





2022 YEAR IN REVIEW

FEATURES

INTRO	Education & Outreach8-
Message from the Administrator1	Gallery of Pictures10-1
OVERVIEW	Natural Resources12-1
	Events & Awards1
Staff & Board2-3	Inspecting & Permitting16-1
The Watershed RWMWD Boundary Map4-5	Water Monitoring18-1
Capital Improvement Projects6-7	By the Numbers20



Tina CarstensAdministrator

PRESERVING, IMPROVING & EDUCATING IN A SEASON OF CHANGE

THIS PAST YEAR WAS ANOTHER PERIOD OF CHANGE AT THE DISTRICT, INCLUDING OUR RETURN TO THE OFFICE FULL TIME POST-COVID AND THE RETIREMENT OF ONE OF OUR BOARD MEMBERS AND LONGSTANDING DISTRICT LEADERS, CLIFF AICHINGER.

I sincerely thank him for all he has contributed to RWMWD and for his continued volunteer service as part of the Citizen Advisory Committee. Our District and our state continue to experience periods of record-setting drought, which we have addressed through careful water quality monitoring and delivering precise long-term solutions for any concerns that arise.

State projections anticipate that the trend of weather extremes we have seen in recent years, from flooding to drought, will continue well into the future. RWMWD has engaged in comprehensive, in-depth studies of areas at risk for flooding and planned projects to remove structures from the adjusted floodplain and create resilience in our watershed system before these resources are needed.

We continue to work closely with state and local agencies to deliver capital improvement projects that apply innovative and precise solutions to water quality, erosion, and flooding management needs. Best management practices (BMPs) like our sand filters, alum treatment plant, invasive carp removal, and ecological restoration

have significantly contributed to water quality improvements at lakes in the District over the last ten years. Equally important is our ongoing commitment to a robust maintenance program for our built and green infrastructure, ensuring each BMP operates effectively.

Our community outreach and education programs are thriving post-Covid, particularly with the return of WaterFest to its one-day format at Lake Phalen. The weather was perfect for hosting approximately 4,000 attendees and 52 exhibitors for a day to celebrate and learn about our local waters. We also launched a redesigned website to improve user-friendliness, mobile accessibility, and a more comprehensive range of educational content.

Many thanks are due to the state and local agencies, cities, community organizations, schools, Board members, committee members, volunteers, and staff that made 2022 such a success for the District. We look forward to another year of preserving and improving water resources and related ecosystems now and for future generations.



2022 STAFF & PARTICIPANTS

Watershed Staff, Board Members & CAC Advocates

2022 CITIZEN ADVISORY COMMITTEE MEMBERS

Cliff Aichinger John Chikkala Jill Danner Randee Edmundson Hallie Finucane Mark Gernes Jennifer Gruetzman Katheryn Keefer Stuart Knappmiller Dana Larsen-Ramsay Tammy McCulloch Gary Nelson Glen Olson Gary Schroeher Scott Ramsay Karen Wold Stephanie Wang

STAFF LIAISONS

Sage Passi Carrie Magnuson

2022 RWMWD BOARD



Larry Swope
President



Cliff Aichinger
Vice-President



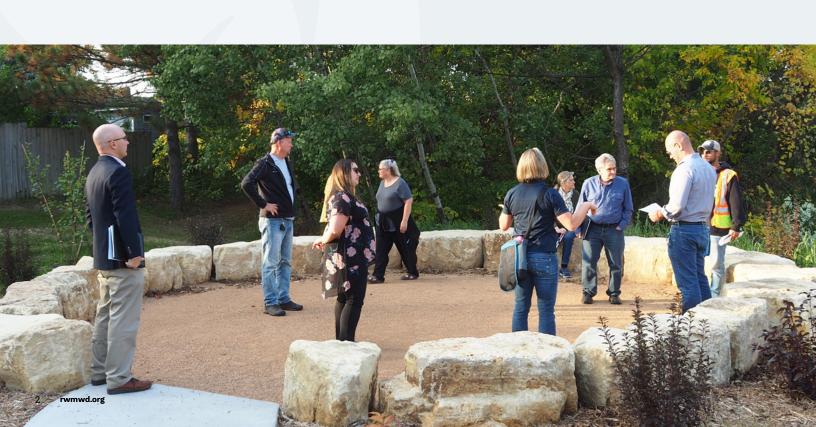
Pam Skinner Secretary



Dianne Ward
Treasurer



Val Eisele Member



2022 RWMWD STAFF

Tina Carstens Administrator

Matt Doneux Natural Resources Technician



Paige Ahlborg
Watershed
Project Manager



Bill Bartodziej Natural Resources Specialist



Simba Blood Natural Resources Technician





Mary Fitzgerald District Inspector



Lauren Hazenson Communications & **Outreach Coordinator**



Eric Korte Water Monitoring Coordinator



Kyle Kubitza Water Monitoring Technician



Carrie Magnuson GIS Technician



Shelly Melser Office Manager



Sage Passi Watershed Education Specialist



Emily Simmons District Secretary



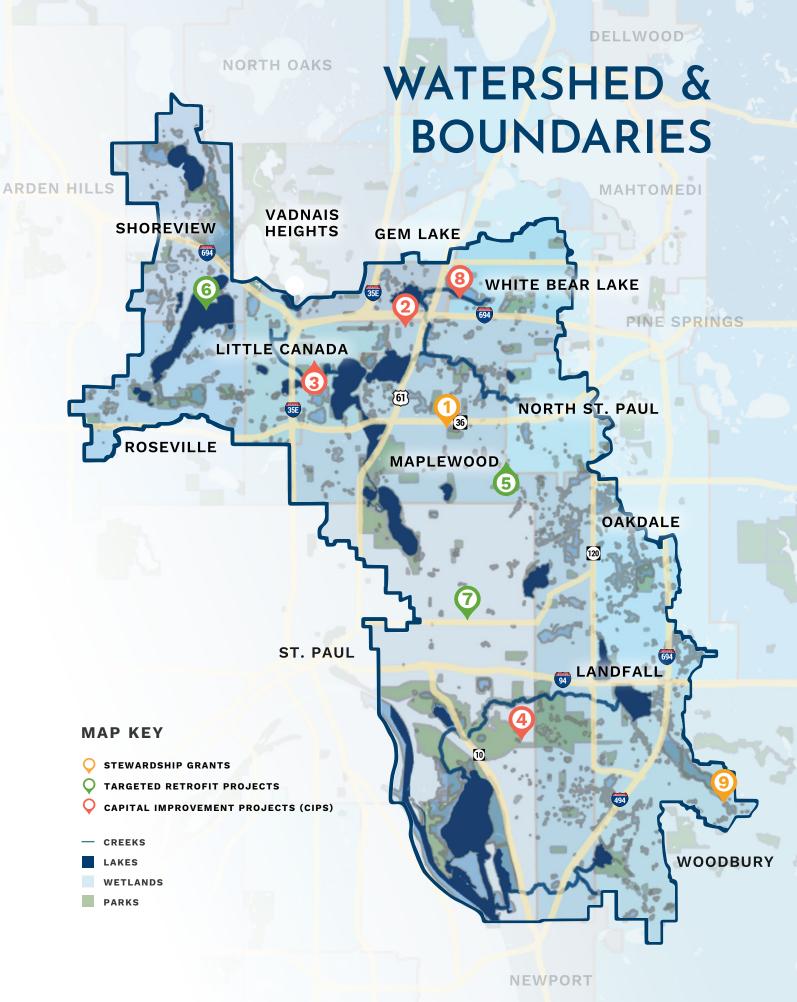
Lyndsey Provos
Water Monitoring Technician



Nicole Soderholm Permit Coordinator



Dave Vlasin Watershed Project Coordinator





View the watershed map to learn about each of the waters we manage.

GRAN'

rwmwd.org/water

STILLWATER

BAYPORT



RAMSEY-WASHINGTON

METRO WATERSHED DISTRICT

OUR MISSION

To PRESERVE and IMPROVE water resources and related ecosystems to SUSTAIN their long-term health & integrity and CONTRIBUTE to the well-being and engagement of stakeholders within the community.

OUR BACKGROUND

Ramsey Washington Metro Watershed
District works across municipal
boundaries to manage about
65 square miles that eventually drain
into the Mississippi River, including
25 lakes, five streams and over
1,000 wetlands.

We contribute funding and technical expertise to water infrastructure projects, help regulate development through permitting, manage natural resources and educate the public on watershed issues. As a special-purpose unit of government, we were established in 1975 under what is now the Minnesota Watershed Act. This provides planning, regulatory and taxing authority to coordinate watershed management efforts between city, county and state agencies.

LAKE ELMO

PROJECTS & LOCATIONS

- Cope Ave Improvements
- County Rd D Washout Repair
- Gervais Creek Improvements
- Lower Afton Rd Drainageway Sediment Removal
- Mounds Park Academy
- 6 Owasso Phase 1 Shoreline Restoration
- St Pascal Baylon Catholic Church
- Willow Creek Headwall Grate
- Woodbury City Hall Improvements



Mounds Park Academy

RWMWD creates and funds large-scale projects that effectively utilize built and natural stormwater infrastructure to create a system resilient to various conditions and weather extremes. Our Capital Improvement Projects and Stewardship Grants aim to deliver effective and long-term benefits by enhancing water quality, mitigating flood risks, and supporting local ecosystems.

Capital Improvement Projects are large-scale efforts to manage flood risk and improve water quality that often involve partnerships across multiple organizations. They include stormwater treatment systems, stormwater outlet control structures, and other stormwater infrastructure improvements. The Stewardship Grant Program offers financial, educational, and technical assistance to protect and improve water resources within our watershed.

COPE AVENUE

When the City of Maplewood identified Cope Avenue from English Street to White Bear Avenue as a prime candidate for reconstruction, they took the opportunity to provide better access to pedestrians and bicyclists. RWMWD partially funded the project to add green space, reducing runoff pollution to Knucklehead Lake, Keller Lake, and other downstream waterbodies. The additional greenspace around a reenvisioned Cope Avenue reduced impervious surfaces by a half acre. Other benefits include less maintenance, reduced salt use in the winter, and traffic calming.



Woodbury City Hall



St Pascal Baylon Church



St Pascal Baylon Church



WOODBURY CITY HALL RAINGARDENS

This parking lot at the Woodbury City Hall was transformed by 20,000 square feet of native plantings, including ten pockets of native gardens and two tree trenches. The existing pervious pavement, which was experiencing drainage problems, also received an upgrade. Native plants were added to the existing rain gardens to improve their look and function.

ST. PASCAL BAYLON CHURCH

Several church parking spaces were reoriented to accommodate an infiltration basin raingarden and a tree trench, which treats stormwater on the 3.5-acre site. The project works with the existing drainage of the site to maximize the impact of the tree trench while leaving much of the space accessible for parking. Stormwater at the church and school drains to Battle Creek, and these improvements will increase water quality by introducing natural filtration to the area.

This example of user-adapted green infrastructure has excited churchgoers. The church's priest, Father Mitchell, expressed that this project has helped build awareness within the congregation and the community around water-related issues.

MOUNDS PARK ACADEMY

This rain garden project, located between the on-site stormwater pond and the parking lot on campus, will treat water that eventually flows to Wakefield Lake. A row of parking near the pond was removed to accommodate a raingarden wrapping around the southern portion of the pond. The restored area also includes an outdoor classroom so students can explore their new natural environment.

LAKE OWASSO SHORELINE RESTORATION GRANTS PHASE ONE

In Spring 2022, RWMWD offered grants to Lake Owasso residential property owners to complete buffer restorations at ten shorelines damaged by prolonged high water levels on Lake Owasso. The project was designed to create a diverse, natural shoreline buffer, establish wildlife and pollinator habitat, filter pollutants from stormwater runoff, and provide competition for invasive species in an aesthetically pleasing manner. The individual sites range from 855 square feet to 3,270 square feet, adding up to a .39 acre restoration. Each site received management for invasive species, bank and shoreline stabilization, and a custom-designed planting of native seed and plant plugs. Each design was adjusted according to the resident's needs, elevation, remnant plant communities, and anticipated soil and hydrologic conditions.

CAPITAL IMPROVEMENT PROJECT MAINTENANCE

RWMWD is committed to keeping our Capital Improvement Projects (CIPs) in optimal working condition. Funds and staff time are allocated each year for maintenance tasks. In 2022, we completed cleanouts at Meadowood, Ventura, and Lake Terrace ponds in Woodbury. The Tanners Wetland weir and the sand filter at Kohlman Basin both received maintenance and other minor equipment repairs were completed throughout the District. A comprehensive update of CIP maintenance work can be found in RWMWD board meeting packets on the District website.



The RWMWD education and outreach team is committed to informing and empowering those who live, work, and play in the watershed to become stewards of their local water resources. Our programs provide science education rooted in local environments, integrating service learning experiences at our restoration sites and in the classroom. Beyond the classroom, we champion best watershed management practices such as sustainable landscaping, smart salting, reducing water pollution, ecological restoration, and conservation of groundwater resources to the community.









LAKE OWASSO

Fifteen 4th-7th grade classes helped transform a degraded Lake Owasso shoreline section that did not offer viable habitat and food for wildlife into a vibrant, restored environment that supports wildlife and protects nearby water resources from runoff and erosion. Pre-lessons over the winter and spring and participation in our annual native plantgrowing indoor activities helped orient many of these classes. Forty Master Gardeners, Water Stewards, and Education staff supported this intergenerational initiative. A \$6,000 grant from the DNR's No Child Left Inside program provided the incentive to purchase a classroom set of binoculars for these classes to observe birds and wildlife at nearby Lake Wabasso and to continue to use them in future projects.

EASTSIDE BOYS AND GIRLS CLUB

In East St. Paul, we continued to grow our stewardship and outreach efforts through our partnership with the East Side Boys and Girls Club and our Water Stewards creation of a display and a fun, hands-on art project with residents of the neighborhood housing community, Roosevelt Homes during the National Night Out event held on the Club's grounds. L'Etoile du Nord fourth graders helped resolve hillside erosion on the Club's grounds by helping plant a trouble spot and completing this large-scale two-year "makeover" native pollinator demonstration garden. In midsummer, Kohl's corporate volunteers also contributed their time to this effort.

ADOPT A DRAIN

RWMWD's involvement in the Adopt-a-Drain program in 2022 added 73 new participants who adopted 131 new drains, giving us a total of 534 participants and raising our total adopted drains to 958. These cities in RWMWD have had the most adoptions: St. Paul (458), Roseville (109), White Bear Lake (92), and Shoreview (80).

WEBSITE REDESIGN

In July, we completed a website redesign, which featured user-friendly improvements to make documents, Board meeting information, best management practice tutorials, and updates more accessible to the general public. The impact on our website analytics was immediate, with the website bounce rate dropping over 40 percentage points over the previous five years.

LIONSGATE ACADEMY

We presented an introductory lesson about watersheds for fourteen science classes at Lionsgate Academy to foster their future engagement in watershed projects. Five of these high school classes helped revitalize the school's alternative turf courtyard by planting native flowers around its perimeter late in the fall with the help of our staff and several Water Stewards. This experience helped prepare students for involvement in future Watershed restoration projects around the District.

MINNESOTA WATER STEWARDS

On August 7, education staff and Water Stewards hosted a table at the Pollinator Festival sponsored by Wakan Tipi Awanyankapi at Lake Phalen. RWMWD gave away native seedlings at this event to promote water-friendly landscaping. On the western edge of our watershed in Roseville. Water Stewards hosted a Water Bar at the Taste of Rose Fest on June 23. They also provided info about drinking water sources and gave out Watershed educational handouts. Water Stewards supported Central Park Elementary's four sixth-grade classes in Roseville by working together to cut down and bag up vegetation in the school's extensive rain garden spring clean-up. In the fall, another four classes spread a large quantity of hardwood mulch in the rain garden with the help of Master Gardeners and Water Stewards and cleaned up leaves together from neighborhood storm drains.

VIDEO-BASED STORYTELLING

We continued to expand our presence on YouTube and Facebook videos with features of Watershed Excellence Award and Landscape Ecology Award winners and an in-depth look at the recently finished Snail Lake Regional Park wetland restoration. The video on the Snail Lake Regional Park wetland won recognition at the Minnesota Watersheds' annual conference. We also developed shorter reels to capture attention and drive traffic to the new website.



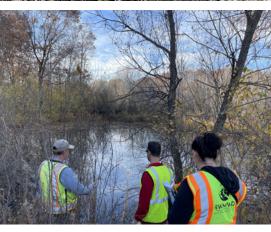






















































2.4 ACRES

of prairie and wetland restoration at Goodrich Golf Course *includes 39 different wet meadow & prairie species

PARTNERS IN RESTORATION

OUR NATURAL RESOURCES PROGRAM IS DEDICATED TO CONSERVING AND RESTORING AQUATIC HABITATS, WETLANDS, AND THEIR SURROUNDING SUBWATERSHEDS. THE CONTINUED SUCCESS OF THESE RESTORATIONS IS OBTAINED THROUGH OUR COMPREHENSIVE MAINTENANCE WORK. WE ALSO MANAGE AQUATIC INVASIVE SPECIES, SUCH AS COMMON CARP, THROUGH INNOVATIVE MONITORING AND REMOVAL METHODS.





of restoration with a mix of 2,688 native grasses and flowers planted at the Lake Owasso shoreline

GOODRICH GOLF COURSE RESTORATION

For nearly 20 years, District natural resources staff and project partners Ramsey County Parks and Recreation have restored no-play zones to native prairie and wetland habitat on Keller Golf Course. These areas enhance the course's natural beauty, create a habitat for native pollinators and wildlife, and improve water quality. Due to the success at Keller, we restored 2.4 acres of no-play areas at the neighboring Goodrich Golf Course in 2022 to diverse prairie and wetland habitats. The restoration now boasts 2.4 acres of 3,792 native plants that add diversity and pollinator habitat to the area and treats water that eventually reaches Wakefield Lake.

CARP MANAGEMENT

Carp numbers have declined due to continued invasive species control efforts, such as barrier installation to limit carp spawning and netting to remove adult carp. Limited carp spawning has been detected in Lake Owasso, Wabasso, and Bennett, indicating that barrier installation in connected ponds and wetlands has been effective. In 2022 Natural Resources staff conducted extensive netting around the barriers and removed 1,476 invasive common carp from Lake Wabasso, Lake Owasso, Lake Bennet, and Gervais Mill Pond. We will assess water quality indicators in lakes that have received carp management to measure any improvement in phosphorus levels and water clarity that can be attributed to carp removal. Carp management is a collaborative effort between the District, Carp Solutions, Ramsey County, the University of Minnesota, the Minnesota Department of Natural Resources, and cities surrounding the managed lakes.

LAKE OWASSO SHORELINE RESTORATION

RWMWD partnered with Ramsey County and secured a Conservation Partners Legacy Grant to restore over 700 feet of shoreline between the boat launch and swimming beach along the northeast shore of Lake Owasso after work was completed at Owasso County Park. Turf grass and invasive species that once littered the Lake Owasso County Park shoreline near the public beach were replaced by 9,960 square feet of upland native grasses and wildflowers. A mix of 2,688 plants will now provide quality habitat to birds and pollinators, stabilize the shoreline with more extended root systems, and filter out pollutants found in stormwater runoff.

Events





4,000+
ATTENDEES

52

Exhibitors & Vendors Participating





























ANNUAL AWARDS

Landscape Ecology Awards Program — L.E.A.P.

The Landscape Ecology Awards Program recognizes landowners and managers in the Ramsey-Washington Metro Watershed District who use innovative practices to benefit water quality and natural resources.

2022 L.E.A.P. RECIPIENTS

- Brian & Linda Adams (White Bear Lake)
- John & Christine Hoffman (Shoreview)
- Tom Reynen & Stephen Gryzan (Shoreview)
- Jennifer Ruhland & Jeff Van De Walker (N. St. Paul)

Watershed Excellence Awards

Watershed Excellence Awards recognize our volunteers and partners who make an extraordinary contribution to watershed conservation, education, and community outreach. These clean water champions are celebrated at our annual ceremony.

INNOVATIVE STEWARDSHIP AWARD — Andy Goble COMMUNITY STEWARD AWARD — Georgiana Harris OUTSTANDING PARTNER AWARD — Dan Latham OUTSTANDING EDUCATOR AWARD — Gretchen Eibs COMMUNITY CONSERVATION ADVOCATE AWARD

Kathleen Juenemann

ROGER LAKE STEWARDSHIP AWARD

- Linda Neilson

Inspection & Permitting















IMPROVED & REVISED PROGRAMS



construction inspections completed

PERMIT AND INSPECTIONS PROGRAM

Multiple government entities can have distinct roles in protecting our waters at the local, state, and national levels. RWMWD, like other watershed districts, acts as a local regulator.

Our permitting standards include requirements for stormwater management, flood control, wetland management, erosion and sediment control, and illicit discharge connection to the District's stormwater conveyance systems. The Wetland Conservation Act (WCA) is a state law administered by the District that regulates projects that impact area wetlands and may come with additional requirements.

Permits are required for development and redevelopment projects that disturb 1 acre or more of soil or involve land alteration to wetlands or floodplains. Permitting rules require that these sites capture 1.1" of rainfall and take measures to prevent erosion and runoff pollution during and after construction.

A complete version of the rules and additional information/guidance can be found at rwmwd.org/permits

WETLAND CONSERVATION ACT ADMINISTRATION

RWMWD is the Local Government Unit responsible for administering the Wetland Conservation Act within its boundaries, except in the City of St. Paul and Minnesota Department of Transportation right-of-way. As a Local Government Unit, the District is responsible for regulating wetlands in the watershed, including reviewing wetland boundaries submitted for

development projects and impacts on wetlands. RWMWD has also completed a District-wide wetland inventory and classification that determines required wetland setbacks for development projects for resource protection and erosion prevention.

2022 UPDATES

Permitting staff began looking into revisions to District rules. This process is done in collaboration with Capitol Region Watershed District (CRWD) to increase regulatory consistency for our shared stakeholders. The Rule revision process will continue in 2023, including drafting proposed Rule revisions, engaging stakeholders through the Districts' Technical Advisory Committee (TAC), and public comment period(s).

	2020	2021	2022
OPEN PERMITS	129	122	119
BOARD APPROVED APPLICATIONS	40	33	37
VARIANCES APPROVED	11	3	5
ACTIVE CONSTRUCTION INSPECTIONS	492	523	413
VIOLATIONS	84	119	83
VERBAL WARNINGS	4	2	11
SURETY (ESCROW) DEDUCTIONS	\$4,650	\$3,335	\$2,635
PERMITS CLOSED	29	40	42
ACTIVE SITES	64	44	47
STORMWATER FACILITY MAINTENANCE INSPECTIONS	Not reported	Not reported	37
WCA APPLICATIONS	22	23	28













of total phosphorus in stormwater flowing through the Frost-Kennard spent lime filer was removed

TESTING THE WATERS

THROUGHOUT THE YEAR, RWMWD CONDUCTS WATER QUALITY MONITORING, TRACKING, AND IMPROVEMENT ACTIVITIES TO KEEP OUR WATERS CLEAN, HEALTHY, AND SAFE USING THE MOST CURRENT AND SCIENTIFICALLY SOUND METHODS. OUR LAKE AND POND WATER QUALITY MONITORING PROGRAM, CONDUCTED IN PARTNERSHIP WITH RAMSEY COUNTY, COLLECTS SAMPLES ON DISTRICT LAKES EVERY TWO TO THREE WEEKS FROM THE BEGINNING OF JUNE THROUGH THE END OF SEPTEMBER. THE VALUABLE DATA WE GATHER IS USED TO SELECT AND PRIORITIZE WATER QUALITY IMPROVEMENT PROJECTS THROUGHOUT THE WATERSHED AND IS ALSO AVAILABLE AS A RESOURCE FOR PUBLIC AND PRIVATE ENTITIES.

2022 WATER MONITORING UPDATES

Overall, there is a long-term trend of improving water quality for District lakes. Water quality indicators are either improving or stable in most District lakes and streams. In 2022, water quality improved in Battle Creek Lake and Gervais Lake, while water quality declined in Casey Lake and Kohlman Lake. For monitored streams (Battle Creek, Fish Creek, Kohlman Creek, Beltline Interceptor, and Gervais Creek) there is also a long-term trend of improving water quality. However, these improvements have plateaued in recent years.

The long-term water quality improvements in District lakes and streams indicate that stormwater best management practices (BMPs) such as the sand and spent lime filters have been successful. These filters and other BMPs implemented over the past decade effectively remove significant amounts of phosphorus.

BEAM AVENUE FILTER

This iron-enhanced sand filter was

first monitored in 2009, with total phosphorus removal ranging from around 75 to 90% from 2009 to 2018. Performance slightly improved in 2021 and 2022. Continued monitoring is planned for 2023, and this will provide valuable information regarding the expected longevity of iron-enhanced sand filters in Minnesota.

WOODLYN AVENUE IRON-ENHANCED SAND-TYPE VEGETATIVE FILTER

In 2022, this filter had over 90% removal for total phosphorus, orthophosphate, and total suspended solids. One potential explanation is that 2022 was a drought year with small rain events, so the potential for phosphorus release was low. Monitoring is planned to be on a rotational basis.

SPENT-LIME FILTERS

Three spent-lime media filtrationtype stormwater best management practices have been constructed in the District.

In 2022, the Frost-Kennard filter had its best removal performance,

with 78% total phosphorus removal, 65% orthophosphate removal, and 93% total suspended solids removal. Monitoring of Frost-Kennard Filter will continue in 2023.

Willow Pond is relatively new and has only been monitored a few times in 2021 and 2022. Additional "start-up" monitoring will be conducted for Willow Pond in 2023.

The Wakefield experimental filter (Wakefield cell) had the spentlime media replaced with iron and granite sand media in 2022. The filter's performance for phosphorus and orthophosphate was mixed with an average removal of 9% and 19%, respectively. Total suspended solids performance improved over the year, but the filter still had minimal removals, with two events releasing suspended solids. One potential reason for this is if the new media was not washed properly and contained additional solids at the time of installation. Monitoring is planned for 2023 to see if the performance improves.

By the Numbers

2022 GENERAL FUND BUDGET

Engineering	\$ 675,000
Attorney	\$ 40,000
Managers	\$ 12,500
Finance/Auditing	\$ 70,000
Miscellaneous	\$ 74,500
Administrative	\$ 2,334,000
Program Activities	\$ 1,024,000

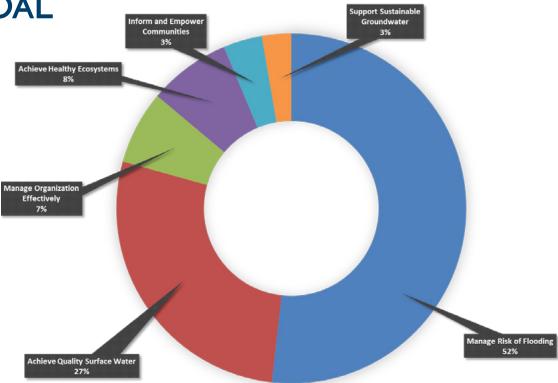
TOTAL = \$ 4,230,000

2022 CAPITAL IMPROVEMENT BUDGET

Maplewood Mall SRF Loan Debt Service	\$ 91,848	
Beltline and Battle Creek Tunnel Repair Debt Service	\$ 302,863	
Targeted Retrofit Projects	\$ 1,500,000	
Stewardship Grant Fund	\$ 1,000,000	
Project Repair & Maintenance	\$ 1,500,000	
Wetland Restoration Projects	\$ 500,000	
Flood Risk Reduction Fund	\$ 5,200,000	
TOTAL BUDGET for 2022	\$ 14,324,711	
TOTAL LEVY for 2022	\$ 6,735,000	
Levy Decrease from 2021	-0.42%	
Levy Decrease from 2021	-0.42%	

TOTAL = \$10,094,711

2022 BUDGET BY PLAN/GOAL



2022 BUDGET BY PROGRAM

