2024 Operating Budget & Capital Improvements Plan

Madison Metropolitan Sewerage District

ADOPTED OCTOBER 26, 2023

Cover photo: A family admires the clean water of local Lake Mendota at McKenna Park.

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, 2023. 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 this budget continues to conform to program requirements, and we are submitting it to GFOA to determine its eligibility for another award.

YEARS WON

2013 • 2014 • 2015 • 2016

2017 • 2018 • 2019 • 2020

2021 • 2022 • 2023

Madison Metropolitan Sewerage District Commission

The District is governed by nine Commissioners serving staggered terms.

President
Thomas Hovel

Vice President
Ezra Meyer

Secretary
Brad Murphy

Commissioner
Beth Bookland

Commissioner
Kenneth Clark

Commissioner
Sara Eskrich

Commissioner
Greg Fries

Commissioner
Marsha Rummel

Commissioner
Thomas Wilson

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SECTION ONE

Introduction to the Budget

A family explores the clear waters of Sixmile Creek, a tributary to Lake Mendota, under a bridge at Waunakee Village Park.

Budget Message & Highlights

As your regional wastewater utility, we are charged with the responsible management of wastewater for more than 407,000 homes, apartments and businesses in the greater Madison area. We must be excellent and efficient in providing this critical service while concurrently protecting public health and the environment. We must be a steward of our shared landscape and vital water resources. We must be strategic and clear-eyed in our work and how we do it, focusing on both the interim needs of the District and the long-term needs and vision of our infrastructure, our communities and the industry.

As we move into our 94th year, the District is straddling an important line. We are growing, transitioning from a small, single-focused utility to a large, multi-faceted organization. We stand between large and small. We are tasked with doing more inside and outside the fence and actively participating in our communities and local conversations. We also, as outlined in our Capital Improvements Plan accepted in Summer 2023, are facing significant infrastructure challenges to meet the needs of our communities, maintain regulatory compliance and ensure reliable wastewater service. These challenges are made even more daunting as we face the effects of climate change and addressing inequities in our community.

The 2024 budget is a do-more budget that addresses important, growing needs for our maturing organization. These needs fall broadly into four categories — performance, projects, productivity and people.

The budget also reflects the current economic climate. While inflation and supply chain issues have softened a bit, they continue to impact our financial resources. Increases in unavoidable costs, such as chemicals and energy, represent a significant portion of the 2024 service charge increase. District staff have made additional effort to accurately estimate these rising costs for the coming year. In addition, we scrutinized past spending and needs for the new year to identify efficiencies and prioritize needs for our 2024 budget.

DOING MORE

As a maturing organization, we are not only tasked with doing more to support our owner communities and the greater Madison community as a whole, but we also push ourselves to innovate and improve. Our strategic plan, approved in Summer 2022, represents this shift by aligning our work to performance areas, which are those areas in which the District must pursue with excellence to achieve its purpose and uphold its mission. Those performance areas drive increased projects, productivity and people needs. We are doing more, guided by strategic vision and direction.

PERFORMANCE: As stewards of public health and the environment, we are held to high standards and performance. The District's seven performance areas help us keep our sights on these standards, and each year, staff develop focus items aligned to those performance areas. Focus items are projects, initiatives, challenges and opportunities that require leadership in the coming months and years. The Commission has approved nine focus items for 2024, which can be found on **pages 57 and 58**.

PROJECTS: The District is in a period with significant capital needs driven by aging infrastructure, a growing service area, changing regulatory requirements and disruptive weather patterns. Approximately two-thirds of capital spending over the next six years is to address aging infrastructure. Nearly another one-third is to address growing capacity. The remainder is to address regulatory and reliability needs. This period will challenge the District's ability to deliver on many projects, make significant changes to the Nine Springs Wastewater Treatment Plant and manage financial requirements without disruption. The Capital Improvements Plan, which is part of our overall budget, is the District's best effort to meet these challenges and look out to the horizon. Increased capital program needs to continue to drive the District's overall budget.

PRODUCTIVITY: To support our needs as a maturing organization, our growing portfolio of capital projects, and our vast inventory of assets, we must also support tools to increase our productivity. A significant project for the District in the next three to five years is to implement an Enterprise Resource Planning (ERP) tool. This ERP will replace the obsolete technology that supports many of our financial processes, work planning, and human resources management. The goal is to implement technology that increases productivity by streamlining our critical functions, enhancing work planning efforts, strengthening our financial processes, and providing actionable data to make more informed decisions.

PEOPLE: Even as we increase our performance and productivity, people remain at the center of completing our mission-critical work and managing the increasing number of projects on the horizon. As part of this year's budget process, the District's Executive Team identified the most important position needs facing the District over the coming three to four years and prioritized the most urgent ones for the 2024 budget. Remaining positions need will be re-evaluated for the 2025 budget. Positions are outlined in **Appendix F, page 135**.

With these 4Ps — performance, projects, productivity and people — we are doing more, in a way guided by strategic vision and purpose. This allows us to make our best effort to prepare a budget and financing plan for the District, all in service of providing reliable and efficient wastewater services to our owner communities and the individuals who live, work, play and do business in them.

It is an exciting time for the District. We are experiencing challenges that come with maturation. But with a strong workforce, intelligent planning, and a keen eye to the future, we have never been more focused on what's important to our work, our owner communities and the public we serve and on upholding our mission to protect public health and the environment. Thank you for your support.

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

BUDGETING PRINCIPLES AND POLICIES

The goal of the District's annual budget process is to identify prioritized spending needs and develop a financing plan adequate to cover those needs. The budget reflects capital project spending, debt service costs, ongoing operational costs, new program needs, forecasted non-service charges revenues and reserve requirements. Service charges are set to provide adequate revenue for the coming year.

The District follows several key principles in budgeting. First, the annual budget is based on a six-year capital spending plan and a six-year financing plan. This advanced planning helps the District anticipate and prepare for significant future costs. It also allows the District to smooth revenue collection and maintain adequate financial reserves.

Second, the District manages its overall budget with three individual budgets, each with a corresponding fund. The operating budget supports operational costs for District programs. Major components include District labor, materials, and professional services costs. The operating budget includes transfers to the capital projects fund to support capital project costs and to the debt service fund to support the repayment of District debt. Revenues from the operating fund are primarily from service charges, with lesser revenues from septage hauling fees, interest earnings, and similar sources.

The capital projects budget supports the costs of capital projects to serve the District's growing service area, repair and replace existing infrastructure, improve infrastructure reliability, and meet additional regulatory requirements. Staff costs related to capital projects are charged to the capital projects budget. Funding for capital projects comes from the transfer from the operating fund, connection charges paid when new areas connect to the District, and loan proceeds from the State of Wisconsin's Clean Water Fund Loan Program.

The debt service budget pays principal and interest payments for Clean Water Fund loans. **Figure 1, page 5,** summarizes the fund structure for the operating, capital projects and debt service budgets.

The third principle regards borrowing. The District finances operating expenditures through current revenues and reserves; it does not incur debt for operational costs. The District borrows for certain capital projects through the State of Wisconsin's Clean Water Fund Loan Program. The District uses its authority to collect a property tax as collateral for Clean Water Fund loans, but the District repays loans through service charges revenue. The District has no plans to collect a property tax.

Fourth, most District costs are funded by services charges paid by the communities the District serves. These charges are allocated proportionally to a community's population and the volume and strength of wastewater from each community in the billing period. This arrangement is meant to fairly allocate the costs of the District's regional wastewater collection system and treatment plant to the communities that benefit.

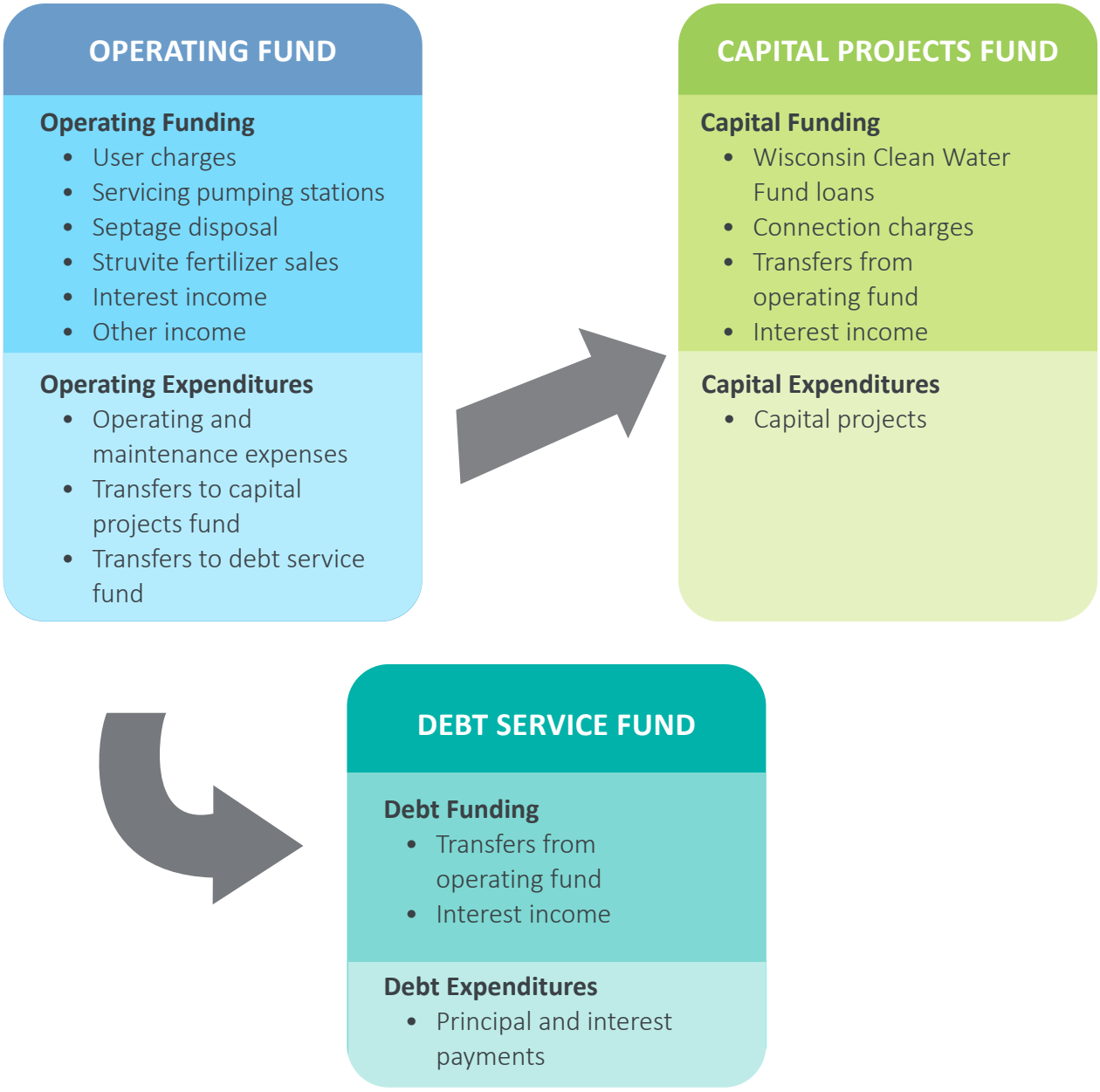
Fifth, the District strives to maintain stable increases in service charges and to maintain financial resiliency. These goals are supported through the use of fund reserves as part of the six-year financing plan.

Several Commission policies govern the budget. The District's Commission Policy Book can be found at madsewer.org/commission. Policies that guide the preparation of the annual budget for each fund include:

- ATT-2A regarding capital projects and debt service budget development and approval;
- ATT-2B regarding debt financing;
- ATT-2D regarding fund reserves;
- ATT-2E fund structure; and
- ATT-2F regarding operating budget development and approval.

Find the District's Commission Policy Book at madsewer.org/commission

Figure 1: **Fund Structure for Budgets**



ROLES

District budgeting involves efforts from several key groups. The Chief Engineer and Director (CED) is ultimately responsible for the development and content of the annual budget and oversight of budget implementation once adopted. The Executive Team oversees budget development and advises the CED on the final budget proposal. The Department of Enterprise Services' accounting group manages District revenues and expenditures and provides essential information for budget development and monitoring. The Budget and Planning department develops the Capital Improvements Plan (CIP) and the annual budget. Finally, the Commission sets overall policy direction, represents the interests of owner communities, and approves the final annual budget.

SCHEDULE & AMENDMENTS

The annual budget process begins with developing the CIP, which identifies capital spending needs and includes a draft financing plan covering the next six years. The Commission accepts that plan for planning purposes in mid-summer. District staff and leadership then identify operating needs for the coming year. These are combined with the CIP to form the full budget proposal for review and approval by the Commission in September and October. **Figure 2, page 7,** shows the District's budget calendar by month and activity.

The District may amend the budget after adoption if needed; see **Table 1 at right.**

For the operating budget, any increase in expenditure authority requires Commission approval. In addition, any change in the amount to be transferred from the operating fund to the debt service fund requires Commission approval. Staff may change transfers to the capital budget to reflect changes in service charges revenue or capital project spending. However, the general practice is to make such changes in subsequent budget years. For the capital budget, Commission approval is required to increase expenditure authority for an individual project, to add a new project, or if total spending on all projects will exceed the total authorization for the year. Debt service payments are an obligation, and their budget cannot be reduced.

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.

The annual budget process requires leadership and oversight by Chief Engineer and Director Michael Mucha and the District's Executive Team of Bill Walker, Lisa Coleman, Mike Lipski, Dana Reed, Martye Griffin, Amanda Wegner and Eric Dundee.

Figure 2: **Milestones for Developing the 2024 Budget**

JULY 2024

DISTRICT

Throughout month

Departments identify critical needs and budget forecasts

DISTRICT

July 13

District staff present draft Capital Improvements Plan, which informs the budget, to Commission

COMMISSION

July 27

Commission reviews and accepts draft Capital Improvements Plan

AUGUST 2024

DISTRICT

Throughout month

Department staff develop the proposed operating budget

SEPTEMBER 2024

DISTRICT

September 13

Proposed budget summary is published and notice given of the upcoming budget hearing as required by Wisconsin Statutes Section 65.90

COMMISSION

September 14

Chief Engineer and Director presents proposed budget to Commission

DISTRICT

September 15

Notification of District's proposed budget and budget hearing mailed to owner communities

COMMISSION

September 28

Public hearing and Commission discussion on proposed budget

OCTOBER 2024

DISTRICT

October 5

Deadline to receive written comments from the public

COMMISSION

October 12

Commission deliberates budget

COMMISSION

October 26

Commission adopts budget and service charge and septage disposal rates

NOVEMBER 2024

DISTRICT

By November 1

Notify customers and septage haulers of new rates and estimated charges

ACCOUNTING

The District's budget reflects the following key accounting factors. First, the District's accounting and budget fiscal year begins on January 1 of each year and ends on December 31 of that year.

Second, District expenditures are recorded on a cash basis. Revenues are recorded on an accrual basis. Capital outlay is budgeted as expenses in the year incurred but capitalized and depreciated for financial reporting purposes. Capital project expenses are budgeted according to what is projected to be completed for that particular year.

Third, although the District develops three separate budgets for operations, capital and debt, it 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.

Fourth, the District must meet statutory requirements for municipal budgeting in Chapter 65 of Wisconsin state statute, including adopting a balanced budget. A balanced budget is one in which anticipated revenues equal anticipated 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.

SERVICE CHARGE RATES

The District's service charge rates depend on the budget and the predicted loadings for the coming year. The budget determines the 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)/Predicted 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 and expected changes in wastewater discharge from high-strength users. Rates are determined for each parameter.

It is important to note that the District is a wholesaler and bills owner 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 on the District's website.

Find the District's Sewer Use Ordinance at madsewer.org/suo

Service charge rates are set following the adoption of the final budget and provided to owner communities at that time. The District also provides an estimate of each owner community's charges for the coming year. Actual charges will vary based on the flows and loadings from the community during the year.

FUND RESERVES

Fund reserves play an important role in managing risks, including risks related to cash flow (variation in revenue and expenditure timing), unplanned expenditures, revenue shortfalls, multi-year revenue smoothing, regulatory requirements, and borrowing requirements. The District follows general utility practices in managing reserves. Key requirements are set in Commission policy.

Operating fund reserves:

- 180 days to 210 days of annual operating costs — cash flow risk (Commission policy); and
- Amounts for Wisconsin Department of Natural Resources (WDNR) equipment replacement requirements — regulatory requirement and unplanned expenditure risks.

Capital projects fund reserves:

- Minimum of $3 million or 10% of subsequent year expenditures — general minimum (Commission policy);
- 50% of average annual loan-funded expenditures — cash flow risk; general utility practice; and
- $2 million for emergencies — WDNR equipment replacement requirements and unplanned expenditure risk; general utility practice.

Debt service fund reserves:

- Balance as of October 1 at least as large as subsequent year's expenditures — regulatory requirement and cash flow risk;
- Amounts needed to pay annual debt service on $50 million in additional debt beginning in year six of the Capital Improvements Plan — unplanned expenditure risk; and
- Varying amounts to smooth revenue requirements across years — multi-year revenue smoothing.

Staff within the reliability and maintenance section update plant equipment, for example welding a skimmer arm on a final clarifier, to support continual operations and reduce unplanned expenditures.

SECTION TWO

2024 Operating Budget Summary

A couple enjoys fall splendor at Picnic Point and Lakeshore Nature Preserve along Lake Mendota.

The operating budget is an annual financing plan that accounts for revenues and expenses to support daily operations and maintenance of all District facilities. This section summarizes spending and position changes for 2024 from the prior year's budget; presents the overall budget, including revenues, expenditures, reserves and positions; and briefly discusses the all-funds budget and financing plan. More details on the financing plan are found in the Capital Finance section.

CHANGES FROM PRIOR BUDGET

Development of the operating budget uses the prior year's operating budget as a starting point. This is the so-called "base budget" and a variety of adjustments are added to that base budget. Some of these are necessary housekeeping items, such as incorporating changes made during 2023, truing up actual labor costs for the current complement of employees, and removing one-time items from the budget.

Next, various unavoidable cost-of-doing-business increases needed to maintain current operations are added. These include costs of chemicals, power and insurance. Third, there are added changes to reflect growing program needs and a general wage adjustment. Finally, there are added needed new positions. These are summarized in **Table 2, page 12.**

OPERATING BUDGET AND FUND SUMMARY

The full operating budget is given in **Table 3, page 13.** The table reports actual values for the preceding budget year, estimated values for the current budget year, and budgeted values for the current year and subsequent year.

Service charges revenue for 2023 is forecast to be the same as budgeted. It is too early to predict changes in the third and fourth quarter service charges revenue, and the best estimate is what was made last year. Estimates for non-service charges revenues have been updated to reflect recent trends. Non-service charges revenues are generally more predictable than service charges revenues.

Expenditures are given by District department, with lines for interfund transfers to the capital projects fund and debt service fund. Note that in prior years, budgeted expenditures were given by accounting activity categories, including wastewater treatment, capital outlay, and effluent diversion. The shift to departmental budgeting more accurately and transparently reflects the way the District's budget is constructed and the functional organization of the District.

Current year expenditures are estimated equivalent to the budgeted amounts. Although amounts through June 2023 are greater than half the budgeted amounts for the year, the budgeted amounts remain the best estimate of final spending. Note that the through-June amounts and the 2024 budget reflect several reorganizations that occurred during 2023, as described below.

The reserve requirements for the current year and budget year include the required 180-day expenditure equivalent amount. The reserve in the current year is forecast to exceed the minimum by approximately $1.3 million or 15 days' equivalent. The budget year is forecast to exceed the minimum by approximately $500,000 or five days' equivalent. The reserve also meets the Wisconsin Department of Natural Resources (WDNR) requirement to have a reserve for equipment replacement. The requirement for the budget year is approximately $4 million. (Two million dollars of this requirement is covered with an unplanned expense reserve in the capital projects fund.)

The District has a separate account for costs of vehicle replacements. The current balance in that account is $484,300. **Appendix E, page 134**, shows the proposed five-year vehicle replacement schedule.

Table 2: **2024 Service Charge Changes from 2023**

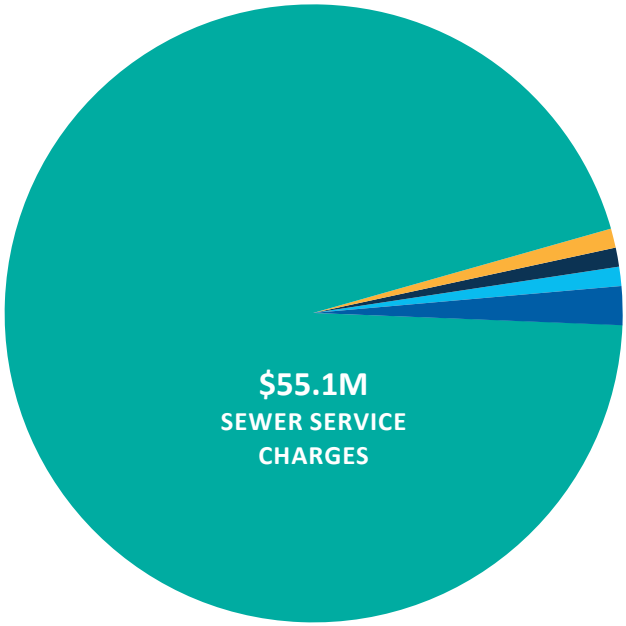
BUDGET STEP	AMOUNT	% CHANGE	NOTE
2023 Budgeted Service Charges	**$50,498,000**	N/A	Service charges set in 2023 budget
Non-Service Charges Revenue Offset	**(137,100)**	**-0.3%**	Additional non-service charges revenue reduces need for service charges
Automatic Adjustments			
Labor True Up	(63,600)	-0.1%	Update labor budget to match current employment complement
Non-Continuing Items	(255,000)	-0.5%	Remove one-time expenditure authority from Enterprise Services
Subtotal	***(318,600)***	***-0.6%***	
Cost of Business			
Yahara WINS Contribution	110,000	0.2%	Additional contribution required by shifting flow from Badger Mill Creek to Badfish Creek
Laboratory	17,000	0.0%	Required chemicals and services cost increases
Enterprise Services	70,000	0.1%	Insurance and audit fee cost increases
O&M Supply and Contract Cost Increases	284,000	0.5%	Increasing supply and contract costs for operations and maintenance
O&M Power, Chemicals, Gas, Water	715,000	1.3%	Increasing costs for electric power, natural gas, water and chemicals for plant operations
Metrogro Hauling	175,000	0.3%	Increasing costs of hauling and disposing biosolids through the Metrogro program
Capital Program	1,243,000	2.5%	Transfers to capital projects fund and debt service fund per the Capital Improvements Plan
Net Reserve Requirements and Balance Change	1,042,600	2.1%	Primarily to meet 180-day minimum reserve
Subtotal	***3,656,600***	***7.2%***	
Additional Needs			
General Wage Adjustment	548,400	1.1%	General wage increase of 4% for all regular employees
Maintenance Projects	325,000	0.6%	Various mid-sized maintenance needs
New Positions	535,300	1.1%	4.0 FTE regular positions
Miscellaneous	(44,600)	-0.1%	Miscellaneous changes yielding a net reduction
Subtotal	***1,364,100***	***2.7%***	
Grand Total	***$4,565,000***	***9.0%***	***2024 Budgeted Service Charges***

Table 3: **2024 Operating Budget Summary**

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$24,172,800**	**$18,508,000**	**N/A**	**$18,776,700**	**$18,465,700**
Revenues					
Sewer Service Charges	45,960,900	50,498,000	24,892,200	50,498,000	55,063,000
Servicing Pumping Stations	471,900	454,000	267,500	494,700	517,500
Rent	85,700	90,000	27,900	89,000	92,300
Interest Earnings	226,700	29,000	259,400	234,600	242,500
Annexation and Plan Review Fees	59,300	70,000	21,000	69,100	69,100
Miscellaneous Income	165,200	106,000	46,700	168,800	172,400
Septage Disposal Revenue	1,077,900	809,000	551,400	1,175,100	1,272,300
Pretreatment Monitoring	34,500	38,000	-	36,800	39,100
Struvite Fertilizer Sales	217,300	215,000	132,100	231,900	231,900
TOTAL REVENUES	**$48,299,400**	**$52,309,000**	**$26,198,200**	**$52,998,000**	**$57,700,100**
Expenditures					
Budget and Planning	3,078,400	4,329,900	495,100	2,090,400	2,001,500
Ecosystems Services	2,508,200	3,906,800	1,551,700	3,900,700	3,986,900
Engineering	1,057,100	2,224,900	476,600	1,076,400	1,843,500
Enterprise Services	-	-	1,920,700	2,545,800	3,935,900
Leadership Support	3,012,900	3,918,600	921,300	3,200,000	2,666,600
Operations and Maintenance	20,220,600	19,039,300	8,953,000	19,678,700	21,401,600
Interfund Transfer, Capital	7,521,300	4,791,000	4,791,000	4,791,000	15,521,000
Interfund Transfer, Debt	16,297,000	16,026,000	16,026,000	16,026,000	6,539,000
TOTAL EXPENDITURES	**$53,695,500**	**$54,236,500**	**$35,135,400**	**$52,309,000**	**$57,896,000**
CLOSING BALANCE	**$18,776,700**	**$16,580,500**	**N/A**	**$18,465,700**	**$18,269,800**
Reserve Requirement	16,984,000	17,160,500	N/A	17,160,500	17,756,300
Closing Balance Net of Reserves	1,792,700	(580,000)	N/A	1,305,200	513,500

Figure 3: **2024 Operating Budget Summary**

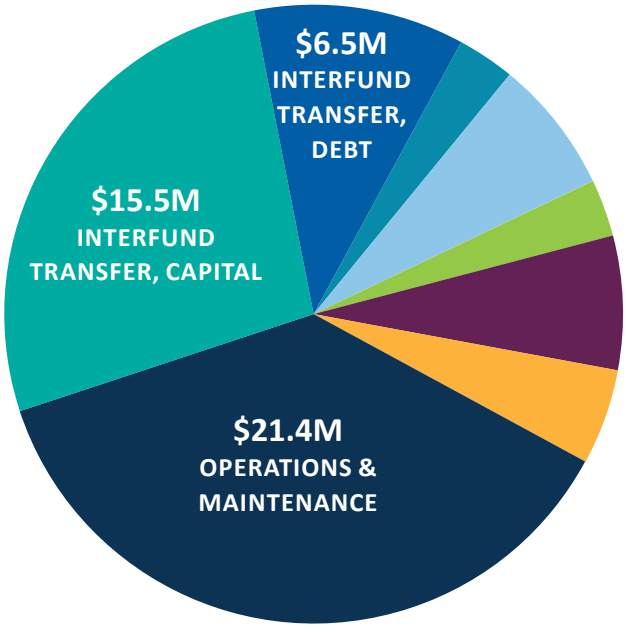
OPERATING REVENUES



SEWER SERVICE CHARGES	$55,063,000	95.4%
SEPTAGE DISPOSAL REVENUE	$1,272,300	2.2%
SERVICING PUMPING STATIONS	$517,500	0.9%
INTEREST EARNINGS	$242,500	0.4%
ALL OTHER	$604,800	1.1%

TOTAL OPERATING REVENUE:
$57,700,100

OPERATING EXPENDITURES



BUDGET & PLANNING	$2,001,500	3.5%
ECOSYSTEM SERVICES	$3,986,900	6.9%
ENGINEERING	$1,843,500	3.2%
ENTERPRISE SERVICES	$3,935,900	6.8%
LEADERSHIP SUPPORT	$2,666,600	4.6%
OPERATIONS & MAINTENANCE	$21,401,600	37.0%
INTERFUND TRANSFER, CAPITAL	$15,521,000	26.8%
INTERFUND TRANSFER, DEBT	$6,539,000	11.3%

TOTAL OPERATING EXPENDITURES:
$57,896,000

POSITIONS

The budget includes four new positions. The overall driver for these positions is the growth of the District. Two positions are driven by growth in the capital projects needed to maintain and expand the treatment plant. The new assistant operations manager position and new night lead operator will relieve staffing pressure on the Operations group and allow the group to provide more support for capital projects affecting the plant in the coming years. In addition, the assistant operations manager will provide important backup to one of the most critical positions at the District. The night lead operator will also provide needed backup and increased safety during night hours.

The new treatment plant planning engineer will address a key gap in District planning by focusing on plant-related capital plans. This will allow the Budget and Planning Department to fully support facility planning and capital project planning for both the collection system and treatment plant.Finally, the new business services specialist will match the growth in other District programs and staffing. The position will join the team that provides support for meetings, event planning, communications, outreach, and Commission support. Having specialized support staff frees other staff from support duties, increases efficiencies and supports process improvements.

Table 4, below, shows changes in the District's authorized positions. Figures are given as full-time equivalent positions, not number of individual employees. The changes from 2023 to 2024 reflect the 4.0 FTE new positions discussed above. They also reflect the following reorganizations that have already occurred:

- Create a new Department of Enterprise Services to consolidate technology and accounting services.
  - Shift 7.0 FTE IT positions from Budget & Planning.
  - Shift 6.0 FTE accounting positions from Leadership Support.
- Shift the 1.0 FTE collection system engineer position from Engineering to Budget & Planning to consolidate planning functions.

Table 4: **Full-time Equivalent Positions**

Department	2022	2023	2024	Changes
Budget and Planning	15.0	15.0	8.0	• Shifted 7.0 FTE IT positions to Enterprise Services in 2023. • Shifted 2.0 FTE asset management positions to O&M in 2023. • Shifted 1.0 FTE collection system engineer to B&P in 2023. • Add 1.0 FTE treatment plant planning engineer in 2024.
Ecosystems Services	14.0	14.0	14.0	No changes.
Engineering	9.0	12.0	11.0	• Shifted 1.0 FTE collection system engineer position to B&P.
Enterprise Services	0.0	0.0	13.0	• Shifted 7.0 FTE IT positions from B&P in 2023. • Shifted 6.0 FTE accounting positions from Leadership Support in 2023.
Leadership Support	16.9	17.9	11.4	• Shifted 6.0 accounting positions to Enterprise Services in 2023. • Shifted 1.5 FTE purchasing positions to O&M in 2023. • Add 1.0 FTE business services specialist in 2024.
Operations and Maintenance	65.3	67.3	72.8	• Shifted 2.0 FTE asset management positions from B&P in 2023. • Shifted 1.5 FTE purchasing positions from LS in 2023. • Add 2.0 FTE operations positions in 2024.
	120.2	126.2	130.2	

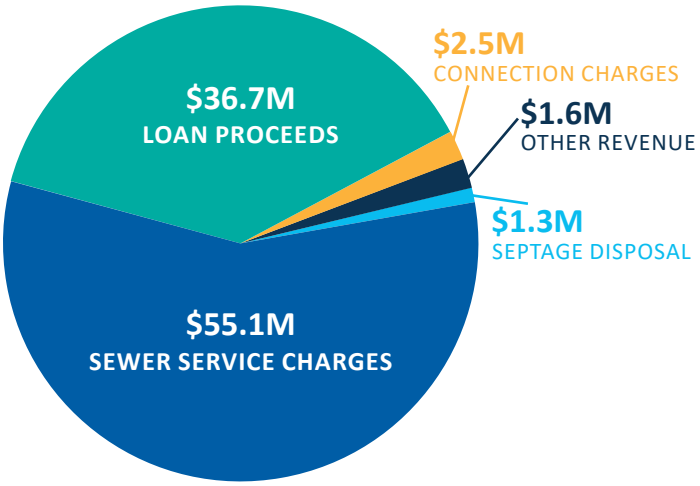
Note: *2023 and earlier budget documents reported all fractional positions as 0.5 FTE, even if their authorized level was higher. The table above reports all fractional positions precisely.*

ALL-FUNDS SUMMARY AND PLAN

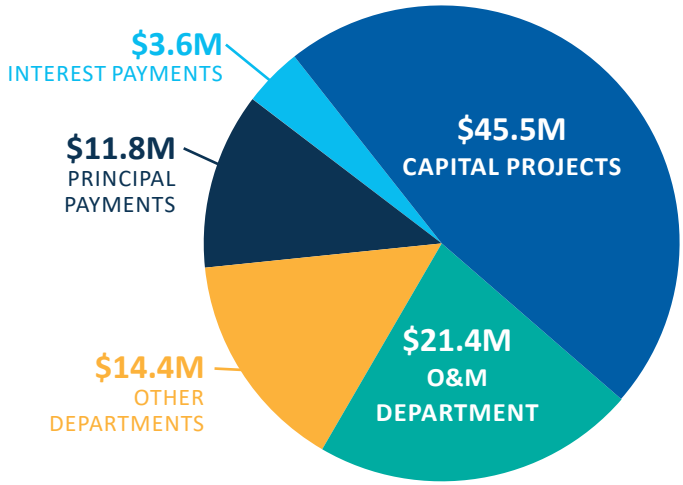
The operating budget includes transfers to the capital projects fund and the debt service fund. Details on those funds are presented in the capital finance section, including revenues from connection charges. Combining the three budgets, net of interfund transfers, yields an all-funds budget, shown in detail in **Appendix C, page 125.** A simplified illustration of all-funds spending and revenue is given in **Figure 4, below and Table 5, page 17.**

Figure 4: **2024 Combined Summary of Revenues & Expenditures**

ALL-FUNDS BUDGETED REVENUES
$97 MILLION



ALL-FUNDS BUDGETED EXPENDITURES
$96.7 MILLION



REVENUE & EXPENDITURE CATEGORIES DEFINED

REVENUE CATEGORIES

Sewer service sharges: Charges paid by the District's owner communities to cover each community's share of District costs. These charges are the primary revenue source for the District. See the information on service charge rates on **page 8.**

Servicing pumping stations: Charges paid by communities whose pumping stations are operated and maintained by the District.

Rent: Rental revenue from District-owned properties.

Interest: Interest earned on the District's cash reserves.

Annexation & plan review rees: Payments from owner communities for District services in reviewing plans for annexations of land to the District's area of service and for modifications or additions to their sewer systems.

Miscelleanous income: Smaller sources of revenue including sale of scrap materials and providing laboratory services.

Septage disposal income: Income received for waste delivered by truck to the plant. The largest source of waste delivered is from homes and businesses on septic systems.

Pretreatment monitoring: Payments by businesses for District industrial discharge permits.

Struvite fertilizer sales: Revenue from sales of struvite pellets, a type of fertilizer from phosphorous removed from wastewater treated at the plant.

EXPENDITURE CATEGORIES

Department expenditures: Expenditures for each District department individually.

Interfund transfer, capital: Transfer to the capital projects fund to support capital project costs.

Interfund transfer, debt: Transfer to the debt service fund to support District debt service payments.

Table 5: **2024 All-Funds Budget Summary**

Note: *This table omits interfund transfers.*

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$55,549,600**	**$64,587,300**	**N/A**	**$70,412,700**	**$65,589,700**
Revenues - Operating Budget					
Sewer Service Charges	45,960,900	50,498,000	24,892,200	50,498,000	55,063,000
Servicing Pumping Stations	471,900	454,000	267,500	494,700	517,500
Rent	85,700	90,000	27,900	89,000	92,300
Interest Earnings	226,700	29,000	259,400	234,600	242,500
Annexation and Plan Review Fees	59,300	70,000	21,000	69,100	69,100
Miscellaneous Income	165,200	106,000	46,700	168,800	172,400
Septage Disposal Revenue	1,077,900	809,000	551,400	1,175,100	1,272,300
Pretreatment Monitoring	34,500	38,000	-	36,800	39,100
Struvite Fertilizer Sales	217,300	215,000	132,100	231,900	231,900
SUBTOTAL REVENUES - OPERATING	*$48,299,400*	*$52,309,000*	*$26,198,200*	*$52,998,000*	*$57,700,100*
Revenues - Capital Projects Budget					
Clean Water Fund Loans	16,190,800	22,285,000	-	1,515,000	36,651,000
Connection Charges	3,169,000	4,550,000	1,215,400	2,175,000	2,450,000
Interest Earnings	154,700	150,000	19,000	19,000	80,000
Transfers From Operating Fund	7,521,300	4,791,000	4,791,000	4,791,000	15,521,000
SUBTOTAL REVENUES - CAPITAL	*$27,035,800*	*$31,776,000*	*$6,025,400*	*$8,500,000*	*$54,702,000*
Revenues -Debt Service Budget					
Transfer from Operating Fund	16,297,000	16,026,000	16,026,000	16,026,000	6,539,000
Interest Earnings	141,800	150,000	67,500	51,000	155,000
SUBTOTAL - DEBT SERVICE	*16,438,800*	*16,176,000*	*16,093,500*	*15,077,000*	*6,694,000*
TOTAL REVENUES, OMITTING TRANSFERS	**$67,955,700**	**$79,444,000**	**$27,500,100**	**$56,758,100**	**$97,036,100**

(continued)

Table 5: **2024 All-Funds Budget Summary** (continued)

Expenditures - Operating Budget					
Budget and Planning	3,078,400	4,329,900	495,100	2,090,400	2,001,500
Ecosystems Services	2,508,200	3,906,800	1,551,700	3,900,700	3,986,900
Engineering	1,057,100	2,224,900	476,600	1,076,400	1,843,500
Enterprise Services	-	-	1,920,700	2,545,800	3,935,900
Leadership Support	3,012,900	3,918,600	921,300	3,200,000	2,666,600
Operations and Maintenance	20,220,600	19,039,300	8,953,000	19,678,700	21,401,600
Interfund Transfer, Capital	7,521,300	4,791,000	4,791,000	4,791,000	15,521,000
Interfund Transfer, Debt	16,297,000	16,026,000	16,026,000	16,026,000	6,539,000
SUBTOTAL EXPENDITURES - OPERATING	*$53,695,500*	*$54,236,500*	*$35,135,400*	*$53,309,000*	*$57,896,000*
Expenditures - Capital Projects Budget					
Treatment Plant	1,851,000	6,131,000	234,700	4,497,000	11,963,000
Interceptors	1,415,000	10,415,000	1,596,200	4,497,000	19,304,000
Pumping Stations and Force Mains	4,418,000	14,536,000	896,600	3,357,000	13,745,000
Capital Budget Expenses	213,000	484,000	316,600	693,000	533,000
SUBTOTAL EXPENDITURES - CAPITAL	*$7,897,000*	*$31,566,000*	*$3,044,100*	*$13,044,000*	*$45,545,000*
Debt Service Budget					
Principal Payments	12,280,900	13,949,000	13,038,000	13,097,000	11,762,000
Interest Payments	3,038,400	3,669,000	1,538,500	2,948,000	3,578,000
SUBTOTAL EXPENDITURES - DEBT SERVICE	*$15,319,300*	*$17,618,000*	*$14,576,500*	*$16,045,000*	*$15,340,000*
TOTAL EXPENDITURES, OMITTING TRANSFERS	**$53,093,500**	**$82,603,500**	**$31,939,000**	**$61,581,000**	**$96,721,000**
CLOSING BALANCE	**$70,411,800**	**$61,427,800**	**N/A**	**$65,589,700**	**$65,904,800**

SECTION THREE

2024 Capital Improvements Plan & Budget

A child plays along the rocky shoreline of a Madison lake.

The District's Capital Improvements Plan (CIP) is updated and adopted as draft each year prior to the development of the annual operating budget. This section provides an overview and summary of the 2024 capital projects budget that funds the CIP and provides a six-year capital projects summary.

The CIP contributes to District planning and budgeting in the following ways:

- Identifies capital projects that are needed to keep the District's assets in good working order and meet capacity needs.
- Analyzes and describes projects in detail in individual business cases, including needs, alternatives, costs and time frames for planning, design and construction.
- Identifies potential large spending requirements for future years and incorporates them into financial planning as needed.
- Estimates project expenditures for six years using the best information available.
- Arranges project timelines to balance urgency, resources and coordination requirements.
- Prepares a financing plan to balance the use of debt, financial resiliency and impacts on service charges.
- Proposes an annual capital budget for the succeeding year.

For projects toward the end of the six-year timeframe, costs and schedules are generally less developed. Details of projects in the first one to three years are more precisely known. Many of the early period projects are underway, and their costs have been committed to by contract. Annual CIP updates allow the District to have more precise spending and work plans in the short term and prepare for potential large work and financial issues over the longer term.

Information on specific projects in the CIP can be found in the project summaries in **Appendix A, page 64**. These project summaries describe the scope, need, cost and schedule for each project. More detailed descriptions of each project are included in business cases.

Large construction projects, whether on the Nine Springs Treatment Plant campus or offsite, require years of strategic planning before work can begin.

A brief discussion of recently completed projects can be found in **Appendix B, page 117**, along with the status of maintenance retainers for recently completed or soon-to-be-completed projects.

PROJECT COST ESTIMATES

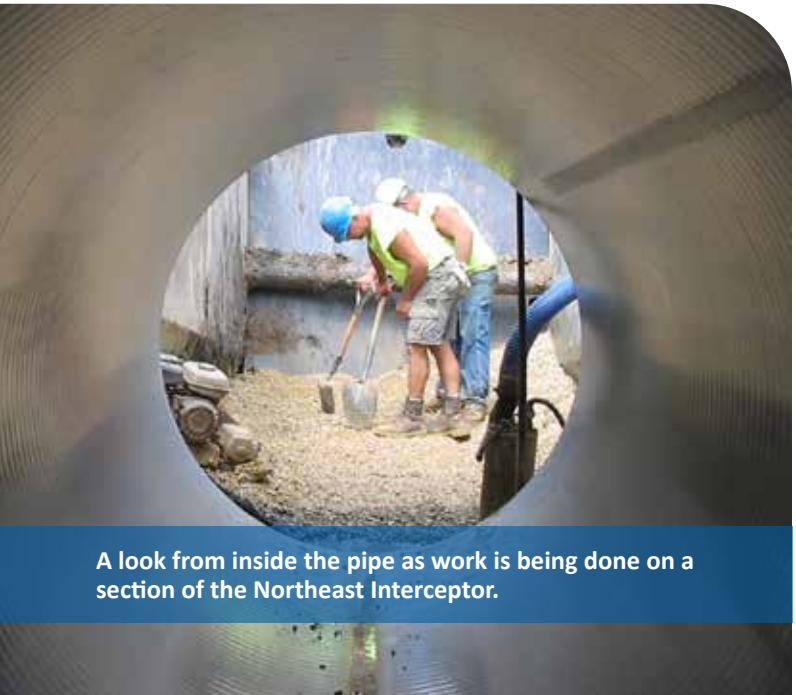
The 2023 CIP included several provisions to address rising costs in the construction industry that arose because of the COVID-19 pandemic. Annual project costs in the CIP are typically increased at a rate of 3% to account for the effects of inflation, but the 2023 CIP increased these rates in the early years of the plan. The 2024 plan continues these higher rates of annual inflation as follows:

- 5% for 2024
- 5% for 2025
- 4% for 2026
- 3% in 2027, 2028 and 2029

At the time the 2023 CIP was prepared, staff recognized that supply chain and other economic factors were affecting capital projects generally but did not have information about impacts on individual projects. The 2023 CIP therefore applied an additional contingency factor for projects costs to account for projects that were scheduled for construction in 2022 or 2023. This contingency factor, referred to as an economic climate contingency (ECC), was meant to be independent of inflation and was used to represent the cost volatility of construction projects at the time.

For the 2024 CIP, project-specific information is now available. Since the scope of each capital project varies appreciably and they are not all susceptible to the same cost drivers to the same extents, the ECC is not used in the 2024 plan as a general contingency. Rather, allowances for rising costs due to raw material shortages, supply chain issues, and overall inflation have been factored into the cost estimates for each individual project where applicable.

In general, project cost estimates in the 2024 plan are appreciably greater than those in the 2023 plan because of these external factors.



A look from inside the pipe as work is being done on a section of the Northeast Interceptor.

SUMMARY OF 2024 EXPENDITURES

Capital expenditures for 2024 focus on the rehabilitation and replacement of existing assets at the treatment plant and the collection system and the provision of new assets to provide additional capacity in the collection system. Some of the major construction activities and equipment purchases in 2024 include the following:

- Rehabilitation of HVAC systems in four process buildings at the treatment plant.
- Replacement of the drives and mechanisms on two of the gravity sludge thickeners at the treatment plant.
- Rehabilitation of the flow splitter structure at the treatment plant's Headworks Facility.
- Replacement of the District's maintenance, financial and human resources systems.
- Completion of the third and final phase of the West Interceptor – Shorewood Relief Project between Shorewood Boulevard and Walnut Street in the City of Madison and Village of Shorewood Hills to provide additional capacity.
- Installation of Phases 5 and 6 of the Lower Badger Mill Creek Interceptor between County Highway PD and Midtown Road in the City of Verona and Town of Verona.
- Installation of a relief/replacement sewer for the Northeast Interceptor – Waunakee Extension in the Town of Westport to provide additional capacity.
- Rehabilitation of the Northeast Interceptor between Rieder Road and Lien Road in the City of Madison.

- Rehabilitation of the West Interceptor on University Avenue between Shorewood Boulevard and Segoe Road in the Village of Shorewood Hills and the City of Madison.
- Rehabilitation of Pumping Station 4 in the City of Madison.
- Firm capacity improvements and equipment replacements at Pumping Station 17 in the City of Verona.
- Installation of a relief force main for Pumping Station 17 in the City of Verona and Town of Verona.

Besides construction, several large projects will be under design in 2024. Construction of the first phase of the Liquid Processing Improvements was completed in 2021. Design of the second phase of projects began in 2023 and is scheduled for completion in 2024. These projects include replacement of the air piping in the East Primary Influent Channel, replacement of piping and equipment in the aeration tanks and modifications to allow for treatment at lower levels of dissolved oxygen, and replacement of blower and switchgear equipment at both the west and east complexes.

Regulatory performance and process engineer Carly Amstadt takes a District vehicle to the lagoons to monitor pollution mitigation efforts.

Design work will also continue in 2024 for the replacement of the electrical equipment that handles the incoming electrical service to the treatment plant. This equipment is responsible for transforming the incoming voltage from the local utility for use by downstream plant equipment at lower voltages and for isolating and protecting that equipment.

Other design work at the treatment plant includes a continuation of the analysis on the dikes in the sludge lagoons to protect them against rising water levels in future wet weather events. Design work in 2024 is also expected to begin on replacement of various components of the effluent reuse system that provides non-potable water to various processes around the treatment plant.

Design work to interceptor facilities in the collection system in 2024 is expected to include two projects related to the reconstruction of U.S. Highway 51 by the Wisconsin Department of Transportation (WisDOT) in the Village of McFarland. One project will involve the rehabilitation of portions of the Southeast Interceptor that are in the highway right-of-way prior to the expansion of the roadway over the sewer. The other project requires the relocation of District facilities near the Yahara River caused by WisDOT's reconstruction of the bridge at this location. This work also involves the relocation of sewers by three of the District's owner communities.

Finally, design work will begin in 2024 on a multi-year plan to provide emergency power generation at all District pumping stations. The District currently has facilities or plans in place for portable generation at five of its 18 pumping stations. Under the 2024 plan, the remaining stations will be equipped with portable generators in a series of annual installations between 2025 and 2032.

Several significant planning projects are also scheduled for 2024, most significantly a project related to the District's future use of biogas and the related impact on heat and power systems at the treatment plant. The Energy Management Master Plan was completed in 2021 and contained recommendations for further study of the District's biogas utilization. Options to be considered during the

facility planning phase include producing pipeline-quality biogas for regional sale or continuing the practice of using biogas to generate electricity at the treatment plant. Selection of the final alternative will be made in 2024, with facility planning continuing in 2025.

Planning work in the collection system will also begin on a series of projects to provide additional capacity to the Nine Springs interceptor system between Pumping Stations 11 and 12. The first phase of the project will include a new relief or replacement sewer between Pumping Station 11 and U.S. Highway 14, with additional phases proceeding upstream between 2030 and 2040.

Finally, the Collection System Facilities Plan Update is expected to be completed in 2024. This document will be used to identify, justify and prioritize collection system projects for inclusion in future CIPs. This plan will be completed as a joint effort between District staff and an engineering consultant.

CONFORMANCE WITH ADOPTED PLANS AND PROGRAMS

The 2024 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. 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 near future. This is a key assumption to note as the projects to add capacity in the Pumping Station 17 basin will be constructed in the next two to three years.

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 (CARPC) updated its 2009 evaluation of the District's collection system capacity in 2017 and 2018. This update will allow the District to update its Collection System Facilities Plan, currently scheduled for substantial completion in 2024.

SOLIDS HANDLING FACILITIES PLAN

This Solids Handling Facilities Plan formed the basis for work constructed during the Eleventh 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 2024 CIP.

Collection System Services staff Ben Vehlow and Derek Steinhorst raise a manhole casting by using two rings, a non-rocking frame and a sealed cover to help reduce inflow and infiltration (I/I) in sewers.

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. This facilities plan was substantially completed in 2017 and included multiple projects that will address the plant's liquid processing needs. 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 the project was bid in 2019 and was completed in the second half of 2021. Projects to be included in the second and third phases of the Liquid Processing Improvements are included in the 2024 CIP, with the timing and phasing of these projects determined based on project need, staff workload and the District's financial situation.

Key staff from MGE toured our plant to learn more about biogas energy management and resource recovery.

ENERGY MANAGEMENT MASTER PLAN

Brown and Caldwell and Strand Associates performed an energy study in 2014. This plan built on that study by taking a comprehensive look at how the District is currently using energy and creating a roadmap for how to manage energy in the future. The study, conducted by Carollo Engineers, emphasized how to select projects and optimize energy use as critical pieces of equipment are replaced in the coming years, such as the gas-driven electrical generators and the associated hot water system. The study was completed in the fall of 2021 and recommendations include further study and facilities planning for heat and power improvements, biosolids processing and miscellaneous energy enhancements at the treatment plant in the coming years.

ASSET MANAGEMENT PROGRAM

The CIP is informed by the District's asset management program. Asset management contributes to capital planning by evaluating the condition and criticality of District assets, implementing proper maintenance processes to extend asset life and providing data on asset repair and replacement needs. The District's program began in 2011, received an updated framework in 2016, and received an updated plant asset management plan in 2019. The next steps in the program include further improving maintenance practices, improving asset data and implementing a new computerized maintenance management system to provide better information for planning.

CAPITAL PROJECT INFRASTRUCTURE PLACEMENT PLAN

The newest planning effort is the Capital Infrastructure Placement Plan, which started in 2022. The purpose of this plan is to perform an inventory of all major facilities at the Nine Springs Wastewater Treatment Plant and to propose a plan that optimizes future infrastructure and operations given the District's limited space and resources. Specific focus areas of the plan include the future handling and treatment of biogas, biosolids, and administrative spaces at the plant. TKDA consultants began the study in 2022, and it is anticipated that the final report will be delivered in 2023. The recommendations from this report will be used in the preparation of future Capital Improvement Plans.

2024 CAPITAL PROJECTS BUDGET OVERVIEW & SUMMARY

Operator Nathan Schick monitors dissolved oxygen (DO) levels in plant aeration tanks and cleans the sensors.

This section discusses the District's 2024 capital budget. The capital budget sets spending limits on a per-project basis and total annual spending basis. Spending on individual projects is limited to the authorized total project cost. Individual project spending can and does vary by year if the total cost is not exceeded over the life of the project. Spending on all capital projects combined in the budget year is limited to the total amount authorized. The annual total budget limit is set for the current year only. Future year spending totals in the CIP are estimates.

The tables in this section list proposed total project cost authorizations, annual expenditures by project and loan proceeds. Financial matters, including fund balances and the use of debt, are discussed in the section on capital finance.

TOTAL PROJECT COSTS SUMMARY

Table CIP-1A, pages 27-28, lists total project costs. In accordance with Commission Policy ATT-2 on the development of the capital budget, each year the Chief Engineer and Director is required to submit to the Commission a list of total project costs for all previously approved projects and all projects new to the proposed budget. This table also includes total costs for those projects that are included in the six-year Capital Improvements Plan. For each project, the total project cost of the current budget year is compared to that of the preceding year.

Table CIP-1B, page 29, provides a breakdown of total project costs for projects that were authorized in previous CIPs but were subsequently combined, or bundled, into a single consolidated project for bidding and construction purposes. This table is provided for informational purposes per Commission policy, although only the total cost of the consolidated project is used for cost control purposes.

ANNUAL BUDGETS AND EXPENDITURES SUMMARY

Table CIP-2, page 30-31, lists annual expenditures by project. **Table CIP-3, page 32,** shows total annual budgets for 2022-2024, with actual and estimated spending for 2022 and 2023, respectively. For 2022, actual expenditures were $7.9 million, which was below the budgeted amount of $21.8 million. The underspending of approximately $14 million in 2022 was due primarily to the following projects:

- Construction of the 2021 Treatment Plant HVAC Improvement Project was delayed, and the construction contract was not awarded until January of 2023. Therefore, most of the project costs will be incurred in 2023-2024, rather than in 2022 ($1.1 million shift from 2022 to 2023).
- Facility planning for the Heat and Improvements Project was postponed from 2022 to 2024 due to staffing concerns ($0.7 million shift from 2022 to 2024).
- Construction of the West Interceptor – Shorewood Relief (Phase 2) Project was budgeted to occur in 2022. While most of the construction did occur in 2022 as scheduled, payments to the contractor were administered by Wisconsin Department of Transportation and were not invoiced to and paid by the District until early in 2023 ($1.5 million shift from 2022 to 2023).
- The Northeast Interceptor (Truax Extension) Rehabilitation Project was postponed from 2022 until 2024 ($6.0 million shift from 2022 to 2024).
- Construction of the Pumping Station 4 Rehabilitation Project was delayed, and the construction contract was not awarded until December of 2022. This will result in most of the project costs shifting from 2022 to 2023-2024 ($1.5 million shift from 2022 to 2023-2024).
- Construction of the Pumping Stations 13 and 14 Rehabilitation Project proceeded slightly slower than anticipated in 2022 ($1.0 million shift from 2022 to 2023).

The six projects described above account for roughly 85% of the amount that was underspent in 2022 and will be spent in later years.

Expenditures for 2023 are estimated to be $13.0 million. This is below the budgeted value of $31.6 million by $18.5 million. The underspending for 2023 is due to the postponement of the West Interceptor – Shorewood Relief (Phase 3) Project from 2023 to 2024 ($5.1 million shifted from 2023 to 2024) and the delayed starts for the Pumping Station 17 projects ($9.6 million shifted from 2023 to later years).

Electrician Roy Wells works on a control panel for Pumping Station 16. The panel helps maintain passive pressure between the control room and wet well.

Table CIP-1A: **Total Project Cost Authorizations**

Subprojects shown in separate table as noted		Has Sub-projects	Authorization in 2023 Plan	Proposed Authorization in 2024 Plan	Change in Authorization	
TREATMENT PLANT			**$160,998,000**	**$218,442,000**	**$57,444,000**	**36%**
A01	Liquid Processing Improvements- Phase 2		-	-	-	n/a
A01.1	East Primary Influent Channel Air Piping Replacement		1,390,000	1,515,000	125,000	9%
A01.2	Low Dissolved Oxygen (Partial Plant)		3,850,000	4,000,000	150,000	4%
A01.3	Low Dissolved Oxygen (Full Plant)		21,563,000	23,263,000	1,700,000	8%
A01.4	West Blowers and Switchgear Replacement		10,100,000	11,200,000	1,100,000	11%
A01.5	East Blowers and Switchgear Replacement		-	11,400,000	11,400,000	n/a
A02	Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacements		500,000	500,000	-	0%
A03	NSWWTP Electrical Service Equipment Replacement		4,739,000	13,700,000	8,961,000	189%
A04	Treatment Plant Energy Projects		-	-	-	n/a
A04.1	Heat and Power Improvements		50,914,000	50,914,000	-	0%
A04.2	Maintenance Facility Rooftop Solar Panels		10,422,000	378,000	(10,044,000)	-96%
A05	Lagoon Dikes Improvements		4,148,000	5,000,000	852,000	21%
A06	Maintenance, Financial and HR Systems		6,007,000	6,150,000	143,000	2%
A07	Metrogro Applicators & Equipment		4,494,000	4,850,000	356,000	8%
A08	Flow Splitter Improvements		2,500,000	5,000,000	2,500,000	100%
A09	Treatment Plant HVAC Improvements- Group 1 Projects		3,310,000	3,875,000	565,000	17%
A10	Liquid Processing Improvements- Phase 3		-	-	-	n/a
A10.1	Headworks Screening		5,012,000	5,175,000	163,000	3%
A10.2	Grit Processing Improvements		2,585,000	2,675,000	90,000	3%
A10.3	Septage Receiving Modifications		4,005,000	4,710,000	705,000	18%
A11	Phosphorus Recovery Improvement Projects		-	5,400,000	5,400,000	n/a
A12.1	Miscellaneous Treatment Plant Projects 2024		-	121,000	121,000	n/a
A12.2	Miscellaneous Treatment Plant Projects- Future		-	680,000	680,000	n/a
A13.1	Minor Capital Improvements 2024		-	125,000	125,000	n/a
A13.2	Minor Capital Improvements- Future		-	700,000	700,000	n/a
A14	Annual Pavement Improvements- Future		-	244,000	244,000	n/a
A15	Metrogro Operations Improvements		-	24,100,000	24,100,000	n/a
A16	W4 System Improvements		-	1,100,000	1,100,000	n/a
A17.1	Annual Solids Processing Tank Cleaning 2024		-	800,000	800,000	n/a
A17.2	Annual Solids Processing Tank Cleaning- Future		-	4,250,000	4,250,000	n/a
N/A	Energy Management Master Plan		624,000	624,000	-	0%
N/A	Engine Generator and Blower Control Panel Replacements		677,000	750,000	73,000	11%
N/A	Final Clarifier 4, 5 and 6 Effluent Launder Trough Replacement		370,000	370,000	-	0%
N/A	Headworks Flow Metering		2,291,000	2,291,000	-	0%
N/A	Liquid Processing Improvements- Phase 1	*	16,818,000	16,818,000	-	0%
N/A	Operations Building First Floor Remodel		2,175,000	2,175,000	-	0%
N/A	2021 Treatment Plant HVAC Improvement Project		1,960,000	2,450,000	490,000	25%
N/A	Minor Capital Improvements 2020 (Ops Bldg Mechanical Room)		109,000	109,000	-	0%
N/A	Miscellaneous Treatment Plant Projects 2022		124,000	124,000	-	0%
N/A	Miscellaneous Treatment Plant Projects 2023		119,000	119,000	-	0%
N/A	Minor Capital Improvements 2023		122,000	122,000	-	0%
N/A	Annual Pavement Improvements 2023		-	95,000	95,000	n/a
N/A	Primary Tank 6 Rehabilitation		-	500,000	500,000	n/a
N/A	Annual Pavement Improvements 2022		70,000	70,000	-	0%

(continued)

Table CIP-1A: **Total Project Cost Authorizations** (continued)

Subprojects shown in separate table as noted		Has Sub-projects	Authorization in 2023 Plan	Proposed Authorization in 2024 Plan	Change in Authorization	
INTERCEPTORS			**$76,549,000**	**$91,504,000**	**$14,955,000**	**20%**
B01	West Interceptor- Shorewood Relief Projects		-	-	-	n/a
B01.1	West Interceptor- Shorewood Relief (Phase 2)		1,754,000	1,754,000	-	0%
B01.2	West Interceptor- Shorewood Relief (Phase 3)		5,481,000	7,625,000	2,144,000	39%
B02	Lower Badger Mill Creek Interceptor		-	-	-	n/a
B02.1	Lower Badger Mill Creek Interceptor- Phase 5		1,382,000	1,900,000	518,000	37%
B02.2	Lower Badger Mill Creek Interceptor- Phase 6		3,566,000	4,900,000	1,334,000	37%
B03	Pumping Station 6 to Pumping Station 10 Connector		9,882,000	9,882,000	-	0%
B04	NEI- Waunakee Extension Capacity Improvements (Phase 1)		9,548,000	12,000,000	2,452,000	26%
B05	NEI- Truax Extension Rehab		7,769,000	8,200,000	431,000	6%
B06	NEI- FEI to SEI Rehab		2,277,000	2,400,000	123,000	5%
B07.1	Southeast Interceptor Rehabilitation on USH 51 (Phase 1)		2,718,000	1,300,000	(1,418,000)	-52%
B07.2	Southeast Interceptor Rehabilitation on USH 51 (Phase 2)		-	1,850,000	1,850,000	n/a
B08	NSVI Capacity Improvements- Phase 1		12,500,000	12,500,000	-	0%
B09	West Interceptor Rehab- Babcock Hall to Dayton Street		1,350,000	1,360,000	10,000	1%
B10	District Flow Monitoring Stations		1,239,000	1,250,000	11,000	1%
B11	Southeast Interceptor Relocation at Yahara River		-	850,000	850,000	n/a
B12	West Interceptor Rehab- Segoe Road to Shorewood Boulevard		-	1,100,000	1,100,000	n/a
B13	NEI- Waunakee Extension Rehab (MH14-358 to MH14-362)		-	700,000	700,000	n/a
B14	West Interceptor on Regent Street (Mills to East Campus Mall)		-	625,000	625,000	n/a
B15	NEI- Rehab West of Airport (Phase 2)		-	4,000,000	4,000,000	n/a
N/A	Northeast Interceptor Joint Grouting MH10-101 to MH10-106		307,000	307,000	-	0%
N/A	Northeast Interceptor Joint Grouting MH10-112 to MH10-106		304,000	304,000	-	0%
N/A	NSVI Improvements-McKee Road to Dunn's Marsh		4,754,000	4,754,000	-	0%
N/A	NSVI-Morse Pond Extension		2,300,000	2,300,000	-	0%
N/A	Southwest Interceptor- Haywood Ext. Replacement		1,925,000	1,925,000	-	0%
N/A	West Interceptor- Shorewood Relief (Phase 1)		4,915,000	4,915,000	-	0%
N/A	Interceptor Rehabilitation- 2020	*	2,078,000	2,078,000	-	0%
N/A	Repair to West Interceptor Extension on Allen Boulevard		500,000	725,000	225,000	45%
PUMPING STATIONS & FORCE MAINS			**$65,791,000**	**$72,062,000**	**$6,271,000**	**10%**
C01	Pumping Station 10 Force Main Leak		-	1,500,000	1,500,000	n/a
C02	Pumping Station 4 Rehabilitation		7,069,000	7,069,000	-	0%
C03	Pumping Station 17 Firm Capacity Improvements		6,790,000	8,100,000	1,310,000	19%
C04	Pumping Station 17 Force Main Relief- Phase 2		10,500,000	12,010,000	1,510,000	14%
C05	Emergency Power Generation at District Pumping Stations		9,271,000	10,000,000	729,000	8%
C06.1	Miscellaneous Collection System Projects 2024		-	105,000	105,000	n/a
C06.2	Miscellaneous Collection System Projects, Future		-	1,130,000	1,130,000	n/a
C07	Force Main Condition Assessment		3,684,000	3,684,000	-	0%
C08	Pumping Station 16 Projects		-	-	-	n/a
C08.1	Pumping Station 16 Rehabilitation		6,370,000	6,370,000	-	0%
C08.2	Pumping Station 16 Force Main Rehabilitation		2,068,000	2,068,000	-	0%
N/A	Grass Lake Dike Stabilization		905,000	905,000	-	0%
N/A	Miscellaneous Collection System Improvements		103,000	90,000	(13,000)	-13%
N/A	PS 13 & PS 14 Rehabilitation	*	10,755,000	10,755,000	-	0%
N/A	PS 15 Rehab		4,683,000	4,683,000	-	0%
N/A	Miscellaneous Collection System Projects 2023		103,000	103,000	-	0%
N/A	Pumping Station 17 Force Main Relief- Phase 1		3,490,000	3,490,000	-	0%
CAPITAL BUDGET EXPENSES			**$14,071,000**	**$2,846,000**	**$(11,225,000)**	**-80%**
D01	Capital Budget Expenses		53,000	53,000	-	0%
D02	Collection System Facilities Plan Update		335,000	360,000	25,000	7%
D03	Badger Mill Creek Phosphorus Compliance		13,000,000	1,750,000	(11,250,000)	-87%
N/A	Plant Asset Management Plan Implementation		323,000	323,000	-	0%
N/A	Capital Project Infrastructure Placement Plan		360,000	360,000	-	0%
GRAND TOTAL			**$317,409,000**	**$384,854,000**	**$67,445,000**	**21%**

Table CIP-1B: **Total Estimated Subproject Costs for Bundled Projects**

	2023	Estimated 2024	Increase	
INTERCEPTOR REHABILITATION - 2020	**$2,078,000**	**$2,078,000**	**$ -**	**0%**
NEI Relief Sewer and E. Johnson Street Relief Sewer Rehab	470,000	470,000	-	0%
West Interceptor - Spring Street Relief (lining project)	1,608,000	1,608,000	-	0%
LIQUID PROCESSING IMPROVEMENTS - PHASE 1	**$16,818,000**	**$16,818,000**	**-**	**0%**
54 Inch Primary Influent Rehabilitation	662,000	662,000	-	0%
East Blower Controls	727,000	727,000	-	0%
East-West Plant Flow Metering	1,848,000	1,848,000	-	0%
Plant Peak Capacity Improvements	4,695,000	4,695,000	-	0%
Plant Unit Substation Improvements	3,940,000	3,940,000	-	0%
Primary Tanks 1 and 2 Rehabilitation	1,055,000	1,055,000	-	0%
Process Control System Upgrade-Phase Two	1,112,000	1,112,000	-	0%
UV Disinfection System Replacement	2,779,000	2,779,000	-	0%
PUMPING STATION 13 & PUMPING STATION 14 REHABILITATION	**$10,755,000**	**$10,755,000**	**-**	**0%**
Pumping Station 13 Rehabilitation	5,480,000	5,480,000	-	0%
Pumping Station 14 Rehabilitation	5,275,000	5,275,000	-	0%

Mechanics Matt Barrett and Brian Suchomel conduct repairs on West Blower 1. Blowers pump compressed air through diffusers in the aeration tanks to ensure a continual supply of dissolved oxygen for microbes.

Table CIP-2: **2022-2024 Expenditures by Project**

		2022 Actual	2023 Through June	2023 Estimated	2024 Anticipated
TREATMENT PLANT		**$1,851,000**	**$234,700**	**$4,497,000**	**$11,963,000**
A01	Liquid Processing Improvements- Phase 2	-	-	-	-
A01.1	East Primary Influent Channel Air Piping Replacement	1,000	1,100	10,000	79,000
A01.2	Low Dissolved Oxygen (Partial Plant)	4,000	3,300	15,000	284,000
A01.3	Low Dissolved Oxygen (Full Plant)	20,000	35,600	330,000	184,000
A01.4	West Blowers and Switchgear Replacement	10,000	9,100	90,000	856,000
A01.5	East Blowers and Switchgear Replacement	10,000	9,200	90,000	614,000
A02	Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacement	-	400	335,000	165,000
A03	NSWWTP Electrical Service Equipment Replacement	49,000	60,300	290,000	509,000
A04	Treatment Plant Energy Projects	-	-	-	
A04.1	Heat and Power Improvements	-	-	50,000	425,000
A04.2	Maintenance Facility Rooftop Solar Panels	-	13,300	300,000	73,000
A05	Lagoon Dikes Improvements	112,000	13,200	170,000	520,000
A06	Maintenance, Financial and HR Systems		1,800	764,000	1,756,000
A07	Metrogro Applicators & Equipment	713,000	7,800	140,000	893,000
A08	Flow Splitter Improvements	5,000	39,000	200,000	2,993,000
A09	Treatment Plant HVAC Improvements- Group 1 Projects	-	-	-	-
A10	Liquid Processing Improvements - Phase 3	-	-	-	-
A10.1	Headworks Screening	-	-	-	-
A10.2	Grit Processing Improvements	-	-	-	-
A10.3	Septage Receiving Modifications	-	-	-	-
A11	Phosphorus Recovery Improvement Projects	-	-	-	-
A12.1	Miscellaneous Treatment Plant Projects 2024	-	-	-	121,000
A12.2	Miscellaneous Treatment Plant Projects - Future	-	-	-	-
A13.1	Minor Capital Improvements 2024	-	-	-	124,000
A13.2	Minor Capital Improvements- Future	-	-	-	-
A14	Annual Pavement Improvements- Future	-	-	-	-
A15	Metrogro Operations Improvements	-	-	-	-
A16	W4 System Improvements	-	-	-	194,000
A17.1	Annual Solids Processing Tank Cleaning 2024	-	-	-	800,000
A17.2	Annual Solids Processing Tank Cleaning- Future	-	-	-	-
N/A	2021 Treatment Plant HVAC Improvement Project	130,000	17,700	990,000	1,210,000
N/A	Annual Pavement Improvements 2022	43,000	-	-	-
N/A	Annual Pavement Improvements 2023	-	1,500	70,000	-
N/A	Energy Management Master Plan	11,000	-		-
N/A	Engine Generator and Blower Control Panel Replacements	480,000	10,900	77,000	-
N/A	Final Clarifier 4, 5 and 6 Effluent Launder Trough Replacement	113,000		-	-
N/A	Headworks Flow Metering	(37,000)	100	-	-
N/A	Liquid Processing Improvements- Phase 1	33,000	-	-	-
N/A	Minor Capital Improvements 2020 (Ops Bldg Mechanical Room)	6,000	-	-	-
N/A	Minor Capital Improvements 2023	-	-	122,000	-
N/A	Miscellaneous Treatment Plant Projects 2022	3,000	6,300		-
N/A	Miscellaneous Treatment Plant Projects 2023	-	4,100	119,000	-
N/A	Operations Building First Floor Remodel	145,000	-		-
N/A	Primary Tank 6 Rehabilitation	-	-	335,000	165,000

Table CIP-2: **2022-2024 Expenditures by Project** (continued)

		2022 Actual	2023 Through June	2023 Estimated	2024 Anticipated
INTERCEPTORS		**$1,415,000**	**$1,596,200**	**$4,497,000**	**$19,304,000**
B01	West Interceptor- Shorewood Relief Projects	-	-	-	-
B01.1	West Interceptor- Shorewood Relief (Phase 2)	164,000	1,029,700	1,118,000	269,000
B01.2	West Interceptor- Shorewood Relief (Phase 3)	30,000	67,600	255,000	5,602,000
B02	Lower Badger Mill Creek Interceptor	-	-	-	-
B02.1	Lower Badger Mill Creek Interceptor- Phase 5	41,000	73,100	1,285,000	570,000
B02.2	Lower Badger Mill Creek Interceptor- Phase 6	32,000	29,100	120,000	1,964,000
B03	Pumping Station 6 to Pumping Station 10 Connector	126,000	21,200	181,000	
B04	NEI- Waunakee Extension Capacity Improvements (Phase 1)	84,000	101,900	439,000	8,518,000
B05	NEI- Truax Extension Rehab	-	-	-	1,596,000
B06	NEI- FEI to SEI Rehab	-	-	-	-
B07.1	Southeast Interceptor Rehabilitation on USH 51 (Phase 1)	-	-	20,000	26,000
B07.2	Southeast Interceptor Rehabilitation on USH 51 (Phase 2)	-	-	-	-
B08	NSVI Capacity Improvements- Phase 1	-	-	-	95,000
B09	West Interceptor Rehab- Babcock Hall to Dayton Street	-	-	-	-
B10	District Flow Monitoring Stations	-	-	-	-
B11	Southeast Interceptor Relocation at Yahara River	-	-	20,000	21,000
B12	West Interceptor Rehab- Segoe Road to Shorewood Boulevard	-	-	-	641,000
B13	NEI- Waunakee Extension Rehab (MH14-358 to MH14-362)	-	-	-	-
B14	West Interceptor on Regent Street (Mills to East Campus Mall)	-	-	-	3,000
B15	NEI- Rehab West of Airport (Phase 2)	-	-	-	-
N/A	Interceptor Rehabilitation- 2020	-	-	-	-
N/A	Northeast Interceptor Joint Grouting MH10-101 to MH10-106	216,000	100	-	-
N/A	Northeast Interceptor Joint Grouting MH10-112 to MH10-106	-	-	-	-
N/A	NSVI Improvements-McKee Road to Dunn's Marsh	10,000	2,500	3,000	-
N/A	NSVI-Morse Pond Extension	35,000	600	1,000	1,000
N/A	Repair to West Interceptor Extension on Allen Boulevard	-	267,900	655,000	-
N/A	Southwest Interceptor- Haywood Ext. Replacement	(20,000)	-	-	-
N/A	West Interceptor- Shorewood Relief (Phase 1)	697,000	2,500	400,000	-
PUMPING STATIONS AND FORCE MAINS		**$4,418,000**	**$896,600**	**$3,357,000**	**$13,745,000**
C01	Pumping Station 10 Force Main Leak	-	-	-	74,000
C02	Pumping Station 4 Rehabilitation	141,000	210,400	1,165,000	3,507,000
C03	Pumping Station 17 Firm Capacity Improvements	187,000	151,200	225,000	2,939,000
C04	Pumping Station 17 Force Main Relief- Phase 2	365,000	308,500	1,383,000	6,459,000
C05	Emergency Power Generation at District Pumping Stations	--	400	-	100,000
C06.1	Miscellaneous Collection System Projects 2024	-	-	-	105,000
C06.2	Miscellaneous Collection System Projects- Future	-	-	-	-
C07	Force Main Condition Assessment	-	-	-	525,000
C08	Pumping Station 16 Projects	-	-	-	-
C08.1	Pumping Station 16 Rehabilitation	-	-	-	21,000
C08.2	Pumping Station 16 Force Main Rehabilitation	-	-	-	16,000
N/A	Grass Lake Dike Stabilization	605,000	9,800	15,000	-
N/A	Miscellaneous Collection System Improvements	2,000	-	-	-
N/A	Miscellaneous Collection System Projects 2023	-	-	103,000	-
N/A	PS 13 & PS 14 Rehabilitation	2,995,000	170,000	416,000	-
N/A	PS 15 Rehab	(8,000)	-	-	-
N/A	Pumping Station 17 Force Main Relief- Phase 1	131,000	46,300	50,000	-
CAPITAL BUDGET EXPENSES		**$213,000**	**$316,600**	**$693,000**	**$533,000**
D01	Capital Budget Expenses	-	-	-	53,000
D02	Collection System Facilities Plan Update	5,000	6,200	70,000	130,000
D03	Badger Mill Creek Phosphorus Compliance	84,000	161,000	288,000	350,000
N/A	Capital Project Infrastructure Placement Plan	90,000	139,300	225,000	-
N/A	Plant Asset Management Plan Implementation	33,000	10,100	110,000	-
GRAND TOTAL		**$7,897,000**	**$3,044,100**	**$13,044,000**	**$45,544,000**

LOAN REVENUES SUMMARY

Table CIP-4 provides a summary of loan revenues by project(s). Preceding year values are actual disbursements received from the State of Wisconsin's Clean Water Fund for projects under construction or recently completed. Current year and subsequent year values are estimates based on the District's financing needs.

As shown in the table, the District received $16.2 million in loan proceeds from the Clean Water Fund in 2022. Due to a lack of construction activity in 2023, loan revenue is estimated to be only $1.5 million. Loan revenue in 2024 is expected to increase significantly to $46.7 million as more construction projects will be underway. This loan revenue assumes that District loan applications to the Department of Natural Resources are processed and closed in a timely manner. The District's projected capital fund balance includes reserves to accommodate potential delays in loan revenue, as discussed in the capital finance section.

Table CIP-3: **2022-2024 Annual Budget & Expenditures**

	Capital Budget		2024 Proposed CIP	
	2022	2023	2024	2023-2024 CHANGE
Budgets	$21,783,000	$31,566,000	$45,544,000	44%
Expenditures (Actual 2022; Estimated 2023)	$7,897,000	$13,044,000		
Underspending	*$13,886,000*	*$18,522,000*		

Table CIP-4: **Clean Water Fund Loan Proceeds**

	2022 Actual	2023 Estimated	2024 Anticipated
LPI- Phase 1/PS 7 Improvements/Headworks Flow Metering	748,000	-	-
NEI- Waunakee Extension Relief	-	-	8,951,000
Pumping Station 4 Rehabilitation	-	-	4,931,000
Flow Splitter Rehab	-	-	3,070,000
West Interceptor- Shorewood Relief (Phase 3)	-	-	5,886,000
Pumping Station 17 Force Main- Phase 2	-	-	8,143,000
2021 Treatment Plant HVAC Improvement Project	-		2,347,000
PS 13&14 Rehab/Ops Bldg Remodel/2019 Plant Piping/Int Rehab	7,516,000	1,050,000	-
WI-Shorewood Relief (Phase 1)/NSVI-McKee Rd to Dunn's Marsh	7,927,000	465,000	-
Pumping Station 17 Firm Capacity Improvements	-	-	3,324,000
GRAND TOTAL	**$16,191,000**	**$1,515,000**	**$36,651,000**

2024 PROJECT FUNDING

As discussed in the finance section, capital projects are funded from the District's capital projects fund. This fund receives revenue from the following sources: as loan proceeds from the Clean Water Fund; from connection charges collected from new users of the conveyance system and treatment plant; as cash transfers from the operating fund; and from interest investments. Since 2020 the District has borrowed approximately 82% of its capital expenditures from the Clean Water Fund. Financing decisions are made on a per-project basis, considering loan eligibility and project size, in addition to overall financing strategy. In 2024, cash revenues net of loan proceeds will be used for approximately 35% of total expenditures. This percentage of cash spending is expected to decrease slightly in future years of the plan. The following notable construction projects and major purchases will be paid from revenue sources other than loan proceeds in 2024:

- Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacements — $165,000
- Maintenance Facility Rooftop Solar Panels —$73,000
- Maintenance, Financial and HR Systems — $1,756,000
- Metrogro Applicators & Equipment — $893,000
- Annual Solids Processing Tank Cleaning for 2024 — $800,000
- Primary Tank 6 Rehabilitation — $165,000
- West Interceptor–Shorewood Relief (Phase 2) — $269,000
- Lower Badger Mill Creek Interceptor (Phases 5 and 6) — $2,534,000
- NEI – Truax Extension Rehabilitation — $1,596,000
- West Interceptor Rehabilitation — Segoe Road to Shorewood Boulevard- $641,000
- Badger Mill Creek Phosphorus Compliance — $350,000

Cash in the capital projects fund will also be used to pay for planning and design work for the following projects in 2024:

- Liquid Processing – Phase 2 Projects —$2,017,000
- NSWWTP Electrical Service Equipment Replacement — $509,000
- Heat and Power Improvements —- $425,000
- Lagoon Dikes Improvements — $520,000
- W4 System Improvements — $194,000
- Emergency Power Generation at District Pumping Stations — $100,000
- Force Main Condition Assessment — $525,000
- Collection System Facilities Plan Update — $130,000

These planning and design costs will initially be paid from cash in the fund and all or a portion of them may later be reimbursed through loans from the Clean Water Fund in subsequent years if/when construction commences.

Metrogro operations supervisor Ross Hollfelder snapped this photo of two Metrogro semis filling Terragators with valuable fertilizer for injection to fields. Metrogro is applied to more than 5,000 acres each year.

SIX-YEAR CAPITAL PROJECTS SUMMARY

This section discusses planned projects for the six years of the CIP. Financing issues for the six-year period are discussed in the capital finance section.

The District's CIP includes projections for projects that are either underway and will continue into 2024, or for those new projects that will begin within the six-year planning horizon. District staff has identified these projects to address a variety of needs such as hydraulic capacity, condition or 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 CIP-5, pages 35-36, is included to show the anticipated annual inflation-adjusted costs that are expected for each project. These tables show approximately $275 million worth of expenditures over the six years from 2024 to 2029.

Table CIP-6, pages 37-38, presents the anticipated schedule for each project by phase within the six-year planning window. For each project, the predominant phase of the project is shown for a given year. Where two phases of a project are likely to occur in the same year, both phases are indicated.

PROJECT SUMMARIES AND BUSINESS CASES

Summary descriptions for each of the proposed projects are included in **Appendix A, page 64**. 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:

A - Nine Springs Wastewater Treatment Plant

B - Interceptor Projects

C - Pumping Stations and Force Main Projects

D - Capital Budget Expenses

It should also be noted that some projects contain a numerical suffix to indicate that it is related to, or dependent upon, some other project and may be part of a larger constructed project in the future (i.e., Project ID A01.1).

Additional project information for most projects is contained in comprehensive business cases. Since some projects are intricately connected or contingent upon other projects, more than one project may be included in a single business case. 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 an updated business case.

The remainder of this section provides a summary of the most notable projects that are included in each category in the 2024 CIP.

Facilities maintenance mechanic Luis Valdes-Jasso repairs a roller chain for Screen 2 at Headworks. Screens help filter out large items in our influent, like wipes or plastic items, before they cause further damage to plant equipment.

Table CIP-5: **Six-Year Spending Forecast**

Proj. No.	Project Title	2024	2025	2026	2027	2028	2029
TREATMENT PLANT		**$11,963,000**	**$28,359,000**	**$21,464,000**	**$16,605,000**	**$41,837,000**	**$37,703,000**
A01.1	East Primary Influent Channel Air Piping Replacement	79,000	1,235,000	178,000	-	-	-
A01.2	Low Dissolved Oxygen (Partial Plant)	284,000	3,131,000	224,000	230,000	-	-
A01.3	Low Dissolved Oxygen (Full Plant)	184,000	-	-	1,075,000	14,348,000	7,198,000
A01.4	West Blowers and Switchgear Replacement	856,000	7,067,000	3,061,000	-	-	-
A01.5	East Blowers and Switchgear Replacement	614,000	3,170,000	5,206,000	2,232,000	-	-
A02	Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacements	165,000	-	-	-	-	-
A03	NSWWTP Electrical Service Equipment Replacement	509,000	3,308,000	6,106,000	3,313,000	-	-
A04.1	Heat and Power Improvements	425,000	502,000	1,915,000	1,972,000	12,067,000	12,429,000
A04.2	Maintenance Facility Rooftop Solar Panels	73,000	-	-	-	-	-
A05	Lagoon Dikes Improvements	520,000	3,605,000	390,000		-	-
A06	Maintenance, Financial and HR Systems	1,756,000	1,268,000	1,467,000	887,000	-	-
A07	Metrogro Applicators & Equipment	893,000	1,103,000	120,000	130,000	-	-
A08	Flow Splitter Improvements	2,993,000	1,770,000			-	-
A09	Treatment Plant HVAC Improvements- Group 1 Projects	-	-	387,000	2,578,000	888,000	-
A10.1	Headworks Screening	-	-	183,000	437,000	2,232,000	2,299,000
A10.2	Grit Processing Improvements	-	-	-	171,000	1,223,000	1,259,000
A10.3	Septage Receiving Modifications	-	-	6,000	307,000	2,214,000	2,174,000
A11	Phosphorus Recovery Improvement Projects		22,000	178,000	1,323,000	3,777,000	-
A12.1	Miscellaneous Treatment Plant Projects 2024	121,000	-	-	-	-	-
A12.2	Miscellaneous Treatment Plant Projects- Future	-	127,000	132,000	136,000	140,000	144,000
A13.1	Minor Capital Improvements 2024	124,000	-	-	-	-	-
A13.2	Minor Capital Improvements- Future	-	130,000	135,000	139,000	144,000	148,000
A14	Annual Pavement Improvements- Future	-	76,000		81,000		86,000
A15	Metrogro Operations Improvements	-	105,000	631,000	886,000	4,075,000	11,214,000
A16	W4 System Improvements	194,000	860,000	-	-	-	-
A17.1	Annual Solids Processing Tank Cleaning 2024	800,000		-	-	-	-
A17.2	Annual Solids Processing Tank Cleaning- Future	-	882,000	1,147,000	709,000	730,000	752,000
N/A	2021 Treatment Plant HVAC Improvement Project	1,210,000	-	-		-	-
	Primary Tank 6 Rehabilitation	165,000	-	-	-	-	-
INTERCEPTORS		**$19,304,000**	**$15,660,000**	**$6,864,000**	**$11,544,000**	**$6,693,000**	**$6,500,000**
B01.1	West Interceptor- Shorewood Relief (Phase 2)	269,000	-	-	-	-	-
B01.2	West Interceptor- Shorewood Relief (Phase 3)	5,602,000	1,433,000	-	-	-	-
B02.1	Lower Badger Mill Creek Interceptor- Phase 5	570,000		-	-	-	-
B02.2	Lower Badger Mill Creek Interceptor- Phase 6	1,964,000	2,778,000	-	-	-	-
B03	Pumping Station 6 to Pumping Station 10 Connector	-	-	-	-	-	-
B04	NEI- Waunakee Extension Capacity Improvements (Phase 1)	8,518,000	2,811,000	-	-	-	-
B05	NEI- Truax Extension Rehab	1,596,000	6,543,000	-	-	-	-
B06	NEI- FEI to SEI Rehab		55,000	2,316,000			
B07.1	Southeast Interceptor Rehabilitation on USH 51 (Phase 1)	26,000	1,125,000	-	-	-	-
B07.2	Southeast Interceptor Rehabilitation on USH 51 (Phase 2)		-	92,000	1,718,000	-	-
B08	NSVI Capacity Improvements- Phase 1	95,000	375,000	390,000	5,527,000	5,693,000	-
B09	West Interceptor Rehab- Babcock Hall to Dayton Street		6,000	1,353,000	-	-	-
B10	District Flow Monitoring Stations		33,000	1,215,000	-	-	-
B11	Southeast Interceptor Relocation at Yahara River	21,000	33,000	740,000	-	-	-

Table CIP-5: **Six-Year Spending Forecast** (continued)

Proj. No.	Project Title	2024	2025	2026	2027	2028	2029
INTERCEPTORS (CONT.)							
B12	West Interceptor Rehab- Segoe Road to Shorewood Boulevard	641,000	408,000	-	-	-	-
B13	NEI- Waunakee Extension Rehab (MH14-358 to MH14-362)	-	22,000	34,000	638,000	-	-
B14	West Interceptor on Regent Street (Mills to East Campus Mall)	3,000	26,000	574,000	-	-	-
B15	NEI- Rehab West of Airport (Phase 2)	-	11,000	149,000	3,661,000		
N/A	Collection System Projects- Future	-	-	-	-	1,000,000	6,500,000
	NSVI-Morse Pond Extension	1,000	-	-	-	-	-
PUMPING STATIONS		**$13,745,000**	**$8,058,000**	**$8,254,000**	**$8,155,000**	**$4,973,000**	**$5,373,000**
C01	Pumping Station 10 Force Main Leak	74,000	1,290,000	-	-	-	-
C02	Pumping Station 4 Rehabilitation	3,507,000	-	-	-	-	-
C03	Pumping Station 17 Firm Capacity Improvements	2,939,000	3,086,000	1,604,000	-	-	-
C04	Pumping Station 17 Force Main Relief- Phase 2	6,459,000	2,183,000	-	-	-	-
C05	Emergency Power Generation at District Pumping Stations	100,000	198,000	1,737,000	3,945,000	2,743,000	1,121,000
C06.1	Miscellaneous Collection System Projects 2024	105,000	-	-	-	-	-
C06.2	Miscellaneous Collection System Projects- Future	-	110,000	115,000	118,000	122,000	125,000
C07	Force Main Condition Assessment	525,000	551,000	573,000	590,000	608,000	626,000
C08.1	Pumping Station 16 Rehabilitation	21,000	557,000	2,259,000	3,502,000	-	-
C08.2	Pumping Station 16 Force Main Rehabilitation	16,000	83,000	1,966,000	-	-	-
	Pump Station Projects- Future	-	-	-	-	1,500,000	3,500,000
CAPITAL BUDGET EXPENSES		**$533,000**	**$305,000**	**$257,000**	**$259,000**	**$261,000**	**$63,000**
D01	Capital Budget Expenses	53,000	55,000	57,000	59,000	61,000	63,000
D02	Collection System Facilities Plan Update	130,000	-	-	-	-	-
D03	Badger Mill Creek Phosphorus Compliance	350,000	250,000	200,000	200,000	200,000	-
GRAND TOTAL		**$45,544,00**	**$52,382,000**	**$36,839,000**	**$36,564,000**	**$53,763,000**	**$49,639,000**

Table CIP-6: **Six-Year Capital Projects Phases**

A = Annual | C = Construction | C/O = Construction and Operation | D = Design | D/C = Design and Construction | E = Equipment Purchase
O = Operation | P = Planning | P/D = Planning & Design | S = Study | S/T = Study & Testing | T = Testing

Project No.	Project Title	2024	2025	2026	2027	2028	2029
TREATMENT PLANT							
A01.1	East Primary Influent Channel Air Piping Replacement	D	D/C	C			
A01.2	Low Dissolved Oxygen (Partial Plant)	D	C/O	O	O		
A01.3	Low Dissolved Oxygen (Full Plant)	D			D	D/C	C
A01.4	West Blowers and Switchgear Replacement	D	C	C			
A01.5	East Blowers and Switchgear Replacement	D	D/C	C	C		
A02	Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacements	C					
A03	NSWWTP Electrical Service Equipment Replacement	D	C	C	C		
A04.1	Heat and Power Improvements	P	P/D	D	D/C	C	C
A04.2	Maintenance Facility Rooftop Solar Panels	C					
A05	Lagoon Dikes Improvements	D	C	C			
A06	Maintenance, Financial and HR Systems	C	C	C	C		
A07	Metrogro Applicators & Equipment	E	E	E	E		
A08	Flow Splitter Improvements	C	C				
A09	Treatment Plant HVAC Improvements- Group 1 Projects			D	C	C	
A10.1	Headworks Screening			P/D	D	C	C
A10.2	Grit Processing Improvements				D	C	C
A10.3	Septage Receiving Modifications			P	D	D/C	C
A11	Phosphorus Recovery Improvement Projects		S	P	D/C	C	
A12.1	Miscellaneous Treatment Plant Projects 2024	C					
A12.2	Miscellaneous Treatment Plant Projects- Future		C	C	C	C	C
A13.1	Minor Capital Improvements 2024	C					
A13.2	Minor Capital Improvements- Future		C	C	C	C	C
A14	Annual Pavement Improvements- Future		C		C		C
A15	Metrogro Operations Improvements		P	P/D	D	C	C
A16	W4 System Improvements	D	C				
A17.1	Annual Solids Processing Tank Cleaning 2024	A					
A17.2	Annual Solids Processing Tank Cleaning- Future		A	A	A	A	A
N/A	2021 Treatment Plant HVAC Improvement Project	C					
	Primary Tank 6 Rehabilitation	C					
INTERCEPTORS							
B01.1	West Interceptor- Shorewood Relief (Phase 2)	C					
B01.2	West Interceptor- Shorewood Relief (Phase 3)	C	C				
B02.1	Lower Badger Mill Creek Interceptor- Phase 5	C					
B02.2	Lower Badger Mill Creek Interceptor- Phase 6	C	C				
B03	Pump Station 6 to Pump Station 10 Connector						
B04	NEI- Waunakee Extension Capacity Improvements (Phase 1)	C	C				
B05	NEI- Truax Extension Rehab	D/C	C				
B06	NEI- FEI to SEI Rehab		D	C			
B07.1	Southeast Interceptor Rehabilitation on USH 51 (Phase 1)	D	C				
B07.2	Southeast Interceptor Rehabilitation on USH 51 (Phase 2)			D	C		
B08	NSVI Capacity Improvements- Phase 1	P	D	D	C	C	
B09	West Interceptor Rehab- Babcock Hall to Dayton Street		P	D/C			
B10	District Flow Monitoring Stations		D	C			
B11	Southeast Interceptor Relocation at Yahara River	P/D	D	C			
B12	West Interceptor Rehab- Segoe Road to Shorewood Boulevard	D/C	C				
B13	NEI- Waunakee Extension Rehab (MH14-358 to MH14-362)		P	D	C		
B14	West Interceptor on Regent Street (Mills to East Campus Mall)	P	D	C			
B15	NEI- Rehab West of Airport (Phase 2)		P	D	C		
N/A	Collection System Projects- Future					C	C
	NSVI-Morse Pond Extension	C					

Table CIP-6: **Six-Year Capital Projects Phases** (continued)

A = Annual | C = Construction | C/O = Construction and Operation | D = Design | D/C = Design and Construction | E = Equipment Purchase
O = Operation | P = Planning | P/D = Planning & Design | S = Study | S/T = Study & Testing | T = Testing

Project No.	Project Title	2024	2025	2026	2027	2028	2029
PUMPING STATIONS & FORCE MAINS							
C01	Pumping Station 10 Force Main Leak	P/D	C				
C02	Pumping Station 4 Rehabilitation	C					
C03	Pumping Station 17 Firm Capacity Improvements	C	C	C			
C04	Pumping Station 17 Force Main Relief- Phase 2	C	C				
C05	Emergency Power Generation at District Pumping Stations	D	D/C	D/C	D/C	D/C	D/C
C06.1	Miscellaneous Collection System Projects 2024	C					
C06.2	Miscellaneous Collection System Projects- Future		C	C	C	C	C
C07	Force Main Condition Assessment	A	A	A	A	A	A
C08.1	Pumping Station 16 Rehabilitation	P	D	C	C		
C08.2	Pumping Station 16 Force Main Rehabilitation	P	D	C			
	Pump Station Projects- Future					C	C
CAPITAL BUDGET EXPENSES							
D01	Capital Budget Expenses	A	A	A	A	A	
D02	Collection System Facilities Plan Update	P					
D03	Badger Mill Creek Phosphorus Compliance	A	A	A	A	A	

TREATMENT PLANT

Work at the treatment plant in 2024 will focus on design of the improvements for Phase 2 of the Liquid Processing Improvements. The Liquid Processing Facilities Plan, completed in August 2017, recommended a series of improvements to the liquid processes at the plant be installed in three separate phases over a roughly ten-year period. The Phase 2 improvements consist of replacement of air piping in the influent channel for the east primary tanks, replacement of air piping and diffusers in the aeration tanks, and modifications to implement a low-dissolved oxygen system, and replacement of the blowers and switchgear.

While the original facilities plan recommended replacing the three west blowers in a phased approach over several years, the 2024 CIP calls for replacing all three blowers between 2025 and 2026 due to the deteriorating condition and critical nature of this equipment. Replacement of the east blowers and related switchgear equipment is less critical and is scheduled to begin upon completion of the west blowers project.

The 2024 plan also calls for a project to introduce a low dissolved oxygen process to the secondary treatment system. The 2017 Facilities Plan recommended a process called nitrite shunt that would use less energy and lower nutrients in the wastewater. While bench-scale testing of the nitrite shunt process did not yield satisfactory results, it did suggest that using low levels of dissolved oxygen for secondary treatment could have significant energy savings. The low dissolved oxygen process will be implemented at full scale in one of the four treatment plants in 2025 and operated to assess its effectiveness through 2027. If successful, the process will be expanded to all plants in 2028-2029.

Work on a project to replace the high-voltage switchgear equipment at the treatment plant will continue in 2024. This equipment steps down the incoming voltage from the utility so that it can be used by downstream equipment. This switchgear is inspected regularly, and it is in decent working condition. However, it is nearing the end of its useful life by industry standards, and replacement parts are difficult to obtain. A consultant completed an alternatives analysis for replacement of the equipment in the first half of 2023. Preliminary and detailed design of the project will occur in the second half of 2023 and into 2024, with construction scheduled to occur from 2025 to 2027.

Further study and planning on improvements to the plant's heat and power systems will resume in 2024. The 2020 Energy Management Master Plan evaluated options related to the District's future handling and use of biogas, the replacement of the associated assets and the impacts on ancillary systems. The plan recommended that additional study be done for the options involving the sale of biogas for regional use and for the continued use of the biogas to generate on-site electricity. The 2024 CIP includes funds to select a final alternative and develop a facility plan in 2024-2025, perform design work in 2026-2027, and conduct improvements in 2028-2029.

Finally, the 2024 CIP proposes a new project that reinvests in the resources and assets needed for the District's Metrogro program. Currently, all biosolids are stored at the treatment plant and hauled seasonally to agricultural fields for disposal as liquid fertilizer. Hauling is done at loadout stations located near the storage tanks and at the Vehicle Loading Building (VLB), located adjacent to the plant grounds. The capacity at the VLB is insufficient for the current demands, and it is proposed to relocate and construct a new facility adjacent to the storage tanks. The new facility will include construction of additional loadout stations, space for storage and maintenance of Metrogro equipment and other District fleet vehicles and will allow for consolidation and more efficient operation of the Metrogro program. Planning for the facilities is scheduled to begin in 2025.

INTERCEPTORS

The 2024 CIP continues the District's investment in increasing the capacity of the collection system in response to growth in the District's service area and increasing rates of inflow and infiltration. Dane County remains one of the fastest-growing counties in Wisconsin. The following capacity improvements are planned in response to this growth:

- **West Interceptor – Shorewood Relief:** New relief and replacement sewers will be constructed in the City of Madison and the Village of Shorewood Hills along University Avenue between Whitney Way and Walnut Street in three separate phases. The additional capacity is required to serve projected development in the City of Middleton and the Town of Westport. Phase 1 construction was substantially completed in early 2022 and Phase 2 will be completed in 2023 as part of the reconstruction of University Avenue. The Phase 3 improvements are scheduled for construction in 2024-2025.
- **Northeast Interceptor – Waunakee Extension (Phase 1):** Approximately 9,000 feet of new 30-inch diameter relief sewer will be installed in 2024 and 2025 to serve future development in the villages of Waunakee and Dane and the Town of Westport.
- **Lower Badger Mill Creek Interceptor (Phases 5 and 6):** These are the final phases of the interceptor, to be installed in 2023-2025. Upon completion, existing and future wastewater flows north of Midtown Road will be diverted to Pumping Station 17 in the City of Verona.

Crews work on installing the Pumping Station 17 relief force main in 2021. This pipeline will increase capacity for future development in the Lower Badger Mill Creek watershed.

- **Nine Springs Valley Interceptor Capacity Improvements (Phase 1):** This is the first phase of major capacity improvements that are needed for this intercepting system between Pumping Station 11 and Pumping Station 12. It is expected that construction will be divided into at least four phases over a 15- to 20-year period, with the first phase scheduled for construction in 2027 and 2028.

The 2024 CIP also contains several rehabilitation projects for District interceptors. Several of these projects have been delayed one or more years from previous plans, and several of them are now proposed in 2025 and/or 2026. These rehabilitation projects will become the focus of work in the interceptor category once the majority of the previously mentioned capacity improvement projects are completed.

Also of note is that the Pumping Station 6 to Pumping Station 10 Connector Project has been postponed in the 2024 CIP. This project proposes to connect these two pumping stations with either a deep gravity sewer or a force main that would allow flow to be diverted between the stations if the force main from either station becomes inoperable. The 2023 plan called for construction of the connector line in 2024-2025, pending a feasibility analysis of the project. A consultant completed this analysis in 2023 and while the project is feasible from an engineering perspective, its estimated cost is considered prohibitive relative to other needs. A project to inspect the Pumping Station 10 force main will be initiated to better assess the condition of this critical asset before proceeding further with the connector project.

PUMPING STATIONS AND FORCE MAINS

The District has been systematically rehabilitating its pumping stations over the last 20 years as part of its capital improvements program. These rehabilitations have generally included full replacement of the major mechanical, electrical, control and HVAC systems. The rehabilitation of Pumping Stations 13 and 14 was substantially completed in the first half of 2023. Rehabilitation of Pumping Station 4 began in early 2023 and will continue into 2024.

Firm capacity improvements to Pumping Station 17 are included in the 2024 CIP. Additional pumping capacity is needed to serve areas of new growth in the Lower Badger Mill Creek basin, especially north of Midtown Road in the City of Madison. Most of the station equipment is in good working condition at this time and can be expected to provide reliable service for 10 to 15 more years. The station is not easily expandable, however, and floodplain issues suggest that a new pumping station may be needed in the longer term for this basin. The 2023 Collection System Facilities Plan Update will further evaluate the need and timing for a new station to serve this basin.

This category also includes the completion of a relief force main for Pumping Station 17 in 2024. Phase 1 work was coordinated with a City of Verona public works project completed in the summer of 2021. When fully complete, the force main will have the capacity needed to serve flows in the upper portions of the Lower Badger Mill Creek basin, which are scheduled to be diverted to Pumping Station 17 in 2025.

Another noteworthy project in this category will address the continuity and reliability of pumping station operations and force main conditions. Only two District pumping stations currently have standby generators that can ensure that the stations continue to operate during a loss of electrical power. Generators have been installed at Pumping Stations 13 and 14 as part of the construction that is nearing completion. The 2024 CIP outlines a plan to install standby generators at most of the remaining District stations between 2025 and 2032. The plan also includes an annual allowance, starting in 2024, to perform annual inspections of the District's higher-risk force mains.

CAPITAL PROJECTS BUDGET EXPENSES

The final category of expenditures in **Table CIP-5, pages 35-36,** is capital budget expenses. These expenses typically include expenses related to planning and studies assessed against the capital fund that would be difficult to capitalize on a specific asset.

The largest anticipated expenses in this category over the next six years relate to the compliance plan for new phosphorus requirements for District effluent that is discharged to Badger Mill Creek.

These new effluent requirements were included in the District's discharge permit that was reissued in May 2020, which calls for full compliance no later than 2028. In May of 2023, the District's Commission approved the staff recommendation to divert all treated effluent to Badfish Creek and discontinue the discharge of effluent to Badger Mill Creek. Included in this recommendation is a commitment for the District to allocate $1 million to improve the health and resiliency of Badger Mill Creek through flow, habitat and other improvements. The 2024 CIP includes funds for this commitment and shows it as an annual disbursement spread equally over five years beginning in 2024. Funds are also included for staff and consultant time to engage stakeholders in this process.

Other items in this category include an annual allowance for general planning expenses for use in developing the Capital Improvements Plan and completion of the Collection System Facilities Plan Update in 2024.

Large pumps in the Effluent Building discharge treated water back to the local watershed.

SECTION FOUR

2024 Capital Finance

A family takes in a view of Lake Mendota from a pier at Marshall Park in Middleton.

The previous sections described the annual capital budget and the six-year project plan, including project costs and schedules. This section addresses how this capital work is to be financed.

The District finances its capital improvements program through a combination of cash and borrowing. Borrowing is done through the state's Clean Water Fund loan program, which provides subsidized, below-market interest rates in support of the state's wastewater infrastructure. Cash is obtained through charges applied for the connection of areas to the District's collection system and through quarterly service charges from the communities the District serves.

The financing plan is designed to cover anticipated spending needs, avoid highly variable annual increases in service charges and meet minimum fund reserve requirements over the entire planning period. In addition, the plan attempts to limit use of debt within those constraints.

The current financing plan reflects the following factors. First, the planning period includes high levels of spending needed for a variety of infrastructure renewal projects. This spending has been anticipated in prior plans but is now coming due.

Second, the financing plan reflects recent and anticipated macroeconomic headwinds. Higher inflation has increased project costs and the cost of borrowing. It has also reduced revenue from connection charges, due to slower housing development in the region. Apparently enduring changes in the supply chain for electrical equipment and some materials have increased costs and significantly extended time for delivery for some equipment by a year or more. And changes in federal law are expected to increase costs of materials and administrative requirements for projects that are funded through the Clean Water Fund loan program.

Third, to accommodate the high spending in the planning period, the financing plan relies more heavily on use of debt than was true in the recent, lower-spending period. The plan uses debt for between 65% to 78% of capital expenditures each year.

Fourth, to limit service charges needs, the financing plan maintains reserves in the capital projects fund and debt service fund that are only slightly over minimum levels. Planned reserves are adequate to meet Clean Water Fund loan program requirements and manage anticipated cash flows through the planning period. However, they are not large enough to absorb unanticipated spending greater than approximately $1 million to $3 million nor to allow greater cash financing of capital projects during the planning period.

These factors are expected to continue beyond the planning period.

POLICY CONTROLS

District capital financing is controlled by several Commission policies (available at madsewer.org/commission and select Commission Policy Book). These include:

- Owner Expectations policies regarding cost-effectiveness, operational and business practice sustainability, regulatory compliance, anticipation of future requirements and service to communities
- Executive Expectations Policy EE-2C, regarding financial planning/budgeting;
- EE-2D (6) regarding adequacy of available funds;
- EE-2G regarding adequacy of rates to fund capital improvements; and
- Commission policy ATT-2, specifically the sections on:
    - Capital projects budget and debt service budget;
    - Debt financing;
    - Fund reserves;
    - Fund structure; and
    - Strategic financial planning.

This CIP is consistent with the above policies.

FINANCING TOOLS

The District's capital program is financed with a combination of debt and cash:

1. Disbursements from the state's Clean Water Fund loan program.
2. Revenue from District connection charges (charged for extension of service to new areas).
3. Revenue from District service charges (paid quarterly by owner communities).

Clean Water Fund loan interest rates are lower than commercial loans because of a state interest rate subsidy. Rates in previous years were at or under 2% but are forecast to be 2.5% for most of the planning period, reflecting market rate increases. Clean Water Fund loans typically have a 20-year term.

Clean Water Fund loan proceeds are deposited in the capital projects 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. These delays are one reason to maintain adequate reserves in the capital projects fund.

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 term require the District to maintain specified reserves in the debt service fund.

Connection charge revenue is paid by municipalities (or directly by developers) on a one-time basis when service is made available to new areas. Connection charges are based on the cost of the conveyance facilities serving a given area and a proportion of the costs of assets at the Nine Springs Wastewater Treatment Plant. Connection charges are meant to recover the infrastructure costs of expanding the system and providing capacity. Ongoing repair and replacement of the system are supported by service charges. Connection charges are deposited directly in the capital projects fund.

Connection charge revenue varies significantly by year depending on the pace and location of development in the region. In preparing the capital financing plan, staff estimate future connection charges based on historical patterns, known rate changes and best judgement about economic conditions. The unpredictability of connection charge revenue is a second reason to maintain adequate reserves in the capital projects fund. (Estimated connection charges in this Capital Improvements Plan reflect the phase in of higher treatment plant connection charge rates, authorized by the Commission in 2017.)

Connection charge revenues contribute roughly 22% of the cash financing for the capital program over the six-year planning horizon, with the remaining 77% from service charges and 1% from interest. (Service charges also cover all debt service payments.) Service charge 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 Clean Water Fund loans remains the largest financing tool for the capital program, financing approximately 70% of capital expenditures over the period. The high level of spending needs and the desire to limit service charge increases dictates a relatively high use of debt through the planning period.

Commission and staff members discuss capital projects and related expenditures during strategic planning discussions.

CAPITAL FINANCING PLAN

The financing plan covers the CIP planning period, 2024–2029. In addition to borrowing levels, the plan proposes annual transfers from the operating fund to the capital projects fund and to the debt service fund. These amounts are anticipated. However, the transfer amounts for the first year of the plan will be fixed in the District's annual budget in the fall. Borrowing amounts will vary from anticipated, reflecting changes in project costs, loan eligibility and staff decisions to not borrow for smaller projects when feasible.

FORECAST ASSUMPTIONS

The forecast in the plan makes several assumptions regarding future economic and District conditions. First, the plan assumes inflation remains at 5% for the first two years of the period, declining to 3% thereafter. This is to reflect continuing high national inflation, particularly as it affects infrastructure construction. Second, the plan assumes that Clean Water Fund subsidized loan rates will be higher than historical levels, remaining at 2.5% through 2027 and declining thereafter. Third, the plan assumes relatively low levels of non-service charges revenue, reflecting macroeconomic conditions. (These revenues include septage fees, fertilizer sales, review fees and similar sources that are outside of District control.) Fourth, the plan assumes relatively low connection charges revenue, reflecting an already apparent slowdown in development in the region.

Regarding the District itself, the plan assumes that the District will be able to accomplish the high level of work planned for the later years of the period by relying on additional engineering staff previously added, as well as staff anticipated to be requested in the 2024 operating budget. In addition, the plan assumes annual growth in non-capital spending consistent with average growth since 2018.

The plan also assumes that spending after the six-year plan will remain at similar or slightly higher levels. In addition to ongoing trends in capital spending, there are several needs that have either been deferred or are anticipated for future spending. These include continuing expansion of the collection system to serve the Nine Springs Valley area; general collection system rehabilitation needs; potential infiltration and inflow reduction projects; potential improvements in biosolids disposal; and reconfiguration of certain areas of the Nine Springs Wastewater Treatment Plant relating to safety, storage, energy systems and growth. Specific figures have not been programmed for these items, but fund balance and service charges growth remain steady through the planning period to allow absorption of likely costs of these future needs.

TABLE CIP-7: **Capital Projects Fund Cash Flow Summary**

	2023	2024	2025	2026	2027	2028	2029
OPENING BALANCE	**$20,592,000**	**$16,048,000**	**$25,205,000**	**$20,108,000**	**$21,700,000**	**$20,861,000**	**$26,318,000**
Revenues							
Clean Water Fund Loans	1,515,000	36,651,000	36,328,000	29,820,000	23,879,000	45,596,000	21,009,000
Connection Charges	2,175,000	2,450,000	2,675,000	2,950,000	3,075,000	3,200,000	3,325,000
Interest Revenues	19,000	80,000	126,000	101,000	109,000	209,000	263,000
Transfers From Operating Fund	4,791,000	15,521,000	8,156,000	5,560,000	8,661,000	10,216,000	12,764,000
Total Revenues	*8,500,000*	*54,702,000*	*47,285,000*	*38,431,000*	*35,724,000*	*59,221,000*	*37,361,000*
Expenditures							
Treatment Plant	4,497,000	11,963,000	28,359,000	21,464,000	16,605,000	41,837,000	37,703,000
Interceptors	4,497,000	19,304,000	15,660,000	6,864,000	11,544,000	6,693,000	6,500,000
Pumping Stations and Force Mains	3,357,000	13,745,000	8,058,000	8,254,000	8,155,000	4,973,000	5,373,000
Capital Budget Expenses	693,000	533,000	305,000	257,000	259,000	261,000	63,000
Total Expenditures	*13,044,000*	*45,545,000*	*52,382,000*	*36,839,000*	*36,563,000*	*53,764,000*	*49,639,000*
CLOSING BALANCE	**$16,048,000**	**$25,205,000**	**$20,108,000**	**$21,700,000**	**$20,861,000**	**$26,318,000**	**$14,040,000**
Reserve Target	*10,069,000*	*19,073,000*	*19,396,000*	*15,326,000*	*18,404,000*	*20,658,000*	*12,747,000*
Closing Balance Net of Reserve	*5,979,000*	*6,132,000*	*712,000*	*6,374,000*	*2,457,000*	*5,660,000*	*1,293,000*

CAPITAL PROJECTS FUND BALANCE

The capital projects fund balance is an important factor in the capital financing plan. The balance provides resiliency against fluctuations in connection charge revenues and against delays in loan proceeds. It also covers the costs of the planning and design phases of loan-funded projects until loan proceeds are received. Furthermore, the balance allows the District to take on unplanned capital expenditures, like emergency repairs. To provide this resiliency, the balance must grow with the size of the capital program. The District seeks to maintain a capital projects fund reserve at least as large as 50% of annual spending, less the amount transferred from the operating fund, averaged over several years.

To achieve needed balances, the plan increases the amount transferred from the operating fund to the capital projects fund, over the course of the six-year plan. As shown in **Table CIP-7, page 45**, previous page, the reserve target varies between $13 million and $21 million, depending on spending levels in any given year. Note that the plan rebalances the capital projects fund and debt service fund in 2024.

DEBT SERVICE FUND BALANCE

Payments for principal and interest obligations come from the debt service fund. As with the capital projects fund, the balance provides resiliency against financial fluctuations.

However, where the capital projects fund's balance is useful mainly for year-to-year variations, the debt service fund's balance is for longer-term variations. In particular, the fund balance provides resiliency against potential large capital costs three or more years in the future. "Large" means costs on the order of $25 million to $50 million, like those for major new regulatory requirements, growth or infrastructure renewal projects. The debt service fund balance allows the District to take on new debt for such requirements without having to immediately make large increases in service charge revenue. The financing plan builds in a reserve for this purpose in the final years of the plan.

In addition, 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. This minimum requirement assures ability to pay but provides no resiliency against potential future projects.

As shown in **Table CIP-8 below,** the Clean Water Fund reserve requirement increases from $18 million to $25 million over the period. Transfers from the operating fund to the debt service fund increase from $7 million to $26 million. Note that the plan rebalances the capital projects fund and debt service fund in 2024. The balance net of the reserve requirement is low at several points. However, the debt service fund balances are adequate to pay the required principal and interest payments on existing and anticipated Clean Water Fund loans.

Table CIP-8: **Debt Service Fund Cash Flow Summary**

	2023	2024	2025	2026	2027	2028	2029
OPENING BALANCE	**$31,044,000**	**$31,076,000**	**$22,430,000**	**$21,231,000**	**$23,576,000**	**$24,871,000**	**$25,716,000**
Revenues							
Transfer from Operating Fund	16,026,000	6,539,000	16,355,000	21,797,000	22,156,000	24,226,000	25,689,000
Interest Earnings	51,000	155,000	112,000	106,000	118,000	249,000	257,000
Total Revenues	*16,077,000*	*6,694,000*	*16,467,000*	*21,903,000*	*22,274,000*	*24,475,000*	*25,946,000*
Principal Payments	13,097,000	11,762,000	13,456,000	14,920,000	16,097,000	18,151,000	18,849,000
Interest Payments	2,948,000	3,578,000	4,210,000	4,638,000	4,882,000	5,479,000	5,509,000
Total Expenditures	*16,045,000*	*15,340,000*	*17,666,000*	*19,558,000*	*20,979,000*	*23,630,000*	*24,358,000*
CLOSING BALANCE	**$31,076,000**	**$22,430,000**	**$21,231,000**	**$23,576,000**	**$24,871,000**	**$25,716,000**	**$27,304,000**
Reserve Requirement	*15,340,000*	*17,666,000*	*19,558,000*	*20,979,000*	*23,630,000*	*24,358,000*	*25,066,000*
Closing Balance Net of Reserve	*15,736,000*	*4,764,000*	*1,673,000*	*2,597,000*	*1,241,000*	*1,358,000*	*2,238,000*

BORROWING

The Capital Improvements Plan's use of debt is consistent with general financial resiliency principles and with overall Commission policy guidance. Borrowing allows the District to smooth its revenue needs over time. Rather than immediately increase service charges to accommodate large new capital projects, borrowing spreads the costs over the term of the loan. There are two primary considerations with borrowing for capital projects. First, borrowing increases the long-term total cost of the District by adding interest costs. This cost is mitigated by the subsidized loans provided through the state's Clean Water Fund loan program. Second, borrowing may create concerns over ability to repay debt. This risk is low for the District because of its ability to raise revenues as needed through service charges and — if necessary — property tax.

Total District debt continues to rise. As shown in **Table CIP-9 below,** total outstanding principal would rise from $153 million to $228 million over the planning period. Correspondingly, annual interest payments would rise from $3.6 million to $5.5 million over the period. This ongoing increase in nominal debt burden may be concerning for some. However, best practices in financial management evaluate debt burden relative to other organizational factors.

One such measure is the percentage of capital expenditures financed with debt. This indicates the extent to which an organization relies on debt for its capital program. There are no hard and fast rules for appropriate percentages. The key consideration for the CIP is that the District's ratio remains mostly steady, in the range of 65% to 78% over the period, with no significant trend up or down. (Percentages are two-year moving averages, to smooth annual variation that results from loan and spending timing differences.)

Another relative measure is the percentage of revenue used to pay principal and interest expenses. This indicates the overall increase in long-term cost from use of debt. Approximately 6.7% of service charge revenue would be used to pay interest over the period and 22.4% to pay principal. The relative burden is stable over the period. (See **Table CIP-9**.)

A final measure assesses the District's ability to secure sufficient revenue to repay its debt. The District relies on a constitutional measure for this purpose. The Wisconsin constitution, article XI, section 3 limits District debt to 5% of the equalized property valuation of the District. Currently, that valuation is approximately $64 billion. As shown in **Table CIP-9**, debt under the draft plan would remain at 0.3% of property value, well below the constitutional limit.

Table CIP-9: **Use of Debt in Capital Program**

	2024	2025	2026	2027	2028	2029
End of Year Outstanding Principal Obligations	$152,895,000	$175,767,000	$190,667,000	$198,449,000	$225,894,000	$228,054,000
Percent of Capital Expenditures Financed with Debt (2 year moving average)	65%	75%	74%	73%	77%	64%
Principal Paid	11,762,000	13,456,000	14,920,000	16,097,000	18,151,000	18,849,000
Interest Paid	3,578,000	4,210,000	4,638,000	4,882,000	5,479,000	5,509,000
Payments as Percent of Service Charges Revenue:						
Principal	21.4%	22.4%	22.7%	22.4%	23.2%	22.1%
Interest	5.8%	6.5%	7.0%	7.1%	6.8%	7.0%
Total	27.2%	28.9%	29.7%	29.5%	30.0%	29.1%
Total Obligations as Percentage of District Property Value (5% constitutional limit)	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

On a financial resiliency basis, the District's use of debt is consistent with general financial standards. This is primarily due to the District's reliable revenue sources through service charges and — if necessary — property tax collection.

There remains the Commission-level policy tradeoff with the use of debt, balancing the ability to defer revenue requirements against the increased total cost of borrowing. The plan assumes Clean Water Fund interest rates will be 2.5% through 2027, declining to nearer historical normal thereafter. At 2.5% interest, the total cost of a capital project over the lifetime of the loan would be 28% higher than if paid for in cash. The draft plan accepts this cost to allow growth in service charges to remain between roughly 8% and 10% per year over the planning period.

Tables CIP-10 and CIP-11, below, report the debt service budget for 2022 and forecast debt service expenditures.

Table CIP-10: **Debt Service Budget**

	Budget Year		2024 Proposed CIP	
	2022	**2023**	**2024**	**2023-2024 CHANGE**
Anticipated in Budget	$16,669,000	$17,618,000	$15,340,000	-13%
Expenditures (Actual 2022; Estimated 2023)	15,319,000	16,045,000		
Difference	*$(1,350,000)*	*$(1,573,000)*		

Table CIP-11: **Forecasted Debt Service Expenditures**

Note: Amounts for years beyond 2029 do not reflect potential future debt-funded capital projects.

Five-Year Intervals	Principal	Interest	Total
2024-2028	$74,386,000	$22,787,000	$97,173,000
2029-2033	$91,703,000	$24,179,000	$115,882,000
2034-2038	$70,328,000	$15,456,000	$85,784,000
2039-2043	$65,198,000	$7,836,000	$73,034,000

SERVICE CHARGES

Supporting the financing plan will require additional transfers from the operating fund and thus increases in service charge revenues. **Table CIP-12, below,** shows the amount transferred from the operating fund to each of the other funds per year. The total amount transferred rises from $22 million to $38 million over the period.

Table CIP-12 also shows a forecast of service charge needs for the operating budget, the non-capital side of District spending. Although the operating budget is not planned on a multi-year basis, the overall trend in growth is relatively stable. It is driven by inflationary factors and anticipated increases in staffing levels. The amounts shown reflect an assumed steady growth rate equal to the average rate since 2018, plus or minus an error factor. (The error factor reflects actual variation in non-service charges revenue since 2018, an assumed 1% annual variation in salary and benefits trends, and an assumed 0.5 FTE annual variation in position growth.)

Table CIP-12: **Service Charges Support for the Capital Program**

	2024	2025	2026	2027	2028	2029
Transfer to Capital Projects Fund	$15,521,000	$8,156,000	$5,560,000	$8,661,000	$10,216,000	$12,764,000
Transfer to Debt Service Fund	$6,539,000	$16,355,000	$21,797,000	$22,156,000	$24,226,000	$25,689,000
Total Support for Capital Program	*$22,060,000*	*$24,511,000*	*$27,357,000*	*$30,817,000*	*$34,442,000*	*$38,453,000*
Increase from Prior Year	*$1,243,000*	*$2,451,000*	*$2,846,000*	*$3,460,000*	*$3,625,000*	*$4,011,000*
Operating Budget Service Charge Needs						
High forecast	55,437,000	60,833,000	66,803,000	73,246,000	80,058,000	87,474,000
Low forecast	54,689,186	59,337,401	64,558,639	70,253,873	76,317,754	82,985,539
Total Service Charge Increase from Prior Year						
High forecast	*9.8%*	*9.8%*	*9.9%*	*9.8%*	*9.5%*	*9.5%*
Low forecast	*8.3%*	*8.4%*	*8.7%*	*8.7%*	*8.5%*	*8.5%*

Members of the Budget and Planning team are responsible for researching, forecasting and advising leadership on service charges.

SECTION FIVE

The Work of the DIstrict

A woman sits with three young girls in Grand Crossing Park along the Yahara River.

The success of the District is the result of the combined efforts of many talented people. Whether it's a multimillion-dollar capital project, an adaptive solution to a regulatory challenge, new technology, or other efforts, this work requires people working together effectively. To fulfill its strategic plan and manage day-to-day work, the District organizes its work into functional departments. These support efficient organization of tasks, budgeting, staff support, and accountability.

This section includes descriptions of each department; a review of the District's strategic plan; a list of District 2024 budget focus items with department assignments; a broad view of the breadth of work the District performs; and key metrics.

OUR DEPARTMENTS

The **Budget and Planning (B&P)** department helps the District plan for and meet challenges. The department has four main functions. This includes planning, such as the District's strategic plan, master and facility planning, and policy development. B&P oversees performance improvement and capital improvements, including the six-year Capital Improvements Plan. This department also has responsibility for budget and finance, including the six-year financing plan, annual operating budget development, and fund and reserves management. (The Department of Enterprise Services is responsible for all District accounting functions.)

The **Ecosystem Services** department oversees portions of the discharge permit and provides support services for treatment plant and collection system operations. This includes laboratory services to monitor the performance of the plant, provide information for service charge bills, and ensure the safety of the environment and public health with rigorous testing. Pollution prevention staff work on programs and initiatives to reduce pollutants such as chloride and mercury from entering the collection system and enable water stewardship. The pretreatment program provides coordination and oversight of industrial wastewater contributors and non-traditional sources, and the resource recovery team helps maximize the District's efforts to safely recycle and reuse biosolids on area fields.

PHOTOS

Budget & Planning: Engineering technician Curt Sauser (left) and GIS analyst Mitchell Johnson survey the plant grounds.
Ecosystem Services: Pollution prevention specialist Emily Jones nets a fish during the annual survey of effluent streams.

The **Engineering department** plans, designs, constructs and commissions new capital improvements and provides design and construction administration and advisory services to District teams so that safe, reliable and cost-effective infrastructure is built both on the plant grounds and beyond the fence. These projects range in value from less than $100,000 to over $50 million. Engineering coordinates with owner communities, other agencies and developers on outside projects affecting the collection system. The department also assists with capital planning and budgeting and with real estate and property issues.

The **Enterprise Services** department provides a range of management services to the organization in the areas of accounting, budget, procurement and IT. This department partners and collaborates with internal customers to provide effective and efficient services that allow departments to do their business better. These services include accounts payable and receivable, payroll, risk management, procurement and contract management, technological infrastructure support, software support, application development, cybersecurity services, data management, and records administration.

The **Leadership and Support** department provides broad-ranging support to the organization, particularly human resources (HR), which includes organizational development and employee health and safety, communications, and business services. This department also serves as a direct connection to the Commission, the District's governing body, and coordinates with contracted legal services. Centralizing these core business services provides efficiencies for the District, such as effectively developing and investing in its employees; advancing a policy-driven strategic approach to governance; deepening relationships with customers and the public; and supporting diversity, equity and inclusion activities.

The **Operations & Maintenance (O&M) department** is the backbone of the organization, protecting 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 24 hours a day, 365 days a year. The largest of our departments, O&M fulfills its charge by providing an array of critical services through the electrical, mechanical, facilities maintenance, collections systems services, operations and Metrogro workgroups, which all work together to recover the resources of clean water, biosolids, biogas and phosphorus fertilizer.

PHOTOS

Engineering: Project engineer Rachel Feil visits the construction site for the Nine Springs Valley Interceptor project.

Enterprise Services: IT staff Laurie Dunn (left) and Mickey Bowman examine a network server in the Operations Building.

Leadership Support: Resource associate Lynn Coleman installs a new poster into a District kiosk in Middleton.

Operations & Maintenance: Electricians Roy Rodriguez (left) and Roy Wells work on the actuator for Final Clarifier 14.

WORK WORTH DOING

The District employs about 125 staff in a variety of professional, technical and skilled trade positions. Each employee brings a wealth of knowledge and deep commitment to our mission of protecting public health and the environment.

Working here is about taking care of the communities we live in. We are the unseen leaders protecting one of our most valuable resources — our water.

In addition to supporting projects and focus items, staff are key to the daily operations of the plant, collection system and organization as a whole.

At a plant meeting held in December 2023, staff were asked to identify how their work is reflected in the District's seven performance areas, which are outlined on the following page. The wordcloud below represents the breadth of responses and work duties staff complete day in and day out and shared at that meeting.

Every day, people depend on us to get it right. It is our job to always look for ways to improve because our communities count on it, and the 2024 budget reflects this.

STRATEGIC PLAN

The District's annual budget supports the District's critical day-to-day work, medium-term projects and initiatives of importance, and long-term goals that support the strategic plan and the organization as a whole.

The District's Commission approved a new strategic plan in summer 2022, which is shown in **Figure 5, page 55**.

The structure of the strategic plan provides broad direction to guide District work on an ongoing basis. It includes our strategic purpose, owner expectations and performance areas, which are outlined at right.

Find the District's strategic plan online at madsewer.org/strategic-plan

Director of enterprise services Dana Reed and accounting supervisor Siphiwe Nkosi discuss how the strategic plan touches District roles in a staff exercise.

STRATEGIC PLAN STRUCTURE, EXPLAINED

STRATEGIC PURPOSE Our purpose succinctly describes why the District exists and who it serves. Articulating this purpose helps direct attention and resources to what is most important.

OUR PURPOSE

Protect public health, welfare and the environment by providing efficient and strategic wastewater management on behalf of our owner communities.

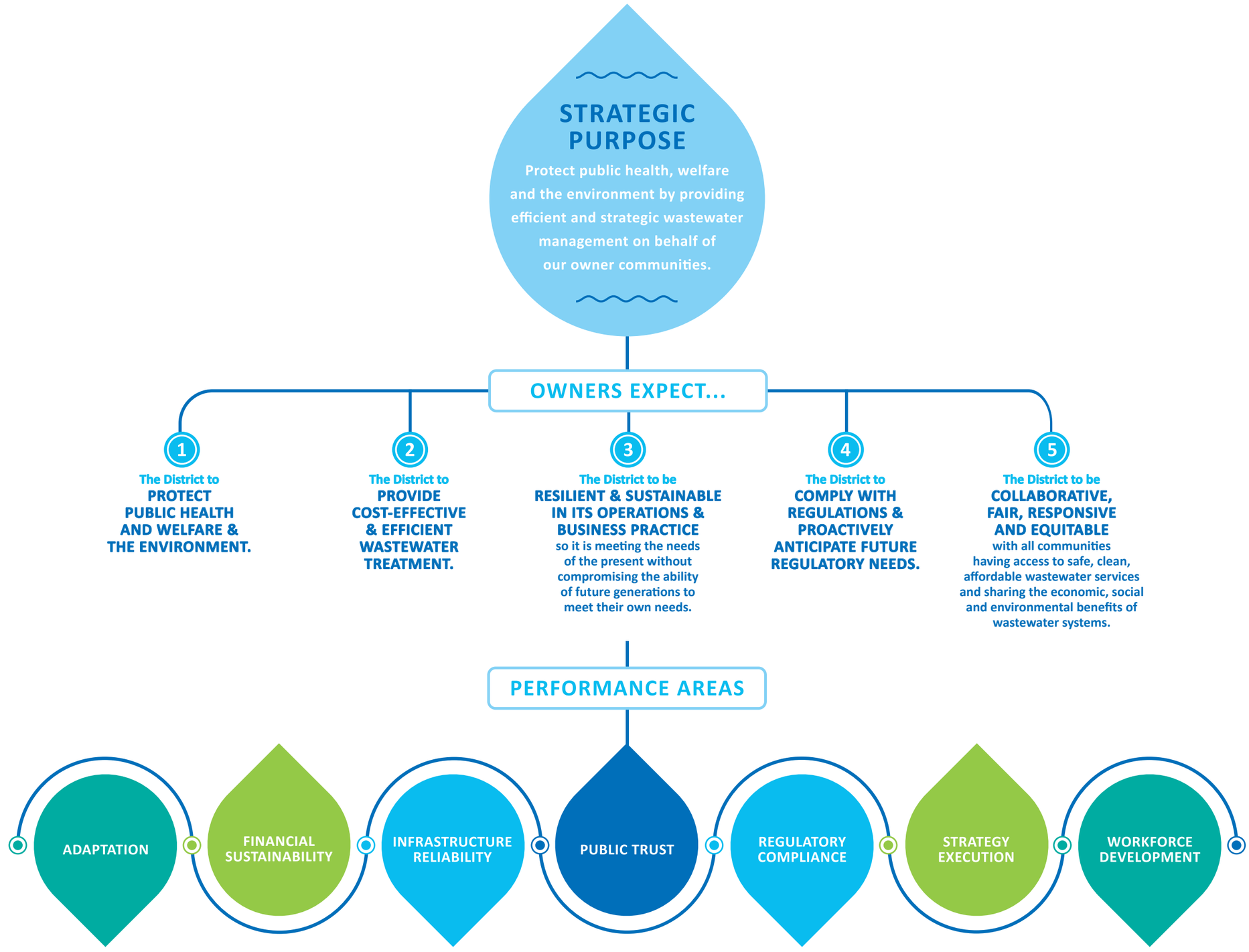
OWNER EXPECTATIONS These outline the Commission's understanding of how owner communities expect us to approach our work and what aspects are most critical to communities. The following are shortened versions of the owner expectations:

1. *Owners expect the District to protect public health, welfare and the environment.*
2. *Owners expect the District to provide cost-effective and efficient wastewater treatment.*
3. *Owners expect the District to be resilient and sustainable in its operations and business practices.*
4. *Owners expect the District to comply with regulations and proactively anticipate future regulatory needs.*
5. *Owners expect the District to be collaborative, fair, responsive and equitable.*

PERFORMANCE AREAS These are areas the District must excel at to fulfill its strategic purpose and meet owner expectations. They are high-level and broad categories of effort. They are also a management tool to support executive-level monitoring and work prioritization. Our seven performance areas are:

- ADAPTATION
- FINANCIAL SUSTAINABILITY
- INFRASTRUCTURE RELIABILITY
- PUBLIC TRUST
- REGULATORY COMPLIANCE
- STRATEGY EXECUTION
- WORKFORCE DEVELOPMENT

Figure 5: **District Strategic Plan**



2024 DISTRICT FOCUS ITEMS

Outside of the strategic plan, the District's Executive Team determines — and the Commission approves — a set of focus items for the budget year. Focus items are areas that need discrete attention in the coming months and years. They may not be projects in the traditional sense, but represent growth areas, opportunities, and resource-intensive challenges. They have both technical and adaptive elements, tend to be broader and more fluid than projects, and often are supported by one or more projects, several teams or departments, or by day-to-day work.

These focus items are aligned to the level of the organization, specifically Commission and Chief Engineer & Director (CED)/Executive Team, which provides oversight or support for the focus items. More specifically:

Commission-level items:

- Needs active Commission direction; support through setting policy, providing resources, or making a politically challenging decision; or is an area that requires Commission discussion and exploration; or
- Is an area the Commission believes needs more focus and attention. It identifies a gap or opportunity.

CED/Executive Team-level items:

- Requires adaptation;
- Involves significant organizational resources, especially staffing; or
- Management-level work that needs CED and E Team monitoring to succeed; i.e., is at a relatively high risk of failure or drifting.

The 2024 focus items are provided in **Tables 6 and 7, pages 57 and 58**. It is important to note that while focus items are outside the strategic plan and require higher-level oversight, they do have throughlines to the performance areas of the District's strategic plan and individual departments. **Figure 6, below,** provides a graphical representation of how the 2024 focus items align to the District's performance area. **Tables 6 and 7** also specify which department(s) bear responsibility for individual focus items.

Figure 6: **Focus Item Alignment to Performance Areas**

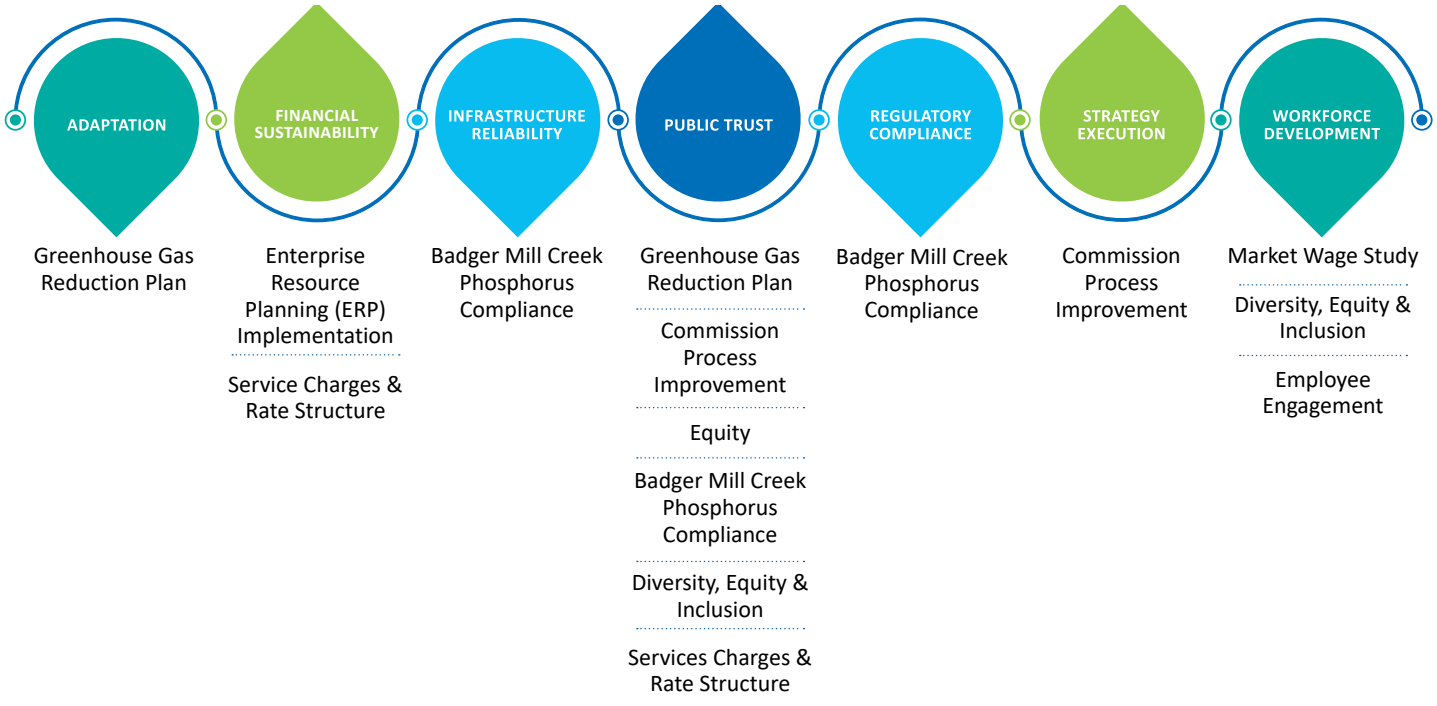


Table 6: **2024 District Focus Items - Commission-Level**

Greenhouse Gas Reduction Plan

PERFORMANCE AREAS
Adaptation &
Public Trust

RESPONSIBILITY
Budget & Planning and Leadership Support

DELIVERABLES
Finalize greenhouse gas reduction plan. Begin plan implementation by evaluating emissions as part of the heat and power facilities plan.

Ongoing Commission Process Improvement

PERFORMANCE AREAS
Public Trust &
Strategic Execution

RESPONSIBILITY
Leadership Support

DELIVERABLE
To be determined at a Fall 2023 Commission study session

Equity

PERFORMANCE AREA
Public Trust

RESPONSIBILITY
E Team and Leadership Support

DELIVERABLE
- Form an owner community of practice group on affordability programs
- Define equity and equitable engagement
- Memorandum of Understanding with partners in the Capital Springs Recreation Area
- Identify equitable procurement next steps

Badger Mill Creek Phosphorous Compliance

PERFORMANCE AREAS
Infrastructure Reliability, Regulatory Compliance & Public Trust

RESPONSIBILITY
Ecosystem Services and Leadership Support

DELIVERABLES
1. Convene and facilitate stakeholder group to develop a project prioritization and funding plan to present to the Commission by September 30, 2024.
2. Work with WDNR and CARPC to move Commission-approved BMC final phosphorus compliance solution through regulatory approvals.

Market Wage Study

PERFORMANCE AREA
Workforce Development

RESPONSIBILITY
E Team and ELC

DELIVERABLE
Complete a market wage study and plan for next steps.

Table 7: **2024 District Focus Items - CED/E Team-Level**

Enterprise Resource Planning (ERP) Implementation

PERFORMANCE AREAS
Financial Sustainablity

RESPONSIBILITY
Budget & Planning and Enterprise Services

DELIVERABLES
Select firm to manage ERP implementation. Work with that firm to develop detailed implementation plans and start requirements gathering.

Diversity, Equity and Inclusion (DEI)

PERFORMANCE AREAS
Public Trust & Workforce Development

RESPONSIBILITY
E Team and HR

DELIVERABLE
Develop strategy and workplan for upcoming years' internal DEI work.

Employee Engagement

PERFORMANCE AREA
Workforce Development

RESPONSIBILITY
HR

DELIVERABLES
Review 2023 action plans. Conduct second survey and develop additional action plans in 2024.

Service Charges & Rate Structure

PERFORMANCE AREAS
Public Trust & Financial Sustainability

RESPONSIBILITY
Budget & Planning

DELIVERABLES
Initiate a planning effort to explore the feasibility of establishing an industrial billing program. Staff will share findings of this effort with the Commission and obtain feedback and interests in late 2024 or early 2025.

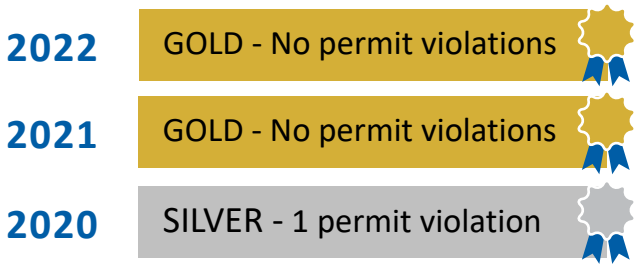
PERFORMANCE INDICATORS

To ensure needed performance in the areas identified in the strategic plan, the District develops and revises performance indicators on an ongoing basis. Many of these indicators are technical and pertinent only to the workgroups that use them. The indicators reported here are intended to reflect overall District performance in key areas. Data is provided for the last three years where applicable to provide a better snapshot of performance over time.

RECORDABLE INJURIES

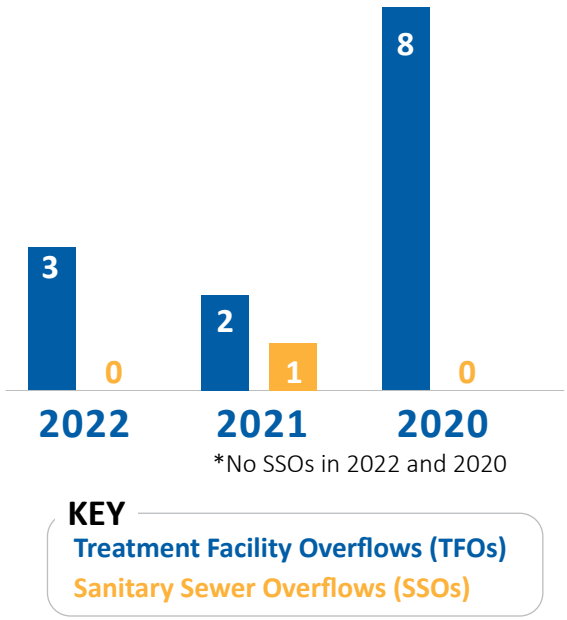
Performance areas this indicator supports:
Workforce Development &
Infrastructure Reliability

NACWA PEAK PERFORMANCE AWARD



Performance areas this indicator supports:
Regulatory Compliance &
Infrastructure Reliability

OVERFLOWS



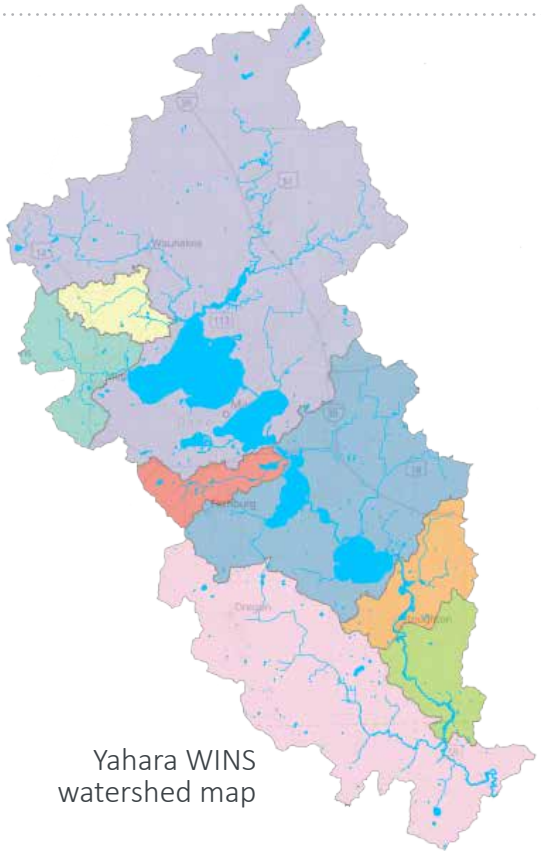
Performance areas this indicator supports:
Regulatory Compliance &
Infrastructure Reliability

WPDES PERMIT COMPLIANCE

Performance areas this indicator supports:
Regulatory Compliance &
Infrastructure Reliability

Note: From annual WDNR Compliance Maintenance Annual Report (CMAR), which is graded on a 4.0 scale

YAHARA WINS PHOSPHORUS COMPLIANCE



Yahara WINS watershed map

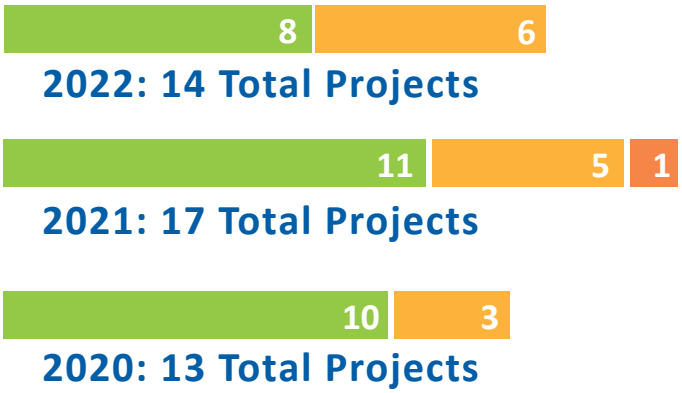
Year	Conservation practices implemented, in acres	Phosphorus kept on the land, in pounds
2022	28,646	50,563*
2021	36,120	88,854
2020	22,450	61,823

Notes: Numbers shown are for reporting year, not total of project to date

*A new phosphorus reduction accounting method was adopted by all WINS partners in 2022.

Performance areas this indicator supports:
Regulatory Compliance, Adaptation & Public Trust

CAPITAL PROJECTS MANAGEMENT



KEY
Capital Projects on Target
Capital Projects Requiring Additional Monitoring
Capital Projects Requiring Course Correction

Performance areas this indicator supports:
Regulatory Compliance & Infrastructure Reliability

ANNUAL AUDIT RESULTS

2022 ✓ UNQUALIFIED OPINION - CLEAN AUDIT

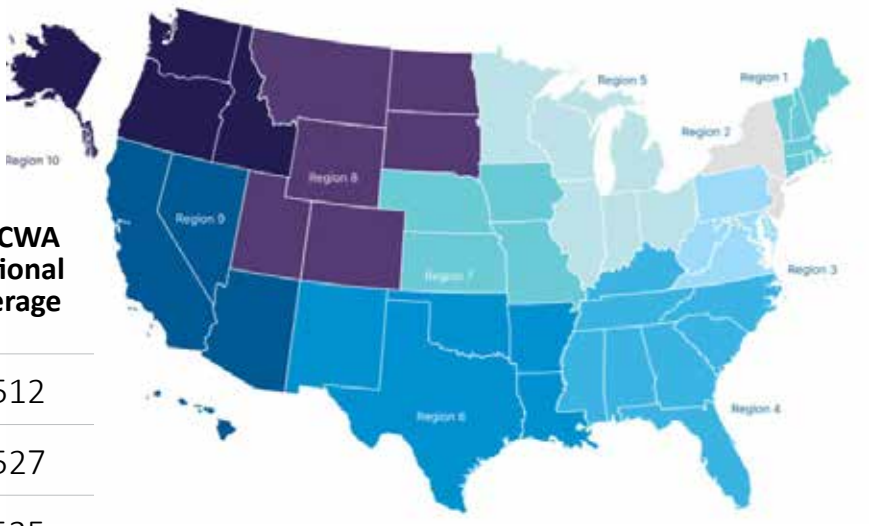
2021 ✓ UNQUALIFIED OPINION - CLEAN AUDIT

2020 ✓ UNQUALIFIED OPINION - CLEAN AUDIT

Performance areas this indicator supports:
Financial Sustainability & Public Trust

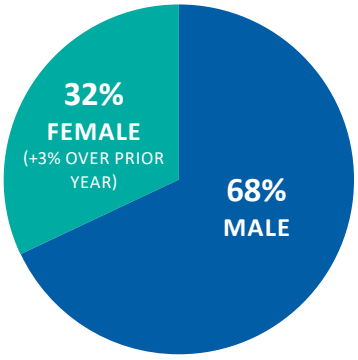
DISTRICT HOUSEHOLD BURDEN COMPARED TO NACWA AVERAGES

Year	Average Household Charge, City of Madison + District	NACWA Region 5 Average	NACWA National Average
2019	$343	$477	$512
2020	$361	$502	$527
2021	$385	$518	$535
2022	$409	$535	$569



Performance areas this indicator supports:
Financial Sustainability & Public Trust

EMPLOYEE DEMOGRAPHICS & TURNOVER



Note: As of December 31, 2022. 129 total employees. Data self-reported by staff.

	EMPLOYEE CENSUS	
Race	**2021**	**2022**
Asian	2	3
American Indian or Alaskan Native	1	1
Black	4	3
Hispanic or Latino	3	3
Native Hawaiian or Other Pacific Islander	0	0
White	106	115
Two or more races	3	3

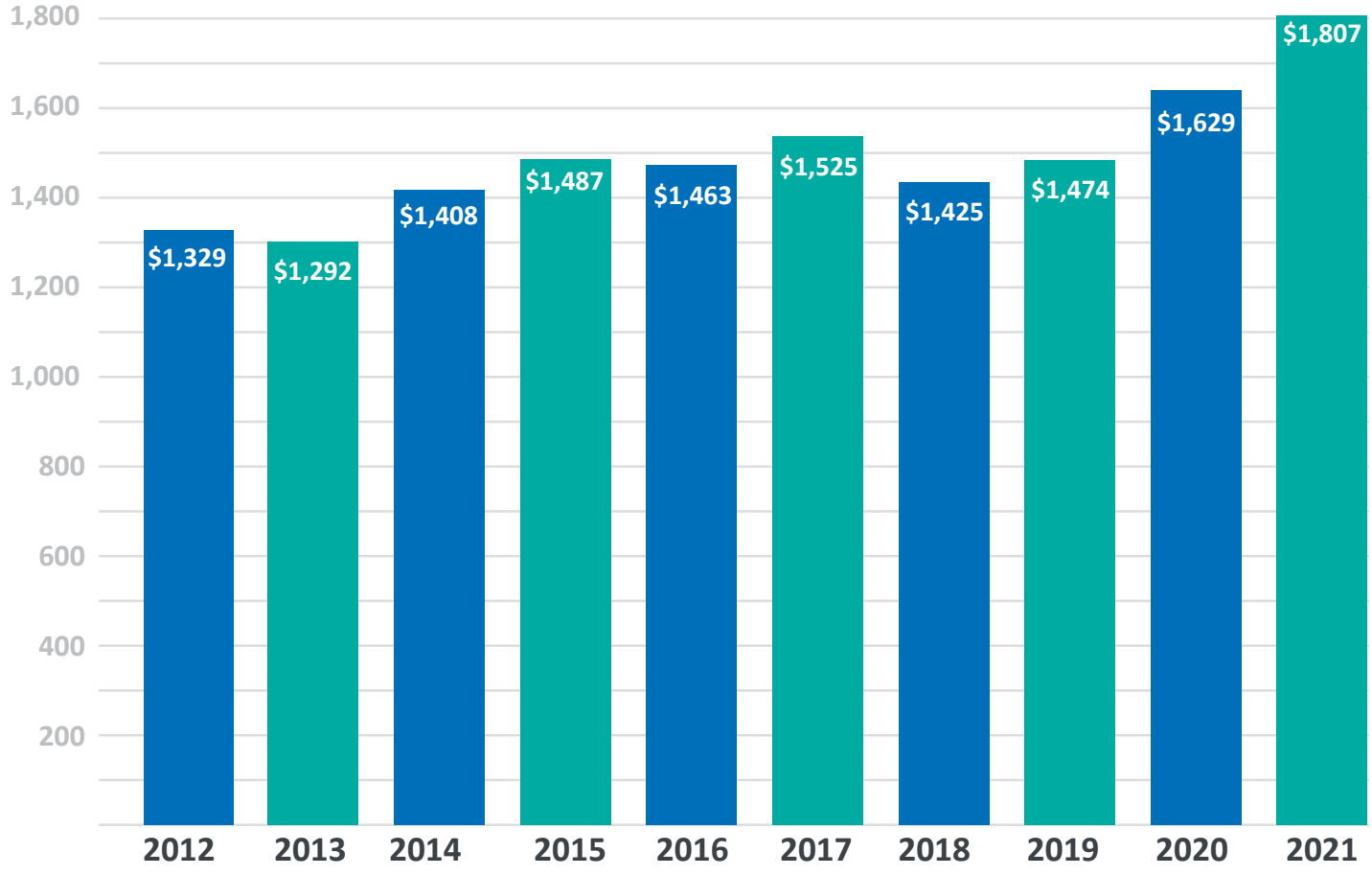
	New Hires	Resignations	Retirements	Internal Promotions	Other
2020	15	7	3	7	0
2021	10	5	5	12	0
2022	17	6	3	21	0

Performance area this indicator supports:
Workforce Development

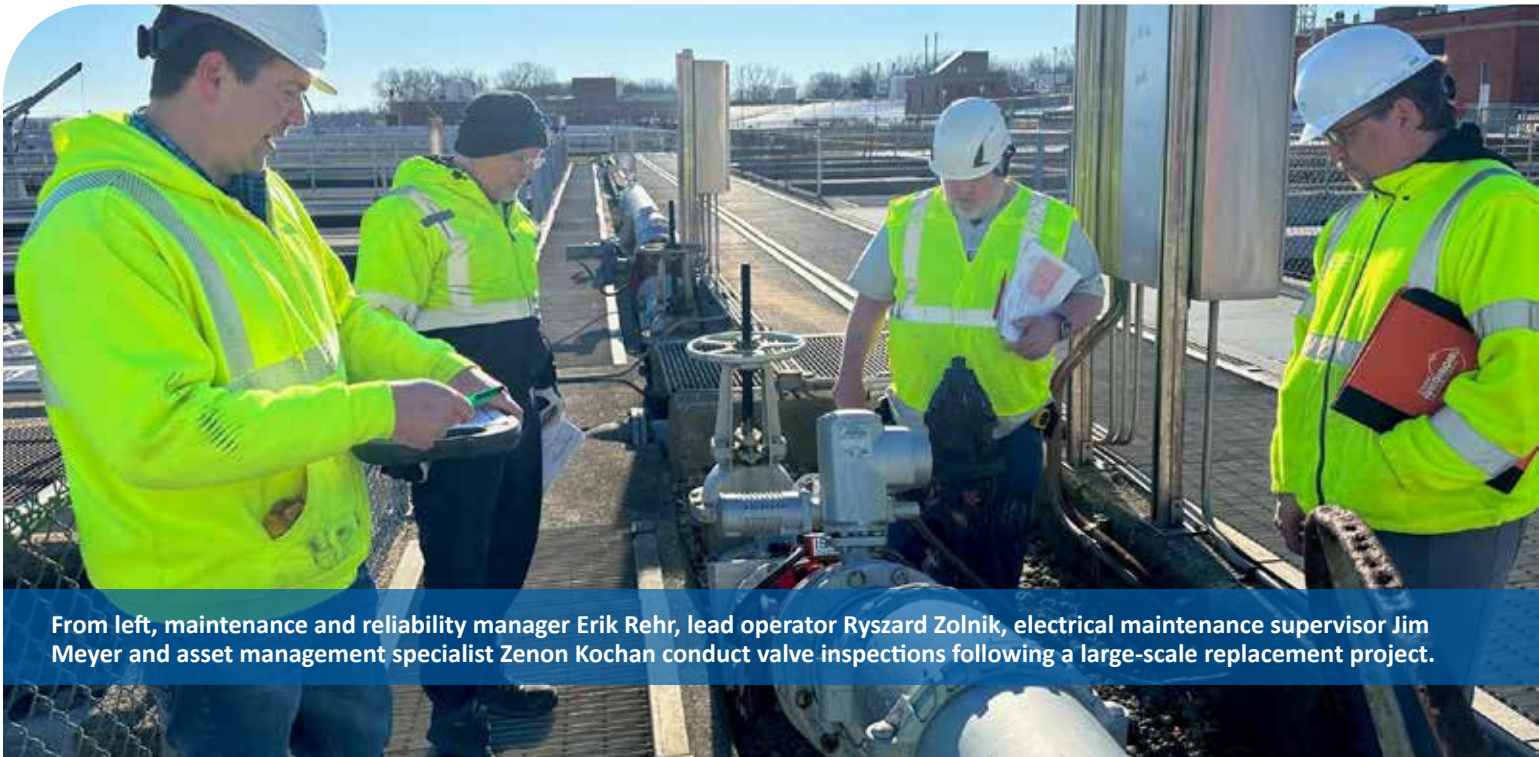
COST TO TREAT WASTEWATER

Non-capital spending per million gallons treated, 2012-2021

*In 2021 dollars



Performance area this indicator supports:
Financial Sustainability



From left, maintenance and reliability manager Erik Rehr, lead operator Ryszard Zolnik, electrical maintenance supervisor Jim Meyer and asset management specialist Zenon Kochan conduct valve inspections following a large-scale replacement project.

Appendices

A child jumps on the shoreline of a lagoon at Winnequah Dream Park in Monona.

APPENDIX A
Project Summaries

This section contains summaries for projects in the 2024 Capital Improvements Plan. These summaries are intended to provide a broad overview of each 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.

Please note that project summaries are provided only for those projects that are anticipated to occur within the planning horzion of this document (2024-2029).

CIP ID# A01.1

East Primary Influent Channel Air Piping Replacement

START
2022

COMPLETION
2026

PROJECT TYPE
Plant Improvements – Primary Treatment

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project will replace the air piping in the influent channels to the primary tanks on the east side of the treatment plant. Several air leaks were discovered in the air piping in April 2021 and it has been determined that the system can no longer be repaired cost-effectively. It is anticipated that this project will be funded through cash in the capital projects fund.

BACKGROUND
The air piping in the influent channels to the primary tanks supplies pressurized air to the wastewater so that the solids remain suspended until they reach the primary settling basins. Without the proper amount of air in these channels, the solids will settle over time, reducing the channel capacity and increasing maintenance costs to clear the settled material. The air piping in the primary influent channels on the west side of the plant was replaced as part of the Liquid Processing Improvements (Phase 1) in 2020. The piping for the east plant is older than that on the west side prior to its replacement. It requires replacement to ensure that the primary treatment process continues to operate effectively.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$79,000	$1,515,000

CIP ID# A01.2

Low Dissolved Oxygen (Partial Plant)

START
2022

COMPLETION
2027

PROJECT TYPE
Plant Improvements – Aeration System

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purposes of this project are to replace aging assets associated with the secondary treatment system and to test the use of low dissolved oxygen (DO) at full scale on a portion of the biological nutrient removal process. The test results will be used to determine if the low DO process changes can be implemented in the entire secondary treatment process. It is anticipated that costs associated with implementing and testing the low DO process changes will be funded through cash in the capital projects fund.

BACKGROUND
The existing activated sludge facilities operate an enhanced biological phosphorus removal process. Many of the aeration supply and control equipment assets need replacement due to age, condition or obsolescence. As part of the 2016 Liquid Processing Facilities Plan, changes to the existing processes were evaluated as part of asset replacement, including a process called nitrite shunt, which could result in more effective nutrient removal while using less energy and potentially positioning the District for future total nitrogen regulations. While bench-scale testing of the nitrite shunt process did not yield satisfactory results, it did identify low DO as a promising alternative that could remove the necessary nutrients with less energy.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$284,000	$4,000,000

CIP ID# A01.3

Low Dissolved Oxygen (Full Plant)

START
2022

COMPLETION
2029

PROJECT TYPE
Plant Improvements – Aeration System

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project involves the implementation of a 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.

BACKGROUND
The existing activated sludge facilities operate an enhanced biological phosphorus removal process. Many of the aeration supply and control equipment assets need replacement due to age, condition or obsolescence. As part of the 2016 Liquid Processing Facilities Plan, changes to the existing processes were evaluated as part of asset replacement, including a process called nitrite shunt that could result in more effective nutrient removal while using less energy and potentially positioning the District for future total nitrogen regulations. While bench-scale testing of the nitrite shunt process did not yield satisfactory results, it did identify low DO as a promising alternative that could remove the necessary nutrients with less energy. The low DO improvements will be implemented in all plants of the biological nutrient removal process if the initial testing, currently scheduled for 2025-2027, is successful.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$184,000	$23,263,000

CIP ID# A01.4

West Blowers and Switchgear Replacement

START
2023

COMPLETION
2026

PROJECT TYPE
Plant Improvements – Aeration System

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project will replace the west blowers and associated medium-voltage switchgear. These facilities have been in operation for more than 35 years and they are currently operating beyond their expected lifespan. This project was included in the 2016 Liquid Processing Facilities Plan. It is anticipated that the costs of the project will be funded through the Clean Water Fund.

BACKGROUND
The 2016 Liquid Processing Facilities Plan recommended the replacement of the west blowers using a phased approach. The plan called for two blowers to be replaced between 2020 and 2025, and the remaining blower and blower switchgear to be replaced shortly after 2024. Since the plan was developed, the condition of the blowers has deteriorated significantly, and one of the units is inoperable and requires costly repairs. Given the condition and criticality of this equipment, District operations staff is recommending that all three blowers and associated switchgear be replaced as soon as possible to ensure that this critical process continues to operate satisfactorily.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$856,000	$11,200,000

CIP ID# A01.5

East Blowers and Switchgear Replacement

START
2022

COMPLETION
2027

PROJECT TYPE
Plant Improvements – Aeration System

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project will replace the east blowers and associated medium-voltage switchgear. This equipment is of varying ages, with some of it more than 50 years old. This infrastructure is a crucial component of the activated sludge process and needs to be replaced to ensure compliance with the District's discharge permit. It is anticipated that the costs of this project will be funded through the Clean Water Fund.

BACKGROUND
The east blower system is older than the west blower system, with some of the facilities dating back to the 1960s. The system includes four electric blowers and one engine-driven blower that operates on biogas to reduce electricity demands in the east plants. The 2016 Liquid Processing Facilities Plan recommended the replacement of the east blower switchgear, but not the blowers themselves. New east blowers were not deemed necessary since the plan recommended that the aeration systems of the west and east plants be connected in such a way that the new west blowers could provide excess capacity to the east plant. District staff elected not to connect the west and east sides of the plant, thereby necessitating the replacement of the east blowers and switchgear.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$614,000	$11,400,000

CIP ID# A02

Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacements

START
2022

COMPLETION
2024

PROJECT TYPE
Plant Improvements – Sludge Thickening

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purpose of this project is to replace the gravity thickener tank drives and mechanisms on Gravity Thickener Tanks No. 1 and No. 2. This equipment is used to thicken the sludge which is removed in the primary clarifiers. Due to the age, condition and safety concerns associated with maintaining this equipment, it is recommended that the drives and mechanisms be replaced rather than rebuilt. This project will be financed through cash in the capital projects fund.

BACKGROUND
Both gravity thickener tanks were constructed in 1961 as part of the Fourth Addition to the Nine Springs Wastewater Treatment Plant. Each tank is equipped with a mechanical drive that turns a collection mechanism. This mechanism pushes settled sludge into the bottom of the tank for removal and further processing. The drives and mechanisms undergo routine preventative maintenance and have been rebuilt several times over the last 60 years. Due to the age and condition of the equipment, replacement materials are difficult to obtain, and continuing to rebuild the units is not recommended.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$165,000	$500,000

CIP ID# A03

NSWWTP Electrical Service Equipment Replacement

START
2022

COMPLETION
2027

PROJECT TYPE
Plant Improvement - Electrical Distribution

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project proposes to replace the outdoor service switchgear, transformers, busway system and indoor distribution switchgear for the incoming electrical service to the treatment plant. This system is responsible for transforming the incoming voltage so that it can be utilized by plant equipment and for isolating and protecting that equipment. It is anticipated that future equipment replacement will be funded through a loan from the Clean Water Fund.

BACKGROUND
Electrical power from the utility is routed to the treatment plant through two sets of switchgear. The first set, known as switchgear H1, is located outside of the Effluent Building. This system operates at 13.8 kV and steps down the voltage to 4.16 kV for use in downstream plant processes. The second system, known as switchgear S1, is located inside the Effluent Building. All equipment was installed in 1984-1985 and is approaching the end of its useful life (40- 50 years). An inspection of the H1 equipment was conducted by an electrical engineering company in the fall of 2020. While the equipment was determined to be in good operating condition overall, it is beginning to show signs of deterioration. Replacement parts for the S1 switchgear are increasingly difficult to obtain and it is recommended that this equipment be replaced in conjunction with the H1 switchgear.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$509,000	$13,700,000

CIP ID# A04.1

Heat and Power Improvements

START
2024

COMPLETION
2029

PROJECT TYPE
Energy-Related Projects – Use Reduction/Generation

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purpose of this project is to identify and replace aging assets associated with the District's energy-producing infrastructure and to optimize the use of energy going forward. These improvements will position the District to use its biogas to generate electricity on site at greater efficiency or to produce a biogas of pipeline quality that can be sold to others. This project was evaluated as part of the 2020 Energy Management Master Plan. Additional facility planning and design phases are expected to precede construction. It is anticipated that all project costs will be financed through a loan from the Clean Water Fund.

BACKGROUND
An energy study was conducted in 2014 by Strand and Brown and Caldwell to provide a roadmap for how the District might achieve energy independence. Areas of focus included ways to reduce energy usage, improve utilization of digester gas and produce more energy. The 2020 master planning study expanded on all these areas and examined the most energy-efficient way to handle and dispose of biosolids.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$425,000	$50,914,000

CIP ID# A04.2

Maintenance Facility Rooftop Solar Panels

START
2022

COMPLETION
2024

PROJECT TYPE
Energy-Related Projects – Use Reduction/Generation

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project was recommended in the 2020 Energy Management Master Plan to optimize energy use. The project involves expansion of the photovoltaic system on the roof of the Maintenance Facility Building by adding a 100-kilowatt direct current (DC) solar array to the existing 20-kilowatt DC system. The project will be paid for with cash in the capital projects fund.

BACKGROUND
The base bid for construction of the Maintenance Facility Building in 2015 included installation of the 20-kilowatt DC system with provisions for adding capacity at a later date. Installation costs have dropped since the original construction and efficiency of the equipment has improved, making system expansion a viable project. The 2020 Energy Management Master Plan estimated that this expansion of the photovoltaic system will have a payback period of approximately 20 years and will offset plant energy use by about $10,000 per year.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$73,000	$378,000

CIP ID# A05

Lagoon Dikes Improvements

START
2020

COMPLETION
2026

PROJECT TYPE
Plant Improvements – Lagoon Management

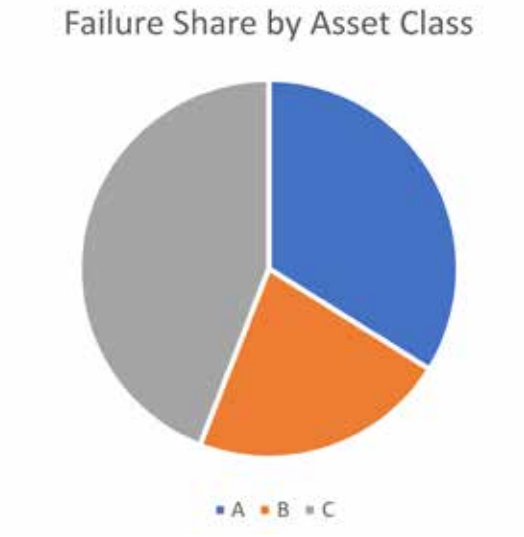
LOCATION
Nine Springs Wastewater Treatment Plant

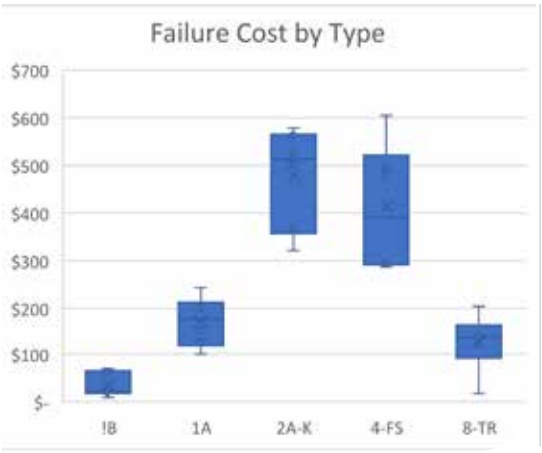
DESCRIPTION
The purpose of this project is to conduct a geotechnical study of the dikes in the District's lagoons and implement measures to stabilize them, especially in periods of high-water levels. The project is being conducted in several phases between 2020 and 2026, and any recommended repairs will be prioritized and implemented as needed. It is anticipated that the geotechnical study will be funded through cash in the capital projects fund, 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 Environmental Protection Agency (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.evaluate the dikes and repair any defective sections.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$520,000	$5,000,000





CIP ID# A06

Maintenance, Financial and HR Systems

START
2020

COMPLETION
2027

PROJECT TYPE
Plant Improvements – Computerized Maintenance Management System (CMMS)

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purpose of this project is to replace the District's existing CMMS and to address needs in the related financial and human resources systems. Each system will operate independently, but their functions and design must be closely integrated. The cost of this project will be funded through cash in the capital projects fund.

BACKGROUND
The District installed its initial CMMS in 1997 for a cost of approximately $1.0 million (roughly $2.3 million in 2023 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. 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 and reliability-centered maintenance. The project will also identify processes within the Human Resources department that need to be incorporated in the new financial system or in a new dedicated system.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$1,756,000	$6,150,000

CIP ID# A07

Metrogro Applicators & Equipment

START
2015

COMPLETION
2027

PROJECT TYPE
Metrogro Applicators and Equipment

LOCATION
Metrogro Program

DESCRIPTION
This line item is included in the Capital Improvements Plan to fund the periodic replacement of the District's biosolids applicators, tankers and low-disturbance toolbars. It is anticipated that these replacements will be funded through cash in the capital projects fund.

BACKGROUND
While the District's Biosolids Management Plan recommended a possible transition from a liquid biosolid to a cake product, that transition will take several years to complete. It is probable that a cake product will not be produced on a consistent basis until 2035 at the earliest. The District's Metrogro Program will remain the backbone of the Biosolids Reuse Program for the foreseeable future. The District's standard is to replace an applicator when it reaches 10,000 hours of service. Using that standard, new applicators were purchased in 2019, 2021 and 2022. Two more applicators are scheduled to be purchased in 2024 and 2025. Acquisition of new equipment will also allow for enhanced GPS capability and low-disturbance soil injection. These features are lacking in the older equipment

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$893,000	$4,850,000

CIP ID# A08

Flow Splitter Improvements

START
2015

COMPLETION
2025

PROJECT TYPE
Plant Improvements – Headworks

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project will rehabilitate, modify or possibly replace the existing flow splitter structure which is located immediately downstream of the grit removal tanks at the Headworks Facility. The structure's concrete and metal components have deteriorated significantly since the structure was put into operation as part of the Tenth Addition, likely due to the high levels of hydrogen sulfide and turbulent flow in this structure. It is anticipated that this project will be funded through a loan from the Clean Water Fund.

BACKGROUND
The flow splitter structure was built in 2005 as part of the Tenth Addition and allows for the controlled distribution of flow to the west and east plants. Flow from the grit removal basins enters the splitter structure from the west. The flow rises within the structure and spills over weirs that empty into five channels that connect to discharge pipes to the west and east sides of the plant. Flow to each side of the plant can be controlled by the placement of stop logs in the effluent channels. Corrosion of the structure has made it difficult to remove the stop logs in recent years. A thorough video inspection of the structure in February 2021 revealed that the concrete walls supporting the effluent channels are also in very poor condition. It is desired to rehabilitate or rebuild the damaged sections of concrete before the steel reinforcing is further compromised and leads to failure of the structure.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$2,993,000	$5,000,000

CIP ID# A09

Treatment Plant HVAC Improvements – Group 1 Projects

START
2026

COMPLETION
2028

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
A consultant performed a comprehensive condition assessment of existing HVAC systems in 2020-2021 and compiled a prioritized list of improvements for the most deficient systems. The improvement projects were broken down into three priority areas, or groups, with the first group containing items that need to be addressed in the near term to satisfy code requirements, worker safety and/or equipment condition. The most critical projects in Group 1 are included in a separate project which is scheduled for construction in 2023-2024. This project will address other projects which were identified in the Group 1 category.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$3,875,000

CIP ID# A10.1

Headworks Screening

START
2026

COMPLETION
2029

PROJECT TYPE
Plant Improvements – Screening at Headworks Facility

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project includes the replacement or modification of the fine-screening equipment and related screening 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.

BACKGROUND
Three fine-screening units were installed at the Headworks Facility as part of the Tenth 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 to 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 screening handling system requires frequent operator attention to keep it running. Further, the equipment for the screening 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

2024 Expenditure ($2024)	Total Project Cost
$0	$5,175,000

CIP ID# A10.2

Grit Processing Improvements

START
2027

COMPLETION
2029

PROJECT TYPE
Plant Improvements – Grit Handling

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project will improve the performance of the grit-handling equipment in the Headworks Facility. It is expected that several pieces of equipment will be replaced due to age and wear, including grit pumps, concentrators, classifiers and appurtenances. It is anticipated that project costs will be funded through the Clean Water Fund.

BACKGROUND
The existing grit system was installed as part of the Tenth Addition to the Nine Springs Treatment Plant in 2005. The system consists of three vortex grit basins, six recessed impeller grit pumps and three grit concentrators/classifiers located on the mezzanine level of the Headworks Facility. This system was evaluated as part of the 2016 Liquid Processing Facilities Plan. While the equipment works reasonably well and requires little operator attention, it is now reaching the end of its useful life and will require replacement in the next five to 10 years, especially the grit concentrators.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$2,675,000

CIP ID# A10.3

Septage Receiving Modifications

START
2026

COMPLETION
2029

PROJECT TYPE
Plant Improvements – Septage Receiving

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
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.

BACKGROUND
The Septage Receiving Facility was constructed as part of the Tenth 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. A space needs study for the treatment plant will be completed in 2023 and will help inform the preferred location of the future facility.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$4,710,000

CIP ID# A11

Phosphorus Recovery Improvement Projects

START
2025

COMPLETION
2028

PROJECT TYPE
Plant Improvements – Struvite Harvesting

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
This project contains several projects that will optimize and improve the performance of the District's phosphorus recovery system, also known as the Ostara system. Proposed improvements include rehabilitating a dissolved air flotation tank to allow for pre-thickening of waste activated sludge prior to struvite recovery; modifications to struvite dryers to optimize performance; and enhancing the method of seeding the struvite reactors. It is anticipated that these improvements will be funded through the Clean Water Fund.

BACKGROUND
The Ostara system was installed as part of the Eleventh Addition to the Nine Springs Treatment Plant in 2013. The system removes phosphorus from the various treatment streams resulting from solids processing. The phosphorus is precipitated and then reused as a chemical fertilizer due to its nutrient content and slow-release properties. Since the process was brought online in 2013, numerous operational challenges have been observed such as product size, dust and quantity of material.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$5,400,000

CIP ID# A12.1 AND A12.2

Miscellaneous Treatment Plant Projects, 2024 & Future

START
Ongoing

COMPLETION
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 from revenue sources other than loans in the capital projects fund.

BACKGROUND
As the District's assets at the treatment plant continue to age and 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 projects 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 department or Engineering department and completed by a contractor in accordance with the District's procurement code.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
A12.1	$121,000	$121,000
A12.2	$0	$680,000

CIP ID# A13.1 & A13.2

Minor Capital Improvements, 2024 & Future

START
Ongoing

COMPLETION
Ongoing

PROJECT TYPE
Variable

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
Work under this item includes minor improvements or repairs to miscellaneous assets located at the Nine Springs Wastewater Treatment Plant. Costs of the work are financed through cash in the capital projects fund.

BACKGROUND
While the work included in this item is minor from a budgetary perspective, it usually is unplanned and urgent. As such, it is not possible for the District's maintenance crews to readily perform the work in most cases. Providing this line item in the capital projects budget allows District staff to have flexibility in prioritizing and implementing small projects on an annual basis to ensure that assets continue to operate and function reliably.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
A13.1	$124,000	$125,000
A13.2	$0	$700,000

CIP ID# A14

Annual Paving Improvements - Future

START
Ongoing

COMPLETION
Ongoing

PROJECT TYPE
Facilities Maintenance – Roads

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
Work under this item includes rehabilitating paved surfaces on the plant grounds on an annual or semi-annual basis. Paving costs are funded through cash in the capital projects fund.

BACKGROUND
The District annually or semi-annually includes funds in its capital projects budget for resurfacing of roads. Since these improvements are not necessary in every budget year and the cost can vary from year to year, it is generally more efficient to fund them in the capital projects budget rather than the operating budget

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$244,000

CIP ID# A15

Metrogro Operations Improvements

START
2025

COMPLETION
2030

PROJECT TYPE
Plant Improvements – Biosolids Disposal

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The primary purpose of this project is to consolidate operations for biosolids hauling, fleet storage and maintenance in a central location near the existing Maintenance Facility. Additional load-out stations will be added near the Metrogro storage tanks to provide additional capacity and a new fleet storage building is proposed for biosolids equipment and other District vehicles. This project will be financed through loan proceeds from the Clean Water Fund.

BACKGROUND
The 2021 Biosolids Management Plan reviewed the District's existing biosolids program and its future needs. While the District continues to study the feasibility and cost-effectiveness of producing a cake product for the long term, disposal of biosolids as a liquid product (Metrogro) on agricultural fields will continue to be the backbone of the program for the foreseeable future. The 2021 Biosolids Management Plan noted that operations are currently hampered by a lack of load-out stations, sludge transfer inefficiencies between storage and load-out facilities, and inadequate facilities to maintain and store equipment. Consolidating biosolids facilities near the Maintenance Facility will also allow the Metrogro Vehicle Loading Building to be repurposed for other plant processes such as biogas processing or sludge digestion.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$24,100,000

CIP ID# A16

W4 System Improvements

START
2024

COMPLETION
2025

PROJECT TYPE
Plant Improvements – Non-Potable Water System

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purpose of this project is to replace various components of the District's non-potable water (W4) system and to make related improvements to optimize its use. The W4 system reuses treated effluent for a number of plant processes including polymer dilution, wash water for screening at the Headworks Facility and pump seal water. Use of this system avoids the purchase of approximately 200 million gallons of potable water each year. This project will be financed through loan proceeds from the Clean Water Fund.

BACKGROUND
The W4 system was installed in the Tenth Addition to the treatment plant in 2006 and includes a pre-packaged pump and disinfection system that is in the Headworks Building. Expansion of the system was performed as part of the Eleventh Addition in 2014, with additional facilities installed in the Struvite Harvesting Building. As the original system approaches a service life of 20 years, the pumps and controls are in need of rehabilitation or replacement. Preliminary work will include an evaluation of the existing systems and recommendations for improvements.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$194,000	$1,100,000

CIP ID# A17.1& A17.2

Annual Solids Processing Tank Cleaning, 2024 & Future

START
ONGOING

COMPLETION
ONGOING

PROJECT TYPE
Plant Improvements – Process Tank Maintenance

LOCATION
Nine Springs Wastewater Treatment Plant

DESCRIPTION
The purpose of this line item in the capital projects budget is to provide for the annual cleaning of solids processing tanks, specifically digesters, sludge storage tanks, and wells. Periodic cleaning of these facilities is an important component of reliability centered maintenance and infrastructure reliability. Routine cleaning allows tanks to better utilize capacity, reduces wear on equipment due to sediment accumulation and allows for more frequent inspection of equipment. Costs of the work will be financed through cash in the capital projects fund.

BACKGROUND
Work of this type has been funded through the District's operating budget in the past. This is often problematic due to the nature of the work (i.e., variable quantities, variable costs and project delays). The capital projects budget is better suited to accommodate the challenges associated with annual tank cleaning.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
A17.1	$800,000	$800,000
A17.2	$0	$4,250,000

CIP ID# B01.1 & B01.2

West Interceptor – Shorewood Relief (Phases 2 & 3)

START
2018

COMPLETION
2025

PROJECT TYPE
Capacity Improvement – Conveyance System

LOCATION
West Interceptor Relief Sewer

University Avenue, Walnut Street to Shorewood Boulevard, City of Madison and Village of Shorewood Hills

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 improvements consist of the installation of 11,500 feet of replacement and 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, the construction will occur in three phases, with Phase 1 construction occurring in 2021-2022.

Phases 2 and 3 are scheduled for 2022-2024 and 2024-2025, respectively. Phase 2 of the project is being paid for with cash in the capital projects fund while Phase 3 of the project will be financed through the Clean Water Fund.

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 Intercepting System. 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.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
Phase 2	$269,000	$1,754,000
Phase 3	$5,602,000	$7,625,000

CIP ID# B02.1 & B02.2

Lower Badger Mill Creek Interceptor – Phases 5 and 6

START
2022

COMPLETION
2025

PROJECT TYPE
New Capacity – Conveyance System

LOCATION
Lower Badger Mill Creek Interceptor: CTH PD to Midtown Road, City of Verona, Town of Verona and City of Madison

DESCRIPTION
This project will extend the District's Lower Badger Mill Creek Interceptor from Highway PD to Midtown Road to provide service for new development. Construction will occur in two phases in order to accommodate proposed development in the basin. This project will be funded through revenue sources other than loan proceeds in the capital projects fund. Project costs will be recovered from connection charges from new users upon connection to the interceptor improvements.

BACKGROUND
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 to serve the cities of Verona and Madison and the towns of Verona and Middleton.

Phases 1-4 of the interceptor project were constructed between 2006 and 2018. Phase 5 will extend the sewer approximately 3,500 feet to the north to Shady Oak Lane in 2024. The sewer is scheduled to be completed in 2025 when it is extended 5,500 feet to Midtown Road.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
Phase 5	$570,000	$1,900,000
Phase 6	$1,964,000	$4,900,000

CIP ID# B03

Pumping Station 6 to Pumping Station 10 Connector

START
2022

COMPLETION
TBD

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 connect the East Interceptor at Pumping Station 6 (PS 6) to the Northeast Interceptor at Pumping Station 10 (PS 10) with a new pipeline. The new sewer will flow by gravity or under pressure between the two stations, or a combination of the two. The primary purpose of this interconnection is to provide system redundancy and reliability. An interim step in this project has been recommended in the 2024 Capital Improvements Plan (CIP): develop the District's force main inspection and repair program before committing to either the gravity or force main connection. Force main inspection is expected to occur in 2024 and 2025 (Project ID: C07).

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 and they have been used very effectively in other areas of the collection system. A feasibility analysis for the connector was completed in 2022. Spending for the recommended alternative is not included in the 2024 CIP. If results from the force main inspection support the need for the connector, the project will be added in a future CIP.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$9,882,000

CIP ID# B04

NEI – Waunakee Extension Capacity Improvements (Phase 1)

START
2021

COMPLETION
2025

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 18,600 feet of new relief or replacement 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 three phases, with construction of the first phase scheduled for 2024-2025. It is anticipated that this project will be financed through the Clean Water Fund.

BACKGROUND
Continued high growth rates in this part of the collection system have created 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 2022, based on population forecasts. Periodic flow monitoring performed by District staff as part of the billing program validates these projections.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$8,518,000	$12,000,000

CIP ID# B05

NEI – Truax Extension Rehab

START
2021

COMPLETION
2025

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. Bypassing of flows during lining will be through the NEI-Truax Extension Relief Sewer, which was 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.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$1,596,000	$8,200,000

CIP ID# B06

NEI – FEI to SEI Rehab

START
2025

COMPLETION
2026

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Northeast Interceptor (NEI): 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 (FEI) and its junction with the Southeast Interceptor (SEI). 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 Interceptor and the Southeast Interceptor 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

2024 Expenditure ($2024)	Total Project Cost
$0	$2,400,000

CIP ID# B07.1

Southeast Interceptor Rehabilitation on USH 51 (Phase 1)

START
2023

COMPLETION
2025

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Southeast Interceptor

Along U.S. Highway 51 from Pumping Station 9 to approximately one-half mile south of Terminal Road, Village of McFarland

DESCRIPTION
This project will correct condition defects in the Southeast Interceptor between the District's Pumping Station 9 in the Village of McFarland and U.S. Highway 12/18. Numerous cracks and missing pipe material in the asbestos cement sewer will be rehabilitated through the insertion of a cured-in-place lining. Phase 1 of the project will rehabilitate the 12-inch portion of the Southeast Interceptor from structure MH07-823 to structure MH07-810. The project will be completed in conjunction with a highway reconstruction project. It is anticipated that this project will be financed through the Clean Water Fund.

BACKGROUND
This section of the Southeast Interceptor was constructed in 1961 and consists of approximately 8,300 lineal feet of 12-inch and 15-inch asbestos cement pipe. A routine inspection by closed-circuit television in 2014 revealed numerous defects, including surface corrosion, cracks and missing pipe material.

The Wisconsin Department of Transportation (WisDOT) is planning to make improvements to U.S. Highway 51 from I-39/90 to about one-half mile south of Terminal Road starting in early 2025. Phase 1 of the work must be completed in conjunction with the highway project due to the widening of U.S. Highway 51.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$26,000	$1,300,000

CIP ID# B07.2

Southeast Interceptor Rehabilitation on USH 51 (Phase 2)

START
2026

COMPLETION
2027

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Southeast Interceptor and Pumping Station 9

Along U.S. Highway 51 from approximately one-half mile south of Terminal Road to U.S. Highway 12/18, Village of McFarland

DESCRIPTION
This project will correct condition defects in the Southeast Interceptor between the District's Pumping Station 9, in the Village of McFarland, and U.S. Highway 12/18. Numerous cracks and missing pipe material in the asbestos cement sewer will be rehabilitated through the insertion of a cured-in-place lining. Phase 2 of the project will rehabilitate the 15-inch portion of the Southeast Interceptor from MH07-810 to MH07-218. New force main valves and a flow meter will also be installed at Pumping Station 9 as part of the work. It is anticipated that this project will be financed through the Clean Water Fund.

BACKGROUND
This section of the Southeast Interceptor was constructed in 1961 and consists of approximately 8,300 lineal feet of 12-inch and 15-inch asbestos cement pipe. A routine inspection by closed-circuit television in 2014 revealed numerous defects, including surface corrosion, cracks and missing pipe material.

The Wisconsin Department of Transportation (WisDOT) is in the process of studying the corridor for improvements along U.S. Highway 51 from approximately one-half mile south of Terminal Road to U.S. Highway 12/18. It is anticipated that rehabilitation or relocation of the Southeast Interceptor along this corridor will be required due to the impacts of the highway improvements.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$1,850,000

CIP ID# B08

NSVI Capacity Improvements – Phase 1

START
2024

COMPLETION
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 Interceptor 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 Interceptor system between Pumping Station 11 and Pumping Station 12 was constructed in 1965 and includes 33,000 feet of sewer, ranging in diameter from 30 inches to 54 inches. The NSVI's service area includes some of the fastest-growing lands in Dane County and Wisconsin.

Population and wastewater forecasts performed by the Capital Area Regional Planning Commission (CARPC) indicate that most of the NSVI system and approximately 3,600 feet of sewer upstream of Pumping Station 12 will require additional capacity between 2025 and 2040. 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

2024 Expenditure ($2024)	Total Project Cost
$95,000	$12,500,000

CIP ID# B09

West Interceptor Rehab – Babcock Hall to Dayton Street

START
2025

COMPLETION
2026

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
West Interceptor
Along Babcock Drive, University Avenue and North Randall Avenue, City of Madison

DESCRIPTION
The purpose of this project is to rehabilitate a portion of the West Interceptor, which is located on the University of Wisconsin campus. The sections to be rehabilitated have been in service for over 100 years and are suffering from internal corrosion. Inserting a cured-in-place liner in the existing sewer will extend its service life by 50 years or more. It is anticipated that this project will be financed through the Clean Water Fund.

BACKGROUND
These sections of the West Interceptor are the oldest assets in the District's collection system. The 24-inch cast iron sewer was originally constructed by the City of Madison in 1916 and then transferred to the District in 1933. Like other sewers of similar age and construction materials, this sewer suffers from tuberculation, or the buildup of deposits on the inside walls of the pipe. These deposits reduce the capacity of the sewer over time and may compromise the structural integrity of the pipe if left unchecked. Rehabilitating the pipe with a new liner is a cost-effective way to address these problems.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$1,360,000

CIP ID# B10

District Flow Monitoring Stations

START
2025

COMPLETION
2026

PROJECT TYPE
Inflow & Infiltration – Conveyance System

LOCATION
Various

DESCRIPTION
This project supports the District's inflow and infiltration monitoring program through the installation of flow monitoring stations. These monitoring stations will be installed at strategic locations in the collection system to provide accurate flow measurements from District customers. It is anticipated that this project will be funded through the Clean Water Fund.

BACKGROUND
Owner community meetings held in 2019 identified inflow and infiltration (I/I) reduction as a top priority for the District. With that in mind, the District hired a consultant in 2020 to develop an I/I reduction plan. One of the recommendations from that plan is to use the District's hydraulic model of its collection system to identify areas of excessive I/I. The construction of long-term monitoring sites in the collection system is needed to properly calibrate the model and validate its results. The installation of monitoring sites that are well constructed, provide accurate data and are safe for District staff will ensure the integrity of the flow data and the I/I Reduction Program.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$1,250,000

CIP ID# B11

Southeast Interceptor Relocation at Yahara River

START
2023

COMPLETION
2026

PROJECT TYPE
System Relocation – Conveyance System

LOCATION
Southest Interceptor
U.S. Highway 51 north of the Yahara River Bridge, Village of McFarland

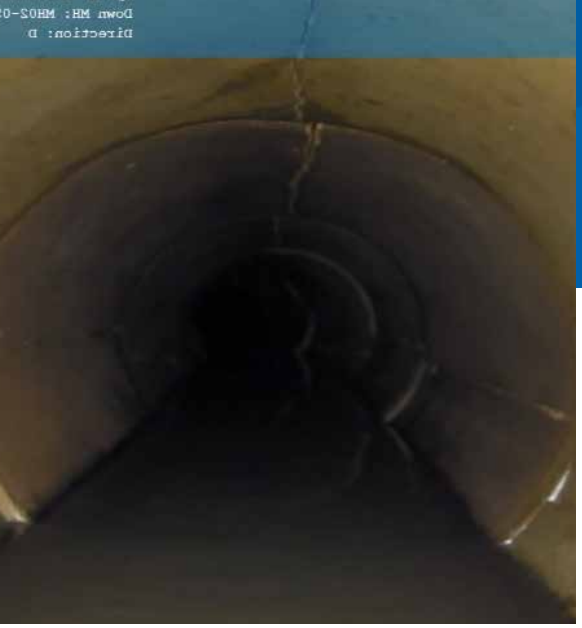
DESCRIPTION
The purpose of this project is to relocate District structure MH09-108 and parts of the Southeast Interceptor that conflict with a proposed retaining wall that will be installed for the Wisconsin Department of Transportation's (WisDOT) U.S. Highway 51 Yahara River Bridge project. It is anticipated that this project will be paid for through cash in the capital projects fund.

BACKGROUND
The Southeast Interceptor from structure MH09-108 to structure MH09-107 was installed in 1961 and consists of 72 lineal feet of 27" reinforced concrete pipe that was rehabilitated with a cured-in-place liner in 2018. MH09-108 is a large junction chamber that receives flow from three District owner communities: Town of Dunn Sanitary District #3, Kegonsa Sanitary District and the Village of McFarland.

WisDOT is planning a project for U.S. Highway 51 from I-39/90 (east of Stoughton) to U.S. 12/18 (Beltline). Part of this project involved improvements to the Yahara River bridge. The bridge will widen, and the grade elevation will rise to construct a new pedestrian walkway under the bridge. Due to poor soils, the retaining wall proposed will require deep pile supports that will be in direct conflict with MH09-108. Utility relocations need to be completed prior to October 2026.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$21,000	$850,000



CIP ID# B12

West Interceptor Rehab – Segoe Road to Shorewood Blvd

START
2024

COMPLETION
2025

PROJECT TYPE
System Relocation – Conveyance System

LOCATION
West Interceptor
Along Locust Dr, Burbank Place, and University Avenue between Segoe Road and Shorewood Boulevard, City of Madison and Village of Shorewood Hills

DESCRIPTION
The purpose of this project is to rehabilitate a portion of the West Interceptor, which is located between Segoe Road and Shorewood Boulevard in the City of Madison and the Village of Shorewood Hills. This pipeline has been in service for over 90 years and several sections of cracked pipe have been identified by video inspection. Inserting a cured-in-place liner in the existing sewer will extend its service life 50 years or more. It is anticipated that this project will be financed through cash in the capital projects fund.

BACKGROUND
This portion of the West Interceptor was constructed in 1931 and represents the first interceptor constructed by the District after it was created in 1930. This section of the Old West Interceptor consists of 4,700 feet of vitrified clay pipe and is a mixture of 12-inch, 15-inch and 18-inch diameter sewers. As is common with sewers of this era, the pipe lengths are three feet in length and thus are susceptible to inflow and infiltration. Additionally, an inspection of the Old West Interceptor in 2022 showed cracked sections along Locust Drive and Burbank Drive. Rehabilitating the pipe with a new liner is a cost-effective way to address these problems.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$641,000	$1,100,000

CIP ID# B13

NEI - Waunakee Extension Rehab (MH14-358 to MH14-362)

START
2025

COMPLETION
2027

PROJECT TYPE
Inflow & Infiltration – Conveyance System

LOCATION
Northeast Interceptor – Waunakee Extension

Along the southwest edge of Kearny Pond, Village of Waunakee

DESCRIPTION
The purpose of this project is to rehabilitate a portion of the Northeast Interceptor - Waunakee Extension along the southwest edge of Kearny Pond. The sections to be rehabilitated have been in service for over 50 years and are suffering from deterioration and significant infiltration. The recommendation is for pipe replacement to correct condition defects and extend the service life of the interceptor by increasing capacity. It is anticipated that this project will be financed through cash in the capital projects fund.

BACKGROUND
The Northeast Interceptor - Waunakee Extension from structure MH14-358 to structure MH14-362 was installed in 1970 and consists of 775 lineal feet of 10-inch vitrified clay pipe. The pipe segments were televised in 2019 and show signs of deterioration and significant infiltration. While additional capacity is not needed until at least 2040, pipe replacement is recommended to address both current condition and future capacity needs. Pipe bursting is the recommended installation method over open-cut excavation due to the creek crossing and anticipated problems with groundwater.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$700,000

CIP ID# B14

West Interceptor on Regent Street (Mills to East Campus Mall)

START
2024

COMPLETION
2026

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
West Interceptor

Along Regent Street between Mills Street and East Campus Mall, City of Madison

DESCRIPTION
This project will rehabilitate manholes along the West Interceptor along Regent Street between Mills Street and East Campus Mall in the City of Madison. The improvements consist of replacing structures that are more than 100 years old. It is anticipated that this project will be funded through cash in the capital projects fund.

BACKGROUND
The West Interceptor along Regent Street consists of 24-inch cast iron sewer that was installed in 1916 and was rehabilitated with a cured-in-place liner in 2017. However, the structures were not rehabilitated as part of the lining project. These structures are deteriorating and need replacement. The City of Madison is planning a street and utility reconstruction project along Regent Street between Mills Street and East Campus Mall in 2026. The rehabilitation of the structures should be completed in conjunction with the City of Madison project.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$3,000	$625,000

CIP ID# B15

NEI - Rehab West of Airport (Phase 2)

START
2025

COMPLETION
2027

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Northeast Interceptor

West of the Dane County Regional Airport and east of Pumping Station 14, City of Madison

DESCRIPTION
The purpose of this project is to rehabilitate a portion of the Northeast Interceptor - Waunakee/DeForest Extension (NEIWD) which is located to the west of the Dane County Regional Airport and east of Pumping Station 14. The concrete sewer segments in this area are showing evidence of corrosion and need to be rehabilitated or replaced to ensure reliable service. Inserting a cured-in-place liner in the existing sewer will extend its service life by 50 years or more. It is anticipated that this project will be financed through the Clean Water Fund.

BACKGROUND
Approximately 50,000 feet of concrete pipe was installed in the Northeast Interceptor system between 1964 and 1971. Of that total, approximately half of the pipe that was originally installed is in service. The remaining 22,000 feet has either been replaced or rehabilitated with a cured-in-place liner due to issues of corrosion and/or capacity. Approximately 2,100 feet of 48-inch sewer was lined in 2014 between Dennis Drive and the Dane County Regional Airport during Phase 1 of this project. The remainder of the 48-inch sewer within the project limits, approximately 4,500 feet, remains unlined. Based on the varying degrees of corrosion present and the likelihood that the corrosion will continue to progress over time, it is recommended that the remaining pipe be replaced or rehabilitated.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$0	$4,000,000

CIP ID# C01

Pumping Station 10 Force Main Leak

START
2024

COMPLETION
2025

PROJECT TYPE
System Rehabilitation – Effluent Conveyance System

LOCATION
Pumping Station 10
110 Regas Road, City of Madison

DESCRIPTION
The purpose of this project is to investigate and repair a leak in the force main exiting Pumping Station 10. The full extent of repair work that needs to be completed is unknown. Excavation at the site of the leak will be conducted in 2023 to determine the nature of the problem. Work under this item will include bypassing the flows around the station, repair of the leak and replacement of valves in the dry well during leak repair. Funding for the improvements will be from revenue sources other than loan proceeds in the capital projects fund.

BACKGROUND
The Pumping Station 10 force main is part of the Northeast Interceptor system that provides service to the northerly and easterly areas of the collection system, including the City of Madison, villages of Cottage Grove, DeForest and Waunakee, and other municipalities. This pumping station conveys the second-largest average daily flow of all the District's 18 pumping stations. Raw wastewater is currently leaking back into the pumping station where the force main leaves the station. Identifying the source of this wastewater and repairing any associated problems is essential to ensure that this critical facility remains in operation.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$74,000	$1,500,000

CIP ID# C02

Pumping Station 4 Rehabilitation

START
2020

COMPLETION
2024

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Pumping Station 4
620 John Nolen Drive, City of Madison

DESCRIPTION
Improvements to the station will 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 project will be funded through a Clean Water Fund loan.

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 works in concert with the pumps from Pumping Stations 2 and 3.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$3,507,000	$7,069,000

CIP ID# C03

Pumping Station 17 Firm Capacity Improvements

START
2021

COMPLETION
2026

PROJECT TYPE
System Capacity – Conveyance System

LOCATION
Pumping Station 17
407 Bruce Street, City of Verona

DESCRIPTION
This project will provide additional capacity to Pumping Station 17 in advance of an increase in flows to the station, which is expected to occur in 2025. Some ancillary equipment will also be rehabilitated as part of this project. The work is expected to include the following elements: new pumping units and variable frequency drives; replacement of motor control centers; replacement of HVAC equipment; and a new station flow meter. It is anticipated that this project will be funded through a loan from the Clean Water Fund.

BACKGROUND
Pumping Station 17 currently 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 approximately 2025 when the final phase of the District's Lower Badger Mill Creek Interceptor is constructed up to Midtown Road. A capacity upgrade will be needed for Pumping Station 17 when this occurs. These firm capacity improvements are expected to serve the station for approximately 15 years. Due to size and hydraulic limitations of the existing station and floodplain concerns, it is expected that a new pumping station will need to be constructed at that time to serve the basin for the long term.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$2,939,000	$8,100,000

CIP ID# C04

Pumping Station 17 Force Main Relief – Phase 2

START
2021

COMPLETION
2025

PROJECT TYPE
Capacity Improvement – Conveyance System

LOCATION
Pumping Station 17 Force Main: Badger Mill Creek, Arbor Vitae Place to Goose Lake, City of Verona and Town of Verona

DESCRIPTION
This project will add a 24-inch diameter relief force main to the existing 16-inch diameter force main and will provide additional capacity for wastewater that is pumped from Pumping Station 17 in the City of Verona. Approximately 8,000 feet of force main and 3,300 feet of 24-inch and 36-inch diameter interceptor sewer will be installed in the second phase of this project. 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 approximately 2025 when the final phase of the District's Lower Badger Mill Creek Interceptor is constructed up to Midtown Road. 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 completed the first phase of the project in conjunction with a City of Verona utility project in 2020-21 to reduce costs and inconvenience to the general public. Completion of Phase 2 is scheduled to occur in 2025, just prior to completion of the final phase of the Lower Badger Mill Creek Interceptor Project.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$6,459,000	$12,010,000

CIP ID# C05

Emergency Power Generation at District Pumping Stations

START
2024

COMPLETION
2032

PROJECT TYPE
System Reliability – Conveyance System

LOCATION
Various Pumping Stations

DESCRIPTION
This project will improve the District's ability to sustain its collection system operations in the event of a local or regional power outage. Improvements will include the addition of on-site diesel generators for emergency use and associated switching equipment that will be installed at District pumping stations which currently lack such standby facilities. It is anticipated that this project will be funded through a loan from the Clean Water Fund.

BACKGROUND
District Administrative Guideline #11 provides guidance on how to sustain operations during a loss of power from the electrical grid. More specifically, the guideline specifies a desired level of service such that wastewater collection and treatment can continue to operate at peak design capacity for at least 72 hours after a loss of power. Applying this standard to District pumping stations, one method of achieving this level of service is by providing standby generators at each station. District staff have prioritized each pumping station's needs for standby generation and developed an implementation schedule that begins in 2024 and runs through 2032.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$100,000	$10,000,000

CIP ID# C06.1 & C06.2

Miscellaneous Collection System Improvements, 2024 & Future

START
Ongoing

COMPLETION
Ongoing

PROJECT TYPE
Variable

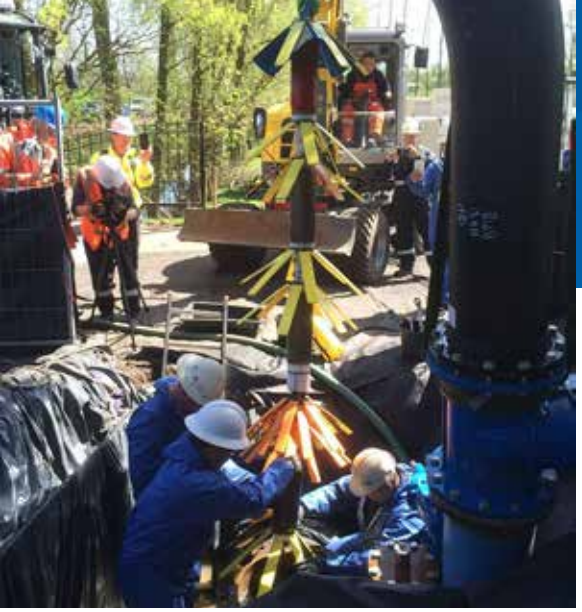
LOCATION
Conveyance System

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 cash in the capital projects fund.

BACKGROUND
As the District's assets in the collection system age, operations staff have noted a need to make a number of minor improvements to ensure that the assets 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 projects 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 department or Engineering department and completed by a contractor in accordance with the District's procurement code.

FINANCIAL ANALYSIS

	2024 Expenditure ($2024)	Total Project Cost
C06.1	$105,000	$105,000
C06.2	$0	$1,130,000



CIP ID# C07

Force Main Condition Assessment

START
2024

COMPLETION
2029

PROJECT TYPE
Conveyance System – Force Main Condition Assessments

LOCATION
Various

DESCRIPTION
The purpose of this project is to provide support for the annual inspection of the District's force mains. These assets are extremely difficult to inspect by traditional methods as they are difficult to access, are under pressure and cannot be taken out of service for long periods of time. Technology has been developed that can address these challenges, but the inspections require careful planning and can be costly to perform. It is expected that these annual or semi-annual inspections will be paid for from revenue sources other than loan proceeds in the capital projects fund.

BACKGROUND
Black & Veatch developed a Force Main Condition Assessment Plan for the District in 2017. The primary goals of this work were to develop a plan for the District to use to evaluate the condition of its force mains and to recommend when and how the condition assessments should be performed. The Collection System Facilities Plan Update will make further recommendations on the timing and location of projects when it is completed in 2024. Specifically, the implementation plan will focus on steps and costs that are needed to conduct an inspection of the Pumping Station 10 force main as early as 2024-2025. In the interim, an annual placeholder is being included in the six-year Capital Improvements Plan beginning in 2024.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$525,000	$3,684,000

CIP ID# C08.1

Pumping Station 16 Rehabilitation

START
2024

COMPLETION
2027

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Pumping Station 16
1303 Gammon Road, City of Middleton

DESCRIPTION
The purpose of this project is to rehabilitate mechanical and electrical equipment at Pumping Station 16. The rehabilitation is expected to include the following elements: replacement of Pumping Unit C; replacement of cast iron fittings and valves in the dry well piping; new electrical generator, switchgear and motor control centers; variable frequency drives; HVAC system replacement; and modifications to the odor control system. It is anticipated that this program will be funded through a Clean Water Fund loan.

BACKGROUND
Pumping Station 16 was placed into service in 1981. No major rehabilitation projects have been completed in the 42 years since the station was installed. Pumping Units A and B were replaced in 2014 and are in good condition, but much of the remaining equipment has reached the end of its useful life. Of special note, the cast iron fittings in the dry well need to be replaced. In 2017, a cast iron tee developed a crack and subsequent leak, which required immediate replacement. Due to odor concerns both at the station and the downstream force main, a comprehensive odor control evaluation will be conducted as part of this project and the related force main rehabilitation project (Project ID# C08.2).

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$21,000	$6,370,000

CIP ID# C08.2

Pumping Station 16 Force Main Rehabilitation

START
2021

COMPLETION
2026

PROJECT TYPE
System Rehabilitation – Conveyance System

LOCATION
Pumping Station 16
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 1979-1980 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 thus is showing evidence of corrosion via inspection by closed circuit television. The project proposes to either rehabilitate the corroded force main sections with a cured-in-place liner or replace those sections with new pipe. This work will be coordinated with the proposed rehabilitation of Pumping Station 16 (Project ID# C08.1).

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$16,000	$2,068,000

CIP ID# D01

Capital Budget Expenses

START
Ongoing

COMPLETION
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 (CIP).

BACKGROUND
Development of the District's CIP and capital budget requires almost continual study and planning. Often, internal resources are not available to conduct studies or planning in desirable time frames, and external resources are necessary. This budget item provides funds to cover expenditures for smaller studies or planning efforts.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$53,000	$53,000

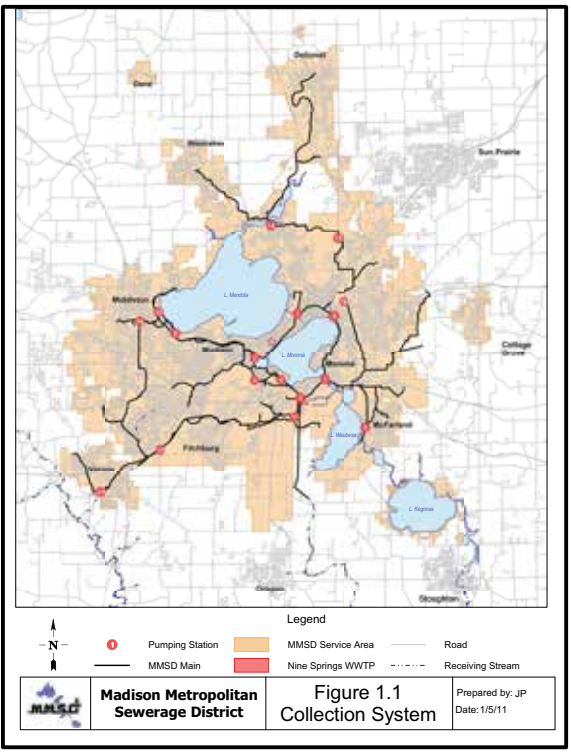
CIP ID# D02

Collection System Facilities Plan Update

Madison Metropolitan Sewerage District
Collection System Facilities Plan Update

Prepared by the Staff of the
Madison Metropolitan Sewerage District

December 2011



START
2018

COMPLETION
2024

PROJECT TYPE
Capital Budget Expenses

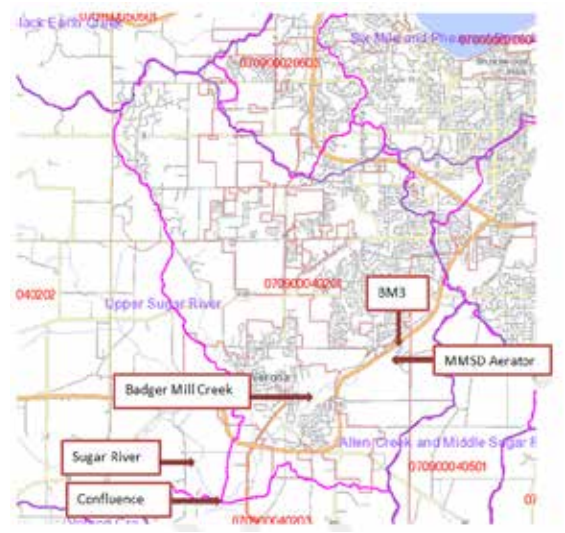
LOCATION
Collection Systems

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 (CARPC). Funding for this study will be through cash in the capital projects 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 CARPC's update of the District's collection system evaluation in 2018, it is 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 District's collection system. In the past, the facility plans have been completed solely with District staff at considerable levels of time and effort. An engineering consultant will be retained to complete a portion of this update.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$130,000	$360,000



CIP ID# D03

Badger Mill Creek Phosphorus Compliance

START
2019

COMPLETION
ONGOING

PROJECT TYPE
Effluent

LOCATION
Badger Mill Creek - Town of Verona and 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 that was issued in May 2020. The District began preliminary planning for the new standards in 2019, assuming a nine-year compliance schedule. It is anticipated that costs related to this effort will be funded through cash in the capital projects fund.

BACKGROUND
The District currently pumps up to 3.6 million gallons per day (MGD) of effluent to Badger Mill Creek. The majority of the District's effluent, up to 75.5 MGD, is pumped to Badfish Creek. Historically, all of the District's effluent was returned to Badfish Creek but in 1998 after the City of Verona discontinued operation of their wastewater treatment plant and joined the District, the District began returning up to 3.6 MGD flow to Badger Mill to maintain historic flows.

The District's new WPDES permit requires a phosphorus water quality criterion for Badger Mill Creek, which is significantly less than the existing standard. The selected alternative for compliance is diversion of effluent flow to Badfish Creek and providing funding for stream improvement projects for Badger Mill Creek.

FINANCIAL ANALYSIS

2024 Expenditure ($2024)	Total Project Cost
$350,000	$1,750,000

APPENDIX B
Completed Projects & Retainers

2022 PROJECT COMPLETIONS

LIQUID PROCESSING IMPROVEMENTS – PHASE 1

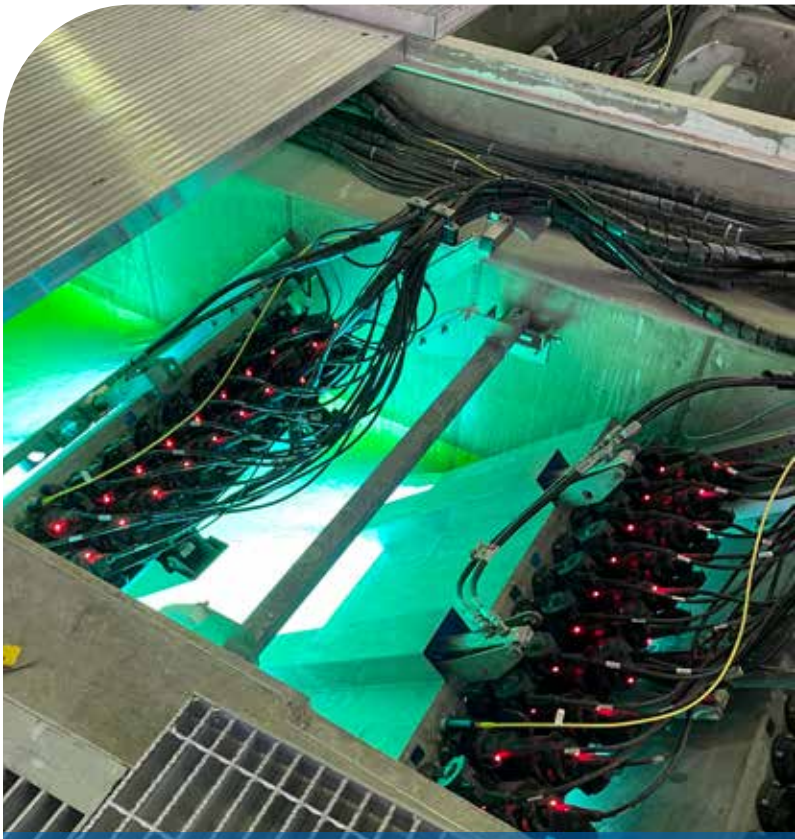
With the start-up of new Pumping Station 18 in 2015 and capacity upgrades to Pumping Station 11 occurring shortly thereafter, there was the potential for the hydraulic capacity of the Nine Springs Treatment Plant to be exceeded in high-flow events. Facility planning began in 2016 for hydraulic upgrades to the treatment plant and to identify any related improvements to the liquid processes. A facilities plan was completed in August of 2017 that recommended a series of improvements to be implemented in three phases over roughly 10 years. The first phase of these improvements consisted of enhancements to peak-flow management at the plant, replacement of the ultraviolet light disinfection system, replacement of an electrical substation building and upgrades to the process control system. C.D. Smith began work on the improvements in the spring of 2020, and the project was accepted by the District's Commission in January of 2022. The total project cost of $16.6 million is being funded with a loan from the Clean Water Fund.

HEADWORKS FLOW METERING

The District's flow metering facilities were installed in 2005 as part of the Tenth Addition improvements. These facilities consisted of a venturi meter on each of the five influent force mains that convey flow to the treatment plant. Accurate readings of these meters are essential for service charge billing and proper operation of plant processes. Shortly after these facilities were started up, it was discovered that the flow meters were installed at an elevation that was too high relative to the water surface at the downstream fine screening units. To ensure that the flow meters read accurately, it was necessary to artificially raise the water surface upstream of the screens. This has caused the screens to run excessively and bypass rags and other solids. The purpose of this project was to lower each of the five venturi meters so that the fine screening units could be operated as originally intended with a lower upstream water elevation. Staab Construction began work on the project in June of 2020, and the project was accepted by the District's Commission in January of 2022. The total project cost of $2.2 million is being funded with a loan from the Clean Water Fund.

ENERGY MANAGEMENT MASTER PLAN

This master planning effort involved a comprehensive study of how the District is currently using energy, and it created a roadmap for how to manage energy in the future. The study emphasized how to optimize energy use as critical pieces of equipment are replaced in the coming years, such as the gas-driven electrical generators and the associated hot water system. Projects related to heat and power improvements, biosolids processing and miscellaneous energy enhancements will be incorporated into the District's



Our ultraviolet (UV) disinfection system offers an extra treatment step in warmer months to kill bacteria and make our effluent and downstream waters even safer for local anglers, paddlers and water recreationists.

Capital Improvements Plan for implementation and/or additional planning in the years to come. Carollo Engineers, Inc. began work on the master plan in February of 2020, and the plan was accepted by the District's Commission in February of 2022. The approximate total project cost of $585,000 was paid for with cash in the capital projects fund.

FINAL CLARIFIERS 4, 5 AND 6 EFFLUENT LAUNDER TROUGH REPLACEMENT

In the fall of 2017, District staff discovered numerous holes in the effluent launder troughs of final clarifier 6. It is believed that these holes are due to corrosion of the steel. Similar holes were found in the launder trough of final clarifier 5 in the spring of 2018. If the corrosion progresses too far, it could result in mixed liquor combining with the effluent and lead to decreased treatment performance. The corrosion could also compromise the safety of District personnel who need to stand on the troughs to maintain the clarifiers. This project replaced the effluent launder troughs on final clarifiers 4, 5 and 6. Sabel Mechanical, LLC began work on the new launder troughs in 2021, and the work was completed in the second half of 2022. The total project cost of approximately $350,000 was paid for with cash in the capital projects fund.

Contractors replace the launder system in final clarifier 6, including the troughs, weirs and scum baffles. The new fiberglass material is a welcome upgrade from the old galvanized system.

OPERATIONS BUILDING FIRST FLOOR REMODEL

A space needs study performed by Bray Architects in 2013 identified a need for improvements to the operators' control room in the Operations Building. In particular, a need for personal storage and a more efficient working space were identified. Further study and improvements were not conducted at that time, however. Since 2013, several members of the Ecosystems Services department had moved into offices in the laboratory, and the operations supervisor and lead operators shared a small office. These changes led to concerns over worker safety, the safety of the public during facility tours and overall unsanitary conditions in these work areas. This project included remodeling a portion of the laboratory and the operators' control room to provide a safer and more efficient use of space for staff who work in this area. Kenneth F. Sullivan Co. began work on the project in September of 2020, and work was accepted by the District's Commission on August 12, 2022. The total project cost of $2.2 million is being paid for through a loan from the Clean Water Fund.

MINOR CAPITAL IMPROVEMENTS 2020 - OPERATIONS BUILDING 800 MECHANICAL ROOM

The District's mechanical room contains an electric chiller that uses a refrigerant to cool interior spaces within the Operations Building. An inspection of this room by the Department of Safety and Professional Services in April of 2020 noted that several aspects of the chiller operation needed to be brought up to the proper standards. Required improvements included the installation of a leak detection and alarm system for the refrigerant, ventilation modifications and provision of warning signs to alert personnel of the associated dangers with the system. The District retained Design Services to prepare plans and specifications for the necessary improvements in August of 2020, and the work was awarded to Kenneth F. Sullivan Co. in November of 2020. Completion of the project occurred in June of 2022. The total project cost of $105,000 was paid for with cash in the capital projects fund as part of the minor capital improvements line item in the 2020 capital budget.

NINE SPRINGS VALLEY INTERCEPTOR - MCKEE ROAD TO DUNN'S MARSH

This portion of the Nine Springs Valley Interceptor was installed in 1965 and consisted of reinforced concrete pipe ranging in diameter from 30 inches to 42 inches, except for a 1,170-foot stretch that was replaced in 2000. Due to its proximity to the end of the Pumping Station 12 force main, significant corrosion occurred in portions of this section. In addition, upstream flows have increased at a rapid pace due to development, and updated population forecasts suggest that capacity in much of this section will be reached in the next 10 years. For these reasons, a new replacement sewer was installed along the recreational trail between McKee Road and Dunn's Marsh. R.G. Huston, Inc. began work on the project in December of 2020, and the work was substantially completed in October of 2021. The total project cost of $3.8 million is being funded through a loan from the Clean Water Fund.

PUMPING STATION 17 FORCE MAIN RELIEF – PHASE 1

Pumping Station 17 currently serves only lands within the City of Verona, and the station and its force main are nearing capacity. In addition, the completion of the Lower Badger Mill Creek Interceptor between County Highway PD and Midtown Road is scheduled for 2023-2024. When this occurs, flow from the City of Madison's Midtown Pumping Station will be redirected to Pumping Station 17. In advance of this diversion, a relief force main for Pumping Station 17 is needed to provide the required future capacity. The relief force main project was broken into two phases so construction of the first phase would coincide with a City of Verona project in the same corridor. Minger Construction Co., Inc. began installation of the force main in November 2020, and it was completed in the first half of 2022. The total $3.4 million project cost was paid for with cash in the capital projects fund.

NORTHEAST INTERCEPTOR JOINT GROUTING MH10-101 TO MH10-106

This was the second of two planned projects to reduce inflow and infiltration in the original Northeast Interceptor sewer upstream of Pumping Station 10. The work consists of testing each joint of the 48-inch diameter sewer for water tightness and injecting grout as needed to seal any leaks. The first phase of the project involved approximately 2,600 feet of sewer, and the work was performed in 2020-2021. The second phase of the project addressed the remaining 2,500 feet of sewer in the section to be rehabilitated. Visu-Sewer began work on the project in November of 2021, and the work was accepted by the District's Commission on July 28, 2022. The total project cost of $245,000 was paid for with cash in the capital projects fund.

2023 FINAL/SUBSTANTIAL PROJECT COMPLETIONS

ENGINE GENERATOR CONTROL PANEL REPLACEMENTS

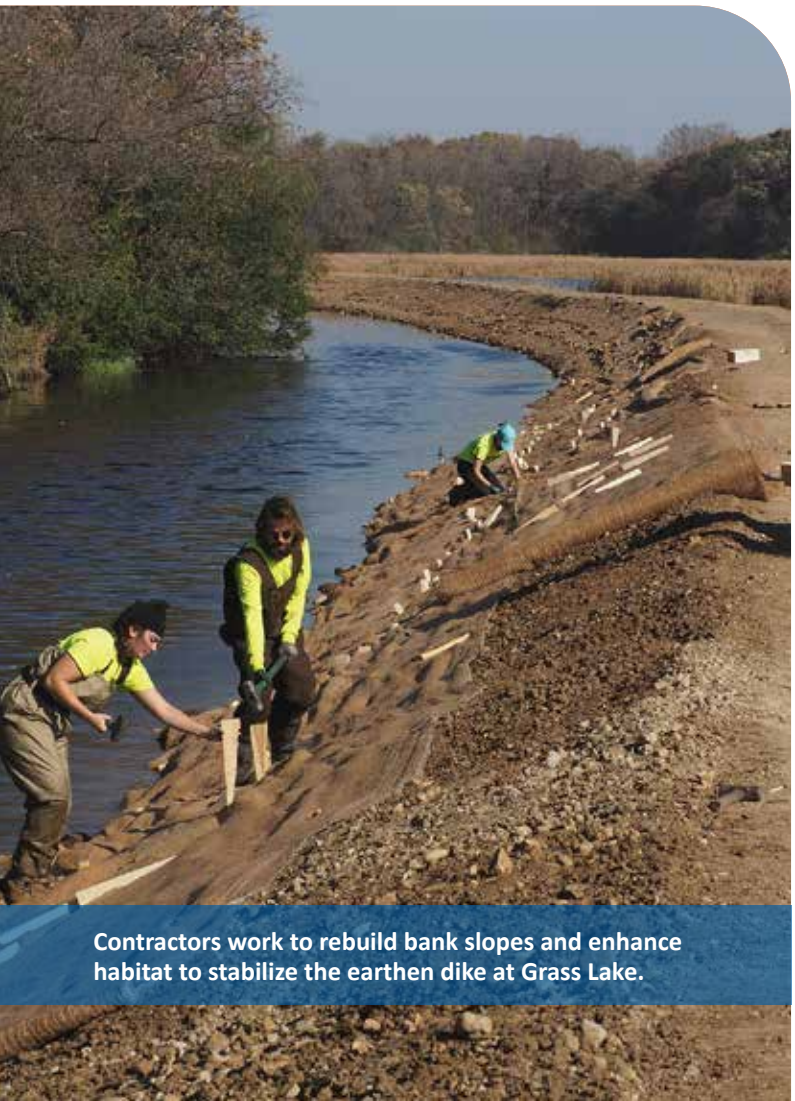
These gas-driven engines and generators were installed in 1991 as part of the sludge gas utilization facilities for the Sixth Addition. The control panels for the generators use relays for control of the engines and have not been significantly modified since they were first installed. The panels also have high-voltage cabling in them that requires special safety equipment and expertise for staff to work on them. The purpose of this project was to replace the relay-based panels with modern programmable logic controllers (PLC) and to reconfigure the panels to eliminate the electric hazard for routine maintenance. Pieper Electric began work on the project in June of 2021, and the project was substantially completed in April of 2023. The estimated total project cost of $748,000 will be paid for with cash in the capital projects fund.

GRASS LAKE DIKE STABILIZATION

The District constructed facilities to discharge treated effluent to the Badfish Creek waterway in 1958. These improvements included an earthen dike along the western edge of Grass Lake to create a barrier between the lake and the effluent discharge waterway. Over the years, the bank slopes have eroded significantly in some locations, and animals have burrowed into the dike so that seepage through the barrier is a concern if not addressed. This project repaired the dike using a combination of methods, including rebuilding the bank slopes, redirecting the channel and enhancing habitat by inserting vegetation into the channel at strategic locations. Work on the project was completed in the fall of 2022, and the project was accepted by the Commission on January 12, 2023. The total project cost of $785,000 was paid for with cash in the capital projects fund.

NSVI-MORSE POND EXTENSION

This project included 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 Wisconsin Department of Transportation's (WisDOT) 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. Due to the size of the project and the number of stakeholders involved, closeout of the project is a lengthy process, and the District's share of the costs for the contractor's retainage release and other administrative costs was made in April of 2023. It's possible a small payment will also be made in 2024 for final closeout. The total project cost of $2.2 million was financed through cash in the capital projects fund.



Contractors work to rebuild bank slopes and enhance habitat to stabilize the earthen dike at Grass Lake.

2023 ANTICIPATED PROJECT COMPLETIONS

WEST INTERCEPTOR-SHOREWOOD RELIEF (PHASES 1 & 2)

These projects include the first two phases of a three-phased project to provide additional capacity to the West Interceptor system between Whitney Way and Walnut Street in the City of Madison and the Village of Shorewood Hills. Additional capacity is needed in the system to serve future development, primarily in the Pumping Station 15 service area. Approximately 5,600 feet of 30-inch and 36-inch diameter replacement sewer was installed during the first phase of this project between Whitney Way and Shorewood Boulevard. Construction of Phase 2 includes approximately 1,400 feet of 30-inch diameter relief sewer that is being installed in conjunction with the WisDOT's reconstruction of University Avenue between Marshall Court and University Bay Drive. The Phase 3 segment is scheduled for construction in 2024-2025.

Advance Construction, Inc. of Green Bay, WI began work on the Phase 1 project in February of 2021, and the work was substantially completed in the first half of 2022. Closeout of the contract is expected in the second half of 2023. The anticipated total project cost of $4.7 million is being financed with a loan from the Clean Water Fund.

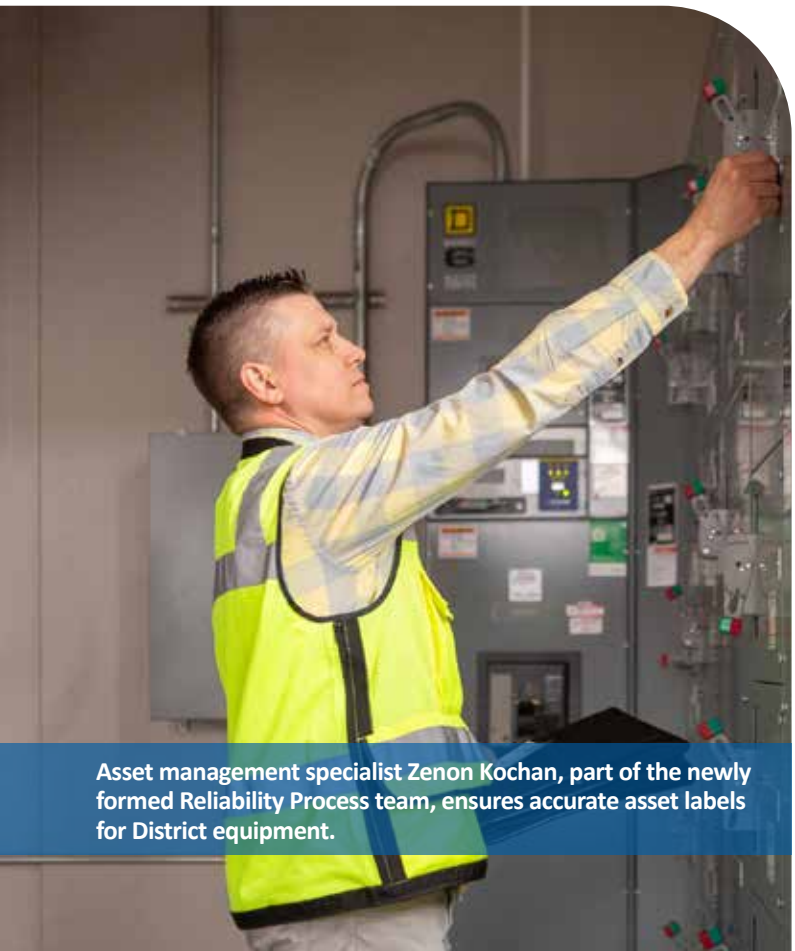
Integrity Grading & Excavating of Madison, WI began work on the Phase 2 segment of the project in 2022 and is scheduled to complete the work in 2023. The anticipated total project cost of $1.6 million is being paid for with cash in the capital projects fund.

PLANT ASSET MANAGEMENT PLAN IMPLEMENTATION

This project generally refers to a series of initiatives to develop the District's Asset Management Plan. As part of this effort, the District retained a vendor in November of 2020 to implement a program for Reliability Centered Maintenance (RCM). RCM is a strategy to optimize a maintenance program by considering the various assets of a facility and maintaining them in such a way that system reliability is emphasized. Vendor work to implement RCM in District practices continues in 2023 as part of this project, and it is expected that it will be completed prior to the end of the year. The total project costs of approximately $320,000 will be paid from cash in the capital projects fund.

PUMPING STATIONS 13 AND 14 REHABILITATION

The District determined that many of its pumping facilities required rehabilitation and improvements to bring them up to the proper standards. The rehabilitations were prioritized in the District's Collection System Facilities Plan Update (approved by the Wisconsin Department of Natural Resources in July 2012). At each station, the rehabilitation work includes the replacement of all three pumping units, replacement of all major electrical and control equipment, and installation of HVAC equipment. Construction began in September of 2020, and the project is expected to be closed out in the second half of 2023. The expected total project cost of $10.5 million is being financed with a Clean Water Fund loan.



Asset management specialist Zenon Kochan, part of the newly formed Reliability Process team, ensures accurate asset labels for District equipment.

REPAIR TO WEST INTERCEPTOR EXTENSION ON ALLEN BOULEVARD

The District's West Interceptor Extension was constructed in 1957 and extends from Marshall Park in the City of Madison to Baskerville Harbor in the City of Middleton. A routine inspection of the sewer by closed-circuit television in December of 2021 revealed that several 30-inch diameter pipe segments had settled along Allen Boulevard, just west of the District's Pumping Station 15. This settlement has caused the joints to separate and partial obstructions such as grease, rags, and sediment to form in the pipe. Given the urgent need to fix the pipe and prevent a complete blockage of flow, the District's 2022 Capital Projects Budget was amended in August of 2022 to include this project. Repair work by Terra Engineering & Construction Corporation began in April of 2023 and will be completed in June or July of 2023. The total cost of the project is estimated to be approximately $715,000, with about $655,000 of this total paid for with cash in the capital projects fund.

CAPITAL PROJECT INFRASTRUCTURE PLACEMENT PLAN

The purpose of this project is to support the District in sustainable planning of its current and future needs related to the District's Capital Improvements Plan (CIP). Current and future capital projects require a holistic approach to planning so that treatment facilities optimize the limited area that is available on the Nine Springs site. Specific focus areas for the study were siting of facilities for biosolids processing, heat and power generation, and administrative spaces. TKDA consultants of St. Paul, MN began work on the plan in the fall of 2022. Delivery of the final plan is expected in the second half of 2023. The estimated total project cost of approximately $315,000 will be paid for with cash in the capital projects 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 within the past year or those that are presently being withheld.

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 the 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 the 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 was released to Miron Construction Co. in December of 2022.

NSVI-MORSE POND EXTENSION

The District's interceptor was constructed under a contract that is being administered by the WisDOT. The District released its share of contractor retainage in a payment made to the WisDOT (via the City of Madison) in April of 2023.

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 one year after project acceptance and (2) an additional $10,000 retainer to grout two sanitary structures to address infiltration and inflow issues. The full retainer amount will not be released to the contractor due to warranty issues with inflow and infiltration.

Collection systems engineer Jen Hurlebaus reviews the station control system at Pumping Station 15.

LIQUID PROCESSING IMPROVEMENTS – PHASE 1

The District withheld a $15,000 one-year maintenance retainer upon final completion and acceptance of the work in January of 2022. A partial release of $10,000 was made to C.D. Smith Construction, Inc. in May of 2023. The remaining $5,000 is being withheld pending completion of warranty work.

NORTHEAST INTERCEPTOR JOINT GROUTING MH10-112 TO MH10-106

The District withheld a $5,000 one-year maintenance retainer upon final completion and acceptance of the work on June 10, 2021. The District also withheld an additional $5,000 one-year maintenance retainer as a guarantee that the contractor shall provide post-grouting digital video of pipe sections that were tested, sealed and verified. The District released the $5,000 one-year maintenance retainer in June of 2022 and the $5,000 maintenance retainer for the video inspection in December of 2022.

Process and project specialist Aaron Dose works on the sampler tubing below the force main pipes carrying influent at Headworks. Sampling equipment helps us test the incoming water at each influent pipe.

OPERATIONS BUILDING FIRST FLOOR REMODEL

The District withheld a $10,000 one-year maintenance retainer upon final completion and acceptance of the work on July 28, 2022. The retainer will be released to Kenneth F. Sullivan Co. one year after project acceptance, pending satisfactory performance.

HEADWORKS FLOW METERING

The District withheld a $10,000 one-year maintenance retainer upon final completion and acceptance of the work on January 27, 2022. A partial release of $5,000 was made to Staab Construction Corporation in February of 2023, and the remaining $5,000 was released in May of 2023.

NSVI-MCKEE ROAD TO DUNN'S MARSH

The District withheld a $25,000 one-year maintenance retainer upon final completion and acceptance of the work on January 26, 2023. The retainer will be released to R.G. Huston Co., Inc. one year after project closeout, pending satisfactory performance.

NORTHEAST INTERCEPTOR JOINT GROUTING MH10-101 TO MH10-106

The District withheld a $5,000 one-year maintenance retainer upon final completion and acceptance of the work on July 28, 2022. The District also withheld an additional $5,000 one-year maintenance retainer as a guarantee that the contractor shall provide post-grouting digital video of pipe sections that were tested, sealed and verified. The retained amounts shall be released to Visu-Sewer, Inc. one year after project acceptance, pending satisfactory performance.

GRASS LAKE DIKE STABILIZATON

The District withheld a $10,000 one-year maintenance retainer upon final completion and acceptance of the work on January 12, 2023. The retainer will be released to Resource Environmental Solutions, LLC one year after project closeout, pending satisfactory performance.

ENGINE GENERATOR CONTROL PANEL REPLACEMENTS

The District will withhold a $7,000 three-year maintenance retainer upon final completion and acceptance of the work. The retainer will be released to Pieper Electric, Inc. three years after project acceptance, pending satisfactory performance.

WEST INTERCEPTOR – SHOREWOOD RELIEF (PHASE 1)

The District will withhold a $20,000 one-year maintenance retainer upon final completion and acceptance of the work. The retainer will be released to Advance Construction, Inc. one year after project closeout, pending satisfactory performance.

PUMPING STATIONS 13 AND 14 REHABILITATION

The District will withhold a $20,000 one-year maintenance retainer upon final completion and acceptance of the work. The retainer will be released to C.D. Smith Construction, Inc. three years after project closeout, pending satisfactory performance.

WEST INTERCEPTOR – SHOREWOOD RELIEF (PHASE 2)

The District's interceptor is being constructed under a contract that is being administered by the Wisconsin Department of Transportation (WisDOT). The District will withhold a maintenance retainer upon final project closeout under the WisDOT's contracting provisions.

PUMPING STATION 4 REHABILITATION

The District will withhold a $25,000 one-year maintenance retainer upon final completion and acceptance of the work. The retainer will be released to J.F. Ahern Co. one year after project closeout, pending satisfactory performance.

2021 TREATMENT PLANT HVAC IMPROVEMENT PROJECT

The District will withhold a $10,000 one-year maintenance retainer upon final completion and acceptance of the work. The retainer will be released to Illingworth-Kilgust Mechanical, Inc. one year after project closeout, pending satisfactory performance.

Operator Brenda Staudenmaier takes engine generator readings, prior to the equipment's replacement and upgrades.

APPENDIX C
Budget Summaries

2024 Operating Budget Summary

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$24,172,800**	**$18,508,000**	**N/A**	**$18,776,700**	**$18,465,700**
Revenues					
Sewer Service Charges	45,960,900	50,498,000	24,892,200	50,498,000	55,063,000
Servicing Pumping Stations	471,900	454,000	267,500	494,700	517,500
Rent	85,700	90,000	27,900	89,000	92,300
Interest Earnings	226,700	29,000	259,400	234,600	242,500
Annexation and Plan Review Fees	59,300	70,000	21,000	69,100	69,100
Miscellaneous Income	165,200	106,000	46,700	168,800	172,400
Septage Disposal Revenue	1,077,900	809,000	551,400	1,175,100	1,272,300
Pretreatment Monitoring	34,500	38,000	-	36,800	39,100
Struvite Fertilizer Sales	217,300	215,000	132,100	231,900	231,900
TOTAL REVENUES	**$48,299,400**	**$52,309,000**	**$26,198,200**	**$52,998,000**	**$57,700,100**
Expenditures					
Budget and Planning	3,078,400	4,329,900	495,100	2,090,400	2,001,500
Ecosystems Services	2,508,200	3,906,800	1,551,700	3,900,700	3,986,900
Engineering	1,057,100	2,224,900	476,600	1,076,400	1,843,500
Enterprise Services	-	-	1,920,700	2,545,800	3,935,900
Leadership Support	3,012,900	3,918,600	921,300	3,200,000	2,666,600
Operations and Maintenance	20,220,600	19,039,300	8,953,000	19,678,700	21,401,600
Interfund Transfer, Capital	7,521,300	4,791,000	4,791,000	4,791,000	15,521,000
Interfund Transfer, Debt	16,297,000	16,026,000	16,026,000	16,026,000	6,539,000
TOTAL EXPENDITURES	**$53,695,500**	**$54,236,500**	**$35,135,400**	**$52,309,000**	**$57,896,000**
CLOSING BALANCE	**$18,776,700**	**$16,580,500**	**N/A**	**$18,465,700**	**$18,269,800**
Reserve Requirement	16,984,000	17,160,500	N/A	17,160,500	17,756,300
Closing Balance Net of Reserves	1,792,700	(580,000)	N/A	1,305,200	513,500

2024 Capital Projects Budget Summary

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$1,452,800**	**$16,006,300**	**N/A**	**$20,592,000**	**$16,048,000**
Revenues					
Clean Water Fund Loans	16,190,800	22,285,000	-	1,515,000	36,651,000
Connection Charges	3,169,000	4550000	1,215,400	2,175,000	2,450,000
Interest Earnings	154,700	150000	19,000	19,000	80,000
Transfers From Operating Fund	7,521,300	4,791,000	4,791,000	4,791,000	15,521,000
TOTAL REVENUES	**$27,035,800**	**$31,776,000**	**$6,025,400**	**$8,500,000**	**$54,702,000**
Expenditures					
Treatment Plant	1,851,000	6,131,000	234,700	4,497,000	11,963,000
Interceptors	1,415,000	10415000	1,596,200	4,497,000	19,304,000
Pumping Stations and Force Mains	4,418,000	14536000	896,600	3,357,000	13,745,000
Capital Budget Expenses	213,000	484,000	316,600	693,000	533,000
TOTAL EXPENDITURES	**$7,897,000**	**$31,566,000**	**$3,044,100**	**$13,044,000**	**$45,545,000**
CLOSING BALANCE	**$20,591,600**	**$16,216,300**	**N/A**	**$16,048,000**	**$25,205,000**
Reserve Requirement	3,000,000	10,254,000	N/A	10,069,000	19,073,000
Closing Balance Net of Reserves	17,591,600	5,962,300	N/A	5,979,000	6,132,000

2024 Debt Service Budget Summary

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$29,924,000**	**$30,073,000**	**N/A**	**$31,044,000**	**$31,076,000**
Revenues					
Transfer from Operating Fund	16,297,000	16026000	16,026,000	16,026,000	6,539,000
Interest Earnings	141,800	150,000	67,500	51,000	155,000
TOTAL REVENUES	**$16,438,800**	**$16,176,000**	**$16,093,500**	**$16,077,000**	**$6,694,000**
Expenditures					
Principal Payments	12,280,900	13,949,000	13,038,000	13,097,000	11,762,000
Interest Payments	3,038,400	3,669,000	1,538,500	2,948,000	3,578,000
TOTAL EXPENDITURES	**$15,319,300**	**$17,618,000**	**$14,576,500**	**$16,045,000**	**$15,340,000**
CLOSING BALANCE	**$31,043,500**	**$28,631,000**	**N/A**	**$31,076,000**	**$22,430,000**
Reserve Requirement	16,045,000	16,082,000	N/A	15,340,000	17,666,000
Closing Balance Net of Reserves	14,998,500	12,549,000	N/A	15,736,000	4,764,000

2022-2024 Expenditures by Project

Note: This table is a duplicate of Table CIP-2.

		2022 Actual	2023 Through June	2023 Estimated	2024 Anticipated
TREATMENT PLANT		**$1,851,000**	**$234,700**	**$4,497,000**	**$11,963,000**
A01	Liquid Processing Improvements- Phase 2	-	-	-	-
A01.1	East Primary Influent Channel Air Piping Replacement	1,000	1,100	10,000	79,000
A01.2	Low Dissolved Oxygen (Partial Plant)	4,000	3,300	15,000	284,000
A01.3	Low Dissolved Oxygen (Full Plant)	20,000	35,600	330,000	184,000
A01.4	West Blowers and Switchgear Replacement	10,000	9,100	90,000	856,000
A01.5	East Blowers and Switchgear Replacement	10,000	9,200	90,000	614,000
A02	Sludge Thickeners No. 1 and No. 2 Drive and Mechanism Replacement	-	400	335,000	165,000
A03	NSWWTP Electrical Service Equipment Replacement	49,000	60,300	290,000	509,000
A04	Treatment Plant Energy Projects	-	-	-	
A04.1	Heat and Power Improvements	-	-	50,000	425,000
A04.2	Maintenance Facility Rooftop Solar Panels	-	13,300	300,000	73,000
A05	Lagoon Dikes Improvements	112,000	13,200	170,000	520,000
A06	Maintenance, Financial and HR Systems		1,800	764,000	1,756,000
A07	Metrogro Applicators & Equipment	713,000	7,800	140,000	893,000
A08	Flow Splitter Improvements	5,000	39,000	200,000	2,993,000
A09	Treatment Plant HVAC Improvements- Group 1 Projects	-	-	-	-
A10	Liquid Processing Improvements - Phase 3	-	-	-	-
A10.1	Headworks Screening	-	-	-	-
A10.2	Grit Processing Improvements	-	-	-	-
A10.3	Septage Receiving Modifications	-	-	-	-
A11	Phosphorus Recovery Improvement Projects	-	-	-	-
A12.1	Miscellaneous Treatment Plant Projects 2024	-	-	-	121,000
A12.2	Miscellaneous Treatment Plant Projects - Future	-	-	-	-
A13.1	Minor Capital Improvements 2024	-	-	-	124,000
A13.2	Minor Capital Improvements- Future	-	-	-	-
A14	Annual Pavement Improvements- Future	-	-	-	-
A15	Metrogro Operations Improvements	-	-	-	-
A16	W4 System Improvements	-	-	-	194,000
A17.1	Annual Solids Processing Tank Cleaning 2024	-	-	-	800,000
A17.2	Annual Solids Processing Tank Cleaning- Future	-	-	-	-
N/A	2021 Treatment Plant HVAC Improvement Project	130,000	17,700	990,000	1,210,000
N/A	Annual Pavement Improvements 2022	43,000	-	-	-
N/A	Annual Pavement Improvements 2023	-	1,500	70,000	-
N/A	Energy Management Master Plan	11,000	-		-
N/A	Engine Generator and Blower Control Panel Replacements	480,000	10,900	77,000	-
N/A	Final Clarifier 4, 5 and 6 Effluent Launder Trough Replacement	113,000		-	-
N/A	Headworks Flow Metering	(37,000)	100	-	-
N/A	Liquid Processing Improvements- Phase 1	33,000	-	-	-
N/A	Minor Capital Improvements 2020 (Ops Bldg Mechanical Room)	6,000	-	-	-
N/A	Minor Capital Improvements 2023	-	-	122,000	-
N/A	Miscellaneous Treatment Plant Projects 2022	3,000	6,300		-
N/A	Miscellaneous Treatment Plant Projects 2023	-	4,100	119,000	-
N/A	Operations Building First Floor Remodel	145,000	-		-
N/A	Primary Tank 6 Rehabilitation	-	-	335,000	165,000

TABLE CIP-2 | **2022-2024 Expenditures by Project** (continued)

		2022 Actual	2023 Through June	2023 Estimated	2024 Anticipated
INTERCEPTORS		**$1,415,000**	**$1,596,200**	**$4,497,000**	**$19,304,000**
B01	West Interceptor- Shorewood Relief Projects	-	-	-	-
B01.1	West Interceptor- Shorewood Relief (Phase 2)	164,000	1,029,700	1,118,000	269,000
B01.2	West Interceptor- Shorewood Relief (Phase 3)	30,000	67,600	255,000	5,602,000
B02	Lower Badger Mill Creek Interceptor	-	-	-	-
B02.1	Lower Badger Mill Creek Interceptor- Phase 5	41,000	73,100	1,285,000	570,000
B02.2	Lower Badger Mill Creek Interceptor- Phase 6	32,000	29,100	120,000	1,964,000
B03	Pumping Station 6 to Pumping Station 10 Connector	126,000	21,200	181,000	
B04	NEI- Waunakee Extension Capacity Improvements (Phase 1)	84,000	101,900	439,000	8,518,000
B05	NEI- Truax Extension Rehab	-	-	-	1,596,000
B06	NEI- FEI to SEI Rehab	-	-	-	-
B07.1	Southeast Interceptor Rehabilitation on USH 51 (Phase 1)	-	-	20,000	26,000
B07.2	Southeast Interceptor Rehabilitation on USH 51 (Phase 2)	-	-	-	-
B08	NSVI Capacity Improvements- Phase 1	-	-	-	95,000
B09	West Interceptor Rehab- Babcock Hall to Dayton Street	-	-	-	-
B10	District Flow Monitoring Stations	-	-	-	-
B11	Southeast Interceptor Relocation at Yahara River	-	-	20,000	21,000
B12	West Interceptor Rehab- Segoe Road to Shorewood Boulevard	-	-	-	641,000
B13	NEI- Waunakee Extension Rehab (MH14-358 to MH14-362)	-	-	-	-
B14	West Interceptor on Regent Street (Mills to East Campus Mall)	-	-	-	3,000
B15	NEI- Rehab West of Airport (Phase 2)	-	-	-	-
N/A	Interceptor Rehabilitation- 2020	-	-	-	-
N/A	Northeast Interceptor Joint Grouting MH10-101 to MH10-106	216,000	100	-	-
N/A	Northeast Interceptor Joint Grouting MH10-112 to MH10-106	-	-	-	-
N/A	NSVI Improvements-McKee Road to Dunn's Marsh	10,000	2,500	3,000	-
N/A	NSVI-Morse Pond Extension	35,000	600	1,000	1,000
N/A	Repair to West Interceptor Extension on Allen Boulevard	-	267,900	655,000	-
N/A	Southwest Interceptor- Haywood Ext. Replacement	(20,000)	-	-	-
N/A	West Interceptor- Shorewood Relief (Phase 1)	697,000	2,500	400,000	-
PUMPING STATIONS AND FORCE MAINS		**$4,418,000**	**$896,600**	**$3,357,000**	**$13,745,000**
C01	Pumping Station 10 Force Main Leak	-	-	-	74,000
C02	Pumping Station 4 Rehabilitation	141,000	210,400	1,165,000	3,507,000
C03	Pumping Station 17 Firm Capacity Improvements	187,000	151,200	225,000	2,939,000
C04	Pumping Station 17 Force Main Relief- Phase 2	365,000	308,500	1,383,000	6,459,000
C05	Emergency Power Generation at District Pumping Stations	--	400	-	100,000
C06.1	Miscellaneous Collection System Projects 2024	-	-	-	105,000
C06.2	Miscellaneous Collection System Projects- Future	-	-	-	-
C07	Force Main Condition Assessment	-	-	-	525,000
C08	Pumping Station 16 Projects	-	-	-	-
C08.1	Pumping Station 16 Rehabilitation	-	-	-	21,000
C08.2	Pumping Station 16 Force Main Rehabilitation	-	-	-	16,000
N/A	Grass Lake Dike Stabilization	605,000	9,800	15,000	-
N/A	Miscellaneous Collection System Improvements	2,000	-	-	-
N/A	Miscellaneous Collection System Projects 2023	-	-	103,000	-
N/A	PS 13 & PS 14 Rehabilitation	2,995,000	170,000	416,000	-
N/A	PS 15 Rehab	(8,000)	-	-	-
N/A	Pumping Station 17 Force Main Relief- Phase 1	131,000	46,300	50,000	-
CAPITAL BUDGET EXPENSES		**$213,000**	**$316,600**	**$693,000**	**$533,000**
D01	Capital Budget Expenses	-	-	-	53,000
D02	Collection System Facilities Plan Update	5,000	6,200	70,000	130,000
D03	Badger Mill Creek Phosphorus Compliance	84,000	161,000	288,000	350,000
N/A	Capital Project Infrastructure Placement Plan	90,000	139,300	225,000	-
N/A	Plant Asset Management Plan Implementation	33,000	10,100	110,000	-
GRAND TOTAL		**$7,897,000**	**$3,044,100**	**$13,044,000**	**$45,544,000**

2024 All-Funds Budget Summary, Omitting Interfund Transfers

	2022 Actual	2023 Budget	2023 Through June Actual	2023 Total Estimated	Proposed 2024 Budget
OPENING BALANCE	**$55,549,600**	**$64,587,300**	**N/A**	**$70,412,700**	**$65,589,700**
Total Revenues Omitting Transfers	67,955,700	79,444,000	27,500,100	56,758,000	97,036,100
Total Expenditures Omitting Transfers	53,093,500	82,603,500	31,939,000	61,581,000	96,721,000
CLOSING BALANCE	**$70,411,800**	**$61,427,800**	**N/A**	**$65,589,700**	**$65,904,800**

Schedule of Principal Amount of Indebtedness

Sewerage System Improvement Bonds	**January 2024**
Series 2005 PS's 1, 2 and 10 Rehabilitation	35,000
Series 2006 Effluent Equalization Projects and AT's 1-6	314,000
Series 2007 West In Ext and PS 13-14 Projects	662,000
Series 2008 PS's 6-8 Rehabilitation and NEI Truax Ext Liner	2,700,000
Series 2010A NEI-PS 10 to Lien Rd	3,594,000
Series 2012A Nine Springs Eleventh Addition	24,879,000
Series 2012B Operations Building HVAC Rehab	1,553,000
Series 2013A NEI-SEI to FEI- Replacement Project	4,561,000
Series 2013B Pumping Station No. 18	8,488,000
Series 2013C Process Control System Upgrade	2,619,000
Series 2014A Pumping Station No. 18 Force Main	6,825,000
Series 2015A PS 11 & 12 Rehabilitation	6,426,000
Series 2015B Maintenance Facility Expansion	7,693,000
Series 2016A PS 15 Rehabilitation, PS 12 FM Relocation, Rimrock Int. Lining	5,006,000
Series 2017A West Interceptor-Randall St. to Near PS2	1,008,000
Series 2019A PS10 FM/WI- PS5 to Gammon Ext.	1,499,000
Series 2020A NEI Truax Ext Relief/SWI-Haywood Ext. Replacement	8,548,000
Series 2020B NLSPI- Phase 1A/PS7 Improvements/Headwords Flow Meetering	20,760,000
Series 2021A Pump Station 13 & 14 Rehabilitation/Operations Bldg 1st Floor Remodel/9 Springs Hot Water & W1 Piping Improvements/WI Spring Street Relief Lining	12,067,000
Series 2022A WI Shorewood Relief Sewer PH1/ NSVI McKee Rd to Dunns Marsh	7,313,000
Total Indebtedness	**$126,550,000**

APPENDIX D
Statistical & Supplemental Information

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 eighth 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 a Commission of nine Commissioners serving staggered terms. Five Commissioners are appointed by the mayor of the City of Madison. Three Commissioners who reside outside the City of Madison are appointed by an executive council made up of elected officials from District cities (except for Madison) and villages. One Commissioner is appointed by an executive council comprised of town-elected officials. 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 approximately 15% of the entire county by area and approximately 70% of the county population. Areas served include the cities of Madison, Fitchburg, Middleton, Monona and Verona; the villages of Cottage Grove, Dane, DeForest, Maple Bluff, McFarland, Shorewood Hills, Waunakee, and Windsor; and portions of the towns of Dunn, Pleasant Springs, Verona, Vienna and Westport.

Additional information regarding Dane County can be found at **countyofdane.com**; more information about the City of Madison is available at **cityofmadison.com**.

Dane County Principal Employers

	Type of Business	Number of Employees, 2022
State of Wisconsin	State Government	35,877
UW-Madison	Higher Education	24,398
UW Hospitals & Clinics	Hospital/Healthcare	18,000
Epic Systems	Software Services	10,000
Madison Metropolitan School District	Elementary & Secondary Education	4,003
WPS Insurance	Insurance	3,500
UnityPoint Health - Meriter	Hospital/Healthcare	3,500
American Family Insurance	Insurance	3,400
Dane County	County Government	2,564
TruStage (formerly CUNA Mutual)	Insurance	2,000

Source: Madison Area Technical College Wisconsin, Annual Comprehensive Financial Report for Fiscal Years Ending June 30, 2022 and 2021
https://madisoncollege.edu/files/media-document/2022-12/2022%20ACFR%20-%20Final.pdf

Dane County & District Data

Madison Metropolitan Sewerage District

DISTRICT FAST FACTS

407,000
DISTRICT SERVICE POPULATION

187 SQUARE MILES SERVED

36M AVERAGE DAILY INFLUENT FLOW (MILLIONS OF GALLONS)

DANE COUNTY FAST FACTS

568,203
EST. COUNTY POPULATION
JULY 1, 2022

1,196 TOTAL SQUARE MILES
2020

$78K MEDIAN HOUSEHOULD INCOME
2021 DOLLARS

10 Most Populous Municipalities in Dane County

	2020 Census	2022 Final Estimate	% Change
Madison, City	269,840	279,012	3.4%
Sun Prairie, City*	35,967	37,304	3.7%
Fitchburg, City	29,609	31,817	7.5%
Middleton, City	21,827	23,031	5.5%
Waunakee, Village	14,879	15,426	3.7%
Verona, City	14,030	14,889	6.1%
Stoughton, City*	13,173	13,204	0.2%
Oregon, Village*	11,179	11,815	5.7%
DeForest, Village	10,811	11,388	5.3%
McFarland, Village	8,991	9,537	6.1%
Dane County	**561,504**	**582,165**	**3.7%**

**Denotes communities not served by the District; these communities have their own wastewater treatment facilities*

County Industry Employment and Future Projections

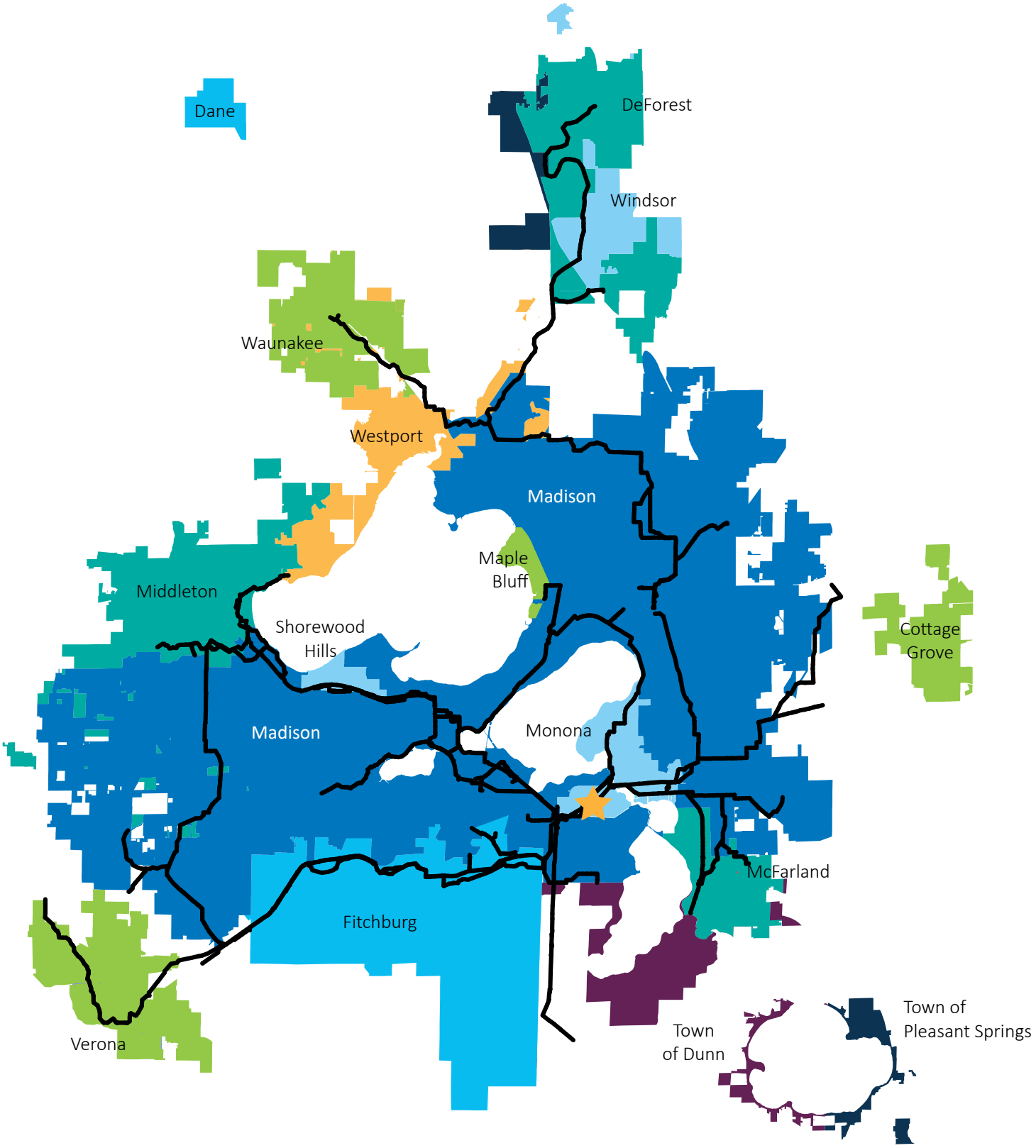
	2020 Employment	2030 Projection	% Change 2020-2030
Natural Resources & Mining	5,120	5,714	11.6%
Construction	21,828	24,116	10.5%
Trade, Transportation & Utilities	74,318	79,221	6.6%
Information	17,045	20,865	22.4%
Financial Activities	27,323	28,485	4.3%
Professional & Business Services	56,958	64,097	12.5%
Education & Health Services	112,033	128,729	14.9%
Leisure & Hospitality	37,990	49,464	30.2%
Other Services (not Govt)	30,679	32,945	7.4%
Public Administration	37,053	38,867	4.9%
Self Employed & Unpaid Family Workers	23,228	23,410	0.8%
Total all industries	**499,791**	**555,692**	**11.2%**

Source for both tables: Dane County 2023 Workforce Profile; jobcenterofwisconsin.com/wisconomy/wits_info/downloads/CP/dane_profile.pdf

Estimated Wastewater Contributions for 2023

	Community	Volume (gpd)	CBOD (lbs/day)	Solids (lbs/day)	Nitrogen (lbs/day)	Phosphorus (lbs/day)	Equivalent Meters	Actual Customers
CITIES	Fitchburg	2,005,014	5,241	4,017	845	107	9,992	6,882
	Madison	24,758,200	65,493	60,661	11,284	1,362	94,270	71,100
	Middleton	2,121,910	4,000	3,510	804	96	8,961	5,946
	Monona	659,571	1,272	1,012	228	28	4,123	2,986
	Verona	1,044,469	2,853	2,369	509	64	6,350	4,758
VILLAGES	Cottage Grove	721,728	1,303	1,301	243	28	2,778	2,353
	Dane	54,336	136	116	31	4	455	412
	DeForest	1,007,259	5,062	2,808	524	75	5,146	4,048
	Maple Bluff	123,223	177	137	41	4	755	591
	McFarland	584,492	1,381	1,282	277	32	4,026	3,467
	Shorewood Hills	144,002	275	268	59	7	1,316	706
	Waunakee	1,588,151	9,203	2,937	734	95	6,194	5,119
	Windsor	489,197	5,173	923	903	53	2,451	2,127
TOWN SANITARY AND UTILITY DISTRICTS	Dunn - Lake Kegonsa	133,239	238	232	55	6	675	564
	Dunn S.D. #1	135,450	62	99	16	2	191	191
	Dunn S.D. #3	70,503	120	125	26	3	493	492
	Dunn S.D. #4	11,378	16	18	4	0.5	68	68
	Pleasant Springs #1	72,114	107	120	26	3	516	509
	Verona - Marty Farms	504	0.9	0.9	0.2	0.03	3	3
	Verona #1	25,881	45	51	10	1.1	128	116
	Vienna - Wyst59 LLC	100	0.2	0.2	0.03	0.004	1	1
	Vienna #1	66,062	178	217	26	3	105	47
	Vienna #2	33,139	55	61	14	2	207	211
	Westport - Cherokee	4,393	6	2	0.6	0.05	8	1
	Westport Sewer Utility District	458,468	646	559	137	15	1,993	1,721
	Westport Utility District	494,000	626	604	150	16	1,976	1,696
	Interceptor Infiltration	1,974,000						
Daily Nine Springs Loadings		**38,286,784**	**103,044**	**82,825**	**16,796**	**1,990**	**151,204**	**114,419**

District Service Area Map



View our interactive collection system map at madsewer.org/interactive-map

APPENDIX E
Five-Year Vehicle Replacement Schedule

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

Five-Year Vehicle Replacement Schedule, 2024-2028

Year	Vehicle	Estimated Cost
2024	CSS Service Truck	$100,000
	2024 Anticipated Fleet Fund Contribution	**$100,000***
2025	CSS Cargo Van	$60,000
	Mechanical Service Truck	$120,000
	Operations Pickup-Four Wheel Drive	$40,000
	Electrical Cargo Van	$50,000
	2025 Anticipated Fleet Fund Contribution	**$300,000***
2026	HVAC Cargo Van	$50,000
	Admin Pool Van	$55,000
	Electrical Cargo Van	$50,000
	Locator Truck	$45,000
	Facilities Maintenance Flat Bed Truck	$85,000
	2026 Anticipated Fleet Fund Contribution	**$275,000***
2027	Electrical Cargo Van	$50,000
	Locator Truck	$45,000
	Mechanical Service Truck	$120,000
	Metrogro Service Truck	$120,000
	2027 Anticipated Fleet Fund Contribution	**$350,000***
2028	Mechanical Route Truck	$50,000
	HVAC Cargo Van	$50,000
	Operations Pool Vehicle	$45,000
	Facilities Maintenance Pickup-Four Wheel Drive	$60,000
	Facilities Maintenance Small Dump Truck	$85,000
	2028 Anticipated Fleet Fund Contribution	**$300,000***

**Budget balancing of fund contribution.*

An employee prepares to drive a District fleet vehicle out of the Maintenance Facility garage.

APPENDIX F
New Position Proposals

In 2024, there are four positions proposed in the budget, which are all driven by growth needs. This appendix includes position proposals that briefly outline the request, urgency and alternatives considered.

The organizational chart in Appendix H represents the District's hierarchy.

OPERATOR - NIGHT LEAD

Requested by: *Eric Dundee, Director of Wastewater Operations & Reliability and Alan Grooms, Operations Manager*

Department: *Operations & Maintenance*

REQUEST

Add 1.0 FTE for an Operator - Night Lead position. This position is similar to the existing day shift lead position but will specifically support night operators for coverage of shifts/duties and work planning for process and equipment shutdowns for maintenance work. The position will also provide supervision and training for night work activities and assignments at the start of the night shift.

WORK NEEDS

The operator workgroup is the only District work-group that must be staffed and onsite 24 hours a day, seven days a week, 365 days a year. This group is comprised of 10 shift operators, one lead operator on the day shift, and one operator supervisor who bridges the day shift and night shift from 11 p.m. to 9:30 a.m. to support staff. The permanent night shift operators work 6:30 p.m. to 6:30 a.m. It is difficult for two night operators to be allowed paid leave or training hours during the same week as it would leave a single operator on shift without in-person safety or duty support. The night lead operator would address coverage issues, add supervisory support to the night shift, and increase operators' involvement in planning and maintaining treatment plant operations during maintenance and large CIP construction projects.

Furthermore, the District's reliability-centered maintenance (RCM) program has successfully assisted with plant equipment operations. However, this success comes with increased operations support to identify needs, assist in planning maintenance shutdowns, and monitor treatment processes during work. Currently, this work is the responsibility of the operator supervisor, and this new position will provide assistance for this critical work.

PRIORITY AND URGENCY

The department has identified an operator position as a priority for schedule coverage and to support the District's performance areas of infrastructure reliability and permit compliance. Currently, the operator supervisor and lead are responsible for coordinating maintenance activities on the operations side. Without a night lead operator, in the absence of the operator supervisor, there is no supervisory coverage of night staff. Furthermore, no succession planning or trainee positions are available to provide immediate coverage of operator shifts. Any unexpected operator absence puts the District at risk regarding treatment plant operation and safety. It is also expected that the new staff member for this position or the replacement of an existing staff member due to promotion will take time to gain comprehensive knowledge of the treatment plant infrastructure and process. Delaying this position will impact treatment plant oversight and advancement of operational improvements related to RCM operations and maintenance activities.

REJECTED ALTERNATIVES

Multiple alternatives were considered while reviewing this staffing issue. One option was rotating staff between night and day shifts based on need. This alternative was disregarded due to work-life balance and planning for staff along with safety issues with acclimating to different shifts on short notice.

NIGHT OPERATOR - LEAD CONTINUED

A second alternative considered was hiring hourly operators for flexible shift coverage or contract operator coverage with a private company. After review, this alternative did not provide an effective solution as extensive knowledge is required to operate the Nine Springs treatment plant. This option also puts the District at risk of permit non-compliance, reliable coverage, and safety.

The third alternative was to add a succession planning operator position to create additional support for operator scheduling. This alternative is viable but brings challenges with regard to the training schedule and incorporating the staff member into the permanent schedule when shift coverage is needed.

The approval of this position is critical to uphold the District's mission to protect public health and the environment. Operators require specialized training and knowledge, both of the field and the Nine Springs plant, and have direct responsibility for ensuring continuous and reliable operation of the plant and collection system and maintaining safety and permit compliance.

Ryszard Zolnik, lead operator on the day shift, talks with process and research engineer Matt Seib near the primary tanks.

TREATMENT PLANT PLANNING ENGINEER

Requested by: *Bill Walker, Senior Director of Budget & Planning*

Department: *Budget & Planning*

REQUEST

Add 1.0 FTE Treatment Plant Planning Engineer position. The position would do capital planning work related to the treatment plant, including leading facilities planning, writing capital project business cases, identifying capital needs and maintaining key performance data. The position would report to the capital planning engineer (along with the existing collection system planning engineer) and work closely with engineering, operations, and maintenance experts. The proposal reflects the growing need for planning and executing capital projects at the plant.

WORK NEEDS

The proposed position would join the capital planning group in the Budget & Planning department. That group currently has two positions: the capital planning engineer leads the group, and the collection system planning engineer works on collection system-related infrastructure and reliability needs. The group develops the annual Capital Improvements Plan, works closely with Engineering and O&M staff on project business cases, supports the implementation of capital projects, and tracks overall capital spending. (Capital financing is done by the director of budget and planning as part of overall budget management.)

The planning function is separate from engineering project management, plant operations, and maintenance because it requires a particular skill set and planning operates on a longer time horizon. Staff in the other departments do not have time to perform planning functions.

Planning for the collection system has been thorough for many years, centering on the periodically updated Collection System Facilities Plan. (An updated plan is expected to be completed in 2024.) However, treatment plant planning has been less thorough. The age of the plant and its growing complexity call for a dedicated plant planning function, with a plant facilities plan that parallels the collection system plan.

In addition, with the development of an RCM program at the District, there is an increasing opportunity to use asset data to drive capital planning. This will similarly require a dedicated planning position.

Third, developing and updating plant-related capital project business cases burdens O&M staff, who have other pressing duties. The requested position would reduce that burden and allow other staff to contribute their expertise to planning more efficiently.

Finally, there are two pressing components of the capital plan: facility planning for replacing the heat and power equipment and implementing the campus infrastructure placement plan.

PRIORITY AND URGENCY

This is the only position proposed for the Budget & Planning department for the 2024 budget year. Potential future department position needs include support for District strategic planning and performance improvement and budget and finance analysis.

Delaying the addition of this position would hinder the District's ability to prioritize and plan the large capital projects to be constructed in later years of the 2024 CIP. The CIP has several important projects that must be coordinated to succeed. These include two phases of liquid processing improvements, upgrading electrical service at the plant, and potentially relocating Metrogro operations. Most importantly, delay would hinder developing the heat and power facility plan. Several plant projects depend on the details of that facility plan.

REJECTED ALTERNATIVES

Two alternatives were considered for this position. The first is to continue incomplete treatment plant planning. The consequences of that course are implicit in the discussion above.

The second alternative is to contract planning services. This option was rejected for two reasons. First, the value of a planning engineer comes from the incumbent's specialized knowledge of the plant itself and of District staff. An external firm would have to rely on District staff, creating an additional burden on staff. Second, the cost of contracting for such work is generally higher cost than a permanent position. (Note that the treatment planning function is ongoing, full-time work, as is collection system planning.)

BUSINESS SERVICES SPECIALIST

Requested by: *Amanda Wegner, Communications & Public Affairs Director*

Department: *Leadership Support*

REQUEST

Add a 1.0 FTE Business Services Specialist position to the Resource Team workgroup. This position will assume primary responsibility for Commission and agenda management while supplementing the needs of the Resource Team. This team provides a growing body of broad-business services to the organization and its staff and expands the Resource Team's capacity to take on project work to support the District.

WORK NEEDS

The Resource Team currently consists of 3.5 FTE staff members; the primary duties of this team are expansive, including managing daily business needs and functions of the District, supporting staff needs, onboarding and offboarding District staff, event management, Commission management, executive needs, and more. This team also assists the Communications team with internal and external communications and marketing needs.

In the last 10 years, the District has added 14 new program areas, such as Pollution Prevention, Communications, Human Resources, Records management, Watershed programs and more. The number of District staff has increased by approximately 40% over this period. These growth areas have driven an increased demand for general District support.

Concurrently, the Resource Team has taken on increased responsibility for District-critical tasks. For instance, the Resource Team developed an HR onboarding and offboarding tracking system and oversees the completion of these important tasks. As the District works to enhance and expand its onboarding processes to improve the employee experience, the workload for this team has expanded in parallel. Another critical duty of this team is Commission and agenda managment. In 2020, the Commission implemented a new web-based tool for agenda management that streamlines the process, reduces adminstrative burden for project managers and directors and ensures accurate record-keeping. While this tool has created time and process efficiencies for District staff with Commission responsibilities, it increased Resource Team workload and requires additional training and technical knowledge to manage. Commission and agenda management alone requires, on average, 15 hours of Resource Team staff time per week.

Despite the increase in need and responsibility, the staff capacity of the Resource Team has not kept pace: the last position approved for the Resource Team was an 0.5 FTE position in 2017. As such, the workload of this team has become unsustainable. For example, in 2022, the Resource Team's 0.5 FTE Program Assistant worked over their allotted 24 hours/week for 12 consecutive pay periods to accommodate two team members' family emergencies. Overtime or working over hours (for those who are salaried or part-time) is a frequent occurrence for the team.

The greater demand for support services and increased responsibilities for critical business services, without an increase in staff resources, has resulted in diminished capacity for the Resource Team to take on new projects or requests. Adding a new position to the Resource Team allows this workgroup to address a backlog of projects and unmet needs. One example is the build-out and support of the District's Dgital Asset Management system. Another examples is a critical records management project to curate, organize and create processes around the District's master documents. A final example is providing support services to directors and managers to reduce their administrative burden.

PRIORITY AND URGENCY

As the District continues to grow its internal and external programming and staff needs increase, the department has identified this position as a priority to address growth, capacity and need. The position also provides additional in-office coverage.

Because this position will take on Commission and agenda management as two of their primary duties, an extended period of knowledge transfer and training is necessary. Delaying or denying approval of this position impacts the Resource Team's ability to accomodate existing staff and business needs and prevents the team from taking on new projects or requests. Delay would also perpetuate team coverage

issues and puts staff in the position to work over their hours or forego the paid time-off to which they are entitled, which is already contributing to burnout in the team.

REJECTED ALTERNATIVES

Resource Team leadership, including the Communications and Public Affairs Director and Business Services Supervisor, have grappled with this staffing issue for several years and considered multiple alternatives.

An alternative that has been used is utilizing interns and/or temp workers. The Resource Team has much experience with this alternative as it has used interns and temp workers in the past. However, due to the transient nature of these workers, combined with the vast nature of services the Resource Team provides and the technical knowledge required for some duties, this alternative requires a significant upfront training investment and time burden by current staff. As a result, utilizing interns and temporary workers is not a sustainable or cost-effective option.

ASSISTANT OPERATIONS MANAGER

Requested by: *Eric Dundee, Director of Wastewater Operations & Reliability and Alan Grooms, Operations Manager*

Department: *Operations & Maintenance*

REQUEST

Add 1.0 FTE for an Assistant Operations Manager position. This position will expand Operations leadership, provide a succession planning opportunity, and support Operations functions at the treatment plant, including oversight of the overall treatment plant process, coordination of maintenance work, and providing subject matter expertise for capital improvement projects.

WORK NEEDS

The Operations workgroup currently has three staff operations engineers/specialists and an operations manager position. The primary functions of this small group, in order of priority, are overseeing plant treatment plant functions, serving as subject matter experts for capital improvement projects, and roviding operational input for RCM work processes specific to work order prioritization and scheduling.

The driver for this staff addition is competing challenges with treatment plant operations and a significant increase in capital improvement projects workload. Aging infrastructure leading to equipment breakdowns and out-of-service equipment has led to increased challenges in the operational function of the treatment plant and permit compliance. Major treatment plant improvements have been identified and planned with the District's CIP to address this issue.

Furthermore, the process oversight and CIP projects that support critical functions require operations engineering expertise and cannot be minimized. Historically, District expertise within other departments was relied upon to relieve the demand on Operations support to develop successful CIP projects. This support no longer exists with staff turnover and creates the need for additional staffing, specifically within Operations. In addition, the District's RCM program has successfully assisted with plant equipment operations. However, this success comes with increased operations support to identify needs, assist in planning for maintenance shutdowns, and monitor treatment processes while the work is being completed.

An additional benefit to this position is the opportunity for increased leadership support for the operations manager. There are immediate increased demands attributed to RCM planning and scheduling workflows, meetings and maintenance work completion. This is in addition to increased involvement in and workload associated with significant treatment plant projects such as liquid processing and heat and power improvements, along with all other treatment plant projects underway or starting soon.

This had been a permanent position within the Operations workgroup until 2019, when there was a

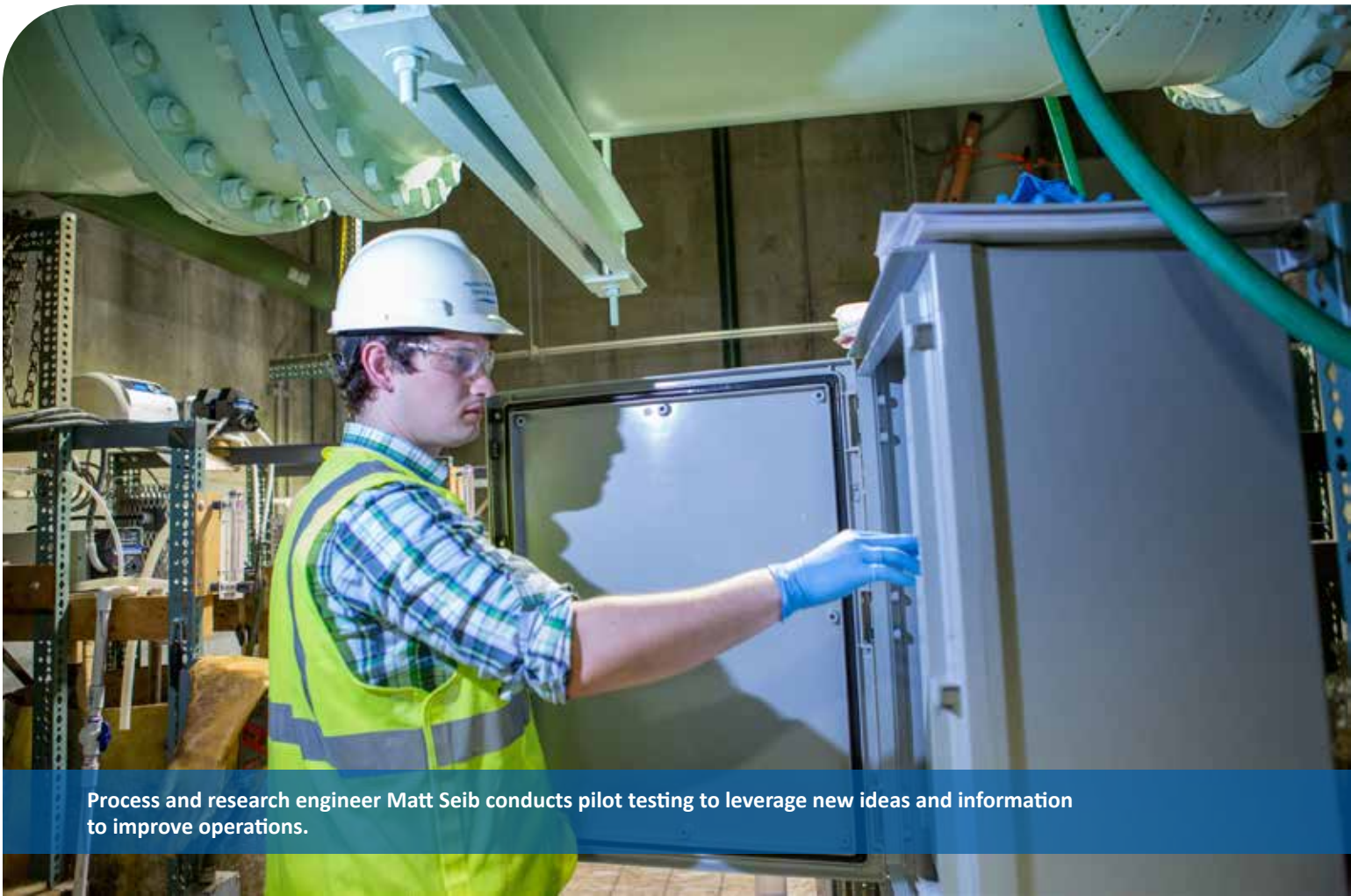
staff retirement. With that retirement, two principal job duties of the retiree were evaluated for priority, and the assistant operations engineer (manager) position duties were reallocated. As part of the 2019 department staffing plan, the position was intended to be refilled at a future date based on need.

PRIORITY AND URGENCY

The District's CIP is transitioning to a heavier focus on addressing aging infrastructure within the treatment plant in the next two years, with additional focus well into the future. This transition will require immediate attention to provide workload hours for project development. Unfortunately, it is also expected that the new staff member for this position or the replacement of an existing staff member due to promotion will take several years to gain comprehensive knowledge of the treatment plant infrastructure and processes to become a subject matter expert for CIP project development. Any delay will significantly impact the delivery of projects based on workload-hour allocation for projects and treatment plant subject matter expertise.

REJECTED ALTERNATIVES

Based on current and future projected workload requirements, the consideration of no new position(s) in the operations workgroup was disregarded. The CIP alone requires at least one new position assigned to projects as the operations lead. Additionally, the specialized duties and deep plant expertise required of this position cannot be covered by another person or department within the District. There was consideration given to adding an additional operations engineer/specialist to directly address CIP project coverage. However, hiring for this singular need does not address increased operational oversight, provide operational background for project development, or provide succession planning for the workgroup.



Process and research engineer Matt Seib conducts pilot testing to leverage new ideas and information to improve operations.

APPENDIX G
Glossary

COMMON ACRONYMS

CARPC: Capital Area Regional Planning Commission

CIP: Capital Improvements Plan

CMAR: Comprehensive Maintenance Annual Report

CMMS: Computerized Maintenance Management System

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

DNR: Department of Natural Resources (also WDNR)

FEI: Far East Interceptor

FOG: Fats, Oils and Grease

MH: Manhole or maintenance hole

MMSD: Madison Metropolitan Sewerage District

NACWA: National Association of Clean Water Agencies

NEI: Northeast Interceptor

NSWWTP: Nine Springs Wastewater Treatment Plant (also NSWTP)

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 (District's CMMS software)

WDNR: Wisconsin Department of Natural Resources

WPDES: Wisconsin Pollutant Discharge Elimination System (District permit)

WisDOT: Wisconsin Department of Transportation

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.

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.

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 District's executive leadership team. Also E Team.

Force main: The discharge pipeline of a pumping station.

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/NSWWTP): Wastewater treatment plant originally constructed in the late 1920s in Madison, Wis. Since then, the plant has experienced numerous changes and additions. The plant presently serves 25 owner communities in the greaterMadison 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: Owner 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 (PS): 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).

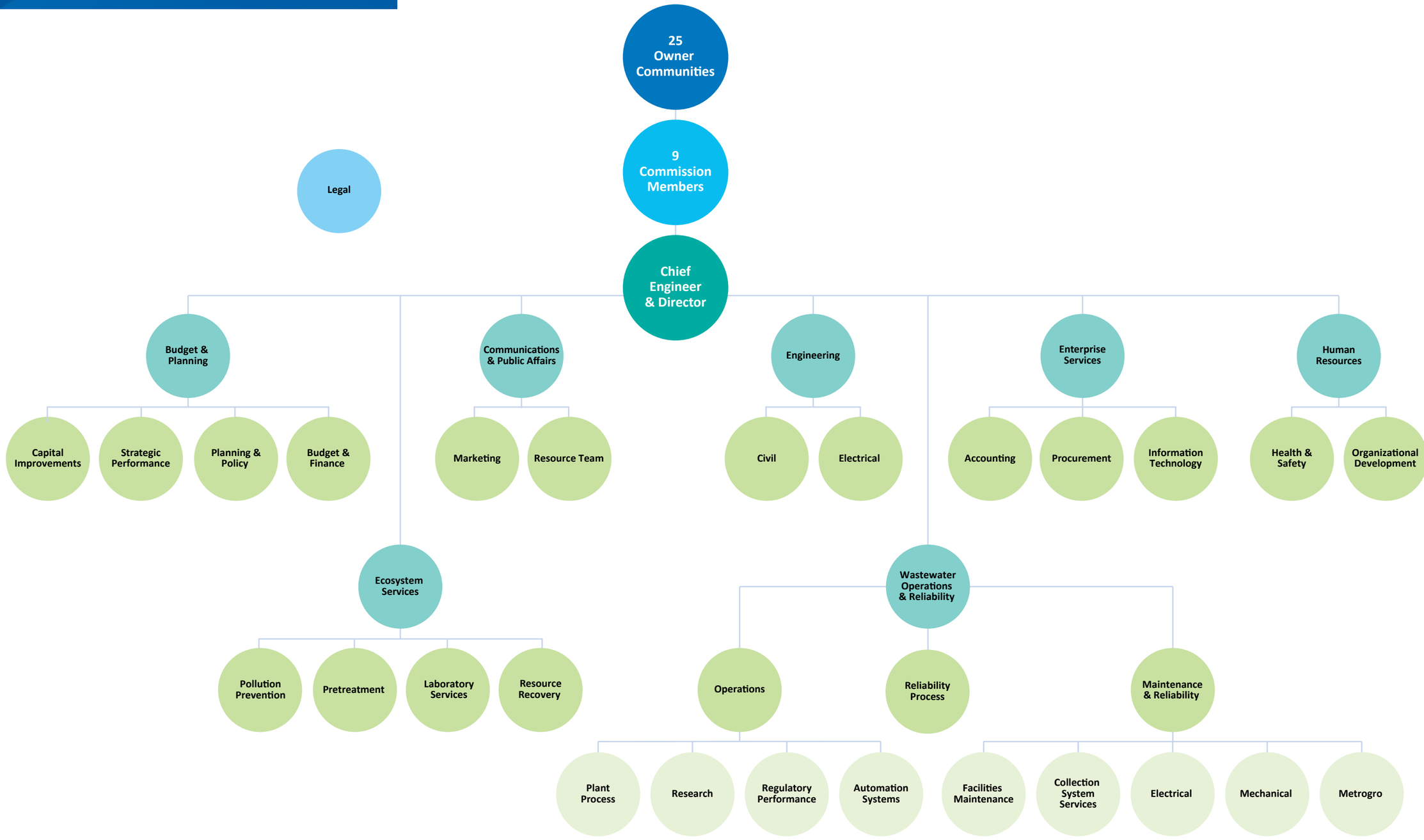
Televising: A method using video camera(s) to assess the condition of a sewer line in real time. It can reveal blockages from debris, roots or grease; show cracks, breaks or deterioration of a pipe. It allows detailed diagnosis without the need for excavation, saving time and money.

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).

APPENDIX H
Organizational Chart



An aerial view of the Nine Springs Wastewater Treatment Plant.

Madison Metropolitan Sewerage District

www.madsewer.org