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Madison Metropolitan Sewerage District



GFOA AWARD

The Government Finance Officers Association of the United States and Canada (GFOA) presented a Distinguished Budget Presentation Award to Madison Metropolitan Sewerage District for its annual budget for the fiscal year beginning January 1, 2020. In order to receive this award, a governmental unit must publish a budget document 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.

MADISON METROPOLITAN SEWERAGE DISTRICT COMMISSION

Madison Metropolitan Sewerage District is governed by nine commissioners serving staggered terms.



President Thomas Hovel



Vice President Ezra Meyer



Secretary Mary Swanson



Commissioner Kenneth Clark



Commissioner Beth Bookland



Commissioner Sara Eskrich



Commissioner Grant Foster



Commissioner Brad Murphy



Commissioner Thomas Wilson

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SECTION ONE

INTRODUCTION TO THE DISTRICT BUDGET

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The State Capitol from Lake Monona at dusk.

INTRODUCTION TO THE DISTRICT BUDGET

BUDGET MESSAGE

Commissioners,

As we prepared our 2020 budget in late August of 2019, there was no way we could have foretold what was to come. The coronavirus pandemic has affected nearly every aspect of life around the globe, and the governance of the District and operation of wastewater collection and treatment facilities is no different. But here at Madison Metropolitan Sewerage District, we take the long view in all we do, prioritizing thoughtful planning and resilience and acknowledging that our changing climate brings unanticipated challenges.

The application of this approach to budgeting and finances has allowed us to retain a good position through the pandemic. We have maintained our financial position and avoided the drastic changes some of our counterparts in the private sector and some government agencies have experienced. We have been able to protect our workforce and maintain assets. And most importantly, we have continued to deliver on our charge to protect public health and the environment.

We are taking all this with us into 2021, and the District is delighted to present a budget that is relatively flat yet recognizes the impacts of the coronavirus pandemic and the uncertainty that lies ahead with our revenues and our communities' ability to pay. Highlights of the budget are as follows:

- This budget positions the District to continue to safely collect and treat wastewater and protect employees by continuing investments in our people and our critical infrastructure.
- It builds resilience into our long-term financial security so we can weather uncertainty.
- It builds community confidence that we are doing everything we can to soften the impacts of the coronavirus pandemic and help in the recovery. We are not ignoring what is going on around us.

- It invests in research and action to investigate and address the challenges posed by per- and polyfluoroalkyl substances, or PFAS. The 2021 budget also invests in long-term work to address inflow and infiltration (I/I) across the collection system and in our customer communities. The outcome of this important work will include tools to minimize stormwater and groundwater leaking into the system, which causes elevated billing charges in some areas.
- This budget also continues to support critical infrastructure investments both at the plant and throughout the collection system. With aging infrastructure and fast growth in some sectors of our service area, we remain committed to these investments to uphold our mission while building trust and resiliency in the system.

Thanks to the Commission's guidance and support, the 2021 budget is the result of an ongoing commitment to smart financial and capital planning, to our employees, to our customer communities and most importantly, to our mission. We seek to be a partner in the area's economic recovery by continuing to invest in capital projects that create jobs, but also watching our proverbial pocketbook to remain good fiscal stewards of public dollars.

Thank you for your support of this budget and for furthering our work to protect public health and our local environment.

Michalluda

Michael Mucha, P.E., ENV-SP Chief Engineer and Director | Madison Metropolitan Sewerage District

BUDGET HIGHLIGHTS

To improve the lives of community members through clean water and resource recovery, Madison Metropolitan Sewerage District develops an annual budget that reflects its strategic goals, short-term organizational factors and issue-driven challenges likely to shape District priorities in the months and years ahead.

Delivering regional wastewater services that advance public health, the environment and the economy requires forward-thinking leadership and vigilant fiscal management. While the District's method of collecting, transporting and treating wastewater has proven reliable for 90 years, changing public expectations and increasingly stringent permit requirements point to the need for new management approaches and budget initiatives that extend beyond the traditional focus on infrastructure.

At the same time, challenges related to the District's aging physical assets and complex information system needs require increased investment.

The 2021 budget identifies:

- Strategic goals and related spending, including a comprehensive program to evaluate District assets and plans for replacing aging information technology systems.
- Short-term organizational factors, such as rising preventive maintenance needs and repair costs.
- Issue-driven priorities, including an energy management policy to establish infrastructure investment priorities, improve resiliency and expand use of renewable energy sources.
- Continued investment in IT hardware and other supports to enhance the District's cybersecurity by increasing reliability, data backup, use of cloud computing, cyber insurance and disaster recovery planning.
- To advance the District's financial sustainability and resiliency, the 2021 budget contains new investments to build the capital fund reserve.
- To further advance financial sustainability and prioritize major infrastructure replacement and rehabilitation projects, the District



Cory Pieper replaces a triple-duty valve in a boiler building.

is implementing a comprehensive asset management program. This includes a plant asset management plan and reliability-centered maintenance practices.

- Some modest increased funds to capital equipment and repair.
- Existing and new funds also will be directed to updating and enhancing the District's information systems and technology. Specific projects include the launch of a multi-year effort to identify and implement a suitable replacement for the District's computerized maintenance management system (CMMS) and financial systems; and improve the security and usability of a variety of District database tools.
- To advance the District's economic sustainability, including its competitive ability to hire and retain a skilled workforce, the 2021 budget contains a scheduled market adjustment of 2%.
- To enhance collaboration and team success while welcoming a broader talent pool and building internal leadership skills, the District is implementing inclusion and diversity programs and will expand leadership development opportunities.
- An initiative to develop an energy policy and management plan that will improve resiliency and identify a preferred energy mix that

accounts for the necessary replacement of the District's current energy production system.

- Funds to develop and implement a phosphorus management strategy for Badger Mill Creek that addresses social and regulatory concerns about water quality in the Sugar River Watershed beyond the District's ability to control phosphorus in its own outfall. A strategy to encourage chloride reduction also is being put in place.
- An increase in funds to study PFAS compounds and as well as funds for an off-season bacterial disinfection recreational risk assessment study of Badfish Creek.

In summary, the 2021 budget is a relatively flat budget, recognizing the impacts of the coronavirus pandemic and the uncertainty that lies ahead with our revenues and our communities' ability to pay. The District seeks to be a partner in the area's economic recovery by continuing to invest in capital projects that create jobs, but at the same time, defer some expenditures to be good fiscal stewards. Therefore, it is important to be mindful of what is coming in 2022 and beyond. **Figure 1** shows shortterm capacity needs that will be phased in once the economy recovers and gets back to normal.



Canadian Geese make a stop at the Wildlife Observation Unit during the spring migration.

FIGURE 1 | Future Budget Capacity Needs

Budget Need	2022	2023	2024
Maintenance	200,000	100,000	100,000
HR/Safety/Security	100,000	100,000	100,000
Small Plant Projects (cash finance)	100,000	200,000	200,000
Collection System Engineering	250,000	250,000	100,000
Metrogro	100,000	100,000	50,000
Resource Recovery	125,000	100,000	50,000
Pretreatment	100,000	100,000	50,000
Lagoon Maintenance	50,000	100,000	50,000
Pollution Prevention/Source Reduction	100,000	100,000	50,000
Capital Planning	50,000	50,000	50,000
Budget/Accounting	50,000	50,000	50,000
Communications	50,000	50,000	50,000
Totals	\$1,275,000	\$1,300,000	\$900,000

STRATEGIC PLANNING

MISSION, VISION AND WORK

The District's mission is to protect public health and the environment. This is an enduring mission. It started with the founding of the District in 1930 and will extend as long as the region generates wastewater. The District's vision brings focus on the twin elements of wastewater: cleaning water and recovering resources.

The District's mission, vision, ideals and goals make up the strategic plan diagram, **Figure 2**. These concepts are supported by five key result areas.

Each area contains priorities, strategies and influencing factors that are supported by this budget. The full list makes up the District's strategic plan (see **Appendix L**). The following is a description of these categories: **PRIORITIES:** Committed work functions that utilize the majority of budget funds.

STRATEGIES: Important areas of growth and development that are in the process of plan development and policy making. These are areas where the District is taking a cautious, thoughtful approach.

INFLUENCING FACTORS: Emerging issues of opportunity or concerns that require more research and learning. If the District fails to proactively address these issues, future impacts to the mission of protecting public health and the environment could result.

FIGURE 2 | Strategic Plan

OUR MISSION:

To protect public health and the environment.

OUR VISION: Enriching life through clean water and resource recovery.

OUR IDEALS: Equitable, reliable and cooperative.

ENVIRONMENT	COMMUNITY	EMPLOYEES	EFFECTIVENESS	INFRASTRUCTURE
Goal: Increase recovery of resources while meeting permit requirements.	Goal: Improve partnerships to build and increase public support.	Goal: Achieve a culture of positive engagement.	Goal: Adopt best business practices to increase District efficiency and effectiveness.	Goal: Achieve expected community level of services at the lowest total cost of ownership.

FIVE PILLARS



Martye Griffin, director of ecosystem services (right), leads a group discussion at the November 2019 customer community meeting.

COMMISSION STRATEGIC PLANNING

In 2019, the Commission conducted strategic planning. The purpose of strategic planning was to answer the following question:

Looking out 20 years or more, what should the District pursue to assure we continue to meet the needs of our customer communities and rate payers?

The Commission identified the following themes and insights to be considered in long-range planning:

- Substantial changes in resource availability and environmental operating conditions that are not readily predictable
- Increasing public demand for using wastewater as a resource
- Viewing water more holistically (ground, surface, storm, wastewater) as an integrated concept called One Water
- Balancing our core mission with environmental justice issues

- A greater awareness of how land use patterns and development policy outside the District's service area could impact the District
- The need to be more flexible in approaches within the current rigid regulatory framework
- The need to actively promote the District's long-term vision

To address these themes and insights, the Commission established high-level ideals. Ideals are the next level of clarity down from vision, but broader and more forward looking than mission. Ideals represent what is necessary to meet the needs of our customers in the form of broad policy guidance to staff that spans all District priorities.

Two outcomes came out of strategic planning:

- 1. The Commission reaffirmed a commitment to major efforts around inflow and infiltration reduction, pollution prevention/source reduction, building community understanding and continuing to provide reliable service to the public in the face of great challenges.
- 2. The Commission established the following ideals to guide ongoing work efforts:

EQUITABLE: We deliver clean, safe water in an affordable and equitable manner that benefits everyone.

- Pursue equity at the micro- and macro-levels relative to ability to pay and cost of service
- Focus on efficiency through attention to asset management, spending and land use patterns

RELIABLE: We see a future filled with change, where our reliability remains constant.

- Systems are reliable, redundant and safe to address climate change, extreme weather and funding requirements
- Provide necessary capacity in our collection and treatment systems

COOPERATIVE: We are good partners, ready to assist with regional water needs.

- Work actively with customer communities as advisors and partners, to "endeavor to be forward looking" and anticipate regulatory changes
- Put systems in place to be nimble, responsive and aware of what is happening in the region and how that may impact the District
- Assure regional "one water" concepts are introduced into broader regional policy decisions and advocate for holistic approaches



BUDGET PROCESS

The purpose of the annual budgeting process is to ensure that the District has adequate resources to deliver its planned services during the upcoming year and in future years. As part of this process, the following questions need to be answered:

- 1. What are the estimated expenses for operating the District's facilities and programs next year?
- 2. What are the estimated costs for construction of new or replacement facilities over the next six years?
- 3. How much money can the District expect from the various revenue sources next year, and how much money will the District need to recover through service charges?
- 4. How much money will the District need to borrow to finance construction work?
- 5. How much money does the District need in the bank to ensure adequate cash flow, to fulfill promises made when borrowing money and to address unforeseen emergencies?

The annual budget process addresses the upcoming year's financial management plan in three areas:

The **operating fund budget** addresses the operation of facilities and includes transfers to the capital projects fund and recovery of future years' debt service costs to comply with promises made at the time the District borrows money to finance construction projects. Service charge revenue is the primary source of funds for the operating fund budget.

The capital projects fund budget addresses construction of new or replacement facilities. Larger projects are typically funded with proceeds from a Clean Water Fund Ioan. These Ioans are administered by the State of Wisconsin. The District uses its taxing authority as collateral for these Ioans; however, the intent is to repay these Ioans with revenues generated through service charges. Smaller construction projects are funded from connection charges, transfers from the operating fund, and interest earned on the fund's investments. The debt service fund budget addresses debt service, the annual principal and interest payments due on borrowed funds. When the District borrows money from the state in the form of a Clean Water Fund loan, the District promises to place the amount of the next year's debt service payments on the tax roll unless the debt service fund has a balance by October 1 sufficient to make those payments. Since the District intends to repay its debt through service charges, each year's operating fund budget includes sufficient amounts of principal and interest in its operating expenses to fulfill this requirement. This money is transferred from the operating fund to the debt service fund prior to October 1 each year to ensure that no debt service payments need to be placed on the tax roll. Each year, the Chief Engineer and Director submits proposed operating, capital projects and debt service budgets. These proposed budgets are typically submitted at the first Commission meeting in September. After a public hearing and further consideration by the Commission, the Commission commonly approves the operating, capital projects and debt service budgets in late October (see Figure 3).

FIGURE 3 | 2021 Budget Calendar

STAFF/OUTSIDE ACTION		COMMISSION ACTION
Departments identify critical needs and forecast	JULY	Commission reviews & accepts draft
Department staff develops and submits budget requests to the budget review team. The team balances and develops the proposed budget.	AUGUST	Capital Improvements Plan.
 Sept. 9: A summary of the proposed budget is published and notice given of the upcoming budget hearing as required by Wisconsin Statutes Section 65.90. Sept. 11: Notification of the District's proposed budget and budget hearing mailed to communities. 	SEPTEMBER	Sept. 10: The Chief Engineer and Director presents proposed budget to commission. Sept. 24: Public hearing & Commission discussion.
Oct. 1: Deadline to receive written comments from the public on the proposed budget.	OCTOBER	Oct. 15: Commission deliberates budget
Nov. 1: Notify customers and septage haulers of new rates and estimated charges.	NOVEMBER	and debt service budgets and service charge and septage disposal rates

TABLE 1 | Amendment Procedures

BUDGET	REQUIREMENTS FOR BUDGET AMENDMENTS
OPERATING	Any increase in the total authorized expenditures.
CAPITAL PROJECTS	Any increase in the budget total for the year. The addition of a new project not previously included in the adopted budget. Any increase to a previously approved total project cost.
DEBT SERVICE	Any change to the approved amount to be transferred from the operating fund to the debt service fund.

BUDGET AMENDMENT PROCEDURES

Amendments to the proposed operating, capital projects and debt service budgets, or to the approved budgets, can be initiated by either the Commission or staff. Once the Commission approves the budgets for the succeeding calendar year, amendments to the budgets must be approved by the Commission as shown in **Table 1**.

BUDGET POLICIES AND PRACTICES

Several overarching policies and practices combine to form the District's approach to budgeting for the services provided by the District:

- Users pay charges based on the cost of the service.
- Operating costs are funded on a "pay-asyou-go" basis. Annual costs for operating the District's facilities are recovered from current users through the payment of service charges that reflect the customer's use of the service and the current costs of providing that service. The District does not use borrowed money to pay for current operating costs.

- Construction of new facilities is financed primarily with debt. New facilities are built to last 20 years or more and are designed with sufficient capacity to handle increasing loads caused by expected growth over their useful lives. Debt for new facilities is generally paid back over a 20-year period. This spreads the upfront construction costs over those users that actually use the facility during its service life.
- Detailed long-range planning helps to ensure stable rates and charges. The District's capital projects fund budget includes a six-year projection of construction-related expenses and revenues. The financial plan that evaluates the impacts of long-term borrowing on future budgets uses a 10-year projection.

BUDGET POLICY GUIDANCE

A number of policies guide the preparation of the annual budget for each of the three District funds.

The operating fund budget policies:

- Maintain a minimum fund balance equal to 180 days of the annual operating costs (does not include debt service), to ensure adequate cash flow capabilities, and a budgeted maximum fund balance of 210 days of the annual operating costs.
- Balance the budget by calculating the required service charge revenues so that total revenues equal total expenditures. Service charge rates are reviewed and set annually so projected flows and loadings will provide the required service charge revenue.

The capital projects fund budget policies:

- Maintain a minimum fund balance of \$3 million to fund any unforeseen project that may arise during the year.
- Utilize reserve funds, interest earnings and connection charge revenues to pay project costs before borrowing additional funds, unless the estimated project cost significantly exceeds the sum of these sources. In such cases, money is borrowed to finance the project. Since the early 1990s, the Clean Water Fund program has been the lowest cost source of debt financing for the District. All District loans since 1992 have been through the Clean Water Fund program.

The debt service fund budget policies:

• Maintain a minimum balance in the debt service fund to ensure that no debt service payments need to be placed on the tax roll.

DEFINITIONS

Fiscal year: The fiscal year for Madison Metropolitan Sewerage District begins on January 1 of each year and ends on December 31 of that year. The fiscal year is the accounting and budget year.

Enterprise fund: The District prepares its financial statements on an enterprise fund basis. Generally accepted accounting principles 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 service charges.

Balanced budget: Madison Metropolitan Sewerage District is required to adopt a balanced budget each year. A balanced budget is one in which anticipated District revenues equal anticipated District expenditures for the fiscal year. The District achieves this with the operating budget by offsetting expenditures with service charge billings, other operating income and fund reserves. The District's capital projects budget is balanced by offsetting total project expenditures with Clean Water Fund loans, connection charge revenues, fund reserves and all other capital projects fund income. The District's debt service budget achieves balance by offsetting total debt service expenses with funds transferred from the operating fund, debt service reserves and interest income.

Fund balance: Fund balance is the difference between the assets and liabilities of a fund. It is a measure of the amount available to budget or spend in the future.

Figure 4 summarizes the fund structure for the operating, capital projects and debt service budgets. The connection between the operating budget and the debt service budget is the transfer of service charge revenues to the debt service fund. The connection between the debt service budget and the capital projects budget is an indirect one. Loan proceeds are used to fund projects budgeted in the capital projects budget.

Table 2 provides a combined summary of revenuesand expenditures for 2019 through 2020.

FIGURE 4 | Fund Structure for Budgets

*Net operating expenses do not include transfers to the capital projects fund or the debt service fund.



TABLE 2 Combined Summary of Revenues & Expenditures

	2019 Actual	2020 Estimated	2020 Budget	Proposed 2021 Budget	Change from 2020 Adopted Budget	% Change
REVENUE CATEGORY						
OPERATIONS AND MAINTENANCE						
Sewer Service Charges	\$37,684,000	\$39,400,000	\$41,333,000	\$43,478,000	\$2,145,000	5.19%
Septage Disposal Revenue	826.000	800.000	790.000	820.000	30.000	3.80%
Servicing Pumping Stations	580.000	596.000	520.000	428.000	(92,000)	-17.69%
Struvite Fertilizer Sales	253,000	235,000	260,000	200,000	(60,000)	-23.08%
All Other Operating Income	674 000	540,000	540,000	520,000	(20,000)	-3 70%
Cash Reserves	-		775.000		(775.000)	-100.00%
TOTAL OPERATIONS AND MAINTENANCE REVENUES	\$40,017,000	\$41,571,000	\$44,218,000	\$45,446,000	\$1,228,000	2.78%
CAPITAL PROJECTS						
Clean Water Fund Loans	\$1,585,533	\$27,069,000	\$37,581,000	\$32,845,000	(\$4,736,000)	-12.60%
Interceptor and Treatment Plant Connection Charges	2,262,579	2,500,000	2,750,000	2,400,000	(350,000)	-12.73%
Interest on Investments	151,653	35,000	111,000	70,000	(41,000)	-36.94%
Contribution from Operating Fund	1,200,000	915,000	915,000	1,486,000	571,000	62.40%
Return to Spare party to Inventory					-	NMF
TOTAL CAPITAL PROJECTS REVENUES	\$5,199,765	\$30,519,000	\$41,357,000	\$36,801,000	(\$4,556,000)	-11.02%
DEBT SERVICE						
Transfer from Operating Fund	\$15,158,000	\$15,840,000	\$15,840,000	\$16,55 <mark>2,000</mark>	\$712,000	4.49%
Interest on Investments	384,000	220,000	437,000	84,000	(353,000)	-80.78%
TOTAL DEBT SERVICE REVENUES	15,542,000	16,060,000	16,277,000	16,636,000	359,000	2.21%
TOTAL REVENUES (net of transfers and reserves)	\$44,400,765	\$71,395,000	\$84,322,000	\$80,845,000	(\$3,477,000)	-4.12%
EXPENSE CATEGORY						
OPERATIONS AND MAINTENANCE						
Administration, Engineering & Planning	\$5,125,000	\$5,596,000	\$6,189,000	\$6,646,000	\$457,000	7.38%
User Charge & Pretreatment Program	614,000	812,000	910,000	1,100,000	190,000	20.88%
Wastewater Collection	2,935,000	2,943,000	2,906,000	3,099,000	193,000	6.64%
Wastewater Treatment	11,311,000	12,647,000	13,460,000	13,701,000	241,000	1.79%
Effluent Division	110,000	118,000	129,000	132,000	3,000	2.33%
Metrogro Biosolids Reuse Program	1,660,000	2,596,000	2,581,000	1,679,000	(902,000)	-34.95%
Capital Outlay	684,000	393,000	618,000	473,000	(145,000)	-23.46%
Servicing Pumping Stations Owned by Others	580,000	596,000	520,000	428,000	(92,000)	-17.69%
Contribution to Capitol Projects Fund	1,200,000	915,000	915,000	1,486,000	571,000	62.40%
Contribution to Equipment Replacement Fund	450,000	150,000	150,000	150,000	-	0.00%
Transfer to Debt Service Fund	15,158,000	15,840,000	15,840,000	16,552,000	712,000	4.49%
TOTAL OPERATIONS AND MAINTENANCE EXPENDITURES	\$39,827,000	\$42,606,000	\$44,218,000	\$45,446,000	\$1,228,000	2.78%
CAPITAL PROJECTS						
Nine Springs Wastewater Treatment Plant Projects	\$2,245,000	\$10,784,000	\$17,671,000	\$14,350,000	(\$3,321,000)	-18.79%
Interceptors	5,171,000	8,836,000	14,873,000	11,896,000	(2,977,000)	-20.02%
Pumping Stations and Force Mains	1,921,000	4,457,000	10,769,000	13,315,000	2,546,000	23.64%
Capital Budget Expenses	338,000	615,000	820,000	308,000	(512,000)	-62.44%
TOTAL CAPITAL PROJECTS EXPENDITURES	\$9,675,000	\$24,692,000	\$44,133,000	\$39,869,000	(\$4,264,000)	-9.66%
DEBT SERVICE						
Principal Payments	\$9,794,000	\$10,115,000	\$10,213,000	\$10,747,000	\$534,000	5.23%
Interest Payments	3,075,000	\$2,919,000	3,731,000	3,394,000	(337,000)	-9.03%
TOTAL DEBT SERVICE EXPENDITURES	\$12,869,000	\$13,034,000	\$13,944,000	\$14,141,000	\$197,000	1.41%
TOTAL EXPENDITURES	¢4Γ Γ62 000	\$63 427 000	\$85 390 000	\$81,268,000	(\$4,122,000)	-4.83%

NMF= No Meaningful Figure

COMBINED SUMMARY OF OPERATING, CAPITAL PROJECTS AND DEBT SERVICE

The District prepares its financial statements and budgets on an enterprise fund basis. The District's operating expenses are funded within the operating budget, the capital expenditures are funded within the capital projects budget, and the debt service budget is funded by transfers from the operating fund. The operating fund is the main fund. The operating budget authorizes use of the operating fund. The capital projects budget authorizes use of the capital projects fund. The debt service budget authorizes use of the debt service fund. Table 3 provides details on the sources of funds,use of funds, basis of accounting and basis foraccounting and expense in the operating and capitalprojects budgets.

TABLE 3 | Operating and Capital Projects Budgets Combined

	OPERATING	CAPITAL PROJECTS
SOURCES OF FUNDS	Service charges, servicing pumping sta- tions, struvite fertilizer sales, reserve funds, interest and other income	Wisconsin Clean Water Fund loans, conveyance facility and treatment plant connection charges, operating fund transfers, reserve funds and interest
USE OF FUNDS	Operating and maintenance expenses, debt service, capital outlay, transfers to capital projects fund	Project expenses and all other capital expenses
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, except capital outlays. These are budgeted as expenses in the year incurred, but capitalized and depreciated for financial reporting purposes. Depreciation is not budgeted.	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. Expenses are budgeted according to what is projected to be completed for that particular year.
BASIS FOR EXPENSE	Costs of operating and maintaining the sewerage system. Costs also include asset repair and replacement that is necessary to maintain the capacity and performance to meet the needs of the communities we serve, our regulatory requirements, and to protect the environment.	Costs of acquiring, purchasing, planning, designing, construction, extending and improving all or any part of the sewerage system.

FIGURE 5 | Combined Summary of Revenues & Expenditures



COMBINED SUMMARY OF REVENUE

COMBINED SUMMARY OF EXPENDITURES



COMBINED SUMMARY OF REVENUES AND EXPENDITURES

The District's 2021 combined budget totals approximately \$80.1 million in revenue and \$81.3 million in expenditures. As seen in Figure 5, the primary sources of revenue in the combined budget are sewer service charges, 53.8%, and Clean Water Fund loans, 40.6%. On the expenditure side, the capital budget comprises 49.1% of the combined budget, while operations and maintenance of the District facilities net of debt service totals 33.5%. Debt service is 17.4% of the expenditures.

SECTION TWO 2021 OPERATING BUDGET SUMMARY

OPERATING BUDGET OVERVIEW AND SUMMARY

The operating budget is the annual financing plan for the District's operating fund expenditures. The operating fund is the general fund of the District and accounts for revenues and expenses used to support daily operations and maintenance of all District facilities.

Table 4 summarizes the District's operating budgetincluding expenditures, revenues and operatingreserves for the years 2019 through 2021.

Figure 6 summarizes the revenues and expenditure categories for the proposed 2021 operating budget.

The proposed 2021 operating budget includes revenue of \$45,446,000, up \$1.2 million or 2.8% from a budgeted \$44,218,000 for 2020. Operating expenses are also budgeted at \$45,446,000, up \$1.2 million or 2.8% from budgeted expenses of 44,218,000 in 2020. Revenue from sewer service charges, the largest single category of revenue, is expected to total \$43,478,000, up \$2.1 million or 5.2% from \$41,333,000 budgeted in 2020.

Actual revenues for 2020 are projected to total \$41,571,000, down \$1.9 million from budget after accounting for the budgeted use of \$775,000 from reserves. Actual expenses for 2020 are projected to total \$42,606,000, \$1.6 million less than budgeted. The 2020 operating fund balance is projected to decrease by \$885,000 to \$18,443,000.

2020 REVENUE REVIEW

For 2020, revenues are estimated to be \$1.9 million or 4.3% less than budgeted after accounting for the budgeted use of reserves. Projections are for estimated revenues from service charges to be under budget by \$1,900,000, largely because of lower than budgeted loadings due to the economic effects of the coronavirus pandemic. Revenues from servicing pumping stations are estimated to exceed budget by \$76,000 due to greater than expected maintenance project work. Septage disposal revenue is estimated to exceed budget by \$10,000 due to slightly higher than expected volumes of regular and special hauled wastes. Revenues from interest, rent, miscellaneous income, and pretreatment monitoring are expected to be on budget. Revenues from struvite fertilizer sales are estimated to be \$25,000 under budget due to lower than expected production of struvite.

2020 EXPENDITURE REVIEW

The District anticipates expenditures for 2020 of \$42,606,000, down \$1.6 million or 3.6% from the \$44,218,000 budgeted. This is the result of efforts to reduce expenditures to partially balance the expected shortfall in revenues because of the coronavirus pandemic. During the year, wastewater treatment expenditures were running under budget by \$813,000; administration, engineering and planning under by \$593,000; capital outlay by \$225,000; user charge and pretreatment program by \$98,000; and effluent diversion by \$11,000. Items anticipated to run over budget include pumping stations owned by others by \$76,000; wastewater collection by \$37,000; and the Metrogro program by \$15,000. The expenses for servicing pumping stations owned by others are offset by the revenue collected for that service.



Operator Brenda Staudenmeier doing a pH calibration.

TABLE 4 | 2021 Operating Budget

	2019 Actual	2020 Thru June	2020 Estimated Total	2020 Budget	2021 Budget	% Change
REVENUE CATEGORY	· · · · · · · · · · · · · · · · · · ·		·			
Sewer Service Charges	\$37,684,000	\$19,672,000	39,400,000	41,333,000	43,478,000	5.19%
Servicing Pumping Stations	580,000	240,000	596,000	520,000	428,000	-17.69%
Rent	82,000	77,000	84,000	84,000	84,000	0.00%
Interest	269,000	41,395	250,000	250,000	250,000	0.00%
Annexation and Plan Review Fees	63,000	46,000	70,000	70,000	50,000	-28.57%
Miscellaneous Income	231,000	90,700	110,000	110,000	110,000	0.00%
Septage Disposal Revenue	826,000	374,000	\$800,000	\$790,000	\$820,000	3.80%
Pretreatment Monitoring	29,000	-	26,000	26,000	26,000	0.00%
Struvite Fertilizer Sales	253,000	117,000	235,000	260,000	200,000	-23.08%
Cash Reserves	-			775,000		-100.00%
TOTAL REVENUES	\$40,017,000	\$20,658,095	\$41,571,000	\$44,218,000	45,446,000	2.78%
EXPENSE CATEGORY						
Administration, Engineering, and Planning	\$5,125,000	\$2,789,000	5,596,000	6,189,000	6,646,000	7.38%
User Charge & Pretreatment Program	614,000	286,000	812,000	910,000	1,100,000	20.88%
Wastewater Collection	2,935,000	1,223,000	2,943,000	2,906,000	3,099,000	6.64%
Wastewater Treatment	11,311,000	5,587,000	12,647,000	13,460,000	13,701,000	1.79%
Effluent Diversion	110,000	26,000	118,000	129,000	132,000	2.33%
Metrogro Biosolids Reuse Program	1,660,000	1,102,000	2,596,000	2,581,000	1,679,000	-34.95%
Capital Outlay	684,000	(96,000)	393,000	618,000	473,000	-23.46%
Servicing Pumping Stations Owned by Others	580,000	240,000	596,000	520,000	428,000	-17.69%
Contribution to Operating Fund	-		-			NMF
Contribution to Capital Projects Fund	1,200,000	915,000	915,000	915,000	1,486,000	62.40%
Contribution to Equipment Replacement Fund	450,000		150,000	150,000	150,000	0.00%
Transfer to Debt Service Fund	15,158,000	-	15,840,000	15,840,000	16,552,000	4.49%
TOTAL EXPENDITURES	\$39,827,000	\$12,072,000	42,606,000	44,218,000	45,446,000	2.78%
OPERATING FUND BALANCE						
BEGINNING BALANCE	\$18,688,000	\$19,328,000	\$19,328,000	\$18,233,000	\$18,443,000	1.15%
TOTAL REVENUES LESS CASH RESERVES USED	40,017,000	20,658,095	41,571,000	43,443,000	45,446,000	4.61%
TOTAL EXPENDITURES LESS CONTRIBUTIONS TO ERF	39,377,000	12,072,000	42,456,000	44,068,000	45,296,000	2.79%
ENDING BALANCE	\$19,328,000	\$27,914,095	\$18,443,000	\$17,608,000	\$18,593,000	5.59%

NMF = No Meaningful Figure

FIGURE 6 | Operating Budget



2021 OPERATING EXPENDITURES

Total Operating Expenditures \$45,446,000



2021 REVENUES

The budgeted revenues for 2021 of \$45,446,000 are 2.8% greater than budgeted revenues for 2020 of \$44,218,000, and 9.3% more than the estimated 2020 revenues of \$41,571,000. For 2021, required service charge revenues will increase \$2.1 million or 5.2% over the 2020 budgeted amount and \$4.1 million over the estimated 2020 service charge revenues. Revenues from servicing customer-owned pumping stations are expected to decrease by \$92,000 because of less planned maintenance for these stations. Revenues from struvite fertilizer sales are estimated to decrease by \$60,000 due to reduced production. Based on interest rate trends, interest income is budgeted to be unchanged at \$250,000. Annexation and plan review fees are projected to decrease by \$20,000 and miscellaneous income to remain unchanged at \$110,000. The 2021 budget includes no use of reserves, whereas the 2020 budget as amended in January 2020 included the use of \$775,000 of reserves to address extraordinary expenses for the Metrogro program.

2021 EXPENDITURES

The budgeted expenditures of \$45,446,000 are \$1.2 million or 2.8% more than the budget for 2020. Total operating budget expenditures for personnelrelated costs, including salaries, benefits, payroll taxes and other items, will increase by \$261,000 or 2.0%, to \$13.1 million. Non-personnel related costs increase by \$967,000 million or 3.1% to \$32.6 million. Non-personnel expenditures, other than the transfers to the debt service fund and the capital projects fund, are down \$316,000 compared to the 2020 budget as amended in January 2020. After adjusting for the \$775,000 increase in budgeted expenditure authorized in January 2020 to address the extraordinary one-time Metrogro program expenses, and the transfers to the debt service fund and the capital projects fund, all other non-personnel expenditure increased \$459,000 compared to 2020.

The personnel services increase is due to:

- A 2% market increase for all employees and a catch-up provision for some employees.
- Step and/or longevity increases for hourly employees.
- Performance increases for salaried employees.
- The addition of one full-time equivalent position, \$60,000 for a human resources generalist.
- Additional costs for four part-time or limited-term positions, \$70,000.

There is no increase for health insurance premium rates in 2021.

Clean Water Fund debt	\$712,000
service	
Transfer/contribution to the capital projects fund	\$571,000
PFAS	\$100,000

Significant non-personnel related operating expenditure increases include:

See section five for more detail on department budgets.

Fleet Management Fund

The Commission created a fleet management fund in 2018. The 2018 budget included \$230,000 to start the fund. The 2019 budget included a \$160,000 contribution to the fund and the 2020 budget included \$195,000. The 2021 budget includes a \$200,000 contribution to the fund, an increase of \$5,000. **Appendix H** shows the proposed five-year vehicle replacement schedule.

OPERATING FUND BALANCE

The 2021 operating fund balance is projected to increase by \$150,000 to \$18,593,000 from the estimated 2020 ending balance of \$18,443,000.

The District's 2020 operating fund estimated ending balance includes the District's equipment replacement fund of \$3.9 million and unrestricted operating reserves of \$14.5 million or 195 days of operating expenses. This meets the District's minimum targeted end-of-year reserves of 180 days. Operating expenses for this purpose are defined as the operating budget expenditure total less the debt service expenditures and contributions to reserves. The projected operating fund balance at the end of 2021 of \$18.6 million includes an equipment replacement fund balance of \$4.05 million and unrestricted operating reserves of \$14.5 million or 195 days of operating expenses. The projected balance meets the District's end-of-year minimum balance of 180 days of operating expenses and is below the maximum balance of 210 days.

IMPACTS OF CAPITAL INVESTMENTS ON THE OPERATING BUDGET

The District's capital investments have a major effect on the District's operating budget. The largest effect is from debt service expenses. Debt service accounts for 36.8% of the proposed operating budget expenditures in 2021 and accounted for 35.8% of budgeted expenditures in 2020. The debt service expenses are paid through service charges.

In addition, the 2021 budget includes a \$1,486,000 transfer from the operating fund to the capital projects fund in order to increase the amount of cash financing for capital projects and decrease the amount of debt financing needed. The 2020 budget included a \$915,000 contribution to the capital project fund. The 2021 contribution is being funded as part of an anticipated continuing annual transfer to the capital projects fund.

The District also funds some smaller capital investments in the capital outlay line item of the operating budget. The proposed 2021 operating budget includes \$473,000 of capital outlay items, or 1.0% of total operating expenditures. Capital outlay items were budgeted at \$618,000, or 1.4% of total operating expenditures in 2020.

Debt service increases to support the capital improvements program have driven the operating budget increases in the last decade. This driver will lessen in the coming years. The last six budgets covering the years 2015 through 2020 have seen operating budget increases for debt service of 9% in 2015 and 2016; 6% in 2017 and 2018; and 4.5% in 2019 and 2020. The 2021 budget includes a 4.5% increase in debt service. The annual debt service increases are projected to continue at 4.5% to 2027. This lower rate of increase in debt service will reduce pressure on the District's operating budget in future years.

2021 SERVICE CHARGE RATES

The District's service charge rates depend on the budget and the predicted pollutant loadings for the coming year. The budget determines the service charge revenues required to cover expenditures. The service charge rates are determined by dividing the required service charge revenues by the loadings expected to be received at the treatment plant.

Rate = (Required Revenue)/Loading

The District has seven billing parameters: five wastewater parameters and two customer parameters. District expenses are allocated to these seven parameters, and loadings to the treatment plant are estimated from recent loadings history. Rates are determined for each parameter. The District, therefore, has seven rates that are used to determine billings to our customer communities. It is important to note that the District bills customer communities for the services provided and does not directly bill residential and business users of the sewerage system. Local sewer utilities add the costs to operate and maintain their local sewer systems to the District charges and then send bills to individual residences and businesses for sewer service charges provided by both the District and the local sewer utility. More details about the District's rate structure can be found in our sewer use ordinance at www.madsewer.org/Planning/ Permits-Ordinances.

The current year has shown overall wastewater volumes and pollutant loadings that are below budget through July, likely due to the effects of the coronavirus pandemic. This experience with loadings suggests that the overall increases in 2021 rates will be greater than the increase in required service charge revenues. If this loading trend continues, overall service charge rates for 2021 would be expected to increase more than the 5% increase in service charges. This projection of service charge rates is subject to change based upon actual flows and loadings in the coming months. The service charge rate determinations are made in October so that nine months of actual flow and loadings experience for the current year can be considered in determining the rates for the coming year.

FIGURE 7 | Number of Pumping Stations Serviced by Location



Total Stations: 65

REVENUE CATEGORIES

SEWER SERVICE CHARGES

This category covers charges paid by the District's customer communities for the wastewater conveyance and treatment services provided by the District. Customer communities pay these charges according to the volume and strength of the wastewater they discharge to the District. These charges are the primary revenue source for the District. The District serves five cities, eight villages and 13 sanitary or utility districts as of August 1, 2020.

SERVICING PUMPING STATIONS

This category covers charges to various customer communities for District services to operate and maintain pumping stations owned by the communities. The District currently services 47 pumping stations owned by others. The station owner and the number of stations served as of Aug. 1, 2020, are shown in **Figure 7**.

RENT

This category covers rent the District receives for use of District-owned property. The District rents three houses, one set of farm buildings including a house, barn, sheds and associated acreage, 157 acres of farmland, and land for an electrical substation.

INTEREST

This category covers interest earned on the District's cash reserves.

ANNEXATION & PLAN REVIEW FEES

This category covers District revenues for the annexation process and sewer plan review and approval processes. Customer communities pay annexation fees when new lands are added to the District. Customer communities pay sewer plan review fees for modifications or additions to their sewer systems.

MISCELLANEOUS INCOME

This category covers income received for various revenues that do not fit in other categories. For instance, the income from the sale of scrap materials and income for laboratory services performed for others are placed in this category.

SEPTAGE DISPOSAL INCOME

This category covers income received for wastes delivered by truck to the Nine Springs Wastewater Treatment Plant. The largest single source of waste delivered by truck is septage from homes and businesses on septic systems. Thirty-nine haulers have permits to discharge at the treatment plant as of Aug. 1, 2020.

PRETREATMENT MONITORING

This category covers the District's revenues for industrial monitoring. The fees are paid by businesses that are required to have industrial treatment permits issued by the District. Nineteen businesses have industrial discharge permits issued by the District as of August 1, 2020.

STRUVITE FERTILIZER SALES

This category covers the income from the sale of struvite fertilizer pellets. The District operates a process to recover phosphorus from the wastewater treated at the Nine Springs Wastewater Treatment Plant. The process recovers phosphorus in the form of struvite pellets, which are sold as a fertilizer.

CASH RESERVES

This category covers funds used from our cash reserves.

EXPENDITURE CATEGORIES

ADMINISTRATION, ENGINEERING AND PLANNING

This cost center includes the chief engineer's office, accounting, information systems, communications, engineering, human resources/safety, planning and strategy and ecosystem services.

District Leadership and Support: Provides organizational leadership to the District.

Oversees communication and public information, coordinates District strategic efforts and oversees overall District performance and general administration of District business.

Accounting: Provides general accounting, payroll, purchasing and grants and loan administration.

Information Systems: Ensures data integrity, optimal network functionality and provides hardware, software and user support. Information systems also provide technological expertise to District staff.

Communications: Provides District-wide communications and business support.

Engineering: Provides engineering, design and construction of projects within the District's Capital Improvements Plan.

Human Resources/Safety: Provides opportunities for growth of the organizational culture and performance. Provides cost-effective employee management services for recruitment, safety and leadership development while minimizing the District's liability in employment matters.

Records Management: Provides support for processing, accessing, retaining and disposing of District records.

Strategy: Provides strategic and capital improvements planning, sustainable infrastructure program management, customer service charge billing, connection charge and annexation management and geographic information system services.

Ecosystem Services: Oversees a wide range of regulatory, legislative and environmental and strategic initiatives that impact District operations and/or help establish overall District focus and oversees the Metrogro resource recovery program.

USER CHARGE & PRETREATMENT PROGRAM

This cost center implements state and federal requirements directed toward industrial users and implements strategies for pollution prevention and source control. In addition, this cost center includes wastewater flow and loadings data sampling and analysis for customer billing.

WASTEWATER COLLECTION

This cost center provides funding to operate and maintain the District's gravity sewers, pumping stations and raw wastewater force mains. The District operated and maintained 97 miles of gravity sewer, 18 pumping stations and 32 miles of raw wastewater force mains serving 13 cities and villages and 13 sanitary and utility Districts as of August 1, 2020.

WASTEWATER TREATMENT

This cost center includes funding to operate and maintain the Nine Springs Wastewater Treatment Plant. This plant treats about 40 million gallons of wastewater per day from our customer communities and Districts, and 100,000 gallons per day of hauled wastes.

EFFLUENT DIVERSION

This cost center includes operations and maintenance for the District's 15 miles of force mains that discharge treated effluent to Badfish Creek and Badger Mill Creek. The cost center also includes monitoring to determine the impact on receiving streams.

METROGRO BIOSOLIDS REUSE PROGRAM

This cost center recycles biosolids to agricultural land through the Metrogro program.

CAPITAL OUTLAY

This cost center funds asset purchases such as vehicles and equipment.

SERVICE PUMPING STATIONS OWNED BY OTHERS

This cost center funds activities to operate and maintain, on a contract basis, local pumping stations owned by other cities and Districts. The District operated and maintained 47 pumping stations as of Aug. 1, 2020

CONTRIBUTION TO CAPITAL PROJECTS FUND

This cost center accounts for the transfer of funds to the capital projects fund.

CONTRIBUTION TO EQUIPMENT REPLACEMENT FUND

This cost center accounts for additions to the equipment replacement fund required by the State of Wisconsin Clean Water Fund program.

TRANSFER TO DEBT SERVICE

This cost center pays the annual debt service on the District's long-term debt.

DEPARTMENT	2019 FTE COUNT	2020 FTE COUNT	2021 PROPOSED	CHANGES FOR 2021
District Leadership and Support	14	14	14	Moving 1 FTE to Strategy in 2021 Moving a current part-time in HR to full-time
Ecosystem Services	17	18	18	
Engineering	8	8	8	
Operations and Maintenance	51	57	57	
Strategy	14	14	15	1 FTE moved from DLS to Strategy in 2021
TOTALS	104	111	112	

TABLE 5 | Full-Time Equivalent Positions

PERSONNEL

The District has experienced tremendous staff turnover during the past 5 years at all levels of the organization, and this trend will continue as more employees retire or move on. We continue to prioritize leadership development through a number of methods such as NACWA's Core Growth: Building Utility Leaders of the Future training program; the Certified Public Manager program at the University of Wisconsin; and the Supervisory Academy through the City of Madison. Our investment in our people is crucial, as the talent shortage worsens especially in the fields that are mission critical to the District, such as STEM jobs and the skilled trades.

In 2018, the District began a three-year partnership with the YWCA to further build on the inclusion and diversity work the District began in 2017. This partnership began with the Creating Equitable Organizations training for District leadership and the Employee Leadership Council. The goal of this work is to create significant, sustainable organizational change, not just diversity awareness. The District is continuing to implement the inclusion and diversity strategic plan and our use of the Intercultural Development Inventory, which is regarded as the premier tool for assessing organizational cultural competence.

The Employee Leadership Council is in its fifth year serving as an advisory body to the executive team. The council is comprised of eight District employees representing all major departments, and members are voted onto the council by their fellow employees. The council has established itself as a valuable employee resource and regularly receives requests from employees. These requests are thoroughly evaluated before making recommendations to the executive team.

Safety has always been a District priority, with a dedicated safety staff position, a safety committee and safety practices that go beyond mere compliance. Through these efforts a new priority has emerged – security of our people, the treatment process and the plant. In 2019, the Department of Homeland Security conducted a voluntary assessment of District security practices to identify risks and long- and short-term opportunities for improvement. We used this assessment to identify our specific security needs and develop a multi-year approach to making improvements.

The coronavirus pandemic has certainly caused an enormous amount of disruption in 2020, and likely into 2021, but the District is still committed to maintaining a high level of service, safety and employee engagement despite all the new challenges and changes to our work environment.

Table 5 shows changes in the District's overallstaffing from 2019-2021.

Appendix K is a representation of the District's hierarchy with the proposed positions included.

SECTION THREE

2021 CAPITAL IMPROVEMENTS PLAN & BUDGET

INTRODUCTION

The District's Capital Improvements Plan, or CIP, is updated each year to reflect capital projects that are needed to keep the District's assets in good working order. Projects are included for a six-year time period using the best information and cost estimates that are available. The document also incorporates the District's financial situation by providing information on the necessary funding mechanisms for these projects.

The primary purpose of the District's CIP is to inform the development of the budget for the next year's capital projects fund. The plan includes proposed projects for the next six-year period with approximate costs and timeframes for planning, design and construction. For some projects toward the end of the six-year timeframe, costs and schedules are generally less developed and thus placeholders have been included until the scope of work and actual costs can be better defined.

Information on specific projects in the CIP can be found in the project summaries in **Appendix A**. These project summaries describe the scope, need, cost and schedule for each project. More detailed descriptions of each project are included in business cases, which can be found at the District's website at www.madsewer.org/Planning.

A brief discussion of recently completed projects can be found in **Appendix B**, along with the status of maintenance retainers for recently completed or soon-to-be-completed projects.

OVERVIEW AND HIGHLIGHTS

The 2021 Capital Budget anticipates total funds received (identified as revenues) of \$36.8 million, expenditures of \$39.9 million and a projected 2021 closing balance of \$5.9 million, down from a projected \$8.9 million in 2020. The plan estimates that \$32.8 million of additional debt will be incurred due to construction activities in 2021. Revenue collected from service charges for payment of debt service will increase from \$15.8 million in 2020 to \$16.6 million in 2021. Details on financing of this capital spending plan are given in the capital financing section. Consistent with previous plans, the District's capital expenditures for 2021 are expected to increase significantly relative to those in 2020. Some of the major construction activities and equipment purchases in 2021 include the following:

- Treatment plant improvements related to the 2016 Liquid Processing Facilities Plan. These projects include the addition of hydraulic capacity to the plant; rehabilitation of the 54-inch diameter influent line to the east primary tanks; construction of a new unit substation building; replacement of the effluent disinfection system; and upgrades to the process control system.
- Lowering the five influent flow meters in the Headworks Building to improve measurement accuracy and performance of the fine screening units
- Remodeling a portion of the first floor of the Operations Building at the treatment plant
- Replacing the District's computerized maintenance management system (CMMS)
- Improvements to the Nine Springs Valley Interceptor between County Highway PD and Dunn's Marsh in the City of Fitchburg
- Installing a new relief sewer for the West Intercepting System in the University Avenue corridor between Walnut Street and Whitney Way
- Installing a portion of a relief force main along Badger Mill Creek in the City of Verona
- Rehabilitation of Pumping Station 13 and Pumping Station 14 in the City of Madison

Lesser activities in 2021 include the following:

- Replacement of the effluent launder troughs on three final clarifiers at the treatment plant
- Purchase of an applicator and associated equipment for disposal of biosolids on agricultural fields
- Grouting of pipe joints on the Northeast Interceptor from Pumping Station 10 to State Highway 30

• Repairing and restoring the Badfish Creek effluent channel near Grass Lake in the Town of Dunn

The design of several large projects in the collection system will also begin in 2021. These projects include the rehabilitation of the Northeast Interceptor (Truax Extension) from Lien Road to Pumping Station 13; the rehabilitation of Pumping Station 4 and Pumping Station 17; and the second phase of the Pumping Station 17 relief force main in the City of Verona.

Planning work in 2021 will include completion of the Energy Management Master Plan and completion of the update to the Collection System Facilities Plan. Work on the Energy Management Master Plan began early in 2020 and is being performed by a team of consultants. This plan will take a comprehensive look at how the District currently uses energy at the treatment plant and will provide a roadmap for optimizing energy use in the future. A major focus of the plan will include how the District should use its biogas going forward and how best to optimize energy, as aging infrastructure at the treatment plant is replaced within the next 10 years.

The original Collection System Facilities Plan was prepared in 2002 and was updated in 2011. The 2021 update will incorporate the population and flow projections prepared by the Capital Area Regional Planning Commission (CARPC) In 2018 as part of the collection system evaluation.

Table 6 and **Table 6.1** provide a summary of the District's 2021 Capital Budget. These tables include a financial summary of actual results from 2019, ongoing information related to 2020 and expected 2021 activities. In addition to those projects previously mentioned in this section, numerous other projects are anticipated during the years 2022 through 2026.

Table 7 and Table 7.1 show estimates of the annualexpenditures for each of the proposed capitalprojects over the next six years. The annual amountsshown are adjusted for inflation at a rate of 3% peryear. The anticipated capital projects fund cash flow

for 2021 to 2026 is included in **Table 8**. Details on financing of this capital spending plan are given in the capital financing section.

The 2021 CIP forecasts a reduction in connection charge revenues due to the coronavirus pandemic. It is thought that the effects of the pandemic will slow the rate of growth for new development and redevelopment in the District's service area, beginning in 2020 and continuing through 2022. The plan proposes that the loss of revenue from this source be offset with increased transfers from the operating fund to the capital fund in each year of the planning period.



Cranes staged for work at the plant.

CONFORMANCE WITH ADOPTED PLANS AND PROGRAMS

The 2021 CIP assumes that capital projects will be in conformance with the recommendations of the District's 2009 50-year Master Plan regarding centralized treatment. The plan recommends that the District continue to treat all wastewater from its service area at the Nine Springs Wastewater Treatment Plant and to return a portion of the effluent to Badger Mill Creek. As such, none of the projects in the CIP assume that a satellite treatment facility will be located anywhere in the District's service area in the foreseeable future.

While the 50-year Master Plan provides long-term guidance, shorter-term planning is required to assess the condition and capacity of the District's systems and assets. The District relies upon facility planning efforts, its asset management program and other planning efforts to help direct annual updates to its CIP. The following planning efforts provide the most significant guidance to the District's annual capital improvements planning.

COLLECTION SYSTEM FACILITIES PLAN

Last updated in 2011, the Collection System Facilities Plan provides a list of recommended capital improvements to the District's collection system. The Capital Area Regional Planning Commission updated its 2009 evaluation of the District's collection system capacity in 2017 and 2018. This update will in turn allow the District to update its Collection System Facilities Plan in 2019-2021.

SOLIDS HANDLING FACILITIES PLAN

This facilities plan formed the basis for work constructed during the 11th Addition to the plant. This addition, completed in 2014, provided a comprehensive update to the treatment plant's solids handling processes. This work should allow the plant to meet solids loadings for the next 20 years. As such, solids handling is not a primary focus of the 2021 CIP.

LIQUID PROCESSING FACILITIES PLAN

While the Solids Handling Facilities Plan investigated the plant's solids streams and processes, the Liquid Processing Facilities Plan reviewed the plant's


liquid streams and processes. The facilities plan was substantially completed in 2017 and included multiple projects that will address the plant's liquid processing needs. It is assumed that the 17 projects identified in the facilities plan will be combined into separate bid packages that will be constructed in multiple phases over the next 10 to 15 years. The first phase of projects was bid in 2019 and will be constructed over the next two years (2020-2021). Subsequent Capital Improvement Plans will further identify the timing and phasing of these projects based on project need, staff workload and the District's financial situation.

ASSET MANAGEMENT PROGRAM

The District developed a draft Plant Asset Management Plan in 2011 that has helped guide improvements and planning at the treatment plant. In 2017, the District conducted a pilot asset management plan for the solids handling processes at the treatment plant and for all HVAC assets that the District owns. This pilot program used advanced asset management principles and served as a guide for the development of a full-scale asset management plan. The full-scale plan began in 2018 and was substantially completed in 2019.

It is anticipated that the District's Plant Asset Management Plan and the Collection System Facilities Plan will be crucial components of the annual Capital Improvements Plan in the years to come. Condition defects in District assets caused by aging infrastructure will continue to be addressed by these plans. As the plans become more mature over time, it is anticipated that asset risk will become more prominent in capital planning and allow for more precise identification of project needs and prioritization. These ongoing planning efforts, along with periodic initiatives such as the Solids Handling and Liquid Processing Facilities Plans, serve as valuable planning tools for the Capital Improvements Plan.



Maintaining accurate inventory counts is important for the District's asset management program.



The Commission is regularly updated on the District's capital projects.

CAPITAL PROJECTS BUDGET OVERVIEW & SUMMARY

The District's CIP affects the District's finances in the following ways:

- 1. The plan is used to develop the capital projects fund budget.
- The plan provides an estimate of annual cash flow that is required to fund projects. Enough cash must be in the fund to pay for projects under construction, to fund any new construction projects and to provide an adequate reserve for any unplanned projects and/or contingencies.
- 3. The plan projects the amount of existing and future debt that will be incurred to fund the projects.

This section discusses the first two points. A discussion of capital financing, including debt, is given in a following section.

Table 6 provides a summary of the capital budget

for years 2019 through 2021. For 2019, the summary shows the actual year-end totals for revenues and expenses for each project. For the current year, 2020, the summary shows the budgeted amount and the estimated year-end totals. For 2021, the summary shows anticipated revenues and expenditures. All estimates are rounded to the nearest thousand dollars.

It should be noted that four of the projects that are shown in Table 6 have been consolidated into a single project from one or more individual projects that were part of previous CIPs. These projects have been consolidated for purposes of construction bidding as they involve similar types of work. The total project cost for the single, consolidated project shall serve as the point of control for the purposes of meeting the project cost requirements of the District's Commission Policy Statements on Capital Projects Budget and Debt Service Budget Development and Approval. Projects that have been consolidated are noted in Table 6 and the expenditures for all the corresponding subprojects are reported in Table 6.1 for information purposes and for project cost tracking.

2019 SUMMARY

For 2019, expenditures of \$9.7 million exceeded revenues of \$5.2 million, leaving an end-ofyear balance of \$3.1 million. Revenues included Clean Water Fund loan proceeds of \$1.6 million; connection charge revenues of \$2.3 million; transfers from the operating fund of \$1.2 million; and investment income of \$152,000. Expenditures included \$2.2 million in treatment plant project expenses; \$5.2 million in interceptor project expenses; \$1.9 million in pumping station and force main project expenses; and \$338,000 of capital budget expenses.

2020 SUMMARY

The 2020 Capital Budget showed 2020 expenditures exceeding revenues by \$2.8 million; we now anticipate that revenues will exceed expenditures by \$5.8 million. The primary reason for this change relates to the timing of disbursements from the Clean Water Fund for three large projects that were under construction in 2019, including the Southwest Interceptor (Haywood Drive Extension), Northeast Interceptor (Truax Extension) Relief Sewer, and the Pumping Station 7 Improvements project. Total expenditures in 2019 for these three projects totaled approximately \$5.7 million and the 2020 Capital Budget assumed that loan revenues of approximately the same amount would be received in that same year. No loan revenue for these projects was received in 2019, however. This revenue will instead be received entirely in 2020.

The year-end fund balance is projected to be \$8.9 million, which is greater than the budgeted \$6.1 million by \$2.8 million.



Commissioner Beth Bookland being sworn in as the newest member of the District's nine-person Commission.

TABLE 6 Capital Projects Budget

		2019 Actual	2020 Thru	2020 Estimated Total	2020 Budget	Proposed 2021 Budget	% Change
	REVENUE CATEGORY	/ letter	June	- Stimated lotal		2021 Duuget	
	CWELOANS	\$1.585.533	\$7,455,811	\$27.069.000	\$37.581.000	\$32,845,000	-12.60%
	CWE Loan- PS 10 FM Rehab/West Int- PS 5 to Gammon Ext	1.585.533	218.063	261.000	-	-	NMF
			7.237.749	10.089.000	4.676.000	-	-100.00%
	CWF Loan- NEI-Truax EXL Reliei/SWI-Haywood EXL Replacement		.,,		.,		/
(1)	CWF Loan- 2019 Treatment Plant Piping Improvements Project	-	-	430,000	-	-	NMF
(1)	CWF Loan- LPI-Phase 1/PS 7 Improvements/HW Flow Metering	-	-	13,689,000	16,338,000	9,852,000	-39.70%
(1)	CWE Loan- Pumping Station 13 and 14 Rehabilitation	-	-	950,000	5 900 000	9 705 000	64 49%
(-)	CWF Loan- Operations Building First Floor Remodel	-	-	400.000	625.000	1.500.000	140.00%
(1)	CWF Loan- Interceptor Rehabilitation- 2020	-	-	1.250.000	1.792.000	304.000	-83.04%
()	CWF Loan- NSVI Improvements- McKee Road to Dunn's Marsh	-	-	-	3.000.000	4.734.000	57.80%
	CWE Loan- West Intercentor- Shorewood Relief (Phase 1)	_	_	_	5 250 000	6 750 000	28 57%
	CONNECTION CHARGE REVENUES	\$2 262 579	\$939.021	\$2 500 000	\$2 750 000	\$2 400 000	-12.73%
	INTEREST ON INVESTMENTS & MISC. INCOME	\$151 653	\$18 864	\$35,000	\$111,000	\$70,000	-36.94%
		\$ 1 200 000	\$915,000	\$915,000	\$915,000	\$1 486 000	62 40%
	TOTAL SOURCES OF FUNDS	\$5 199 765	\$9 328 696	\$30,519,000	\$41 357 000	\$36,801,000	-11.02%
	EXPENSE CATEGORY	<i>\$3</i> ,133,703	\$3,820,030	\$50,515,600	<i>\$</i> 41,007,000	\$50,002,000	11102/0
	NINE SPRINGS WTP PROJECTS	\$2,244,591	\$1,807,746	\$10,784,000	\$17,671,000	\$14,350,000	-18,79%
	Badfish Creek Effluent Force Main Standpipe	88.452	-	-	-	-	NMF
	Clarifier Stress Testing	9.594	-	-	-	-	NMF
	Shon One Site Improvements	165 716	4 308	24 000	-	_	NME
	Engine Generator And Blower Control Panel Replacements	6 666	4,508	60,000		203.000	NIME
(1)	2019 Treatment Plant Pining Improvements Project	12 279	387 281	448 000	-		NME
(1)	Liquid Processing Improvements - Phase 1	760 498	978 103	7 305 000	12 295 000	7 727 000	-37 15%
(±)	Headworks Flow Metering	104 954	65 279	1 015 000	2 091 000	1 166 000	-44 24%
	Resource Recovery Facility	2 9/6	8/ 827	210 000	258 000	309,000	19 77%
	Operations Building First Floor Remodel	2,540	114 638	541 000	599,000	1 479 000	146 91%
	Annual Process Tank Coating and Renair	202 153		191 000	191 000		-100.00%
	Annual Pavement Improvements	45 316	_		61,000	63.000	3 28%
	Minor Capital Improvements	79 896	-	109 000	109 000	112 000	2 75%
	Miscellaneous Treatment Plant Projects	11.439	357	110.000	110.000	100.000	-9.09%
	Metrogro Applicators & Equipment	724 980	2 4 2 1			896,000	NME
	Energy Management Master Plan	724,500	169 508	412 000	412 000	212,000	-48 54%
	Final Clarifier 4 5 and 6 Effluent Launder Trough Replacement	_	105,500	20,000	239,000	212,000	-8 37%
	CMMS Replacement	-	_	89,000	706,000	1 339 000	89.66%
	Lagoon Dikes Improvements	-	987	175 000	361,000	299,000	-17 17%
	Plant HVAC Improvements	-		75.000	129.000	206.000	59.69%
	Septage Receiving Modifications	-	-	-	5.000	10.000	100.00%
	Headworks Screening	-	-	-	10.000	10.000	0.00%
	15 kV Electrical Service Replacement	-	-	-	95.000		-100.00%
	INTERCEPTORS	\$5.170.603	\$3.293.049	\$8.836.000	\$14.873.000	\$11.896.000	-20.02%
	SEI - Rehab upstream of PS 9 (lining project)	74.143	-	-	-	-	NMF
	West Int PS 5 to Gammon Extension (lining project)	464.842	-	-	-	-	NMF
	NSVI-Morse Pond Extension	1,255	52,653	60,000	-	-	NMF
	Southwest Interceptor- Haywood Ext. Replacement	1,744,896	1,905	22,000	-	-	NMF
	Northeast Interceptor Joint Grouting MH10-112 to MH10-106	3,911	4,658	255,000	-	-	NMF
(1)	Interceptor Rehabilitation- 2020	4,315	29,499	2,074,000	2,019,000	-	-100.00%
. /	NEI- Truax Extension Relief	2,697,418	3,021,294	5,448,000	4,666,000	-	-100.00%
	NSVI Improvements-McKee Road to Dunn's Marsh	24,295	84,115	291,000	3,033,000	4,434,000	46.19%
	West Interceptor- Shorewood Relief (Phase 1)	155,527	98,926	686,000	5,073,000	7,061,000	39.19%
	NEI- Truax Extension Rehab (lining project)	-	-	-	82,000	82,000	0.00%
	NEI- Waunakee Extension Relief (Phase 1)	-	-	-	-	10,000	NMF
	Northeast Interceptor Joint Grouting MH10-101 to MH10-106	-		-	-	309,000	NMF

TABLE 6 | Capital Projects Budget (cont.)

		2019 Actual	2020 Thru June	2020 Estimated Total	2020 Budget	Proposed 2021 Budget	% Change
PUMPING S	TATIONS AND FORCE MAINS	\$1,921,077	\$2,234,395	\$4,457,000	\$10,769,000	\$13,315,000	23.64%
PS 10 Force I	Main Rehab	103,975	-	-	-	-	NMF
Automated F	Power Transfer at Pump Stations 10 and 11	7,872	40	184,000	-	-	NMF
PS 7 Improve	ements	1,318,101	1,923,686	2,536,000	1,934,000	-	-100.00%
Grass Lake D	ike Stabilization	58,003	19,110	87,000	417,000	659,000	58.03%
PS 17 Force I	Main Relief- Phase 1	145,890	14,739	412,000	2,114,000	2,786,000	31.79%
(1) PS 13 & PS 1	4 Rehabilitation	272,478	276,821	1,158,000	5,788,000	9,325,000	61.11%
Miscellaneou	us Collection System Improvements	14,758	-	80,000	80,000	-	-100.00%
PS 4 Rehabili	itaiton	-	-	-	415,000	427,000	2.89%
PS 16 Force I	Main Rehabilitation	-	-	-	21,000	15,000	-28.57%
PS 17 Rehab	ilitation	-	-	-	-	21,000	NMF
PS 17 Force I	Main Relief- Phase 2	-	-	-	-	82,000	NMF
CAPITAL BUI	DGET EXPENSES	\$337,945	\$80,263	\$615,000	\$820,000	\$308,000	- 62.44%
Capital Budg	et Expenses	12	-	-	52,000	52,000	0.00%
Plant Asset N	Management Plan Implementation	153,675	66,701	265,000	323,000	-	-100.00%
Collection Sy	rstem Facilities Plan Update	105,051	10,197	50,000	135,000	50,000	-62.96%
Badger Mill (Creek Phosphorus Compliance	79,208	3,365	300,000	310,000	206,000	-33.55%
TOTAL EXPE	ENDITURES	\$9,674,216	\$7,415,454	\$24,692,000	\$44,133,000	\$39,869,000	-9.66%
CAPITAL PR	OJECTS FUND BALANCE						
BEGINNING	BALANCE	7,566,609	3,092,158	3,092,158	8,871,000	8,919,000	0.54%
TOTAL SOUF	RCES OF FUNDS	5,199,765	9,328,696	30,519,000	41,357,000	36,801,000	-11.02%
TOTAL EXPE	NDITURES	9,674,216	7,415,454	24,692,000	44,133,000	39,869,000	-9.66%
ENDING BAL	ANCE	\$3,092,158	\$5,005,400	\$8,919,000	\$6,095,000	\$5,851,000	-4.00%

NMF=No Meaningful Value

(1) This project consists of two or more individual projects that were part of previous capital improvement plans. The individual projects have been consolidated into a single project for purposes of bidding, in accordance with the district's "Commission Policy Statements on Capital Projects Budget and Debt Service Budget Development and Approval." The total project cost for the single, consolidated project shall serve as the point of control hereafter for the purposes of meeting the project cost requirements of said policy. Expenditures for the individual projects are reported in Table 6.1 for informational purposes.

TABLE 6.1 | Detailed Information for Consolidated Projects

	2019 Actual	2020 Thru June	2020 Estimated Total	2020 Budget	Proposed 2021 Budget	% Change
EXPENSE CATEGORY						
LIQUID PROCESSING PROJECTS - PHASE 1	\$760,498	\$978,103	\$7,305,000	\$12,295,000	\$7,727,000	-37.15%
Plant Peak Capacity Improvements	263,722	330,752	2,390,000	4,661,000	2,590,000	-44.43%
UV Disinfection System Replacement	140,139	101,667	1,956,000	1,893,000	1,950,000	3.01%
East Blower Controls	28,163	7,790	169,000	351,000	194,000	-44.73%
Primary Tanks 1 and 2 Rehabilitation	56,140	36,679	149,000	403,000	224,000	-44.42%
54 Inch Primary Influent Rehabilitation	37,076	22,744	370,000	719,000	398,000	-44.65%
East-West Plant Flow Metering	55,052	74,915	6,000	138,000	77,000	-44.20%
Plant Unit Substation Improvements	110,226	368,848	1,578,000	2,783,000	1,546,000	-44.45%
Process Control System Upgrade- Phase Two	69,981	34,707	687,000	1,347,000	748,000	-44.47%
2019 TREATMENT PLANT PIPING IMPROVEMENTS	\$12,279	\$387,281	\$448,000	\$0	\$0	NMF
PROJECT						
W1 Piping Improvements	8,648	188,878	262,000	-	-	NMF
Hot Water Piping Improvements	3,631	198,403	186,000	-	-	NMF
INTERCEPTOR REHABILITATION - 2020	\$4,315	\$29,499	\$2,074,000	\$2,019,000	\$0	-100.00%
West Interceptor- Spring Street Relief (lining project)	4,315	22,827	1,604,000	1,787,000	-	-100.00%
NEI Relief Sewer and E. Johnson Street Relief Sewer	-	6,672	470,000	232,000	-	-100.00%
Rehab						
PUMPING STATION 13 & PUMPING STATION 14	\$272,478	\$276,821	\$1,158,000	\$5,788,000	\$9,325,000	61.11%
REHABILITATION						
PS 13 Rehabilitation	136,239	141,049	589,000	2,930,000	4,755,000	62.29%
PS 14 Rehabilitation	136,239	135,772	569,000	2,858,000	4,570,000	59.90%

2021 REVENUES & EXPENDITURES

The proposed 2021 Capital Budget anticipates revenues from all sources totaling \$36.8 million and expenditures of \$39.9 million with a resulting year-end capital fund balance of \$5.9 million. The projected year-end fund balance for 2021 represents a fund balance decrease of \$3.1 million relative to the estimated year-end balance for 2020. The decrease in the capital fund balance for 2021 results from the financing of many projects and initiatives through cash reserves in 2021 in the amount of approximately \$7.4 million. These projects and initiatives include the following:

- Phase one of the Pumping Station 17 Relief Force Main (\$2.8 million)
- Replacement of the District's Computerized Maintenance Management System (\$1.3 million)
- Purchase of a new Metrogro applicator and associated equipment (\$896,000)
- Stabilization of the Grass Lake Dike (\$659,000)
- Preparation of the Energy Management Master Plan (\$212,000)
- Various capital budget expenses related to longterm planning (\$308,000)

Cash reserves will also be used to pay for planning and/or design work for various projects, including the rehabilitation of Pumping Station 4 (\$427,000); planning for potential improvements to the Resource Recovery Facility (\$309,000); and continued study for the Lagoon Dikes Improvements (\$299,000). These planning and design costs will initially be paid from cash reserves and may later be reimbursed through loans from the Clean Water Fund in subsequent years if/when construction commences.

There are several reasons for the relatively large amount of cash financing that is proposed for projects in the 2021 Capital Budget. In general, the District's long-range financial strategy aims to reduce its reliance on long-term debt by paying for more projects with cash in the short-term. In particular, cash reserves are typically sought to fund smaller projects that cost less than \$500,000. This helps to reduce administrative time and costs that are associated with the procurement of loans. In other cases, cash funding is sometimes necessary because the scope of the projects may make them ineligible for loans with reduced market interest rates from the Clean Water Fund loan program.

As detailed in **Table 6**, anticipated 2021 revenues include \$32.8 million in Clean Water Fund loan proceeds for the projects listed below:

- Liquid Processing Improvements Phase 1 (\$8.5 million)
- Headworks Flow Metering (\$1.3 million)
- Pumping Station 13 and Pumping Station 14 Rehabilitation (\$9.7 million)
- Operations Building First Floor Remodel (\$1.5 million)
- Interceptor Rehabilitation 2020 (\$304,000)
- NSVI Improvements McKee Road to Dunn's Marsh (\$4.7 million)
- West Interceptor Shorewood Relief (Phase 1) (\$6.7 million)

Other anticipated revenues include \$2.4 million in conveyance facility and treatment plant connection charges (connection charge revenues); \$1.5 million in contributions from the operating fund; and \$70,000 in interest on investments.

The 2021 CIP projects that the ongoing coronavirus pandemic and likely economic recession will slow the growth rate of local housing and redevelopment. As such, connection charges, which are typically collected for new development, are expected to be below the targeted amounts shown in the 2020 CIP for the next two years. The plan assumes that connection charges will be at 75% of expected levels in 2021 and at 90% of expected levels in 2022. To make up for the shortfall of connection charge revenue, the plan calls for increased annual transfers from the operating fund to the capital fund, beginning in 2021.

Also detailed in **Table 6**, the highest expense items for 2021 include the following projects:

- Liquid Processing Improvements Phase 1 (\$7.7 million)
- Headworks Flow Metering (\$1.2 million)

- Operations Building First Floor Remodel (\$1.5 million)
- Computerized Maintenance Management System (\$1.3 million)
- Metrogro Applicators & Equipment (\$896,000)
- NSVI Improvements McKee Road to Dunn's Marsh (\$4.4 million)
- West Interceptor Shorewood Relief (Phase 1) (\$7.0 million)
- Grass Lake Dike Stabilization (\$659,000)
- Pumping Station 17 Force Main Relief Phase 1 (\$2.8 million)
- Pumping Station 13 and Pumping Station 14 Rehabilitation (\$9.3 million)
- Design of Pumping Station 4 Rehabilitation (\$427,000)

Other anticipated expenditures include an additional \$2.4 million in other capital project expenditures as well as \$308,000 in capital budget expenses.

2021 CAPITAL PROJECTS FUND BALANCE

The 2021 capital projects fund ending balance of \$5.9 million is projected to decrease by 4.0%, or \$0.2 million, in 2021 compared to the budgeted 2020 ending balance of \$6.1 million, and to decrease by 34.4%, or \$3.1 million, compared to the estimated 2020 ending balance of \$8.9 million. The end-of-year capital projects fund balance varies significantly from year-to-year depending upon the timing of project expenses, loan proceeds and the use of cash reserves for project financing.

District policy requires a minimum capital projects fund balance (or reserve) of the greater of \$3 million or 10% of anticipated expenditures for the forthcoming fiscal year. Planned expenditures in 2022 are \$19.1 million. Therefore, for 2021, the minimum acceptable end-of-year balance is \$3.0 million (10% of \$19.1 million is \$1.9 million). The projected 2021 end-of-year balance is projected to be \$5.9 million, which is above the minimum acceptable amount.





Volunteer for the adaptive management program taking stream buffer measurements.

SIX-YEAR CAPITAL PROJECTS BUDGET SUMMARY

The District's CIP includes projections for projects that are either underway and will continue into 2021, or for those new projects that will begin within the six-year planning horizon. These projects have been identified by District staff to address a variety of needs such as hydraulic capacity, condition or to meet new regulatory requirements. Costs and schedules for these projects are continually updated as the scopes become better defined and as priorities and funding strategies change over time.

Table 7 and Table 7.1 are included to show the anticipated annual inflation-adjusted costs that are expected for each project. These tables show approximately \$163 million worth of expenditures over the six-year period from 2021 to 2026, representing projects totaling \$223 million.

PROJECT SUMMARIES AND BUSINESS CASES

Summary descriptions for each of the proposed projects are included in **Appendix A**. Projects are categorized as Nine Springs Wastewater Treatment Plant projects, interceptor projects or pumping station and force main projects. Projects are identified using an alphanumeric identifier. Project identification for Nine Springs Wastewater Treatment Plant projects begin with the letter A; those for interceptor projects begin with the letter B; those for pumping station and force main projects begin with the letter C; and those for capital budget expenses begin with the letter D.

Additional project information for most projects is contained in comprehensive business cases, located on the District's website at www.madsewer.org/ Planning. Since some projects are closely connected or contingent upon other projects, more than one project may be included in a single business case. A table of contents identifies which projects are included in which business case summary. Note that some business cases, and hence associated costs, are more developed than others. Where costs have not been fully developed, amounts have been included as placeholders or allowances to identify the need. As with all projects, these costs will be modified as project scopes are refined and better estimates become available.

It should be noted that projects that have entered the construction phase are not included in the project summaries in **Appendix A** and do not have a business case on the District website.

TABLE 7 Six-Year Capital Projects Summary

		Total Project	2021 - 2026						
No.	Project	Cost	Cost	2021	2022	2023	2024	2025	2026
NINE S	PRINGS WTP PROJECTS	\$108.063.000	\$64.829.000	\$14,147,000	\$5.911.000	\$10.183.000	\$14.257.000	\$5.471.000	\$14.860.000
	Liquid Processing Improvements- Phase 1	16.818.000	7,727,000	7,727,000	-	-	-	-	-
	Headworks Flow Metering	2 291 000	1 166 000	1 166 000	_	_	-	_	_
AO1 1	Activated Sludge Projects	11 151 000	9 355 000	1,100,000	552.000	2 426 000	5 280 000	195 000	812.000
A01.1	Activated Studge Projects	2 701 000	9,555,000	-	14,000	2,420,000	3,560,000	165,000	812,000
AU1.2	Nitrite Snunt/Low DO Pliot	2,791,000	2,774,000	-	14,000	167,000	2,593,000	-	-
A01.3	Septage Receiving Modifications	3,502,000	3,502,000	10,000	297,000	1,574,000	1,621,000	-	-
A01.4	Headworks Screening	4,109,000	4,109,000	10,000	350,000	1,847,000	1,902,000	-	-
A01 F	Plant Aeration Systems Projects (Nitrite	24,246,000	2,125,000	-	-	-	-	626,000	1,499,000
AU1.5	Shunt/Low DO)								
A01.6	Fast and West Blower Switchgear	2.624.000	2.624.000	-	-	5.000	219.000	1.182.000	1.218.000
	Final Clarifier 4 5 and 6 Effluent Launder	239,000	219,000	219 000	-	-	-	-	-
A02	Trough Replacement	200,000	215,000	215,000					
402	Resource Resource Facility	800 000	696 000	200.000	196.000	101.000			
AU3		899,000	080,000	509,000	180,000	191,000	-	-	-
A04.1	Energy Management Master Plan	624,000	212,000	212,000	-	-	-	-	-
A04.2	Plant Energy Facilities Plan	942,000	942,000	-	464,000	478,000	-	-	-
A04.3	Plant Energy Projects	17,529,000	10,916,000	-	-	-	591,000	916,000	9,409,000
A05	Annual Process Tank Coating and Repair	1,076,000	1,076,000	-	203,000	209,000	215,000	221,000	228,000
A06	Annual Pavement Improvements	408.000	408.000	63.000	65.000	67.000	69.000	71.000	73.000
A07	Minor Capital Improvements	726,000	726,000	112,000	116,000	119,000	123,000	126,000	130,000
A08	Metrogro Applicators & Equipment	1 1 1 8 000	3 232 000	896.000	828,000	7/3 000	765,000	120,000	100,000
A00	Operations Building First Floor Bernadal	4,148,000	1,470,000	1 470 000	828,000	743,000	705,000	-	_
A09	Operations building First Floor Remodel	2,050,000	1,479,000	1,479,000	-	-	-	-	-
A10	Miscellaneous Treatment Plant Projects	562,000	562,000	100,000	87,000	90,000	92,000	95,000	98,000
A11	15 kV Electrical Service Replacement	3,093,000	3,093,000	-	112,000	116,000	119,000	1,353,000	1,393,000
A12	CMMS Replacement	4,373,000	4,284,000	1,339,000	1,565,000	1,380,000	-	-	-
A13	Lagoon Dikes Improvements	2,109,000	1,934,000	299,000	515,000	552,000	568,000	-	-
A14	Plant HVAC Improvements	838.000	763.000	206.000	557.000	-	-	-	-
Δ15	Campus Space Master Plan	915,000	915,000			219 000	-	696,000	_
		\$74 292 000	\$60,921,000	\$11 896 000	\$2.012.000	\$2,10,000	\$12 720 000	\$10 555 000	\$8 E07 000
INTERC	NSVI Improvements McKee Read to	4 754 000	4 424 000	4 424 000	\$8,913,000	38,340,000	\$12,720,000	\$10,555,000	\$8,507,000
B01	NSVI Improvements-wickee Road to	4,754,000	4,434,000	4,434,000	-	-	-	-	-
	Dunn's Marsh								
B02	Northeast Interceptor Joint Grouting	309,000	309,000	309,000	-	-	-	-	-
002	MH10-101 to MH10-106								
DO2 1	West Interceptor- Shorewood Relief	7,906,000	7,061,000	7,061,000	-	-	-	-	-
BU3.1	(Phase 1)								
	West Interceptor - Shorewood Relief	2.429.000	2.429.000	-	2.429.000	-	-	-	-
B03.2	(Phase 2)								
	West Intercentor- Shorewood Belief	4 311 000	4 311 000	_	_	4 311 000	-	_	_
B03.3	(Phase 3)	4,511,000	4,511,000			4,511,000			
	(Fliase 5)	F 001 000	F 001 000	82.000	F 000 000				
B04	NEI- ITUAX EXTENSION REMAD (IIMINg	5,991,000	5,991,000	82,000	5,909,000	-	-	-	-
	project)								
B05	NEI- Waunakee Extension Relief (Phase 1)	7,133,000	7,133,000	10,000	355,000	1,382,000	5,386,000	-	-
B06	NEI- FEI to SEI Rehab (lining project)	2,070,000	2,070,000	-	48,000	2,022,000	-	-	-
007	Lower Badger Mill Creek Interceptor-	4,289,000	4,289,000	-	29,000	297,000	3,963,000	-	-
B07	Phase 5								
B08	NSVI Capacity Improvements- Phase 1	13.250.000	954.000	-	-	-	107.000	417.000	430.000
000	Pump Station 6 to Pump Station 10	7 097 000	7 097 000	_	143 000	328 000	3 264 000	3 362 000	
B09	Connector	7,037,000	7,007,000		143,000	520,000	3,204,000	5,502,000	
		1 2 4 2 0 0 0	4 2 4 2 000					2 120 000	2 202 000
	Lining projects starting beyond 5 years	4,342,000	4,342,000	-	-	-	-	2,139,000	2,203,000
	Other Future Collection System Projects	10 511 000	10 511 000	-	-	-	-	4.637.000	5.874.000
		10,011,000	10,011,000					.,,	-,
PUMPI	NG STATIONS AND FORCE MAINS	\$38,333,000	\$36,138,000	\$13,315,000	\$3,714,000	\$9,959,000	\$2,532,000	\$3,260,000	\$3,358,000
C01	Grass Lake Dike Stabilization	864,000	659,000	659,000	-	-	-	-	-
C02	PS 17 Force Main Relief- Phase 1	3,346,000	2,786,000	2,786,000	-	-	-	-	-
C03	PS 13 & PS 14 Rehabilitation	10 755 000	9 325 000	9 325 000	-	-	-	-	-
C04	PS 4 Rehabilitaiton	5 3 2 8 000	5 3 28 000	427 000	2 907 000	1 99/ 000	_	_	_
COF	DC 17 Dehabilitation	5,520,000	5,520,000	21,000	2,507,000	2,271,000	2 4 4 2 000		
CU3		5,252,000	5,232,000	21,000	398,000	2,5/1,000	2,442,000	-	-
C06	PS 17 Force Main Relief- Phase 2	4,276,000	4,276,000	82,000	255,000	3,939,000	-	-	-
C07	PS 16 Force Main Rehabilitation	1,652,000	1,652,000	15,000	69,000	1,568,000	-	-	-
C08	Miscellaneous Collection System	451,000	451,000		85,000	87,000	90,000	93,000	96,000
	Improvements								
	Other Future Pumping Station	6,429,000	6,429,000		-	-	-	3,167,000	3,262,000
	Improvements	. , -	, , -						
CAPIT	AL BUDGET EXPENSES	\$2,039,000	\$1,504,000	\$308.000	\$530,000	\$492,000	\$56,000	\$58,000	\$60,000
D01	Capital Budget Expenses	324 000	324 000	52,000	52,000	55,000	56,000	58,000	60,000
001	Collection System Coslition Direction	334,000	534,000	52,000	55,000	55,000	50,000	36,000	00,000
003	Conection System Facilities Plan Update	206,000	50,000	50,000	477.000	407.000	-	-	-
D03	Bauger IVIIII Creek Phosphorus	1,499,000	1,120,000	206,000	477,000	437,000	-	-	-
		4000	4	+	+ + 0	+	400-00	4.0.0.0	+
TOTALS		5222 827 000	\$163,402,000	\$39,666,000	519 068 000	528 974 000	\$29 565 000	1519 344 000	S26 785 000

TABLE 7.1 Six-Year Capital Projects Summary for Consolidated Projects

Project	Total Project Cost	2021 - 2026 Cost	2021	2022	2023	2024	2025	2026
EXPENSE CATEGORY								
LIQUID PROCESSING PROJECTS - PHASE 1	\$16,818,000	\$7,727,000	\$7,727,000	\$0	\$0	\$0	\$0	\$0
Plant Peak Capacity Improvements	5,663,000	2,590,000	2,590,000	-	-	-	-	-
UV Disinfection System Replacement	4,196,000	1,950,000	1,950,000	-	-	-	-	-
East Blower Controls	424,000	194,000	194,000	-	-	-	-	-
Primary Tanks 1 and 2 Rehabilitation	490,000	224,000	224,000	-	-	-	-	-
54 Inch Primary Influent Rehabilitation	870,000	398,000	398,000	-	-	-	-	-
East-West Plant Flow Metering	167,000	77,000	77,000	-	-	-	-	-
Plant Unit Substation Improvements	3,374,000	1,546,000	1,546,000	-	-	-	-	-
Process Control System Upgrade- Phase Two	1,634,000	748,000	748,000	-	-	-	-	-
PUMPING STATION 13 & PUMPING	\$10,755,000	\$9,325,000	\$9,325,000	\$0	\$0	\$0	\$0	\$0
STATION 14 REHABILITATION								
PS 13 Rehabilitation	5,480,000	4,755,000	4,755,000	-	-	-	-	-
PS 14 Rehabilitation	5,275,000	4,570,000	4,570,000	-	-	-	-	-

CAPITAL PROJECTS BUDGET EXPENSES

The final category of expenditures in Table 7 and Table 7.1 are capital budget expenses (letter D). These expenses typically include expenses related to planning and studies assessed against the capital fund but would be difficult to capitalize to a specific asset. The 2020 budget included \$820,000 related to ongoing planning efforts in the collection system and at the treatment plant including but not limited to asset management program expenses. The 2021 budget allocates a total of \$308,000 for these longer-term planning efforts. Of this total, approximately two-thirds of the 2021 expenses in this category are to study alternatives for meeting the lower phosphorus requirements for effluent that is discharged to Badger Mill Creek. Work planned for 2021 will include performing a feasibility analysis for all of the alternatives to meet the new discharge requirements and preparation of the final compliance alternative plan for submission to the Wisconsin Department of Natural Resources.

Prior CIP plans included an item in the capital budget expenses category for implementation of the District's treatment plant asset management program. The 2020 CIP showed the costs for this item gradually declining in the capital budget until 2024, at which time all costs for implementing the program would be transferred to the operating fund. In the 2021 CIP, this cost transfer has been accelerated and thus this item has been removed from the category for all years of the plan.

Additional expenditures that are anticipated in 2021 for this category include: (general) capital budget expenses (\$52,000) and preparation of the collection system facilities plan update (\$50,000). The first expenditure covers general planning expenses related to development of the CIP. The second item is for resources to study and prepare an update to the District's collection system facilities plan. While the original 2002 plan and the 2011 update were completed by District staff, a portion of the 2021 update is employing the use of an engineering consultant for specialized work. This specialized work will focus on creating a strategic plan for the District to follow for the control of infiltration and inflow (I/I) in the District's collection system as well as that of its customer communities, with particular emphasis given to the control of I/I on private property. Work on this initiative began in 2019 and is scheduled to be completed in 2020.

TABLE 8 | Capital Projects Fund Cash Flow Summary 2021-2026

REVENUES	2021	2022	2023	2024	2025	2026
CLEAN WATER FUND LOANS	\$ 32,845,000	\$12,727,000	\$26,718,000	\$ 21,206,000	\$13,411,000	\$ 18,805,000
CONNECTION CHARGES	2,400,000	3,275,000	4,100,000	4,550,000	5,000,000	5,450,000
INTEREST REVENUES	70,000	40,000	61,000	88,000	98,000	120,000
TRANSFER FROM (TO) OPERATING FUND	\$1,486,000	\$2,001,000	\$2,506,000	\$3,021,000	\$3,542,000	\$4,040,000
TOTAL REVENUES	\$36,801,000	\$18,043,000	\$33,385,000	\$28,865,000	\$22,051,000	\$28,415,000
EXPENDITURES	2021	2022	2023	2024	2025	2026
NINE SPRINGS WTP PROJECTS	\$14,350,000	\$5,911,000	\$10,183,000	\$14,257,000	\$5,471,000	\$14,860,000
INTERCEPTORS	11,896,000	8,913,000	8,340,000	12,720,000	10,555,000	8,507,000
PUMPING STATIONS AND FORCE MAINS	13,315,000	3,714,000	9,959,000	2,532,000	3,260,000	3,358,000
CAPITAL BUDGET EXPENSES	308,000	530,000	492,000	56,000	58,000	60,000
TOTAL EXPENDITURES	\$39,869,000	\$19,068,000	\$28,974,000	\$29,565,000	\$19,344,000	\$26,785,000
CAPITAL PROJECTS FUND CASH FLOW	2021	2022	2023	2024	2025	2026
BEGINNING BALANCE	\$8,919,000	\$5,851,000	\$4,826,000	\$9,237,000	\$8,537,000	\$11,244,000
TOTAL REVENUES	36,801,000	18,043,000	33,385,000	28,865,000	22,051,000	28,415,000
TOTAL EXPENDITURES	39,869,000	19,068,000	28,974,000	29,565,000	19,344,000	26,785,000
ENDING BALANCE	\$5,851,000	\$4,826,000	\$9,237,000	\$8,537,000	\$11,244,000	\$12,874,000

CAPITAL PROJECTS FUND CASH FLOW SUMMARY

Table 8 provides a summary of the District's construction account cash flow for the period from 2021 to 2026. The table includes anticipated revenue and expenditures for this six-year period. Total revenues for the period are anticipated at \$168 million, with total expenditures anticipated at \$164 million. Further details related to revenues are provided in the next section showing anticipated disbursements from the Wisconsin Clean Water Fund program, while expenditures were discussed previously as part of the six-year capital project summary for the District's CIP. The District's construction account includes revenues from four sources: loan proceeds, conveyance facility and treatment plant connection charges, interest received on account balances, and service charge revenues transferred from the operating fund to the capital fund. The projection anticipates funds from each of these sources during the six-year period, including \$126 million from loan proceeds; \$24.8 million from collection of connection charges; \$477,000 from interest; and \$16.6 million in transfers from the operating fund.

Wisconsin Clean Water Fund Loan Program

Although the District can, and may, fund future projects with general obligation bonds, continued use of the Wisconsin Clean Water Fund Loan Program is anticipated for most of the larger projects in the plan. As of Aug. 23, 2020, the District has borrowed \$246.7 million from this program for the following projects.



Wisconsin Clean Water Fund Loan Program

The District also anticipates that it will require funding for many future projects, with funding for many of them coming from Clean Water Fund loans. The projects listed below are expected to qualify for a reduced interest rate from the Clean Water Fund over the 20-year life of the loan. This reduced interest rate has averaged approximately 2% in the past year. Use of the loan program helps to ensure that adequate capital reserves are on hand to address any unforeseen capital costs.



SECTION FOUR

2021 CAPITAL FINANCE

INTRODUCTION

The previous section described the projects included in this CIP, including their costs and schedule. This section addresses how the plan is to be financed.

The District finances its capital improvements program through a combination of cash and debt, the latter from the state's Clean Water Fund Ioan program. Under current Commission policy, Clean Water Fund Ioans are used for nearly all eligible projects.

The Commission is in the process of revising its approach to capital financing, as discussed below. This CIP follows the initial guidance provided by the Commission. It also proposes several metrics that the Commission can use to assess District capital financing and that staff can use in preparing future Capital Improvements Plans.

Financing under this Capital Improvements Plan differs from the 2020 plan in two respects. First, this plan proposes a significant increase in the capital fund balance, achieved through greater transfers from the operating fund. This is to address risks regarding cashflow, potential economic recession, and potential unplanned expenditures. Second, this plan proposes to use the operating fund transfer to begin reducing use of debt at the end of the planning period.

POLICY CONTROLS

District capital financing is controlled by several Commission policies (available at www.madsewer. org/About-Us/Commission). These include:

Outcomes policy O-2C "Charges for service are justified, adequate, equitable and predictable;"

Executive limitations policy EL—2C, regarding financial planning;

EL—2D(5) regarding adequacy of available funds;

EL—2G regarding adequacy of rates to fund capital improvements; and

Commission policy book attached policy ATT-2, specifically the sections on:

- Capital projects budget and debt service budget (p. 40);
- Debt financing (p. 45);
- Fund reserves (p. 47);

- Fund structure (p. 48); and
- Strategic financial planning (p. 53).

This CIP is consistent with the above policies. In addition, this plan follows the initial capital financing guidance provided by the Commission in its strategic financial planning discussions.

LOAN AND FUND MANAGEMENT

The District's capital program is financed with three tools:

- Disbursements from the state's Clean Water Fund loan program.
- Cash from District connection charges (charged for extension of service to new areas).
- Cash from District service charges (paid quarterly by customer communities).

Under current Commission policy, Clean Water Fund loans are used for nearly all eligible projects (Commission policies ATT-2, debt financing). Interest rates are lower than commercial loans because of a state interest rate subsidy. District rates for loans in the past two years have been at or under 2%. Clean Water Fund loans have a 20-year term.

Clean Water Fund loan proceeds are deposited in the capital fund. Loan proceeds are often received a year or more after spending begins on a project. This is because initial planning and design expenses are not eligible for reimbursement until a construction contract for the project has been bid and awarded. Loan proceeds may occasionally be delayed due to administrative issues.



Principal and interest payments are made from a separate debt service fund. Money for these payments comes from District service charges, transferred from the operating fund to the debt service fund. Clean Water Fund program terms require the District to maintain a certain minimum balance in the debt service fund.

Connection charges revenue is paid by customer communities (or directly by developers) on a onetime basis, when service is made available to new areas. Connection charges revenues are deposited directly in the capital fund. Revenue varies significantly by year depending on the pace and location of development in the region.

Connection charges are based on the actual cost of the interceptor system serving a given area and the user's proportionate use of the assets at the Nine Springs Wastewater Treatment Plant. Connection charges are meant to recover the infrastructure costs of expanding the system. Ongoing repair and replacement of the system are supported by service charges.

Service charges revenue has historically not been used to support the capital program. That changed in 2017 with a small transfer of \$172,000. Service charges revenues are initially deposited in the operating fund, and then transferred to the capital projects fund as part of the District's annual budget. Use of service charges revenue for the capital program is motivated by recent Commission concern over the District's reliance on debt.

Use of Clean Water Fund loans remains the largest financing tool for the capital program, financing approximately 85% of capital expenditures in the early years of this plan (although this ratio declines slightly in later years of the plan due to additional proposed operating fund transfers).

CAPITAL FINANCE METRICS

Motivated in part by questions over the District's use of debt, the Commission is in the process of revising its approach to capital financing. At its Jan. 16, 2020 meeting, the Commission established three informal standards. They are:

- 1. Limit year-over-year increases in service charges collected from customer communities
- 2. Limit use of debt
- 3. Maintain the ability to handle unplanned expenses or lost revenues

These standards provide general guidance for capital financing but are not specific enough to evaluate performance or guide decisions. To address this, staff have developed several financial metrics to give an objective indication of performance for the three standards. Staff have used the metrics in developing this plan.

Although the metrics indicate performance, they do not provide targets that staff can aim for. Staff will ask the Commission to set targets during the next scheduled strategic financial planning meeting in the fall of 2020. For this plan, staff have used tentative targets based on best professional judgement.

The metrics developed for this plan are:

- Service charge impacts: Year-over-year percentage increase in the amount transferred from the operating fund to support the capital program.
- 2. Debt usage: Proportion of capital spending supported by borrowing.
- 3. Debt obligations: Total outstanding principal.
- 4. Capital fund cash flow risk: Annual closing balance relative to average annual spending over the planning period.
- 5. Capital fund revenue loss or unplanned expense risk: Available closing balance in year six relative to total cash inflow over the period.
- 6. Debt fund cash flow risk: (same as capital).
- 7. Debt fund revenue loss or unplanned expense risk: (same as capital).

ESTIMATED CONNECTION CHARGES REVENUE

The District sets connection charges rates to eventually recover the infrastructure cost of system expansion. However, the District has no control over revenue amounts in any given year. District connection charges revenues vary significantly depending on the pace and location of development in the region.

In developing the capital financing plan, staff estimate future connection charges based on historical patterns, known rate changes and best judgement about economic conditions.

In recognition of the coronavirus pandemic, staff reestimated connection charges revenue for 2020, 2021, and 2022 to be \$1.4 million lower than the 2020 CIP estimate over those three years (\$8.2 million down from \$9.6 million total). The estimate is based on the pattern from the 2007 recession. The reductions by year are:

- 2020: \$250,000
- 2021: \$800,000
- 2022: \$375,000

Estimated connection charges reflect the phase-in of higher treatment plant connection charges rates, authorized by the Commission in 2017.

PROPOSED OPERATING FUND TRANSFERS

The capital program is supported by transfers from the operating fund to the capital projects fund and to the debt service fund. The transfer amounts for 2021 will be authorized in the 2021 capital projects budget, adopted later in 2020. This Capital Improvements Plan proposes amounts for each year of the planning period, 2021–2026.

TABLE 9 | Transfer from Operating Fund to Capital Projects Fund

YEAR	2020 CAPITAL BUDGET (ACTUALS THROUGH 2019)	PROPOSED 2021 CAPITAL IMPROVEMENTS PLAN	DIFFERENCE
2016	\$0	-	-
2017	172,000	-	-
2018	0	-	-
2019	1,200,000	-	-
2020	915,000	-	-
2021	961,000	1,486,000	525,000
2022	1,009,000	2,001,000	992,000
2023	1,059,000	2,506,000	1,447,000
2024	1,112,000	3,021,000	1,909,000
2025	1,168,000	3,542,000	2,374,000
2026	1,226,000	4,040,000	2,814,000
2021-2026 Total	\$6,535,000	\$16,596,000	\$10,061,000

TRANSFERS TO THE CAPITAL PROJECTS FUND

The capital projects fund balance is a significant concern in this plan. The fund balance is currently low. Furthermore, the total amount of cash-only expenditures is high relative to the amount of connection charges and operating fund support that was proposed in the 2020 CIP.

Together, these mean that the fund is at risk of cash insufficiency due either to delays in receipt of loan proceeds or to unexpected reductions in revenue or increases in expenditures. This situation is inconsistent with the Commission's third standard of maintaining the ability to handle the unexpected.

To remedy this, this plan proposes a stepped increase in transfers from the operating fund, in each year of the planning period, as shown in Table 9.

Had this plan continued the transfer amounts proposed in the 2020 CIP, the capital projects fund would have fallen below the current policy minimum of \$3 million in 2022 and 2026.

Furthermore, that policy minimum has not been adjusted to reflect new, higher spending levels from the fund nor has it been adjusted for inflation for many years. An alternative standard is to have a fund balance at least as large as average annual spending over the planning period. This metric indicates the fund's ability to handle cashflow risk, like a delay in receipt of Clean Water Fund loan proceeds or earlier-than-planned spending. The 2020 transfer levels would have resulted in balances below this standard (\$6.3 million for the 2021-2026 period) in each year of the period.

In addition, the available fund balance at the end of the planning period would have been only \$2.4 million. If we subtract average annual spending to reflect the need to avoid cashflow risk, the District would have less than zero ability to handle any recessionary revenue reductions or unexpected expenditures.

The transfer amounts in this CIP would improve performance against both measures. The fund balance would be over \$8.5 million in 2024 and rise to over \$12 million by 2026. The available period closing balance would be \$6.6 million, which is 16% of total period revenue. (The "available" capital projects fund balance is the closing balance minus average annual cash spending over the planning period. It is a measure of the balance above normal cash spending levels.) This indicates that the fund could handle an unexpected revenue reduction or additional expenditure of these levels.

TRANSFERS TO THE DEBT SERVICE FUND

Payments for principal and interest obligations come from the debt service fund, which is solely supported by the operating fund, and thus from service charges.

The Clean Water Fund loan program requires the District to have sufficient funds on hand to pay debt service requirements for the following calendar year. The District meets this obligation through the debt service fund balance. As a result, the balance is adequate to handle cashflow risks. Applying the same cashflow risk standard as for the capital fund, the debt service fund will maintain a balance between one- and two-times annual debt service expenditures.

The debt service fund's balance also prepares the District to handle unexpected revenue reductions or large additional debt-funded capital expenditures. The available closing balance at the end of the period would be \$18.2 million. (The "available" debt service fund balance is the closing balance minus the debt service obligation for the succeeding year. It is a measure of the balance above committed spending for the next year.) This is 16% of total operating fund contributions over the period. This indicates that the fund could withstand a recessionary revenue drop or unexpected increase in annual debt service payments of that magnitude.

Reflecting the adequacy of the debt service fund's balance, this Capital Improvements Plan has the same transfer amounts as were planned in the 2020 Capital Improvements Plan, as indicated in **Table 10**. The plan ensures that debt service fund annual closing balances remain above the minimum required by the Clean Water Fund loan program. **Table 11** summarizes the cash flow of the debt service fund.

PROPOSED USE OF DEBT

The District is entering a period of increased capital spending. Following current Commission policy, most of these costs are planned to be financed with Clean Water Fund loans. (Commission policies ATT-2, debt financing).

As shown in **Table 8**, over the planning period, the percentage of capital expenditures financed with debt will be 85% in 2021 and 86% in 2022, but then decline to 70% in 2026. (Percentages are three-year moving averages, to smooth annual variation that results from loan and spending timing differences.)

The reduction is due to increased use of cash to fund capital expenditures in 2026. Due to the proposed increase in operating fund support for the capital fund, enough cash will be available by the end of the planning period to begin borrowing less. This is consistent with the Commission's second standard of reducing use of debt.

Note, however, that total outstanding principal obligations rise significantly over the planning period, because expenditures themselves are rising. Principal obligations are planned to rise from about \$136.0 million in 2020 to about \$193.4 million in 2026.

(State statute limits District debt to 5% of the equalized property valuation of the District. Currently, that valuation is approximately \$52.3 billion. The District's debt limit is 5% of that, or approximately \$2.6 billion.)

TABLE 10 | Transfer from Operating Fund to Debt Service Fund

YEAR	2020 CAPITAL BUDGET (ACTUALS THROUGH 2019)	PROPOSED 2021 CAPITAL IMPROVEMENTS PLAN	DIFFERENCE
2016	\$12,909,000		
2017	\$13,684,000		
2018	\$14,505,000		
2019	\$15,158,000		
2020	\$15,840,000		
2021	\$16,552,455	\$16,552,455	\$0
2022	\$17,297,316	\$17,297,316	\$0
2023	\$18,075,695	\$18,075,695	\$0
2024	\$18,889,101	\$18,889,101	\$0
2025	\$19,739,111	\$19,739,111	\$0
2026	\$20,627,371	\$20,627,371	\$0
2021-2026 Total	\$111,181,048	\$111,181,048	\$0

TABLE 11 | Debt Service Fund Cash Flow Summary

YEAR	2021	2022	2023	2024	2025	2026
Opening Balance	\$27,180,000	\$29,675,000	\$30,530,000	\$31,289,000	\$34,259,000	\$36,416,000
Transfer from Operating Fund	\$16,552,000	\$17,297,000	\$18,076,000	\$18,889,000	\$19,739,000	\$20,627,000
Interest Earnings	\$84,000	\$380,000	\$448,000	\$546,000	\$589,000	\$625,000
Debt Service Payments	\$14,141,000	\$16,822,000	\$17,765,000	\$16,465,000	\$18,171,000	\$19,113,000
Closing Balance	\$29,675,000	\$30,530,000	\$31,289,000	\$34,259,000	\$36,416,000	\$38,554,000
Reserve Requirement	\$16,822,000	\$17,765,000	\$16,465,000	\$18,171,000	\$19,113,000	\$20,383,000
Available Closing Balance	\$12,853,000	\$12,765,000	\$14,824,000	\$16,088,000	\$17,303,000	\$18,171,000

(Note: The debt service fund balances are adequate to pay the required principal and interest payments on existing and anticipated Clean Water Fund loans. The planned balance at the end of 2021 meets the District's policy requirement to maintain a balance sufficient to avoid levying a property tax to satisfy its debt service obligations.)

TABLE 12 | Debt Financing

Year	PERCENT OF CAPITAL EXPENDITURES FINANCED WITH DEBT (3-YEAR MOVING AVERAGE)	END OF YEAR OUTSTANDING PRINCIPAL OBLIGATIONS
2016	96%	\$140,609,000
2017	87%	\$135,878,000
2018	58%	\$127,257,000
2019	48%	\$119,048,000
2020	61%	\$136,001,000
2021	82%	\$158,099,000
2022	86%	\$158,008,000
2023	80%	\$179,957,000
2024	77%	\$188,721,000
2025	78%	\$188,736,000
2026	70%	\$193,366,000

TABLE 13 | IMPACT ON SERVICE CHARGES

YEAR	OPERATING FUND SUPPORT FOR THE CAPITAL PROGRAM (FROM SERVICE CHARGES)	INCREASE OVER PRIOR YEAR	IMPLIED PERCENTAGE INCREASE IN SERVICE CHARGE REVENUE OVER PRIOR YEAR
2016	\$12,909,000	\$1,066,000	4%
2017	\$13,856,000	\$947,000	3%
2018	\$14,505,000	\$649,000	2%
2019	\$16,358,000	\$1,853,000	5%
2020	\$16,755,000	\$397,000	1%
2021	\$18,038,000	\$1,283,000	3%
2022	\$19,298,000	\$1,260,000	3%
2023	\$20,582,000	\$1,283,000	3%
2024	\$21,910,000	\$1,328,000	3%
2025	\$23,281,000	\$1,371,000	3%
2026	\$24,667,000	\$1,386,000	3%

(Note that the percentage increases are only for the capital program's share of service charges. Increases in operating expenditures occur in each annual budget, requiring an additional increase in service charges.)

EFFECTS ON SERVICE CHARGES

Supporting the financing plan above will require additional transfers from the operating fund and thus increases in service charges revenues. Under the proposal, service charges would increase by roughly 3% per year to support the capital program (Table 13).

CURRENT DEBT SERVICE SCHEDULE

Currently, all debt is financed through the State of Wisconsin Clean Water Fund program. The District makes principal payments on its long-term debt in May of each year and interest payments in May and November of each year. Future principal and interest due on long-term debt incurred as of July 31, 2020 or anticipated through 2022 are shown in Table 15. Note that the table does not include any debt that will be incurred beyond 2022.

TABLE 14 | Debt Service Budget

	2019 Actual	2020 Thru June	2020 Estimated Total	2020 Budget	Proposed 2021 Budget	% Change
REVENUES						
Transfer from Operating Fund	\$15,158,000	\$0	\$15,840,000	\$15,840,000	\$16,552,000	4.49%
Interest	384,000	155,000	220,000	437,000	84,000	-80.78%
TOTAL REVENUES	\$15,542,000	\$155,000	\$16,060,000	\$16,277,000	\$16,636,000	2.21%
EXPENDITURES						
First Half Interest	\$1,601,000	1,491,000	1,491,000	\$1,767,000	1,631,000	-7.70%
Principal	9,794,000	10,115,000	10,115,000	10,213,000	10,747,000	5.23%
Second Half Interest	1,474,000	-	1,428,000	1,964,000	1,763,000	-10.23%
TOTAL EXPENDITURES	\$12,869,000	\$11,606,000	\$13,034,000	\$13,944,000	\$14,141,000	1.41%
DEBT SERVICE FUND BALANCE						
BEGINNING BALANCE	\$21,481,000	\$24,154,000	\$24,154,000	\$24,134,000	\$27,180,000	12.62%
TOTAL REVENUES	15,542,000	155,000	16,060,000	16,277,000	16,636,000	2.21%
TOTAL EXPENDITURES	12,869,000	11,606,000	13,034,000	13,944,000	14,141,000	1.41%
ENDING BALANCE	\$24,154,000	\$12,703,000	\$27,180,000	\$26,467,000	\$29,675,000	12.12%

TABLE 15 | Estimated Debt Service Payment Schedule

TOTAL	\$224,832,598	\$85,263,895	310,096,493
2030- 2036	\$102,915,893	\$39,660,375	\$142,576,269
2025-2029	\$73,275,993	\$29,051,229	\$102,327,222
2024	\$11,606,903	\$4,857,717	\$16,464,620
2023	\$13,468,482	\$4,296,699	\$17,765,181
2022	\$12,818,260	\$4,003,774	\$16,822,033
2021	\$10,747,068	\$3,394,100	\$14,141,168
YEARS ENDING DECEMBER 31	PRINCIPAL	INTEREST	TOTAL

SECTION FIVE

DEPARTMENTAL INFORMATION



The District serves 26 Madison-area customer communities covering approximately 184 square miles and 380,000 people.

DEPARTMENT INFORMATION

The District is made up of five departments: District Leadership and Support, Engineering, Strategy, Operations and Maintenance and Ecosystem Services. Each department's section includes a purpose statement, budget summary (all totals are rounded to the nearest thousand), influence factors and major changes to the budget. Each section also includes goals.

TABLE 16 | Departmental Budget Summary

	2020 Adopted Budget	2021 Budget	2020 Change from 2021	% from 2020 Budget
District Leadership and Support	\$3,443,000	\$3,251,000	(192,000)	-5.6%
Engineering	\$1,034,000	\$990,000	(44,000)	-4.3%
Ecosystem Services	\$5,548,000	\$5,180,000	(368,000)	-6.6%
Operations and Maintenance	\$14,421,000	\$14,857,000	\$436,000	3.0%
Strategy	\$3,015,000	\$3,130,000	\$115,000	3.8%
Capital Projects Fund	\$915,000	\$1,486,000	\$571,000	62.4%
Debt Service	\$15,840,000	\$16,552,000	\$712,000	4.5%
TOTAL	\$44,216,000	\$45,446,000	\$1,230,000	2.8%
TOTAL WITHOUT CAPITAL PROJECTS FUND AND DEBT SERVICE	\$27,461,000	\$27,408,000	(53,000)	-0.2%
MAJOR EXPENSE CATEGORIES				
Asset Addition, Repair and Replacement	\$3,038,000	\$2,800,000	(238,000)	-7.8%
Personnel Services	\$12,883,000	\$13,145,000	\$262,000	2.0%
Contract Services	\$5,275,000	\$5,126,000	(149,000)	-2.8%
Energy, Materials and Supplies	\$6,265,000	\$6,336,000	\$71,000	1.1%
Transfer to Capital Projects Fund	\$915,000	\$1,486,000	\$571,000	62.4%
Transfer to Debt Service Fund	\$15,840,000	\$16,552,000	\$712,000	4.5%
TOTAL	\$44,216,000	\$45,445,000	\$1,229,000	2.8%

* Amounts for the totals may not agree precisely due to rounding.



The District participated in a local billboard company's campaign to honor essential workers during the Safer At Home order in early 2020.



District Leadership and Support Department



The purpose of the Department of District Leadership and Support is to provide Commission, human resources, communications, financial and procurement services to the organization so that the District develops and invests in coworkers, advances a policy-driven strategic approach to governance, deepens relationships with customers and the public, and manages funds in a fiscally responsible manner.

KEY RESULT INDICATORS

Key result indicators for the District Leadership and Support team highlight advances in employee health and engagement as well as efforts to deepen the District's external relationships.

INTERCULTURAL DEVELOPMENT INVENTORY

> 76% Percentage of employees completing inventory



2019 AUDIT RESULTS

2019 UNQUALIFIED

RECORDABLE INJURIES



BUDGET SUMMARY

2020 ADOPTED BUDGET | TOTAL: \$3,444,000

2021 BUDGET | TOTAL: \$3,250,000

	2020 Adoped Budget	2021 Budget	Change from 2020
PERSONNEL SERVICES	\$2,010,000	\$1,907,000	(\$103,000)
ASSET ADDITION, REPAIR AND REPLACEMENT	\$240,000	\$249,000	\$9,000
CONTRACT SERVICES	\$1,026,000	\$919,000	(\$107,000)
MATERIAL, SUPPLIES AND MISC.	\$168,000	\$175,000	\$7,000

- 5.6% change from 2020 budget (\$194,000)

Personnel Services:-5.1%Asset Addition, Repair
and Replacement:3.8%Contract Services:-10.4%Material, Supplies
& Misc.:4.2%

INFLUENCE FACTORS

- 1. The coronavirus pandemic has affected every aspect of the District. The department will continue to lead emergency management efforts and guide the District as it adapts to the pandemic's lasting impacts.
- 2. As critical infrastructure, it is imperative that we take proactive action to protect the plant, our people and our processes. Workplace violence, security threats and data breaches are becoming common in the United States which is decreasing employees' feeling of security at work.
- 3. Having a diverse and inclusive work environment is no longer a benefit, it is a necessity, and our workplace must evolve to support diversity in order to recruit, retain and engage employees at the highest level. A work environment where all people are valued, included and encouraged to provide different viewpoints is necessary for the organization to thrive.
- 4. Recruitment and retention of top talent for science, technology, engineering and mathematics (STEM) related jobs and the trades have become more competitive.
- 5. There is increasing utility industry awareness that leveraging water investments can create workforce opportunity and increase community economic development.
- 6. Collaboration with and outreach to our customer communities and the public are critical to help the District achieve permit compliance, address contaminants of emerging concern, and demonstrate the value of and investment in our work.
- 7. The District is continuing to grow, innovate and fill vacancies, which requires us to invest more in recruitment, training and development. Human resources continues to expand the scope and support within the organization to include diversity, equity and inclusion efforts, enhanced leadership development, and leading the District's coronavirus pandemic response.
- 8. Projections for increased capital and operating obligations, along with the ongoing pandemic, will exert pressure on District finances, requiring increased focus on District revenues and expenditures.
- 9. The upcoming change in the District's work and asset management software present the requirement and the opportunity to develop new financial systems.

DEPARTMENT UPDATE

The Department of District Leadership and Support works actively to support effective Commission and organizational governance, corporate strategic communications, employee development and safety, and budget management and accountability.

The department is made up of 14 full-time employees: chief engineer and director; assistant chief engineer; comptroller/budget manager; two staff accountants; one accounting assistant; procurement agent; purchasing and inventory assistant; human resources manager; health, safety and security leader; communications and public affairs manager; executive coordinator; program resource associate; and a program resource assistant.

MAJOR CHANGES TO THE BUDGET

No substantive changes.

KEY RESULT INITIATIVES

In addition to its many ongoing duties, the following initiatives highlight some of the transformative efforts of the department. They align with the five pillars described in the overview and strategic planning section.

1. ENCOURAGE ELC ENGAGEMENT IN DISTRICT DECISION MAKING WITHIN THE SCOPE OF THE ELC'S CHARGE AND EXPLORE OTHER OPPORTUNITIES FOR ENGAGEMENT.

> *Background:* The Employee Leadership Council and the Executive Team have established three priorities to focus on: communication, roles and an employee survey. Teams have been organized to develop these plans.

Goal: Implement key actions in the plans.

2. EQUITY

Background: The District faces increasing financial pressure from a combination of aging infrastructure, increasing regulatory requirements and the end of federal funding. In addition, the cost of water utility service including District charges — is unaffordable for some in our community. The Commission received a report from staff of potential affordability programs and their feasibility, and the issue was turned over to the Commission for guidance. During strategic planning in 2019, the Commission established an ideal that "we deliver clean and safe water in an affordable and equitable manner that benefits everyone." In addition, the Commission adopted outcomes policy O-2C, which sets the goal that "charges for services are justified, adequate, equitable and predictable." The District's capital asset management and investment work is responsible for the first two factors, justification and adequacy of charges. Equity and predictability are joint concerns with the District and its customer communities.

Goal: Engage customer communities on concerns and options for equitability and predictability of District service charges through the periodic customer community meeting process.

3. INCLUSION & DIVERSITY

Background: Having a diverse and inclusive work environment is no longer a benefit, it is a necessity. The District's customer communities are diverse, and the District's working environment must evolve to support diversity in order to recruit, retain and engage employees at the highest level. We will be continuing our partnership with the YWCA as well.

Goal: The District will be completing a handbook and policy update with an inclusion and diversity lens, using an equity tool to complete that work. An accessibility audit will examine our physical environment and our technology to identify our ability to meet the needs of diverse employees and visitors.

4. CAMPUS SECURITY

Background: The Nine Springs campus has limited security protocols and infrastructure in place. With workplace violence and security threats becoming more common, the District has initiated a process to take a comprehensive look at security, with a focus on employee safety and network security.

Goal: Complete the access control at plant

gates and buildings on the plant grounds in conjunction with the Operations Building first-floor remodel. Implement visitor and security policies by the end of the year. Continue to utilize new technologies and build relationships with community agencies to improve our campus security.

5. COMMUNICATION

Background: In 2020, an external strategic communications and marketing plan was developed for the District. Based in the District's strategic pillars and built on a goal-oriented model, the plan includes an array of actions to engage the public and our customers, increase awareness and demonstrate the value of our work, show the importance of long-term investment in wastewater infrastructure and initiatives, and more.

Goal: Redesign www.madsewer.org, the District's public-facing website, which is a critical piece of the plan. Continue executing the District's Marketing and Communications Plan.

6. BUDGET AND ACCOUNTING PROCESS IMPROVEMENTS

Background: The District is using older budget development, accounting and procurement processes and technologies. The budget development process and software were developed in 2000, and the existing procurement code was last revised in 1999. Since that time, new methods and technologies have emerged. The District wants to make process improvements, create efficiencies, leverage automation and upgrade technologies.

Goal: Review current budget development, accounting processes and related software and make recommendations. Implement the new procurement code revised in 2020 and train staff. This will be done with existing resources in 2021.



Ecosystem Services Department

18_{FTES}

The purpose of the Ecosystem Services department is to advance initiatives and provide support services so that treatment plant operating systems can be optimized, demand for traditional wastewater treatment infrastructure and collection services can be reduced, resources can be recovered and environmental quality can be enhanced.

KEY RESULT INDICATORS

WPDES PERMIT COMPLIANCE

2019 99.954% COMPLIANCE

Percentage based on NACWA scoring for peak performance award

NATIONAL ASSOCIATION OF CLEAN WATER AGENCIES' PEAK PERFORMANCE AWARD

Number



IN-HOUSE LABORATORY ANALYSES



The number of analyses vary annually as a result of research projects that may require additional analysis.

BUDGET SUMMARY

2020 ADOPTED BUDGET | TOTAL: \$5,549,000

2021 BUDGET | TOTAL: \$5,181,000

		I	I
	2020 Adopted Budget	2021 Budget	Change from 2020
PERSONNEL SERVICES	\$2,137,000	\$2,344,000	\$207,000
ASSET ADDITION, REPAIR AND REPLACEMENT	\$342,000	\$342,000	-
CONTRACT SERVICES	\$2,518,000	\$1,943,000	(\$575,000)
MATERIAL, SUPPLIES AND MISC.	\$552,000	552,000	-

-6.6% change from 2020 budget (\$368,000)

Personnel Services:9.7%Asset Addition, Repair
and Replacement:0.0%Contract Services:-22.8%Material, Supplies
& Misc.:0.0%

100 PROFESSIONALS TRAINED

28 TRAINED AND LISTED AS EXPERTS ON SALT SAVERS WEBSITE A digital tool was developed to assist trained professionals in the assessment and/or optimization of water softeners. The Salt Savers Pilot Program was launched in late 2019 and will continue through District Innovation Grants with the Town of Dunn and Village of McFarland in 2020.



Yahara WINS partners kept over 50,000 pounds of phosphorus on the land in 2019, nearly doubling the projected reduction for the year in the adaptive management plan. Practices that led to this reduction included cover crops, grassed waterways, low-disturbance manure injection, and novel approaches like manure composting and grazing initiatives.

INFLUENCE FACTORS

- 1. Increasing community awareness about the impacts of excess nutrients and other emerging contaminants on surface water is creating rising expectations for effective local action around source reduction measures and pollution prevention as ways to improve influent and effluent water quality, as well as biosolids quality.
- 2. The projected scarcity for mined phosphorus will create more volatility in prices and more demand for dependable and affordable nutrient-rich byproducts, as well as increased expectations for employing the best science and technology to ensure sustainable use and application of fertilizer.
- 3. Meeting regulatory obligations through traditional infrastructure solutions is becoming less cost effective, as those solutions are limited to improving water quality only after it reaches the plant and can be disproportionately expensive relative to environmental gains.
- 4. Adaptive management, as well as regulatory focus related to nutrients and contaminants of emerging concern, is creating additional analytical sampling, monitoring, and testing of the collection system, plant processes, receiving streams and in the watershed.
- 5. Rising desire from industrial users, and the communities they are located in, to proactively find sourcereduction solutions that involve collaborative permitting, best-management practices and examination of local limits

DEPARTMENT UPDATE

The Ecosystem Services Department is aligned based on four program areas: resource recovery; pollution prevention; laboratory services; and pretreatment and waste acceptance programs. Within these four areas are 18 full-time employees: director of Ecosystem Services, pretreatment coordinator, watershed programs coordinator, pollution prevention manager, two pollution prevention specialists, lab manager, six chemists, resource recovery manager, Metrogro operations supervisor, biosolids program coordinator, and two mechanics.

MAJOR CHANGES TO THE BUDGET

Market and progression increases for employees, new positions and changes in individuals in positions, and increased health insurance and fringe benefit costs are the primary reasons for changes to personnel services.

An investment of \$100,000 will be used to characterize PFAS compounds in the District's influent, effluent and biosolids, as well as polymer and struvite. Additional characterization will be done to help isolate and identify potential PFAS sources of significance to the plant, including transformation points within the plant's processes and the collection system.

An investment of \$100,000 will be used to inform the District of the human recreational risk associated with not disinfecting our effluent yearround to help clarify the disinfection standards necessary in the District's recently reissued WPDES permit.

KEY RESULT INITIATIVES

The following initiatives highlight some of the department's efforts. The initiatives align with the five pillars described in the overview and strategic planning section.

1. PHOSPHORUS MANAGEMENT FOR BADGER MILL CREEK

Background: Badger Mill Creek is an effluent dominated stream downstream of one of the District's two discharge locations. The Nine Springs Wastewater Treatment Plant produces a high-quality effluent with respect to phosphorus, but the effluent phosphorus concentration exceeds applicable water quality criterion. District staff are studying a variety of potential compliance options including adaptive management, phosphorus trading, treatment, and obtaining a variance or a site-specific criterion.

Goal: The Commission will be presented with each of the compliance options in the form of study sessions, and the options will be used for a triple bottom line analysis to inform the draft preliminary alternatives plan for Commission approval.

2. BIOSOLIDS RECYCLING PROGRAM MANAGEMENT

Background: The District currently recycles biosolids through the Metrogro program. With every Metrogro application, nutrients, including phosphorus, are applied to area farm fields as fertilizer. More intense seasonal storms, as a result of climate change, are making consistent field application of fertilizer challenging. Phosphorus is needed for crop production, but how it is applied is equally important – phosphorus must be applied where the crops can use it and it also must be kept out of area surface waters.

Goal: Strengthen and diversify the biosolids management program in order to be more resilient and raise community awareness of the benefits and safety of using recycled biosolids. 2021 will begin phased planning and implementation of recommendations from a 2020 biosolids management study.

3. REDUCE CHLORIDE TO MEET REGULATORY REQUIREMENTS

Background: Over the past decade, the District has worked to reduce sources of chloride received at the Nine Springs Wastewater Treatment Plant, with a goal of meeting water quality standards and protecting fresh water. The District currently has a chloride variance as part of its discharge permit to achieve the best possible outcomes for the environment and customer communities. The District has made a preliminary determination that a variance with source reduction is the best compliance option to protect all local waters from chloride pollution. *Goal:* Focus chloride reduction strategies on high-impact policy changes that result in large-scale reductions, as well as continued emphasis on large-scale commercial reductions. The District will also employ strategies that target residential interventions to reduce the impact of residential water softeners to the chloride load passing through the plant.



8_{FTES}

The purpose of the Engineering team is to provide design and construction administration services to other departments and advisory services to District teams so that safe, reliable and costeffective infrastructure is built.

KEY RESULT INDICATORS

CAPITAL PROJECTS MANAGEMENT

PROJECTS ON TARGET

- Liquid Processing Improvements-Phase 1
- Northeast Interceptor Truax Extension Relief
- Headworks Flow Metering Improvements
- Pumping Station 17 Forcemain Force Main Relief- Phase 1
- Pumping Stations 13 & 14 Rehabilitation
- 2020 Interceptor Rehabilitation
- Northeast Interceptor Joint Grouting
- Nine Springs Valley Interceptor McKee to Dunn's Marsh Improvements
- 🗹 West Interceptor Shorewood Relief

PROJECTS UNDER ADDITIONAL MONITORING

- Grass Lake Dike Restoration (Schedule)
- Operations Building First Floor Remodel
- (Budget Increase)
- Engine Generator and Control Panel Replacements (Schedule)

PROJECTS REQUIRING COURSE CORRECTION NONE

BUDGET SUMMARY

2020 ADOPTED BUDGET | TOTAL: \$1,034,000

2021 BUDGET | TOTAL: \$990,000

	2020 Adopted Budget	2021 Budget	Change from 2020
PERSONNEL SERVICES	\$645,000	\$619,000	(\$26,000)
ASSET ADDITION, REPAIR AND REPLACEMENT	\$184,000	\$176,000	(\$8,000)
CONTRACT SERVICES	\$201,000	\$191,000	(\$10,000)
MATERIAL, SUPPLIES AND MISC.	\$4,000	\$4,000	-

-4.3% change from 2020 budget (\$44,000)

Personnel Services:-4.0%Asset Addition, Repair
and Replacement:-4.3%Contract Services:-5.0%Material, Supplies
& Misc.:0.0%

INFLUENCE FACTORS

- During the coronavirus pandemic in 2020, the economy slowed and the demand for construction services declined. This resulted in an increased bidding climate that was favorable to the District. Whether this continues in 2021 remains to be seen, but if the pandemic eases and the economy improves, the competition for construction services may increase. This, along with a backlog of work resulting from the pandemic, could result in increased project costs.
- 2. Since the start of the pandemic, delays have been observed in material deliveries due to a slowdown in manufacturing. Whether these continue or decrease will depend on the recovery from the pandemic and may impact capital improvement project schedules.
- 3. With the average age of the District's infrastructure at approximately 40 years old and continuing to age, many District facilities are reaching the end of their useful life. This will require increased investments for future capital improvement projects and an increase in capital budgets. How these are funded (loans versus cash, etc.) will need to be evaluated.
- 4. The increase in needed capital improvements, both at the treatment plant and in the collection system, will continue to increase the number of projects the Engineering Department is responsible to plan, design and construct. This increase in capital improvement projects will stress the department and may require additional staff in future years.

DEPARTMENT UPDATE

In 2020, the Engineering Department continued to operate with eight full-time employees. The department consists of the director, four civil engineers, one collection system engineer, one electrical engineer and one electrical construction manager. The team's main purpose is to plan, design, construct and commission new capital improvements. These projects range in value from less than \$100,000 to \$40 million or more. No new full-time employees are proposed for 2021.

MAJOR CHANGES TO THE BUDGET

The 2021 Engineering Department budget includes a similar split of salaries between the general operating accounts and the capital accounts. This is based on recent trends and projected workload. The budget also includes market pay adjustments and progression increases for eligible employees, as well as health insurance and fringe benefits cost changes.

The proposed 2021 budget contains an increase (from \$50,000 to \$100,000) for professional services required for the development and implementation of an inflow and infiltration (I/I) reduction program.

KEY RESULT INITIATIVES

The following initiatives highlight some of the department's efforts. The initiatives align with the five pillars described in the overview and strategic planning section.

1. LIQUID PROCESSING FACILITY IMPROVEMENTS

Background: The 2016 Liquid Processing Facility Plan, completed in late 2017, recommended improvements to the liquid processing facilities at the Nine Springs Wastewater Treatment Plant. This was to be done in phases over a 10-plus year period, with phase 1 improvements to be implemented in the 2018-2022 timeframe. These included the following:

- Peak flow management improvements
- Ultraviolet disinfection system replacement
- Process control system upgrades
- Electrical substation improvements
- East-side blower control replacement
- Primary tanks 1 and 2 rehabilitation
- Primary influent pipeline rehabilitation
- Headworks Building flow metering improvements

Design was completed in 2019. Construction began in 2020 and will extend into 2021.

Goal: Begin construction of the Liquid Processing Facility Improvements in 2020, with completion in 2021. Complete the project on time and within budget.

2. TREATMENT PLANT AND INTERCEPTOR/ PUMPING STATION IMPROVEMENTS

Background: Approximately every 10 years the District prepares and updates its collection system facilities plan. Recommendations from this plan, including improvements to interceptors, force mains and pumping stations, are included in the District's annual six-year Capital Improvements Plan (CIP). The District also completed a Treatment Plant Asset Management Plan, which incorporates recommended Plant improvements into the CIP. In 2020-2021, these include the following projects:

- Interceptor rehabilitation
- Improvements to the Nine Springs Valley Interceptor from Dunn's Marsh to McKee Road
- Operations Building first-floor remodel
- West Interceptor Shorewood Relief Phase 1 (from Whitney Way to Shorewood Boulevard)
- Grass Lake dike stabilization
- Pumping Station 13 and 14 rehabilitation
- Northeast Interceptor-Truax Extension Relief
- Pumping Station 17 force main relief-phase 1
- Rehabilitation of Pumping Station 4
- Headworks flow metering improvements
- Rehabilitation of the NEI Truax Extension

Goal: Implement projects identified in the CIP on time and within budget

3. FORCE MAIN INSPECTION

Background: Due to the criticality of force mains and lack of knowledge regarding their condition, the District embarked on a systemwide Force Main Condition Assessment Plan in 2017. The plan was completed in 2018, and implementation began in 2019. Force main inspection work in 2019 included mapping and evaluating Pumping Station 6 and Pumping Station 7 force mains using the Smartball® Platform. Force main inspections will continue in 2020 and beyond, with 2020-2021 work focusing on the Pumping Station 16 force main.

Goal: Continue to implement and improve the force main inspection program in 2020-2021, including incorporating new technologies available, and continue to effectively assess the condition of District force mains. As noted above, work in 2020-2021 will focus on the Pumping Station 16 force main.

4. INFLOW AND INFILTRATION (I/I) REDUCTION Background: The August 2018 storm event was a reminder of how vulnerable the District's infrastructure is to extreme weather. In 2019, the District's customer communities indicated the reduction of I/I as a priority. This priority was confirmed by the Commission during strategic planning, including an emphasis on overall collection system reliability to respond to climate change. A firm was retained to begin the study process, evaluate options and recommend next steps for developing an I/I reduction program.

Goal: The I/I program will continue to develop throughout 2020-2021, with the following goals:

• Evaluate options for the District's role in implementing the program.

- Identify changes to the District's sewer use ordinance that would be required, and any other legal implications with national and state laws that would need to be addressed to implement a private property I/I program.
- Assess financial incentives and funding options for implementing the program and describe how each option specifically impacts the District and its customer communities.
- Explore strategies for public input, education and establishing acceptance from customer communities.

5. COLLECTION SYSTEM RELIABILITY AND OPERATIONAL CONTINUITY

Background: Continuing to protect public health and the environment regardless of what situation is thrown our way is a public expectation. The District has a good track record of this, but outside forces such as a changing climate and extreme weather are making operational continuity more and more difficult. In addition to this, the reliability of the power distribution system is decreasing due to aging infrastructure, increased frequency of intense storms and other factors. An extended loss of power at any of the District's pumping stations quickly becomes an emergency and could result in overflows.

Goal: To ensure the resiliency of our facilities and continued operation of both the pumping stations and the treatment plant during power outages, operational continuity will be a focus in coming years. This will involve evaluating and prioritizing which District pumping stations are best served by the installation of a permanent on-site generator. These generators will be installed as pumping stations are rehabilitated and as budget permits.



Strategy Department



The Strategy Department is responsible for the strategic direction of the District as a whole. The department has four responsibilities with strategic significance: strategic planning, policy and performance improvement; information technology; investment, financing and revenue planning; and capital improvements planning and oversight.

LIMIT AT RISK ASSETS



Zone 5 is assets with the highest combined likelihood of failure and consequence of failure. They need to be addressed within approximately five years. Target: No more than 5% of total number of treatment plant assets in zone 5.

MAXIMIZE NETWORK UPTIME



Time when the District's computer networks are available, excluding planned maintenance outages. Target: at least 99%.

BUDGET SUMMARY

2020 ADOPTED BUDGET | TOTAL: \$3,930,000

2021 BUDGET | TOTAL: \$4,615,000

	1			I
	20)20 Adopted Budget	2021 Budget	Change from 2020
PERSONNEL SERVICES	\$	1,850,000	\$1,967,000	\$117,000
ASSET ADDITION, REPA	R	\$431,000	\$299,000	(\$132,000)
CONTRACT SERVICES		\$562,000	\$691,000	\$129,000
MATERIAL, SUPPLIES AN	ND MISC.	\$172,000	\$172,000	-
TRANSFER TO CAPITAL P	ROJECTS	\$915,000	\$1,486,000	\$571,000

17% change from **2020** budget \$685,000

Personnel Services:	6.3%
Asset Addition, Rep and Replacement:	air -30.6%
Contract Services:	23%
Material, Supplies & Misc.:	0.0%
Transfer to Capital Projects:	62.4%

INFLUENCE FACTORS

- 1. Planning uncertainty. The District faces greater uncertainty in the 20 to 50-year planning horizon. This is due to the District's aging infrastructure, regulatory requirements that have the potential to significantly increase District spending, climate uncertainty, and other factors.
- 2. Infrastructure. The District's physical infrastructure is no longer new (and will never again be wholly new). To limit risk and cost requires a modern approach of asset management and reliability-centered maintenance, integrated into District work processes and systems.
- 3. Information technology. Information technology (IT) has risen in strategic importance at the District and in many other organizations. IT is integral to District business practices and heavily influences the effectiveness and efficiency of those practices. Furthermore, trends in the industry have increased opportunities, such as cloud computing and remote work, and threats, like ransomware and other attacks.
- 4. Financial performance. Customer communities and the Commission are increasingly interested in the financial performance of the District. Areas include value obtained for infrastructure investments, effectiveness of the District's capital financing strategy (use of debt and cash), and methods of obtaining revenue.
- 5. Internal processes. The District has several outdated internal processes for planning, budgeting, maintenance management, and related areas. These processes are hindering the District's ability to modernize its approaches to the previous factors and require significant attention.

DEPARTMENT UPDATE

The department was formed in 2016 by combining positions from the Engineering Department and the Operations and Maintenance Department. In late 2018, the information technology group joined the department. This improved alignment between IT and certain active process improvement efforts; integrated IT into strategic planning; and leveraged expertise of IT staff in flexible agile development and similar project management and program improvement methods.

At the end of 2020, the assistant chief engineer and director position will fall vacant through retirement. In 2021, that position will be transferred to the department and reclassified. It will strengthen the department's ability to work on investment planning, long-term financing, and revenue design, as well as general policy and performance work.

Furthermore, the department director position will be reclassified to senior director for strategy. In addition to leading the department, the senior director will support District strategic planning, policy development and performance improvements, and will provide continuity to the Commission in the event the chief engineer and director is unavailable.

MAJOR CHANGES TO THE BUDGET

The Strategy Department has no new spending initiatives for 2021.

Changes in the department's personnel services budget are due to the transfer and reclassification of the vacant assistant chief engineer and director position (described above); refilling, at a different salary, the network administrator position that fell vacant in 2020; reallocation of asset program staff time to the operating fund from the capital fund; and District-wide salary and benefits changes.

The budget reflects a transfer from the operating fund to the capital fund of \$1,486,000, in accordance with the 2021 Capital Improvements Plan. This is an inter-fund transfer, not department spending. Changes in non-personnel, non-transfer categories reflect adjustments in IT spending plans. Those changes are offsetting, except for a small reduction of miscellaneous spending. Excluding the transfer, the 2021 budget exceeds the 2020 adopted budget by \$114,000.

KEY RESULT INITIATIVES

1. INVESTMENT PLANNING, FINANCING AND REVENUE

Background: The District has a formal policy statement on strategic financial planning which calls for the District to develop "an overall strategy for continued financial viability and integrity." This work involves three elements: properly planning and justifying capital investments; appropriately financing spending through debt, balance management and other tools; and maintaining a revenue structure that generates needed funds equitably. The District is improving its performance in each area, beginning with financing in 2019. With the changes described above for 2021, the department is increasing its efforts in this area.

Goal: Hire an employee with expertise in this area; strengthen the department's overall team capacity; assess current policies and procedures; and develop a plan for further improvements.

2. **BUDGET. ACCOUNTING AND MAINTENANCE** MANAGEMENT PROCESSES AND SYSTEMS Background: The District has several business processes in need of improvement in the areas of budget, accounting and maintenance management. These processes have in common their reliance on the Oracle WAM v. 1.9 software. Prompted by the fact that Oracle is gradually ending support for WAM v. 1.9, the District is reviewing these business processes and preparing to replace WAM v. 1.9 with systems that better suit District needs. Maintenance processes are currently being improved through the reliability centered maintenance efforts led by the maintenance workgroup and staff in the Strategy Department. Budget and accounting processes will be addressed in 2021. When

these processes have been adequately reviewed and modernized, the District will shift to the software phase of the work. This work is funded as a capital project, first authorized in the 2020 Capital Improvements Plan.

Goal: Review and redesign business processes in budget and accounting. Continue maintenance process improvements. Determine the point of readiness for beginning the software phase. Plan and organize the software portion of the project.

3. NETWORK RESILIENCY AND SECURITY

Background: As part of its strategic technology plan, the IT workgroup is leading efforts to improve network resiliency and security and support new needs for cloud computing and remote work. Focus areas include: (a) redundancy for essential equipment like data storage, backup appliances and the process control network; (b) use of cloud services for additional redundancy and resiliency; (c) deployment of remote work tools, particularly the Microsoft Office 365 suite; (d) user training and guidelines such as password use; and (e) IT disaster recovery planning.

Goal: Establish and maintain appropriate plans in the listed focus areas and make progress according to those plans through 2021.

4. COLLECTION SYSTEM FACILITIES PLAN

Background: The District's collection system facilities plan identifies needed investments in the collection system. It addresses increasing system capacity, replacement of aging assets and strategic issues like power reliability and infiltration and inflow. The plan is the counterpart to the plant asset management plan. The collection system facilities plan is updated periodically as needed and is augmented by other studies. The most recent update was in 2009. Updating the plan is a several-year effort that includes study of anticipated regional growth and wastewater flows, evaluation of collection system assets and supplementary studies. Work on the current update began in 2018 with a study of future collection system flows, performed by the Capital Area Regional Planning Commission, for the District.

Goal: Substantially complete the collection system facilities plan.



Operations and Maintenance Department



The employees of the Operations and Maintenance department protect human health and the environment by ensuring that all wastewater generated in the District's service area is safely conveyed to the Nine Springs Wastewater Treatment Plant where they recover the resources of clean water, biosolids, biogas and phosphorus fertilizer.

BUDGET SUMMARY

2020 BUDGET | TOTAL: \$14,421,000

2021 BUDGET | TOTAL: \$14,857,000

	2020 Adopted Budget	2021 Budget	Change from 2020
PERSONNEL SERVICES	\$6,241,000	\$6,308,000	\$67,000
ASSET ADDITION, REPAIR AND REPLACEMENT	\$1,842,000	\$1,735,000	(\$107,000)
ENERGY	\$3,677,000	\$3,777,000	\$100,000
CONTRACT SERVICES	\$969,000	\$1,382,000	\$413,000
MATERIAL, SUPPLIES AND MISC.	\$1,692,000	\$1,655,000	(\$37,000)

3.0% change from 2020 budget + \$436,000

Personnel Services:	1.1%
Asset Addition, Repa	air
and Replacement:	-5.8%
Energy:	2.7%
Contract Services	42.6%
Material, Supplies	
& Misc.:	-2.2%

KEY RESULT INDICATORS



INFLUENCE FACTORS

The District is beginning to implement the early stages of an asset management plan and experiencing an increase in major maintenance work related to large equipment and District assets. These projects are one-year projects with a specific purpose to keep District operations running reliably while addressing aging infrastructure. The continued funding will be used to complete the highest priority projects identified by District staff.

The District is beginning a new term of our agreement with its phosphorous recovery partner. The current economic downturn of commodity pricing and increased District costs associated with transporting and processing material are influencing the agreement and planned future costs for the process.

DEPARTMENT UPDATE

The Operations and Maintenance Department includes 57 employees who serve the District by operating and maintaining District assets. The operations section is finishing a comprehensive energy management study; researching low phosphorous treatment alternatives to meet new regulatory limits; implementing an upgrade to treatment plant logic controllers and communications; and providing support for the ongoing liquid process improvement project while maintaining a high level of service for the plant process and its equipment. The maintenance section activities focus on conducting preventive and reactive maintenance activities at the treatment plant, pumping stations and the collection system, along with monitoring and sampling for customer billing. The department has been significantly involved in asset management and Reliability Centered Maintenance (RCM) these activities, along with involvement in other treatment plant and collection system projects, will continue in 2021.

MAJOR CHANGES TO THE BUDGET

An increase of \$100,000 or 2.7% is included for energy use and provider supplied redundancy.

A total increase of \$270,000 or 6.0% is included for asset repair and replacement, contract services, and materials and supplies. This increase is for large mechanical repair projects to extend the life of existing equipment, and increased costs for process chemicals.

KEY RESULT INITIATIVES

In addition to its many ongoing duties, the following initiatives highlight some of the efforts of the department. They align with the five pillars described in the overview and strategic planning section.

1. COMPREHENSIVE ENERGY MANAGEMENT MASTER PLAN

Background: The District's commitment to sustainability extends to the efficiency, consumption and sourcing of energy needed to ensure reliable operations and meet customer expectations for service at an acceptable cost. As plant assets age and require replacement, a comprehensive energy management master plan will inform equipment purchasing and energy-related contract decisions.

Goal: Completion of the Comprehensive Energy Management Master Plan in 2021 with a final presentation to the Commission. Presentation to detail the District's steps forward with planning of projects related to energy.

2. ASSET MANAGEMENT MAINTENANCE PERFORMANCE

Background: The District is developing a comprehensive asset management program. Reliability Centered Maintenance (RCM) is one of the keys to asset management and is being developed along with the plant asset management plan and the new computerized maintenance management system. Effective maintenance requires careful balancing of unplanned maintenance and planned maintenance. If maintenance is too reactive, too many assets will reach failure, raising costs and increasing harm to other parts of the operation. If too much maintenance is planned, staff will waste time and money on assets that do not require attention or for which failure has little consequence. Achieving the proper balance requires accurate data and relevant analysis of asset information and maintenance practices. This is enabled by a properly configured computerized maintenance management system. There are many factors involved, including

asset condition, consequence of failure, maintenance history, failure modes, and staff time per asset and spending per asset. For daily use by maintenance supervisors and staff, information must be summarized in key performance indicators. Finally, maintenance supervisors and staff must establish and follow proper procedures, including appropriate work planning.

Goal: In 2021, the Operations and Maintenance Department will continue to implement RCM recommendations including:

Further implementation of the concepts that make up the IPSECA (Identify, Plan, Schedule, Execute, Close, and Analyze) process for completing work. Focus will be placed on developing workflows and strategies for identifying, planning and scheduling work.

Development of asset data for streamlining work order planning, purchasing and inventory.



Monitoring services crew members enter a manhole to collect flow data and samples.

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APPENDICES

APPENDIX A: PROJECT SUMMARIES

In this section, you will find project summaries. These summaries are intended to give a broad overview of the project, including general location, scope of work, history, schedule and a summary of cost. Total project costs are adjusted for inflation on an annual basis, unless otherwise noted.

On our District website (madsewer.org) underneath Planning > Budget & Finance, you will find more detailed information in the project business cases. Project business cases provide justification for each project by including more detail than the project summary sheet and also incorporates additional information such as an analysis of alternatives, a lifecycle cost estimate and an allocation of annual costs.

Project Title

Please note that project summaries and business cases are provided only for those projects that are anticipated to occur within the planning horizon of this document (2021-2026).

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Activated Sludge Projects



START DATE: 2022 COMPLETION DATE: 2027

CIP ID#

PROJECT TYPE	Plant Improvements – Activated Sludge Process
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project includes a series of improvements to the activated sludge process that will improve energy efficiency and system reliability and also relieve existing maintenance issues. This project was included in the 2016 Liquid Processing Facilities Plan. It is anticipated that the project will be funded through the Clean Water Fund program.
BACKGROUND	The treatment plant's east and west blower complexes supply air to the east and west plants, respectively. Currently, they are separate systems that are not optimized in regard to energy use. This project includes provisions to connect the east and west blower systems to allow for more efficient use of the existing blowers and to provide improved redundancy. The project also allows for the phased replacement of all three west blowers so that the system operates more efficiently.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) T \$0 \$

TOTAL COST \$11,151,000



START DATE:

COMPLETION DATE:

2022

2024

Nitrite Shunt - Low DO Pilot (Full Scale Pilot)



PROJECT TYPE Plant Improvements – Aeration System Nine Springs Wastewater Treatment Plant LOCATION DESCRIPTION The purpose of this project is to full-scale pilot test the nitrite shunt or low dissolved oxygen (DO) biological nutrient removal process to confirm process design criteria, impacts to sludge quality and operational requirements for potential future wholeplant implementation. It is anticipated that costs associated with the pilot project will be funded through capital fund reserves. BACKGROUND The existing activated sludge facilities operate an enhanced biological phosphorus removal process. The process relies on anaerobic and aerobic zones to remove phosphorus but do not provide significant total nitrogen removal. As part of the 2016 Liquid Processing Facilities Plan, changes to the existing processes were evaluated, including processes that could result in more effective nutrient removal while using less energy and potentially positioning the District for future total nitrogen regulations. Bench-scale testing of the process is currently underway. If bench-scale testing is successful, full-scale pilot testing would be conducted before implementing the changes plant wide.



Septage Receiving Modifications



START DATE: 2021 COMPLETION DATE: 2024

PROJECT TYPE	Plant Improvements – Septage Receiving
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project will correct problems encountered with operation of the existing septage receiving facility. Work will include reconfiguration of the existing facility to allow improved traffic flow, better screening equipment upstream of the headworks facility and implementation of more security and tracking measures to reduce the potential for unauthorized discharges. This project was included in the 2016 Liquid Processing Facilities Plan. It is anticipated that project costs will be funded through the Clean Water Fund program.
BACKGROUND	The septage receiving facility was constructed as part of the 10th Addition to the treatment plant and has experienced a number of operational difficulties since it was placed into operation. Trucks discharging at the facility have to back up to empty their contents, resulting in congestion during periods of heavy traffic and icy and unsafe conditions in winter. Further, sand and grit accumulate in the discharge trough, which requires manual cleaning by District staff on a frequent basis. Improvements will allow for one-way traffic for haulers and an improved screening system to keep unwanted material out of the screening channel.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TO \$10,000 \$1

TOTAL COST \$ 3,502,000



Headworks Screening



START DATE: 2021 COMPLETION DATE: 2024

PROJECT TYPE	Plant Improvements – Screening at Headworks Facility
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project includes the replacement of the fine screening equipment and related screenings handling system at the headworks facility. One possible solution is to replace the existing band screens with new step screens and wash presses to dewater the captured material. This project was included in the 2016 Liquid Processing Facilities Plan. It is anticipated that the project will be funded through the Clean Water Fund program.
BACKGROUND	Three fine screening units were installed at the headworks facility as part of the 10th Addition to the treatment plant. The screens have openings of one- quarter inch and are designed to remove rags and other large material from the raw wastewater to keep it out of the biosolids and protect downstream process equipment. Several problems have been experienced with the existing screening system, particularly with the processing of the material that is captured on the screens. The existing screenings handling system requires frequent operator attention to keep it running. Furthermore, the equipment for the screenings handling system is prone to plugging and wear and tear, and it is difficult to obtain replacement parts in a cost-effective and timely manner.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$10,000	\$4,109,000

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Plant Aeration System Projects (Nitrite Shunt/Low DO)





START DATE: 2025 COMPLETION DATE: 2027

PROJECT TYPE	Plant Improvements – Aeration Systems
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project involves implementation of the nitrite shunt or low dissolved oxygen (DO) biological nutrient removal process on a plant-wide basis. This project assumes successful bench-scale and pilot testing of the process in prior years (see related project ID A01.2). It is anticipated that costs associated with the project will be funded through the Clean Water Fund program.
BACKGROUND	The existing activated sludge facilities operate an enhanced biological phosphorus removal process. The process relies on anaerobic and aerobic zones to remove phosphorus, but does not provide significant total nitrogen removal. As part of the 2016 Liquid Processing Facilities Plan, changes to the existing processes were evaluated, including processes that could result in more effective nutrient removal while using less energy and potentially positioning the District for future total nitrogen regulations. Bench-scale testing of the process is currently underway. If bench-scale testing and subsequent full-scale pilot testing (ID A01.2) is deemed successful, this project would implement the changes plant-wide.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) \$0

TOTAL COST \$24,246,000

East and West Blower Switchgear



FINANCIAL ANALYSIS

CIP ID#

A01.6

2021 EXPENDITURE	(\$2021)
\$0	

TOTAL COST \$2,624,000



Final Clarifier 4, 5 and 6 Effluent Launder Trough Replacement



START DATE: 2020 COMPLETION DATE: 2021

PROJECT TYPE	Plant Improvements – Final Clarifier
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project will replace the effluent launder troughs on final clarifiers four through six. The existing steel troughs have corroded to the point where they are unsafe and may interfere with system performance. It is anticipated that this project will be funded with reserves from the capital fund.
BACKGROUND	In the fall of 2017, District staff discovered numerous holes in the effluent launder trough of final clarifier six. It is thought that these holes are due to corrosion. Similar holes were found in the launder trough for final clarifier five in the spring of 2018. The troughs must be structurally sound, as they need to be able to safely support a worker while performing maintenance on the clarifier. Furthermore, as the troughs continue to corrode, the holes in the steel will enlarge and more mixed liquor will combine with the effluent, compromising treatment efficiency. While there is no visible damage to final clarifier four at present, it was installed at the same time as the other two clarifiers and operates under similar conditions. It is proposed that the effluent launder troughs on all three final clarifiers be replaced as part of one project in 2020-21.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) \$219,000 TOTAL COST \$239,000



Resource Recovery Facility



START DATE: 2019 COMPLETION DATE: 2023

PROJECT TYPE	Plant Improvements – Biosolids End Use
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The primary purpose of this project is to evaluate the best means for managing the District's biosolids using life-cycle cost principles. This study will include analysis of the District's existing liquid program (Metrogro) and other alternatives such as composting. The results of the planning phase may lead to the design and construction of future facilities that are needed to store, mix and distribute the biosolids, depending on the recommended alternative. The construction of future facilities will only be undertaken if a market for a Class A biosolids product exists and can be produced in a competitive manner. The study, planning and design costs included in this project will be paid for from cash reserves in the capital fund, with possible reimbursement from the Clean Water Fund if new infrastructure is constructed.
BACKGROUND	The District has been pursuing development of a Class A biosolids product to diversify its biosolids reuse program since the early 2000s. Early research focused on adding amendments such as sand and sawdust to the dewatered biosolids. The cost of these amendments was high and market interest was low. Current focus has shifted to investigate a composted or air-dried product. Composting significantly reduces the volume of the material, creates fewer odors than mixing biosolids with amendments, and creates a product that would be compatible with uses within urban and rural markets. Small-scale composting trials were successfully conducted in the past several years and will continue to determine the product's viability.

2021 EXPENDITURE (\$2021)	TOTAL COST
\$309,000	\$899,000



Energy Management Master Plan



START DATE: 2020 COMPLETION DATE: 2021

PROJECT TYPE	Energy-Related Projects — Use Reduction/Generation
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This study will take a comprehensive look at how the District is currently using energy at the treatment plant and will create a roadmap for how to best manage energy in the future. Particular focus will be placed on how to optimize energy use as critical pieces of equipment are replaced in the coming years, such as the District's gas-driven electrical generators. Expected areas of study include: replacing or retiring generators, selling upgraded biogas and creating other value-added products from anaerobic digestion. The cost of the master plan study will be funded from capital reserves.
BACKGROUND	Brown and Caldwell and Strand Associates performed an energy study in 2014 with the goal of outlining a strategy for the District to achieve energy independence. These strategies included ways to reduce energy usage, improve the utilization of digester gas and produce more energy. Many of the projects were associated with the aeration system, the largest use of energy at the plant. One major area not addressed in the 2014 study pertained to biosolids handling and distribution. Additionally, the 2014 study was intended to be periodically updated to reflect changes in technology, system changes and changes in the regulatory and rate environment. With the recent issues with aging biogas-powered engines, the addition of air permit requirements and new opportunities for biogas upgrading and sale, updating the energy plan was deemed a sensible next step to determine the best use of energy infrastructure.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTAL COST \$212,000 \$624,000



Plant Energy Facilities Plan



START DATE: 2022 COMPLETION DATE: 2023

PROJECT TYPE	Energy-Related Project — Use Reduction/Generation	
LOCATION	Nine Springs Wastewater Treatment Plant	
DESCRIPTION	This facilities plan will evaluate the District's various energy-related systems and provide a framework for how to best optimize those systems. Specific items that will be evaluated and studied include the following: best uses for digester gas; potential for using food scraps as a feed source for the digesters; potential sources of high-strength waste; capacity of the existing digesters; need for additional digesters or other types of digesters; additional amounts of gas that could be produced; remaining life of the existing gas-driven engines and potential replacements; and heat recovery and hot water systems.	
BACKGROUND	An energy study was conducted in 2014 by Strand Associates and Brown and Caldwell in an effort to provide a roadmap for how the District might achieve energy independence. Strategies outlined in the study focused on reducing energy use, improving the use of digester gas and producing more energy. Some projects recommended by the energy study related to the aeration system have been incorporated into the Liquid Processing Facilities Plan. The facilities plan will build on the results and recommendations from the District's Energy Management Master Plan, which is scheduled for completion in 2021.	

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	Т
\$0	\$

OTAL COST 942,000



Plant Energy Projects



START DATE: 2024 COMPLETION DATE: 2027

PROJECT TYPE	Energy-Related Projects – Use Reduction/Generation
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	These projects address items identified during the 2014 energy study relating to the plant's generation systems and process improvements or equipment replacements that reduce plant energy use/purchase. Cost estimates and project details will be developed from the Energy Management Master Plan (CIP ID#A04.1) and Plant Energy Facilities Plan (CIP ID# A04.2). At this time, we anticipate that further study will focus on the best options for digester gas and the availability and use of high-strength wastes and source separated organics as feed sources. Staff anticipates larger project funding through the Clean Water Fund program while smaller project funding will be from capital fund reserves.
BACKGROUND	The 2014 energy study provided a long-term energy road map for the District to reduce its energy consumption and increase its energy production. The intent of this item is to address plant projects identified in the Energy Management Master Plan and the Plant Energy Facilities Plan. Please note that energy is an ongoing consideration in this and all District projects, and this project does not cover all items in the roadmap. Projects already funded include mixer and lighting replacements with more efficient units.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TO \$0 \$2

TOTAL COST \$17,529,000

Miscellaneous Capital Improvements



START DATE: ONGOING COMPLETION DATE: ONGOING

A05, A06, A07

CIP ID#

PROJECT TYPE	Plant Improvements – Miscellaneous Capital Improvements
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	 This summary covers three areas: Annual Process Tank Coating and Repair (A05) Annual Pavement Improvements (A06) Minor Capital Improvements (A07)
BACKGROUND	The District annually includes funds in its capital budget for coating of process tanks and resurfacing of roads. These funds are used to protectively coat the tanks and restore paved areas of the plant where necessary. In addition, other minor capital improvements are routinely necessary and funds have been included to address these improvements on an as-needed basis.

FINANCIAL ANALYSIS

2021 EXPENDITURE	(\$2021)
\$175,000	

TOTAL COST \$ ONGOING



Metrogro Applicators & Equipment



START DATE: 2019 COMPLETION DATE: 2024

PROJECT TYPE	Metrogo Applicators and Equipment
LOCATION	Metrogro Program
DESCRIPTION	This line item is included in the CIP to fund the replacement of four new biosolids applicators and two storage tanks within the next five years. It is anticipated that these replacements will be funded through reserves from the capital fund.
BACKGROUND	The District's Metrogro program remains the backbone of the District's biosolids reuse program. Metrogro applicators and equipment convey and apply millions of gallons of Metrogro to regional farm fields annually. The District's standard is to replace an applicator when it reaches 10,000 hours of service. Using that standard, a new applicator was purchased in 2019 and four more applicators will require replacement between 2021 and 2024. The six-year CIP calls for one applicator to be replaced each year during this period. It should be noted that the purchase of this equipment is subject to change, pending the outcomes of the District's biosolids management study, which is described in CIP ID# A03.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) \$896,000

TOTAL COST \$4,148,000



Operations Building First Floor Remodel



START DATE: 2019 COMPLETION DATE: 2021

PROJECT TYPE	Building Improvements
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The purpose of this project is to evaluate, design and build site improvements on the first floor of the Operations Building that will provide a safer and more efficient use of space for staff from the Operations and Ecosystem Services departments. The improvements will also allow for safer and enhanced tours of the laboratory facility by the general public. It is anticipated that funding for these improvements will be through a loan from the Clean Water Fund.
BACKGROUND	Some aspects of this project were evaluated in the space needs study performed by Bray Architects in 2013. In that study, the operators' control room was evaluated and a need for improved personal storage and better efficiency was identified. However, specific recommendations for improvement of these conditions were not advanced and implemented. Since the 2013 study was performed, three members of the Ecosystem Services department have moved into offices in the laboratory and the operations supervisor and lead operator now share a standard-sized office near the control room. These recent changes have led to concerns over worker safety, the safety of the public during facility tours, and unsanitary conditions in these work spaces. It is now desired to further evaluate these conditions and implement improvements as part of this project.

2021 EXPENDITURE (\$2021)	TOTAL COST	
\$1,479,000	\$2,050,000	



Miscellaneous Treatment Plant Improvements



START DATE: ONGOING COMPLETION DATE: ONGOING

PROJECT TYPE	Variable
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The purpose of these projects is to make modifications or minor improvements to capital assets at the treatment plant on an annual basis to ensure that they remain in good working condition and to ensure the safety of the District's workers. These projects will be funded through reserves in the capital fund.
BACKGROUND	As the District's assets at the treatment plant continue to age and the process complexity increases, operations staff have noted a need to make a number of minor improvements to assets to ensure they remain in good working order. In many cases, the projects are relatively small in scope, yet they are too large and time-consuming to be addressed by the District's maintenance staff. The intent of this item in the capital budget is to provide an annual allowance for the identification and completion of these smaller improvement projects at the treatment plant. The projects will be administered through the Operations or Engineering department and completed by a contractor in accordance with the District's procurement code.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) T \$100,000 C

TOTAL COST ONGOING



15kV Electrical Service Replacement



START DATE: 2022 COMPLETION DATE: 2026

PROJECT TYPE	Plant Improvements – Electrical Distribution
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	This project proposes to replace the outdoor service switchgear, transformers and busway system for the incoming electrical service to the treatment plant. This system is responsible for transforming the incoming voltage from 15,000 volts to 5,000 volts so that it can be utilized by plant equipment. It is anticipated that any future equipment replacement will be funded through a loan from the Clean Water Fund. Initial investigation and assessments of equipment condition will be paid for through capital fund reserves.
BACKGROUND	This equipment was installed in 1984-85 and is located outside, just north of the effluent building. The equipment steps down the incoming voltage to 5,000 volts, for use by large equipment such as the effluent pumps and the blowers for the aeration system (a secondary system further steps down the voltage from 5,000 volts to 480 volts for use by other equipment). Industry standards estimate a service life of 40 to 50 years for this equipment. Based on the lower bound of this estimate, the District is planning for the equipment to be replaced in 2025. Staff intends to hire a consultant in 2022 to do a thorough evaluation of the equipment's condition. A more definitive schedule will be established after that time.

2021 EXPENDITURE (\$2021)	TOTAL COST
\$0	\$3,093,000

CMMS Replacement



Failure Count by Asset Class



START DATE: 2020 COMPLETION DATE: 2023

CIP ID#

PROJECT TYPE	Plant Improvements – Computerized Maintenance Management System	
LOCATION	Nine Springs Wastewater Treatment Plant	
DESCRIPTION	The purpose of this project is twofold: (1) Purchase and implement a new computerized maintenance management system (CMMS) that utilizes a Reliability Centered Maintenance approach to assets; and (2) Purchase and implement a new financial system with enhanced reporting and analysis features for financial and budgetary processes. Due to their interaction with each other, both of these systems will be analyzed and implemented in parallel through one project which spans several years. The cost of this project will be funded through reserves in the capital fund.	
BACKGROUND	The District installed its initial CMMS in 1997 for a cost of approximately \$1.0 million (roughly \$1.6 million in 2019 dollars). The company that developed the system eventually was purchased by Oracle. While the system has generally served the District well since 1997, Oracle is now planning to upgrade its system to a new version that is more complex and targets large users with different needs than the District's. As such, the District has a need to obtain a new CMMS and financial system that better supports the District's approach to asset management. Management of the project to replace WAM is led by a core team of the IT manager, asset investment program manager, and budget manager, with sponsorship from the director of planning and strategy.	

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTAL COST \$1,339,000 \$4,373,000



Lagoon Dikes Improvements



START DATE: 2020 COMPLETION DATE: 2024

PROJECT TYPE	Plant Improvements – Lagoon Management
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The purpose of this project is to conduct a geotechnical study of the dikes in the District's lagoons and implement measures to stabilize them, especially in periods of high water levels. The entire project will be conducted in several phases between 2020 and 2024, and any recommended repairs will be prioritized and implemented as needed. It is anticipated that the geotechnical study will be funded through cash reserves, while any necessary improvements will be funded through a loan from the Clean Water Fund.
BACKGROUND	The District's lagoons, located east of Moorland Road, were used to store biosolids until the early 1980s, at which time application on agricultural lands commenced. Some of the biosolids in the lagoons were found to have levels of polychlorinated biphenyls, or PCBs. The District worked with the EPA to clean up the lagoons in the late 1990s through the addition of soil, a fabric cover and a new dike. The lagoons now provide wildlife habitat and recreational opportunities for the public, and also act as storage reservoirs for excess plant inflow. During the extreme rainfall event in August of 2018, the water level in Nine Springs Creek reached historic levels, causing a leak that allowed water from the creek to move into the lagoon area. To protect the integrity of the dikes and prevent any migration of contaminated biosolids to the environment, it is desired to fully evaluate the dikes and repair any defective sections.

2021 EXPENDITURE (\$2021)	TOTAL COST
\$299,000	\$2,109,000
+=00,000	+_,,

CIP ID#

Plant HVAC Improvements



START DATE: 2021 COMPLETION DATE: 2022

PROJECT TYPE	Plant Improvements — HVAC
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The purpose of this project is to upgrade and replace aging HVAC systems in various buildings at the treatment plant. HVAC systems need to be in good working order so that they meet applicable building codes, provide a safe environment for staff and protect equipment from damage caused by changing environmental conditions. Due to the harsh environments that these systems treat, they have deteriorated beyond reasonable repair and need to be replaced. It is anticipated that this project will be funded through a loan from the Clean Water Fund.
BACKGROUND	This project will address HVAC deficiencies throughout the treatment plant. Many systems installed prior to the 11 th Addition to the treatment plant are not working as designed or are not functioning at all. These systems do not meet applicable code requirements and pose health risks to workers. In the first phase of this project, a consultant will be retained to evaluate and prioritize the most deficient systems. In the second phase of the project, improvements will be designed by the consultant and constructed by a contractor.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TO \$206,000 \$8

TOTAL COST \$838,000



Campus Space Master Plan



START DATE: 2023 COMPLETION DATE: 2025

PROJECT TYPE	Plant Improvements — Space Needs
LOCATION	Nine Springs Wastewater Treatment Plant
DESCRIPTION	The purpose of this project is to evaluate existing facilities at the treatment plant, estimate future space needs and conditions, and develop a long-term plan to accommodate those needs. Plant security will be an integral part of the evaluation to ensure that the campus is secure and safe for all staff and visitors. It is likely that this project will include the implementation of some security enhancements in the near term. It is anticipated that this project will be funded through capital fund reserves.
BACKGROUND	Traditionally, the District has planned for future space needs in conjunction with major plant additions that were driven by permit compliance and/or capacity needs. The District has many large projects in its six-year capital plan that will require additional space and coordination. These projects include the following: liquids processing improvements projects; Energy Management Master Plan; biosolids master plan; Shop One site improvements and renovations and a potential resource recovery facility. All of these projects should be evaluated together to effectively plan the future layout of the plant grounds. In addition, this master plan will incorporate campus security considerations into the analysis and provide both short and long term recommendations for improvements.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	Т
\$0	\$

OTAL COST 915,000



NSVI Improvements - McKee Road to Dunn's Marsh



START DATE: 2019 COMPLETION DATE: 2021

PROJECT TYPE	System Rehabilitation — Conveyance System
LOCATION	Nine Springs Valley Interceptor Cannonball bike path corridor, McKee Road to Dunn's Marsh, City of Fitchburg
DESCRIPTION	This project will add capacity and correct condition defects caused by corrosion in the Nine Springs Valley Interceptor (NSVI) along the Cannonball bike path. Approximately 4,200 feet of reinforced concrete pipe, ranging in size from 30 to 42 inches, will be replaced. Staff intends to fund this project through the Clean Water Fund program.
BACKGROUND	The portion of the NSVI between McKee Road and Dunn's Marsh was constructed in 1965 and provides service to lands in the southwest portion of the District's collection system, including the cities of Fitchburg, Madison, Middleton and Verona. The existing sewer is suffering from severe corrosion due to its proximity to the end of the Pumping Station 12 force main and steeper than normal pipe slopes. Both of these conditions result in turbulent wastewater, which releases hydrogen sulfide gas from the wastewater. The hydrogen sulfide gas forms sulfuric acid along the pipe wall and leads to deterioration of the pipe material over time. The Capital Area Regional Planning Commission is projecting that additional capacity will be needed in the defective sections as early as 2030. As such, a replacement sewer will be provided as part of this project.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) \$4,434,000 \$4

TOTAL COST \$4,754,000



Northeast Interceptor Joint Grouting MH10-101 to MH10-106



START DATE: 2021 COMPLETION DATE: 2021

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Northeast Interceptor State Highway 30 to Pumping Station 10, City of Madison
DESCRIPTION	The purpose of this project is to identify joints in the Northeast Interceptor upstream of Pumping Station 10 that have excessive rates of infiltration, and to seal these joints by injecting them with grout. Staff intends to fund this project through reserves from the capital fund.
BACKGROUND	The Northeast Interceptor from Pumping Station 10 to Lien Road was installed in 1964. In 2010, a relief sewer was added from Pumping Station 10 to Nakoosa Trail and a replacement sewer was installed from Nakoosa Trail to Lien Road, thereby allowing a portion of the 1964 sewer to be abandoned. During construction of the relief sewer in 2010, it was discovered that numerous joints in the 1964 sewer that remained in service were leaking. In approximately five locations, the water is flowing into the sewer at a rate that is estimated to be five gallons per minute or more. This project proposes to test all joints in the 1964 sewer with pressurized air and fill them with grout to mitigate the intrusion of clear water into the public sewerage system. Approximately 2,600 feet of the 1964 sewer was rehabilitated immediately upstream of this project in 2020. The remaining 2,500 feet between Highway 30 and Pumping Station 10 will be completed as part of this project.

2021 EXPENDITURE (\$2021)	TOTAL COS
\$309,000	\$309,000



West Interceptor - Shorewood Relief (Phases 1, 2, & 3)



START DATE: 2019 COMPLETION DATE: 2023

PROJECT TYPE	Capacity Improvement – Conveyance System
LOCATION	West Interceptor Relief Sewer University Avenue, Walnut Street to Whitney Way, City of Madison and Village of Shorewood
DESCRIPTION	This project will provide additional capacity to the West Interceptor system in order to convey projected flows from the west side of the District's service area. The improve- ments consist of the installation of 11,500 feet of relief sewer that will be installed roughly parallel to the District's existing sewer that runs along the University Avenue corridor between Walnut Street and Whitney Way. Due to the size and complexity of this project, it is proposed that construction will occur in three phases, with construction beginning in 2021 and ending in 2023. It is anticipated that each phase of this project will be financed through the Clean Water Fund program.
BACKGROUND	Expected growth in the District's Pumping Station 15 service area, including the Bishops Bay development in the City of Middleton and the Town of Westport, has created a need for the District to add additional capacity to its West Interceptor system. In its 2009 report, MMSD Collection System Evaluation, the Capital Area Regional Planning Commission identified several sections of the West Interceptor within the proposed project limits that required capacity relief prior to the year 2010, based on population forecasts. The District's 2011 Collection System Facilities Plan update included a detailed analysis of the system between Walnut Street and Whitney Way and determined that additional capacity should be provided in or around the year 2020.

2021 EXPENDITURE (\$202	1) TOTAL COST
PHASE 1 - \$7,061,000	PHASE 1 - \$7,906,000
PHASE 2 - \$0	PHASE 2 - \$2,429,000
PHASE 3 - \$0	PHASE 3 - \$4,311,000



NEI - Truax Extension Rehab (lining project)



START DATE: 2021 COMPLETION DATE: 2022

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Northeast Interceptor – Truax Extension USH 51 corridor, Rieder Road to Lien Road, City of Madison
DESCRIPTION	This project will correct condition defects in the Northeast Interceptor between Lien Road and the end of the Pumping Station 13 force main at Rieder Road. Approximately 11,000 feet of existing 48-inch concrete pipe will be rehabilitated through the installation of a new cured-in-place liner within the existing pipe. This project will be undertaken shortly after the NEI-Truax Extension relief sewer is completed in the fall of 2020. It is anticipated that this project will be financed through a Clean Water Fund Loan.
BACKGROUND	This section of the Northeast Interceptor was installed in 1969 and suffers from internal corrosion due to the presence of elevated levels of hydrogen sulfide in the wastewater. Approximately one-half of the Northeast Interceptor System between Pumping Station 18 and Pumping Station 14 has either been rehabilitated or replaced due to corrosion. Corrosion of the pipe reduces the capacity by increasing surface roughness and may eventually cause the pipe to fail. Installation of a cured- in-place liner can extend the service life of the interceptor if installed before the corrosion progresses too far.

2021 EXPENDITURE (\$2021)	TOTAL COST
\$82,000	\$5,991,000

NEI - Waunakee Extension Relief (Phase 1)



START DATE: 2021 COMPLETION DATE: 2024

CIP ID#

PROJECT TYPE	Capacity Relief – Conveyance System
LOCATION	Northeast Interceptor – Waunakee Extension Yahara River to Village of Waunakee, Town of Westport and Village of Waunakee
DESCRIPTION	This project will provide additional capacity to the Northeast Interceptor system in order to convey projected flows from the villages of Dane and Waunakee and the Town of Westport. The improvements consist of the installation of approximately 16,500 feet of relief sewer that will be installed parallel to the District's existing sewer that extends from the Yahara River to the Village of Waunakee. At this time, it is proposed that construction will occur in two phases, with construction of the first phase tentatively scheduled for 2023. It is anticipated that this project will be financed through the Clean Water Fund program.
BACKGROUND	Continued high rates of growth in the Village of Waunakee and Town of Westport are expected to create a need for the District to add capacity to the Waunakee Extension of the Northeast Interceptor. The Capital Area Regional Planning Commission (CARPC) is projecting that capacity will be reached in several segments of the Waunakee Extension by or about the year 2022 based on population forecasts. Periodic flow monitoring performed by District staff as part of the billing program validates these projections. This project could be postponed if development patterns in the service area change.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TO \$10,000 \$7

TOTAL COST \$7,133,000
CIP ID#

NEI – FEI to SEI Rehab (lining project)



START DATE: 2022 COMPLETION DATE: 2023

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Northeast Interceptor Femrite Drive/ Copps Avenue to Progress Road, City of Monona and City of Madison
DESCRIPTION	This project will correct condition defects in the Northeast Interceptor between its junction with the Far East Interceptor and its junction with the Southeast Interceptor. Approximately 3,300 feet of existing 48-inch concrete pipe will be rehabilitated through the installation of a new cured-in-place liner within the existing pipe. It is anticipated that financing of the project will be through a loan from the Clean Water Fund.
BACKGROUND	This section of the Northeast Interceptor was installed in 1964 and suffers from internal corrosion due to the presence of elevated levels of hydrogen sulfide in the wastewater. Approximately 2,250 feet of the Northeast Interceptor between the Far East and Southeast interceptors was abandoned in 2013 and replaced with a new sewer due to the condition of the pipe. This project will rehabilitate and extend the service lives of the remaining sewer segments that were not replaced in the 2013 project.

FINANCIAL ANALYSIS

2021 EXPENDITURE	(\$2021)
\$0	

TOTAL COST \$2,070,000



Lower Badger Mill Creek Interceptor - Phase 5



START DATE: 2022 COMPLETION DATE: 2024

New Capacity – Conveyance System
Lower Badger Mill Creek Interceptor CTH PD to Midtown Road, Town of Verona & City of Madison
This project will extend the District's Lower Badger Mill Creek Interceptor from Highway PD to Midtown Road to provide service for new development and relieve the City of Madison's existing pumping station at Midtown Road. Approximately 8,500 feet of new interceptor sewer will be installed as part of the proposed improvements. This project will be funded through capital fund reserves. Project costs will be recovered from connection charges from new users upon connection to the interceptor improvements.
District policy allows for the construction of District interceptors only when that interceptor shall serve at least two municipalities. Sanitary sewer service options for the Lower Badger Mill Creek drainage basin were studied by District staff in 2005. At that time, it was decided that a regional interceptor sewer would be constructed in several phases as development needs dictated in order to serve the cities of Verona and Madison and the towns of Verona and Middleton. Phases one through four of the interceptor were constructed between the years 2006 and 2018. Phase five of the interceptor will be constructed when the City of Madison's Midtown Road Lift Station reaches capacity and flows require diversion to the District's Pumping Station 17, and/or when new development between Highway

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTAL COST \$0 \$4,289,000

CIP ID#

NSVI Capacity Improvements - Phase 1



START DATE: 2024 COMPLETION DATE: 2028

PROJECT TYPE	Additional Capacity – Conveyance System
LOCATION	Nine Springs Valley Interceptor (NSVI) Lewis Springs E-Way from Pumping Station 11 to Syene Road, City of Fitchburg
DESCRIPTION	This project will provide additional capacity to the Nine Springs Valley Intercepting System between the District's Pumping Station 11 and Syene Road. It is expected that approximately 8,700 feet of relief or replacement sewer will be installed along the Lewis Springs E-Way in order to serve new development in the southwest and western portions of the District's service area. This project will be funded through a loan from the Clean Water Fund.
BACKGROUND	The Nine Springs Valley Intercepting System between Pumping Station 11 and Pumping Station 12 was constructed in 1965 and and includes 33,000 feet of sewer ranging in diameter from 30 inches to 54 inches. The interceptor's service area includes some of the fastest-growing lands in Dane County and the state of Wisconsin. Population and wastewater forecasts performed by the Capital Area Regional Planning Commission indicate that most of the NSVI system, and approximately 3,600 feet of sewer upstream of PS 12, will require additional capacity between the years 2025 and 2040. A capacity improvement project is currently underway for the NSVI between McKee Road and Dunn's Marsh. This project is the first phase of a multi-phase project that will address capacity needs in the remainder of the NSVI system.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$0	\$ 13,250,000



Pumping Station 6 to Pumping Station 10 Connector



START DATE: 2022 COMPLETION DATE: 2025

PROJECT TYPE	System Redundancy – Conveyance System
LOCATION	Pumping Station 6 402 Walter Street, City of Madison Pumping Station 10 110 Regas Road, City of Madison
DESCRIPTION	This project proposes to construct a gravity sewer to connect the East Interceptor upstream of Pumping Station 6 (PS 6) to the Northeast Interceptor upstream of Pumping Station 10 (PS 10). The primary purpose of this interconnection is to provide system redundancy and flexibility during high flows and other emergency events. Since this emergency diversion relies on gravity and not electrical energy, it satisfies all of the guidance requirements set forth in the District's Administrative Guideline #11 for operational continuity during loss of grid power. It is expected that this project will be funded through a loan from the Clean Water Fund.
BACKGROUND	The District's collection system consists of 18 pumping stations and 32 miles of raw wastewater force mains. A loss of electrical power at any of these pumping stations or a pipe failure in any of the force mains threatens the ability of the collection system to safely and efficiently convey raw wastewater to the treatment plant. Diversion sewers such as the one proposed for this project allow for the emergency transfer of flow between pumping stations during emergency situations. They have been used very effectively in other areas of the collection system. The PS 6 to PS 10 connector was studied and recommended in both the 20002 Collection System Facilities Plan and the 2009 Collection System Facilities Plan Update.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTAL COST \$0 \$7,097,000



Grass Lake Dike Stabilization



START DATE: 2018 COMPLETION DATE: 2021

PROJECT TYPE	System Rehabilitation – Effluent Conveyance System
LOCATION	Badfish Creek and Grass Lake Badfish Creek, Schneider Road to Rutland Dunn Town Line Road, Town of Dunn
DESCRIPTION	The purpose of this project is to evaluate and implement corrective measures to stabi- lize the Grass Lake Dike to prevent sloughing of the shoreline soil. It is anticipated that these measures will include a combination of repair methods, including rebuilding sections of the dike, redirecting the channel and enhancing habitat by inserting vegetation into the channel at strategic locations. Funding of the improve- ments will be via capital fund reserves.
BACKGROUND	The Grass Lake Dike roads were built to provide a barrier between the District's effluent in Badfish Creek and Grass Lake. Repairs have been made in the past to prevent subsurface flow from the effluent channel from passing into Grass Lake, and also to prevent animals from tunneling through the dike. Despite the repairs made by the District's Facilities Maintenance department over the years, these problems are recurring, and a more permanent solution is needed. Cardo Inc. was retained in September 2018 to provide an assessment of the problem, recommend solutions and prepare a design for improvements. The preliminary assessment and final design have been substantially completed. Construction is scheduled for 2021.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$659,000	\$864,000



PS 17 Force Main Relief - Phase 1



START DATE: 2018 COMPLETION DATE: 2021

PROJECT TYPE	Capacity Improvement – Conveyance System
LOCATION	Pumping Station 17 Force Main Badger Mill Creek, Bruce Street to north 6,900 feet, City of Verona
DESCRIPTION	This project will add a relief force main to the existing 16-inch force main, providing additional capacity for wastewater that is pumped from Pumping Station 17 in the City of Verona. Approximately 5,650 feet of force main will be installed in the first phase of construction and 7,650 feet in the second phase, increasing the capacity of the force main system from 7.2 to 20.3 million gallons per day. It is anticipated that the first phase of the project will be funded through reserves from the capital fund.
BACKGROUND	At this time, the Pumping Station 17 force main serves only areas within the City of Verona. Additional flow from the City of Madison, and possibly the Town of Verona, will drain to Pumping Station 17 in or about 2024 when the final phase of the Lower Badger Mill Creek Interceptor is constructed up to Midtown Road, and the City of Madison abandons its pumping station in this location. Capacity relief will be needed for both Pumping Station 17 and its force main system when this occurs. Relief for the force main system has been separated into two construction phases to coordinate with a City of Verona public works project. During Phase 1, currently scheduled for 2020-2021, the City will install a new gravity sewer roughly parallel to the District's force main along Badger Mill Creek.

FINANCIAL ANALYSIS

 2021 EXPENDITURE (\$2021)
 TOTAI

 \$2,786,000
 \$3,340

TOTAL COST \$3,346,000



Pumping Station 13 & 14 Rehabilitation



START DATE: 2019 COMPLETION DATE: 2021

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Pumping Station 13 3634 Amelia Earhart Drive, City of Madison Pumping Station 14 5000 School Road, City of Madison
DESCRIPTION	This project provides for a major rehabilitation at Pumping Station 13 and Pumping Station 14. Improvements to the stations will include the following features: replacement of pumps to increase capacity; improvements to the power systems to achieve the desired level of redundancy; replacement of aging electrical and control equipment; new HVAC systems; installation of flow meters; and new emergency generators. It is anticipated that this project will be funded through a Clean Water Fund loan.
BACKGROUND	Table 5.1 of the District's 2011 Collection System Facilities Plan update included a capacity and condition assessment for each of its 17 pumping stations across six categories. This table was updated in May of 2020 to reflect current conditions, including the construction of Pumping Station 18. Firm capacity improvements and replacement of aging equipment have been identified as the primary needs at both stations. Overall, Pumping Station 13 and Pumping Station 14 received the highest and second highest priorities respectively, among the 18 pumping stations in regard to the need for future rehabilitation.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$9,325,000	\$10,755,000



Pumping Station 4 Rehabilitation

START DATE: 2021 COMPLETION DATE: 2023



PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Pumping Station 4 620 John Nolen Drive, City of Madison
DESCRIPTION	This project provides for a major rehabilitation of Pumping Station 4. Improvements to the station are expected to include the following: replacement of all three pumps due to age and lack of adequate capacity; provision of variable frequency drives to improve operational performance; improvements to the power system to achieve greater redundancy, including provision of an on-site generator; replacement of aging electrical and control equipment; and a new HVAC system. It is anticipated that this program will be funded through a Clean Water Fund Ioan.
BACKGROUND	Pumping Station 4 was placed into service in 1967 and pumps flow directly to the Nine Springs Wastewater Treatment Plant through a parallel force main system with Pumping Stations 2 and 3. Most of the equipment in the station has not been replaced or upgraded since the station was started up in 1967. As a result, it is recommended that the major electrical equipment and associated controls be replaced to ensure that the station operates reliably. In addition, it is recommended that the pumping units be replaced and optimized so that the station is able to work in concert with the pumps from Pumping Stations 2 and 3.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TC \$427,000 \$5

TOTAL COST \$5,328,000



Pumping Station 17 Rehabilitation



START DATE: 2021 COMPLETION DATE: 2024

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Pumping Station 17 407 Bruce Street, City of Verona
DESCRIPTION	This project will rehabilitate many systems at Pumping Station 17 in advance of a significant increase in flows to the station, which is expected to occur within the next five years. The rehabilitation will include improvements to the following: new pumps and associated piping; electrical improvements to support the new pumping equipment; a new standby generator; replacement of HVAC equipment; and replacement and automation of station valves. It is anticipated that this project will be funded through a loan from the Clean Water Fund.
BACKGROUND	At this time, Pumping Station 17 serves only areas within the City of Verona. Additional flow from the City of Madison, and possibly the Town of Verona, will drain to Pumping Station 17 in or about 2024 when the final phase of the Lower Badger Mill Creek Interceptor is constructed up to Midtown Road, and the City of Madison abandons its pumping station in this location. A capacity upgrade will be needed for Pumping Station 17 when this occurs. In addition, it is expected that significant upgrades to the station piping and the electrical and HVAC systems will be needed with the new pumping equipment.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL
\$21,000	\$5,232

OTAL COST 5,232,000



Pumping Station 17 Force Main - Phase 2



START DATE: 2021 COMPLETION DATE: 2023

PROJECT TYPE	Capacity Improvement – Conveyance System
LOCATION	Pumping Station 17 Force Main Badger Mill Creek, Holiday Court to Maple Grove Drive, City of Verona and Town of Verona
DESCRIPTION	This project will add a relief force main to the existing 16-inch force main and will provide additional capacity for wastewater that is pumped from Pumping Station 17 in the City of Verona. Approximately 5,650 feet of force main will be installed in the first phase of construction and 7,650 feet in the second phase. It is anticipated that this project will be funded through a loan from the Clean Water Fund.
BACKGROUND	Additional flow will drain to Pumping Station 17 in or about 2024 when the final phase of the Lower Badger Mill Creek Interceptor is constructed up to Midtown Road, and the City of Madison abandons its pumping station in this location. Capacity relief will be needed for the force main system when this occurs. Relief for the force main system has been separated into two construction phases. The District is proposing to construct phase one of the relief force main in conjunction with a City of Verona utility project in 2020 and 2021 to reduce costs and inconvenience to the general public. Phase two of the project will occur in or about 2023, just prior to completion of the final phase of the Lower Badger Mill Creek Interceptor project.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTA \$82,000 \$4,27

TOTAL COST \$4,276,000



Pumping Station 16 Force Main Rehabilitation



START DATE: 2021 COMPLETION DATE: 2023

PROJECT TYPE	System Rehabilitation – Conveyance System
LOCATION	Pumping Station 16 Force Main North Gammon Road (Colony Drive to Mineral Point Road), City of Madison
DESCRIPTION	The purpose of this project is to correct condition defects in the Pumping Station 16 force main on North Gammon Road between Colony Drive and Mineral Point Road. Approximately 400 feet of interceptor sewer downstream of the interceptor will also be rehabilitated as part of this project. It is anticipated that this project will be funded through a loan from the Clean Water Fund.
BACKGROUND	The Pumping Station 16 force main was installed in 1979-80 on Gammon Road from Pumping Station 16 in the City of Middleton to just north of Mineral Point Road in the City of Madison. The system consists of approximately 6,900 feet of 36-inch diameter ductile iron pressure sewer and 2,900 feet of 30-inch diameter ductile iron sewer that is not pressurized. The majority of the pressurized sewer is fully submerged at all times and is believed to be in good condition. Approximately 1,600 feet of the non-pressurized sewer is not fully submerged with wastewater and is showing evi- dence of corrosion via inspection by closed circuit television. District staff intends to retain a consultant in 2021 to do a more thorough evaluation of the pipe condition to verify the need for rehabilitation. The project proposes to either rehabilitate the corroded force main sections with a cured-in-place liner or to replace those sections with new pipe.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$15,000	\$1,652,000

CIP ID#

Miscellaneous Collection System Improvements



START DATE: ONGOING COMPLETION DATE: ONGOING

PROJECT TYPE	Variable
LOCATION	Conveyance System
DESCRIPTION	The purpose of these projects is to make modifications or minor improvements to capital assets in the collection system on an annual basis to ensure that they remain in good working condition and enhance the safety of the District's workers. These projects will be funded through reserves in the capital fund.
BACKGROUND	As the District's assets in the collection system age, operations staff members have noted a need to make a number of minor improvements to ensure that they remain in good working order. In many cases, the projects are relatively small in scope, yet they are too large and time-consuming to be addressed by the District's maintenance staff. The intent of this item in the capital budget is to provide an annual allowance for the identification and completion of these smaller improvement projects. The projects will be administered through the Operations or Engineering department and completed by a contractor in accordance with the District's procurement code.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) T \$0 0

TOTAL COST ONGOING



Capital Budget Expenses



START DATE: ONGOING COMPLETION DATE: ONGOING

PROJECT TYPE	Capital Budget Expenses
LOCATION	District-wide
DESCRIPTION	These are general capital budget expenses. More specifically, they are annual funds used for smaller planning, study and related expenses that are required to update and implement the Capital Improvements Plan.
BACKGROUND	Development of the District's Capital Improvements Plan and capital budget requires almost continual study and planning. Often, internal resources are not available to conduct studies or planning in desirable timeframes and external resources are necessary. This budget item provides funds to cover expenditures for smaller studies or planning efforts.

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021)	TOTAL COST
\$52,000	ONGOING

Collection System Facilities Plan Update

START DATE: 2018 COMPLETION DATE: 2021	<image/> <image/> <section-header></section-header>	Image: second				
PROJECT TYPE	Capital Budget Expenses					
LOCATION	Collection System					
DESCRIPTION	The District's Collection System Facilities Plan is a key planning document that is periodically updated based on projections from the Capital Area Regional Planning Commission. Funding for this study will be through reserves from the capital fund.					
BACKGROUND	The purpose of the Collection System Facilities Plan is to update and revise the previous plan conducted in 2011. As with the original 2002 plan, the 2011 update reviewed and assessed the adequacy and condition of the District's collection system to identify and recommend future collection system projects. Since plan adoption, the District has completed many of the recommended projects. Following the Capital Area Regional Planning Commission's update of the District's collection system evaluation in 2018, it will be time to review those projects remaining on the list and identify additional future projects that may be required to					
	sustain and/or enhance the integrity of the Distric the facility plans have been completed solely by D of time and effort. It is anticipated that an enginee complete a portion of the update, with particular of inflow and infiltration on private property.	t's collection system. In the past, istrict staff at considerable levels ering consultant will be retained to attention given to work on control				

FINANCIAL ANALYSIS

2021 EXPENDITURE (\$2021) TOTAL COST \$50,000 \$206,000

APPENDIX A: PROJECT SUMMARIES 117

CIP ID#



Badger Mill Creek Phosphorus Compliance





START DATE: 2019 COMPLETION DATE: TBD

PROJECT TYPE	Effluent
LOCATION	Badger Mill Creek Town of Verona & City of Verona
DESCRIPTION	The purpose of this project is to allow for evaluation, plan development and implementation of a solution to address new phosphorus water quality criterion for Badger Mill Creek. New water quality standards for this waterway are part of the District's Wisconsin Pollution Discharge Elimination System (WPDES) permit which was issued in April of 2020. The District began preliminary planning for the new standards in 2019, assuming a nine-year compliance schedule. It is anticipated that early planning work related to this effort will be funded through reserves from the capital fund.
BACKGROUND	Badger Mill Creek is an effluent-dominated stream located in the Town of Verona and City of Verona. The District returns approximately 3.6 million gallons per day of treated effluent to this waterway to offset groundwater that is pumped out of the Sugar River basin and sent to the Nine Springs Wastewater Treatment Plant as wastewater for treatment. The District's new WPDES permit requires a phosphorus water quality criterion for Badger Mill Creek of 0.075 mg/L, significantly less than the District's prior effluent quality for this parameter. The District has developed six preliminary options to comply with this new criterion: (1) diversion of flow to Badfish Creek; (2) water quality trading; (3) site-specific phosphorus criterion for Badger Mill Creek; (4) variance to current water quality criterion; (5) watershed adaptive management; and (6) treatment. Preliminary work will involve the evaluation of these options and pilot testing options that appear viable.

FINANCIAL ANALYSIS



2019 PROJECT COMPLETIONS

ANNUAL CLARIFIER COATING

The District retained MZ Construction, Inc. to coat final clarifiers 17 and 19 in 2019 as part of ongoing efforts to upgrade and extend the life of the District's tanks and mechanisms. The total project cost of \$202,200 was paid with reserves from the capital fund.

ANNUAL PAVEMENT IMPROVEMENTS

The District hired Payne & Dolan, Inc. in 2019 to install approximately 5,000 square feet of asphaltic pavement at the Vehicle Loading Building for a truck parking area. The excavation, foundation preparation and repaving costs of approximately \$45,300 were funded with capital fund reserves.

SOUTHEAST INTERCEPTOR – REHABILITATION UPSTREAM OF PUMPING STATION 9 (LINING PROJECT)

The Southeast Interceptor was constructed in 1961 as part of the Southeast Interceptor project, which began at Pumping Station 7 in the City of Monona and ended at the Yahara River in the Village of McFarland. The section upstream of Pumping Station 9 consists of approximately 3,360 feet of 24-inch and 27-inch reinforced concrete pipe, which runs parallel to the west side of U.S. Highway 51 and crosses to the east side of the highway just north of the Yahara River. Due to the number of customer connections at the manhole at the Yahara River, the geometry of the manhole, turbulence in the flow and release of hydrogen sulfide gas, there is a significant amount of corrosion at this location. The District rehabilitated this manhole in 2014 with a protective liner due to the degree of corrosion present. This project continued rehabilitation efforts by lining approximately 600 feet of 27-inch pipe immediately downstream of the manhole and grouting pipe joints between the manhole and Pumping Station 9 to eliminate intrusion of groundwater into the sewer. The rehabilitation work began in October 2018, with final acceptance of the project provided by the Commission on April 11, 2019. Total project costs of \$274,000 were funded from capital reserves.

PUMPING STATION 10 FORCE MAIN REHABILITATION

The Pumping Station 10 force main was constructed in 1964 and the entire length consists of approximately 11,000 feet of 36-inch diameter prestressed concrete cylinder pipe. Approximately 70 feet of 36-inch ductile iron force main was installed in 2001 at the end of the force main as part of the improvements to Buckeye Road. Portions of the original force main that were removed as part of the road project showed appreciable corrosion of the interior pipe surfaces above the normal water line. Inspection of the non-submerged portions of the prestressed concrete cylinder pipe in 2014 and 2016 showed similar results. This project installed a new liner in approximately 2,000 feet of prestressed concrete cylinder pipe at the downstream end of the force main. Insertion of the liner began in October 2018 and was substantially completed in December 2018. Final acceptance of the project occurred on Aug. 15, 2019. The total project cost of \$1.32 million is being funded through the Clean Water Fund program.

MINOR CAPITAL IMPROVEMENTS

This project involved the replacement of approximately 120 lineal feet of 16-inch piping from the gravity thickening units to the primary settling tanks at the treatment plant. In 2016, staff inspected the pipeline using closed circuit television and discovered that the pipe was extremely corroded where it was not flowing full. Madewell Excavating LLC began construction in late 2018 and substantial completion occurred in early 2019. The total project cost of \$84,000 was paid from cash reserves in the capital fund.

WEST INTERCEPTOR – PUMPING STATION 5 TO WEST INTERCEPTOR (GAMMON EXTENSION)

This section of the West Interceptor was constructed in 1931 and consists of approximately 3,560 feet of 18-inch cast iron sewer. It was inspected by closed-circuit television in 2017 and shows evidence of moderate tuberculation along the entire length. Tuberculation is the buildup of deposits on the inside walls of the pipe due to chemical reactions between the wastewater and the cast iron pipe. The deposits generally form above the normal waterline and decrease the carrying capacity of the sewer by reducing the effective diameter of the pipe and increasing the surface roughness. Tuberculation may also compromise the structural integrity of the pipe if left unchecked. This project extended the service life of the sewer by approximately 50 years by placing a new liner on the interior pipe walls. Insertion of the liner began in April of 2019 and the project was completed in August of 2019. The total project cost of \$490,000 is being funded through the Clean Water Fund program.

BADFISH CREEK EFFLUENT FORCE MAIN STANDPIPE

The majority of the treated effluent from the treatment plant is conveyed through a 54-inch pipeline to Badfish Creek. Near the discharge location at Badfish Creek a standpipe was located on the force main to allow air to be expelled from the pipe. On several occasions small volumes of treated effluent had escaped from the standpipe and drained onto a residential property. This project included removal of the standpipe in its entirety and replacing it with a valve that allows air into or out of the pipeline as required, thereby closing the system and preventing any future releases of effluent to the affected property. Installation of the valve took place in May of 2019 and the project was substantially completed in June of 2019. The total project cost of \$170,000 was paid from cash reserves in the capital fund.

2020 PROJECT COMPLETIONS/ ANTICIPATED COMPLETIONS

FINAL COMPLETION OR SUBSTANTIAL COMPLETION IN 2020:

NSVI-MORSE POND EXTENSION

This project involved the construction of approximately 3,200 feet of new sanitary sewer from the existing Nine Springs Valley Interceptor (Midtown Extension) to the southwest corner of Highway PD and Highway M. The new sewer is located along Raymond Road and will provide service for lands in the City of Madison and lands south of Highway PD in the City of Verona. The sewer construction was coordinated with the reconstruction of Highway M from Cross Country Road in the City of Verona to Flagstone Drive in the City of Madison. Construction began in October 2017 and was substantially completed in September 2018. Final acceptance of and payment on the project occurred in the first half of 2020. The total project cost of \$2.1 million is being financed through reserves from the capital fund.

SOUTHWEST INTERCEPTOR – HAYWOOD EXTENSION REPLACEMENT

This section of the Southwest Interceptor along Haywood Drive was originally constructed in 1936 and consisted of approximately 1,450 feet of 24-inch diameter cast-iron sewer. The existing sewer was severely corroded and in need of rehabilitation or replacement. Additionally, this section of sewer provided a critical interconnection between Pumping Station 2 and Pumping Station 8. Wastewater could flow in either direction through this sewer, making it a valuable asset in high flow events or during a power outage which affected either pump station. Rather than rehabilitate the existing 24-inch sewer, it was decided to provide a new 36-inch diameter sewer between West Shore Drive and North Wingra Drive to provide greater capacity during these types of events. Construction began in May of 2019 and was substantially completed in September of 2019. The total project cost of \$1.8 million will be funded through the Clean Water Fund program.

SHOP ONE SITE IMPROVEMENTS

A portion of the Shop One building was converted into a large meeting room when the new Maintenance Facility was constructed in 2016. The room currently functions as a meeting room for District staff and tour groups but had limitations due to the poor sound quality. In order to use this space for increased uses such as educational programming and to promote the One Water concept, improvements were needed. This project improved the lighting and acoustical properties of this space so that it can be better utilized. The work was done using a design-build process and was completed in early 2020 at a total cost of approximately \$200,000, with funding from capital reserves.

2019 TREATMENT PLANT PIPING IMPROVEMENTS PROJECT

This project involved the replacement of both potable water and hot water piping networks at the treatment plant. Both piping networks were installed in the 1960s and have suffered numerous breaks and leaks over the years. Replacement of the pipes was necessary to ensure that they can reliably support the treatment processes. Work began in December of 2019 by 1901 Inc. mechanical contractors and was substantially completed in May of 2020. The total anticipated project cost of \$460,000 will be funded through the Clean Water Fund program.

ANTICIPATED COMPLETIONS IN 2020:

PUMPING STATION 7 IMPROVEMENTS

Pumping Station 7 (PS 7) was constructed in 1948. Prior to the construction of Pumping Station 18 (PS 18) in 2015, PS 7 conveyed approximately 40% of the daily flow to the District's treatment plant. While PS 18 lessened the criticality of PS 7 to a degree, improvements were still needed at PS 7 to replace aging equipment and to optimize how the stations interact with each other. Improvements constructed as part of this project include the replacement of existing controllers and the control system; replacement of electrical switchgear and HVAC system; separation of the control room space from the garage and screen room; installation of an odor control system and pump and valve replacements. Work on the project by C.D. Smith began in August of 2019, and it is expected that work will be completed in October of 2020. The estimated total project cost of \$4.2 million will be funded through a loan from the Clean Water Fund program.

NORTHEAST INTERCEPTOR - TRUAX EXTENSION RELIEF

The Truax Extension to the Northeast Interceptor was constructed in 1969. The existing sewer within the project limits consists of approximately 11,000 feet of 48-inch diameter reinforced concrete pipe. Like many other sections of the Northeast Interceptor, this particular section of sewer is badly corroded due to hydrogen sulfide attack. In addition, population and flow forecasts by the Capital Area Regional Planning Commission indicate that additional capacity is needed in this section of the Northeast Interceptor within the next five to 10 years to serve rapidly growing areas in the villages of Waunakee and DeForest. This project provides for the installation of a relief sewer to increase system capacity and will serve as a future bypass line when the existing sewer is rehabilitated in 2022. Speedway Sand & Gravel began work on the project in July of 2019 and substantial completion is scheduled for October or November of 2020.

The estimated total project cost of \$8.5 million will be funded with a loan from the Clean Water Fund program.

INTERCEPTOR REHABILITATION – 2020

This project involves the rehabilitation of existing sewers on two District interceptor systems in 2020. Approximately 4,500 feet of the Spring Street Relief sewer on the West Interceptor will be rehabilitated with a cured-in-placer liner as part of the project, starting at the intersection of Spring Street and North Randall Street and terminating at West Washington Avenue near Brittingham Park. This 24inch diameter cast-iron sewer was installed in 1940 and has heavy mineral deposits, or tuberculation, along its entire length. These deposits decrease capacity and weaken the structural integrity of the pipe if not addressed. In addition, approximately 300 feet of the Northeast Interceptor Relief Sewer and East Johnson Street Relief Sewer will be rehabilitated as part of this project. These sewers are located at the intersection of North First and East Johnson streets in the City of Madison. Work on this project is scheduled to begin in the summer of 2020, with substantial completion occurring in December of 2020. The estimated total project cost of \$2.1 million will be funded primarily with a loan from the Clean Water Fund program. Approximately \$500,000 of the project costs will be paid from reserves in the capital fund.

NORTHEAST INTERCEPTOR JOINT GROUTING MH10-112 TO MH10-106

Evidence of excessive inflow and infiltration (I/I) has been observed in the original Northeast Interceptor sewer, immediately upstream of Pumping Station 10 for a distance of approximately 5,100 feet. This 48-inch diameter concrete sewer was installed in 1964 in an area with a high groundwater table. It is estimated that I/I rates may be as high as five gallons per minute in some areas. In this project, each joint along the sewer will be air tested and injected with grout for a distance of 2,600 feet to reduce the I/I to an acceptable rate. The remaining 2,500 feet of 48-inch sewer will be rehabilitated in a similar manner in 2021. Work on this project is scheduled to begin in the first half of 2020, with final completion occurring before the end of the year. The estimated total project cost of \$260,000 will be paid from cash reserves in the capital fund.

AUTOMATED POWER TRANSFER AT PUMPING STATIONS 10 AND 11

Work under this project includes the addition of a third electrical power feed at the District's Pumping Station 10 and Pumping Station 11. The equipment to be installed includes an automated transfer switch, which monitors the status of each incoming power feed to the station and switches the feed as necessary to maintain reliable power. Madison Gas & Electric Company will own and operate this equipment for the District. Work on this project began in 2019 and is scheduled for completion in the second half of 2020. The estimated total project cost of \$190,000 will be paid for out of cash reserves in the capital fund.

RETAINERS

The District often includes maintenance or performance retainers within its contracts. The retainers are typically released to the contractor at the end of one year (in some cases contracts include longer performance periods) following completion of the contract and assuming satisfactory performance. The following are retainers that the District has released or is presently withholding:

PUMPING STATION 11 AND 12 REHABILITATION

The District withheld a \$20,000 three-year special maintenance retainer upon final project closeout. A total of \$10,000 was for satisfactory performance of the pumps and motors and \$10,000 was for satisfactory performance of the adjustable frequency drives. The \$20,000 retainer was released to J.F. Ahern in February of 2020.

PUMPING STATION 15 REHABILITATION

The District withheld a \$27,500 three-year special maintenance retainer upon project acceptance in March of 2018 as follows: (1) \$10,000 to be paid to contractor and pump/motor supplier after three years of satisfactory performance; (2) \$10,000 to be paid to contractor and supplier of variable frequency drives after three years of satisfactory performance; and (3) \$7,500 to be paid to contractor after three years for landscape maintenance warranty, with payments to the contractor of \$2,500 per year for each year's successful warranty work for the landscaping. The total retained amount of \$7,500

for the landscaping work will not be paid due to unsatisfactory performance. The remaining \$20,000 retained amount is scheduled for payment in March of 2021 pending satisfactory performance.

LOWER BADGER MILL CREEK INTERCEPTOR – PHASE FOUR

The District withheld a \$20,000 one-year maintenance retainer upon final project closeout. The retainer was released to SJ Louis Construction in September of 2019.

PUMPING STATION 10 FORCE MAIN REHABILITATION

The District withheld a \$10,000 one-year maintenance retainer upon final project closeout. The retainer was released to Murphy Pipeline Contractors, Inc. in February of 2020.

WEST INTERCEPTOR REHAB – PUMPING STATION 5 TO GAMMON EXTENSION

The District withheld a \$10,000 one-year maintenance retainer upon final acceptance in September 2019. The retainer is scheduled to be released to the contractor in September of 2020.

SOUTHEAST INTERCEPTOR REHABILITATION UPSTREAM OF PUMPING STATION 9

The District withheld a \$10,000 one-year maintenance retainer upon final project closeout. The retainer is scheduled to be released to the contractor in September of 2020.

SOUTHWEST INTERCEPTOR – HAYWOOD DRIVE REPLACEMENT

The District withheld a \$20,000 retainer upon acceptance of the project in November of 2019, as follows: (1) A \$10,000 maintenance retainer to correct any defective work for a period of one year after project acceptance; and (2) An additional \$10,000 retainer to grout two sanitary structures to address infiltration and inflow issues. The \$20,000 retainer will be released to Maddrell Excavating, LLC in November of 2020, pending satisfactory performance.

BADFISH CREEK EFFLUENT FORCE MAIN STANDPIPE

The District withheld a \$3,000 one-year maintenance retainer upon acceptance of the project in July of 2019. The retainer will be released to Maddrell Excavating, LLC in the second half of 2020, pending satisfactory performance.

PUMPING STATION 7 IMPROVEMENTS

The District will withhold maintenance retainers upon acceptance of the project as follows: (1) A \$10,000 retainer to correct any work that is found to be defective for the one-year period following project acceptance; and (2) a \$5,000 retainer to be withheld for a three-year period after project acceptance, to be split equally between the pump/ motor assembly and the variable frequency drives. All retainers will be paid to the contractor and/or supplier pending satisfactory performance in the aforementioned amounts and timeframes.

NORTHEAST INTERCEPTOR - TRUAX EXTENSION RELIEF

The District will withhold a \$25,000 one-year maintenance retainer upon completion of the project. The retainer will be released to Speedway Sand & Gravel, Inc. one year after project closeout, pending satisfactory performance.

2019 TREATMENT PLANT PIPING IMPROVEMENTS

The District will withhold a \$20,000 one-year maintenance retainer upon completion of the project. The retainer will be released to 1901 Inc. one year after project closeout, pending satisfactory performance.



2021 OPERATING BUDGET SUMMARY

REVENUES

				Proposed	
Revenue Category	2020	Estimated	2020	2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
Sewer Service Charges	\$19,672,000	\$39,400,000	\$41,333,000	\$43,478,000	5.19%
Servicing Pumping Stations	240,000	596,000	520,000	428,000	-17.69%
Rent	77,000	84,000	84,000	84,000	0.00%
Interest	41,395	250,000	250,000	250,000	0.00%
Annexation and Plan Review Fees	46,000	70,000	70,000	50,000	-28.57%
Miscellaneous Income	90,700	110,000	110,000	110,000	0.00%
Septage Disposal Revenue	374,000	800,000	790,000	820,000	3.80%
Pretreatment Monitoring	-	26,000	26,000	26,000	0.00%
Struvite Fertilizer Sales	117,000	235,000	260,000	200,000	-23.08%
Cash Reserves	-	-	775,000	-	-100.00%
TOTAL REVENUES	\$20,658,095	\$41,571,000	\$44,218,000	\$45,446,000	2.78%

EXPENDITURES

				Proposed	
Expenditure Category	2020	Estimated	2020	2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
Administration, Engineering, and Planning	\$2,789,000	\$5,596,000	\$6,189,000	\$6,646,000	7.38%
User Charge & PreTreatment Program	286,000	812,000	910,000	1,100,000	20.88%
Wastewater Collection	1,223,000	2,943,000	2,906,000	3,099,000	6.64%
Wastewater Treatment	5,587,000	12,647,000	13,460,000	13,701,000	1.79%
Effluent Diversion	26,000	118,000	129,000	132,000	2.33%
Metrogro Biosolids Reuse Program	1,102,000	2,596,000	2,581,000	1,679,000	-34.95%
Capital Outlay	(96,000)	393,000	618,000	473,000	-23.46%
Servicing Pumping Stations Owned by Others	240,000	596,000	520,000	428,000	-17.69%
Contribution to Capital Projects Fund	915,000	915,000	915,000	1,486,000	62.40%
Contribution to Equipment Replacement Fund	-	150,000	150,000	150,000	0.00%
Transfer to Debt Service Fund	-	15,840,000	15,840,000	16,552,000	4.49%
TOTAL EXPENDITURES	\$12,072,000	\$42,606,000	\$44,218,000	\$45,446,000	2.78%

OPERATING RESERVE BALANCE

Operating Reserves	2020	Estimated	2020	Proposed 2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
Beginning Balance	\$19,328,000	\$19,328,000	\$18,233,000	\$18,443,000	1.15%
Ending Balance	\$27,914,095	\$18,443,000	\$17,608,000	\$18,593,000	5.59%

REVENUES

			2020	2021	
Revenue Source	2020	Estimated	Budgeted	Budgeted	Percent
	Thru June	2020 Total	Amount	Amount	Change
LOANS					
CWF Loan - PS 10 FM Rehab/West Int - PS 5 to Gammon Ext	218,063	261,000	-	-	NMF
CWF Loan - NEI-Truax Ext Relief/SWI-Haywood Ext Replacement	7,237,749	10,089,000	4,676,000	-	-100%
CWF Loan - 2019 Treatment Plant Piping Improvements Project	-	430,000	-	-	NMF
CWF Loan - LPI-Phase 1/PS 7 Improvements/HW Flow Metering	-	13,689,000	16,338,000	9,852,000	-40%
CWF Loan - Pumping Station 13 and 14 Rehabilitation	-	950,000	5,900,000	9,705,000	64%
CWF Loan - Operations Building First Floor Remodel	-	400,000	625,000	1,500,000	140%
CWF Loan - Interceptor Rehabilitation - 2020	-	1,250,000	1,792,000	304,000	-83%
CWF Loan - NSVI Improvements - McKee Road to Dunn's Marsh	-	-	3,000,000	4,734,000	58%
CWF Loan - West Interceptor - Shorewood Relief (Phase 1)	-	-	5,250,000	6,750,000	29%
CONNECTION CHARGE REVENUES	939,021	2,500,000	2,750,000	2,400,000	-13%
INTEREST ON INVESTMENTS & MISC. INCOME	18,864	35,000	111,000	70,000	-37%
CONTRIBUTION FROM OPERATING FUND	915,000	915,000	915,000	1,486,000	62%
TOTAL SOURCES OF FUNDS	9,328,696	30,519,000	41,357,000	36,801,000	-11.02%

EXPENDITURES

			2020	2021	
Project	2020	Estimated	Budgeted	Budgeted	Percent
	Thru June	2020 Total	Amount	Amount	Change
NINE SPRINGS WASTEWATER TREATMENT PLANT PROJECTS					•
Shop One Site Improvements	4,308	24,000	-	-	NMF
Engine Generator and Blower Control Panel Replacements	36	60,000	-	203,000	NMF
2019 Treatment Plant Piping Improvements Project	387,281	448,000	-	-	NMF
Liquid Processing Improvements - Phase 1	978,103	7.305.000	12.295.000	7.727.000	-37%
Headworks Flow Metering	65,279	1,015,000	2,091,000	1,166,000	-44%
Resource Recovery Facility	84,827	210,000	258,000	309,000	20%
Operations Building First Floor Remodel	114.638	541,000	599,000	1.479.000	147%
Annual Process Tank Coating and Repair	-	191,000	191,000	-	-100%
Annual Pavement Improvements	-	-	61,000	63.000	3%
Minor Capital Improvements	-	109,000	109,000	112,000	3%
Miscellaneous Treatment Plant Projects	357	110,000	110,000	100,000	-9%
Metrogro Applicators & Equipment	2.421	-	-	896,000	NMF
Energy Management Master Plan	169.508	412.000	412.000	212,000	-49%
Final Clarifier 4, 5 and 6 Effluent Launder Trough Replacement	-	20.000	239.000	219.000	-8%
CMMS Replacement	-	89,000	706,000	1 339 000	90%
Lagoon Dikes Improvements	987	175,000	361,000	299,000	-17%
Plant HVAC Improvements	-	75 000	129,000	206,000	60%
Septage Receiving Modifications	-	-	5 000	10,000	100%
Headworks Screening	-	-	10,000	10,000	0%
15 kV Electrical Service Replacement	-	-	95,000	-	-100%
INTERCEPTORS			00,000		10070
SEL - Rehab upstream of PS 9 (lining project)	-	-	-	-	NMF
West Int PS 5 to Gammon Extension (lining project)	-	-	-	-	NMF
NSVI-Morse Pond Extension	52.653	60.000	-	-	NMF
Southwest Interceptor - Haywood Ext. Replacement	1.905	22,000	-	-	NMF
Northeast Interceptor Joint Grouting MH10-112 to MH10-106	4.385	255.000	-	-	NMF
Interceptor Rehabilitation - 2020	29,499	2.074.000	2.019.000	-	-100%
NEI - Truax Extension Relief	3.020.861	5.448.000	4.666.000	-	-100%
NSVI Improvements-McKee Road to Dunn's Marsh	84,115	291,000	3.033.000	4.434.000	46%
West Interceptor - Shorewood Relief (Phase 1)	98.926	686.000	5.073.000	7.061.000	39%
NEI - Truax Extension Rehab (lining project)	-	-	82.000	82.000	0%
NEI - Waunakee Extension Relief (Phase 1)	-	-	-	10.000	NMF
Northeast Interceptor Joint Grouting MH10-101 to MH10-106	-	-	-	309.000	
PUMPING STATIONS AND FORCE MAINS					
Automated Power Transfer at Pump Stations 10 and 11	40	184,000	-	-	NMF
PS 7 Improvements	1,923,992	2,536,000	1,934,000	-	-100%
Grass Lake Dike Stabilization	19.110	87.000	417.000	659.000	58%
PS 17 Force Main Relief - Phase 1	14.739	412,000	2.114.000	2.786.000	32%
PS 13 & PS 14 Rehabilitation	276.821	1.158.000	5.788.000	9.325.000	61%
Miscellaneous Collection System Improvements	-	80.000	80.000	-	-100%
PS 4 Rehabilitaiton	-	-	415.000	427.000	3%
PS 16 Force Main Rehabilitation	-	-	21.000	15.000	-29%
PS 17 Rehabilitation	-	-	,	21.000	NMF
PS 17 Force Main Relief - Phase 2	-	-	-	82,000	NMF
CAPITAL BUDGET EXPENSES				-,	
Capital Budget Expenses	-	-	52.000	52.000	0%
Plant Asset Management Plan Implementation	66,701	265.000	323,000	-	-100%
Collection System Facilities Plan Update	10.197	50.000	135.000	50.000	-63%
Badger Mill Creek Phosphorus Compliance	3,365	300,000	310.000	206.000	-34%
TOTAL EXPENDITURES	\$ 7,415,055	\$ 24,692,000	\$ 44,133,000	\$ 39,869,000	-9.7%

CAPITAL PROJECTS RESERVE BALANCE

			2020	2021	
Capital Projects Reserves	2020	Estimated	Budgeted	Budgeted	Percent
	Thru June	2020 Total	Amount	Amount	Change
Beginning Reserve Balance	\$3,092,000	\$3,092,000	\$8,871,000	\$8,919,000	0.54%
Ending Reserve Balance	\$5,006,000	\$8,919,000	\$6,095,000	\$5,851,000	-4.00%

2021 DEBT SERVICE BUDGET SUMMARY

REVENUES

				Proposed	
Revenue Category	2020	Estimated	2020	2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
Transfer From Operating Fund	\$0	\$15,840,000	\$15,840,000	\$16,552,000	4.49%
Interest	155,000	220,000	437,000	84,000	-80.78%
TOTAL REVENUES	\$155,000	\$16,060,000	\$16,277,000	\$16,636,000	2.21%

EXPENDITURES

				Proposed	
Expenditure Category	2020	Estimated	2020	2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
First half Interest	\$1,491,000	\$1,491,000	\$1,767,000	\$1,631,000	-7.70%
Principal	10,115,000	10,115,000	10,213,000	10,747,000	5.23%
Second Half Interest	-	1,428,000	1,964,000	1,763,000	-10.23%
TOTAL EXPENDITURES	\$11,606,000	\$13,034,000	\$13,944,000	\$14,141,000	1.41%

DEBT SERVICE RESERVE BALANCE

				Proposed	
Debt Service Reserves	2020	Estimated	2020	2021	Percent
	Thru June	2020 Total	Budget	Budget	Change
Beginning Balance	\$24,154,000	\$24,154,000	\$24,134,000	\$27,180,000	12.62%
Ending Balance	\$12,703,000	\$27,180,000	\$26,467,000	\$29,675,000	12.12%

SCHEDULE OF PRINCIPAL AMOUNT OF INDEBTEDNESS

Sewerage System Improvement Bonds	January 2020	January 2021	January 2022
Series 2000 P.S. No. 2 Force Main Replacement - Phase 1	123,178	-	-
Series 2001 P.S. No. 2 Force Main Replacement - Phase 2	268,870	136,553	-
Series 2003A PS's 1, 2 and 10 Rehabilitation	1,974,109	1,501,003	1,014,536
Series 2003B Tenth Addition	9,553,922	7,263,313	4,908,659
Series 2005 PS's 1, 2 and 10 Rehabilitation	100,005	84,320	68,256
Series 2006 Effluent Equalization Projects and AT's 1-6	700,507	607,314	511,916
Series 2007 West In Ext and PS 13-14 Projects	1,260,702	1,116,673	968,965
Series 2008 PS's 6-8 Rehabilitation and NEI Truax Ext Liner	4,643,808	4,174,798	3,694,682
Series 2010A NEI-PS 10 to Lien Rd	5,398,891	4,963,499	4,517,793
Series 2012A Nine Springs Eleventh Addition	35,580,328	33,003,836	30,362,467
Series 2012B Operations Building HVAC Rehab	2,121,547	1,985,705	1,845,788
Series 2013A NEI-SEI to FEI - Replacement Project	6,060,731	5,701,063	5,331,343
Series 2013B Pumping Station No. 18	11,310,192	10,632,078	9,936,042
Series 2013C Process Control System Upgrade	3,490,603	3,281,067	3,066,029
Series 2014A Pumping Station No. 18 Force Main	9,082,463	8,540,590	7,984,001
Series 2015A PS 11 & 12 Rehabilitation	8,396,933	7,920,498	7,433,287
Series 2015B Maintenance Facility Expansion	9,833,060	9,315,678	8,786,654
Series 2016A PS 15 Rehabilitation, PS 12 FM Relocation, Rimrock Int. Lining	6,308,670	5,992,378	5,669,887
Series 2017A West Interceptor-Randall St. to Near PS2	1,253,779	1,193,970	1,133,109
Series 2019A PS10 FM/WI - PS5 to Gammon Ext.	1,585,533	1,780,000	1,700,000
Series 2020A NEI Truax Ext Relief/SWI-Haywood Ext. Replacement	-	10,100,000	9,700,000
Series 2020B NLSPI - Phase 1A/PS7 Improvements/Headwords Flow Meetering	-	13,700,000	23,500,000
Anticipated Loans			
2021 - 2022 Loans	-	3,000,000	26,000,000
Total Indebtedness	\$ 119,048,000	\$ 135,994,000	\$ 158,133,000

OVERALL BUDGET SUMMARY, NET OF TRANSFERS

				Proposed	
Summarized Budget Items	2020 Thru June	Estimated 2020 Total	2020 Budget	2021 Budget	Percent Change
Total Revenues	\$29,227,000	\$71,395,000	\$84,322,000	\$80,845,000	-4.1%
Total Expenditures	30,178,000	63,427,000	85,390,000	81,268,000	-4.8%
Beginning Reserve Balance	\$46,574,000	\$46,574,000	\$51,238,000	\$54,542,000	6.4%
Ending Reserve Balance	\$45,623,000	\$54,542,000	\$50,170,000	\$54,119,000	7.9%

All projected values rounded to the nearest \$1000



TABLE 16 | 2021 WAGE SCHEDULE FOR HOURLY EMPLOYEES

Pay Grade 5 Progression										
Range and Titles	Step 1	Step 2	Step 3	Step 4	Step 5	Step 5 plus 15% longevity				
5: Custodian	\$18.72	\$19.19	\$19.66	\$20.13	\$20.61	\$23.70				
6: Custodian II	\$19.19	\$19.66	\$20.13	\$20.61	\$21.08	\$24.24				
7: Custodian III	\$19.66	\$20.13	\$20.61	\$21.08	\$21.55	\$24.78				
8: Sr. Custodian IV	\$20.13	\$20.61	\$21.08	\$21.55	\$22.02	\$25.32				

Pay Grade 8 Progression										
	Chan 1	Char 2	Chan 2	Chara A	Chan E	Step 5 plus 15%				
Current Range and Titles	Step 1	Step 2	Step 3	Step 4	Step 5	longevity				
7: Utility Maintenance Worker	\$24.28	\$24.82	\$25.35	\$25.89	\$26.43	\$30.39				
8: Utility Maintenance Worker II	\$24.82	\$25.35	\$25.89	\$26.43	\$0.00	\$0.00				
9: Utility Maintenance Worker III	\$25.35	\$25.89	\$26.43	\$0.00	\$27.50	\$31.63				
10: Utility Maintenance Worker IV	\$25.89	\$26.43	\$0.00	\$27.50	\$28.57	\$32.85				
10: Sr. Utility Maintenance Worker V	\$26.43	\$0.00	\$27.50	\$28.57	\$29.18	\$33.56				

Pay Grade 10 Progression									
Current Range and Titles	Step 1	Step 2	Step 3	Step 4	Step 5	Step 5 plus 15% longevity			
11: Operator I, MS/SM I, Apprentice I	\$29.16	\$29.76	\$30.40	\$31.04	\$31.68	\$36.44			
12: Operator II, MS/SM II, Apprentice II	\$29.76	\$30.40	\$31.04	\$31.68	\$32.33	\$37.19			
13: Metrogro Mechanic, Journey Mechanic, Journey Electrician, Journey HVAC Tech, Operator III, MS/SM III	\$30.40	\$31.04	\$31.68	\$32.33	\$33.00	\$37.94			
14: Senior Journey Mechanic, Senior Journey Electrician, Senior Metrogro Mechanic, Senior Journey HVAC Tech, Operator IV, MS/SM IV	\$31.04	\$31.68	\$32.33	\$33.00	\$33.64	\$38.69			
15: Biosolids Program Assistant , Senior Journey Mechanic II, Senior Journey Electrician II, Senior Metrogro Mechanic II, Senior Journey HVAC Tech II, Operator V, MS/ SM V	\$31.68	\$32.33	\$33.00	\$33.64	\$34.31	\$39.45			

*This wage schedule applies to employees hired after July 1, 2017 and assumes a 2 percent market increase effective January 1, 2021.



TABLE 17 | 2021 SCHEDULE FOR SALARIED EMPLOYEES

GRADE	MIN	MID	MAX
22	\$73.90	\$86.94	\$99.98
18	\$60.52	\$71.20	\$81.88
17	\$55.02	\$64.72	\$74.43
16	\$50.19	\$59.05	\$67.91
15	\$45.81	\$53.90	\$61.98
14	\$41.82	\$49.19	\$56.57
13	\$38.22	\$44.97	\$51.71
12	\$34.92	\$41.08	\$47.24
11	\$31.89	\$37.52	\$43.14
10	\$29.16	\$34.30	\$39.45
9	\$26.60	\$31.29	\$35.99
8	\$24.28	\$28.57	\$33.56
7	\$22.26	\$26.19	\$30.12
6	\$20.42	\$24.02	\$27.62
5	\$18.72	\$22.02	\$25.32

*assumes a 2% percent market increase effective January 1, 2021



GOVERNANCE

Madison Metropolitan Sewerage District is a body corporate with the powers of a municipal corporation for the purpose of carrying out the provisions of Sections 200.01 to 200.15 of the State of Wisconsin statutes. It was created by judgment of the County Court for Dane County, entered on the 8th day of February 1930. Its existence was validated and confirmed by Chapter 132 of the Laws of 1969, effective Aug. 2, 1969. The constitutionality of that law was sustained by the Wisconsin Supreme Court in Madison Metropolitan Sewerage District vs. Stein, 47 Wis. 2nd 349, 177 N.W. 2nd 131 (1969).

The District is governed by nine Commissioners serving staggered terms: five Commissioners are appointed by the mayor of the City of Madison, three are appointed by an executive council made up of elected officials from District cities and villages, and one is appointed by an executive council made up of by town-elected officials. The Commissioners meet once or twice each month at the District. Special meetings are held as required upon call of any member of the Commission.

SERVICE AREA

The District services 15% of the entire county by area and 70% of the county population as shown in Figure 9. Areas served include the cities of Madison, Fitchburg, Middleton, Monona and Verona; the villages of Cottage Grove, Dane, De Forest, Maple Bluff, McFarland, Shorewood Hills, and Waunakee; and the towns of Blooming Grove, Dunn, Madison, Middleton, Pleasant Springs, Verona, Vienna, Westport and Windsor (Figure 11).

A complete list of District customer communities and their estimated wastewater contributions is shown in **Table 16**. The largest taxpayers and employers in the county are shown in **Tables 17** and **18**, respectively. The equalized property tax valuation for the District is shown in **Figure 10**.

Additional information regarding Dane County and the City of Madison can be found at www. countyofdane.com and www.cityofmadison.com.

FIGURE 8 | Dane County and District Data



FIGURE 9 | Equalized Property Valuation for the District

TID Out Values in Billions



TABLE 18 | Estimated Wastewater Contributions for 2020

Commun	ity	Volume (gpd)	CBOD (lbs/day)	Solids (Ibs/day)	Nitrogen (Ibs/day)	Phosphorus (Ibs/day)	Equivalent Meters	Actual Customers
TIES	Fitchburg	1,810,000	5,100	4,200	770	100	8,895	6,380
	Madison	29,000,000	57,400	55,500	10,700	1,235	89,610	68,300
5	Middleton	2,150,000	4,100	3,300	770	90	8,645	5,780
	Monona	1,170,000	1,475	1,300	250	33	4,070	2,978
	Verona	1,170,000	2,800	2,200	485	62	5,965	4,520
	Cottage Grove	675,000	1,300	1,300	230	29	2,590	2,290
	Dane	55,000	130	110	30	3.50	448	406
S	DeForest (including ABS)	975,000	3,500	2,600	450	67	4,735	3,800
LAG	Maple Bluff	215,000	168	150	41	4.6	755	594
AIL VI	McFarland	770,000	1,175	1,100	251	30	3,825	3,355
	Shorewood Hills	136,000	300	280	55	6.5	1,320	706
	Waunakee	1,805,000	5,400	2,900	730	82	5,805	4,855
	Windsor	585,000	2,300	870	400	46	2,265	1,970
	Dunn S.D. No. 1	250,000	70	120	19	3.0	191	191
ICTS	Dunn S.D. No. 3	83,000	116	110	25	3.05	490	490
	Dunn S.D. No. 4	19,000	15	15	4	0.43	68	68
STR	Dunn- Lake Kegonsa	135,000	250	250	50	6.30	675	565
D	Madison	635,000	1,420	1,200	255	45.00	1,915	1,000
5	Pleasant Springs No. 1	68,000	105	117	25	3.00	510	502
5	Verona, Town of	594	0.90	1.03	0.21	0.03	3	3
AND	Verona U.D. No. 1	25,000	47	46	10	1.20	129	116
VRV.	Town of Vienna	100	0.15	0.17	0.04	0.00	1	1
7TIN	Vienna U.D. No. 1	85,000	160	160	25	4.0	100	45
SAI	Vienna U.D. No. 2	39,000	58	62	14	1.7	205	205
IOWN	Westport- Cherokee Golf	3,500	5	4	1	0.15	8	1
	Westport Utility District	585,000	640	600	133	16.0	1,915	1,645
Interceptor Infiltration 2		2,017,000						
Daily Nin	e Springs Loadings	44,461,194	88,035	78,495	15,721	1,872	145,138	110,766

TABLE 19 | Dane County Principal Taxpayers (Budget Year 2019)

TAXPAYER	TYPE OF BUSINESS	2018 EQUALIZED ASSESSED VALUE	PERCENTAGE OF TOTAL EQUALIZED ASSESSED VALUATION
Epic Systems Corp.	Medical Software	1,225,500,062	1.44%
Madison Joint Venture	Shopping Centers	157,188,700	0.19%
American Family Insurance	Insurance	150,997,400	0.18%
Ax Madison Greenway LLC	Property Management	134,782,965	0.16%
Promega Corporation	Biotechnology	115,833,096	0.14%
Core Campus Madison LLC	Property Development	89,500,000	0.11%
Core Campus Madison II LLC	Property Development	76,700,000	0.09%
University Research Park Inc.	Research and Technology Park	76,365,600	0.09%
Covance Laboratories, Inc.	Research	74,955,000	0.09%
777 University Ave LLC	Insurance	66,935,700	0.08%
	TOTALS	\$2,168,758,523	2.57%

TABLE 20 | Dane County Largest Employers

EMPLOYER	TYPE OF ORGANIZATION	EMPLOYEES
University of Wisconsin-Madison	University/College	21,752
State of Wisconsin	State Government	16,450
Epic Systems	Software Services	9,400
UW Hospital and Clinics	Healthcare	6,000
American Family Insurance	Insurance	4,473
City of Madison	Municipal Government & Services	3,639
Madison Metropolitan School District	Education	3,592
UnityPoint Health- Meriter	Hospital, clinics & home care services	3,500
Madison College	Education	3,497
Dane County	Municipal Government & Services	2,888

FIGURE 10| Collection System Overview Map



APPENDIX G

SUMMARY OF ORGANIZATIONAL CHANGES

ENVIRONMENT DIRECTORY

Madison Metropolitan Sewerage District

SUMMARY OF ORGANIZATIONAL CHANGES

Below is a summary of strategic-level organizational changes that have occurred over the past year or are planned for 2021.

DISTRICT LEADERSHIP AND SUPPORT

In 2020, a part time HR generalist position was created and in 2021 the position is proposed to be turned into an FTE. The vacant assistant chief engineer and director position will be transferred to the Strategy Department and reclassified. The procurement workgroup will move under the budget manager.

ECOSYSTEM SERVICES

tion Metropolitari

erage District

The Metrogro program vacancy due to retirement in 2020 led to the creation of a new Metrogro operations supervisor position. A District watershed programs coordinator position was also created to assist with the growth of the District-led adaptive management project. It is intended to fulfill the services outlined in a service agreement between the District and Yahara WINS and was approved by the Commission in 2020.

ENGINEERING

No strategic-level changes.

STRATEGY

The vacant assistant chief engineer and director position will be transferred to the Strategy Department and reclassified. It will strengthen the department's ability to work on investment planning, long-term financing and revenue design, as well as general policy and performance work. The department director position will be reclassified as senior director for strategy. The senior director will lead strategic planning, performance improvement, District policy and related matters. The senior director will perform chief engineer and director duties when the chief engineer cannot provide services. The department's name has been shorted to Strategy Department (formerly Planning and Strategy Department).

OPERATIONS AND MAINTENANCE

The operators' workgroup began two-person team coverage of plant operations, requiring the addition of two new operator positions. A new process and project engineer position was added to the Operations team. A new internal locating program requiring the addition of two locator positions was started in lieu of an external vendor-provided program. HVAC staff and duties were moved from the mechanical workgroup to the electrical workgroup.



5-Year Vehicle Replacement Schedule 2021-2025

The District fleet management plan details the procedure to evaluate existing vehicles for replacement. A fleet replacement fund using a 5-year vehicle replacement schedule is used to smooth funding requirements. See below for the 5-year schedule.

5-Year Vehicle Replacement Schedule					
Year	Vehicle	Est. Cost			
	CSS Pickup – Four Wheel Drive	\$40,000			
	Lab Sampling Cargo Van	\$30,000			
2021	Facilities Maintenance Heavy Duty Dump Truck	\$50,000			
	Mechanical Pickup – Two Wheel Drive	\$30,000			
	Electric Plant Utility Vehicles (2)	\$25,000			
	2021 Fleet Fund Contribution	\$200,000*			
	Electrical Cargo Van	\$30,000			
2022	Metrogro Pickup – Four Wheel Drive	\$40,000			
2022	Engineering Pickup – Four Wheel Drive	\$30,000			
	CSS Service Truck	\$50,000			
	Electric Plant Utility Vehicles (2)	\$25,000			
	Operators Pickup – Four Wheel Drive	\$35,000			
	2022 Anticipated Fleet Fund Contribution	\$200,000*			
	Admin Pool Van	\$25,000			
	Electrical Pickup – Two Wheel Drive	\$30,000			
2023	Mechanical Service Truck	\$80,000			
	Facilities Maintenance Flat Bed Truck	\$60,000			
	Maintenance Pool Vehicle	\$25,000			
	2023 Anticipated Fleet Fund Contribution	\$200,000*			
	CSS Cargo Van	\$30,000			
2024	Facilities Maintenance Dump Truck	\$50,000			
2024	Facilities Maintenance Skid Steer	\$50,000			
	Electrical Cargo Van	\$30,000			
	2024 Anticipated Fleet Fund Contribution	\$175,000*			
	Electrical Cargo Van	\$30,000			
2025	Locator Truck	\$30,000			
	Mechanical Service Truck	\$80,000			
	2025 Anticipated Fleet Fund Contribution	\$150,000*			

*Budget balancing of fund contribution.



In 2021, one position is proposed in the budget. The following organization chart in **Appendix K** represents the District's hierarchy with the proposed positions included.

HUMAN RESOURCES GENERALIST

New Position Justification Prepared by: Jenni Peters, HR Manager

1. What are the drivers (needs) for this position?

The District' strategic plan identifies opportunities to address equity, organizational leadership capacity and employee engagement. To advance these new programs, staff management time is needed. This FTE is critical in continuing to move the HR department forward in a number of critical tasks, such as recruitment, onboarding, benefits administration, inclusion and diversity, and training. This position will be instrumental in these tasks by allowing the HR Manager to focus on strategic goals such as equity, leadership development, inclusion and diversity, the ELC and organizational culture.

2. What critical results must be achieved?

This position will provide the critical support to allow the District to achieve its strategic HR goals. Over the last three years, recruitment has dramatically increased and is dominating HR time. The essential and time-sensitive nature of recruitment and onboarding of new employees is a top priority; however, the long-term quality improvement initiatives are then stalled with a human resources team of just one person. This new position will take the lead on recruitment, selection, onboarding and benefits administration. In addition, it will support inclusion and diversity and training to allow the District to make more progress in these areas.

- 3. What are the success factors for the individual(s) who will perform this work? The successful HR Generalist brings the following qualities to the work:
 - Customer Service Orientation: Values the importance of delivering high-quality, innovative service to internal and external customers; follows through on commitments in a timely manner; maintains positive, long-term working relationships.
 - Inclusiveness: Shows respect for people and their differences; promotes fairness and equity; engages the talents, experiences, and capabilities of others; fosters a sense of belonging; works to understand the perspectives of others; and creates opportunities for access and success.
 - Self-Motivated: Able to independently, proactively and creatively complete goals and work through challenges. Takes initiative and sees a job through to completion. Ability to prioritize and deliver desired outcomes within the allocated timeframe.
 - Detail Oriented: Is thorough in accomplishing a task, no matter how small. Monitors and checks work or information and plans and organizes time and resources efficiently. Understands the importance of accuracy and strives to produce high-quality, error-free work.
- 4. If new resources are not available, how will this work be performed? If the requested position is not authorized in the 2021 budget, the District will struggle to meet the employee-focused strategic goals. Increased costs related to having a contracted service provider and no gain in available work hours do not provide an advantage to this option.



COMMON ACRONYMS

CARPC - Capital Area Regional Planning Commission

CIP - Capital Improvements Plan

CMMS - Computerized Maintenance Management System

CWF - Clean Water Fund (loan program for wastewater facilities)

- **DNR** Department of Natural Resources
- FEI Far East Interceptor
- FOG Fats, Oils and Grease
- MH Manhole
- **MMSD** Madison Metropolitan Sewerage District

NACWA - National Association of Clean Water Agencies

- **NEI** Northeast Interceptor
- **NSVI** Nine Springs Valley Interceptor
- O&M Operations and Maintenance
- PCS Process Control System
- **PS** Pumping Station
- SEI Southeast Interceptor

WAM - Work and Asset Management (MMSD's CMMS software)

WPDES - Wisconsin Pollutant Discharge Elimination System (District permit)

WRS - Wisconsin Retirement System

DISTRICT DEFINITIONS

adaptive management - Watershed approach developed to comply with stringent phosphorus limits.

additions - Major construction related additions, alterations, conversions, reconstruction, renovations, rehabilitations and replacements at the Nine Springs Wastewater Treatment Plant.

anaerobic digestion - Under this process, the organic sludge is treated in the absence of oxygen to reduce both the quantity and odor of sludges by breaking down the organic matter and producing methane and carbon dioxide.

acid digestion - One of the primary steps of the anaerobic digestion process in which soluble products are fermented to acids and alcohols of lower molecular weight.

annexation - The process whereby a city, village, town or other unit of government (e.g., district) expands its boundaries to include a specific geographic area.

asset management - Comprehensive management of parts and physical infrastructure to provide needed levels of service with tolerable risk at an acceptable lifecycle cost.

billing parameters - District billing parameters include: carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), total phosphorus (TP), total Kjehldahl nitrogen (TKN), volume, equivalent meters and actual customers.

biosolids - The soil-like residue of materials removed from sewage during the treatment process.

capital projects fund - Fund that accounts for financial resources used for the acquisition, construction or rehabilitation of major capital facilities. The budget for this fund is often referred to as the capital projects budget or capital budget.

class "A" products (biosolids) - Refers to sludge that contains minute levels of pathogens (disease causing organisms). To achieve class A certification, biosolids must undergo heating, composting, digestion or increased pH that reduces pathogens to below detectable levels. Once these goals are achieved, class A biosolids can be land-applied without any pathogen-related restrictions at the site.

class "B" products (biosolids) - Refers to sludge that has undergone treatment that has reduced but not eliminated pathogens. Class B biosolids have less stringent standards for treatment and contain small but compliant amounts of pathogens. Class B requirements ensure that pathogens in biosolids have been reduced to levels that protect public health and the environment and include certain restrictions for crop harvesting, grazing animals and public contact. As is true of their class A counterpart, class B biosolids are treated in a wastewater treatment facility and undergo heating, composting, digestion or increased pH processes before leaving the plant.

CMOM/SSO regulations - Refers to a capacity, management, operation, and maintenance program (CMOM) that focuses on sewer collection systems with a goal of eliminating sanitary sewer overflows (SSO).

collection system - A system of pipes and pumping facilities carrying sewage for disposal.

collection system facilities plan (CSFP) - An overall assessment of the condition and capacity of the key components that comprise the district's wastewater collection system. The plan identifies the scope and timing of required projects over the next 20 years so that the infrastructure continues to provide a high level of service to the district's customers while also addressing environmental concerns and regulatory requirements.

commission - A group appointed pursuant to law to conduct certain government business; the district has nine appointed commissioners.

connection charges - Charges related to connecting with district sewers.

conveyance system - Synonymous with collection system.

debt service fund - A fund established by a government agency or business for the purpose of reducing debt by repaying or purchasing outstanding loans and securities held against the entity. The district transfers a portion of its collected service charges to this fund to pay for its debt service.

effluent - Wastewater, treated or untreated, that flows out of a treatment plant or sewer outfall. The Nine Springs Wastewater Treatment Plant returns treated effluent to the environment.

executive team - Refers to the executive team at the district.

force main - The discharge pipeline of a pumping station.

conveyance facility connection charge (CFCC) -

CFCC represents the user's "fair share" of collection system investments the district has made to install interceptor sewers and pumping stations.

influent - Water or wastewater entering a physical structure or process such as a treatment plant, pumping station or tank.

interceptor - Large sewer lines that convey the flow of sewage to a pumping station or treatment plant by gravity.

lining - A rehabilitation process in which a coating material is introduced to extend the life of the existing sewer.

master plan - The district's 50-year blueprint for the future.

Metrogro - A program that recycles liquid biosolids to agricultural land as fertilizer and soil conditioner.

Metromix - a "soil like" material created by the district that combines biosolids with amendments such as sand, sawdust and/or bulking agents. Metromix is intended for use in landscaping, turf production, general gardening and other similar applications.
Nine Springs Wastewater Treatment Plant

(NSWTP) - Wastewater treatment plant originally constructed in the late 1920s in Madison, WI. Since then, the plant has experienced numerous changes and additions. The plant presently serves 26 communities in the Madison area.

nutrient removal - The removal of phosphorus and nitrogen from wastewater. The district uses a process called biological nutrient removal (BNR) that removes nitrogen and phosphorus from wastewater by using specific groups of micro-organisms and providing suitable conditions for their growth.

OnBase - OnBase is a software application that electronically captures, stores and manages documents generated or received by a company.

operating fund - In government accounting, fund used to account for all assets and liabilities of a nonprofit entity except those particularly assigned for other purposes in another more specialized fund. The cost of normal operations is expended from this fund.

Ostara - A process to recover phosphorus-containing fertilizer (struvite) as a natural byproduct of wastewater treatment.

plan review fee - Customer communities pay sewer plan review fees for the district's plan review of modifications or additions to their sewer systems.

pretreatment - Processes used by industrial or commercial customers to reduce or eliminate the contaminants in non-domestic wastewater to alter its nature, before discharging it into the collection system.

pumping stations - Also called lift stations, pumping stations are normally designed to handle raw sewage that is fed from underground gravity pipelines (pipes that are laid at an angle so that a liquid can flow in one direction by gravity). Sewage is fed into and stored in an underground pit, commonly known as a wet well. The well is equipped with instruments to detect the level of sewage present. When the sewage level rises to a predetermined point, a pump will start and lift the sewage upward through a pressurized pipe system called a sewer force main. The sewage discharges into another gravity sewer or its final destination a treatment plant. relief sewer - A sewer built to carry the flows in excess of the capacity of an existing sewer; generally in parallel with the existing sewer.

septage - The waste content found in a septic tank.

service charges - Annual amounts collected through customer rates that are used to fund the district's ongoing operations and debt service.

sewer extension permit - Refers to a required permit for an extension, addition, or modification to the sanitary sewer collection system.

struvite - A phosphate mineral (magnesium ammonium phosphate).

televising - A method using video camera(s) to assess the condition of a sewer line in real time. It can reveal blockages from debris, roots or grease; show cracks, breaks or deterioration of a pipe. It allows detailed diagnosis without the need for excavation, saving time and money.

thermal requirements - Potential regulatory requirements to meet particular thermal temperatures in effluent receiving streams.

treatment plant connection charge (TPCC) -

Represents a new users' fair-share of the total cost of the wastewater treatment plant.

user charge - Service charge based on wastewater flow and loadings data for a specific customer. The wastewater flow and loadings are used to develop customer bills (see also billing parameters).



141 APPENDIX K

Er	To p OUR VISION: nriching life through clean water an	OUR MISSION: rotect public health and the environ d resource recovery. Equita	nment. OUR IDEALS: ble, reliable and cooperative.	
ENVIRONMENT	COMMUNITY	EMPLOYEES	EFFECTIVENESS	
		KEY RESULTS AREAS		
We see opportunities in wastewater to recover valuable resources.	We see solutions in the community to engage others in meeting future challenges.	We see success in a healthy, resilient workforce to promote a culture of positive engagement.	We see greater success in the use of best business practices.	V ii r
<i>Goal:</i> Increase recovery of resources while meeting permit requirements.	<i>Goal:</i> We see solutions in the community to engage others in meeting future challenges.	<i>Goal:</i> Achieve a culture of positive engagement.	<i>Goal</i> : Adopt best business practices to increase district efficiency and effectiveness.	C 0
		INFLUENCING FACTORS (learning)		
Contaminants of Emerging Concern	Strengthening Sewer Use Ordinance	Demand for Skilled Labor and STEM Jobs	Land Use Patterns Asset Investment Planning	L
Water Reuse Nutrient Life Cycle	Improvements to User Charges and Billing	Competitive Pay and Benefits ELC Report on Morale	, , , , , , , , , , , , , , , , , , ,	(
	Environmental Justice Expanded Industrial Pretreatment Program	Leadership Development		
	Equity Fats, Oils and Grease			
		STRATEGIES (developing)		
Energy Master Plan Badger Mill Creek Phosphorus Compliance	Overall Communication Efforts around Vision One Water	Campus Security Employee Leadership Committee and Executive Team Boad Man	Reliability-Centered Maintenance Strategic Financial Planning	N (
Biosolids Management	Inflow and Infiltration Reduction	Workload Management		
		PRIORITIES (implementing)		
Yahara WINS	Community Engagement	Inclusion and Diversity	Procurement Code Revision	L
Chloride Reduction		Internal Communication	Records Management	I
			Asset Management Program	
				F
				(

APPENDIX L

STRATEGIC PLAN

INFRASTRUCTURE



value in sustainable ucture to support a vibrant l community.

hieve expected community level res at the lowest total cost of hip.

n Property Management Iltural Property agement us Space Planning

ork Resiliency and Security tion System Facilities Plan tional Continuity

Processing Facility rovements

- eptor and Pumping on Improvements
- Main Inspections
- uterized System ntenance Management Financial Systems