun-10	Feb-19	\$481,150
		Total			\$481,150
		Previously Approved Total			\$481,151
		Increase/(Decrease)			(\$1)

Project Description

The purpose of this project is to evaluate alternative and renewable sources of energy for operations at District facilities, consistent with the District's 2035 Vision to pursue a higher percentage generation and use of renewable sources of energy. The project scope includes the evaluation of energy sources including but not limited to wind, solar, and sewer thermal projects. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M03059	TMDL Studies	Planning	Feb-11	Feb-20	\$2,770,895
		Total			\$2,770,895
		Previously Approved Total			\$2,495, 121
		Increase/(Decrease)			\$275,774

Project Description

The purpose of this project is to develop and support WDNR implementation of third-party fecal coliform, phosphorus, and sediment Total Maximum Daily Loads (TMDL) for various watersheds in southeastern Wisconsin. The results of the TMDL are the load and waste load allocations by pollutant source that must be met to achieve the water quality standards and targets for each pollutant. This project addresses six beneficial use impairments within the Milwaukee Estuary Area of Concern. The change in total project cost is due to a \$100,000 grant from the WDNR, a \$50,000 addendum to SEWRPC's intergovernmental cooperation agreement, as well as additional labor cost estimates. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M03088	Corridor Study, Phase 5	Planning	Dec-15	Sep-26	\$2,400,362
		Total			\$2,400,362
		Previously Approved Total			\$2,400,361
		Increase/(Decrease)			\$1

Project Description

The purpose of this project is to provide valuable information and baseline data from the Milwaukee Estuary, which the MMSD Commission approved for MMSD watercourse jurisdiction. The data will provide inputs into the 2050 Facilities Plan as well. The project scope is a cooperative water quality research effort between MMSD and the United States Geological Survey that will continue to expand research from previous phases and respond to new areas of interest as identified by regulation, facilities planning, and Executive Director requests. Phase 5 will focus on ecology, restoration evaluation, micro plastics, trace organics, optical properties of water, pathogens, water quality trends, alternative deicers, polycyclic aromatic hydrocarbons, streamflow gauging, and other needs identified as the study progresses. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M03091	Ad Hoc Water Quality Studies 2017-2021	Planning	Dec-15	Sep-26	\$5,719,953
		Total			\$5,719,953
		Previously Approved Total			\$7,658,653
		Increase/(Decrease)			(\$1,965,700)

Project Description

The purpose of this project is a continuation of M03029-Ad Hoc Water Quality Studies under a new capital project number for operational efficiencies. Research projects identified from issuing RFPs are prioritized on how they will benefit the District's 2035 Vision, strategic plan, facilities plan, and operational needs. The decrease in total project cost is from removed projected costs for activities that qualify for O&M funding. At the time of the award, the capital versus O&M funding criteria are reviewed, and if the study does not qualify for capital funding, then it is funded from the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
M03092	2050 Facility Plan's Regional Resilience Plan	Planning	Jan-17	Mar-19	\$775,172
		Total			\$775,172
		Previously Approved Total			\$765,691
		Increase/(Decrease)			\$9,481

Project Description

This planning effort will complement the 2050 Facilities Plan by evaluating external systematic risks that may impact District facilities. A resilience plan works with regional partners to evaluate regional risks and identify strategic actions that can be taken to reduce the most critical risks. Efforts to increase resilience and enhance adaptive capacity are an extension of the 2050 Facilities Plan that will integrate additional components related to high-level risks and achieve multiple water resource objectives through improved District infrastructure planning. This plan will provide recommendations to make the District's facilities more resilient to unanticipated events, particularly those related to weather. The increase in total project cost is due to refined cost estimates. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
M03098	Monitoring for Capital Project Development and Support	Planning	Jan-18	Dec-24	\$14,279,424
		Total			\$14,279,424
		Previously Approved Total			\$12,274,597
		Increase/(Decrease)			\$2,004,827

Project Description

The purpose of this project is to provide the data and analyses activities that the District currently uses for the capital improvement program and facilities planning improvements identification. Approximately 75 miles of MIS have been identified and there is a possible transfer of these sewers from the District to the local municipalities. The increase in total project cost is due to additional years' worth of project costs. There is no impact on the operating budget.

ID #:	Name:	Phase	Start	Finish	Cost
M03102	Biosolids Advanced Facility Planning	Planning	Jan-18	Oct-19	\$623,718
		Total			\$623,718
		Previously Approved Total			\$623,717
		Increase/(Decrease)			\$1

Project Description

The purpose of this project is to determine facilities or capital improvements needed for biosolids management. The project scope includes the development of business case evaluations for biosolids management alternatives to address deficiencies in unit processes with respect to existing and future conditions and operational risks. The change in total project cost is de minimus. The operating budget impact is not known at this time.

ID #:	Name:	Cost
M10003	PPI/I Phase 2	Six Year Forecast Total \$30,000,000

Project Description

The purpose of this project is to provide a funding mechanism for municipalities to complete project work intended to reduce the risk of basement backups, SSOs, and CSOs. This project scope provides funding to municipalities for planning, design, investigation, and construction of projects intended to reduce infiltration and inflow (I/I) on private property. Expenses for actual work to reduce I/I implemented by the municipalities that is consistent and compliant with the approved District Policy and will be reimbursed through this project to the limits of the municipal allocations according to the Policy. Annual reimbursement for the Private Property I/I (PP I/I) program are based on the preceding year's equalized value of each municipality. PP I/I is a capital program and does not have an approved total project cost. The 2019 costs are budgeted at \$5 million; the six-year long-range financing plan includes \$30 million. There is no operating budget impact.

ID #:	Name:	Phase	Start	Finish	Cost
M10004	PPI/I Implementation Phase 2 (Labor)	Prelimin. Eng	Jan-18	Jan-25	\$4,959,088
		Total			\$4,959,088
		Previously Approved Total			\$4,522,508
		Increase/(Decrease)			\$436,580

Project Description

The purpose of this project is to work in conjunction with project M10003 to provide a funding mechanism for the inspection, engineering, and public information and education outreach associated with Private Property Infiltration and Inflow (I/I) reduction. This project scope provides for District work and associated costs for research of existing programs and policies related to publicly funded Private Property I/I (PP I/I) programs and creation of policy and guideline documents for use in District administration and management of the District PP I/I program. The project also provides for District staff and contracted consultant services for guidance to the member municipalities to create their individual programs. The project provides for District staff and consultant services in administrative, management, District-level public involvement, and continuing research for the municipal PP I/I activities funded through M10003. The project scope shifted from M03063 in order for the project to be managed in the new capital program management software. There is no operating budget impact.

Workforce & Business Development Resource Program

ID #:	Name:		Cost
M04002	Workforce & Business Development Resource Program 2017-2022	Six Year Forecast Total	\$3,000,000

Project Description

The Workforce & Business Development Resource Program consists of four program components: pre-apprenticeship training and placement, consulting and construction management training, business development training, and the Regional Internships in Science and Engineering (RISE) program for college students. The scope will continue to integrate this program with the long-term needs of the District's six-year Capital Improvement Program. The Workforce & Business Development Resource Program does not have an approved total project cost. The 2019 expenditures are budgeted at \$500,000; the six-year long-range financing plan includes \$3 million. The Workforce and Business Development Resource Program is a capital program which supports the District's Capital Improvement Program by training and developing the local workforce so that they are better able to compete for and succeed as prime and sub-contractors on the District's construction and engineering projects. No significant operating budget impact is expected.

Information Technology Systems

ID #:	Name:	Phase	Start	Finish	Cost
M06011	Information Technology Software Systems	Design	Jan-16	Dec-21	\$2,664,674
		Total			\$2,664,674
		Previously Approved Total			\$2,169,895
		Increase/(Decrease)			\$494,779

Project Description

The purpose of this project is to provide funding to acquire new software. In 2019, the project includes funding to upgrade the District's enterprise resource planning software, the phone system, and the District's conveyance modeling system. The change in total project cost is due to the addition of the phone system upgrade.

ID #:	Name:	Phase	Start	Finish	Cost
M06013	Capital Program Management System	Design	Aug-14	Jun-19	\$1,635,089
		Total			\$1,635,089
		Previously Approved Total			\$1,635,900
		Increase/(Decrease)			(\$811)

Project Description

The purpose of the project is to procure and implement a new information system and preserve and expand efficiencies and effectiveness in managing the District's ongoing Capital Improvement Program (CIP). The current software is either without support or soon to be unsupported. The District anticipates being able to realize efficiency gains with new software via improved role-based internal and external stakeholder access to project, portfolio, and overall capital improvement program information and by increased utilization of process workflows. The change in total project cost is de minimus. The operating budget impact is an annual license fee of approximately \$224,000.

ID #:	Name:	Phase	Start	Finish	Cost
M06015	Real Estate Software	Planning	Jan-18	Dec-19	\$57,750
		Total			\$57,750
		Previously Approved Total			\$150,000
		Increase/(Decrease)			(\$92,250)

Project Description

The purpose of this project is to procure a new tool to enable all District stakeholders to have access to the location and attribute data associated with real estate holdings of the District. The current software is no longer supported and does not meet the needs of the end users. In addition, the new solution will help manage the real estate acquisition process and better communicate the status of the acquisition process to stakeholders. The change in total project cost is due to refined estimates. The operating budget impact is unknown at this time.

Financial Planning

ID #:	Name:		Cost
M07002	Financial Planning 2017-2022	Six Year Forecast Total	\$1,633,656

Project Description

The purpose of this project is to reduce the cost of debt issuance for the capital budget through:

- Favorable bond ratings,
- An appropriate mix of borrowing and cash financing, with at least 25 percent cash financing of project expenditures over the six-year plan,
- Below-market rate loans from the State Clean Water Fund Program, and
- Capture of grant funds.

The project scope aims at specialized financial planning services to support the District's objective of limiting the proportion of the regional economy needed to finance capital projects. The 2019 Capital Budget will fund financial planning efforts performed by internal staff and outside consultants as the District prepares for a competitive bond sale, grant and loan applications and reimbursement requests, and lobbies for favorable funding legislation. The 2019 Capital Budget includes the six-year long-range financing plan to the year 2024, reflecting implementation of projects included in the District's 2020 Facilities Plan. Financial planning provides funding for internal staff time and outside professional services necessary to obtain financing for capital projects, including:

- Bond Counsel
- Escrow Trustee
- Lobbying Activities for Grant Legislation & Award Arbitrage Rebate Calculation
- Financial Advisor
- Rating Agencies
- Clean Water Fund Program Application & Closeout
- Bond Registrar
- Grant Applications

The financial planning account does not have an approved total project cost because it is an ongoing capital project support program. The 2019 expenditures are budgeted at \$197,650; the six-year long-range financing plan includes \$1,633,656. There is no significant operating budget impact.

Risk Management Program

ID #:	Name:		Cost
M09002	Risk Management for Capital Program	Six Year Forecast Total	\$4,706,960

Project Description

The purpose of the program seeks to reduce the risk of losses associated with the District's Capital Improvement Program. The program scope of the District's Risk Management Program includes the following elements:

- Contractual requirements with consultants and contractors to ensure specified amounts and types of insurance coverage for each design and construction contract. The District has contracted with its insurance broker to monitor compliance with contract insurance requirements.
- The purchase of insurance by the District to address the potential for losses in excess of limits required from contractors and consultants, including professional liability insurance and environmental liability insurance.
- Construction safety program, including construction contractor requirements and oversight by District staff and safety professionals.
- A District Consultant Activity Review Committee to identify, analyze, and determine costs of incidences of deficient work products prepared by consultants.

The Risk Management for Capital Program does not have an approved total project cost because it is an ongoing construction support program. The 2019 expenditures are budgeted at \$788,361; the six-year long-range financing plan includes \$4,706,960. Costs of the Risk Management Program are allocated to capital projects on the basis of construction contract expenditures. There is no significant operating budget impact.

General Other Projects

ID #:	Name:		Cost
M99001	Allowance for Cost & Schedule Changes	Six Year Forecast Total	\$10,460,257

Project Description

The purpose of this account is to provide a source of funds to address unanticipated contract changes and changes in project cash flows. By planning for the payment of these expenditures, this account supports the District's goal of maintaining a stable tax rate over the planning horizon. Commission policy requires the Allowance for Cost and Schedule Changes to be funded at no less than two percent and no greater than five percent of capital expenditures. The Allowance for Cost and Schedule Changes in the six-year plan is budgeted at two percent per year. Allowance accounts do not have an approved total project cost. The long-range financing plan includes \$10.5 million with \$1,509,464 budgeted for 2019. There is no significant operating budget impact.

Green Infrastructure Projects

ID #:	Name:	Phase	Start	Finish	Cost
G98002	Fresh Coast Green Solutions Phase 2	Planning	Jan-18	Aug-21	\$2,616,703
		Total			\$2,616,703
		Previously Approved Total			\$2,174,071
		Increase/(Decrease)			\$442,632

Project Description

The purpose of this project is to plan, design, and provide related support for individual capital-eligible green infrastructure strategies and wider implementations that help to keep stormwater out of the combined and separate sewer systems, reducing the volume and frequency of combined and sanitary sewer overflows and basement backups during significant storms and helping to improve water quality. The project will work in conjunction with key District 2035 Vision and Strategic Plan initiatives, as well as the Private Property Infiltration and Inflow (PP I/I) Reduction project, by funding projects to address stormwater before it flows into or infiltrates the District's system. The change in total project cost includes additional funding for planning activities. This project is a continuation of M03064 and was created to allow the project to be managed in the new capital program management software. The operating budget impact is not known at this time.

ID #:	Name:	Phase	Start	Finish	Cost
G98004	Fresh Coast Implementation Phase 2	Planning	Jan-18	Dec-24	\$15,890,885
		Total			\$15,890,885
		Previously Approved Total			\$9,521,137
		Increase/(Decrease)			\$6,369,748

Project Description

The purpose of this project is to provide stormwater capture and infiltration at aggressive, targeted levels, keeping stormwater out of sanitary and combined sewers and reducing the risk of basement backups. Additionally, this project will provide the District with information related to GI effectiveness (stormwater capture capacity in gallons and water quality benefits), costs, feasibility, and maintenance. The green infrastructure installations completed through this project will have a minimum of a ten-year easement and demonstrate progress toward implementing the MMSD's Regional Green Infrastructure Plan (RGIP) adopted in 2013. Green infrastructure installations implemented through this project are consistent with the District's 2035 Vision that is the District's long-range approach to eliminate sewer overflows, improve water quality, and incorporate an overall triple bottom line sustainable approach to the way the District operates. The scope of the project is to provide capital-eligible projects with cost-share partnership funding. The increase in total project cost is due to the project's additional funding for schools annually.

ID #:	Name:		Cost
G98005	Green Solutions Phase 2	Six Year Forecast Total	\$30,000,000

Project Description

The purpose of this project is to help the District meet its 2013 permit requirement to capture 12 million gallons of stormwater over five years via green infrastructure by incentivizing municipalities within the District to implement green infrastructure. A new permit will be issued in 2019 with a more significant goal (anticipated to be 50 MG over five years at this writing). The project scope is to provide a funding mechanism to municipalities for green infrastructure projects with a minimum value of \$25,000 within the District service area that elect to continue in the green infrastructure. The funding will annually be allocated to municipalities based on equalized value. The project is also consistent with the District's 2035 Vision and Regional Green Infrastructure Plan. Green Solutions is a capital program and does not have a total project cost. The 2019 budget includes \$5,000,000 and the six-year forecast includes \$30 million. The District's capital expenditures on the program would generally not result in an operating budget impact (as the resulting improvements are not operated or maintained by the District) but instead help to preserve the capacity and long-term cost-effective operation of the District's system.

ID #:	Name:	Phase	Start	Finish	Cost
M03064	Fresh Coast Green Solutions	Planning	Jan-12	Jul-19	\$6,332,488
		Total			\$6,332,488
		Previously Approved Total			\$6,337,580
		Increase/(Decrease)			(\$5,092)

Project Description

The purpose of this project is to plan, design, and provide related support for individual capital-eligible green infrastructure strategies and wider implementations that help to keep stormwater out of the combined and separate sewer systems, reducing the volume and frequency of combined and sanitary sewer overflows and basement backups during significant storms. The project works in conjunction with key District initiatives, such as the Private Property Infiltration and Inflow (PP I/I) Reduction project, by funding studies and plans to address stormwater before it flows into or infiltrates the District's system. This project also addresses the District's 2035 Vision and strategic objectives. The decrease in total project cost is due to refined cost estimates at the end of this project. The operating budget impact is not known at this time.



Debt Service

The Wisconsin State Statutes allow the District to finance capital improvements through the issuance of debt instruments, including: general obligation bonds and notes; bond anticipation notes; and revenue bonds and notes. Issuance of bonds and notes require a vote of at least two-thirds of all Commissioners except in the case of emergency borrowing which requires a vote of three-fourths of all Commissioners.

The debt financing strategy focuses on managing the District's debt capacity, operating the District in a fiscally prudent manner, and contributing to the stability and growth of the region's tax base and customer base, by maintaining or improving the District's bond rating.

The District's debt policy seeks to ensure the maintenance of sound debt position and the protection of the District's credit quality. The District's debt policy provides an appropriate balance between establishing limits on the debt program and providing sufficient flexibility to respond to unforeseen circumstances and new opportunities. Key limits in the debt policy include:

- The District's intent to keep outstanding general obligation debt to no more than 2.5 percent of its equalized property value of member communities.
- The District's intent to cash finance at least 25 percent of project expenditures over the six-year financing plan.
- No more than 15 percent of its outstanding general obligation bonds in variable rate form.
- Advance refunding for economic savings to be undertaken only when net present value savings of at least 2 percent.

In acknowledgement of its financial management and planning strength, the District continues to receive strong credit ratings. In May 2017, Standard & Poor's Ratings Services affirmed the District's AA+ credit rating with a stable outlook. The rating report cited the District's large and diversified property tax base; sound fiscal operations with strong liquidity and strong financial management; and moderate overall debt burden with rapid amortization in affirming the AA+ rating which has remained unchanged since 1997. Also, in May 2017, Moody's Investors Service affirmed its credit rating Aa1. Moody's report noted that the District's Aa1 rating reflects "sound financial operations that benefit from strong financial flexibility and adequate liquidity levels." Since July 2007 Fitch Ratings has rated the District as a AAA credit, most recently affirming the AAA rating in June 2017.

As of August 31, 2018, the District has \$832.9 million of general obligation debt outstanding.

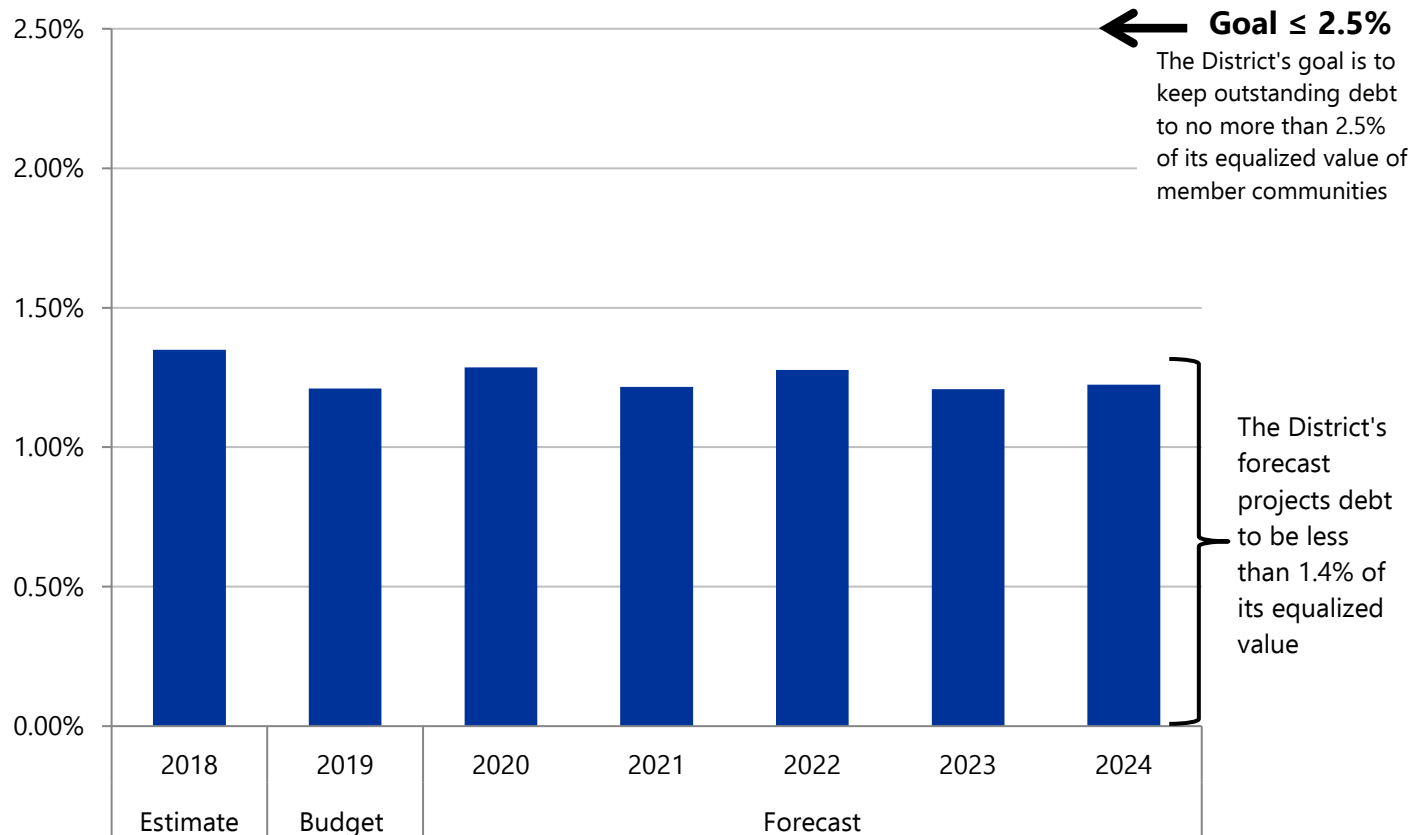
	Principal Amount (\$0)	True Interest Cost (%)
District Bonds	\$312.9	2.437 - 4.447%
Clean Water Fund Program Loans	\$519.9	1.760 - 4.953%
Total	\$832.9	

The District is subject to a statutory debt limit of 5% of equalized value in the Wisconsin Statutes Section 67.03 but District policy further limits this to 2.5%. The District's performance is well below the legal and self-imposed limits.

2018 Equalized Valuation (Estimate)	\$60,259,770,000	100.00%
Statutory Debt Limit Rate		5.00%
Statutory Debt Limit	\$3,012,988,500	
General Obligation Debt Outstanding at August 31, 2017	\$832,885,156	1.38%
Legal Debt Margin	\$2,180,103,344	

The District's Long-Range Financing Plan includes the estimate for outstanding debt at year-end 2018 at \$813.2 million and 1.35% of equalized value, rather than the current level as shown on the prior page. As seen in the table below, the District achieves its goals in each year of the plan.

2018-2024: Outstanding Debt as a % of Equalized Value



Debt service schedules for the District's existing debt and projected debt, are summarized in the table below, and as indicated in the Long-Range Financing Plan on page 73. Total debt service payments in 2019 are budgeted at \$109.5 million, of which \$1.7 million is for an Intergovernmental Loan not secured by a pledge of tax levy. \$107.8 million is for debt service on District general obligation bonds and Clean Water Fund Loan program, both of which are secured by a pledge of tax levy. In 2019, the tax levy of \$100.1 million does not fully cover the \$107.8 million debt service, and to abate the tax levy, \$6.4 million is transferred to the Debt Service Sinking Fund of \$1.3 million. In 2019, the District does not plan to issue general obligation debt but plans to receive an additional \$31.5 million in low-interest loan funds from the State of Wisconsin Clean Water Fund Program.

Debt Service Schedules

All Amounts in \$ Thousands

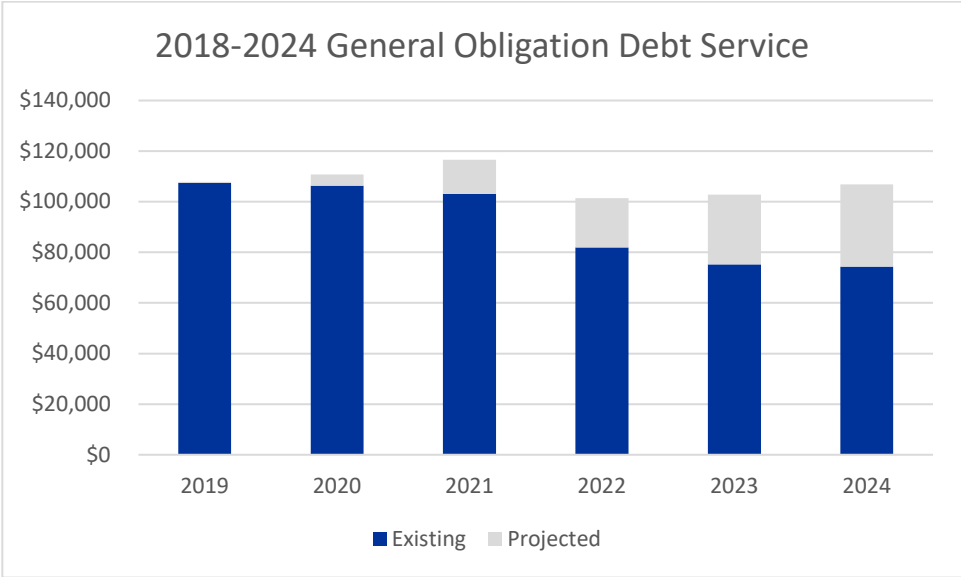
	2018	2019	2020	2021	2022	2023	2024	2019-24 Six Year Total
	Estimate	Budget	Forecast	Forecast	Forecast	Forecast	Forecast	
District Bonds	\$38,579	\$35,104	\$36,705	\$41,621	\$35,690	\$34,281	\$35,983	\$219,384
CWFP Loans	71,322	72,704	74,047	74,987	65,727	68,562	70,846	426,872
Intergovt. Loan	1,693	1,692	1,692	1,691	1,691	1,691	1,690	10,147
Total Debt Service	\$111,593	\$109,499	\$112,444	\$118,299	\$103,108	\$104,533	\$108,519	\$656,403

NOTE: Totals may not add due to rounding.

District General Obligation Bonds

District bonds supplement other revenue sources to fund the Capital Improvement Program. District bonds are used primarily to finance projects with a total project cost less than \$2 million dollars and projects in the Watercourse/Flood Management capital account or other capital studies which are not eligible for a Clean Water Fund Loan or Clean Water Fund Loan rate subsidy. The District has historically issued 20-year bonds and planned bonds assume a 20-year issuance.

The chart below depicts total debt service payments further broken down by existing debt service and the incremental projected debt service for any new debt beginning in 2020, as anticipated in the Long-Range Financing Plan.



This project represents the budget year’s repayment obligation of this funding. Timely principal and interest payments are critical in maintaining the District’s bond rating. This project funds payments to holders of District bonds for principal and interest coming due in 2019. Five District-issued general obligation bond series are currently outstanding. The District typically finances a major portion of its Capital Improvement Program with 20-year, level payment, long-term debt in the form of either its own general obligation bonds or low-interest Clean Water Fund Program loans from the State of Wisconsin.

In 2017, the District issued a 20-year general obligation bond with a face value of \$80,000,000. The true interest cost of this issue is 2.82%. The proceeds will be used to finance two years of capital project spending that cannot be or is not efficient to finance through the Clean Water Fund Loan program. The District does not anticipate issuing general obligation bonds in 2019.

Budgeted debt service in 2019 for District-issued general obligation bonds is as follows:

District Bonds 2019 Net Debt Service

All Amounts in Thousands

Series	Gross Debt Service	Less: Debt Service Fund	Net Debt Service
2005A	\$12,630	\$150	\$12,480
2010L	\$3,901	\$21	\$3,880
2015A	\$7,985	\$85	\$7,900
2015C	\$5,200	\$10	\$5,190
2017A	\$5,387	\$62	\$5,325
Total	\$35,103	\$328	\$34,775*

NOTE: Totals may not add due to rounding - *Net Debt Service may differ from actual debt service payments due to interest earned on unused bond proceeds, premiums received, or discounts provided.

Estimated debt service requirements in the six-year plan for District-issued bonds, including \$243.0 million of new bonds projected to be issued through 2024 are as follows:

District Bonds Debt Service Schedule

All Amounts in Thousands

Year	Total
2019	35,104
2020	36,705
2021	41,621
2022	35,690
2023	34,281
2024	35,983
Total	\$219,384*

NOTE: Totals may not add due to rounding. - *Net Debt Service may differ from actual debt service payments due to interest earned on unused bond proceeds, premiums received, or discounts provided.

Clean Water Fund Program Loans

Clean Water Fund Program loans are a funding source for most major conveyance and water reclamation facility capital projects. This project represents the budget year's repayment obligation of this funding to the State of Wisconsin. Timely principal and interest payments are critical in maintaining the District's bond rating.

The Clean Water Fund Program, established under section 144.21 and 144.2415 of Wisconsin Statutes, provides low-interest loans for the construction of wastewater treatment works, non-point source pollution projects and estuary projects, for which the program provides a subsidized interest rate that is currently 55% of a published State of Wisconsin general obligation rate. Each loan is for a period of 20 years with principal payment beginning within 12 months after the expected date of project completion.

Since the beginning of the loan program in 1991, the District has received 128 loan awards totaling \$1.366 billion at interest rates ranging from 1.760 to 4.953 percent. Projects for compliance maintenance receiving State fiscal year 2019 funding are eligible for loans at 55 percent of the Clean Water Fund Program market interest rate. This project provides payments to the State of Wisconsin in 2019 for financial assistance received under the Clean Water Fund Program.

2019 Clean Water Fund Program	
All Amounts in Thousands	
Gross Debt Service	\$72,703
Less Debt Service Fund	\$983
Total	\$71,720

*Net Debt Service may differ from actual debt service payments due to interest earned on unused bond proceeds, premiums received, or discounts provided.

In 2019, the District expects to receive \$31.5 million in project expense reimbursements from low-interest, 20-year loans from the Clean Water Fund Program. Six new loans are expected to be awarded from November 2018 through December 2019.

Estimated debt service requirements for Clean Water Fund Program loans, including disbursements from new loans projected to be received through 2024 are as follows:

Clean Water Fund Program Debt Service Schedule	
All Amounts in Thousands	
Year	Total
2019	72,704
2020	74,047
2021	74,987
2022	65,727
2023	68,562
2024	70,846
Total	\$426,872*

NOTE: Totals may not add due to rounding.

Net Debt Service may differ from actual debt service payments due to interest earned on unused bond proceeds, premiums received, or discounts provided.

Intergovernmental Loan

In 2010, the District entered into an Intergovernmental Cooperation Agreement with the City of Franklin to design, construct, and finance the Ryan Creek Interceptor which will ultimately become an asset of the District. The City of Franklin has received a Clean Water Fund Program loan of \$24,588,635 at 2.46 percent for the project.

The District's obligation is to make payments to the City of Franklin, beginning in 2015, which will equal the total principal and interest on the CWF loan. The CWF loan will be paid off in 2031. Ownership of the Ryan Creek Interceptor will transfer to the District at that time. No significant operating budget impact is expected. Debt service payments to the City of Franklin are as follows:

Intergovernmental Loan with City of Franklin

All Amounts in Thousands

<u>Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Total</u>
Prior	5,788,665	3,456,618	9,245,282
2019	1,244,629	447,534	1,692,163
2020	1,275,272	416,514	1,691,786
2021	1,306,669	384,730	1,691,399
2022	1,338,839	352,164	1,691,003
2023	1,371,802	318,796	1,690,598
2024	1,405,575	284,607	1,690,182
2025-2031	10,857,184	961,556	11,818,739
Total	<u>\$24,588,635</u>	<u>\$6,622,518</u>	<u>\$31,211,153</u>

NOTE: Totals may not add due to rounding

Glossary of Acronyms and Terms

AMP	Asset Management Program
ACE	Army Corps of Engineers
BOD	Biochemical Oxygen Demand
BMPs	Best Management Practices
CAFR	Comprehensive Annual Financial Report
CIP	Capital Improvements Program
CMOM	Capacity, Maintenance, Operation and Management
CNG	Compressed Natural Gas
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
D&D	Drying and Dewatering Facility
DNR	Department of Natural Resources
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GAAP	Generally Accepted Accounting Principals
GFOA	Government Finance Officers Association
GI	Green Infrastructure
GIS	Geographic Information System
GBT	Gravity Belt Thickener
H ₂ S	Hydrogen Sulfide
HHW	Household Hazardous Waste
I/I	Infiltration and Inflow
I&C	Instrumentation and Control System
IPS	Interplant Solids System
ISS	Inline Storage System (Deep Tunnel)
IWPP	Industrial Waste Pretreatment Program
LEED	Leadership in Energy and Environmental Design
LFG	Landfill Gas
LID	Low Impact Development
LIMS	Laboratory Information Management Systems
M7	Milwaukee 7
MBE	Minority Business Enterprise
MCRR	Material Capital Repair and Replacement
MGD	Million Gallons per Day
MIS	Metropolitan Interceptor Sewer System

MMAC	Metropolitan Milwaukee Association of Commerce
MMSD	Milwaukee Metropolitan Sewerage District
NACWA	National Association of Clean Water Agencies
NRCS	Natural Resources Conservation Service
NS	North Shore Interceptor
NPDES	National Pollution Discharge Elimination System
NWSRS	Northwest Side Relief Sewer
PCB	Poly Chlorinated Biphenyl
PPII	Private Property Infiltration and Inflow
QA/QC	Quality Assurance and Quality Control
RACM	Redevelopment Authority of the City of Milwaukee
RAS	Return Activated Sludge
SEWRPC	Southeastern Wisconsin Regional Planning Commission
SSES	Sewer System Evaluation Survey
SSO	Sanitary Sewer Overflow
SWMBE	Small, Women-, or Minority-Owned Business Enterprise
SWWT	Southeastern Wisconsin Watershed Trust
TAT	Technical Advisory Team
TAS	Thickened Activated Sludge
TMDL	Total Maximum Daily Loads
TSS	Total Suspended Solids
USACE	United States Army Corps of Engineers
VFD	Variable Frequency Drive
VWM	Veolia Water Milwaukee
WAS	Waste Activated Sludge
WDNR	Wisconsin Department of Natural Resources
WII	Water Impact Index
WisDOT	Wisconsin Department of Transportation
WPAP	Water Pollution Abatement Program
WPDES	Wisconsin Pollutant Discharge Elimination Systems
WRF	Water Reclamation Facilities
WRP	Watershed Restoration Plan

Abatement: The measures taken to reduce or eliminate pollution or the tax levy.

Acre-Foot: A term used in measuring the volume of water that is equal to the quantity of water required to cover 1 acre, 1 foot deep; 43,560 cubic feet. Storage volumes are usually expressed in acre-feet.

Accrual Basis of Accounting: A method of accounting in which revenues are recorded when measurable and earned, and expenses are recognized when a good or service is used.

Activated Sludge (AS): The interaction of microorganisms, wastes, and oxygen to form sludge. Activation takes place during the aeration process.

Activated Sludge Process: A biological process that removes pollutants by breaking down organic matter in raw sewage and converting it into sludge. AS process is the form of secondary treatment used by the District.

Ad Valorem Tax: A tax levied according to the value of the property, merchandise, etc., being taxed.

Agri-Life®: An anaerobically digested, organic sludge formerly produced at the South Shore Water Reclamation Facility. It is injected into farmland as a soil conditioner and is also reprocessed into Milorganite®.

Anaerobic Digestion: The process by which sludge is stabilized by biological action in a temperature-controlled, oxygen-free (anaerobic) environment (digesters). The stabilized sludge is injected into farmland as a soil conditioner (Agri-Life®). The digester gas resulting from the biological action provides energy to run the South Shore plant.

Appropriation: A sum of money or total of assets devoted to a special purpose.

Average Flow: Average quantity of wastewater entering the treatment system over a given period of time.

Balanced Budget: A budget in which current revenues equal current expenditures.

Biochemical Oxygen Demand (BOD): A measure of the amount of oxygen used up in the anaerobic decomposition of organic matter. The BOD test utilizes the oxygen from air dissolved in water and reflects treatability or stage of decomposition. It gives a direct measurement of the strength of wastewater, usually expressed in mg/l (milligrams per liter).

Bio-swale: Landscape designed to remove silt and pollution from surface runoff water.

Bond: A written promise to repay debt on a specific date in the future, along with payment of a specified amount of interest at predetermined intervals while the debt is outstanding.

Bypass: A flow relief device by which sanitary sewers, intercepting sewers or main sewers can discharge a portion or all of their flow, by gravity, into a receiving body of surface water to alleviate surcharging of intercepting or main sewers.

Capacity assurance, Maintenance, Operation and Management (CMOM): A program where the District works with the 28 communities in its service area to control the degradation of the sewer systems and curtail infiltration and inflow.

Capital Budget: A planned schedule of projects that acquire or improve land, waters, property or facilities to enhance sewerage services in the District's service area.

Capital Expenditure: The costs of acquiring, purchasing, adding to, leasing, planning, designing, constructing, extending, and improving all or any part of a sewerage system and of paying principal, interest or premiums on any indebtedness incurred for these purposes. To be a capital expenditure project costs must be greater than or equal to \$25,000, with a service life of ten or more years and must represent an identifiable addition to facilities or extend the service life of existing facilities. Equipment replacement costs must be greater than or equal to \$25,000 and a service life greater than 20 years.

Capital Improvement Program (CIP): A long-range plan of the District for the construction rehabilitation and replacement of the District-owned and operated infrastructure.

Channelization: The artificial enlargement or realignment of a stream channel.

Chlorination: Chlorine is added to the reclamation facility effluent before it is discharged into Lake Michigan to kill most of the bacteria.

Clean Water Fund Loan: This program provides low-interest loans for the construction of wastewater treatment facilities, nonpoint source pollution projects, and estuary projects.

Clearwater: Water entering the sanitary sewer system through infiltration or inflow. It reduces the sewer system capacity to carry sanitary sewage.

Coarse Screening: First step in preliminary treatment, which removes debris from the wastewater by screening.

Collection and Transportation System: A series of sewers, manholes, pumping facilities, and force mains, which carry wastewater from residences, commercial establishments, public buildings, institutions, and industrial plants. It terminates at a reclamation facility. Bypasses are considered a part of this system.

Collector Sewers: That portion of the collection and transportation system, which gathers wastewater from individual buildings and transports it through a network of sanitary sewers to interceptor sewers.

Combined Sewers: Sewers that carry both, sewage and stormwater runoff.

Compressed Natural Gas (CNG): A fossil fuel substitute for gasoline, Diesel fuel, and propane. CNG is an alternative to gasoline that is made by compressing natural gas to less than 1 percent of its volume at standard atmospheric pressure. It consists mostly of methane, and is odorless, colorless, and tasteless. It is drawn from domestically drilled natural gas wells or in conjunction with crude oil production.

Conveyance System: The system of sewers designed and operated to intercept and carry sewage from local government collection systems to the water reclamation facility.

Datalogger: An electronic device that records data over time or in relation to location. The District uses dataloggers to collect continuous groundwater level measurements at 30 minute increments.

Debt Service: Payments of interest and principal on bonds or other long-term borrowing.

Deep Tunnel: A major project of the Water Pollution Abatement Program that consisted of constructing 28.5 miles of tunnels 300 feet underground and designed to minimize sewer overflows. (Also see Inline Storage System)

Depreciation: A measure of the decrease in value of an asset over a specific period of time.

Design Flow: Average quantity of wastewater, which a water reclamation facility is designed to handle, expressed in millions of gallons per day (MGD).

Dewatering: Any process that removes water from sludge, i.e., vacuum filtering, centrifuging, decanting, heat-drying, etc. The term is also used to describe the removal of groundwater during sewer construction projects.

Dissolved Oxygen: Oxygen dissolved in water (as opposed to gaseous oxygen which occurs in water only as bubbles), available for respiration by most aquatic organisms.

District: The area that is provided water reclamation services by the Milwaukee Metropolitan Sewerage District.

Drop Shaft: A vertical shaft used to get wastewater from the surface to the Inline Storage System.

Dryer Cyclone: The Dryer Cyclone is a piece of equipment used as part of the Milorganite® process to remove dust particles from the dryer exhaust.

Easements: A right to obtain access to property; can be temporary or permanent.

Effluent Discharge: (1) A liquid which flows out of a containing space; (2) Sewage, water or other liquid, partially or completely treated, or in its natural state, flowing out of a reservoir, basin or reclamation facility, or part thereof.

Effluent Limitations: The maximum amount of a pollutant that a point source may discharge into a water body. They may allow some or no discharge at all, depending on the specific pollutant to be controlled and the water quality standards established for the receiving waters.

Enterprise Fund: Utilized to account for operations that are financed and operated in a manner similar to private sector enterprises where the cost of providing services to the general public is recovered primarily through user charges.

Environmental Assessment: The aspect of the facility planning process and resulting report analyzing environmental, social, and economic implications of the proposed alternatives.

Environmental Protection Agency (EPA): The federal agency responsible for regulating water quality and the Federal Clean Water Act.

Equipment Replacement Fund: In accordance with Wisconsin Department of Natural Resources requirements, a reserve fund established by the District equal to 5 percent of the asset value of District equipment with a value over \$25,000 and useful life between 10 and 20 years.

Extraterritorial Communities: Communities outside the Milwaukee Metropolitan Sewerage District boundaries that receive contracted service from the District.

Fecal Coliforms: Euteric bacteria, primarily *Eschericia coli*, found in fecal matter and used as indicators of the presence of pathogenic bacteria.

Filter Cake: Sludge that has been dewatered in the vacuum filters and is ready for heat drying into Milorganite®; it has a water content of 86 percent and looks like wet cardboard.

Fine Screening: Final step of preliminary treatment at Jones Island, which removes fine particles and debris such as hair and cigarette butts not caught in coarse screening.

Fiscal Year: The time period designated by the District signifying the beginning and ending period for recording financial transactions.

Floodplain: Land which may be covered by flood water during the 1% annual probability flood event. It includes the floodway and the floodfringe, and may include other designated floodplain areas for regulatory purposes.

Floodwall: A concrete or masonry embankment built to restrain the flow of water of a river bank and protect land from flooding.

Full-time Equivalent: A unit that indicates the workload of an employed person (or student) in a way that makes workloads or class loads comparable across various contexts.

Fund: A sum of money or other resources whose principal or interest is set apart for a specific objective.

Fund Balance: The difference between a fund's assets and its liabilities. Portions of the fund balance may be reserved for various purposes, such as contingencies or encumbrances.

Geographic Information System (GIS): An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information.

Green Infrastructure: An adaptable term used to describe an array of products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services. As a general principal, Green Infrastructure techniques use soils and vegetation to infiltrate, evapotranspire, and recycle stormwater runoff.

Green alleys, streets, and parking lots: Green alleys, streets and parking lots are typically in the public right-of-way and can provide a combination of different benefits designed to channel, infiltrate and evapotranspire rainwater. They include permeable pavement, sidewalk planters, landscaped medians and bio-swales, inlet restrictors, greenways and trees, and can also take advantage of recycled materials.

Green Roofs: Green roofs (also known as eco-roofs) are either partially or completely planted with vegetation growing in soil (or a growing medium) to hold rainwater. They can be planted in waterproof trays or on top of a waterproof barrier, and can be intensive (like a rooftop park) or extensive (relatively lightweight). They function for stormwater management purposes when they are lush and green as well as when they are dormant.

Greenways: Greenways include riparian and non-riparian buffer zones and strips that store and drain stormwater runoff into the ground naturally. As vegetated strips that help to infiltrate and evapotranspire both rainwater and snow melt, they can be placed along bike paths, sidewalks, riverbanks, and streets. They can be planted in native vegetation, in mowed grass, and as gardens.

Heat Drying: Final step in the production of Milorganite®. Rotary drum dryers tumble-dry filter cake into a dry granular product that can be packaged. Heat drying destroys pathogens in the sludge (filter cake).

Hydrogen Sulfide: A colorless gas with the characteristic foul odor of rotten eggs. It is heavier than air, very poisonous, corrosive, flammable, and explosive. It results from the bacterial breakdown of organic matter in the absence of oxygen, such as in sewers.

Impervious Areas: Any pavement or structural element including, but not limited to, roofs and paved roads, driveways, and parking lots, that prevents rain, surface water runoff, or melting snow from infiltrating into the ground below. Lack of infiltration can increase surface runoff and contribute to flood risk and pollutant transport.

Industrial Cost Recovery: A provision in the 1972 Federal Water Pollution Control Act (FWPCA) that requires industries to pay back to the federal government the extra capital costs that their discharges impose on municipal treatment plants. (The 1977 Clean Water Act established an 18-month moratorium on Industrial Cost Recovery).

Infiltration/Inflow (I/I): Total quantity of water entering a sewer system. Infiltration means entry through such sources as defective pipes, pipe joints, connections or manhole walls. Inflow signifies discharge into the sewer system through service connections from such sources as area or foundation drainage, springs and swamps, storm waters, street wash waters, or sewers.

Influent: The wastewater entering the reclamation facility.

Inline Storage System (ISS): The Inline Storage System (ISS) provides relief to the Metropolitan Interceptor Sewer (MIS) system during extreme wet weather periods by allowing excess flows from the MIS to be diverted to the ISS in both the separate sewer area and the combined sewer service areas. The excess flow is stored in the ISS until reclamation facility capacity is available. (Also see Deep Tunnel)

Instrumentation & Control (I&C): Equipment used to monitor and control wastewater treatment processes such as flows, dissolved oxygen levels, valve positions, and equipment operations.

Interceptor: A sewer that carries sanitary waste that is built by the District. These are large sewers that collect wastewater from local trunk sewers and convey it to the water reclamation facility.

Intergovernmental Cooperation Council (ICC): Comprises 19 communities located within Milwaukee County. The mayors and village presidents meet on a monthly basis to discuss topics of common interest and regional concern.

Laboratory Information Management System (LIMS): An automated system used by the District's Central Laboratory, Industrial Waste and Water Quality Research departments to manage data including test scheduling, case log-in, worksheets, instrument interfaces, reporting, research, test results, and dispersion of the results to designated areas.

Lateral: That part of the horizontal piping of a drainage system which extends from the end of a building drain and which receives the building discharge and conveys it to the sewer system.

Lift Station: A facility in a sewer system consisting of a receiving chamber, pumping equipment, and associated drive and control devices which collect and lift wastewater to a higher elevation when the continuance of the sewer at reasonable slopes would involve excessive trench depths; or that collects and raises wastewater through the use of force mains from areas too low to drain into available sewers.

Low Impact Development (LID): Integrates ecological and environmental considerations into all phases of urban planning, design, and construction in order to avoid encroaching on environmentally fragile or valuable lands, and to decrease runoff volumes and peak flow impacts.

Milwaukee 7 (M7): Milwaukee 7, launched in September 2005, was formed to create a regional, cooperative economic development platform for the seven counties of southeastern Wisconsin: Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha. Its mission is to attract, retain and grow diverse businesses and talent.

Metropolitan Interceptor Sewers (MIS): Portion of the collection and transportation system, which receives wastewater from collector sewers from conveyance to the point of treatment and are owned and maintained by the Milwaukee Metropolitan Sewerage District. An interceptor sewer is designed to have a limited number of connections for receiving wastewater from the collector sewer system.

Milorganite®: An organic nitrogen fertilizer (6-2-0) produced from waste-activated sludge at the Jones Island plant that is an excellent lawn and turf, non-burning, slow release fertilizer.

Minority Business Enterprise: An independent business concern that is at least 51 percent owned and controlled by minority members, that has undergone a pre-certification process that enables it to receive enhanced consideration on bids and proposals it submits to MMSD.

Native Landscaping: The use of native plant species that can tolerate the drought and flooding cycles of an area. Native plants are those that evolved in a particular area and are adapted to local climate conditions.

Nonpoint Source Pollutants: Pollutants which do not enter the water from any discernible, confined and discrete conveyance but rather wash off, run off or seep from broad areas of land.

North Shore Interceptor (NS): That portion of the Inline Storage System that connects to the Crosstown Interceptor and proceeds north to West Hampton and then west to North 51st Street. Other drop shafts (NS 4, 5, 12, etc.) connect to the NS.

NS – 4, 5, 12, etc.: Drop shafts connecting to North Shore Interceptor.

Operations and Maintenance (O&M) Budget: Annual budget for activities related to controlling, operating, managing, and maintaining the sewerage system.

Overflow: A flow relief device by which sanitary sewers, intercepting sewers or main sewers can discharge a portion or all of their flow, by gravity, into a receiving body of surface water to alleviate surcharging of intercepting or main sewers.

Peak Flow: The maximum volume of effluent expected to enter a treatment system over a given time period. Treatment systems are designed based on an estimate of the rate of peak flow to average flow for different segments of the system.

Phosphorus Removal: Excess phosphorus in Lake Michigan can kill off fish life by stimulating the growth of excess algae. A small amount of iron sulfate (pickle liquor) is added to the wastewater. The iron combines chemically with the phosphorus and settles into the sludge that is removed.

Pickle Liquor (Iron Sulfate): A chemical waste from local industries that is used to remove phosphorus from wastewater.

Point Source Pollutants: Those that enter the water from any discernible, confined, and discrete conveyance such as a sewer pipe, culvert, tunnel, or other channel.

Pollution Prevention Initiative (P2): Within the Industrial Waste Pretreatment Program, a point source control system that involves the elimination of hazardous material inputs, improvements to in-production processes, and the “closed looping” of residual streams.

Porous Pavement: porous pavement can reduce and infiltrate surface runoff through its permeable surface into a stone or filter media below. Runoff then percolates into the ground, is conveyed offsite as part of a stormwater system, or is collected and contained for future use. Porous pavement can be asphalt, concrete or pavers, but differs from traditional pavement because it excludes fine material and instead provides pore spaces that store and pass water.

Preliminary Treatment: The first stage of wastewater treatment that removes debris, sand, grit, and fine particles through use of bar screens, grit changes, and sedimentation tanks.

Pretreatment: Any process used by local industries to reduce pollution load before wastewater is introduced into a main sewer system or delivered to a reclamation facility.

Primary Treatment: The process following preliminary treatment at the reclamation facilities that allows solids to settle, thicken, and be removed. Primary effluent goes on to secondary treatment. The sludge is removed for processing by anaerobic digestion.

Pumping Station: A relatively large sewage pumping installation designed not only to lift sewage to a higher elevation but also to convey it through force mains to gravity flow points located relatively long distances from the pumping station.

Rain Barrel: A barrel that collects and stores rainwater from a rooftop to use later for lawn and garden watering.

Rain Gardens: Gardens that are watered by collected or pooled stormwater runoff, slowly infiltrating it into the ground along root pathways. They are typically planted with wildflowers and deep-rooted native vegetation, which helps infiltrate rain channeled to them from roofs, driveways, yards and other impervious surfaces.

Rainwater Harvesting: Rainwater harvesting encompasses the capture and storage of rainwater. It also includes the ability to reuse stored rainwater for appropriate uses, primarily gardening and lawn watering. Harvesting not only includes the collection systems, but also the rain barrels and cisterns used to store the water.

Red Circle Rate: A pay rate that is above the maximum range assigned to the job grade. Employees are usually not eligible for additional pay increases until the range maximums exceed the individual pay rate.

Relief Sewer: A sewer added to convey projected flow in excess of the flow that the existing sewer can effectively carry.

Sanitary Sewers: Sewers that are designed to carry only domestic or commercial sewage.

Secondary Treatment: Biologically removes dissolved solids and pollutants from the water by means of the activated sludge process.

Separated Sewer: A sewer system where sanitary sewers carry domestic and commercial sewerage and stormwater is carried in a separate sewer.

Service Area: The area served by the District's wastewater treatment system.

Sewage: Sewage refers to the wastewater flow from residential, commercial, and industrial establishments, which flows through the pipes to a reclamation facility.

Sewerage: Sewerage refers to the system of sewers and physical facilities employed to transport, treat, and discharge sewage.

Sinking Fund: A fund used solely for paying debt service on general obligation bonds or notes. General obligation bonds and notes include a pledge of tax levies to be deposited into a debt service sinking fund as provided in Section 67.11 of Wisconsin Statutes. Any interest earned on monies placed in the sinking fund stays within the fund.

Siphon: A tube through which a liquid is lifted over an elevation by the pressure of atmosphere and is then emptied at a lower level.

Sludge: The accumulated settled solids deposited from sewage or industrial wastes, raw or treated, in tanks and basins, and containing more or less water forming a semi-liquid mass.

Small Business Enterprise (SBE): Those businesses that adhere to guidelines of U.S. Small Business Administration that are afforded special opportunities, when feasible.

Solids: The particulates contained in, or removed from wastewater (debris, sand and grit, sludge). Also, a synonym for sludge in cases where it can be reused in some beneficial way, i.e., Milorganite®, Agri-Life®.

Solids Processing: After secondary treatment, the solids (sludge) are processed prior to being recycled. At Jones Island, the processing involves vacuum filtering (dewatering) and heat drying into Milorganite®. At South Shore, the solids (sludge) are anaerobically digested into Agri-Life®.

Solids Utilization: Solids that can be recycled. At Jones Island, solids are converted into Milorganite®; at South Shore into Agri-Life®.

Southeastern Wisconsin Regional Planning Commission (SEWRPC): The advisory regional plan commission serving Milwaukee, Ozaukee, Racine, Kenosha, Washington, Walworth, and Waukesha counties. The commission is made up of 21 Commissioners, three from each of the seven counties. SEWRPC is not a state agency. It is responsible for producing the Area-wide Water Quality Management Plan.

Southeastern Wisconsin Watershed Trust (SWWT): This is a voluntary, non-taxing partnership of independent government units, special purpose districts, other organizations, and individuals to achieve cooperation and collaboration within Greater Milwaukee Watersheds.

Storm Sewer: A conduit that collects and transports rain and snow runoff back to the surface water. In a separate sewerage system, storm sewers are entirely separate from those carrying domestic and commercial wastewater.

Stormwater Best Management Practices (BMPs): Any practices that reduce the adverse impacts of stormwater runoff.

Stormwater Rule: A region-wide effort to manage future flooding in southeastern Wisconsin that will manage the volume and rate of stormwater runoff from new development and redevelopment so that peak flows in a watershed do not increase downstream flooding.

Stormwater Trees: Stormwater trees can hold rainwater on their leaves and branches, infiltrate it into the ground, absorb it through root systems and evapotranspire it to the atmosphere.

SWOT Analysis: A strategic planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in a plan. It involves specifying the project's objective and identifying the internal and external factors that will help or inhibit achieving that objective.

Technical Advisory Team (TAT): A cooperative effort with District staff and members of the 28 communities served by the District. The group also includes representatives of the realtors and builders associations, the Wisconsin Department of Natural Resources, Milwaukee County, and the Southeastern Wisconsin Regional Planning Commission. Provides advisory level input for the development of the 2020 Facilities Plan and other MMSD projects, programs and initiatives.

Total Suspended Solids (TSS): Small particles of solids pollutants in sewage that contribute to turbidity and that resist separation by conventional wastewater treatment means.

2020 Facilities Plan: A plan that identifies system capital improvements necessary for wastewater, conveyance, treatment, and watercourse management needs through 2020.

User Charges: Fees levied upon residential, commercial, and industrial users of a wastewater treatment system based upon the volume and characteristics of the waste.

User Class Codes: Certified Commercial; Non-Certified Industrial; Certified Industrial; Waste Strength Certified Industrial. These codes are used in compiling information for a pretreatment program for the industrial user.

Waste Activated Sludge (WAS): Settled, activated sludge that is not returned to the process to “seed” incoming wastewater but is drawn off “wasted.” At Jones Island, WAS is heat dried to produce Milorganite®.

Waste Load Allocations: Distribution of total “pollutant load” permitted on a particular water body among the various dischargers to that water body.

Watercourse System Maintenance Plan: System-wide plan that will monitor all watercourses within District jurisdiction to: (1) provide coordination on elements of maintenance; (2) establish a single agenda; and (3) promote safe and environmentally secure watercourses. Monitoring will be conducted on a cyclical basis, following a significant flow, and following receipt of a request. Determination will be made if action is required and, if so, who the responsible party is to undertake the action.

Water Impact Index (WII): An interactive tool that is used to quantify the impact of both water quality and water quantity.

Water Pollution Abatement Program (WPAP): A major program from 1977 to 1996 that repaired and expanded the entire metropolitan area wastewater conveyance and treatment system.

Watershed: The contributing land area confined by topographic divides that drain into a lake or river. Also called catchment area, drainage area, or river basin, and expressed in acres or square miles.

Wetlands: Areas that have soils that are inundated or saturated for part of the year or for the entire year, and are also known as bogs, marshes, and swamps. Under federal definition, the inundation or saturation of soil in a wetland is at a frequency and duration to sufficiently support a prevalence of vegetation typically adapted for life in saturated soils. Wetlands allow rainwater to pool and slowly infiltrate into the ground, but are also seeps that provide water at the ground surface.

Wisconsin Pollution Discharge Elimination System (WPDES): Used by the DNR to regulate sewers and wastewater treatment plants.

Woman’s Business Enterprise: A business that is 51% owned, operated or controlled by women.

Working Capital: The capital of an organization that is used in its day-to-day trading operations, calculated as the current assets minus the current liabilities.



Pay Grades and Compensation

All staff positions are classified by a pay grade in the table below. Pay grade assignments consider the job content and skill set needed for each job classification. The District strives to maintain a skilled and competitive workforce; thus, the District also considers the local market data and pay rates when determining pay grades.

Prior to May 1, 2016, the District had one bargaining unit, AFSCME Local 366. The Wisconsin Employment Relations Commission (WERC) made permanent the rule requiring unions to annually recertify their status as the representative for general municipal employees. In 2016, Local 366 members voted not to request a vote for recertification. Effective May 1, 2016, MMSD employees represented by ASFCME Local 366 became non-represented employees.

In 2017, the Commission approved a single compensation plan that covers all classifications of positions at the District, with pay grades ranging from pay grade 4 to pay grade 21. As recommended by the District's compensation consultant, Carlson Dettmann, the 2019 Operations & Maintenance Budget applies a structural adjustment as of 1/1/19 of 2.2 percent and a 2.75 percent merit based on satisfactory or above performance.

2019 Pay Grades 4-21

Pay Grade	Minimum	Midpoint	Maximum
21	\$197,021.16	\$231,838.66	\$278,227.24
20	\$162,933.37	\$191,704.72	\$230,066.51
19	\$142,605.79	\$167,728.60	\$201,295.16
18	\$130,513.49	\$153,551.41	\$184,303.39
17	\$119,463.62	\$140,520.91	\$168,666.79
16	\$109,456.20	\$128,741.34	\$154,489.61
15	\$100,178.48	\$117,899.96	\$141,459.11
14	\$91,838.96	\$108,101.03	\$129,679.54
13	\$84,333.40	\$99,240.29	\$119,046.65
12	\$77,557.54	\$91,213.50	\$109,456.20
11	\$71,302.90	\$83,916.42	\$100,699.70
10	\$65,673.72	\$77,244.80	\$92,672.92
9	\$60,461.52	\$71,094.41	\$85,271.59
8	\$55,770.54	\$65,569.48	\$78,704.22
7	\$51,496.54	\$60,565.76	\$72,658.07
6	\$41,384.87	\$48,681.95	\$58,376.64
5	\$35,964.18	\$42,323.06	\$50,766.83
4	\$31,273.20	\$36,798.13	\$44,199.46

Budget Policies

Annual Budget

Fiscal Year: The fiscal year of the Milwaukee Metropolitan Sewerage District begins on January 1 of each year and ends on December 31 of that year. The fiscal year is both the accounting and the budget year.

Enterprise Fund: The District prepares its financial statements on an enterprise fund basis. Generally Accepted Accounting Principles (GAAP) require state and local governments to use the enterprise fund to account for “business-type activities” – activities similar to those found in the private sector. Business-type activities include services primarily funded through user charges. The National Council of General Accounting Standards (NCGAS) defines the purpose of enterprise funds as: “...to account for operations (a) that are financed and operated in a manner similar to private business enterprises —where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance, public policy, management control, accountability, or other purposes.”

Within the Enterprise Fund, District expenditures are funded within two adopted budgets: an Operations & Maintenance Budget and a Capital Budget. The O&M Budget and the Capital Budget are funded differently.

Balanced Budget: It is required that the Milwaukee Metropolitan Sewerage District annually adopt a balanced budget in which District revenues and other sources of funds equal District expenditures and other uses in both the operating and capital budgets for the fiscal year. The District achieves this for the Operations & Maintenance Budget by offsetting total division expenditures and all other operating expenditures with funds from user charge billings, the User Charge Stabilization Fund, budget surpluses applied, and any other operating income. The District’s Capital Budget achieves this by offsetting total project expenditures and net debt service with tax levy income, non-member billings, use of available funds on hand, and all other capital income.

Budget Adoption

The Executive Director, with approval of the Policy, Finance, and Personnel Committee, shall establish a calendar for public hearings and the Commission’s review of the proposed budget. A summary of the proposed budget is made available for public inspection at least 15 days prior to the public hearing. (Commission Policy 1-15.01)

Operations & Maintenance Budget: The Executive Director shall present annually a recommended detailed budget of operating and maintenance expenditures and estimated revenue for the ensuing calendar year. These recommendations will be presented to the Policy, Finance, and Personnel Committee which will review and make recommendations to the Commission for adoption. Commission action is required to authorize the adoption of the annual Operations & Maintenance Budget (majority vote) (Commission Policy 1-15.01).

Capital Budget: The Executive Director shall annually submit to the Commission the following:

- A. **Total Project Costs** – A list of all projects new to the current budget year with the estimated costs to complete each project, as well as a list of all existing projects that have changes in previously granted total project cost. Commission action on the Total Project Costs is the policy setting mechanism, not an authorization to expend funds.
- B. **Capital Budget** – The annual financing plan for the current year’s anticipated capital account expenditures. Commission action on the Capital Budget sets the level of taxing and other sources of funds for the current year’s capital expenditures and authorizes staff to expend funds for the current year.
- C. **Long-Range Financing Plan** – The six-year plan identifies anticipated sources of funds for anticipated capital expenditures in each year of the six-year plan. It will also include a summary of actual revenues and expenditures for the preceding calendar year and an estimate of revenues and expenditures based on the first six months (or most current actual data) for the current calendar year. Commission action on the Capital Financing Plan approves the financial plan for out-years capital financing and capital expenditures for the planning purposes only; it does not set the level of taxing and other sources of funds or capital expenditures in subsequent years. (Commission Policy 1-15.02)

Commission action is required to authorize the adoption of the annual Capital Budget (majority vote). (Commission Policy 1-15.02)

The Commission has the authority to amend both the Executive Director's Operations & Maintenance and Capital Budgets at adoption. (Commission Policy 1-15.09)

Budget Amendments

New Projects: Commission action is required to authorize the addition of a new project not authorized in the adopted annual Capital Budget. The resolution presented to the Commission for approval must describe the project, identify the estimated amounts to be spent in the current year and over the life of the project, and identify the amounts to be transferred from other project(s) or from working capital to fund the new project. If funds are transferred between projects within the same project group (capital account) without increasing total authorized spending in that account, then a simple majority vote is required. If funds are transferred between project groups (capital accounts), or from working capital, then a two-thirds vote is required in accordance with state law. (Commission Policy 1-15.02)

Carryovers: Carryover of unexpended funds authorized in the Operations & Maintenance Budget to the next fiscal year is permitted with the approval of the Commission as an amendment to the Budget. The Executive Director shall present annually in March a list of funds budgeted in the previous fiscal year recommended for a carryover to the next fiscal year. The list shall include the following information: cost center, account, dollar amount recommended for carryover, purpose of expenditure, summary explanation of reason(s) funds remain unexpended, and summary of continuing need for goods or services to be procured. Operations & Maintenance funds may not be carried over more than one fiscal year. (Commission Policy 1-15.04)

Budget Transfers

The Office of Management & Budget will maintain both the Operations & Maintenance and Capital Budgets by monitoring expenditure levels and evaluating requests for all budget transfers to ensure compliance with Commission policies.

Operations & Maintenance Budget: The Executive Director shall ensure that the annual expenditures of each of the operating divisions do not exceed the total funds budgeted for that division. When it is apparent that the total division budget for any of the divisions will be exceeded, a request for a fund transfer shall be brought to the Commission prior to an overrun. The total division budget for a division includes all monies budgeted for all cost centers within that division. Budget overruns in one division may not be used to offset overruns in another division without approval of the Commission. (Commission Policy 1-15.01)

Capital Budget: Commission action (two-thirds vote) is required to authorize the approval of amendments increasing the total authorized annual spending in the Capital Budget. (Commission Policy 1-15.02)

Within the limits of authority delegated by this or other Commission policy or action, the Executive Director may, without further Commission approval during the budget year, execute contract amendments and adjust project allocations within a single capital account to fund such amendments and to respond to actual project cash flows, provided that total spending in the affected capital account, as approved by the Commission, is not exceeded. (Commission Policy 1-15.02).

Budget Reserves

Operating Reserves: Operating reserves are funds that have been segregated to meet legal requirements and/or have been segregated at the discretion of the Commission and are available only to the Operations & Maintenance Budget. (Commission Policy 1-15.08)

Equipment Replacement Fund: In accordance with the Wisconsin Administrative Code section NR-128.03 (18), the District is required to maintain an Equipment Replacement Fund (ERF) that will be funded specifically from user charges. User charges collected for the ERF are required to be maintained in a separate and distinct fund. The ERF will be used to fund replacement equipment and maintained at a level no less than five percent of the historical cost of all equipment with a cost greater than \$25,000 and a service life greater than 10 years and up to 20 years.

User Charge Stabilization Fund: The User Charge Stabilization Fund (UCSF) was created after 1998, by the Commission to reserve some of the savings realized from the operation and maintenance contract with the first operating contract with the former provider United Water Services, for distribution to customers of the District in future years. The UCSF is maintained as a separate and distinct fund, and, within the fund, the balance is classified by the District's four user charge billing parameters. Interest earned on the savings is to remain in the fund. In accordance with the District's objective of

maintaining stable user charge billings, the UCSF will be maintained at a level no less than 2.5 percent of the current year's revenues (refer to policy 1-15-08). Contributions to and withdrawals from the fund may be made by Commission action through the annual budget process.

Capital Reserves: Capital Reserves are funds that have been segregated to meet legal requirements and/or have been segregated at the discretion of the Commission and are available only to the Capital Budget. (Commission Policy 1-15.08)

Debt Service Funds: In accordance with section 67.11(1) of the Wisconsin Statutes, the District is required to establish and maintain a debt service fund for the payment of principal and interest on bonds and notes used in financing its capital improvement program. The District maintains a separate account for each of its own outstanding debt issues and one account for debt obtained through the State of Wisconsin Clean Water Fund Loan Program.

Annually, the District will levy an irrepealable tax sufficient to pay the principal and interest on the debt as it comes due in the following year. Taxes collected from this levy are placed into the debt service fund account and used to pay the annual debt service. Earnings from the investments in the debt service fund accounts remain until used as part of the debt service fund accounts.

Money shall not be withdrawn from a debt service fund and used for any purpose other than the purpose for which the fund was created until that purpose has been accomplished. After all the outstanding debt has been paid and retired, any balance in any debt service fund account may be transferred out and used as directed by the Commission. (Commission Policy 1-15.08)

Working Capital

The District needs unreserved cash balances as working capital to pay routine and non-routine operating and capital expenses. Annually as part of the determination of user charge billings and capital funding, the District will assess and budget as necessary any adjustments to the specific working capital levels, considering fund balances, investments, and cash flow requirements.

Operating: The District shall attempt to maintain a working capital balance between 60 to 90 days of expenditures with a target of 75 days. (Commission Policy 1-15.08)

Capital: The District shall attempt to maintain a working capital balance between 90 to 150 days of expenditures with a target of at least 90 days. (Commission Policy 1-15.08)

Contingency Accounts

Contingency accounts in both the Operations & Maintenance and Capital Budgets are used to ensure that adequate funds are available for unforeseen circumstances.

Operating: The District shall annually fund an Unallocated Reserve. Recommended changes regarding contingency accounts allow funding at a level within a range between 2.0 percent and 3.5 percent of net division expenditures. (Commission Policy 1-15.08)

Capital: To ensure that there are adequate funds for cost and schedule changes, unforeseen projects, and other unexpected circumstances, the Capital Budget shall fund an Allowance for Cost and Schedule Changes maintained within a range between 2.0 percent and 5.0 percent of the current year's total budgeted project expenditures.

One-Time Revenues

One-time revenues are those funds that cannot be relied upon to fund the continuing operations or capital expenditures of the District. They may be used to fund non-continuing expenses, such as litigation, the study of new cost-saving initiatives, to fund reserves, or the achievement of targeted working capital balance. (Commission Policy 1-15.08)

Debt

Limitations: Per Commission Policy 1-73.18, the District intends to keep outstanding general obligation debt within 50 percent (2.5 percent) of the limit prescribed by law (5 percent) and at levels consistent with its credit objectives and long-range financing plan goal of 25 percent cash financing. Annual debt service requirements anticipated in the long-range plan are funded from the tax levy and other revenues, including available funds on hand.

Types: The District has authority under Section 200.55 of the Wisconsin Statutes to finance capital improvements through the issuance of debt instruments, including:

- General obligation bonds and promissory notes;
- Bond anticipation notes; and
- Revenue obligation bonds and notes

Even though the District also has authority to issue revenue obligations, the District shall issue general obligation bonds and notes to finance the capital improvements program, unless staff can demonstrate to the Commission that other, statutorily authorized debt instruments provide the District with a financial advantage.

Maturity of Debt: Staff shall utilize the following considerations in structuring debt maturities:

- long-range financing objectives;
- the useful life of the project assets to be financed; and
- a fair allocation of project costs to current and future customers benefiting from the project.

Fixed and Variable Rate Debt: The District intends to issue debt on a fixed-rate basis. Staff, however, may propose that the District issue securities that pay a variable rate of interest determined in accordance with a pre-determined formula or that results from a periodic remarketing of the securities, consistent with State law and covenants of pre-existing bonds, and depending on market conditions. The District will have no more than 15 percent of its outstanding general obligation bonds in variable-rate form.

Credit Objectives: The District will seek to maintain or improve its current credit rating with Moody's Investors Service (Aa1), Standard & Poor's (AA+), and Fitch Investors Service (AAA). The District will strive to maintain good relations with the rating agencies, routinely communicating with the rating agencies and keeping them informed of significant developments that could affect the District's credit rating.

In order to achieve its credit rating objective, the District recognizes the need to integrate debt policy with its six-year capital improvements program and long-range financing plan. The District will also consider the debt issuance plans of other governmental units located within the District's boundary as provided in Section 200.55 (7) of the Wisconsin Statutes.

The following objectives for the District's capital improvement program and financing plan will be used to maintain debt service requirements at affordable levels and enhance the credit quality of the District:

- An average of at least 25 percent of project expenditures shall be cash financed over the six-year financing plan.
- Changes to the annual tax levy throughout the long-range plan shall be limited to amounts that are necessary, affordable, and allow for tax levy stability into the future.
- Responsible drawdown of accumulated reserve funds in a manner that does not cause destabilizing annual fluctuations in the tax levy.
- Flexibility to fund future expenditures necessary to fulfill the District's responsibilities.

Approval of Sale: Commission approval of the debt sale shall comply with the affirmative vote requirements of Section 200.27 (2) of the Wisconsin Statutes and Commission Policy 1-15.02, "Capital Budget."

Selection of Outside Financial Consultants: The Controller shall be responsible for establishing a solicitation and selection process for securing outside professional services necessary to develop and implement the District's debt program. Selection of outside financial advisors, bond counsel, and underwriters and other service providers will comply with District procurement policies and state law. Section 200.57 (2) of the Wisconsin Statutes requires the Commission to attempt to ensure that 5 percent of the total funds expended for financial advisory services and investment analysis shall be expended for the services of minority financial advisors.

Refundings: Periodic reviews of outstanding debt will be undertaken to determine refunding opportunities. Refunding will be considered (within federal tax law constraints) if and when there is a net economic benefit of the refunding or the refunding is essential in order to update covenants essential to operations and management.

In general, advance refundings for economic savings will be considered when net present value (NPV) savings of at least 2 percent of the refunded debt can be achieved. Current refundings that produce NPV savings of less than 2 percent will be considered on a case-by-case basis. Advance refundings with less than 2 percent savings may be considered when the Commission determines that there is a compelling public policy or long-range financing policy objective.

			2018	2019
		Prior	Estimate	Budget
Water Reclamation Facilities		\$122,794,409	\$36,657,484	\$44,897,921
Jones Island		\$89,521,442	\$22,631,093	\$21,527,184
Primary Treatment		\$5,043,158	\$5,257,588	\$3,017,258
J01008	Upgrade Primary Clarifier Mechanisms	\$5,014,772	\$317,237	\$1,265
J01013	Preliminary Facility Electrical Upgrade	\$0	\$22,637	\$401,076
J01019	JI Force Main Assessment	\$28,386	\$80,583	\$489,571
J01021	Grit Basin Equipment Replacement	\$0	\$81,373	\$144,193
J01023	Primary Clarifier 4 & 6 PSD Withdrawal Piping Replacement	\$0	\$1,496,917	\$1,879
J01024	Harbor Siphon Structures & Adjacent Asset Modifications	\$0	\$3,258,841	\$1,979,274
Secondary Treatment		\$1,079,592	\$683,457	\$297,672
J02011	Upgrade Secondary Clarifier Drain Valves	\$0	\$0	\$0
J02012	Aeration System Diffusers Replacement	\$3,257	\$69,178	\$83,551
J02013	East Plant RAS Header and Pump Replacement	\$1,076,335	\$614,279	\$214,121
Advanced Treatment		\$2,907,006	\$4,900	\$0
J03004	JI Effluent Pump Replacement	\$2,907,006	\$4,900	\$0
Solids Processing		\$13,355,274	\$8,991,771	\$8,646,176
J04031	Biosolids/Energy Instrumentation Upgrade	\$705,314	\$1,178	\$0
J04032	Ferric Oxide System Improvements	\$0	\$0	\$0
J04033	D&D Drainage Piping & Quench Chambers Rehabilitation	\$1,502,640	\$150	\$0
J04035	Greens Grade Train Replacement and Redundant Train Evaluation	\$30,106	\$294,148	\$371,244
J04037	Thickened Sludge Improvements	\$69,436	\$200,410	\$320,570
J04038	D&D Dryers Guillotine Gate Replacement	\$0	\$244,634	\$155,388
J04039	D&D Building Explosion Relief Panel Replacement	\$2,398,690	\$605,701	\$0
J04040	D&D Freight & Passenger Elevator Rehab	\$258,498	\$2,443,515	\$23,810
J04041	Milorganite Facilities Improvement - Phase III	\$5,073,873	\$542,951	\$0
J04046	D&D ID Fan Energy Conservation	\$147,486	\$227,683	\$558,860
J04047	Install Winches at Chaff Load out Bay	\$250,020	\$45,429	\$0
J04050	Dryer Feed and Discharge Screw Replacement	\$416,888	\$1,453,462	\$1,744,715
J04051	MRAB Feed Screw Replacements	\$470,160	\$208,494	\$3,867
J04052	Milorganite Facilities Improvements Phase IV	\$344,267	\$1,884,499	\$3,596,877
J04057	Dryer Exhaust Duct Header Replacement	\$2,713	\$12,592	\$79,202
J04059	Milorganite Product Cooler Replacement	\$1,638,109	\$16,685	\$0
J04060	Sludge Cake Transport & Feed Conveyors Replacement	\$47,074	\$258,615	\$477,466
J04061	D&D PLC 5 Upgrades	\$0	\$42,190	\$321,028
J04064	Chaff Conveyance Equipment Replacement	\$0	\$0	\$0
J04065	D&D First Stage Classification Equipment Replacement	\$0	\$214,600	\$495,714
J04066	Milorganite Dust Suppressant System Upgrades	\$0	\$0	\$68,269
J04067	D&D South Cake Loadout System	\$0	\$48,011	\$88,275
J04068	E/B Tank Odor Removal	\$0	\$246,824	\$340,891

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$59,797,969	\$40,054,344	\$32,925,992	\$40,314,929	\$65,535,319	\$39,049,050	\$331,221,989	
\$29,899,119	\$31,325,606	\$24,123,220	\$22,807,670	\$12,021,054	\$1,831,258	\$209,623,484	
\$1,193,023	\$1,577,475	\$2,004,574	\$682,461	\$0	\$0	\$18,775,537	
\$553	\$181	\$10	\$0	\$0	\$0	\$5,334,018	J01008
\$135,180	\$1,345,407	\$2,004,564	\$682,461	\$0	\$0	\$4,591,325	J01013
\$138,520	\$0	\$0	\$0	\$0	\$0	\$737,060	J01019
\$916,218	\$231,887	\$0	\$0	\$0	\$0	\$1,373,671	J01021
\$1,205	\$0	\$0	\$0	\$0	\$0	\$1,500,001	J01023
\$1,347	\$0	\$0	\$0	\$0	\$0	\$5,239,462	J01024
\$83,569	\$270,193	\$1,717,237	\$1,567,333	\$89,661	\$429,630	\$6,218,344	
\$0	\$0	\$0	\$76,838	\$87,341	\$429,630	\$593,809	J02011
\$83,569	\$270,193	\$1,717,237	\$1,490,495	\$2,320	\$0	\$3,719,800	J02012
\$0	\$0	\$0	\$0	\$0	\$0	\$1,904,735	J02013
\$0	\$0	\$0	\$0	\$0	\$0	\$2,911,906	
\$0	\$0	\$0	\$0	\$0	\$0	\$2,911,906	J03004
\$13,671,828	\$14,982,899	\$10,320,970	\$6,240,285	\$306,827	\$1,248,591	\$77,764,621	
\$0	\$0	\$0	\$0	\$0	\$0	\$706,492	J04031
\$0	\$0	\$0	\$179,347	\$300,700	\$1,248,591	\$1,728,638	J04032
\$0	\$0	\$0	\$0	\$0	\$0	\$1,502,790	J04033
\$1,253,370	\$1,281,231	\$5,602	\$0	\$0	\$0	\$3,235,701	J04035
\$5,984	\$0	\$0	\$0	\$0	\$0	\$596,400	J04037
\$2,853,035	\$2,621,486	\$1,613	\$0	\$0	\$0	\$5,876,156	J04038
\$0	\$0	\$0	\$0	\$0	\$0	\$3,004,391	J04039
\$0	\$0	\$0	\$0	\$0	\$0	\$2,725,823	J04040
\$0	\$0	\$0	\$0	\$0	\$0	\$5,616,824	J04041
\$532,284	\$5,385	\$0	\$0	\$0	\$0	\$1,471,698	J04046
\$0	\$0	\$0	\$0	\$0	\$0	\$295,449	J04047
\$756,098	\$43	\$0	\$0	\$0	\$0	\$4,371,206	J04050
\$0	\$0	\$0	\$0	\$0	\$0	\$682,521	J04051
\$15,000	\$0	\$0	\$0	\$0	\$0	\$5,840,643	J04052
\$379,861	\$1,421,119	\$862,834	\$197	\$0	\$0	\$2,758,518	J04057
\$0	\$0	\$0	\$0	\$0	\$0	\$1,654,794	J04059
\$3,440,835	\$2,827,166	\$7,087	\$0	\$0	\$0	\$7,058,243	J04060
\$150,190	\$2,085,041	\$2,780,995	\$2,077,239	\$2,290	\$0	\$7,458,973	J04061
\$856,823	\$1,888,064	\$6,509,403	\$3,983,502	\$3,837	\$0	\$13,241,629	J04064
\$2,693,641	\$2,470,050	\$5,013	\$0	\$0	\$0	\$5,879,018	J04065
\$106,061	\$380,134	\$148,310	\$0	\$0	\$0	\$702,774	J04066
\$544,694	\$3,180	\$113	\$0	\$0	\$0	\$684,273	J04067
\$83,952	\$0	\$0	\$0	\$0	\$0	\$671,667	J04068

			2018	2019
		Prior	Estimate	Budget
General Jones Island		\$67,136,412	\$7,693,377	\$9,566,078
J06022	Site Settlement	\$1,733,079	\$1,096	\$0
J06032	JI Geotechnical Structural Analysis	\$502,811	\$59,847	\$613,949
J06034	Head Tank Wall Extension	\$2,039,702	\$8,574	\$0
J06037	Gas Turbine Replacement	\$43,838,341	\$25,887	\$0
J06045	HVAC for Computer Room in Ops Building	\$446,468	\$0	\$0
J06050	JI I&C Improvements	\$1,472,313	\$261,955	\$16
J06052	Building Piping Inventory & Rehabilitation	\$170,431	\$585	\$0
J06054	ISS Crane Rehabilitation	\$794,505	\$744,961	\$365,775
J06056	Turbine Extended Service Agreement	\$5,285,089	\$1,244,579	\$1,281,917
J06058	JI Building Roof Replacement - Phase II	\$2,783,172	\$174,358	\$0
J06061	Dryer Conversion for Additional LFG	\$985,468	\$617,332	\$1,533,144
J06062	Re-Commission GE Turbine #2	\$1,883	\$0	\$0
J06064	Gaseous Fire Suppression Systems	\$281,084	\$360,490	\$273,968
J06065	Rolling Stock & Other Equipment	\$6,034,882	\$1,259,297	\$211,646
J06066	Power System Improvements	\$297,353	\$180,867	\$92,324
J06068	JI & SS Network Optimizations	\$391,852	\$429,854	\$0
J06069	JI Building Roof Replacement - Phase 3	\$43,339	\$321,911	\$3,366,087
J06073	Harbor Siphons Area Settlement Mitigation	\$17,572	\$73,462	\$52,000
J06075	2018 JI Capital Equipment Rehabilitation/Replacement	\$17,068	\$1,234,085	\$1,341,052
J06076	Turbine Waste Heat Expansion Joint 12 & 13 Replacement	\$0	\$94,237	\$384,200
J99003	Operator Contribution to CIP	\$0	\$600,000	\$50,000
South Shore		\$19,123,888	\$12,806,356	\$17,471,402
Primary Treatment		\$509,440	\$159,102	\$545,672
S01008	Influent Bar Screen Improvements	\$5,219	\$0	\$0
S01009	Scum System Improvements	\$112,265	\$151,323	\$537,603
S01010	Influent Channel Sampler	\$391,956	\$7,779	\$0
S01013	Primary Clarifier Overhaul	\$0	\$0	\$8,069
Secondary Treatment		\$2,843,033	\$1,576,576	\$1,381,164
S02008	SS Capacity Improvements	\$1,940,580	\$354,498	\$350,543
S02012	Biological Phosphorous Removal	\$318,440	\$13,360	\$23,802
S02013	Aeration Galleries RAS Header Piping Rehab	\$562,303	\$1,207,065	\$1,006,053
S02014	Secondary Clarifier Idling Control	\$21,710	\$1,653	\$0
S02015	Aeration Basin Diffuser Replacement	\$0	\$0	\$766
Advanced Treatment		\$491,308	\$218,021	\$176,484
S03002	SS Chloramination	\$0	\$0	\$0
S03003	Post-Secondary Capacity Improvements	\$491,308	\$218,021	\$176,484
Solids Processing		\$9,127,283	\$3,158,864	\$2,897,269
S04010	Thickening Process Capacity Enhancements	\$149,130	\$74	\$8,757
S04012	Plate and Frame Press Upgrade	\$292	\$1,145	\$168,119
S04020	Digester Mixing and Piping Replacement	\$5,022,038	\$172	\$0
S04023	Aeration Basin Concrete Rehab - Phase II	\$2,393,897	\$444,351	\$1,903
S04024	Digester Gallery Piping Rehab	\$63,321	\$0	\$113,530
S04025	HW Boiler Control Systems Improvements	\$669,096	\$10,927	\$0
S04029	Digester Mixing II	\$0	\$0	\$0
S04030	Aeration Basin Concrete Rehab - Phase III	\$11,444	\$116,577	\$191,866
S04031	Digester Gas Treatment System	\$818,065	\$2,517,791	\$1,437,814
S04033	Aeration Basin Concrete Rehab - Phase IV	\$0	\$0	\$0
S04034	High Strength Waste Mixing Improvements	\$0	\$0	\$42,838
S04035	Digester 6 & 8 Mixer Replacement	\$0	\$67,827	\$932,442

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$6,864,442	\$5,778,628	\$3,689,068	\$2,580,683	\$491,351	\$153,037	\$103,953,076	
\$0	\$0	\$0	\$0	\$0	\$0	\$1,734,175	J06022
\$0	\$0	\$0	\$0	\$0	\$0	\$1,176,607	J06032
\$0	\$0	\$0	\$0	\$0	\$0	\$2,048,276	J06034
\$0	\$0	\$0	\$0	\$0	\$0	\$43,864,228	J06037
\$0	\$0	\$0	\$0	\$0	\$0	\$446,468	J06045
\$0	\$0	\$0	\$0	\$0	\$0	\$1,734,284	J06050
\$0	\$0	\$0	\$0	\$0	\$0	\$171,016	J06052
\$0	\$0	\$0	\$0	\$0	\$0	\$1,905,241	J06054
\$1,326,784	\$1,379,855	\$1,435,049	\$1,492,451	\$0	\$0	\$13,445,724	J06056
\$0	\$0	\$0	\$0	\$0	\$0	\$2,957,530	J06058
\$2,761,327	\$2,590,531	\$728,457	\$0	\$0	\$0	\$9,216,259	J06061
\$0	\$0	\$22,577	\$38,232	\$117,631	\$153,037	\$333,360	J06062
\$14,504	\$0	\$0	\$0	\$0	\$0	\$930,046	J06064
\$0	\$0	\$0	\$0	\$0	\$0	\$7,505,825	J06065
\$277,711	\$525,302	\$5,494	\$0	\$0	\$0	\$1,379,051	J06066
\$0	\$0	\$0	\$0	\$0	\$0	\$821,706	J06068
\$647,351	\$66	\$0	\$0	\$0	\$0	\$4,378,754	J06069
\$52,000	\$52,000	\$266,679	\$0	\$0	\$0	\$513,713	J06073
\$1,727,915	\$1,180,812	\$1,180,812	\$1,000,000	\$323,720	\$0	\$8,005,464	J06075
\$6,850	\$62	\$0	\$0	\$0	\$0	\$485,349	J06076
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$900,000	J99003
\$10,408,991	\$4,289,572	\$6,865,375	\$17,009,825	\$53,511,844	\$37,217,792	\$121,598,505	
\$507,155	\$544,455	\$2,001,498	\$2,955,660	\$2,979,306	\$5,404,554	\$15,606,842	
\$0	\$0	\$0	\$0	\$0	\$0	\$5,219	S01008
\$224,121	\$0	\$0	\$0	\$0	\$0	\$1,025,312	S01009
\$0	\$0	\$0	\$0	\$0	\$0	\$399,735	S01010
\$283,034	\$544,455	\$2,001,498	\$2,955,660	\$2,979,306	\$5,404,554	\$14,176,576	S01013
\$494,732	\$487,097	\$444,658	\$450,589	\$1,239,439	\$29,206,853	\$38,124,141	
\$381,440	\$378,413	\$253,403	\$25,237	\$2,186	\$0	\$3,686,300	S02008
\$91,901	\$87,409	\$87,758	\$87,409	\$88,108	\$4,076,258	\$4,874,445	S02012
\$16,229	\$0	\$0	\$0	\$0	\$0	\$2,791,650	S02013
\$0	\$21,275	\$103,497	\$337,943	\$43,647	\$0	\$529,725	S02014
\$5,162	\$0	\$0	\$0	\$1,105,498	\$25,130,595	\$26,242,021	S02015
\$159,093	\$459,487	\$838,800	\$33,473	\$0	\$0	\$2,376,666	
\$9,121	\$111,763	\$553,274	\$11,608	\$0	\$0	\$685,766	S03002
\$149,972	\$347,724	\$285,526	\$21,865	\$0	\$0	\$1,690,900	S03003
\$4,691,861	\$1,481,933	\$2,034,440	\$1,062,782	\$3,280,655	\$2,606,385	\$30,341,473	
\$246,624	\$387,557	\$1,888,365	\$284,396	\$0	\$0	\$2,964,903	S04010
\$557,913	\$18,282	\$12,014	\$3,427	\$3,455	\$3,208	\$767,855	S04012
\$0	\$0	\$0	\$0	\$0	\$0	\$5,022,210	S04020
\$0	\$0	\$0	\$0	\$0	\$0	\$2,840,151	S04023
\$1,055,124	\$0	\$0	\$0	\$0	\$0	\$1,231,975	S04024
\$0	\$0	\$0	\$0	\$0	\$0	\$680,023	S04025
\$0	\$0	\$0	\$327,071	\$2,019,572	\$2,168,902	\$4,515,545	S04029
\$1,502,428	\$843,698	\$0	\$0	\$0	\$0	\$2,666,013	S04030
\$1,433	\$0	\$0	\$0	\$0	\$0	\$4,775,103	S04031
\$0	\$3,102	\$115,612	\$447,888	\$1,257,628	\$434,276	\$2,258,506	S04033
\$82,175	\$199,873	\$18,449	\$0	\$0	\$0	\$343,335	S04034
\$1,246,164	\$29,421	\$0	\$0	\$0	\$0	\$2,275,855	S04035

		2018	2019
	Prior	Estimate	Budget
General South Shore	\$6,152,824	\$7,693,793	\$12,470,813
S06015 SS Geotechnical Structural Analysis	\$0	\$0	\$248,517
S06019 Replace W3 Flushing Water Pumps	\$272,014	\$457,719	\$678,705
S06022 Building 326 Site Improvements	\$399,190	\$232,798	\$131,695
S06026 SS Building Roof Replacement - Phase II	\$817,336	\$7,632	\$0
S06027 Tunnels Concrete Rehabilitation	\$287,370	\$381,494	\$2,773,832
S06028 Central Control Building H2S Removal System	\$261,143	\$515,833	\$597,065
S06029 Med Voltage Switchgear Replacement	\$486,344	\$1,420,207	\$1,841,695
S06032 SS Rolling Stock & Other Equipment	\$2,865,445	\$565,141	\$390,388
S06033 Upgrade Medium & Low Voltage MCC's	\$465,212	\$1,363,746	\$1,545,782
S06034 Building Roof Replacement Phase III	\$0	\$232,078	\$1,792,031
S06036 Gas Compressor 5 DG Enhancements	\$83,799	\$113,347	\$0
S06038 2018 SS Capital Equipment Rehabilitation/Replacement	\$0	\$1,779,592	\$1,203,628
S06039 Building Roof Replacement Phase IV	\$0	\$172,820	\$983,531
S06040 SS Network Optimization	\$214,971	\$112,607	\$116,235
S06043 SS Buffer Zone	\$0	\$38,779	\$117,709
S99003 Operator Contribution to CIP	\$0	\$300,000	\$50,000
Interplant Pipeline	\$14,149,079	\$1,220,035	\$5,899,335
Interplant Pipeline	\$3,680,885	\$670,736	\$4,565,308
P01003 Interplant Pipeline Improvements at South Shore	\$2,650,357	\$27,132	\$0
P01005 Interplant Pipeline Improvements - Phase II	\$1,030,528	\$560,100	\$4,418,568
P01006 Replace IPS Pipes within South Shore WRF Property	\$0	\$83,504	\$146,740
Energy Pipeline	\$10,468,194	\$549,299	\$1,334,027
P02002 West Shore Pipeline	\$10,169,223	\$9,650	\$0
P02003 LFG Pipeline Pigging Station	\$154,108	\$183,820	\$653,081
P02004 Landfill Gas System - Metro Landfill	\$144,863	\$355,829	\$680,946
General Reclamation Facility Projects	\$0	\$0	\$0
Allowance for Plant Rehabilitation	\$0	\$0	\$0
J99001 Allowance for Plant Rehabilitation	\$0	\$0	\$0
J99004 Allowance for D&D Rehabilitation	\$0	\$0	\$0
S99001 Allowance for Plant Rehabilitation	\$0	\$0	\$0
Inflation	\$0	\$0	\$0
J99005 Inflation	\$0	\$0	\$0
S99004 Inflation	\$0	\$0	\$0
P99002 Inflation	\$0	\$0	\$0

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$4,556,150	\$1,316,599	\$1,545,979	\$12,507,321	\$46,012,444	\$0	\$35,149,383	
\$232,761	\$0	\$0	\$0	\$0	\$0	\$481,278	S06015
\$4,477	\$0	\$0	\$0	\$0	\$0	\$1,412,915	S06019
\$0	\$0	\$0	\$0	\$0	\$0	\$763,683	S06022
\$0	\$0	\$0	\$0	\$0	\$0	\$824,968	S06026
\$564,713	\$0	\$0	\$0	\$0	\$0	\$4,007,409	S06027
\$15,030	\$30	\$0	\$0	\$0	\$0	\$1,389,101	S06028
\$10,899	\$0	\$0	\$0	\$0	\$0	\$3,759,145	S06029
\$0	\$0	\$0	\$0	\$0	\$0	\$3,820,974	S06032
\$7,665	\$0	\$0	\$0	\$0	\$0	\$3,382,405	S06033
\$482,517	\$0	\$0	\$0	\$0	\$0	\$2,506,626	S06034
\$0	\$0	\$0	\$0	\$0	\$0	\$197,146	S06036
\$1,144,000	\$1,100,000	\$1,100,000	\$1,161,945	\$917,926	\$0	\$8,407,091	S06038
\$1,839,990	\$0	\$0	\$0	\$0	\$0	\$2,996,341	S06039
\$0	\$0	\$0	\$0	\$0	\$0	\$443,813	S06040
\$0	\$0	\$0	\$0	\$0	\$0	\$156,488	S06043
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$600,000	S99003
\$19,489,858	\$4,439,166	\$1,937,398	\$497,434	\$2,421	\$0	\$46,930,339	
\$6,858,845	\$4,235,941	\$1,825,653	\$459,552	\$2,193	\$0	\$22,299,113	
\$0	\$0	\$0	\$0	\$0	\$0	\$2,677,489	P01003
\$6,221,726	\$2,960,509	\$1,032,474	\$457,315	\$2,193	\$0	\$16,683,413	P01005
\$637,119	\$1,275,432	\$793,179	\$2,237	\$0	\$0	\$2,938,211	P01006
\$12,248,859	\$30,847	\$0	\$0	\$0	\$0	\$24,631,226	
\$0	\$0	\$0	\$0	\$0	\$0	\$10,178,873	P02002
\$1,300,396	\$6,612	\$0	\$0	\$0	\$0	\$2,298,017	P02003
\$10,948,463	\$24,235	\$0	\$0	\$0	\$0	\$12,154,336	P02004
\$8,672,509	\$9,055,359	\$6,899,094	\$23,070,166	\$56,177,961	\$0	\$13,875,090	
\$7,500,000	\$7,500,000	\$5,000,000	\$20,000,000	\$50,000,000	\$0	\$90,000,000	
\$0	\$0	\$0	\$5,000,000	\$10,000,000	\$0	\$15,000,000	J99001
\$7,500,000	\$7,500,000	\$5,000,000	\$5,000,000	\$0	\$0	\$25,000,000	J99004
\$0	\$0	\$0	\$10,000,000	\$40,000,000	\$0	\$50,000,000	S99001
\$1,172,509	\$1,555,359	\$1,899,094	\$3,070,166	\$6,177,961	\$0	\$13,875,090	
\$586,257	\$1,216,411	\$1,391,371	\$1,736,908	\$1,133,215	\$0	\$6,064,163	J99005
\$204,098	\$166,569	\$395,979	\$1,295,376	\$5,044,518	\$0	\$7,106,540	S99004
\$382,154	\$172,378	\$111,745	\$37,882	\$228	\$0	\$704,387	P99002

		2018	2019
	Prior	Estimate	Budget
Conveyance	\$45,831,283	\$8,420,450	\$8,055,079
Metropolitan Interceptor Sewer	\$11,291,409	\$6,835,120	\$5,457,070
Subsystem 2 - Southwest Branch	\$2,146,987	\$125,696	\$1,080,606
C02008 Force Main Rehabilitations	\$2,126,551	\$76,507	\$316,735
C02009 Franklin/Muskego Gravity MIS Chemical Addition	\$20,436	\$0	\$376,735
C02011 Force Main Greenfield Park Rehabilitation Project	\$0	\$49,189	\$288,525
C02012 10th Avenue MIS Lateral Reconstruction	\$0	\$0	\$98,611
Subsystem 3 - Northwest Branch	\$761,099	\$313,059	\$0
C03009 107th St. MIS Improvement	\$569,847	\$310,724	\$0
C03012 ZIC MIS Lining & Manhole Reconfiguration	\$191,252	\$2,335	\$0
Subsystem 4 - Northeast Branch	\$871,639	\$1,715,633	\$693,362
C04002 Honey Creek MIS Rehab	\$78,085	\$0	\$0
C04005 Martha Washington/Highlands MIS Rehab	\$147,912	\$0	\$0
C04010 Mill/Green Bay/Green Tree MIS Relief	\$610,704	\$1,398,338	\$690,767
C04011 Martha Washington Dr. MIS Segment Rehabilitation	\$34,938	\$317,295	\$2,595
Subsystem 5 - North Side High Relief	\$2,626,106	\$482,297	\$1,540,285
C05041 CMIS - Basin H PCB Remediation and Rehabilitation (C016)	\$2,611,004	\$357,472	\$359,413
C05051 Edgewood MIS Extension	\$15,102	\$49,708	\$591,087
C05053 River Road MIS & Glendale Sewer	\$0	\$75,117	\$471,360
C05055 BS0503 Facility Upgrades	\$0	\$0	\$118,425
Subsystem 6 - South Side High Relief	\$441,685	\$29,879	\$0
C06021 S. 27th Howard to Euclid MIS Rehab	\$441,685	\$29,879	\$0
Subsystem 7 - Low Level	\$11,724	\$99,844	\$699,001
C07035 Mitchell Park PCB Sewer Improvements	\$0	\$0	\$0
C07036 Siphons Assessment/Inspection	\$0	\$0	\$13,729
C07037 South Shore Force Main Assessment	\$11,724	\$99,844	\$685,272
General Interceptor Sewer System	\$4,432,169	\$4,068,712	\$1,443,816
C98044 MIS Abandonment	\$139,513	\$675,910	\$85,000
C98047 Access Hatch Covers	\$330,459	\$354,311	\$736,034
C98048 Gravity Overflow Conversion to Pump Overflow	\$57,936	\$0	\$0
C98051 Conveyance Gate Rehab, Phase 3	\$3,329,801	\$302,846	\$0
C98052 Miscellaneous Sewer Rehab	\$3,349	\$12,657	\$34,436
C98053 Conveyance Gate Rehab, Phase 4	\$571,111	\$2,421,787	\$2,090
C98054 Force Main Cathodic Protection	\$0	\$0	\$14,369
C98055 Conveyance Equipment Replacement	\$0	\$126,126	\$73,874
C98056 Conveyance System Modeling Software Improvements	\$0	\$175,075	\$498,013
Inline Storage System	\$447,084	\$237,901	\$858,502
CSO Structures	\$447,084	\$237,901	\$858,502
I03008 CSO102 Rehabilitation - Humbolt	\$25,799	\$0	\$234,219
I03009 CSO 125 Backflow Prevention	\$42,425	\$209,559	\$0
I06001 NS12 Collector System Improvements	\$378,860	\$28,342	\$624,283
General Control System	\$21,426,554	\$898,611	\$1,283,226
Conveyance System Central Control	\$21,426,554	\$898,611	\$1,283,226
K01010 Wet Weather Peak Flow Measurement System	\$16,232,457	\$14,743	\$0
K01012 Conveyance SCADA Upgrade	\$5,194,097	\$883,868	\$1,283,226
General Conveyance	\$12,666,236	\$448,818	\$456,281
General Conveyance	\$0	\$248,818	\$256,281
I98003 Miscellaneous Outfall Improvements	\$0	\$55,218	\$206,281
C99002 Operator Contribution to CIP	\$0	\$193,600	\$50,000
Allowance for Conveyance	\$12,666,236	\$200,000	\$200,000
C99001 Allowance for Future Conveyance Rehab Projects	\$0	\$0	\$0
C99004 Allowance for DOT Reimbursements	\$691,714	\$200,000	\$200,000
I98001 Allowance for Closeout	\$11,974,522	\$0	\$0
Inflation	\$0	\$0	\$0
C99003 Inflation	\$0	\$0	\$0

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$25,292,685	\$39,805,902	\$50,365,731	\$34,782,666	\$18,533,081	\$12,198,239	\$243,285,116	
\$15,917,929	\$30,244,240	\$46,865,975	\$15,633,807	\$485,982	\$12,198,239	\$144,929,771	
\$1,612,997	\$191,334	\$589,400	\$107,823	\$2,695	\$3,492	\$5,861,030	
\$313,048	\$0	\$0	\$0	\$0	\$0	\$2,832,841	C02008
\$4,616	\$179,037	\$586,715	\$105,149	\$0	\$0	\$1,272,688	C02009
\$1,295,333	\$12,297	\$2,685	\$2,674	\$2,695	\$3,492	\$1,656,890	C02011
\$0	\$0	\$0	\$0	\$0	\$0	\$98,611	C02012
\$0	\$0	\$0	\$0	\$0	\$2,556,191	\$3,630,349	
\$0	\$0	\$0	\$0	\$0	\$0	\$880,571	C03009
\$0	\$0	\$0	\$0	\$0	\$2,556,191	\$2,749,778	C03012
\$5,050,086	\$14,190,282	\$24,620,961	\$3,658,659	\$20,493	\$3,012,436	\$53,833,551	
\$0	\$0	\$0	\$0	\$0	\$3,008,199	\$3,086,284	C04002
\$0	\$116,601	\$1,067,581	\$3,410,538	\$17,622	\$0	\$4,760,254	C04005
\$5,050,086	\$14,073,681	\$23,553,380	\$248,121	\$2,871	\$4,237	\$45,632,185	C04010
\$0	\$0	\$0	\$0	\$0	\$0	\$354,828	C04011
\$6,590,916	\$13,860,275	\$17,181,983	\$11,472,517	\$427,412	\$52,305	\$54,234,096	
\$759,631	\$1,018,306	\$1,022,379	\$691,484	\$427,129	\$52,305	\$7,299,123	C05041
\$5,357,820	\$2,035,378	\$0	\$0	\$0	\$0	\$8,049,095	C05051
\$473,237	\$10,806,366	\$16,159,604	\$10,781,033	\$283	\$0	\$38,767,000	C05053
\$228	\$225	\$0	\$0	\$0	\$0	\$118,878	C05055
\$0	\$0	\$0	\$0	\$0	\$0	\$471,564	
\$0	\$0	\$0	\$0	\$0	\$0	\$471,564	C06021
\$1,574,013	\$893,172	\$2,982,620	\$0	\$0	\$0	\$6,260,374	
\$87,749	\$367,243	\$2,982,620	\$0	\$0	\$0	\$3,437,612	C07035
\$1,293,681	\$525,929	\$0	\$0	\$0	\$0	\$1,833,339	C07036
\$192,583	\$0	\$0	\$0	\$0	\$0	\$989,423	C07037
\$1,089,917	\$1,109,177	\$1,491,011	\$394,808	\$35,383	\$6,573,815	\$20,638,808	
\$85,000	\$85,000	\$113,440	\$0	\$0	\$0	\$1,183,863	C98044
\$363,370	\$8,940	\$8,690	\$0	\$0	\$0	\$1,801,804	C98047
\$0	\$0	\$0	\$0	\$35,182	\$6,573,815	\$6,666,933	C98048
\$0	\$0	\$0	\$0	\$0	\$0	\$3,632,647	C98051
\$34,016	\$27,771	\$314,808	\$5,672	\$0	\$0	\$432,709	C98052
\$0	\$0	\$0	\$0	\$0	\$0	\$2,994,988	C98053
\$7,534	\$391,437	\$356,060	\$0	\$0	\$0	\$769,400	C98054
\$100,000	\$100,000	\$200,000	\$0	\$0	\$0	\$600,000	C98055
\$499,997	\$496,029	\$498,013	\$389,136	\$201	\$0	\$2,556,464	C98056
\$8,306,653	\$7,765,950	\$344,778	\$0	\$0	\$0	\$17,960,868	
\$8,306,653	\$7,765,950	\$344,778	\$0	\$0	\$0	\$17,960,868	
\$943,121	\$76,807	\$0	\$0	\$0	\$0	\$1,279,946	I03008
\$0	\$0	\$0	\$0	\$0	\$0	\$251,984	I03009
\$7,363,532	\$7,689,143	\$344,778	\$0	\$0	\$0	\$16,428,938	I06001
\$315,452	\$0	\$0	\$0	\$0	\$0	\$23,923,843	
\$315,452	\$0	\$0	\$0	\$0	\$0	\$23,923,843	
\$0	\$0	\$0	\$0	\$0	\$0	\$16,247,200	K01010
\$315,452	\$0	\$0	\$0	\$0	\$0	\$7,676,643	K01012
\$752,651	\$1,795,712	\$3,154,978	\$19,148,859	\$18,047,099	\$0	\$56,470,633	
\$56,716	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$761,815	
\$6,716	\$0	\$0	\$0	\$0	\$0	\$268,215	I98003
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$493,600	C99002
\$200,000	\$200,000	\$200,000	\$16,450,000	\$16,250,000	\$0	\$46,366,236	
\$0	\$0	\$0	\$16,250,000	\$16,250,000	\$0	\$32,500,000	C99001
\$200,000	\$200,000	\$200,000	\$200,000	\$0	\$0	\$1,891,714	C99004
\$0	\$0	\$0	\$0	\$0	\$0	\$11,974,522	I98001
\$495,935	\$1,545,712	\$2,904,978	\$2,648,859	\$1,747,099	\$0	\$9,342,582	
\$495,935	\$1,545,712	\$2,904,978	\$2,648,859	\$1,747,099	\$0	\$9,342,582	C99003

		2018	2019
	Prior	Estimate	Budget
Watercourse and Flood Management	\$83,617,975	\$17,440,504	\$14,533,983
Milwaukee River Watershed	\$21,457,130	\$2,832,500	\$469,571
Milwaukee River	\$1,116,492	\$1,940,590	\$280,578
W10001 Milwaukee River Flood Mgt	\$228,403	\$58,777	\$69,715
W10002 Estabrook Dam Removal	\$840,541	\$1,383,196	\$39,501
W10004 Milwaukee River Planning Study – Capitol to Bender	\$47,548	\$498,617	\$171,362
Lincoln Creek	\$20,286,448	\$861,554	\$179,588
W11030 E - North 30th Street Corridor Wet Weather Relief - East	\$13,729,378	\$778,202	\$70,308
W11031 W - North 30th Street Corridor Wet Weather Relief - West	\$6,557,070	\$83,352	\$109,280
Indian Creek	\$54,190	\$30,356	\$9,405
W13002 Indian Creek Improvements	\$54,190	\$30,356	\$9,405
Milwaukee River Lake Estuary	\$0	\$0	\$0
W16001 Milwaukee River Lake Estuary Study	\$0	\$0	\$0
Menomonee River Watershed	\$25,615,229	\$2,460,119	\$1,892,870
Menomonee River - Main Stem	\$11,913,590	\$1,734,493	\$1,113,333
W20018 Concordia Avenue	\$714,203	\$24,813	\$13,727
W20021 Menomonee River Stream Management - CR	\$5,531,251	\$19,588	\$25,404
W20023 Phase II Menomonee River Stream Mgt	\$3,022,198	\$26,914	\$50,377
W20027 Western Milwaukee Phase 2A	\$2,122,438	\$12,582	\$11,961
W20028 Western Milwaukee Phase 2B	\$143,776	\$1,402,596	\$877,097
W20029 Western Milwaukee Real Estate & Environmental Assessment	\$257,363	\$89,113	\$16,382
W20031 Memonomee River Estuary Study	\$122,361	\$158,887	\$118,385
Underwood Creek	\$7,626,775	\$329,607	\$139,214
W21006 Phase II - Underwood Creek Reach 1, Phase II - CR	\$7,019,897	\$120,666	\$16,038
W21007 Underwood Creek Reach 2 - CR	\$606,878	\$208,941	\$123,176
South Branch Underwood Creek	\$0	\$0	\$0
Honey Creek	\$628,727	\$207,365	\$159,757
W24005 Honey Creek Watercourse Mgmt. Plan & BMPs	\$239,466	\$26,173	\$48,346
W24006 Honey Creek USACE Habitat Improvement Feasibility Study	\$389,261	\$181,192	\$29,547
W24007 Honey Creek Reach 2 - CR	\$0	\$0	\$81,864
Grantosa Creek	\$36,335	\$770	\$0
W26004 Grantosa Parkway	\$36,335	\$770	\$0
Schoonmaker Creek	\$5,240,432	\$49,325	\$70,610
W28001 Schoonmaker Creek	\$225,144	\$20,589	\$33,614
W28002 Daylighting Schoonmaker Creek	\$5,015,288	\$28,736	\$36,996
Menomonee River Lake Estuary	\$169,370	\$138,559	\$409,956
W29001 Menomonee River Lake Estuary Study	\$0	\$0	\$0
W29002 Burnham Canal	\$169,370	\$138,559	\$409,956
Root River Watershed	\$0	\$0	\$2,883
Root River West Branch	\$0	\$0	\$2,883
W34002 Phase 2 Root River W. Branch Flood Management Study	\$0	\$0	\$2,883
Wintnall Park Creek	\$0	\$0	\$0
W35003 Lower Whitnall Park Creek Flood Mgt II	\$0	\$0	\$0
Hale Creek	\$0	\$0	\$0
W39002 Hale Creek Flood Management	\$0	\$0	\$0

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$20,256,254	\$33,898,329	\$23,952,805	\$33,880,494	\$49,589,119	\$298,668,662	\$575,838,125	
\$471,529	\$373,036	\$196,045	\$1,512,509	\$2,389,528	\$64,668,095	\$94,369,943	
\$273,669	\$218,395	\$24,954	\$24,854	\$24,359	\$46,612,053	\$50,515,944	
\$61,965	\$190,475	\$24,954	\$24,854	\$24,359	\$46,612,053	\$47,295,555	W10001
\$39,659	\$27,103	\$0	\$0	\$0	\$0	\$2,330,000	W10002
\$172,045	\$817	\$0	\$0	\$0	\$0	\$890,389	W10004
\$155,061	\$135,878	\$50,670	\$1,299,477	\$2,222,933	\$18,056,042	\$43,247,651	
\$45,474	\$34,737	\$34,876	\$23,821	\$0	\$0	\$14,716,796	W11030
\$109,587	\$101,141	\$15,794	\$1,275,656	\$2,222,933	\$18,056,042	\$28,530,855	W11031
\$42,799	\$18,763	\$91,942	\$31,081	\$0	\$0	\$278,536	
\$42,799	\$18,763	\$91,942	\$31,081	\$0	\$0	\$278,536	W13002
\$0	\$0	\$28,479	\$157,097	\$142,236	\$0	\$327,812	
\$0	\$0	\$28,479	\$157,097	\$142,236	\$0	\$327,812	W16001
\$8,778,521	\$19,819,283	\$5,482,065	\$3,086,244	\$3,176,214	\$43,027,205	\$113,337,750	
\$6,274,433	\$6,133,986	\$5,245,768	\$2,924,439	\$3,029,108	\$11,959,556	\$50,328,706	
\$0	\$0	\$0	\$67,610	\$260,327	\$3,877,601	\$4,958,281	W20018
\$0	\$0	\$0	\$0	\$0	\$0	\$5,576,243	W20021
\$50,578	\$0	\$0	\$0	\$0	\$0	\$3,150,067	W20023
\$12,009	\$5,651	\$0	\$0	\$0	\$0	\$2,164,641	W20027
\$5,613,125	\$5,686,679	\$5,160,244	\$2,851,032	\$2,762,938	\$809,502	\$25,306,989	W20028
\$530,846	\$441,656	\$85,524	\$5,797	\$5,843	\$7,272,453	\$8,704,977	W20029
\$67,875	\$0	\$0	\$0	\$0	\$0	\$467,508	W20031
\$139,769	\$6,771,015	\$13,107	\$10,406	\$993	\$12,682,298	\$27,713,184	
\$16,102	\$15,974	\$13,107	\$10,406	\$993	\$0	\$7,213,183	W21006
\$123,667	\$6,755,041	\$0	\$0	\$0	\$12,682,298	\$20,500,001	W21007
\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$346,923	\$5,108,831	\$100,397	\$29,095	\$26,371	\$5,536,662	\$12,144,128	
\$12,027	\$0	\$0	\$0	\$0	\$0	\$326,012	W24005
\$0	\$0	\$0	\$0	\$0	\$0	\$600,000	W24006
\$334,896	\$5,108,831	\$100,397	\$29,095	\$26,371	\$5,536,662	\$11,218,116	W24007
\$0	\$0	\$0	\$0	\$0	\$0	\$37,105	
\$0	\$0	\$0	\$0	\$0	\$0	\$37,105	W26004
\$40,491	\$16,375	\$0	\$0	\$0	\$9,973,160	\$15,390,393	
\$3,348	\$0	\$0	\$0	\$0	\$9,973,160	\$10,255,855	W28001
\$37,143	\$16,375	\$0	\$0	\$0	\$0	\$5,134,538	W28002
\$1,976,905	\$1,789,076	\$122,793	\$122,304	\$119,742	\$2,875,529	\$7,724,234	
\$0	\$0	\$0	\$0	\$0	\$41,438	\$41,438	W29001
\$1,976,905	\$1,789,076	\$122,793	\$122,304	\$119,742	\$2,834,091	\$7,682,796	W29002
\$27,105	\$18,928	\$59	\$0	\$0	\$245,465	\$294,440	
\$27,105	\$18,928	\$59	\$0	\$0	\$0	\$48,975	
\$27,105	\$18,928	\$59	\$0	\$0	\$0	\$48,975	W34002
\$0	\$0	\$0	\$0	\$0	\$113,316	\$113,316	
\$0	\$0	\$0	\$0	\$0	\$113,316	\$113,316	W35003
\$0	\$0	\$0	\$0	\$0	\$132,149	\$132,149	
\$0	\$0	\$0	\$0	\$0	\$132,149	\$132,149	W39002

		2018	2019
	Prior	Estimate	Budget
Kinnickinnic River Watershed	\$29,627,523	\$7,594,337	\$7,061,408
Kinnickinnic River	\$27,462,175	\$7,152,973	\$5,938,277
W40002 KK River Real Estate Decon./Demo. & Pulaski Park	\$20,986,115	\$6,015,536	\$3,576,009
W40007 KK River Reach 3 - CR	\$205,179	\$114,958	\$93,281
W40008 KK River S. 6th to S. Chase Flood Mgt	\$5,705,542	\$18,679	\$0
W40009 Jackson Park	\$0	\$53,912	\$596,820
W40010 KK River Watershed	\$268,704	\$541,039	\$596,816
W40011 KK River I-94 to Becher	\$296,635	\$105,284	\$18,586
W40012 KK River - 6th to 16th St.	\$0	\$208,584	\$823,036
W40013 KK River - Railroad to 27th St.	\$0	\$0	\$0
W40014 KK River - 43rd St. Bridge Replacement	\$0	\$0	\$0
W40016 KK River Sewer Modifications	\$0	\$94,981	\$233,729
Lyons Creek	\$313,224	\$231,691	\$302,938
W41001 KK River Flood Management - Lyons Creek (W026)	\$313,330	\$183,519	\$26,861
W41003 Lyons Park Creek Streambank Stabilization	(\$106)	\$48,172	\$276,077
Villa Mann Creek	\$0	\$0	\$0
W43003 Villa Mann Creek Tributary Culvert Improvement	\$0	\$0	\$0
Wilson Park Creek	\$1,852,124	\$209,673	\$820,193
W45002 Wilson Park Creek Reach 3 - CR	\$1,852,124	\$209,673	\$820,193
W45003 Wilson Park Creek Reach 2 - CR	\$0	\$0	\$0
W45004 Wilson Park Creek Reach 4 - CR	\$0	\$0	\$0
W45005 Wilson Park	\$0	\$0	\$0
Oak Creek Watershed	\$1,144,936	\$795,563	\$295,765
Oak Creek - Main Stem	\$1,144,936	\$795,563	\$295,765
W50005 Oak Creek Flood Management - Floodproofing/Acquisition	\$989,820	\$765,212	\$248,067
W50006 Oak Creek Watershed Restoration Plan	\$155,116	\$30,351	\$47,698
Lake Michigan Drainage Watershed	\$950	\$0	\$0
Fish Creek	\$950	\$0	\$0
W61002 Fish Creek Flood Acquisitions	\$950	\$0	\$0
General Watercourse Projects	\$5,772,207	\$3,757,985	\$4,811,486
System Improvement Plan - Phase II	\$2,732,055	\$5,380	\$10,975
W91001 Phase II Corridor & SEWRPC Studies	\$2,732,055	\$5,380	\$10,975
General Watercourse Projects	\$3,040,152	\$3,752,605	\$4,800,511
W96001 Fresh Coast Implementation	\$2,464,274	\$1,581,625	\$1,943,104
W97003 Great Milwaukee Regional Conservation Partnership Program	\$575,878	\$970,980	\$1,657,407
W97004 Greenseams Phase 2	\$0	\$1,200,000	\$1,200,000
Inflation	\$0	\$0	\$0
W99002 Inflation	\$0	\$0	\$0

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$7,153,840	\$10,177,095	\$15,623,978	\$25,492,205	\$38,142,525	\$185,378,424	\$326,251,335	
\$6,336,105	\$2,239,274	\$6,828,978	\$24,707,688	\$33,223,566	\$78,700,364	\$192,589,400	
\$1,444,321	\$756,768	\$50,805	\$50,602	\$51,007	\$9,992	\$32,941,155	W40002
\$104,087	\$0	\$0	\$0	\$0	\$13,175,476	\$13,692,981	W40007
\$0	\$0	\$0	\$0	\$0	\$0	\$5,724,221	W40008
\$271,279	\$268,608	\$261,088	\$6,498,409	\$8,753,441	\$22,077,799	\$38,781,356	W40009
\$299,473	\$0	\$186,036	\$876,213	\$721,999	\$0	\$3,490,280	W40010
\$0	\$0	\$0	\$0	\$0	\$17,740,182	\$18,160,687	W40011
\$826,315	\$800,493	\$5,432,182	\$10,964,972	\$11,052,692	\$10,547,789	\$40,656,063	W40012
\$0	\$390,746	\$898,867	\$6,317,492	\$12,644,427	\$12,842,929	\$33,094,461	W40013
\$0	\$0	\$0	\$0	\$0	\$2,306,197	\$2,306,197	W40014
\$3,390,630	\$22,659	\$0	\$0	\$0	\$0	\$3,741,999	W40016
\$98,061	\$17,624	\$2,492	\$310,860	\$472,875	\$13,054,184	\$14,803,949	
\$21,357	\$0	\$0	\$310,860	\$472,875	\$13,054,184	\$14,382,986	W41001
\$76,704	\$17,624	\$2,492	\$0	\$0	\$0	\$420,963	W41003
\$0	\$0	\$0	\$0	\$0	\$3,547,123	\$3,547,123	
\$0	\$0	\$0	\$0	\$0	\$3,547,123	\$3,547,123	W43003
\$719,674	\$7,920,197	\$8,792,508	\$473,657	\$4,446,084	\$90,076,754	\$115,310,864	
\$719,674	\$7,920,197	\$8,792,508	\$473,657	\$4,029,136	\$4,408,132	\$29,225,294	W45002
\$0	\$0	\$0	\$0	\$0	\$40,585,582	\$40,585,582	W45003
\$0	\$0	\$0	\$0	\$0	\$8,671,145	\$8,671,145	W45004
\$0	\$0	\$0	\$0	\$416,948	\$36,411,895	\$36,828,843	W45005
\$53,492	\$52,843	\$23,858	\$6,630	\$6,126	\$5,349,472	\$7,728,685	
\$53,492	\$52,843	\$23,858	\$6,630	\$6,126	\$5,349,472	\$7,728,685	
\$6,748	\$6,630	\$6,657	\$6,630	\$6,126	\$5,349,472	\$7,385,362	W50005
\$46,744	\$46,213	\$17,201	\$0	\$0	\$0	\$343,323	W50006
\$32,104	\$69,123	\$14,315	\$0	\$0	\$0	\$116,492	
\$32,104	\$69,123	\$14,315	\$0	\$0	\$0	\$116,492	
\$32,104	\$69,123	\$14,315	\$0	\$0	\$0	\$116,492	W61002
\$3,739,663	\$3,388,021	\$2,612,485	\$3,782,906	\$5,874,726	\$0	\$33,739,479	
\$11,003	\$10,916	\$10,959	\$2,751	\$0	\$0	\$2,784,039	
\$11,003	\$10,916	\$10,959	\$2,751	\$0	\$0	\$2,784,039	W91001
\$3,331,479	\$2,060,792	\$1,219,984	\$1,200,000	\$1,200,000	\$0	\$20,605,523	
\$1,224,077	\$0	\$0	\$0	\$0	\$0	\$7,213,080	W96001
\$907,402	\$860,792	\$19,984	\$0	\$0	\$0	\$4,992,443	W97003
\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$0	\$8,400,000	W97004
\$397,181	\$1,316,313	\$1,381,542	\$2,580,155	\$4,674,726	\$0	\$10,349,917	
\$397,181	\$1,316,313	\$1,381,542	\$2,580,155	\$4,674,726	\$0	\$10,349,917	W99002

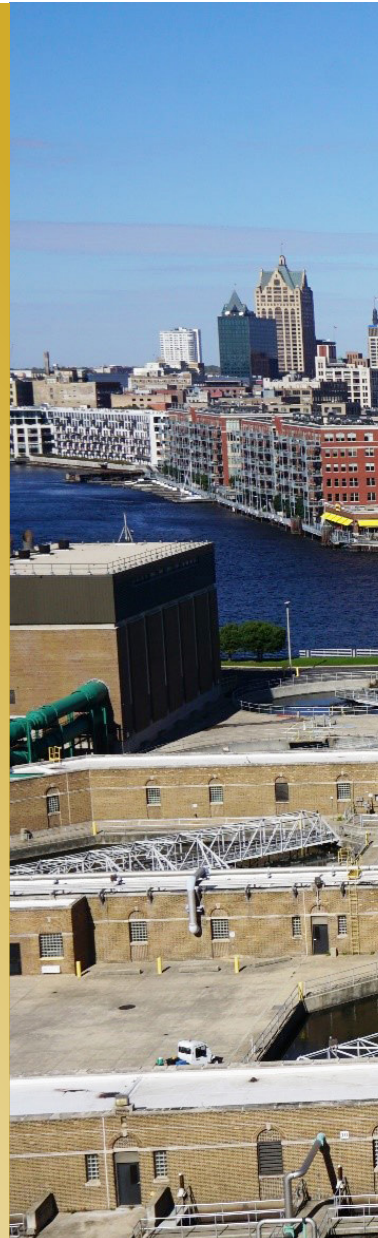
		2018	2019
	Prior	Estimate	Budget
Other Projects	\$85,543,335	\$17,809,435	\$25,387,990
Green Infrastructure	\$0	\$2,713,546	\$6,458,646
G98002 Fresh Coast Green Solutions Phase 2	\$0	\$430,757	\$1,333,519
G98004 Fresh Coast Implementation Phase 2	\$0	\$282,789	\$125,127
G98005 Green Solutions Phase 2	\$0	\$2,000,000	\$5,000,000
Facilities Planning	\$82,304,975	\$6,991,918	\$8,476,042
Facilities Improvements	\$4,418,819	\$979,243	\$2,824,599
M01007 KK River Flushing Station Improvements	\$597,657	\$0	\$0
M01011 NFPA Study	\$487,818	\$108	\$0
M01012 Milw River Flushing Station Building Rehab	\$871,520	\$6,352	\$0
M01019 Safe Atmosphere Monitoring	\$574,316	\$137,340	\$244,299
M01023 Wharf Wall Improvements	\$1,595,336	\$8,486	\$14,160
M01026 HQ & Lab Heat & Power Generation System	\$127,507	\$380,904	\$0
M01029 HQ Wharf Wall System Restoration	\$163,627	\$156,929	\$285,103
M01032 N. 44th Street Property Restoration (Miller Park Area)	\$0	\$114,831	\$205,491
M01035 HQ and Lab Facility Improvements	\$0	\$0	\$1,052,000
M01033 4044 N. 31st Street Demolition/Deconstruction	\$1,038	\$174,293	\$1,002,532
M01034 HQ Parking Lot Solar Powered Electric Vehicle Charging Stations	\$0	\$0	\$21,014
2020 Facilities Planning	\$29,194,943	\$283,778	\$0
M03016 Post 2020 FP Implementation Evaluation & Planning	\$29,194,943	\$283,778	\$0
Continuous Facilities Planning	\$41,551,398	\$4,032,221	\$4,289,181
M03029 Water Quality Studies	\$5,561,322	\$229,556	\$74,091
M03036 Continuous Water Quality Monitoring Stations	\$312,866	\$5,831	\$0
M03043 Greenhouse Gas Planning Study	\$1,332,633	\$154,991	\$0
M03044 I/I Reduction on Private Property Phase II	\$20,488,576	\$0	\$0
M03048 Regional Green Roof Initiative	\$4,944,124	\$2,883	\$0
M03051 Alternative Energy Planning	\$375,872	\$69,037	\$36,241
M03059 TMDL Studies	\$1,933,927	\$253,573	\$554,427
M03062 Integrated Regional Stormwater Mgt Plan	\$1,427,806	\$22,301	\$0
M03072 Energy Plan	\$433,587	\$1,539	\$0
M03074 MMSD Force Main Condition Assessment	\$422,375	\$4,515	\$0
M03076 Green Solutions	\$3,084,556	\$0	\$0
M03088 Corridor Study, Phase 5	\$801,846	\$231,487	\$391,694
M03091 Ad Hoc Water Quality Studies 2017-2021	\$67,196	\$959,972	\$578,113
M03092 2050 Facility Plan's Regional Resiliency Plan	\$364,712	\$395,602	\$14,858
M03098 Monitoring for Capital Project Development and Support	\$0	\$1,466,211	\$2,262,740
M03102 Biosolids Advanced Facility Planning	\$0	\$234,723	\$377,017

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$25,220,234	\$25,499,364	\$23,948,583	\$22,786,681	\$24,056,417	\$9,202,029	\$273,357,265	
\$7,136,428	\$8,047,411	\$7,867,644	\$8,862,358	\$9,421,382	\$174	\$50,602,181	
\$672,391	\$180,036	\$0	\$0	\$0	\$0	\$2,616,703	G98002
\$1,464,037	\$2,867,375	\$2,867,644	\$3,862,358	\$4,421,382	\$174	\$15,890,885	G98004
\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$0	\$32,094,593	G98005
\$7,489,687	\$6,508,776	\$5,342,687	\$3,702,072	\$4,133,429	\$9,217,474	\$134,167,060	
\$4,593,860	\$3,417,534	\$1,728,554	\$401,918	\$1,346,586	\$9,217,474	\$28,928,587	
\$703,184	\$2,396,188	\$1,204,968	\$399,935	\$1,346,586	\$9,217,474	\$15,865,992	M01007
\$0	\$0	\$0	\$0	\$0	\$0	\$487,926	M01011
\$0	\$0	\$0	\$0	\$0	\$0	\$877,872	M01012
\$325,223	\$0	\$0	\$0	\$0	\$0	\$1,281,178	M01019
\$2,975	\$21	\$0	\$0	\$0	\$0	\$1,620,978	M01023
\$0	\$0	\$0	\$0	\$0	\$0	\$508,411	M01026
\$1,611,119	\$8,173	\$0	\$0	\$0	\$0	\$2,224,951	M01029
\$935,294	\$607,563	\$0	\$0	\$0	\$0	\$1,863,179	M01032
\$446,000	\$386,000	\$510,000	\$0	\$0	\$0	\$2,394,000	M01035
\$13,340	\$0	\$0	\$0	\$0	\$0	\$1,191,203	M01033
\$556,725	\$19,589	\$13,586	\$1,983	\$0	\$0	\$612,897	M01034
\$0	\$0	\$0	\$0	\$0	\$0	\$29,478,721	
\$0	\$0	\$0	\$0	\$0	\$0	\$29,478,721	M03016
\$2,895,302	\$3,091,242	\$3,614,133	\$3,300,154	\$2,786,843	\$0	\$65,560,474	
\$6,240	\$0	\$0	\$0	\$0	\$0	\$5,871,209	M03029
\$0	\$0	\$0	\$0	\$0	\$0	\$318,697	M03036
\$0	\$0	\$0	\$0	\$0	\$0	\$1,487,624	M03043
\$0	\$0	\$0	\$8	\$0	\$0	\$20,488,584	M03044
\$0	\$0	\$0	\$0	\$0	\$0	\$4,947,007	M03048
\$0	\$0	\$0	\$0	\$0	\$0	\$481,150	M03051
\$28,968	\$0	\$0	\$0	\$0	\$0	\$2,770,895	M03059
\$0	\$0	\$0	\$0	\$0	\$0	\$1,450,107	M03062
\$0	\$0	\$0	\$0	\$0	\$0	\$435,126	M03072
\$0	\$0	\$0	\$0	\$0	\$0	\$426,890	M03074
\$0	\$0	\$0	\$0	\$0	\$0	\$3,084,556	M03076
\$393,255	\$390,134	\$191,946	\$0	\$0	\$0	\$2,400,362	M03088
\$195,059	\$435,430	\$1,161,266	\$1,245,555	\$1,077,362	\$0	\$5,719,953	M03091
\$0	\$0	\$0	\$0	\$0	\$0	\$775,172	M03092
\$2,263,795	\$2,261,685	\$2,260,921	\$2,054,591	\$1,709,481	\$0	\$14,279,424	M03098
\$7,985	\$3,993	\$0	\$0	\$0	\$0	\$623,718	M03102

		2018	2019
	Prior	Estimate	Budget
2050 Facilities Planning	\$7,139,815	\$1,696,676	\$1,362,262
M03037 2050 Facilities Planning - Ultimate Build-out	\$7,139,815	\$1,696,676	\$1,362,262
Capital Reimbursement Programs	\$12,474,192	\$6,068,162	\$6,045,151
M03063 Private Lateral Inspection and Engineering	\$5,558,270	\$60,582	\$0
M03064 Fresh Coast Green Solutions	\$5,659,829	\$433,653	\$239,006
M10003 PPI/I Phase 2	\$1,254,821	\$5,000,000	\$5,000,000
M10004 PPI/I Implementation Phase 2 (Labor)	\$1,272	\$573,927	\$806,145
Workforce & Business Development Resource Program	\$0	\$500,000	\$500,000
M04002 WDTP 2017 - 2022	\$0	\$500,000	\$500,000
Financial Planning	\$0	\$66,895	\$197,650
M07002 Financial Planning 2017 - 2022	\$0	\$66,895	\$197,650
Risk Management	\$786,820	\$788,361	\$788,361
M09002 Risk Management Program	\$786,820	\$788,361	\$788,361
General Other Projects	\$2,451,540	\$680,553	\$2,922,140
Information Technology Improvements	\$2,091,438	\$536,558	\$1,362,676
M06011 Information Technology Software Systems	\$414,674	\$250,000	\$1,000,000
M06012 Network Equipment Replacement	\$633,159	\$0	\$0
M06013 Capital Program Management System	\$1,043,605	\$286,558	\$304,926
M06015 Real Estate Software	\$0	\$0	\$57,750
Allowance	\$0	\$0	\$1,509,464
M99001 Allowance for Cost & Schedule Changes (M999)	\$0	\$0	\$1,509,464
General	\$360,102	\$143,995	\$50,000
M99002 Operator Contribution to CIP	\$0	\$100,000	\$50,000
L090002 Replacement Laboratory Equipment	\$360,102	\$43,995	\$0
Inflation	\$0	\$0	\$0
M99003 Inflation	\$0	\$0	\$0

2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	Future Forecast	Total	Project Number
\$525	\$0	\$0	\$0	\$0	\$0	\$10,199,278	
\$525	\$0	\$0	\$0	\$0	\$0	\$10,199,278	M03037
\$5,873,127	\$5,789,553	\$5,679,411	\$5,531,782	\$5,201,062	\$0	\$52,776,203	
\$0	\$0	\$0	\$0	\$0	\$0	\$5,618,852	M03063
\$0	\$0	\$0	\$0	\$0	\$0	\$6,332,488	M03064
\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$0	\$36,368,584	M10003
\$873,127	\$789,553	\$679,411	\$531,782	\$201,062	\$0	\$4,456,279	M10004
\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$0	\$3,500,000	
\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$0	\$3,500,000	M04002
\$347,391	\$197,779	\$347,003	\$197,151	\$346,682	\$0	\$2,000,282	
\$347,391	\$197,779	\$347,003	\$197,151	\$346,682	\$0	\$2,000,282	M07002
\$789,510	\$785,622	\$783,301	\$780,083	\$780,083	\$0	\$6,091,487	
\$789,510	\$785,622	\$783,301	\$780,083	\$780,083	\$0	\$6,091,487	M09002
\$3,084,092	\$3,670,224	\$3,428,537	\$3,213,235	\$3,673,779	(\$15,619)	\$24,220,052	
\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$4,990,672	
\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$2,664,674	M06011
\$0	\$0	\$0	\$0	\$0	\$0	\$633,159	M06012
\$0	\$0	\$0	\$0	\$0	\$0	\$1,635,089	M06013
\$0	\$0	\$0	\$0	\$0	\$0	\$57,750	M06015
\$2,039,577	\$2,130,052	\$1,997,238	\$1,427,925	\$1,356,000	\$0	\$11,571,829	
\$2,039,577	\$2,130,052	\$1,997,238	\$1,427,925	\$1,356,000	\$0	\$11,571,829	M99001
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$804,097	
\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$0	\$400,000	M99002
\$0	\$0	\$0	\$0	\$0	\$0	\$404,097	L090002
\$494,514	\$990,171	\$1,381,298	\$1,735,310	\$2,267,779	(\$15,619)	\$6,853,454	
\$494,514	\$990,171	\$1,381,298	\$1,735,310	\$2,267,779	(\$15,619)	\$6,853,454	M99003





Milwaukee Metropolitan Sewerage District
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