ABOUT THE DISTRICT

Who We Serve

When the district was created in 1930 it served five municipalities, an area of approximately 64 square miles, and a population of 80,000. Today, we have grown to serve a community of over 360,000 people in the Greater Madison area. Our 185 square mile service area includes five cities, seven villages and 25 sanitary/utility districts.

The district's service area stretches from Dane and Morrisonville in the north to Verona and Lake Kegonsa in the south.

What We Do

For over 85 years, the Madison Metropolitan Sewerage District has protected public health and the environment by monitoring, maintaining and operating the complex system of pipes and equipment that convey, treat and return wastewater to the environment.

To convey the wastewater generated from homes, businesses and industries throughout its service area, we operate and maintain approximately 95 miles of gravity sewers known as interceptors. These interceptors collect and transport wastewater from smaller sewers, owned by local municipalities, to 18 regional pumping stations operated by the district. The 18 district-owned pumping stations and the 32 miles of pressurized force mains associated with the pumping stations are required due to the relatively flat topography in the region. All wastewater flow generated in the region, approximately 40 million gallons per day, is pumped to the Nine Springs Wastewater Treatment Plant. Once at the plant, the wastewater proceeds through an advanced treatment process that recovers three valuable resources: 1) treated effluent, 2) energy and 3) biosolids. Treated effluent is pumped to the Badfish and Lower Badger Mill creeks, where it supports diverse ecological environments including numerous species of fish and other aquatic life. Energy is produced via methane, a combustible gas, which is recovered during the treatment process and used to power engines that drive generators and a blower. Biosolids, also known as Metrogro, are an organic fertilizer and soil conditioner that are recycled to area farm fields in the spring and fall.
Here at Madison Metropolitan Sewerage District, our efforts to protect public health and the environment extend from our laboratory to the landscape beyond. While monitoring water quality at the microscopic level affirms the effectiveness of our treatment plant, it is our work throughout the watershed that ensures the district’s financial and environmental sustainability.

We recognize that water is a finite resource and that even small changes in individual water use can produce substantial economic and ecological benefits.

In the pages that follow, you’ll find this broader view reflected in our innovative work with customer communities, agricultural partners, elected officials and regulators.

Guided by a nine-member commission, our district is a national leader in clean water and resource recovery technologies, both of which are essential to the region’s quality of life and thriving economy.

During 2016, our staff and partners achieved significant progress with respect to land use and conservation practices that reduced nutrients and salt flowing into our waterways and treatment plant. Longer term, this work will help us minimize costly plant upgrades and keep customer rates low. For example:

- One year into a groundbreaking adaptive management program, the district-led Yahara Watershed Improvement Network reported total phosphorus reductions for the Yahara watershed of 18,392 pounds – nearly 20 percent of the project goal.
- In 2016, we hosted training sessions for plumbers and water softener installers while offering rebates to companies that reduced salt use.
- Our careful attention to system maintenance helps keep rates affordable; in 2016, the average annual residential sewer service charge of $294 remained 39 percent below the national average of $479.

We hope you’ll invest a moment to learn more about the district’s achievements and how our broader views on water are shaping our cost-conscious, sustainable approach. As always, we welcome your comments and feedback.
A change in the district’s governance structure from five to nine commissioners in 2015 set the stage for enhanced representation of our customer communities and a more strategic approach to the budgeting process. This diverse group informs our broader view, providing guidance as we put our values and principles into action through prudent planning and budgeting.

The district’s six year approach to budgeting through the Capital Improvement Plan ensures opportunities for commissioners to mitigate financial risk while prioritizing benefits in terms of public health and the environment. The results can be readily seen in ongoing infrastructure renewal, adaptive management efforts to decrease phosphorus and chloride reduction initiatives.

At a time when many municipal water and sewer utilities are struggling to provide safe, affordable service, our integrated approach to planning and budgeting has resulted in exceptional performance for our customer communities. Our rates remain some 39 percent below the national average for large municipalities, with our average customer paying less than $25 per month.

As we move forward with the planning process, commission members will continue to fine-tune spending decisions based on their knowledge of evolving community needs. Along the way, commissioners will identify how best to delegate work to district leadership and staff while establishing long-term priorities.

Key to our future will be efforts to connect more closely with customers and stakeholders throughout the region. Transparency counts among the district’s fundamental values and is exemplified not just through the rate-setting process, but in how visibly our priorities are tied to our expenditures.

Finding affordable ways to ensure clean water and sustainable resource recovery for future generations will require collaboration among community members from all walks of life, informed by science and common sense. We look forward to strengthening relations with our customers, agricultural partners, elected officials and regulators to optimize service while keeping rates low.
2016 Revenues
Revenues for 2016 of $34.5 million were $1.9 million or 5.7 percent more than budgeted after accounting for the budgeted use of reserves. This is largely due to revenue from estimated service charges being $1.6 million more than budgeted and revenue from septage treatment $0.2 million than budgeted. Higher than anticipated wastewater flows and loadings resulted in the higher than budgeted service charge revenues.

2016 Expenditures
District expenditures for 2016 of $31.9 million were $0.9 million, or 2.8 percent, less than budgeted. The largest under budget amount was for wastewater treatment, $0.8 million.

Operating Fund Balance
The operating fund balance increased by $2.7 million to $16.2 million in 2016. The operating fund balance at the end of 2016 included unrestricted operating reserves of 242 days operating expenses and met the district’s target end-of-year minimum balance of 180 days operating expenses.

Rates
In 2016, the average residential sewer service charge in the district was approximately $294. This amount includes $167 for services provided by the district and $127 for services provided by the municipality. Results from a 2016 survey of 167 of the nation’s largest municipalities indicated that typical residential service charges in the district were 61 percent of the national average of $479 per household.
One year into its groundbreaking adaptive management program, the profile of Yahara WINS continues to grow. Yahara WINS began in 2012 with a pilot program focusing on a small area of the watershed. In 2015, the program launched into a full-scale watershed initiative when 31 representatives of municipalities, organizations and government agencies signed an intergovernmental agreement to jointly pursue phosphorus reduction initiatives in the Yahara Watershed for 20 years. It was an unprecedented level of commitment to the region’s water future.

The program is remarkable both in the breadth of participation—with a large and diverse group of partners—and the depth of involvement, with members committing a total of $104 million, in addition to staff time, for the duration of the project. It took years of work to create this network of trust, and it is a network that is already proving to serve the district’s work in other areas of pollution prevention.

District representatives are eager to share their experience and knowledge with other groups and utilities, and they are frequently asked to do so. They have presented at meetings of Wisconsin utilities, government seminars and at gatherings of the National Alliance of Clean Water Agencies. The U.S. Environmental Protection Agency has also expressed interest in Yahara WINS and asked for more information on the program structure. They are looking for new tools to solve watershed problems—and the district’s adaptive management model is a promising one.

It will be years before water levels can be accurately evaluated due to annual fluctuations in phosphorus levels. In the meantime, Ecosystems Services Director Dave Taylor describes program success as “everyone working together and staying together,” a result Yahara WINS is already achieving.

**BY THE NUMBERS**

- **295** landowners/producers assisted
- **80+** conservation practices planned for implementation in 2017 and forward
- **18,392** pounds of phosphorus reduced in 2016
CUTTING THE SALT IN OUR HOUSEHOLD DIETS

WI Salt Wise formed when the district was compelled to bring together interested parties and address the issue of salt use in the region. For the district it was a matter of permit compliance: we routinely receive more chloride than our permit allows us to discharge. Adding facilities to remove chloride at the plant could cost up to 2.3 billion dollars. Working to change community behavior is more cost-effective and better for the environment as it prevents ancillary road salt runoff into local waterways.

The group’s initial work was in optimizing the amount of salt used on pavement in the winter in this area. In 2016, the group posted applicator training videos on YouTube and began working with the City of Madison on a voluntary applicator certification program. WI Salt Wise found success in reaching homeowners through the “Shovel, Scatter, Switch” campaign, which promotes shoveling to clear snow, applying salt in the proper amounts and then switching to sand when it is too cold for salt to be effective. Cups with the “Shovel, Scatter, Switch” information, which double as a measuring tool for salt application, have been popular giveaways.

Now that the group has grained traction in road salt use by homeowners and municipalities, it is expanding its focus to include another area of common salt use: water softeners, a more challenging area because water softener salt use is often out of sight and mind. In 2016, the group began hosting trainings for water softener plumbers and installers on how to optimize salt use. The group are also working with the district to offer rebates for companies who reduce their water softener salt use. The ultimate goal is to reduce the trend of salt use in our region by getting people to think about how and where they are using salt, in or outside the home.
This is a demanding time for wastewater utilities—budgets are tight, pollutants coming into the plants continue to increase and more permit regulations are imminent. The district has the additional challenge of goals we have set for ourselves: achieving energy neutrality, protecting our watershed and keeping water affordable for our community. Though the list is daunting, in our treatment plant operations we are approaching it the same way that the district always has: look ahead at what is coming, be willing to test new methodology now and save money and time later.

The district became one of the first agencies in the country to begin using the Ostara process in 2013 to remove struvite (phosphorus) from wastewater and convert it to dry pellets that can be resold as fertilizer. It helps protect local waterways by reducing the amount of phosphorus in our biosolids and provides an additional income source for the district. Over the past three years, staff at the district have worked closely with Ostara, an independent company that manufactures the equipment used to create the pellets.

The district continues to work with Ostara, which also markets the pellets, to refine and advance the production process. The process prevents 300 to 400 pounds of phosphorus from returning to the watershed each day; in 2016, about 65 tons of phosphorus was removed from wastewater and repurposed as fertilizer pellets, primarily for potato farming in more western states. The district is still continuing to fine-tune the process and make it more effective.

The district’s operational culture is to plan and stay ahead of the curve by exploring new and innovative treatment processes. The district’s close relationship with the University of Wisconsin yields many useful studies, but it is also encouragement of staff involvement with professional associations and water groups that helps to generate innovation at the plant. This creates a very receptive environment for idea sharing.

There are more projects in various stages from planning to pilot-scale phases that are aimed at helping the Nine Springs facility operate more efficiently and better serve the community, including a pilot project using a nitrite shunt to shortcut the process used to remove nitrogen from wastewater. Right now only one other plant in the country uses this technology, again placing the district in a pioneering position.

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**REACHING OUT TO OPERATE MORE EFFECTIVELY**

**BY THE NUMBERS**

39.7 million gallons of biosolids recovered for reuse as Metrogro fertilizer in 2017
MANAGING ASSETS TO ENSURE RELIABILITY

For many years the district has put a focus on comprehensive project and financial planning. The district’s goal is to stay ahead of regulatory shifts and capital projects to manage and reduce expenses and keep rates steady. One challenge is that much of the wastewater infrastructure system is out of sight. Several thousand miles of sewer lines run underneath the greater Madison area and much of it is 50 or more years old. We need to be smart and strategic with our resources.

The district has developed a new tool to help: the pipe risk assessment. Any pipe failure is a problem, but some locations are critical. The pipe risk assessment, based on EPA methods, applies the triple bottom line sustainability model to each location. The tool estimates the environmental, social and financial impacts of pipe breaks at points in the system. Combined scores help define our highest-priority project areas.

The information is used in the district’s annual Capital Improvements Plan, which plans projects over a six year horizon. The pipe risk assessment also allows for greater coordination with other utilities and municipal work. For example, if the engineering department knows a section of the interceptor system in Madison needs to be replaced in approximately two years, the project can be coordinated with other city works projects to minimize disruption to residents and commuters. Director of Engineering Bruce Borelli says, “Our efforts are mostly to avoid tearing up streets or other infrastructure, but if it must be done, we want to do it in the most efficient way possible.”

The pipe risk assessment tool is one part of the district’s asset management and planning efforts. It supports our mission of protecting human health and the environment, efficiently and effectively.

**BY THE NUMBERS**

185 square mile service area

95 miles of district-owned interceptors

1500 manholes owned and maintained by the district
In 2016, the renovation of two pumping stations represented a change in approach for the district. Pumping Stations 11 and 12 are the first pumping facilities where the district has considered the surroundings of the facility as well as the interior functions. Work on the stations was necessary to upgrade outdated systems; the motivation to make the projects more than functional rehabilitation efforts came from the district’s desire to consider the environmental, social and financial impact of all projects.

Both stations feature equipment that is less noise- and light-invasive than the older equipment, giving consideration to how the facilities interact with nearby residents. Several features were added to lessen the environmental impact of the stations, including white roofs, which reflect 90 percent of the sunlight, skylights, and low- or no-mow native landscaping. Pumping Station 11, on the Capital City State Trail, also provides a picnic table and an informational kiosk for public use.

The station plans were developed using the Envision project assessment tool, a process that looks at the total impact of infrastructure projects—from cost to community to environment. The district is integrating the Envision process into future infrastructure projects with hope for the same outcome: creating better-functioning, more environmentally and community-friendly facilities at a reasonable cost.
The opening of our maintenance facility in 2016 ushered in a new era of energy independence and workplace efficiency for the district. The building received a platinum-level certification from the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program for its exceptional energy conservation and sustainable features.

It also brought an unexpected benefit: a new opportunity to connect with and educate the public. The Maintenance Facility is one of only three buildings in the state of Wisconsin certified at LEED 2009 platinum level standards and has become both a source of inspiration and information for the community.

Unique features like solar tube lighting and a heating and cooling system, that uses treated effluent for temperature control, help generate new green building ideas. One of the driving forces in making this connection is our new LEED tour, which highlights the unique sustainable features of this showcase facility.

The tour can be experienced with a guide, as with our traditional plant tours, or can be self-guided by following a series of eight plaques located throughout the facility, each highlighting a different efficiency feature.

Each plaque features a breakdown of the LEED feature, how it contributed to the building’s certification and a scannable QR code. Each code links to a webpage with additional information on the plaque topic, diagrams or imagery to explain how the systems work and relevant websites that can be helpful in understanding or replicating the building systems.

To schedule a visit or learn about the tour, visit www.madsewer.org/LEEDPlatinumTour.

**BY THE NUMBERS**

8 plaques on the LEED tour
30 minutes to complete the LEED tour
81 total LEED points earned for certification
The district brought together a group of partners from across the region to participate in the US Water Alliance’s Imagine a Day Without Water campaign on Sept. 15. The alliance’s goal was to create awareness of water challenges facing our region and to understand the impact of water in our daily lives and economy. Partners included Madison Water Utility, Madison Fire Department, Public Health Madison and Dane County, Yahara WINS, Dane County Land and Water Resources, Madison Area Municipal Stormwater Partnership, Dane County Office of Lakes and Watersheds, Capital Area Regional Planning Commission, Friends of the Capital Springs Recreation Area, Clean Lakes Alliance, Friends of Lake Wingra, Town of Westport, Village of Cottage Grove, City of Madison, City of Middleton, WI Salt Wise and the Wisconsin Section of the American Water Works Association.

The groups jointly presented an op-ed on the threats to the water infrastructure in our state and ran a coordinated social media campaign throughout the day highlighting the value of water in common daily activities, such as brushing teeth or drinking coffee. “As one of many groups in the region that focuses on protecting and enhancing our water systems we understand that partnership is a key to promoting community awareness,” reflects Kathy Lake, environmental specialist. The coalition plans to continue joint campaigns to recognize national and international water awareness events.
Radebaugh Award

Retired District Operations Engineer Steve Reusser, Operations Manager Alan Grooms and Operations Supervisor Aaron Dose (Grooms and Dose pictured) received the Radebaugh Award during the 89th Annual Meeting of the Central States Water Environment Association. The Radebaugh Award is presented to the authors of the paper judged to be the best presentation at the previous year’s annual meeting, where Steve, Alan and Aaron presented “Operating Experience with Ostara Struvite Harvesting Process,” which was one of the first documented reports on the operation of this innovative new process. The award was presented at the awards banquet on May 19, 2016.

ACEC Engineering Excellence Awards

The district was awarded two Engineering Excellence Awards by the American Council of Engineering Companies (ACEC) in March, 2016. The Pumping Station 18 construction project earned a State Finalist Award and the 11th Addition to the Nine Springs Wastewater Treatment Plant which constructed new facilities for phosphorus removal and recovery, won the Grand Award which is given annually to the best project in Wisconsin. The Engineering Excellence Awards program recognizes and celebrates engineering achievements that demonstrate the highest level of skill and ingenuity. Director of Engineering Bruce Borelli and Project Engineer Jeff Klawes, instrumental in both projects, were present at the ceremony.

Lumley Leadership Award

The Clean Lakes Alliance awarded the Madison Metropolitan Sewerage District the Lumley Leadership Awards Organization of the Year on May 3, 2016 for its leadership in the Yahara WINS (Watershed Improvement Network) project. Dave Lumley, for whom the award is named, has been a long-time lover of the lakes, and one of the first advocates of the Clean Lakes Alliance. In honor of his support, several Lumley Leadership Awards have been presented to some of the most outstanding community members and organizations in the Yahara Watershed. The Yahara WINS project, led by the district, has become a national model for adaptive management programs.
AWARDS & ACHIEVEMENTS

2016 Women of Industry Award
On November 8, Kathy Lake, environmental specialist, was honored as a 2016 Woman of Industry by InBusiness, a business-to-business publication in the Greater Madison area. These annual awards recognize women who have had a significant impact in their industry with their innovative ideas. Lake was recognized for her work in pollution prevention, challenging people and entities to make significant changes in practices and habits.

Bicycle Friendly Business
The League of American Bicyclists has designated Madison Metropolitan Sewerage District as a Silver Level Bicycle Friendly Business in recognition of our outstanding efforts to support and encourage bicycling.

Yahara Lakes Association Citizen of the Year
The Yahara Lakes Association recognized Dave Taylor, retired director of ecosystem services, as the YLA Citizen of the Year for his ground-breaking work on the Yahara WINS program. The awards dinner was held on June 21, 2016. Dane County Executive Joe Parisi introduced Taylor at the event and thanked him for his leadership in his field and in cleaning up the lakes.

GFOA Distinguished Budget Award
For the fifth consecutive year the district was honored with a Distinguished Budget Presentation Award from the Government Finance Officers Association (GFOA) of the United States and Canada. The award is a nationally-recognized honor given to member organizations who adhere to the highest principles of governmental budgeting and prepare budget documents of outstanding quality. In order to receive an award, the budget must meet nationally-recognized guidelines for effective budget presentation.

District employees take advantage of the adjacent Capital City State Trail for commuting and lunchtime rides.
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Commission members (left to right): James Maitley, Ezra Meyer, Brad Murphy, Tom Wilson, Eric Potts, Angela James, Thomas Houlet, Sara Eskrich, Ken Clark

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OUR MISSION: Protect public health and the environment

We are a passionate and experienced resource recovery team focused on protecting public health and the environment. Every time we clean and return wastewater safely back to nature or apply Metrogro to help farmers grow more food, we are taking steps to create a cleaner and better world. We are known for our innovative engineering, conservation leadership, recovery expertise and we are cost-conscious ratepayers just like you.

OUR VISION: Enrich life through clean water and resource recovery

At the district, our vision is to not only enrich the community by improving living conditions for people, plants and animals, but also educate others so they too can take steps to conserve our resources. Water is finite; we cannot create more of it. By changing the way we think about and use water, together we have the power to enhance the quality of life on our planet. By making small changes and respecting every drop of water we have today, we can set the tone for a resource-conscious and sustainable community tomorrow.

A B O U T  T H E  D I S T R I C T
This document is a summary of the 2016 Annual Report of the Madison Metropolitan Sewerage District required under Wis. Sta. 200. 11(1)(e). A full copy of the Annual Report containing a detailed report of its official transactions and expenses and of all presently planned additions and major changes in district facilities and services is available at http://www.madsewer.org/Planning/Budget-Finance. A copy of the full report has been electronically filed with the Wisconsin Department of Natural Resources, Dane County Department of Health Services and the governing bodies of all cities, villages and towns having territory in the District.

Detailed financial and budget information is available at the following District website location: http://www.madsewer.org/Planning/Budget-Finance

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