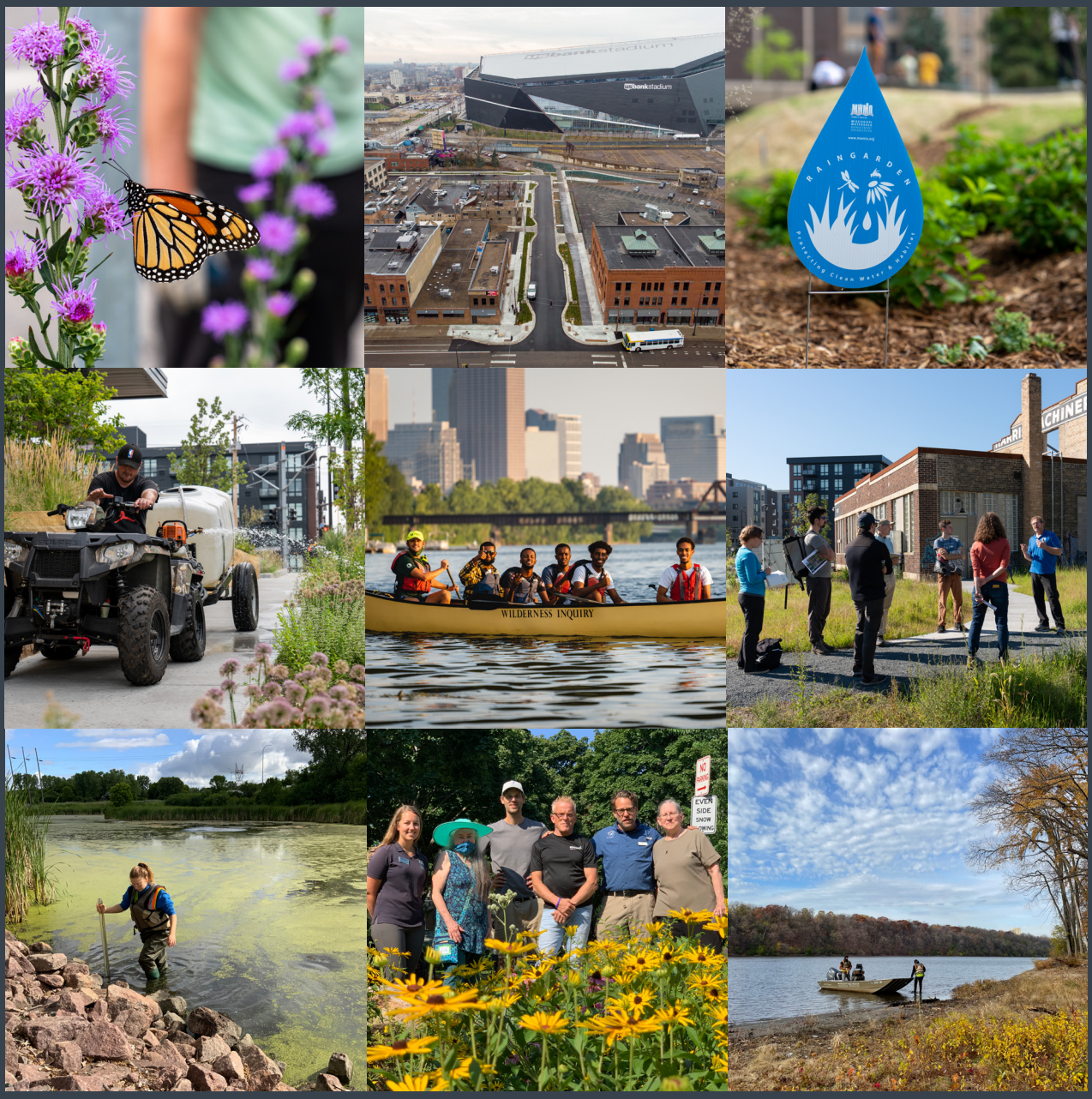
MWMO[SM]

Protect it. Pass it on.

MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

2021 Annual Activity & Financial Report



MWMO Watershed Bulletin: 2022-2

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2021 Annual Activity & Financial Report

Contributing Authors

Doug Snyder, *Executive Director (Former)*
Nancy Stowe, *Projects and Outreach Director*
Udai Singh, *Water Resources Director*
Nick Busse, *Communications Principal*
Dan Kalmon, *Planning Principal*
Alicia Beattie, *Capital Projects and Stewardship Specialist*
Brittany Faust, *Water Resources Specialist (Former)*
Adam Flett, *Communications and Outreach Specialist*
Abby Moore, *Training and Community Learning Specialist*
Michaela Neu, *Youth and Community Outreach Specialist (Former)*
Isabel Seibert, *Administrative and Operations Specialist*

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Photo credit: Mississippi Watershed Management Organization

2021 Annual Activity & Financial Report

Mississippi Watershed Management Organization

Abstract

All metro-area watershed management organizations are required to annually submit an activity report, financial report and financial audit within 120 days of the end of the organization's fiscal year.

This report meets the requirements of the Metropolitan Water Management Act (MS 103B.231) and Minnesota Rules 8410.0150. The intent of an activity and financial report is to provide an annual snapshot or record of where this organization is in meeting its mission, goals and objectives, and what its goals and objectives are for next year. This record is important — not only to meet rule requirements, but also for future organization board and staff members to understand why past decisions were made and directions were taken.

Key components of the required reporting are:

- Budgets and expenditure information
- Annual workplan and evaluation of past workplan
- Status of local water management plan adoption
- Summary of monitoring data
- Permit and enforcement activity
- Status of wetland plans and banking

This report is organized by MWMO areas of expertise and activity. The workplan description is delivered at an area of activity or expertise level, rather than at an individual staff level. Individual workplans are adjusted quarterly to reflect and meet the ever-changing work environment of the MWMO, while areas of activity and expertise needs are driven by annual budget processes of the watershed and its members.

This report may be updated periodically throughout the year. The most recent version will be available on the MWMO's website at mwmo.org.

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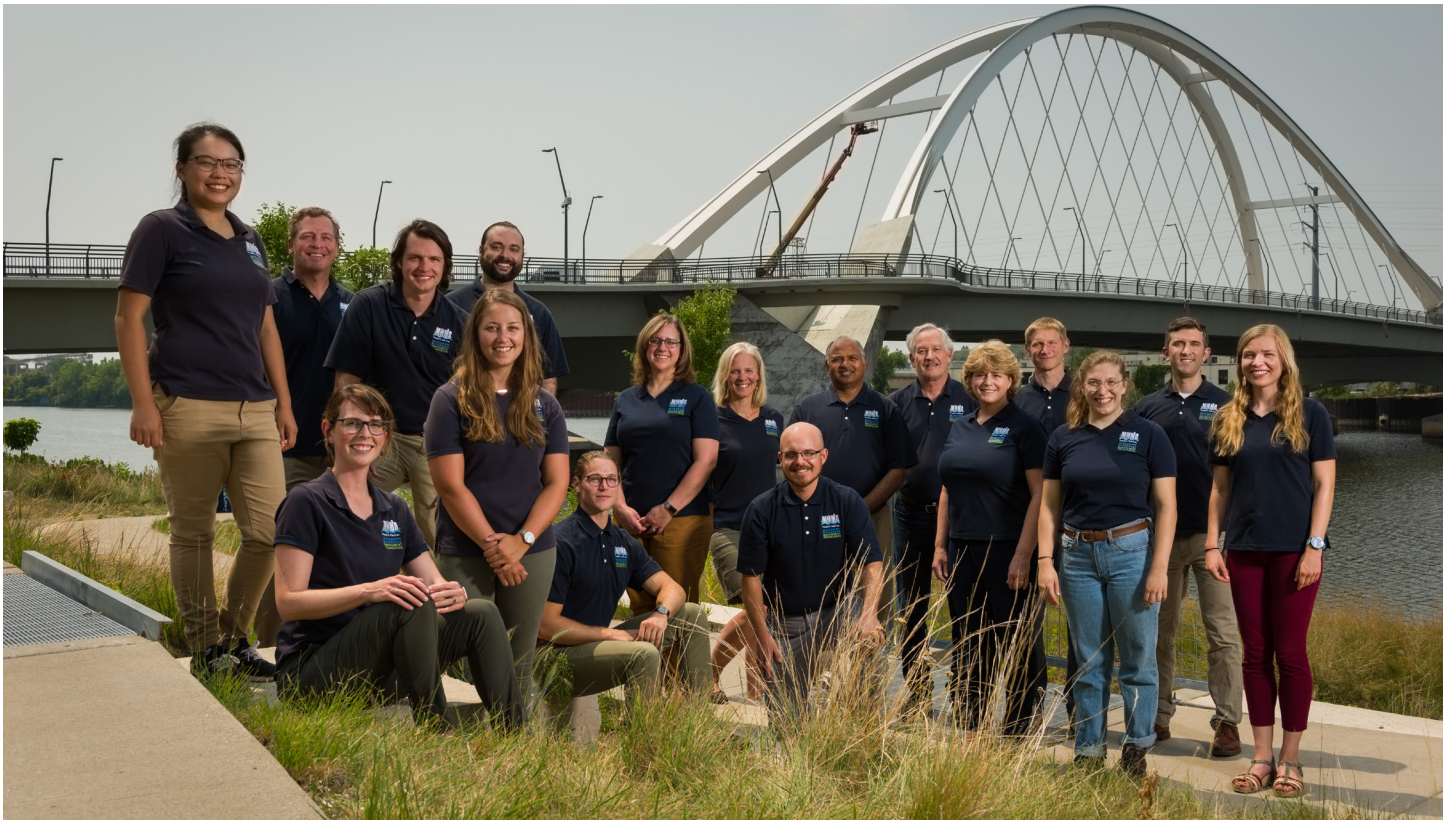

Figure 1. MWMO permanent and seasonal staff in July 2021. From left: Rasmien Vang, Dan Kalmon, Brittany Faust, Brett Eidem, Michaela Neu, Adam Flett, John Mueller, Jennifer Doyle, Abby Moore, Jim Rudolph, Udai Singh, Doug Snyder, Nancy Stowe, Brian Jastram, Chloe Kahn, Nick Busse, and Alicia Beattie.

Organizational Summary

Formation and History

The MWMO encompasses 25,309 acres (39.5 square miles) of fully-developed urban lands and waters within the Minneapolis—Saint Paul metropolitan core area. The original members included the cities of Falcon Heights, Lauderdale, Minneapolis, Saint Anthony Village, and Saint Paul, the Minneapolis Park and Recreation Board, and the University of Minnesota.

Key Events in the History of the Organization

The first draft of the MWMO Plan was published in December 1986. The 1986 plan was prepared to meet the then-current Minnesota Chapter 509 requirements. The 1986 plan addressed surface water quality and quantity, land use, and identified significant point and nonpoint source pollution in the MWMO. It also noted significant groundwater pollution problems from past industrial and commercial practices and stormsewer drainage, but was never approved by the Board of Water and Soil Resources (BWSR) or the MWMO Commission.

In 2000, the University of Minnesota opted out the organization. During second-generation planning (1997-2000, adopted in 2001), the MWMO acknowledged the limits of its member communities to incur additional financial expenses. Consequently, the MWMO developed strategies for new funding mechanisms. The MWMO sought inclusion on the list of Special Taxing Districts (Minnesota Statutes 275.066) and, in 2001, the MWMO became the first joint-powers WMO to receive an ad valorem levy authority necessary to implement plan goals and objectives. In addition, MWMO land in Falcon Heights and Lauderdale was placed in the Capitol Region Watershed District during its formation by BWSR. In September of 2002, the MWMO hired its first two full-time staff members to implement the plan.

The Mississippi River is the MWMO's natural resource focus and the nexus of the urban area we know as the Twin Cities, and the river is the setting for our work. The river itself provides important water-based ecosystem advantages and facilitates many other beneficial activities and services, including: hydroelectricity; barge access; habitat, wildlife corridors, and recreational water-related amenities; industrial, commercial and residential land uses; public drinking water; and stormwater and municipal wastewater discharge. Within the boundaries of the MWMO, surface water either flows directly overland or drains through pipes to the river. All groundwater generally flows toward the river as well.

The MWMO is one of several entities that has developed plans to address critical watershed issues within the MWMO. The MWMO believes coordination of these plans and the entities that drafted them are imperative to successful watershed management. The complex network of private and public (federal, state, regional, municipal, and local) agencies involved in water and natural resource management and land-use planning and development must work together to achieve mutual goals. To put financial and human resources to best use, land use and environmental policies, projects and programs stemming from those agencies must be implemented in a complementary, non-duplicative manner.

In 2011, Six Cities Watershed Management Organization was dissolved. The Cities of Columbia Heights, Fridley, and Hilltop became members of the MWMO in July 2012, joining the Cities of Minneapolis, Saint Paul, Lauderdale, and Saint Anthony Village, and the Minneapolis Park and Recreation Board. These entities entered into a new, revised joint and cooperative agreement (i.e., Joint Powers Agreement under Minnesota Statutes 471.59) that now form the MWMO.

The MWMO Watershed Management Plan was amended to include the area within the new member cities. In 2014, the MWMO went through a staff reorganization to better meet the goals of the organization and to support and coordinate implementation with its members to achieve water quality, water quantity and habitat goals. Depending on the season, the MWMO may have up to 20 staff members across all employment categories–full-time employees, temporary or seasonal employees and interns.

The current plan, approved in January 2022, uses information and data from past studies and actions to address a variety of issues deemed significant by the MWMO Citizen Advisory Committee (CAC), the MWMO Technical Advisory Committee (TAC) and the MWMO Board of Commissioners. This includes new items such as Diversity, Equity, and Inclusion (DEI), climate adaptation, and maintenance of Green Stormwater Infrastructure (GSI).

Vision and Mission Statements

Vision Statement: To lead, to inspire, to act, to educate, and to create a shared vision for a river system with ecological integrity.

Mission Statement: To lead, and to foster stewardship of the watershed with actions that promote civic ownership and responsibility and through measures that achieve diverse and functional ecosystems.

Summary of 2021 Services and Operations

Number of Employees (including seasonal and interns)	21
Number of FTEs	15
FTE Average Length of Service	6.33 years
FTE Turnover Rate	13.3 percent
Capital Improvements and Initiatives Revenue	$3,700,000
Capital Asset Replacement Revenue	$200,000
Operating Revenue	$1,955,000
Total Levy	$5,950,000

Board of Commissioners

The governing body of the MWMO is its commission, which consists of seven voting commissioners. All appointments to the commission are made in accordance with Minnesota Statutes 103B.227 and Articles III and IV of the MWMO Joint and Cooperative Agreement. These statutes and articles together lay out the appointment process and powers of the MWMO Board of Commissioners.

Notices of all vacancies and appointments shall be published at least 15 days prior to filling a vacancy in a legal publication of the member's community seeking a commissioner. The council of each member shall appoint one commissioner to represent the member to the commission. Each commissioner shall serve until his or her successor is appointed.

Member councils may select and appoint alternates to the commission in the same manner as commissioners. In the absence of a member's commissioner, the designated alternate may vote and act in the commissioner's place. The alternate shall serve a term concurrent with the member's commissioner. The council of each member shall determine the eligibility and qualifications of its commissioner and alternate.

Commissioners

Commissioner Kevin Reich, City of Minneapolis, Chair
350 South 5th Street, Room 307, Minneapolis, MN 55415
612-673-2201

Commissioner Steve Eggert, City of Fridley, Vice-Chair
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Commissioner Randy Stille, City of Saint Anthony Village, Treasurer
3301 Silver Lake Road, Saint Anthony, MN 55418
612-782-3301

Commissioner Jeffrey Dains, City of Lauderdale
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Commissioner Chris Meyer, Minneapolis Park and Recreation Board
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Commissioner Nick Novitsky, City of Columbia Heights and City of Hilltop
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Commissioner for City of Saint Paul
Open

Alternate Commissioners

Alternate Commissioner Steve Fletcher, City of Minneapolis
350 South 5th Street, Room 307, Minneapolis, MN 55415
612-203-1459

Alternate Commissioner Mary Gaasch, City of Lauderdale
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Alternate Commissioner Jan Jenson, City of Saint Anthony Village
3301 Silver Lake Road, Saint Anthony, MN 55418
612-782-3301

Alternate Commissioner Bertha Risdahl, City of Hilltop and City of Columbia Heights
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Alternate Commissioner Kale Severson, Minneapolis Park and Recreation Board
2117 West River Road, Minneapolis, MN 55411
612-230-6443

Alternate Commissioner Tom Tilberry, City of Fridley
2522 Marshall Street NE, Minneapolis, MN 55418-3329
612-746-4970

Alternate Commissioner for City of Saint Paul
Open

Citizen Advisory Committee

The MWMO Citizen Advisory Committee (CAC) meets at the request of the MWMO Board of Commissioners to assist in managing the water resources of the MWMO. The scope of responsibilities for the CAC include reviewing funding proposals (e.g., Planning and Action Grants through the Stewardship Fund program), reviewing the MWMO's annual capital budget, and participating in planning for the watershed. Other responsibilities may be assigned to the CAC by the Board of Commissioners as needed. The CAC provides review and feedback in the form of recommendations to the Board of Commissioners.

Applications are accepted year-round, and open positions are filled throughout the year. Applications submitted to replace incumbents are due by December 15 each year. Appointments are for one year and are renewable annually. Up to two at-large positions may be filled by people who live outside of the MWMO boundaries. All CAC members may be contacted through the MWMO office.

CAC Positions

Columbia Heights (one)
Joe Schluender

Fridley (one)
Nick Olberding

Hilltop (one)
Open

Lauderdale (one)
Open

Saint Anthony Village (one)
Lona Doolan

Saint Paul (one)
Open

Minneapolis (five)

Nicole Menard	North
Perry Dean	Northeast
Craig Larson	South
Ann Lewandowski	Southwest
Open	Downtown

At-Large Positions (five)

Mary Fitzgerald	Minneapolis
Joe Handtmann	Minneapolis
Sam Westlund	Minneapolis
William Risse	Saint Anthony Village
Open	

Staff

The MWMO Board of Commissioners first hired staff in September of 2002. The Board of Commissioners first established, and now maintains, personnel policies and structures to attract and retain qualified personnel to implement MWMO activities. This is accomplished by encouraging continual performance improvement through a well-administered training, salary and performance-review programs. In addition to its own full-time employees, the MWMO shares employees with the City of Saint Anthony Village in the areas of human resources and financial management, and the MWMO hires part-time regular and seasonal employees and interns as needed to complete its annual plan of work.

2021 MWMO Staff

Executive Director
Douglas Snyder
dsnyder@mwmo.org
612-746-4971

Projects and Outreach Director
Nancy Stowe, PE
nstowe@mwmo.org
612-746-4978

Water Resources Director
Udai Singh, PhD, PE
usingh@mwmo.org
612-746-4980

Communications Principal
Nick Busse
nbusse@mwmo.org
612-746-4974

Planning Principal
Dan Kalmon, AICP
dkalmon@mwmo.org
612-746-4977

Capital Projects and Stewardship Specialist
Alicia Beattie
abeattie@mwmo.org
612-746-4989

Water Resources Specialist
Brittany Faust
bfaust@mwmo.org
612-746-4992

Communications and Outreach Specialist
Adam Flett
aflett@mwmo.org
612-746-4988

Monitoring and Instrumentation Specialist
Brian Jastram
bjastram@mwmo.org
612-746-4985

Training and Community Learning Specialist
Abby Moore
amoore@mwmo.org
612-746-4981

Environmental Specialist
John Mueller
jmueller@mwmo.org
612-746-4998

Youth and Community Outreach Specialist
Michaela Neu
mneu@mwmo.org
612-746-4975

Environmental Specialist
Jim Rudolph
jrudolph@mwmo.org
612-746-4987

Administrative and Operations Specialist
Isabel Seibert
iseibert@mwmo.org
612-746-4982

Water Quality Intern
Stephen Boler

Water Quality Intern
Lucas Clapp

Water Quality Intern
Chloe Kahn

Water Quality Intern
Rasmien Vang

FT Employees Leaving the MWMO in 2021

Project Planning and Implementation Specialist
Brett Eidem

Admin and Project Support Specialist
Sadie Loose

2021 Shared Staff

The MWMO shared the following staff with the City of St. Anthony Village in 2021:

Accountant
Ka Vue
ka.vue@ci.saint-anthony.mn.us
612-782-3334

Finance Director
Shelly Rueckert
shelly.rueckert@ci.saint-anthony.mn.us
612-782-3316

Human Resources Coordinator
Jennifer Doyle
jennifer.doyle@ci.saint-anthony.mn.us
612-782-3315

Consultants

In accordance with Minnesota Statutes 103B.227, subdivision 5, the MWMO sends out requests for proposals for legal, professional and technical (engineering) and consultant services at least once every two years (in the fall of even-numbered years). At its annual business meeting in January, the MWMO Board of Commissioners reviews and approves a list of approved consultants. The board reserves to right to alter the list at any point in order to meet the needs of the organization.

The following is a list of organizations that provided services to the MWMO in 2021:

Accounting

City of Saint Anthony Village
3301 Silver Lake Rd.
St. Anthony, MN 55418
651-782-3301

Financial Audit

Redpath and Company
55 E. Fifth St., Ste. 1400
St. Paul, MN 55101
651-426-7000

Engineering

Barr Engineering
4700 W. 77th St.
Minneapolis, MN 55435-4803
952-832-2600

Emmons and Olivier Resources
651 Hale Ave. N.
Oakdale, MN 55128
651-203-6001

HGA
420 N. 5th Street
Minneapolis, MN 55401
612-758-4000

Houston Engineering, Inc.
6901 East Fish Lake Rd., Ste. 140
Maple Grove, MN 55369-5400
763-493-4522

Inter-Fluve
2121 Randolph Ave., Ste. 200
St. Paul, MN 55105
651-243-9700

RESPEC
1935 County Rd. B2 West, Ste. 230
Roseville, MN 55113
651-305-2280

TKDA
444 Cedar St., Ste. 1500
UBS Plaza
St. Paul, MN 55101
651-292-4400

Stantec
2335 West Highway 36
St. Paul, MN 55113
651-636-4600

Wenck Engineering
P.O. Box 249
1800 Pioneer Creek Center
Maple Plain, MN 55359
763-479-4201

WSB and Associates, Inc.
763-541-4800
701 Xenia Ave. S., Ste. 300
Minneapolis, MN 55416

Payroll and Financial Services

City of St. Anthony Village
3301 Silver Lake Rd.
St. Anthony, MN 55418
651-782-3301

Banking and Investments

4M Fund
5298 Kyler Ave. NE
Albertville, MN 55301
763-497-1490

Multi-Bank Securities, Inc.
1000 Town Center, Ste. 2300
Southfield, MI 48075

Northeast Bank
77 Broadway St. NE
Minneapolis, MN 55413
612-379-8811

Pershing, LLC
1 Pershing Plaza
Jersey City, NJ 07399

Legal

Kennedy and Graven, Chartered
470 Pillsbury Center, 200 S. 6th St.
Minneapolis, MN 55402
612-337-9215

Information Management and Technology

City of Roseville Management Information Services — Metro-INET
2660 Civic Center Dr.
Roseville, MN 55113
651-792-7092

Other Service Providers

Anoka Conservation District
1318 McKay Dr. NE
Ham Lake, MN 55304
763-434-2030

Ruth Murphy
442 Summit Ave.
St. Paul, MN 55102

Fortin Consulting
215 Hamel Rd.
Hamel, MN 55340
763-478-3606

Metropolitan Council Environmental Services
455 Etna St.
St. Paul, MN 55304
763-434-2030

MMC Associates
1312 Portland Ave.
St. Paul, MN 55104
651-647-6816

St. Anthony Falls Laboratory, University of MN
2 Third Ave. SE
Minneapolis, MN 55414
612-624-4363

Three Rivers Park District
3000 Xenium Ln. N.
Plymouth, MN 55441
763-694-7651

Freshwater Society
2424 Territorial Rd., Suite B
St. Paul, MN 55114
651-313-5800

Wilderness Inquiry
808 14th Ave. SE
Minneapolis, MN 55414
612-676-9400

Communications/Website

Mary Milla
401 N. 2nd St. #216
Minneapolis, MN 55401
612-339-0505

SRF Consulting Group, Inc.
3701 Wayzata Boulevard, Suite 100
Minneapolis, MN 55416-3791
763-452-0010

Windmill Strategy
1227 Tyler St. NE #180
Minneapolis, MN 55413
612-521-4286

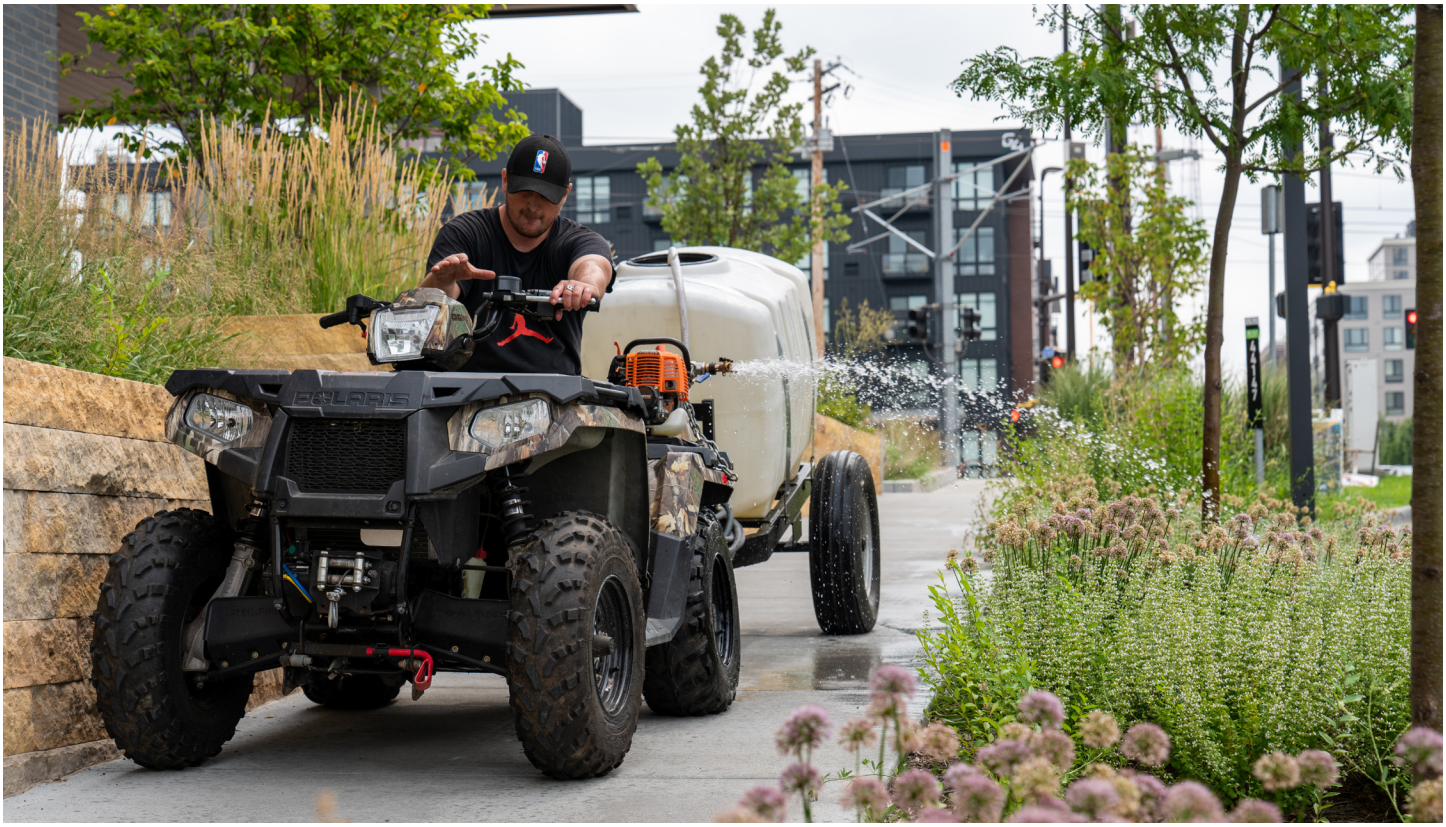

Figure 2. A maintenance worker waters native plants in the boulevard along 4th Street SE in Minneapolis using recycled stormwater runoff from the Towerside District Stormwater System in August 2021.

Capital Project Grants

Purpose

The MWMO's capital project grants fund projects that protect and improve water quality and ecosystem health within the MWMO watershed. These projects provide unique and innovative solutions for stormwater management in highly developed urban areas. They also provide opportunities for community partnerships to build understanding, knowledge, and initiative related to water, habitat, and natural resource issues and solutions.

Objectives

- Encourage the integration of the stormwater system with other infrastructure systems — e.g., energy, water supply and reuse, and wastewater treatment — to create greater efficiencies for all infrastructure systems.
- Participate as members of project teams from ideation through design and implementation.
- Build the MWMO's capital improvement project (CIP) list with opportunities to collaborate

on capital projects that meet both MWMO and member organization goals.

- Strengthen our ability to reach key audiences by collaborating with other MWMO activity areas.
- Leverage funding sources to acquire key parcels of land within the MWMO that will lead to establishment of water quality and habitat improvements.

2021 Implementation

In 2021, the MWMO completed, entered into, continued agreements, or allocated capital funds, for the following capital projects:

26th Avenue North Overlook

The Minneapolis Park and Recreation Board (MPRB) built a river overlook at 26th Avenue North. Also known as the Great Northern Greenway Overlook, the project consists of a large beacon and cantilevered viewing platform to connect North Minneapolis residents to the river. The overlook, beacon, and plaza are designed to provide an iconic and dynamic community place that serves as a catalyst for future park development.

The MWMO partnered with the MPRB to stabilize the riverbank with a vegetated reinforced soil slope (VRSS). This included minor grading, soil amendments, and native plants to capture site runoff while adding pollinator habitat within the Mississippi River Corridor Critical Area (MRCCA). The project incorporates cultural and historical interpretive opportunities in collaboration with the community and Juxtaposition Arts. The project construction is complete. The MWMO and the MPRB completed final plant establishment in spring 2021 and the project will be assessed again in spring 2022.

More details are available at mwmo.org.

4th Street SE Landscape for Habitat

The MWMO modified a grant agreement with Towerside to pay for two of years maintenance expenses that occurred during the build-out of a pollinator and migratory bird habitat project along a four-block stretch of SE 4th Street between Malcom Avenue SE to 25th Avenue SE.

8th Street Stormwater Planters

The MWMO partnered with the City of Minneapolis and the Downtown Improvement District to construct five stormwater planters along a one-block stretch of South 8th Street in Downtown Minneapolis. These bioinfiltration basins will capture and treat runoff from the street, sidewalks, and nearby alleys. The project will remove an estimated 200 pounds of total

suspended solids and 1 pound of total phosphorus annually. The MWMO continues to monitor these planters to collect data on infiltration rates, total volume captured, and vegetation health. Placement of final soil amendments and planting of trees and sedges was completed in spring 2020. The MWMO worked with partners to develop an operations and maintenance plan defining partner roles and responsibilities.

More details are available at mwmo.org.

Columbia Stormwater Pretreatment

The MWMO and the City of Minneapolis installed a stormwater pretreatment unit known as a hydrodynamic separator at the intersection of 35th Avenue NE and NE Tyler Street to help ensure the long-term functionality of the Northern Columbia Golf Course and Park BMPs project to the west (downstream). The system is designed to screen, separate, and trap trash, debris, sediment, and hydrocarbons from stormwater runoff. The project coincided with the city's replacement of a stormsewer system on 35th Avenue NE, which made this the most cost-effective time to install a pretreatment unit. The city replaced an estimated 4,300 feet of storm pipe (35th Avenue NE from Central Avenue NE to Ulysses Street NE, and Tyler Street NE from 35th Avenue NE to 36th Avenue NE) with larger pipes to reduce surface flooding in the neighborhood. Manholes and catch basins in the project area were also replaced. The project was completed in 2020 and MWMO funding was released in 2021.

More details are available at mwmo.org.

Downtown East Green Infrastructure

The MWMO provided $500,000 to the City of Minneapolis to implement green stormwater infrastructure (GSI) as part of a street reconstruction project in the area just north of U.S. Bank Stadium in Downtown Minneapolis. A combination of curb cuts, boulevard bioswales, and a large filtration basin will filter stormwater pollutants and help mitigate flooding in the area. The project is significant in that it is among the first GSI projects within the downtown core right-of-way. The new filtration basin captures and treats runoff from a total of 4.3 acres, removing an estimated 4.8 pounds of total phosphorus and 946 pounds of sediment annually. This project also helps relieve flooding through a new drill-hole connection for filtered runoff from the newly installed GSI to the stormsewer system. The project's stormwater features will be highly visible as they are located near U.S. Bank Stadium, the Guthrie Theater, and a number of downtown businesses. This will provide potential future educational and interpretation opportunities at the site. Construction of the green infrastructure began in October of 2021, and plant establishment will be the focus in 2022.

More details are available at mwmo.org.

Hoyer Heights Tree Trenches

The City of Minneapolis installed a series of stormwater-absorbing tree trenches along portions of Fillmore Street NE, Buchanan Street NE, and Lincoln Street NE (south of 37th Ave NE) in Hoyer Heights as part of a street reconstruction project. This pilot project is among the first in the city to capture and treat runoff directly from the street in a residential neighborhood using a type of stormwater best management practice (BMP) called a tree trench. The design includes curb cuts that allow stormwater runoff to feed directly from the street into the tree trenches, which then filter out pollutants.

The project was planned as part of the Northeast Stormwater Management Initiative, which seeks to improve water quality and flood resiliency in Columbia Park (including Columbia Golf Course) and the surrounding neighborhoods. Construction of the tree trenches, including plantings, was completed in the summer/fall of 2020, with follow-up grading completed in 2021. Vegetation health will be assessed again in spring 2022.

More details are available at mwmo.org.

Metro Transit Bus Garage

The MWMO worked with Metro Transit to design and implement a stormwater reuse system that will be used for washing buses at a new bus operations and maintenance facility in North Minneapolis. The system utilizes a 40,000-gallon underground cistern and multiple filtration methods to capture and treat runoff from the building's roof. This will allow facility staff to conserve up to 13,000 gallons of potable water each day, and up to 2.5 million gallons of water per year. The facility is currently under construction and is expected to open in late 2022.

More details are available at mwmo.org.

Northern Columbia Golf Course and Park Stormwater BMPs

Following extensive outreach and engagement in 2019, the MWMO and its partners began installation of new stormwater best management practices (BMPs) at the Columbia Golf Course and Columbia Park in October 2020. The project expanded an existing wet stormwater pond and constructed one dry pond and one bioinfiltration basin at the golf course and nearby park, along with the necessary stormsewer improvements to convey the stormwater in and out of them. Part of the Northeast Stormwater Management Initiative, these upgrades will improve water quality, restore habitat, enhance the playability of the golf course, and improve the flood resiliency of the park, golf course and upstream neighborhoods. Construction and habitat

restoration work is expected to be completed in 2022, with ongoing BMP maintenance and vegetation management.

More details are available at mwmo.org.

Towerside District Stormwater System

This project is part of a larger redevelopment effort that seeks to establish an urban innovation district. This district stormwater demonstration project will model the difference between a conventional stormwater system layer that provides a singular treatment and conveyance function and an integrated district stormwater system that manages stormwater as a valued resource and redesigns stormwater infrastructure at a net savings to public spaces. The stormwater park, district infrastructure, and reuse tank have all been installed. In 2021, the reuse tank was reconditioned and waterproofed, and the ultraviolet (UV) treatment system was brought online. The system includes 27,000 CF of storage, pumps, UV treatment, and reuse lines that serve four private developments and the Minneapolis Park and Recreation Board's new park and community gardens in Towerside.

More details are available at mwmo.org.

Upper Harbor Terminal District Stormwater 60-Percent Design

In 2021, MWMO staff continued to work with the City of Minneapolis, the Upper Harbor Terminal development team, the Minneapolis Park and Recreation Board, and neighborhood representatives to develop a shared public/private district system that manages stormwater, habitat, privately owned public space, and informal trails.

The MWMO Board of Commissioners approved new funding for 60-percent design and public engagement at Upper Harbor Terminal. At the start of 60-percent design, MWMO staff developed a graphic that compared the city's current site plan with MWMO's project goals.

Water Works Stormwater Reuse System

The Minneapolis Park and Recreation Board (MPRB) led the creation of a new park along the Mississippi River at a highly visited area adjacent to the Stone Arch Bridge in Downtown Minneapolis. Part of the RiverFirst initiative, the project implemented a long-term vision for the area, integrating historical features of the city with park space, green infrastructure, and stormwater reuse within its park pavilion.

The MWMO funded a stormwater reuse system that will collect and treat roof runoff from the existing rooftops of adjacent buildings. This water will be used for irrigation at the Water Works site and toilet flushing in the pavilion. The 67,770-gallon storage tank is projected to conserve and reuse up to 970,000 gallons a year. The stormwater reuse system was installed in

late 2019, and MWMO staff worked with the MPRB to get the system online in 2021, in addition to adding interpretive elements for the project. The project is scheduled to be completed in 2022.

More details are available at mwmo.org.

Funding Availability and Outcomes

Table 1 on the following page shows the funding spent or anticipated to be spent over a three-year window for each MWMO capital project. Amounts spent are rounded to the nearest $1,000. Capital projects are either identified in the MWMO's Watershed Management Plan or are awarded funding through a competitive grant application process. Each year, funding is made available to allow for the completion of the projects identified in the plan ($2.7 million allocated for 2021). In addition to MWMO funding, several projects are supported by additional funders.

Table 1. Capital Project Grants Implementation

Implementation Table	2020	2021	2022
CIP Budget	$2,500,000	$2,700,000	$2,700,000
2333 Jackson Street NE Blue Roof	$116,000	--	--
26th Avenue Overlook	$45,000	$5,000	--
4th Street SE Landscape for Habitat	$15,000	$56,000	$44,000
8th Street Stormwater Planters	$278,000	$7,000	--
Columbia Heights City Hall Snowmelt System	--	--	$132,000
Columbia Stormwater Pretreatment		$144,000	$16,000
Downtown East Greening	--	--	$500,000
Eastside Maintenance Facility[1]	$570,000	--	--
Focus Arts Rooftop Farm	--	--	$200,000
Hiawatha Collegiate High School Stormwater Reuse	$18,000	--	--
Hoyer Heights Tree Trenches[2]	$365,000	$73,000	$84,000
Islands of Peace Park Restoration	$140,000	--	--
Juxtaposition Arts Campus Expansion	--	$13,000	$203,000
Metro Transit Bus Garage	$344,000	$16,000	$40,000

1 A $18,400 Metropolitan Council grant supported the project.

2 $113,459.00 will be reimbursed through Board of Water and Soil Resources (BWSR) Minnesota Clean Water Fund watershed-based funding grant.

N. Columbia Golf Course and Park Stormwater BMPs[3]	$1,327,000	$5,046,000	$1,007,000
NorthPoint Health and Wellness Center Expansion	--	--	$316,000
Northrup King Campus Redevelopment Project	--	--	$187,000
Old Bassett Creek Tunnel Phase II Cleanout	$126,000	--	--
Towerside District Stormwater System	$315,000	$138,000	--
Upper Harbor Terminal District Stormwater 60% Design	--	$272,440	--
Water Works Stormwater Reuse System	$800,000	--	$100,000
Xcel Energy Marshall Operations Center	--	--	$295,000

Below is a summary of progress made towards MWMO's Watershed Management Plan Goals via capital projects. The projects are associated with the year they have been deemed substantially complete.

Projects implemented in 2019 included: 2333 Jackson St NE Blue Roof; 26th Avenue Overlook; 4th Street SE Landscape for Habitat; 8th Street Stormwater Planters; Eastside Maintenance Facility; Edison Safe Routes to School; and the Water Works stormwater reuse system.

Projects implemented in 2020 included: Columbia Stormwater Pretreatment; Hoyer Heights Tree Trenches; Islands of Peace Park Restoration; Metro Transit Bus Garage; and Old Bassett Creek Tunnel Phase II Cleanout. Please note that the Old Bassett Creek Tunnel Phase II Cleanout was a one-time removal of sediment and pollutants.

Projects implemented in 2021 included: Downtown East Greening.

Table 2. Capital Project-Related Watershed Management Plan Goals and Measures Achieved

Water Quality and Quantity	2019	2020	2021
Total Number of Projects	7	7	1
Total Annual TSS Removed (lbs.)	2,860	2,860	946
Total Annual P Removed (lbs.)	15.65	15.65	4.8
Total Volume Reused (gal.)	1,100,000	1,100,000	0
Total Volume Infiltrated (cu. ft.)	836,604	836,604	0

3 $800,000 will be reimbursed through a BSWR grant (via the state's Clean Water, Land and Legacy Amendment) and $100,000 will be reimbursed through a Hennepin County Natural Resources Opportunity Grant. Up to $2,908,012 will be reimbursed by the City of Minneapolis. There is a separate contract (amended) with SRF Consulting for bidding and construction service (not to exceed $679,799.00).

Urban Stormwater Management	2019	2020	2021
Types of BMPs Installed			
Infiltration Basin	1	1	0
Cistern	3	0	0
Filtration Basin	8	0	1
Permeable Pavement	0	0	0
Iron-Enhanced Sand Filter	0	0	0
Pretreatment	0	0	0
Streambank Stabilization	1	1	0
Habitat Restoration	2	1	0
Tree Trench	0	1	0

Ecosystem Health	2019	2020	2021
Vegetation Added (sq. ft.)	29,833	--	11,536
Trees Added	87	--	35

2022 Workplan

Several projects were underway in 2021 that will be finalized and reimbursed in 2022. Those projects include:

- Columbia Stormwater Pretreatment
- Hoyer Heights Tree Trenches
- Metro Transit Bus Garage

In addition, eight new capital projects will get underway in 2022:

4th Street SE Landscape for Habitat

MWMO will finalize a grant to Towerside to cover ongoing maintenance expenses for new pollinator and migratory bird habitat along a four-block stretch of SE 4th Street between Malcom Avenue SE to 25th Avenue SE.

Columbia Snowmelt System

The City of Columbia Heights' snowmelt system will serve approximately 5,000 square feet of exterior sidewalk and parking garage driveway area at the new City Hall, located at the corner of 40th Avenue NE and Central Avenue NE. This system is designed to eliminate the need for chloride-based (i.e., salt) deicers used to melt ice in the winter. Without the snowmelt system, and even if conservative salt application would be practiced at a rate of 1 pound of salt per 250 square feet, about 20 pounds of de-icing salt would be applied after each snow event, which would have been enough to contaminate up to 7,600 gallons of water. In addition to saving the city money, the system will eliminate the need for an amount of salt that could contaminate an estimated 121,000 gallons per year of stormwater runoff that flows to the Mississippi River.

Focus Arts Rooftop Farm

This project is an innovative stormwater reuse system for a rooftop farm at the Focus Arts Building, located in the Seward Neighborhood of Minneapolis. The project's goal is to capture and reuse stormwater runoff and waste heat to support a self-sustaining, year-round urban farm. Runoff from the building's roof will be conveyed into cisterns, cleaned, and used to irrigate the crops, while waste heat from a glass arts studio in the building will be used to heat a rooftop greenhouse.

The project is part of the 3.5-acre Seward Commons redevelopment, which has transformed a formerly polluted industrial property into mixed-use buildings featuring mixed-income, multifamily housing near the Franklin Avenue light rail station. The water reclamation plan, heat reclamation concept, and project design were developed using a travel grant from the Bush Foundation, a capital grant from the McKnight Foundation, and a Stewardship Fund Planning Grant from the MWMO. Construction of this project is anticipated as early as August 2022 and as late as spring 2023.

NorthPoint Health and Wellness Center Expansion

Construction of a stormwater-friendly landscape for the expanded NorthPoint Health and Wellness Center in North Minneapolis will take place in 2022. Stormwater management on-site will include a raingarden, modular wetlands, and underground storage with a stormwater reuse system. This system will be constructed to manage stormwater from a portion of the new building, the plaza, and new parking lot. The MWMO has been partnering with Hennepin County on this initiative since 2018. During 2020, the project was redesigned to come up with a more cost-effective solution to achieve the county's goals for the project. Construction of the project is anticipated to begin in May 2022.

More details are available at mwmo.org.

Northrup King Campus Redevelopment

The Artspace Projects, Inc., (Artspace), a nonprofit arts organization specializing in creating, owning, and operating affordable spaces for artists and creative businesses, received approval for an MWMO Capital Project Grant of up to $750,000 for the Northrup King Campus Redevelopment Project. The Northrup King Campus is approximately 13 acres and is located at 1500 Jackson Street NE in the City of Minneapolis.

Design work and cost estimates for stormwater management and habitat enhancement features were refined in 2021. The applicant proposed multiple ways to improve stormwater management for this historic site that currently has no stormwater practices, including two filtration tanks, a combined rate control and treatment tank (with up-flow filter), permeable pavement areas, tree trench filtration systems, sunken trenches along streets, bioswales, runnel conveyance, and reuse/cisterns. The project also includes native and pollinator friendly plantings. Construction of the project is anticipated to begin in fall 2022.

More details are available at mwmo.org.

Towerside District Stormwater System

In 2022, the MWMO will carry out final inspections of the storage system and the common reuse system during spring startup. Once completed, staff will send a close-out letter to owners of the system confirming that all systems are fully commissioned and operational. This will mark the end of any capital obligations MWMO has related to the build-out and commissioning of the Towerside District Stormwater System. All future costs of the system will be the responsibility of the private landowners.

Upper Harbor Terminal District Stormwater 60-Percent design

In 2022, MWMO staff will continue to work with Upper Harbor Terminal (UHT) partners and neighborhood representatives to advance 60-percent design of a district system that meets the MWMO's project goals. We will develop materials that help us communicate with partners how the physical improvements on the site and lasting changes in policy, ordinances, and standards will establish a sliding scale of MWMO funding available for the project. We will also write a draft memorandum of understanding (MOU) that will be discussed and refined by all of the partners. This MOU will ultimately become a long-term contract including fees, capital costs, and operations and maintenance roles, and the final declaration document to record against parcels at UHT.

Xcel Energy Marshall Operations Center

The MWMO is providing grant funding to Xcel Energy for a project to provide water quality and habitat improvements at its planned office facility in Northeast Minneapolis, to be located

at the northwest corner of St. Anthony Parkway and Marshall Street NE. The funding will be used for a variety of pollinator and wildlife habitat improvements, as well as stormwater best management practices (BMPs). The project will remove most of the invasive plant species and install a variety of native trees, shrubs, and perennials.

A variety of stormwater treatment systems are also integrated into the design, including infiltration basins, vegetated swales, and pretreatment structures. Together, these will remove an estimated 95 percent of phosphorus and sediment from the site's stormwater runoff. The redeveloped site will serve as a connection between several existing prairie and woodland habitat areas near the Mississippi River. Xcel Energy also plans site amenities such as a walking path, patio area, and interpretive features to educate visitors on the stormwater and habitat features. Project partners include Loucks and RSP. Construction of the site's landscaping is planned to start in the summer of 2022.

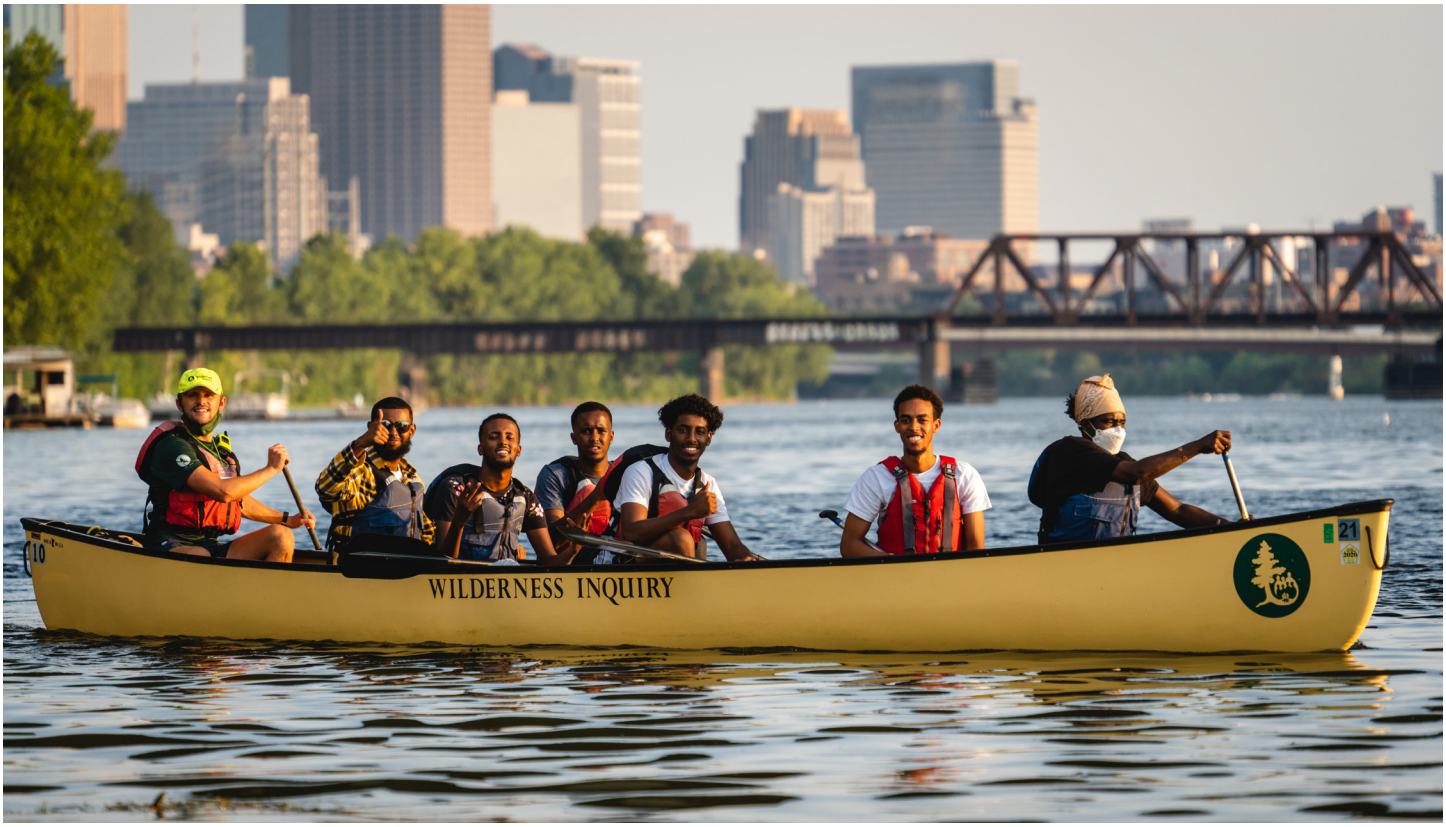

Figure 3. Paddlers and a Wilderness Inquiry guide at the MWMO's Share the River Nordeast event in August 2021.

Communications and Outreach

Purpose

The MWMO's communications and outreach initiatives provide information, training, educational opportunities, financial resources and other services to promote community partnerships and good stewardship of water and natural resources.

Objectives

- Provide services and products to inform and educate the watershed community using a variety of methods and media.
- Create and support opportunities for public participation and involvement.
- Collaborate with other professionals, networks and communities to develop partnerships, leverage funding and increase the reach and effectiveness of watershed education.
- Inform and educate land use decision-makers about the relationship between land use and

natural resource protection/conservation.

- Develop cultural competencies to directly reach diverse communities of the MWMO.
- Provide training and certificate programs for the evaluation, development and use of new technologies and management practices.
- Promote and host workshops and training opportunities for MWMO staff, staff of member organizations, Master Water Stewards, Citizen Advisors, community volunteers and other entities involved in water resources management.
- Support and promote local stewardship initiatives, community leadership and citizen involvement.
- Create demonstration sites to inform and educate the watershed community.

2021 Implementation

The MWMO carried out the following communications and outreach activities in 2021:

Community Outreach

The MWMO partnered on 21 community events, providing tours, activities and/or presentations for participants. Many of these events were hosted virtually. The MWMO also hosted virtual workshops to relay common practices for individuals around the home and yard that protect water quality or improve habitat. The workshops featured concepts of understanding watersheds, stormwater, runoff pollution, and actions that can prevent pollution, and were tailored to seasonal changes. More than 490 participants engaged with staff during these events to learn about actions they could take to protect water quality. Additionally, the MWMO continued to build connections with communities through general neighborhood outreach and responding to inquiries for information or help around stormwater issues, and highlighted community projects through communications channels to demonstrate the diversity of perspectives and efforts in protecting water in the MWMO. The MWMO continues to seek opportunities for outreach in under-served or under-represented areas of the watershed, and prioritizes these opportunities as they arise.

Email Communications

Email is a key part of the MWMO's communication strategy. The MWMO sends out a monthly email newsletter that serves as a digest of news and events from all MWMO program areas. In addition, the MWMO provides periodic email bulletins on specific topics, which subscribers may select based on their individual areas of interest. The MWMO uses the GovDelivery email

platform (owned by Granicus).

In 2021, the MWMO switched from a quarterly to a monthly email newsletter, and also changed the format of its newsletter to be more succinct, easily scannable, and include more external links to provide context to articles. During the course of the year, the MWMO saw continued growth in overall numbers of email subscribers. The number of impressions increased, and the engagement rate bounced back and edged upward toward its pre-pandemic highs.

Table 3. Snapshot of MWMO Email Communications

Metric	2017	2018	2019	2020	2021
Number of Bulletins	106	135	118	85	99
Impressions	30,100	42,600	70,000	70,600	74,300
Engagement Rate	38.8%	45.7%	53.8%	40.8%	48.8%
Total Subscribers	3,628	5,016	6,129	7,874	9,083

Media Training

In 2021, the MWMO organized a joint media training initiative with Capitol Region Watershed District and Ramsey-Washington Metro Watershed District. The three watersheds signed a memorandum of understanding (MOU) to hire a media training consultant, Mary Milla, and split the cost of the training. The training program included a webinar that was open to all staff as well as small group practice interviews with selected staff. The training covered such topics as how to prepare for interviews, how to develop key messages, and how to effectively respond to interview questions. The training was held virtually.

Minnesota Water Stewards

The Minnesota Water Stewards program, formerly known as Master Water Stewards, increases knowledge and awareness of water quality and creates a skilled volunteer corps who work within their communities to effect change. In 2021, the MWMO sponsored training of a cohort of 10 stewards. In an effort to make the training more accessible and accommodate pandemic-related closures, all course content and cohort meetings moved to virtual format. The MWMO Steward Leadership team continued to meet regularly to coordinate communication, continuing education, volunteer and social opportunities to keep stewards engaged, learning and motivated. They assisted with training sessions for new stewards, planned and assisted with resident engagement at the Hoyer Heights project, assisted with Share the River, and more.

Mississippi River Green Team

The Mississippi River Green Team is a two-year employment and conservation program for teens from North and Northeast Minneapolis. The Green Team was co-created by the Minneapolis Park and Recreation Board (MPRB) and the MWMO as an opportunity for youth to have a mentored job experience, learn about environmental careers and acquire new skills. Typical daily activities include working to prevent water pollution, removing invasive species, building raingardens, planting trees and prairie plants, and assisting in citizen science projects. In 2021, 18 youth were employed in the program.

Youth have the chance to participate in the Mississippi River Green Team for two years. After those two years, they are a part of a supportive network that works with them to help secure jobs to expand their skills and get them ready for the future. In 2021, at least three Mississippi River Green Team alumni found jobs in environmental fields including at the MWMO and other local organizations such as the MPRB and the Conservation Corps Minnesota & Iowa in the Increasing Diversity in Environmental Careers program.

Professional Workshops and Trainings

Again in 2021, the MWMO sponsored and facilitated trainings on turfgrass maintenance and smart salting. More than 220 winter and summer maintenance professionals, property owners, and supervisors in the public and private sectors attended a total of five trainings held in 2021. All training sessions were delivered virtually. These trainings are a part of a voluntary maintenance certification program through the Minnesota Pollution Control Agency (MPCA).

In August, staff helped coordinate and host the Minnesota Association of Professional Soil Scientists (MAPSS) annual meeting. Fifty participants spent the morning in presentations at the MWMO Stormwater Park and Learning Center, followed by an afternoon field trip to tour local projects.

Staff also hosted a VIP event for elected officials in conjunction with the annual Share the River Event. Six elected officials attended the event.

Social Media

The MWMO maintains an active social media presence on Twitter, Facebook, LinkedIn, Instagram, Flickr and YouTube. The MWMO uses a social media management platform, CoSchedule, to optimize post times and automatically repost evergreen content. Generally speaking, the MWMO is a leader among its peer organizations in the area of social media engagement.

In assessing the impact of social media, it is difficult to provide an apples-to-apples comparison

of analytics data between different platforms, since each one uses slightly different metrics. With that being said, below is a snapshot of the MWMO's performance on various platforms in 2021:

- **YouTube:** 52,000 views
- **Facebook:** 31,245 people reached
- **Instagram:** 4,299 people reached
- **Twitter:** 121,819 impressions

Table 4. Snapshot of MWMO Social Media Followers

Channel	2017	2018	2019	2020	2021
Facebook	1,163	1,624	2,100	2,287	2,418
Instagram	269	650	972	1,156	1,320
LinkedIn	89	134	242	428	523
Twitter	945	1,178	1,346	1,435	1,500
YouTube	55	70	103	168	326

Stewardship Fund Grants

MWMO Stewardship Fund Grants provide financial assistance to community-led projects and educational efforts to improve and conserve water and natural resources in the watershed.

Financial assistance is provided through four types of Stewardship Fund Grants. In 2021, Community Grants (formerly Mini Grants) offered up to $5,000 in funding for short-term or smaller-scale water quality projects. Planning Grants offered up to $20,000 in funding to plan projects that are significant in scope and cost; they are used to assess the potential success of a project or develop the details required to make a project actionable. Action Grants offered up to $50,000 in funds for the implementation of fully-designed projects that are significant in scope and cost. Minnesota Water Steward (formerly Master Water Steward) Grants are offered to certified stewards who wish to accomplish projects that will improve and/or protect water quality.

All proposals are reviewed by MWMO staff. Planning and Action Grants are also reviewed by the MWMO Citizen Advisory Committee and approved by the MWMO Board of Commissioners.

Grants are awarded based on a project's ability to:

Figure 4. MWMO Youth and Community Outreach Specialist Michaela Neu (*left*) poses with partners from the Southeast Como Improvement Association traffic diverter raingarden Action Grant project in August 2021.

- **Develop partnerships with community organizations.**
  Projects create partnerships and build community understanding with organizations and people wanting to proactively engage in clean water issues, demonstrate new methods, and extend the MWMO's ability to protect clean water and improve water quality, and protect and restore habitat and natural resources through building community knowledge and stewardship.

- **Protect or improve the quality of water, habitat, and natural resources.**
  Projects reduce pollution entering our streams, wetlands, lakes, river and groundwater, and projects that prevent flooding, lessen the effects of drought, retain water on site and/or restore and maintain habitat.

- **Build community understanding, knowledge, and initiative related to water, habitat, and natural resource issues and solutions.**
  Projects engage and educate people in the community about water quality issues. These projects result in awareness of water issues and changed behaviors that protect water. Organizations receiving grants will increase their ability to lead and promote clean water efforts.

Note: Stewardship Fund Grants may be used to create new external programs, but are not intended to sustain ongoing efforts. Projects must benefit people who live, learn, and/or work in or near the MWMO watershed. Physical projects must also lie within the MWMO watershed boundaries or drain to receiving water bodies within the watershed.

Table 5. Stewardship Fund Grants

Stewardship Fund Grants	2020	2021	2022
Total no. awarded (no. proposed)	10 (22)	14 (25)	--
Minnesota Water Steward Grants	0 (0)	0 (0)	--
Mini Grants (*Total; breakdown by season below*)	2 (5)	8 (18)	--
Spring	1 (3)	4 (11)	--
Summer	1 (2)	4 (7)	--
Planning Grants	4 (5)	2 (3)	--
Action Grants	4 (12)	4 (4)	--

Stormwater Park and Learning Center

In June, the MWMO welcomed former artist-in-residence Moheb Soliman for a celebration to mark the release of his first book, HOMES. The celebration consisted of readings by Soliman and two other local poets and a reception at Stormwater Park and Learning Center. Fifty people were in attendance for this event put on in partnership with Coffee House Press and MIZNA.

After a one-year hiatus due to the pandemic, Share the River, the MWMO's annual community event featuring cookies, canoe rides, and partner displays, was back. More than 100 people attended the event.

Beginning in September, local botanist and artist Sarah Nassif began a year-long artist residency at the MWMO. As part of her residency, Nassif offers monthly fiber arts workshops in partnership with other local artists and community members. The residency will culminate in summer 2022 with an exhibit at Stormwater Park and Learning Center featuring Nassif's work as well as that of the community produced during the workshops. In 2021, more than 60 people attended workshops.

Website

The MWMO website serves as the main hub for information about MWMO projects and programs. In 2021, website traffic surged to new all-time highs, with the overall number of website users increasing by more than 54 percent year-over-year. Sessions (defined as periods

of time in which individual users are actively engaged with the website) increased by more than 44 percent.

"News" and "Projects" are the most popular sections of the website, accounting for 24 percent and 16 percent of website traffic, respectively. The "Learn" section, which contains most of the site's educational content, is a close third, with 12 percent. More than 46 percent of website users in 2021 access the site from a mobile device — a new record and a 141 percent increase from 2020.

Table 6. MWMO Website Traffic Overview

Metric	2017	2018	2019	2020	2021
Pageviews	98,357	96,610	101,827	96,667	112,335
Sessions	37,634	44,080	48,551	48,338	69,790
Users	23,232	29,418	34,580	34,766	53,651

Video Production

The MWMO continued its focus on in-house video production in 2021, producing 13 new videos that were distributed on YouTube and other online platforms. New videos in 2021 ranged from videos showing how MWMO staff monitor water quality to a feature on spring ephemerals in the Mississippi River Gorge, to a how-to video showing Hoyer Heights residents how to maintain their boulevard tree trenches.

Views of MWMO videos on YouTube increased dramatically in 2021, with more than 52,000 views counted in 2021 compared to 18,800 in 2020. Videos on how to install and use a rainbarrel, how a tipping-bucket rain gauge works, and how to use an ice chisel to remove compacted snow topped the list of the MWMO's most-viewed videos in 2021. Most of the traffic came from internal YouTube features such as search, suggested videos, and browse features.

Youth Outreach

The MWMO's Stormwater Park and Learning Center hosted nine groups for "Stormwater 101" programs, the MWMO's signature outreach programming, which utilizes a watershed floor map, a stream table, a watershed model and on-site stormwater BMPs. More than 90 youth visitors engaged with staff during these programs to learn about the Mississippi River, stormwater, and water quality. Additionally, the MWMO partnered on six youth events off-site, including project tours and school and summer camp visits, engaging over 160 youth.

In coordination with Minneapolis artist Susan J. Sperl, who will exhibit her felted sea creatures at the Westminster Gallery during the fall of 2022, the MWMO partnered with the Plymouth Youth Center and local artist Jack Kotz to lead a group of 10 teens in development

of design concepts to be included in the exhibition. The teens will explore our connection to water, water quality, and water pollution and will reflect their learnings in their graphic designs, which will ultimately be produced for display.

Table 7. Communications and Outreach Implementation

Implementation Table	2020	2021	2022
Communications, Outreach and Stewardship Fund Budget	$250,000	$250,000	$250,000
Stewardship Fund Grants Budget	$250,000	$250,000	$250,000
Community Outreach	$3,781	$1,120	--
Email Communications	$5,788	$6,078	--
Media Training	--	$3,000	--
Minnesota Water Stewards	$23,000	$18,750	--
Mississippi River Green Team	$8,834	$14,850	--
Professional Workshops and Trainings	$2,885	$10,510	--
Stormwater Park and Learning Center	$20,412	$760	--
Website	$12,318	$8,449	--
Youth Outreach	--	$3,670	--

Table 8. Communications and Outreach-Related Watershed Management Plan Goals and Measures Achieved

Number Engaged (by Audience)	2019	2020	2021
Professional	225	130	277
Community	1,250	535	706
Youth	1,137	240	283

2022 Workplan

- The MWMO will continue its focus on producing video content for YouTube and social media channels.
- The MWMO will continue to refine its monthly newsletter format to improve readability and increase engagement rates.
- MWMO staff will continue to lead communications efforts for the Northern Columbia Golf Course and Park Stormwater BMPs project, coordinating with the City of Minneapolis, Minneapolis Park and Recreation Board, and other partners.

- The MWMO will feature each of its commissioners in the monthly newsletter and on the MWMO website.
- The MWMO will offer resources and support for residents to take water-friendly actions at home and in their communities. Priorities will be building relationships with new, underserved, and/or other target audiences, such as those near MWMO-funded projects.
- The MWMO will continue to fund Stewardship Fund Community Grants, Planning Grants, Action Grants, and Minnesota Water Steward Grants. Efforts to assist grantees from targeted populations will continue as opportunities to deepen these relationships are growing.
- Citizen Advisory Committee (CAC) members will engaged with MWMO activities mainly through upcoming Planning and Action Grant reviews. Strategic recruitment of CAC members from under-represented populations will continue.
- The MWMO will train six new Minnesota Water Stewards and support continued engagement of certified stewards in their work as community leaders on behalf of water quality and habitat.
- The MWMO will integrate the use of new interpretive components into programs at Stormwater Park and Learning Center. Temporary exhibits and programs will be offered as conditions allow.
- The MWMO will continue to offer opportunities to educate and engage local policy-makers and community leaders.
- The MWMO will offer training opportunities for professional audiences whose work directly impacts water quality.
- The MWMO will work with partners to develop and support training opportunities that support the development of a skilled workforce for green infrastructure maintenance.
- The Mississippi River Green Team will enter its 15th year, with expanded support and partnerships.
- The MWMO will continue to support youth programs to strengthen awareness and connection to our water resources. Program offerings will be highlighted on the web.

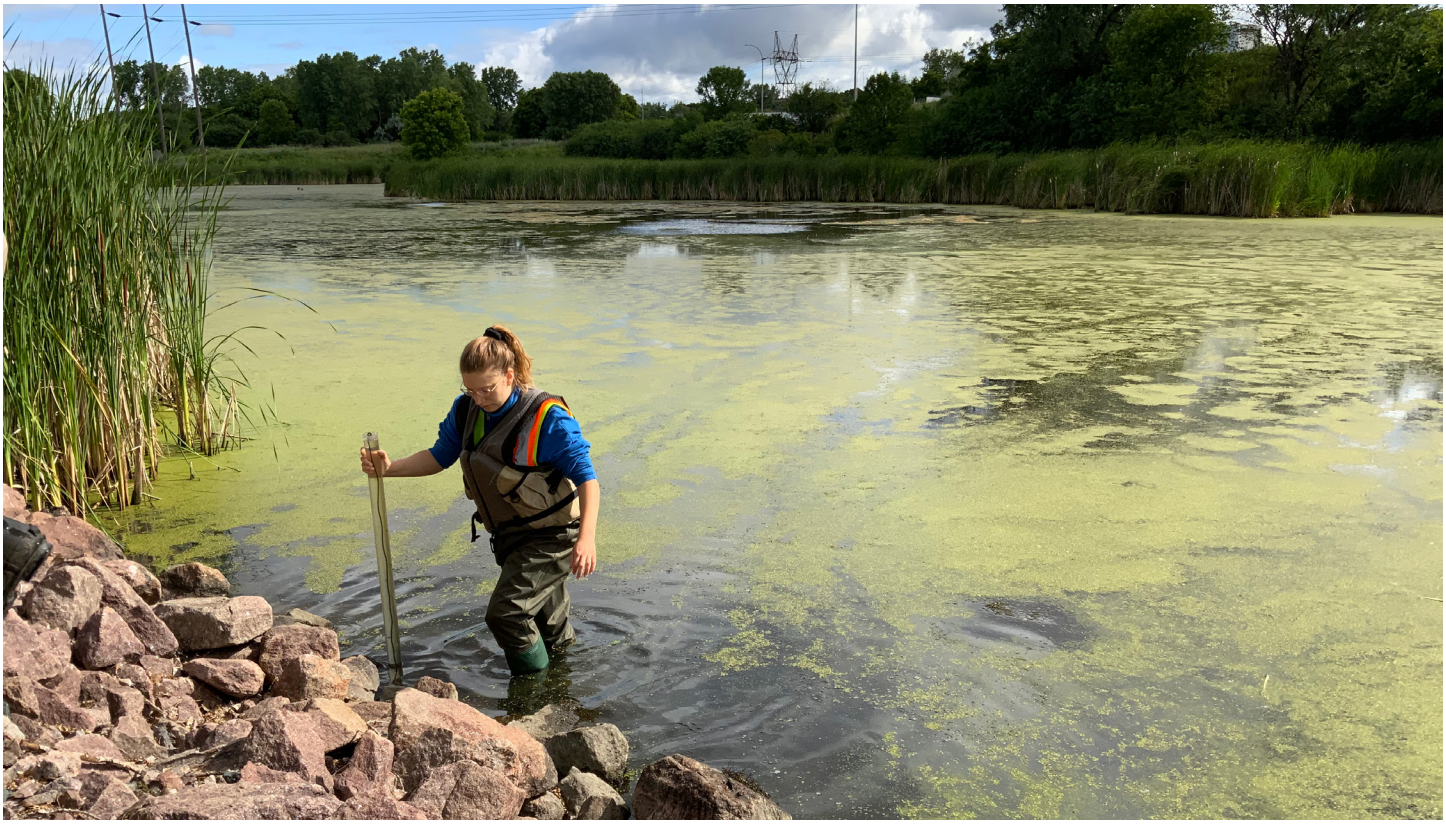

Figure 5. MWMO Intern Chloe Kahn assists with monitoring activities at Kasota Pond East in June 2021.

Monitoring

Purpose

The MWMO's water quality monitoring efforts provide a scientific basis for identifying and tracking water quality and quantity issues and provide information to aid in the selection of projects and evaluate the success of those projects. The MWMO is charged with protecting water quality within the watershed, pursuant to Minnesota Statutes Chapter 103B.201 and Minnesota Rules Chapter 8410.003, which established a Joint Cooperative Agreement among the MWMO's member organizations. Minnesota Rules Chapter 7050 requires that all water bodies comply with water quality standards. Furthermore, section 303d of the Federal Clean Water Act requires states to develop total maximum daily loads (TMDLs) for waters with impaired uses.

Objectives

- Monitor physical, chemical, and biological parameters of surface and groundwater resources in the watershed.

- Monitor water quality within the watershed.
- Develop a record of baseline data to characterize water quality and identify pollutants that exceed water quality standards.
- Assess pollutants listed on the Minnesota Impaired Waters list for the TMDL process.
- Collect rate and volume data for the Mississippi River and key subwatersheds.
- Monitor performance of stormwater best management practices (BMPs).
- Collaborate with stakeholders to identify and apply a standardized data collection and assessment approach.
- Develop partnerships and collaborate with other organizations and/or agencies both inside and outside the watershed boundaries to improve water quality in the Mississippi River.
- Assess land use impacts on water quality.
- Participate in the technical development and update of statewide monitoring databases.
- Make data accessible to the public, other organizations, and MWMO staff.
- Develop an emergency monitoring plan in case of emergencies affecting water resources.

2021 Implementation

Data Management, Reporting, and Outreach

MWMO monitoring staff began the in-house operation, maintenance, and management of the MWMO's remote monitoring data network in 2018. All monitoring data are now stored and managed in one database. Long-term and annual datasets were analyzed and compiled. MWMO staff continued to collaborate with several other metro-area organizations using the same database software. Monitoring staff also reached out to and met with member cities to assess their monitoring needs and develop monitoring plans.

Water quality data collected by the MWMO are submitted annually to the Minnesota Pollution Control Agency's (MPCA) EQuIS database at the end of the monitoring year and summary data are reported on the monitoring pages of the MWMO website. Other data are made available upon request to staff, stakeholders, agencies, and research institutions.

Lake and Wetland Monitoring

The MWMO continued to monitor water levels in the Kasota Ponds Wetlands and added a web-

connected monitoring system to autonomously collect and publish level, temperature, and conductivity data from the Kasota Pond West (KPW). Water quality and biological sampling were conducted in 2021 following a five-year monitoring schedule.

The MWMO contracts with Anoka Conservation District (ACD) to monitor lake levels and water quality of Sullivan (Sandy) Lake and Highland (Unnamed) Lake in Columbia Heights. In 2021, the lake levels were recorded weekly and data were submitted to the Minnesota Department of Natural Resources (DNR) LakeFinder database. ACD staff will monitor lake levels and also perform water quality sampling in 2022.

Mississippi River Monitoring

In 2021, water quality samples were collected twice per month between April and October and once per month from November to March at seven sites on the Mississippi River within MWMO's jurisdiction. Water samples were also collected on a biweekly basis from seven sites on the Mississippi River for E. coli analysis, specifically for continuing data collection for the Upper Mississippi River Bacteria TMDL. Staff gauges at six locations along the river were visited on a weekly basis to track river level changes throughout the year. A level logger was installed at the staff gage in the Mississippi River at the MWMO for hourly level data collection. Bathymetry data were collected in the Mississippi River upstream of the Upper St. Anthony Lock and Dam to the railroad bridge at North 41st Avenue in Minneapolis. These data will be combined with previous data sets and future years' bathymetric data to assess how the river bed is changing as a result of the Upper St. Anthony Falls Lock closure in 2015.

Special Projects

65th Avenue Monitoring

MWMO monitoring staff provided technical service to West Mississippi Watershed Management Commission and maintained, operated, and collected water quantity and quality data at their 65th Avenue stormwater outfall monitoring site.

Columbia Golf Course Monitoring

Monitoring staff collected water level data in a number of ponds on the Columbia Golf Course in Northeast Minneapolis to support a watershed assessment study investigating groundwater flow in and around the golf course for the purpose of determining potential future BMP placement in the southern portion of the golf course. Monitoring staff also worked with Minneapolis Parks and Recreation Board staff to measure the flow rate of the pump in the groundwater well that fills one of the ponds that is used for irrigating the golf course.

Dowling Avenue Monitoring

Water quantity and water quality data were collected at the Dowling Avenue stormwater

tunnel in North Minneapolis in an effort to improve flood modeling and pollutant loading.

Erosion Control Internships

MWMO monitoring staff worked with the City of Minneapolis Health Department to fund an Erosion and Sediment Control internship program. Two interns were hired in 2021 and an intern activity report was submitted to the MWMO.

Stormwater Best Management Practice (BMP) Inspection, Operation, Maintenance and Monitoring

Edison High School Green Campus BMP Monitoring

MWMO staff continued to monitor two Edison High School Green Campus BMPs: a parking lot tree trench and an underground stormwater reuse tank. Precipitation, stormwater volume, and water quality data were collected. Monitoring data from the reuse system were provided to MWMO outreach staff to share with educators at Edison High School.

Jackson Pond Iron-Enhanced Infiltration Bench

Stormwater quantity and quality data collection at the Jackson Pond iron-enhanced infiltration bench in Columbia Heights. Monitoring equipment were maintained and operated for a second year. Vegetation maintenance work was also performed in collaboration with City of Columbia Heights public works staff at the Jackson Pond iron-enhanced sand filter system.

MWMO Stormwater Park and Learning Center

Stormwater flow, volume, and water quality data were collected at the MWMO's Stormwater Park and Learning Center filter media lab site in collaboration with the University of Minnesota Twin Cities, the Natural Resources Research Institute, and the University of Minnesota Duluth. The new research project examines three different types of filter media: iron-enhanced sand, biochar-amended sand, and regular sand. These filter media are being used to evaluate the efficiency of pollutant removal from the shared Tony Jaros and MWMO parking lot stormwater runoff. The research is partially funded by the Minnesota Stormwater Research Council's competitive grants program, of which the MWMO is an original and contributing member.

St. Anthony Regional Stormwater Treatment and Research System

In October 2020, the sluice gates were closed to begin system cleanout and settled stormwater was pumped out. Sediment in the swirl chamber was partially cleaned out in November 2020 and cleanout activities were resumed and completed in May 2021. MWMO monitoring staff continued to inspect, operate, maintain, and monitor the St. Anthony Regional Stormwater Treatment and Research System in 2021. The quantity and quality of water entering and

exiting each component of the facility were monitored in order to assess the treatment systems' effectiveness.

Other BMP Monitoring Activities

- Precipitation, tank level, and stormwater overflow monitoring continued at the Towerside District Stormwater Reuse System.
- Infiltration rate, treatment efficiency, and plant health of the 8th Street Stormwater Planters in downtown Minneapolis were collected throughout the 2021 monitoring season. Objectives of the project and results from the first year of monitoring were presented at the Minnesota Water Resources Conference in October 2021.
- Water quality data were collected at the newly constructed stormwater ponds at the Fridley City Hall and public works campus in collaboration with the City of Fridley Public Works department.
- Installed equipment to monitor the stormwater reuse system at the Minneapolis Sculpture Garden in collaboration with Minneapolis Park and Recreation Board staff.
- Collected level and estimated infiltration rate in the newly constructed northwest dry basin in the Columbia Golf Course in Minneapolis.

Stormwater Pipeshed (Source) and Precipitation Monitoring

The MWMO continued to monitor seven long-term stormwater pipeshed monitoring sites in 2021. Five of those sites use a combination of area/velocity sensors and automated samplers to collect water quantity and quality data throughout the year. Those data are used to calculate stormwater runoff volume and annual pollutant loads for the pipesheds. Summaries of stormwater runoff volume and other monitoring data are available on the MWMO website.

Additional stormwater pipes throughout the watershed were equipped with flow monitoring devices to provide stormwater runoff flow data for the calibration and validation of Hydraulic and Hydrologic ("H&H") modeling efforts (further discussed in the Watershed Assessment section of this report).

MWMO monitoring staff also worked with staff from the City of Minneapolis to survey for and sample potential illicit discharges from stormwater outfalls emptying into the Mississippi River.

Precipitation data were collected at several manual and automatic rain gauge sites throughout the watershed.

Table 9. Water Quality Monitoring Implementation

Implementation Table	2020	2021	2022
Monitoring Budget	$150,000	$150,000	$250,000
Bathymetry Project	$2,500	$7,500	$7,500
Data Management Software	$8,000	$8,000	$8,000
Edison High School BMP Monitoring	$1,000	$1,500	$1,500
EnviroDIY Datalogging System	$5,000	$7,000	$5,000
Laboratory Analysis	$100,000	$120,000	$150,000
Minneapolis Illicit Discharge Monitoring	$1,000	$2,000	$2,000
Monitoring Equipment	$42,000	$40,000	$35,000
Monitoring Related Training	$1,000	$1,500	$1,500
MWMO's Filter Media Laboratory Instrumentation	$2,500	$2,500	$7,500
Real-Time Data Management	$1,500	$1,500	$1,500
St. Anthony Regional Treatment Monitoring	$1,500	$20,000	$20,000

Table 10. Monitoring-Related Watershed Management Plan Goals and Measures Achieved

Monitoring	2020	2021	2022
Number of Stormwater Monitoring Sites	7	9	9
Number of Wetland Monitoring Sites	3	3	3
Number of River Sample Locations	7	7	7
Number of BMPs Monitored	7	10	11

Note: The MWMO is currently gathering long-term trend data. For more detailed monitoring information, visit the MWMO website or contact Water Resources Director Udai Singh.

2022 Workplan

The 2022 work plan for the MWMO's monitoring program includes:

New Monitoring Initiatives for 2022

- Participate in organizational strategic planning (looking ahead three-to-four years) based on approved MWMO 10-year (2021-2031) Watershed Management Plan.
- Complete installation and begin monitoring water quantity and quality for two stormwater outfall monitoring stations at stormwater tunnels near Highway 694 in Fridley.

- Delineate catchments and investigate connections and groundwater flow, etc., at the Kasota Ponds Wetlands.

- Update the Big River Study to include the assessment of the Mississippi River reach between the new upper boundary of the MWMO and the previous upstream boundary (53rd Avenue N).

- Update the MWMO's long-term monitoring program outlook, including monitoring for emerging issues.

Ongoing Monitoring Efforts

Many of the monitoring activities conducted in 2021 will continue in 2022, including: stormwater and precipitation monitoring at long-term monitoring sites; Mississippi River monitoring for water quality, bacteria, and bathymetry; and monitoring select stormwater BMPs throughout the watershed. MWMO monitoring staff will continue to work with Anoka Conservation District for monitoring Highland and Sullivan Lakes, and will continue to work with member cities to assess and assist in accomplishing their monitoring needs.

MWMO staff will support City of St. Anthony Village public works staff in inspection, operation, and maintenance of the primary treatment chamber of the St. Anthony Regional Stormwater Treatment and Research System and will continue to lead the inspection, operation, and maintenance of the secondary treatment system chambers and monitoring the treatment efficiency of the total system. A report of system performance will be published.

The MWMO will continue to work with the MPCA and other federal, state, and local agencies on projects as they arise, including current Total Maximum Daily Load (TMDL) studies. Monitoring data will be submitted to the MPCA's EQuIS database, published on the MWMO website, and will be available upon request.

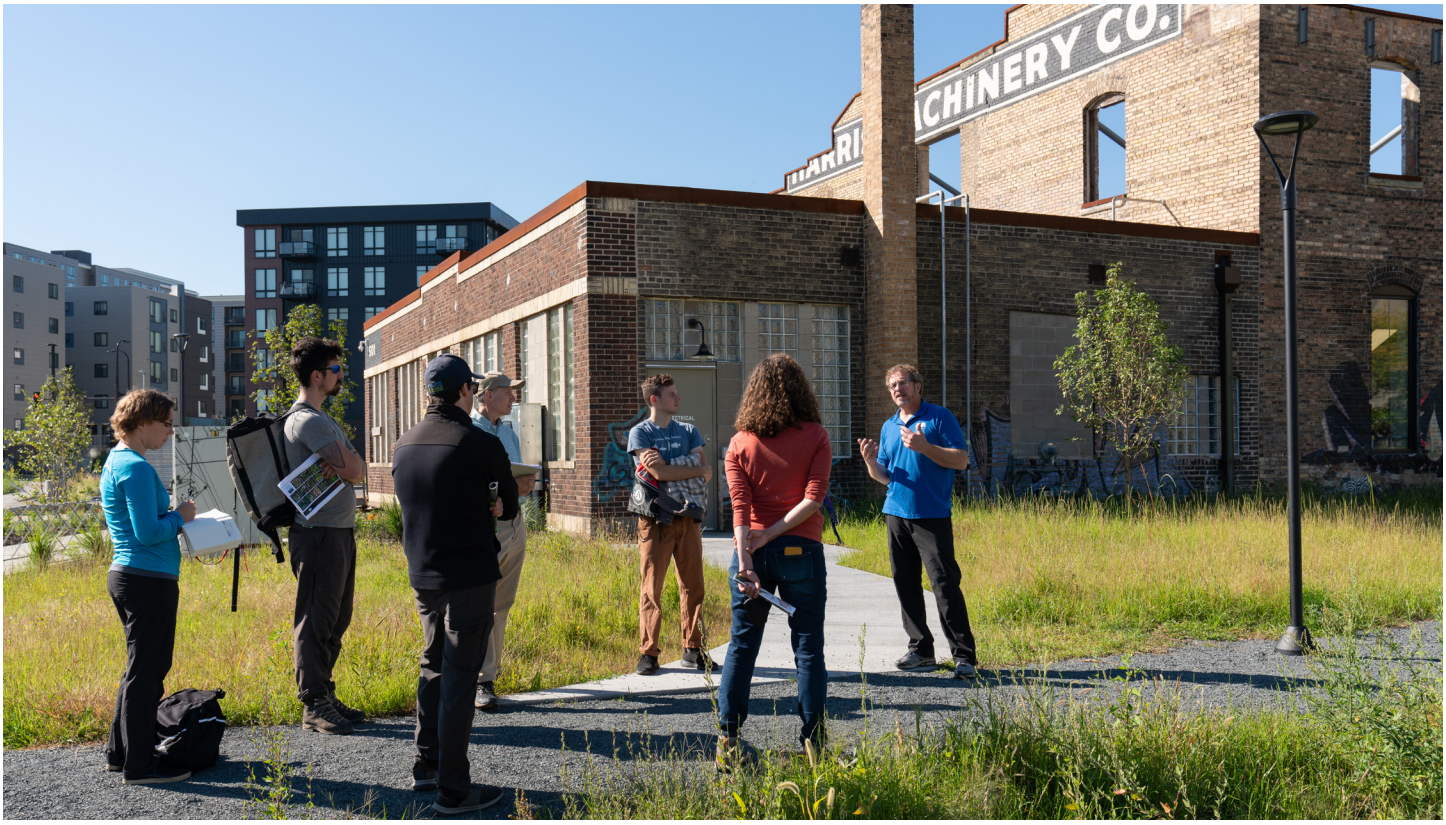

Figure 6. MWMO Planning Principal Dan Kalmon (right) leads a group of graduate students from an ecological restoration class on a tour of the Towerside Innovation District area in September 2021.

Planning

Purpose

Planning provides direction to the MWMO's activities. Our planning efforts clarify and integrate the MWMO's goals, responsibilities and future courses of action. Through planning, we coordinate implementation of MWMO standards and goals by member organizations, and maintain involvement with Mississippi River regional working groups.

Objectives

- Develop and maintain the MWMO's role in water management.
- Keep the MWMO's Watershed Management Plan current to address new circumstances and changing priorities.
- Develop plans for new watershed initiatives.
- Review and approve local management plans and amendments that impact water and

natural resources.

- Develop consensus among stakeholders for managing resources in the watershed.
- Work with member organizations on the implementation of ordinances, standards, plans, and enforcement.
- Participate in regional working groups for protection and improvement of the Mississippi River.

2021 Implementation

The MWMO completed, continued or began the following planning initiatives in 2021:

10-Year Watershed Management Plan (2021-2031)

Work completed in 2021 related to the MWMO's 10-year plan update included: MWMO responding to 60-day comments; meeting with review agencies; releasing a 90-day draft; receiving the final BSWR approvals; and preparing the plan for final, printing, posting, and release to the public and review agencies.

Member City Stormwater Ordinances

In 2021, the MWMO completed our review and comment on member city ordinances. All member cities now have ordinances equal to the standards in the MWMO's Watershed Management Plan. The one exception is Minneapolis's CH54 section on non-contiguous projects. Projects that use this non-contiguous exception will not receive MWMO funding.

Restorative Development Partnership

In November of 2020, the MWMO Board of Commissioners approved $12,000 for additional professional services need to prepare for and complete a series of three workshops based on the Phase I Restorative Development Feasibility Study. Following the workshops, the partnership's leadership team met and agreed to pursue Phase II of the Restorative Development Feasibility Study.

The MWMO and the Restorative Development Partnership also established a member application process. MWMO staff received board approval to become a member in the Restorative Development Partnership and to participate on the Restorative Development Project Leadership Team.

The MWMO also approved $40,000 in matching funds for two years of additional professional services that will continue to develop content for workshops, assist with additional member recruitment, website updates, work planning, coordination of leadership team meetings, partnership updates, community engagement, and alignment of the partnership's activities with Phase II of the Restorative Development Feasibility Study.

Restorative Development Feasibility Study: Integrated Utility Hub

In 2021, MWMO staff and the Restorative Development Partnership's leadership team sought out additional private sector partners to assist with funding Phase II of the Restorative Development Feasibility Study. The partnership also developed a summary of the Phase I deliverable to help leadership team members build vertical and horizontal support within their organizations and additional public-sector organizations. Phase II of the Restorative Development Feasibility Study will begin once the funding has been acquired.

Towerside District Stormwater Administration

The MWMO negotiated an overhaul of the defective storage tank with contractors to assure it was waterproof before the system was commissioned. The MWMO worked with the Green on 4th developer and the Minneapolis Park and Recreation Board on the joint build-out of the ultraviolet (UV) treatment facility in the new Towerside Park.

The MWMO continued its membership on the Towerside Technical Advisory Committee, which consists of a mix of experts on stormwater, energy, zoning, affordable housing, architecture, public realm, restorative systems, etc., who will provide support services for the neighborhood review committees that approve development projects in the area prior to the plans advancing to the cities.

Table 11. Planning Implementation

Implementation Table	2020	2021	2022
Planning Budget	$150,000	$150,000	$250,000
10-Year Watershed Management Plan (2021-2031)	$116,842	--	--
Member City Stormwater Ordinances	--	--	--
Restorative Development Partnership	$47,000	$40,000	--
Restorative Development Feasibility Study: Integrated Utility Hub	--	--	--
Towerside District Stormwater Administration	--	--	--

Below is an evaluation of progress made towards MWMO's Watershed Management Plan

goals via planning initiatives undertaken.

Table 12. Planning-Related Watershed Management Plan Goals and Measures Achieved

Planning	2018	2019	2020	2021	2022
New Initiatives and Related Studies Started	7	5	5	3	--
New Initiatives Resulting in CIP Outcome	--	1	1	--	--
New Initiatives Resulting in Policy Change	--	--	--	1	--
New Initiatives Resulting Partnership Agreements	3	1	3	1	--
Amendments Completed to Maintain WMP Relevance	3	2	0	0	--

2022 Workplan

In 2022, the MWMO will continue or begin work on the following initiatives:

10-Year Watershed Management Plan (2021-2031)

In 2022, staff will seek MWMO Board of Commissioners approval of the final plan at the January meeting. The plan will be posted to MWMO's website and a notice to agencies will be sent out. Following the plan's release, web-based guidance regarding MWMO's standards and our member cities new MRCCA ordinances will be developed and posted on our website.

Restorative Development Partnership

In 2022, the Restorative Development Partnership's Leadership Team is seeking out additional private-sector partners to join the leadership team to help guide Phase II of the Restorative Development Feasibility Study. The leadership team will also work together to build vertical and horizontal support within the public-sector organizations. Support from the public sector is key to attracting private-sector funding and developers who are able to take on the project.

Restorative Development Feasibility Study: Integrated Utility Hub

In 2022, MWMO staff and the Restorative Development Partnership's leadership team will continue fund efforts for Phase II of the Restorative Development Feasibility Study.

Towerside District Stormwater Administration

Staff will begin discussions with the District Stormwater System Owners regarding transferring administrative duties over to them in October 2022.

Figure 7. The MWMO's filter media test laboratory in September 2021.

Watershed Assessment

Purpose

The MWMO's watershed assessment and research activities seek to develop a scientific base of knowledge that characterizes physical, chemical, cultural, historic, biological, social, economic, organizational and political resources of the MWMO to guide planning and management decisions in the watershed.

Objectives

- Conduct assessments within the watershed to define the ecological, physical, biological, cultural, social, economic, organizational and political characteristics of the MWMO.
- Conduct project-based diagnostic and feasibility studies.
- Provide information to support other MWMO projects and activity areas.

- Provide watershed information to organizations both inside and outside the MWMO's boundaries.

2021 Implementation

The MWMO completed the following Watershed Assessment activities in 2021:

Columbia Heights Huset Park-Zurek Pond Stormwater Management Study

Huset Park is located in the southern portion of the City of Columbia Heights. The park contains John P. Murzyn Hall; playground equipment; a picnic shelter, walking trail, and splash pad; five ballfields; and Zurek Pond. Zurek Pond receives runoff from a large upstream drainage area and discharge from the splash pad. It drains south via storm sewer into the City of Minneapolis and then east to the Mississippi River.

The City of Columbia Heights identified a number of needs regarding Huset Park and Zurek Pond. The ballfields in the park currently do not have any irrigation system. Flooding has occurred periodically south of Zurek Pond around the northwest corner of Columbia Park. Hydrological and hydraulic (H&H) modeling results from the MWMO specifically identified flood inundation around the intersections of 5th Street NE with 35th Avenue NE and Columbia Parkway. Runoff from Zurek Pond is conveyed through an existing stormsewer system in a fully developed neighborhood with little water quality.

MWMO identified and agreed to collaborate, with the City of Columbia Heights, to further build on this project to improve water quality as well as reduce flooding issues downstream in Minneapolis. The City of Columbia Heights, with funding provided by the MWMO, retained Stantec to evaluate a number of potential improvements to the park, as follows:

- Use stormwater from Zurek Pond to irrigate the four ballfields in Huset Park west of Jefferson Street NE;
- Retrofit the Zurek Pond outlet with a pumping system to lower the pond level in advance of storm events, in order to increase flood storage and reduce downstream flooding;
- Add a pond south of the softball field in Huset Park east of Jefferson Street NE to increase flood storage and reduce downstream flooding;
- Provide an iron-enhanced sand filter bench with a recirculating pump in Zurek Pond to provide additional water quality treatment to pond runoff.

The following recommendations are made by Stantec based on the results of the evaluation:

- Ball-field irrigation: Three options (Water Reel, in-ground sprinklers, post-mounted sprinklers) are suitable for using Zurek Pond water for irrigation of ballfields in Huset Park. Of these, the Water Reel is recommended as the most flexible and cost-effective.

- Increasing pond storage for flood reduction: Neither option for increasing pond storage in Huset Park (retrofitting Zurek Pond outlet, adding new pond to the east) provided significant flood reduction benefit downstream, and therefore is not recommended for this purpose.

- Water quality treatment: Adding an iron-enhanced sand filter bench to Zurek Pond is recommended as a feasible option for improving water quality treatment in the pond. A small pump for recirculating pond water over the bench is recommended as part of this option.

Field Evaluation of Stormwater BMPs to Characterize the Comprehensive Contaminant Removal Performance of Biochar-Augmented Filter Media

MWMO staff worked on retrofitting the outdoor filter media laboratory at the MWMO Stormwater Park and Learning Center during the spring and fall of 2019. To measure the inflow of stormwater runoff from Tony Jaros and MWMO parking lot, a weir box (5.0 feet long 5.0 feet wide and 4.5 feet deep) with V-notch weir was installed at the inlet of the three filter media cells. Three smaller weir boxes with V-notch weirs were installed at the outlet of the filter media cells to measure the outflow. During the fall of 2019, the MWMO supported researchers from the Natural Resources Research Institute (NRRI) at the University of Minnesota—Duluth and the Department of Bioproducts and Biosystems Engineering from University of Minnesota—Twin Cities (UMN) to submit a research grant proposal to Minnesota Stormwater Research Council (MSRC) to conduct field evaluation of stormwater best management practices to characterize the comprehensive contaminant removal performance of biochar-augmented filter media. NRRI and UMN researchers received the grant funding from MSRC; however, because of COVID-19, field installation of the experiment did not take place in 2020 season.

MWMO staff, in partnership with NRRI and UMN staff, installed the research experiment in May 2021 and started collecting data on water quantity and water quality. A graduate student from UMN is working the project and will write a master's thesis on Field Evaluation of Stormwater BMPs to characterize the Comprehensive Contaminant Removal Performance of Biochar-Augmented Filter Media.

Minnesota Stormwater Research Council Funding for Applied Stormwater Research

MWMO staff, along with staff from other watershed districts, watershed management organizations, state agencies, soil and water conservation districts, and several research

institutions, have been part of the team to conceptualize, formulate, and establish the Minnesota Stormwater Research Council (MSRC).

Prior to being part of the MSRC, the MWMO had worked with Minnehaha Creek Watershed District (MCWD) to establish MCWD/MWMO Joint Watershed Research Grants (JWRG) and had provided funding and managed the two cycles of JWRG and completed a total of six research projects between 2008 and 2016.

The MSRC was established as a nonprofit organization in 2016 to facilitate the completion of needed applied research that enables more informed decisions about the use, management, and protection of water resources in urbanized areas. MSRC periodically assesses the status of research, identifies consensus research priorities, and communicates these to Minnesota's public and private research agencies and organizations. It also promotes coordination of research goals, objectives, and funding among the research agencies and organizations. The MSRC is an independent organization of stormwater professionals, practitioners, managers, engineers, researchers, and others currently operating as an unincorporated association with the University of Minnesota Water Resources Center (WRC) as the fiscal agent.

The purpose of the Minnesota Stormwater Research Council is:

- to facilitate relevant, applied stormwater research and connect surface water managers to actionable research that is responsive to their needs, to benefit Minnesota and its public waters through the following efforts;
- to coordinate and build partnerships at local, regional, state, and federal levels to leverage stormwater research resources (personnel and funding);
- to provide a clear process for identifying research needs, prioritizing, soliciting, submitting, approving and implementing stormwater-related research proposals;
- to find solutions that improve the design, constructability, maintainability, cost effectiveness, hydraulic performance, and treatment efficiency of stormwater facilities, as well as stormwater management operations and maintenance practices;
- to improve the compilation, tracking, and dissemination of stormwater research findings;
- to facilitate a collaborative approach that ensures the involvement of stakeholders in identification, prioritization, and implementation of stormwater research; and
- to provide a sustainable source of funding and a process that insures independent, unbiased, and objective research.

The MSRC raised a total of $100,000 in 2017, $115,000 in 2018, $115,000 in 2019, $163,000 in 2020, and $135,000 in 2021. The MWMO has provided $25,000 per year in funding to the MSRC in each of those years. The WRC also received $1.5 million for stormwater research from the State of Minnesota's Clean Water, Land and Legacy Amendment funds for the 2017-2018 funding cycle and $1.35 Million for the 2019-2020 funding cycle. A total of 23 research projects have been funded since 2017, and 13 research projects were completed by end of 2020. Four projects were completed in 2021, and nine projects were continuing in 2021.

Towerside District Stormwater Phase II 30-Percent Design

In 2021 MWMO staff continued to work with the Minneapolis Park and Recreation Board (MPRB), Towerside partners, City of Minneapolis, University of Minnesota, and Wall and Development Company on the Towerside District Stormwater Phase II 30-percent design.

Activities included:

- update of the stormwater model to reflect the current site conditions;
- preparation of three primary models or designs reflecting options for stormwater management in conjunction with park/green space programming and usage;
- discussion of what a preferred option would include;
- a preliminary assessment of costs and benefits to each of the partners; and
- a discussion of potential easements needed.

Upper Harbor Terminal District Stormwater 30-Percent Design

In 2021 MWMO staff continued to work with the City of Minneapolis, the Upper Harbor Terminal development team, the Minneapolis Park and Recreation Board, and neighborhood representatives to develop a shared public/private District System that manages stormwater, habitat, privately owned public space and informal trails.

The MWMO Board of Commissioners approved an additional $38,240 for the 30-percent design to cover additional project coordination, design work, and public engagement resulting from the City's extension of the project schedule by one year. The MWMO completed 30-percent design of the stormwater system, which included elevations and a range of costs.

Upper Harbor Terminal Community Conversations

In 2021, the MWMO reached out to various North Minneapolis audiences (organizations and individuals) to gauge interest in starting a dialogue with the MWMO on how to we can better engage and create real, meaningful public input around the Upper Harbor Terminal

redevelopment project, and future projects in the neighborhood. We were able to initially assemble small number of interested parties who were interested in setting up a community process for engagement. The group is now waiting for the City of Minneapolis and the MWMO to come to an agreement on potential areas within the project where the community can contribute specific design ideas on public places within the project.

Watershed-Scale H&H and Water Quality Modeling

The MWMO is undertaking a major initiative to create detailed hydrology and hydraulic (H&H) and water quality models across our jurisdiction. The H&H models are being used to simulate and inform the management of flooding throughout the MWMO, while the water quality models are used to estimate pollutant loading from the landscape and into MWMO waterbodies. Results of the modeling initiative will be used to help the MWMO and its member communities to better understand the functioning of our stormwater systems, as well as prioritize the placement and design of future capital projects.

The MWMO is divided into multiple project areas for this effort. In 2021, a water quality model was developed for the Como SEMI-URP Watershed, a 1,824-acre, highly urbanized area which covers portions of Northeast Minneapolis, Lauderdale, and St. Paul

The detailed model was developed using the P8 (P8 Urban Catchment Model) water quality modeling program and serves as a companion to the previous water quantity model completed in 2020. It was designed to replicate the hydrology of the water quantity model, while also including all significant stormwater treatment infrastructure within the watershed. The MWMO and member cities can use the water quality model to quantify existing stormwater runoff pollution, evaluate the performance of existing treatment features, assess the impact of future development and redevelopment, and prioritize areas for future efforts to improve water quality.

Table 13. Watershed Assessment Implementation

Implementation Table	2020	2021	2022
Watershed Assessments Budget	$200,000	$200,000	$550,000
1NE Watershed Stormwater Management Planning and Preliminary Design Project	$89,383	--	--
Columbia Heights Huset Park Zurek Pond	--	$40,000	--
Field Evaluation of Stormwater BMPs to Characterize the Comprehensive Contaminant Removal Performance of Biochar-Augmented Filter Media	$3,075	$11,628	$15,000
Minnesota Stormwater Research Council Funding	$25,000	$25,000	$25,000
Towerside District Stormwater Phase II 30% Design	--	$32,500	--

Upper Harbor Terminal District Stormwater 30% Design	$18,000	$38,240	--
Upper Harbor Terminal Community Conversations	--	$50,000	--
Watershed-Scale H&H and Water Quality Modeling	$114,825	$420,000	$79,300

2022 Workplan

In 2022, the MWMO will continue or begin work on the following initiatives:

Field Evaluation of Stormwater BMPs to Characterize the Comprehensive Contaminant Removal Performance of Biochar-Augmented Filter Media

MWMO staff, in partnership with the Natural Resources Research Institute (NRRI) at the University of Minnesota—Duluth and the Department of Bioproducts and Biosystems Engineering from University of Minnesota—Twin Cities (UMN), will continue to collect water quantity and quality data during the 2022 monitoring season.

Minnesota Stormwater Research Council Funding for Applied Stormwater Research

The Minnesota Stormwater Research Council has released the request for research proposals for 2022-2023 research cycle. Proposals are due on March 18, 2022, and the start date of the research projects is July 1, 2022. MWMO has budgeted and will contribute $25,000 in research funding for 2022 budget year.

Towerside District Stormwater Phase II 30-Percent Design

In 2022, MWMO staff will move forward with the project team on a preferred design option and cost estimate as well as establishing a community engagement process to help shape the design. The team is also working on a shared understanding of the partners' ultimate goals and cost-sharing associated with the proposed system.

The partners are continuing to focus on creating an integrated district system that includes privately owned public spaces, an extensive district stormwater system with habitat corridors, a regional linear park system, and opportunities for future restorative energy, water, and food systems.

The MWMO will also provide the information needed for Wall Companies to submit an initial grant disbursement request related to the Met Council Livable Communities Act (LCA) Transit-Oriented Development (TOD) predevelopment grant for district stormwater design.

Upper Harbor Terminal Community Conversations

MWMO will continue to negotiate a memorandum of understanding with the City of Minneapolis for Upper Harbor Terminal, and identify areas within the project where the community can contribute specific design ideas on public places within the project.

Financial Information

Policy

During the plan development in 1997-2000, the MWMO board acknowledged the limits of its member communities to incur additional financial expenses and therefore developed strategies for new funding mechanisms. The MWMO sought inclusion on the list of Special Taxing Districts (Minnesota Statutes 275.066); and, in 2001, MWMO became the first joint powers WMO in Minnesota to receive levy authority. This funding is necessary to implement plan goals and objectives of the watershed management plan. Taxes are levied in accordance with procedures specified in the Joint and Cooperative Agreement (JCA) and Minnesota Statutes 103B.201–103B.255, also referred to as the Metropolitan Surface Water Management Act (Act), and are subject to limitations set forth in Minnesota Tax Statutes, the Act, the JCA, and the Watershed Management Plan. It is the Board of Commissioners' policy intent to use funds raised in the most effective and efficient manner possible. The MWMO completed an update to its comprehensive plan in 2011 that changed the way projects are selected for inclusion on the capital improvement plan (CIP). This was amended in May 2015, with a minor CIP schedule update occurring in September 2016. In 2021, the MWMO finished a major update of its 10-year Watershed Management Plan. The updated plan was approved by the Board of Water and Soil Resources in 2021 and approved by the MWMO Board of Commissioners on January 11, 2022.

The MWMO will continue to coordinate its CIP with those of its members. Projects are required to have feasibility studies completed that describe estimated water quality and quantity benefits and habitat or resource protection and improvement prior to the MWMO committing funds to the construction of the project. Anyone wishing to partner with the MWMO should invite the watershed to the table early in project design and assessment. The MWMO believes this will improve the project selection process and allow for better budgeting.

Budget

In general, the MWMO follows the following process to set its annual budget and select capital projects to which grant funding is allocated:

- Seek and receive project proposals from members by May of the prior year.
- Submit a draft forecast levy and amended CIP at the July board meeting.
- Select proposed projects for the next fiscal year at the September board meeting.
- Submit a preliminary levy to counties by September 30 for Truth in Taxation statements.

- Make the updated CIP final and approve a final levy at the November board meeting.
- Submit a plan amendment, if needed, to the Minnesota Board of Water and Soil Resources.
- Submit final levy documents to Anoka, Hennepin and Ramsey Counties by December 15.

Table 14. MWMO Budget

2021 Budget	
Projects and Initiatives	$3,700,000
Capital Asset Replacement Fund	$200,000
Administration	$1,955,000
Subtotal Budget	$5,855,000
Contingency (Uncollected Levy)	$95,000
Total Budget	$5,950,000

Capital Projects and Initiatives	**$3,700,000**
Capital Projects	$2,700,000
Upper Harbor Terminal	$1,200,000
Northern Columbia Golf Course and Park Stormwater BMPs	$1,500,000
Initiatives	$1,000,000
Communications and Outreach	$250,000
Planning	$150,000
Monitoring	$150,000
Watershed Assessments	$200,000
Stewardship Grant Fund	$250,000
Capital Asset Replacement Fund	$200,000
Administration	$1,955,000
Staff Salary and Benefits	$1,700,000
Commissioner Expenses	$5,000
Office Admin: Energy, Repair, Equipment, and Supplies	$100,000
Service Providers - Legal, Engineering, IT, Auditor	$50,000
Operating Reserve (additional funds were not needed in 2021)	$0

Line items in the 2021 budget with no money raised in the current fiscal year does not mean there is no money available to the line item. Rather, it means additional funds did not need to be raised in the current fiscal year. For additional financial information, including the 2021 audit, go to mwmo.org or contact the MWMO executive director.

Each year, the MWMO receives a Certification of Apportioned Levies from the Minnesota Department of Revenue. This chart is then used by the three counties in the MWMO to apportion the levy. The following table represents the estimated breakout of levies for each county within the MWMO for 2021.

Table 15. Certification of Apportioned Levies

District 072 - Middle Mississippi River Watershed Management Organization
Certification of Apportioned Levies
Payable 2021

(1) *Payable 2021 Property Tax Levy* $5,950,000

County	(2) Payable 2020 Taxable Net Tax Capacity	(3) Net Tax Capacity Percent Distribution	(4) Apportioned Payable 2021 Levy (1x3)
ANOKA COUNTY	$22,968,551	6.1913%	$368,381
HENNEPIN COUNTY	$346,324,593	93.3534%	$5,554,528
RAMSEY COUNTY	$1,689,145	0.4553%	$27,091
WATERSHED TOTAL	$370,982,289	100.0000%	$5,950,000