THE CITY OF LAKE ELMO

STAFF REPORT

DATE: June 1, 2021
REGULAR

AGENDA ITEM: Public Meeting for MS4 Permit Program & Accept the 2020 MS4 Annual Report

SUBMITTED BY: Jack Griffin, City Engineer

REVIEWED BY: Kristina Handt, City Administrator
Marty Powers, Public Works Director

ISSUE BEFORE COUNCIL: As part of the Municipal Separate Storm Sewer (MS4) Permit Program, the City Council is asked to conduct the annual public meeting. Following the meeting and public input, should the City Council approve the 2020 MS4 Annual Report?

BACKGROUND: The MS4 General Permit is mandated by federal regulations under the Clean Water Act and administered by the Minnesota Pollution Control Agency. A municipal separate storm sewer system (MS4) is a system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains) owned by a municipality. The MS4 program gives owners or operators of MS4's approval to discharge storm water to lakes, rivers and wetlands in Minnesota. The MS4 General Permit focuses on reducing the pollution that enters these public systems and discharges to wetlands, streams and lakes ("waters of the state"). By federal rule, storm water systems in urban areas are labeled Mandatory MS4s. The City of Lake Elmo is a Mandatory MS4 City.

As a MS4 City, Lake Elmo was required to obtain and comply with a National Pollutant Discharge and Elimination System (NPDES) storm water permit. To meet these requirements the city prepared and implemented a Storm Water Pollution Prevention Program (SWPPP) beginning in 2006. The MPCA targets reissuance of a new permit every 5 years with the most recent permit issued in 2020. As required by the MPCA, the city submitted an updated SWPPP document this past April as an application for coverage under the new permit. The MPCA will be posting the SWPPP documents from all MS4 cities for a 30-day public notice period later this summer.

The SWPPP specifies and outlines a series of best management practices intended to satisfy the permit requirements for each of the six minimum control measures. The six minimum control measures are:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Storm Water Controls
5. Post-Construction Storm Water Management for development and redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The updated permit includes a number of new requirements within each of the six (6) minimum control measures, including additional training; inventory and mapping requirements; updates to written review, inspection and enforcements procedures; and expanded documentation requirements. Once the 30-day public notice period has ended and after the city has addressed all public comments that are received, the

MPCA will extend renewed permit coverage to the city. The city then has 12 months to revise the SWPPP to implement all new requirements under the permit.

PROPOSAL DETAILS/ANALYSIS: As part of the on-going permit requirements as a mandatory MS4 City, staff has prepared the 2020 MS4 Annual Report and will present a summary report to the City Council and general public. The City must hold an Annual Public Meeting to encourage public discussion and participation regarding its storm water quality and steps it is taking to address the MS4 Permit requirements. Public input received will be considered for updating the City's Storm Water Pollution Prevention Program (SWPPP) and the meeting minutes will be incorporated into the City's final report. The 2020 MS4 Annual Report must be submitted to the MPCA by June 30, 2021.

RECOMMENDATION: Staff is recommending that the City Council conduct the Annual Public Meeting required by the MS4 Permit and receive public input and comments. After receiving public comment, it is recommended that the City Council accept the MS4 Annual Report for 2020 and authorize staff to submit this report to the MPCA by June 30, 2021. The recommended motion for the action is as follows:

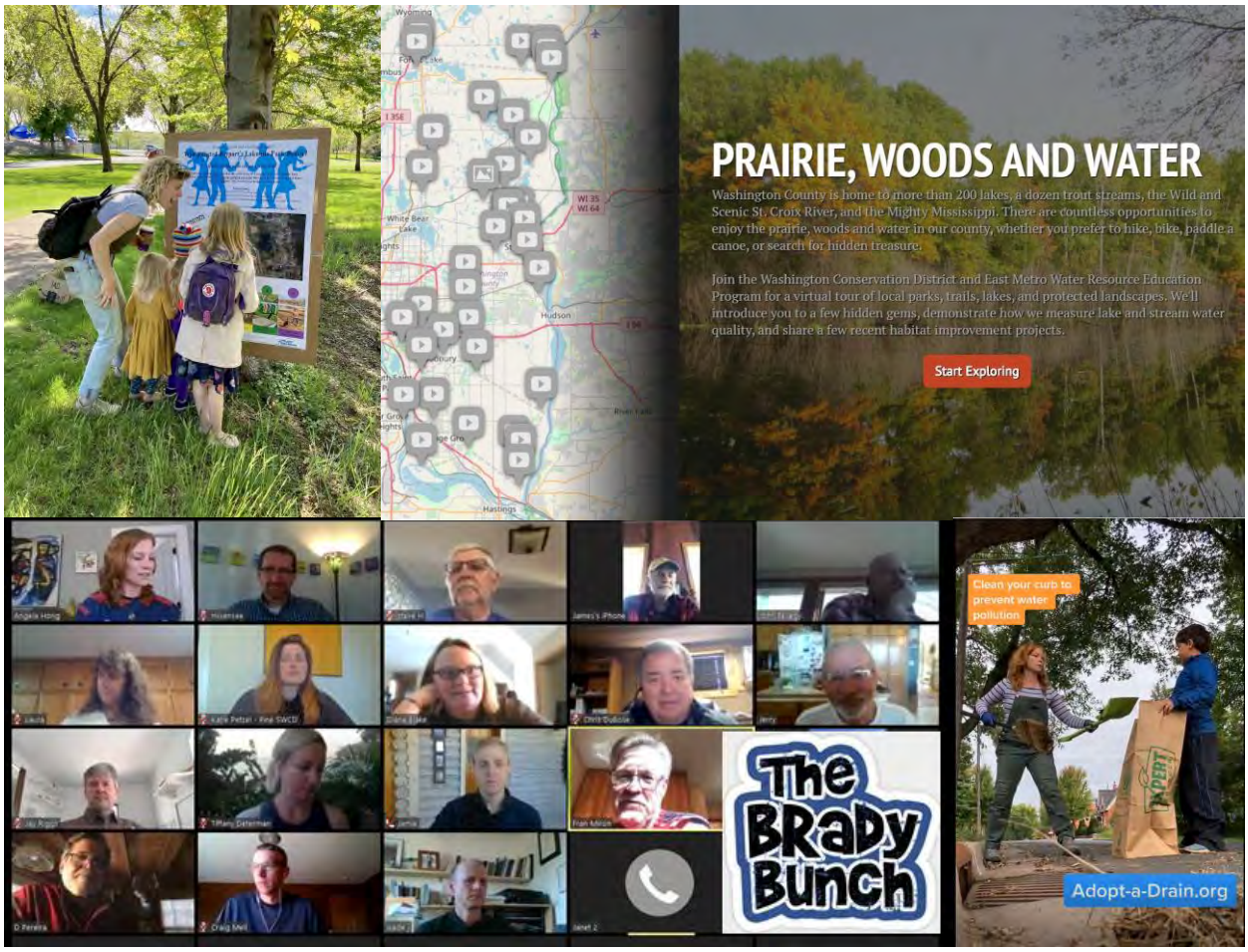
"Move to accept the MS4 Annual Report for 2020 and authorize staff to submit the Report to the MPCA."

ATTACHMENTS:

1. East Metro Water Resources Education Program (EMWREP) 2020 Annual Report.
2. City of Lake Elmo 2020 MS4 Annual Report.

East-Metro
Water Resource Education Program

2020 Annual Report



Above: 2020 was a year for video calls, webinars, social media, and virtual education.

Members of the East Metro Water Resource Education Program:

Brown's Creek Watershed • Carnelian-Marine-St. Croix Watershed
Comfort Lake-Forest Lake Watershed • Bayport • Cottage Grove • Dellwood • Forest Lake
Grant • Hugo • Lake Elmo • Middle St. Croix Watershed • Newport • Oak Park Heights • Oakdale
Ramsey-Washington Metro Watershed • Rice Creek Watershed • South Washington Watershed
Stillwater • St. Paul Park • Valley Branch Watershed • Willernie • West Lakeland
Woodbury • Washington Conservation District • Washington County

East Metro Water Resource Education Program
2020 Annual Report

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About the East Metro Water Resource Education Program

Background: The East Metro Water Resource Education Program (EMWREP) is a partnership hosted by Washington Conservation District that was formed in 2006 to educate community residents, businesses, staff and decision-makers about issues affecting local lakes, rivers, streams, wetlands and groundwater resources and to engage people in projects that will help to protect and improve the health of these water resources.

Over the past 15 years, the EMWREP program has grown from seven local government partners to 25. In 2021, EMWREP will expand further to serve portions of Anoka, Chisago, Isanti and Pine Counties and support implementation of the Lower St. Croix "One Watershed" Plan.

Partnership Structure:
In 2020, EMWREP partners included:

- Washington Conservation District (host)
- Washington County
- Watershed management organizations: Brown's Creek, Carnelian-Marine-St. Croix, Comfort-Lake Forest Lake, Rice Creek, Ramsey-Washington Metro, South Washington, and Valley Branch Watershed Districts, and the Middle St. Croix Watershed Management Organization
- Cities and townships: Bayport, Cottage Grove, Dellwood, Forest Lake, Grant, Hugo, Lake Elmo, Newport, Oakdale, Oak Park Heights, Stillwater, St. Paul Park, Willernie, and Woodbury, West Lakeland Township

Partners jointly fund the program based on a set formula, with fees determined by population (cities) or taxable market value (watershed organizations). A steering committee comprised of representatives from each of the partner organizations meets twice a year to provide recommendations on the program budget and activities.

In 2021, EMWREP will expand to serve portions of Anoka, Chisago, Isanti and Pine Counties in order to help implement the St. Croix Comprehensive Watershed Management Plan. Watershed based implementation funds from the Minnesota Board of Water and Soil Resources (BWSR) will be used to hire additional staff. In addition, local partners in the northern counties will be invited to join the EMWREP partnership.

EMWREP's program coordinator – Angie Hong - communicates regularly with partner staff, council members and board members; prepares an annual report detailing program activities; and provides data for partners' MS4 Permit reports. EMWREP plans and reports are available on-line at www.mnwcd.org/emwrep.

Coordination and collaboration: The EMWREP partnership helps to strengthen relationships between member entities and allows for better coordination and less overlap in the management of local water resources.

EMWREP staff provide leadership for several regional partnerships including Watershed Partners; St. Croix Environmental Education Partnership (SWEEP); Blue Thumb – Planting for Clean Water; and Minnesota Water Stewards. In addition program staff regularly collaborate with nonprofit and citizen-led groups in the Twin Cities and Lower St. Croix regions.

PUBLIC EDUCATION AND ENGAGEMENT

Audience: General Public, Urban and Rural Landowners, Youth

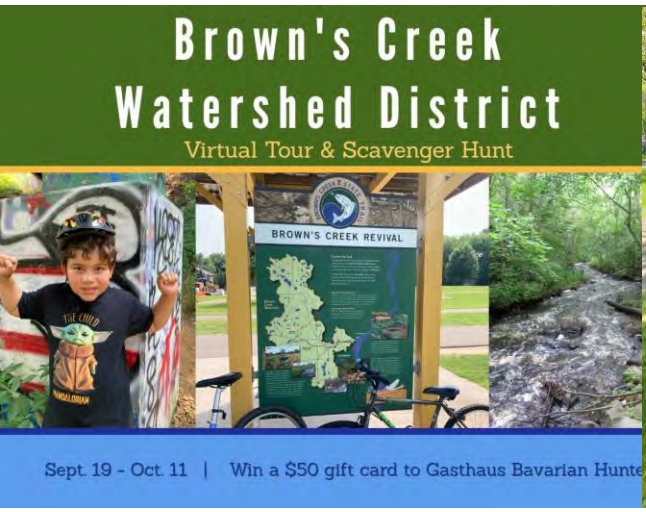
Program Goals:

1. Educate the public about nonpoint source water pollution, groundwater conservation, and basic watershed ecology and management.
2. Build partnerships with state and local government, non-profit organizations, and community groups.
3. Engage citizen volunteers to help conduct education and outreach.
4. Motivate urban and rural landowners to practice behaviors that protect water resources.
5. Train and assist urban and rural residents to complete projects on their land that reduce runoff pollution, conserve groundwater, and increase infiltration.
6. Support EMWREP partners in meeting MS4 Stormwater Permit public education and public engagement requirements.

Educational Objectives:

Citizens will learn:

1. That nonpoint source water pollution comes from a variety of land uses - residential, commercial, and agricultural.
2. That common pollutants impacting surface and groundwater resources in the east metro area include phosphorus, sediment, nitrates, *E. coli*, chloride, and mercury.
3. That a watershed includes all of the land draining to a lake, stream or river, and that Watershed Districts and Watershed Management Organizations are special-purpose local units of government charged with managing the resources of a given watershed to prevent flooding and protect water quality.
4. That surface and groundwater resources interact.
5. That area residents can help to prevent nonpoint source water pollution through a variety of behaviors, including raking leaves and grass clippings out of the street, using less fertilizers and chemicals on lawns and gardens, covering bare soil during landscaping and construction, picking up pet poop, replacing failing septic systems, using less salt for winter maintenance and water softening, disposing of household waste properly, and using less electricity.
6. That landowners can help to reduce runoff pollution, conserve groundwater, and increase infiltration by installing best management practices such as habitat plantings, raingardens, and shoreline plantings; repairing erosion; and managing drainage around homes, farms, and commercial buildings.



PUBLIC EDUCATION AND ENGAGEMENT: STRATEGIES & ACTIVITIES

1. Stormwater Education Support for MS4 Permit Compliance

To support partners in meeting MS4 Permit requirements; EMWREP conducts educational activities and provides partners with newsletter articles, social media graphics, and fact sheets that can be distributed to the public.

With the approval of a new MS4 General Permit in November of 2020, EMWREP has also developed new guidance to help partners meet education requirements in future years.

Stormwater related priorities for EMWREP (partners can choose different priorities for themselves if needed)

1. Reducing stormwater runoff through landscape changes to commercial, residential, and public properties (ie. Installing raingardens or converting turf to native plantings)
    - This includes public projects, completed with support from community residents, as well as landowner-led projects, completed with encouragement and/or support from EMWREP partners.
2. Encouraging residents to keep leaves and grass clippings out of roadways, ditches, and drainage pathways in order to reduce nutrient inputs to stormwater runoff
    - This includes promotion of the Adopt a Drain program.

Public Participation and Involvement

Though in-person public engagement opportunities were dramatically limited in 2020 due to COVID, EMWREP conducted the following activities:

- Promoted the Adopt a Drain program: 265 new adoptions in 2020. Total = 550 in Washington County.
- Helped to plan and execute community clean-up events in Stillwater and Forest Lake on Sat., Sept. 12

MS4 Toolkit
Videos, newsletter articles, fact sheets and other tools for stormwater education

In 2020, EMWREP finished updating the MS4 Toolkit, which is hosted online as part of the MPCA's Minnesota Stormwater Manual. New resources include:

Videos for the General Public

Illicit discharge:

- English: https://youtu.be/AIhvFzNb2tA
- Spanish: https://youtu.be/vp3PNWmPSbk
- Somali: https://youtu.be/o9HyWIctQoo
- Hmong: https://youtu.be/Vd9rU6Uqfpc

Lawn Care:

- English: https://youtu.be/HuD0muQzogE
- Spanish: https://youtu.be/eB9ZvZDfQ8U
- Somali: https://youtu.be/L_Zz0biHTkE
- Hmong: https://youtu.be/_15o2FCDsmw

4 Tips for a Beautiful, Water-Friendly Yard:

- English: https://youtu.be/oiZilb0lOxI
- Spanish: https://youtu.be/C0SBLAnxMYQ
- Somali: https://youtu.be/CA9KzcCVQnU
- Hmong: https://youtu.be/dXPjN91B53I

Training Videos for Municipal Staff:

- Stockpile Management
- Use and Storage of Significant Materials
- Routine Street and Parking Lot Sweeping
- Pesticides and Fertilizers
- Right of Way Maintenance
- Vehicle Maintenance
- Road Maintenance
- Waste Disposal
- Emergency Response
- Cleaning of maintenance equipment, building exteriors, and dumpsters
- Illicit Discharge Detection and Elimination
- Raingarden Maintenance
- Parks Maintenance

Newsletter articles + social media graphics on the following topics

- **Adopt a Drain**
- **Algae**
- **Carpet cleaning**
- **Clean streets for clean water**
  - Includes translations in Spanish and Somali
- **Condos and townhomes going green**
- **Debunking myths about raingardens**
- **Dog poop**
  - Includes translations in Spanish and Somali
- **Five clean water actions in less than 1 hour**
- **Frogs**
- **Grass clippings**
  - Includes translations in Spanish
- **Illicit discharge**
  - Concrete wastewater, carpet cleaning, painting, vehicle maintenance, and general IDDE
  - Includes translations in Spanish
- **Lawns**

- **Leaves**
  - Includes fall utility inserts
  - Includes translations in Spanish and Somali
- **Mercury**
- **Score your shore**
- **SMART salting**
  - Includes translations in Spanish
- **State of the lakes**
- **State of the rivers**
- **Vehicle care**
  - Includes translations in Spanish and Somali
- **Wetlands**
  - Including wetland vs stormwater pond
- **What is a watershed?**
- **Winter yard prep**

Fact Sheets
See Appendix B for English language versions of new print materials.

- **Guidance for lawn care providers**
  - Includes translation in Spanish
- **Mapping and inspections of stormwater infrastructure**
- **MS4 Permit**
- **Waste disposal**
  - Includes translations in Spanish and Somali
- **Small-scale construction**
  - Includes translations in Spanish and Somali
- **Stormwater management**
  - Includes translations in Spanish and Somali
- **Water pollution 101 – Pollutants and stressors**
  - Set of 1/2pg rack cards with information about bacteria, phosphorus, nitrogen, chloride, mercury, and sediment.
  - Includes translations in Spanish and Somali
- **Water governance flow chart**

The above listed materials were shared with EMWREP partners via email in 2020.

Public Education Events and Activities

Despite the challenges of COVID-19, EMWREP staff got creative and planned a number of watershed education events for the public that were held virtually or in-person with safe distancing.

Water Pollution Mystery Game: Participants searched for hidden clues to solve a water pollution mystery. The game was set up in various locations around Washington County throughout the summer so that people could participate as individuals or families with safe social distancing. Winners received an orienteering compass or magnifying glass as a reward.

Locations and dates of Water Pollution Mystery Game events:

- Bayport, Lakeside Park – May 19
- Forest Lake, Lakeside Park – June 2
- Oakdale, Tanners Lake Park – June 19
- Stillwater, East side of Long Lake – July 10
- Hugo, Heritage Ponds Park – July 22
- Cottage Grove, Highlands Park – July 31
- Woodbury, Carver Lake Park – Aug 11
- Marine on St. Croix, Burris Park – Aug. 21
- Woodbury, Tamarack Nature Preserve – Oct. 10-11

A total of 84 people submitted answers online for the Water Pollution Mystery Game. Here's what participants had to say about the game:

"Thank you again for the wonderful educational experience for my son and I! The mystery Clue Game was very well set up, and we appreciate it! My son Chev and I look forward to more future games like this one!"

"We are soooo excited and had an absolute blast seeking the suspect. Thank you for your hard work and planning in it all!"

In addition to being fun, the game generated good publicity as well. It was written up in an article for Bring Me the News and spurred lots of conversation in community Facebook groups.

Take a kid fishing event – Cottage Grove, Aug. 20
EMWREP staff attended this outdoor event and conducted a lesson about macroinvertebrates and aquatic health.

Brown's Creek Watershed District Virtual Tour & Scavenger Hunt –Sept. 19-Oct. 11
EMWREP created this event as an alternative to the community festival usually held in Brown's Creek Park in September. The event included an online virtual tour of sites along Brown's Creek, as well as 11 letter clues hidden along the trail. Participants were encouraged to run, walk, bike, or skate the trail to find hidden clues and enter a drawing to win prizes.

- Virtual Tour: http://bit.ly/bcwd-map20
- Video: https://youtu.be/I3dinsHjAAo

2. Volunteer engagement:

Minnesota Water Stewards
20 Stewards certified in Washington County 6 new stewards graduated in 2020

EMWREP has participated in the Minnesota Water Stewards program since 2018 and has certified 20 volunteers over the past three years. Six stewards completed their training and capstone projects in 2020. In August, we also closed out a three-year BWSR Clean Water grant that had provided funding for this program in Washington County since 2017.

Water stewards participate in 50-hours of in-person and on-line training and complete a capstone project to become certified. Once certified, stewards volunteer 50-hours during their first year of service and 25-hours per year afterwards to remain in the program.

Some of the many volunteer projects led by water stewards include:

- Organizing raingarden clean-up events
- Joining watershed district CACs
- Going door-to-door in their neighborhoods to promote Adopt-a-Drain and other programs
- Attending community events on behalf of EMWREP partners
- Removing invasive species and planting natives in public spaces
- Establishing gravel beds to grow trees for community plantings

In 2020, the following people participated in the program:

- Barb Bickford and Mike McCarthy – Stillwater (MSCWMO)
- Deb Wall – Lake Elmo (VBWD)
- Gabriel Curell – Lake St. Croix Beach (MSCWMO)
- Jean and John Schreckheis – Forest Lake (CLFLWD)
- Leslie MacKenzie – Marine on St Croix (CMSCWD)
- Martin Hyndman – Lake Elmo (VBWD)
- Pam Kelly – West Lakeland Twp. (VBWD)

In addition, EMWREP staff continued to engage stewards from previous cohorts through emails and Zoom meetings, held on Sept. 9 and Nov. 17.

Adopt a Drain
550 drains adopted in Washington County (+265 in 2020) 14,077 drains adopted in Minnesota

The Adopt-a-Drain program engages community residents in helping to prevent stormwater pollution by cleaning leaves, litter and other debris off of storm drains near their homes. Volunteers get reminders via text or email and are asked to report their actions on-line so that cities can track the program's impact. They may also receive a small sign, placed in their yard to help spread the action and let neighbors know of their commitment to clean water.

The Adopt-a-Drain program was created by Hamline University's Center for Global Environmental Education on behalf of Watershed Partners, a metro area collaborative with 60+ partners.

EMWREP promotes the program through a variety of means, including:

- Press releases and city newsletter articles
- Websites and social media
- Door-hangers distributed by volunteers

265 new volunteers signed up to adopt drains in 2020. As a result, there are now 550 storm drains adopted in Washington County.

In April, Watershed Partners also launched a new Adopt-a-Drain 90-second animated film that aired regularly on TPT throughout 2020.

Adopt a Raingarden
55 raingardens adopted in Stillwater and Oak Park Heights

The Adopt-a-Raingarden program engages community volunteers to care for raingardens in Stillwater and Oak Park Heights. Volunteers commit to removing weeds, litter, and built-up sediment during the growing season and reporting larger maintenance concerns to staff at Washington Conservation District. More info at: www.mnwcd.org/adoptaraingarden.

In 2020, EMWREP collaborated with Sustainable Stillwater MN to engage Adopt a Raingarden volunteers and ensure that gardens were well-maintained. In person events were hindered by COVID-19 concerns; however, volunteers continued to maintain gardens on their own.

3. Education Partnerships

One the most important strategies utilized by the EMWREP program is to build partnerships and work collaboratively with federal, state and local government; non-profit organizations; and community groups to educate and engage the public.

Some of our key partnerships include:

Watershed Partners
70 partners in the Twin Cities

Metro Watershed Partners is a coalition of more than seventy public, private and non-profit organizations in the Twin Cities metro area. Through collaborative education and outreach, the Metro Watershed Partners promote a public understanding that inspires people to act to protect water in their watershed. Since 1996, partners have cooperated through educational projects, networking, and resource sharing.

The mission of the Metro Watershed Partners is two-fold:

- To provide and promote collaborative watershed education programs with consistent messages to the general public, local government staff and elected officials; and
- To provide WSP members a place and means to share information, generate ideas, and coordinate and support collaborative watershed education programs.

Watershed Partners holds monthly meetings with special presentations, publishes blog-style stories through its www.cleanwatermn.org website, produces content for partners to use in their educational programming, and is host to the Adopt a Drain program.

In 2020, EMWREP coordinator Angie Hong served on the Watershed Partners' steering committee and acted as convener for large group meetings.

The group held ten meetings during the year, with presentations on the following topics:

- **January:** Outcomes from the Clean Water Fund Paul Gardner, Clean Water Council
- **February:** Chloride Resources and Assistance Brooke Asleson, Minnesota Pollution Control Agency
- **March:** What's Working for Conservation 2020; Lawns to Legumes Update Dan Shaw and Tara Kline from BWSR
- **May:** Climate change and rainfall – where can/should/will all the water go? Leslie Yetka, City of Minnetonka and Janna Kieffer, Barr Engineering
- **June:** Moving environmental education online; Big River Journey, a case study John Shepard & Tracy Fredin of Hamline University's Center for Global Environmental Education and Lyndon Torstenson of the National Park Service.
- **July:** Anti-Racism Conversation
- **September:** Stormwater nutrient pollution of Twin Cities waters: sources and solutions Sarah Hobbie, University of Minnesota
- **October:** Preparing for and Responding to Diverse Audiences and Changing Demographics in Water-related Outreach and Communications Megan Dayton, Senior Demographer at Minnesota's State Demographic Center; Mark Doneux, Administrator, Capitol Region Watershed District; Tammy Schmitz, Communications and Outreach Specialist
- **November:** Art for Water Alex Van Loh and Kris Meyer, Freshwater; Beth Carreno, RCWD; and guest artists
- **December:** Plant for the Future Mary Hammes, Environmental Stewardship and Volunteer Manager, Mississippi Park Connection

St. Croix Watershed Environmental Education Partnership (SWEEP)

78 partners in the Lower St. Croix Watershed

SWEEP (St. Croix Watershed Environmental Education Partnership) brings together staff from parks and nature centers, non-profit organizations, local government, and community groups in the Lower St. Croix watershed to inspire leadership in environmental education though networking, community engagement and collaborative events within the St. Croix River Watershed.

In 2020, SWEEP partners spent time in the early spring preparing for an Earth Day passport event program that was ultimately canceled due to COVID. The group began meeting via Zoom in the fall and is now moving forward on a number of activities for 2021, including distributing a monthly newsletter to highlight outdoor destinations and activities in the St. Croix region, organizing an Earth Day passport program, and planning a St. Croix Youth Summit. EMWREP coordinator Angie Hong is a member of the SWEEP leadership team.

Nonprofit, citizen, and community groups

In addition to the larger partnership programs mentioned above, EMWREP works closely with nonprofit, citizen, and community groups in our area, including:

- Master Gardeners
    - Collaboration on webinars and education activities throughout the year
- Lake associations
    - Angie Hong spoke at the Lily Lake Lake Association Meeting on Oct. 21
    - East Metro Lakes e-newsletter – sent May, Sept., Oct.
- St. Croix River Association
    - Collaboration on webinars and education activities throughout the year
- Pollinator Friendly Alliance
    - Lauren Haydon spoke at the PFA Earth Chapter Webinar on April 14
    - Collaboration on webinars and education activities throughout the year
- Wild Ones
- Sustainable Stillwater MN
    - Collaboration on volunteer activities, including storm drain stenciling, Adopt a Drain, and Adopt a Raingarden

4. Youth education

Though K-12 students are not a primary audience for our education programming, EMWREP provides support for youth education initiatives that are partner-led.

In 2020, youth programming included:

- **Jan. 11 - Girl Scouts "Water Journey" program** – held at Camp Lakamaga on Big Marine Lake. Co-taught with staff from Comfort Lake – Forest Lake Watershed District.

- **Jan. 23 – Presentation at Career Pathways Program** – Oakdale Junior High

- **Feb. 5 – Girl Scouts watershed program** - Stillwater Library

- **South Washington Watershed District (SWWD) Campus Greening projects:** In 2020, SWWD began working with two new elementary schools – Crestview and Valley Crossing - in the South Washington County School District to convert unused turf areas to native plantings. In addition, SWWD continued to work with teachers, students and volunteers at Lake and Middleton Schools, where campus greening projects were completed in 2019. EMWREP had hoped to engage Carpenter Nature Center to conduct classroom lessons for students at these schools, but these lessons were unfortunately canceled due to COVID-19. EMWREP staff continue to provide coordination and education assistance for these projects and are working with Carpenter and SWWD to plan school education for fall of 2021.

- **Support for implementation of the Washington County Groundwater Plan:** In 2020, this included promoting the Children's Water Festival, held virtually in September.

5. Groundwater education

EMWREP provides support for implementation of the Washington County Groundwater Plan.

In 2020, EMWREP had hoped to conduct family-friendly groundwater programming at Washington County libraries. However, these events were not possible due to COVID-19. Instead, EMWREP staff directed their time toward creating three new videos for the general public and two new print handouts for rural residents. See Appendix B for print materials.

Videos

- **Hold the Salt to Protect Minnesota Water** - https://youtu.be/Io-zTw5Yb6g
  - This 4-min video uses cartoon graphics to illustrate the dangers of chloride pollution and provide advice on how to limit salt use.
- **Our groundwater connection** - https://youtu.be/JQVc7-io2uc
  - This 5-min video is adapted from a video originally made by the Anoka County Watershed Education Partnership. It uses cartoon graphics to illustrate what groundwater is and talk about risks to groundwater and ways to protect groundwater.

- **Our Groundwater Connection: Contamination** - https://youtu.be/gRSHJpe8pq8
    - This 5-min video is a companion to the "Our groundwater connection" video that focuses specifically on groundwater contamination. EMWREP and Washington County staff provided input on the script development.

Fact Sheets (Appendix B)
- Well water testing postcard
- Caring for septic systems to protect water resources

6. Aquatic Invasive Species (AIS)

EMWREP also provides support for AIS education in Washington County.

Education activities in 2020 included:

- Collaborating with St. Croix River Association to conduct AIS education
    - AIS video with Lake Demonstreville/Olson Association
    - Lake service provider postcard mailed to residents on Big Marine, Clear, Demontreville-Olson, Forest, and Square Lakes (See Appendix B)
- Publishing AIS information in print and social media.
    - News articles in Stillwater Gazette and Forest Lake Times
        - May 15 - Help prevent the spread of aquatic invasive species while fishing and boating this season
    - Facebook – posts reached 1113 people
        - SCRA + LDO video
        - Algae vs duckweed vs aquatic plants
        - Reed canary grass
        - Zebra mussels
        - Square Lake – Keep it clean
        - Help prevent the spread of AIS
        - AIS webinar promo\
    - Instagram posts – posts reached 298 people
        - Drain your boat
        - Drain your boat
        - Algae vs duckweed vs aquatic plants
    - TikTok – videos reached 680 people
        - Freshwater mussels
        - Zebra mussels
        - Duckweed vs algae

- Delivering an e-newsletter to 165 lake association members and shoreline residents (3 newsletters in 2020)

7. Flooding education

After several years of wetter than normal weather, local partners were very concerned about the risk of major flooding in spring of 2020. In response, EMWREP created a flooding fact sheet and social media graphics with guidance for common flood related concerns. We also created a flood information page on the Washington Conservation District website: www.mnwcd.org/flooding.

In addition, EMWREP helped to write articles about flooding for partner newsletters and local newspapers.

8. Media and Communications

In 2020, EMWREP used a variety of communications platforms to share watershed and stormwater information, promote partner projects and programs, and publicize events and activities.

Print Communications

Newspaper articles: Angie Hong has published a weekly column for the Valley Life – Stillwater Gazette for 15 years. The articles are posted on-line at www.eastmetrowater.org and frequently appear in other local newspapers as well.

- **Chisago Press** (Circulation - 3963)
- **Forest Lake Lowdown** (Circulation – 13,997)
- **Forest Lake Times (**Circulation - 13,029) – *Hong column featured monthly*
- **Hugo Citizen** (Circulation – 14,500)
- **Scandia Country Messenger** (Circulation - 1075)
- **St. Croix 360** (On-line: 25,647 followers)
- **St. Croix Lowdown (**Circulation – 5000)
- **Valley Life / Stillwater Gazette** (Circulation - 17,479) – *Hong column featured weekly*
- **White Bear Press (**Circulation – 19,331)

Newsletters: EMWREP also provides content for city, watershed and WCD newsletters.

Newspaper articles published in 2020 included:

WaterBar offers a unique opportunity to share and hear new stories – Jan. 17
"Growing up in Jamaica, my family had a deep connection with the land and the ocean where we lived," says Angelo Williamson. "When I moved to the United States, I felt a strong sense of identity as a Jamaican. When other people looked at me and saw me as a black, African-American man, that was confusing."

Ode to an old dead log – Jan 18

"Driving down a country road last week, I turned to gaze at a lone tree in the west that always stands so firmly, silhouetted against the evening sky. On this night, however, one half of the tree lay sprawled across a nearby farm field, toppled over by wind or age. "How sad," I thought."

Nurturing the Wild – Jan. 23

"What is that over there?" "It's the wild," said the mole. "Don't fear it." "Imagine how we would be if we were less afraid." – Charlie Mackesy, The Boy, the mole, the fox and the Horse

2020 Brings $1.9 Million in New Clean Water Funds to the Lower St. Croix area – Feb. 10

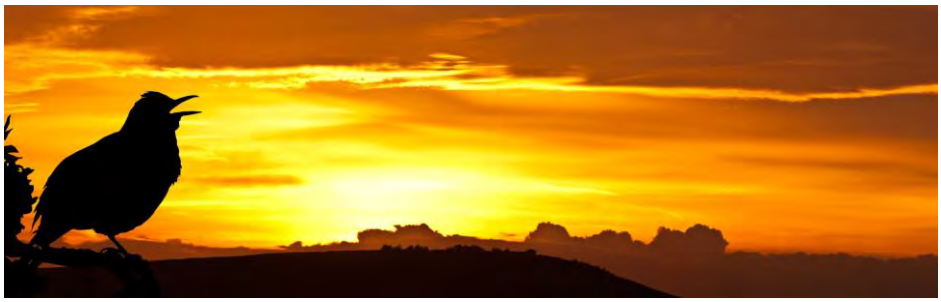
On January 22, the Minnesota Board of Water and Soil Resources approved $13.9 million in Clean Water Fund grants to improve water quality in lakes, streams, and groundwater aquifers across the state.

Feedback helps to shape Lower St. Croix 10-Year Watershed Plan – Feb. 10

"Over the past two years, 15 local government partners in Anoka, Chisago, Isanti, Pine, and Washington Counties have been working to create a shared watershed plan to guide collaborative work in the Lower St. Croix region for the next 10 years."

Minnesota climatologists predict another year of major spring flooding – Feb. 21

"The National Weather Service and Minnesota Climatology Department are both predicting another wet spring with major flooding in 2020. There is a high chance of flooding on the Mississippi and St. Croix Rivers, as well as in lakes, ponds, farm fields, and low lying areas."



The hills [will soon be] alive with the sound of music – Feb. 27

"It is never a secret when my son and I go for a walk. You can hear us coming from at least a block away. I'm usually singing because I consider myself to be either Julie Andrews or June Carter, depending on the day."

Wet basement? Sorry, no app for that. – March 6

"The sun is out, the snow is melting, and someday soon you may go downstairs and discover that your basement is wet. What should you do?"

A walk in the woods, a planted seed, new skills to learn – March 17

"We went to the woods on Sunday afternoon to enjoy fresh air, warm sun reaching through frostbitten air, and no other humans in sight. For the dog, it was just like any other day. She had no idea that the world was turning upside down as she galloped across the blackened prairie."

The day the kingdom rested – March 27
"Once upon a time, there was a great big busy kingdom that was marvelously filled with magic. Rocks split open, allowing crystal clear water to pour out for the villagers to drink; trees oozed with liquid that turned to sugar when it was cooked; and tiny crystals fell from the sky every winter."

Do's and Don'ts of Spring Gardening – April 2
"With too much time on his hands during the past few weeks, one friend's husband gave their seven-year old a Mohawk haircut. Another started tearing down portions of the ceiling in their entryway to install new lighting. (Actually, that was the same guy.)"

500 Frogs a Croaking – April 9
"On the third week of coronavirus my true love gave to me, 500 frogs a croaking, four [dozen] calling birds, three rich fens, two mourning doves, and a partridge in the Great Plains. It is Saturday, which means two days of rest away from video conferences, working remotely, homeschooling, and tending home."

Adopt a storm drain in honor of Earth Day's 50th Anniversary – April 16
"On April 22, 1970, 20 million Americans — 10% of the U.S. population at the time — participated in teach-ins and rallies across the nation to advocate for an end to environmental destruction."

Inspiring a Land Ethic – April 23
"There are degrees and kinds of solitude. An island in a lake has one kind; but lakes have boats, and there is always the chance that one might land to pay you a visit. A peak in the clouds has another kind; but most peaks have trails, and trails have tourists."

One woman's weed is another woman's salad – April 30
"Look! There's a yellow flower growing in that jagged sidewalk crack, but watch out! You almost stepped on the crack and everyone knows that would break your mother's back. Is it a weed or is it a flower? I guess that depends on who you ask."

Green Lands, Blue Waters – A new menu for Minnesota farmers? – May 8
"Do you like Kernza® and jam? Would you eat it in a boat? Would you eat it with a goat? Would you try it drenched in milk, ground to flour, or brewed as beer?"

Help prevent the spread of aquatic invasive species– May 14
"Last weekend, Minnesota's 2020 fishing season opened with a bang. There was snow up north, only a few fish caught in the St. Croix River, and no cameo appearances from Minnesota Governor Tim Walz. None-the-less, record numbers of Minnesotans purchased fishing licenses last week and set sail in search of walleye, pike, and lake trout."

Find wilderness close to home – May 22
"Like any good wilderness adventure, our day featured a stimulating mix of peaceful solitude, surprising discoveries, playful rest time, and harrowing travel."

A modern day tale of Tortoise and Hare – May 29
"As I rounded the corner, I hit the gas and pedaled harder knowing the other bike was probably close behind. Perhaps he'd seen pigtails sticking out from beneath my helmet and thought it would be easy to catch a girl. Little did he know that I am quick like a rabbit."

River flowing, gathering tears – June 4
"The Mississippi is like a woman with a basket on her back that grows heavier by the hour. Sometimes I think she gathers our tears as well, as she sweeps through burning cities and past people crying out for justice."

Meandering in the woods – June 12
"There is an art to meandering in the woods. For Trout Brook and other naturalized streams, the "wiggles" allow for different types of habitat that fish need. Sometimes people need a pause to wander in the woods as well."

Friends of Sunfish Lake Park lands $139,000 grant to manage buckthorn – June 18
"This summer, Friends of Sunfish Lake Park secured a $139,000 grant from the Minnesota Lessard-Sams Outdoor Heritage Council Conservation Partners Legacy Grant Program to remove buckthorn and restore native plants in 40 acres of the park."

Rumor has it there's a rumor in town – June 25
"By some default of the human genome, we seem programmed to spread rumors. It often seems that the harder you work to dispel these false narratives, the more tenaciously they cling."

Paddle, Bike, Repeat: Four days on the Namekagon and St. Croix Rivers – July 3
"We started our trip at the County Rd K landing (Namekagon River), near Trego, Wisconsin, and ended four days later at the Lower Tamarack landing (St. Croix River), 47-miles downriver. To avoid using a shuttle or bringing two cars, I brought my mountain bike along and rode back to our put-in at the end of each day to bring our truck and camping gear down to the next location."

Love Square Lake, Big Marine, St. Croix River? – July 9
"CMSCWD includes 17 miles of the St. Croix Riverway stretching from Stillwater Township to Scandia, as well as 31 lakes, three designated trout streams, and hundreds of acres of wetlands. The four largest lakes in the district – Big Marine, Big Carnelian, Little Carnelian, and Square Lake – are in the Top 10 list of cleanest metro area lakes. There are also thousands of acres of high quality, undeveloped habitat in the region. Where should the district focus limited time and money in the coming decade?"

Dead fish and green water? – July 9
"In recent weeks, several people have contacted the Comfort Lake-Forest Lake Watershed District (CLFLWD) to report fish kills and algal growth observed in Forest Lake. Read on to learn what's behind these recent phenomena."

What goes down, must come up – July 11
"Ask anyone with young kids and they'll tell you about the strain of parenting in COVID times. With schools, summer camps, and daycare closed, we dance a wiggly cha cha as we attempt to somehow do a full day's work while simultaneously caring for stir-crazy children who've been stuck at home since March."

Green lawns for blue water and good health – July 24
"Some common lawn care practices can harm wildlife, pets, and water resources. Happily, there are a few simple guidelines you can follow to get a healthy lawn that looks nice without harming the environment."

Gophers and muskrats, oh why? – July 30
"In a native planting or restored prairie, however, gophers should be considered a friend. Yes, the prairie will be bumpy instead of flat, but nature tends to be that way."

Search for hidden treasure, and sometimes you find goats – Aug 6
"Charlie and I excitedly watched our beacon move ever closer to the hidden cache as we hiked down a trail into the woods. 350 feet to go. 300 feet to go. 100 feet to go! Then we heard a plaintive bleat from behind the trees. Had I heard a goat?"

A crack in the rock & a beach in the forest – Aug. 14
"Crystal Spring Scientific and Natural Area (SNA) in Scandia was established just four years ago. It contains a crystalline spring that pours out of the side of a rock wall, deep in an emerald chasm."

Green days on a summer lake – and that's not a good thing – Aug. 21
"Algae blooms in Carver Lake and other urban lakes are usually caused by too much phosphorus flowing into the water from sidewalks, streets, and parking lots.
Help to keep our lakes blue by sweeping dirt and yard waste off of your sidewalk, driveway and curb-line throughout the year and adopting your local storm drain: www.adopt-a-drain.org."

Brown's Creek Watershed District to work with Oak Glen Golf Course on a new Clean Water project – Aug. 27
"There are three main goals for the Oak Glen stormwater reuse project. The first is to keep warm stormwater out of Brown's Creek. The second is to keep phosphorus and sediment out of Brown's Creek and the St. Croix River. In addition, this project will allow Oak Glen Golf Course to reduce the amount of groundwater it pumps for irrigation."

Campus greening projects planned for Valley Crossing and Crestview Elementary Schools – Sept. 11
"At Valley Crossing in Woodbury, the school will convert 3.7 acres of turf to oak savanna and revitalize 7.15 acres of existing prairie on site. Crestview Elementary in Cottage Grove will restore 10 acres of degraded woodlands on campus and convert several areas of unused turf to prairie as well. The project is a partnership between South Washington Watershed District and South Washington County School District 833."

Transformation underway at Lake Elmo Park Reserve – Sept. 18
"Washington County secured funding through the Outdoor Heritage Fund to restore and improve 166 acres of prairie and oak savanna at Lake Elmo Park Reserve around Eagle Point Lake and in the north end of the park."

Explore the Brown's Creek Watershed with a virtual tour and scavenger hunt – Sept. 24
"This fall, Brown's Creek Watershed District is offering a virtual tour and scavenger hunt to highlight some of the historical features, natural wonders, and stream-improvement projects along the route."

Fall yard care reminders and tips – Sept. 28
"Harvest the last of your tomatoes and herbs now before they're killed by an overnight freeze. Wait to cut down old stems and seed heads until the late spring. Instead of raking leaves, mow your lawn a few times to mulch up the leaves and return nutrients to the soil. If you live on a lake, be sure that you hire a DNR certified contractor to remove your dock this fall."

Tamarack Nature Preserve Park & Boardwalk Reopening Celebration – Oct. 10
"Smack dab in the middle of bustling, suburban Woodbury, the Tamarack Nature Preserve is a hidden gem containing the southern-most tamarack swamp in Minnesota. A community event Oct. 16-18 included a virtual tour and water pollution mystery game."

New rule restricts nitrogen fertilizer application after Sept. 1 – Oct. 15
"Beginning September 1, 2020, Part 1 of the Groundwater Protection Rule goes into effect, restricting the application of nitrogen fertilizer in the fall and on frozen soils in areas with vulnerable groundwater. It applies to approximately 12-13% of Minnesota's cropland and nearly half of the land in Washington County."

Brown's Creek Watershed District Receives Two National Awards in 2020 – Oct. 27
"This fall, the Brown's Creek Watershed District will receive awards from the American Water Resources Association and the Water Environment Federation for long-term work to protect Brown's Creek."

Water stewards inspire neighbors to take action and adopt storm drains – Oct. 29
"To date, Twin Cities' residents have adopted 13,747 storm drains. However, only 530 of those are in Washington County. This fall, the East Metro Water Resource Education Program is encouraging people to adopt a storm drain in their neighborhood and join the movement to promote clean lakes, rivers and streams. To sign up, go to http://www.Adopt-a-Drain.org."

Boy Scouts and Water Stewards help to create outdoor classrooms in Woodbury – Nov. 6
"South Washington Watershed District created its Campus Greening program two years ago to encourage schools and other large campuses to think holistically about how they can meet stormwater management requirements when expanding buildings and parking areas. At the Lake and Middleton campus, South Washington County Schools (District 844) worked with SWWD to convert 15 acres of turf to prairie, plant 200 trees, and create the two new outdoor classrooms."

Amidst tumult of 2020, Comfort Lake – Forest Lake Watershed District work continues - Nov. 10
"CLFLWD continues its work to protect and improve local lakes, rivers, streams and wetlands in Forest Lake and southern Chisago County. The district has completed dozens of clean water projects and is currently updating its 10-year comprehensive watershed management plan, which will guide future work from 2022-2031."

Boring bureaucracy keeps the water clean - Nov. 12
"The U.S. EPA created the MS4 Program in 1990 to address the growing threat of stormwater pollution. In Minnesota, the program is administered by the MPCA and applies to roughly 300 cities, townships, counties, watershed districts, and large campuses such as universities, hospitals and prison complexes that operate their own private roads and stormwater drainage systems. This includes more than 20 permit holders in Washington County."

New trails highlight major changes at Lake Elmo Park Reserve - Nov. 20
"This year, Washington County launched a major transformation at Lake Elmo Park Reserve, aided in part by a grant from the Minnesota Outdoor Heritage Fund. The park has added a new parking lot and entrance off of Inwood Ave., created new trails, and began work to restore 166 acres of prairie and oak savanna. On the east side of the park near the Nordic Center, Washington County added 2.2 miles of new ski trails."

To Bison or to Monet? - Nov. 27
"Washington County Parks is haying the prairie at Pine Point Regional Park to imitate natural processes that would occur if the land were being grazed by bison."

In the in between - Dec. 3
"We're in the season of in between, both literally and metaphorically. The leaves have fallen but the snow has not. A crisp layer of ice coats the corners of the lakes and rivers, not yet thick enough to support our weight, but cold and sharp enough to keep us from impulsively leaping in for one last swim. In the time of in between, look for the simple pleasures in life. The magic is still happening, just a little bit more quietly."

The healing power of nature - Dec. 10
"If you've ever noticed that you feel happier and more relaxed after spending time outdoors, you won't be surprised to hear that research shows a strong connection between time spent in nature and reduced stress, anxiety, and depression."

Getting older shouldn't mean staying indoors – Dec. 17
"Randy Thoreson, a retired National Park Service employee, has traveled the country advocating for new programs to help get seniors outdoors in nature."

Lower St. Croix "One Watershed" plan approved – Dec. 18
"After two years of planning, a Lower St. Croix 10-year Comprehensive Watershed Management Plan was approved by the Minnesota Board of Water and Soil Resources on Oct. 28."

When the stars shine bright – Dec. 24
"In this week of winter solstice, Christmas and Kwanzaa, we approach the end of a long, strange year with a mix of sadness, hope and tangled up holiday lights."

2021 will bring $2.6 million in new funding for watershed work in the St. Croix region – Dec. 31
"Just in time for the holidays, the Minnesota Board of Water and Soil Resources approved $12.3 million in Clean Water Fund grants to be used statewide for water quality improvement projects across Minnesota. Locally, partners in the Lower St. Croix watershed will receive $1.4 million in Clean Water grants in addition to $1.2 million allocated for implementation of the Lower St. Croix "One Watershed" Plan."

Online Communications

For years, EMWREP partners have relied on local newspapers to help us educate the public about water issues in our communities and promote workshops and events. During the past year, however, we've lost four community newspapers – the Oakdale-Lake Elmo and Maplewood-North St. Paul Reviews, as well as the Woodbury and South Washington Bulletins. In addition, the majority of in-person events were canceled in 2020, due to COVID-19. As such, delivering information and education through webinars, social media, and websites has become one of our most important communications strategies.

Webinars: When EMWREP first offered workshops as webinars in spring of 2020, we were pleasantly surprised to see attendance numbers triple in comparison with our traditional in-person workshops. Last year's webinars reached more than 1000 participants via Zoom and 600 via YouTube. Online learning allows us to easily engage residents from a large geographical area and helps to reduce barriers related to child care and commute-time that existed for our previous in-person workshops. In 2021, we plan to continue offering webinars throughout the year.

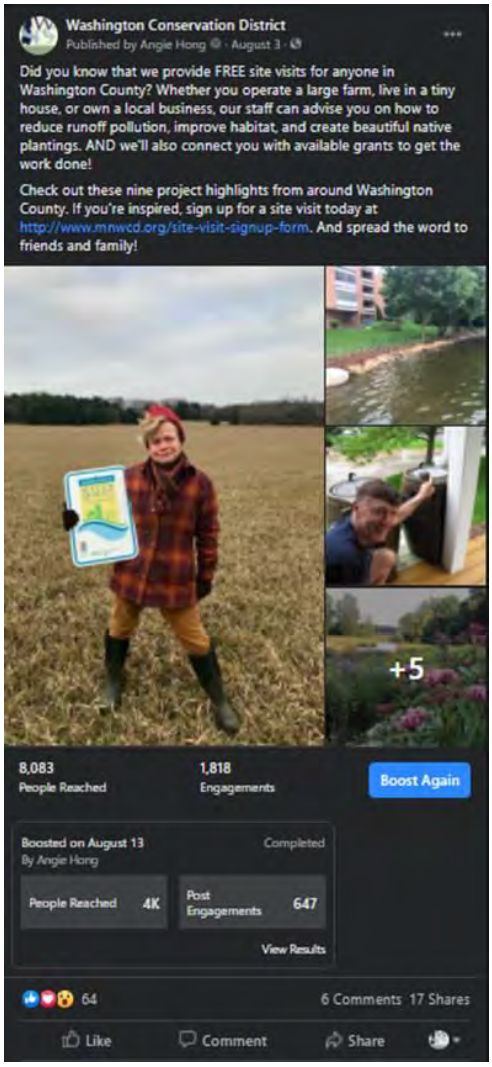
Social Media: EMWREP uses multiple social media platforms to deliver watershed and stormwater information, promote partner projects and programs, and publicize events and activities. Platforms used include Facebook, Instagram, TikTok, YouTube, and Pinterest.

- **Facebook** has 2.45 billion monthly users, is used by 70% of Americans, and continues to be our primary platform for promoting workshops and other events; share partner success stories; and advertise site visits, cost-share grants, and other services that we offer. It is also easy and inexpensive to purchase Facebook ads to deliver our content to people in our communities that are most likely to be interested or to reach new audiences. Facebook continues to be the most widely used social media platform for all ages, races, and income levels and senior citizens are currently the fastest growing demographic on the platform.
- **Other social media plantforms:** In 2020, EMWREP worked to develop a presence on other social media platforms, including Instagram, YouTube, Pinterest, Twitter and TikTok. We are experimenting with how to best engage people on these platforms and how to develop relevant messages for different audiences. We've learned that Twitter is a good way to get stories out to reporters in traditional media, whereas TikTok is a good way to engage young people ages 13-24.

“Best of 2020” - Top performing topics for social media

Facebook – Site visit promo (boosted post) – Aug. 3

- 8083 views + 64 “likes” + 17 shares

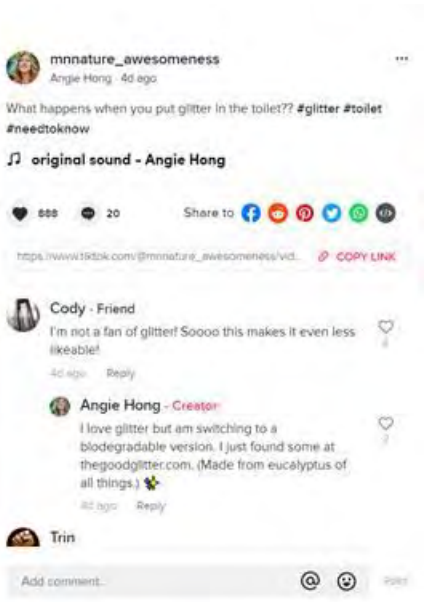


Instagram – Adopt a Drain promo (reel) – Sept. 11

- 2106 views + 79 “likes”

TikTok – Why NOT to put glitter in the toilet (video) – Dec. 9

- 7186 views + 1071 "likes" + 6 shares



YouTube – Park Maintenance municipal training video – created in 2010

- 2988 views

East Metro Water Blog – these and other blog posts are also published in the newspaper

- Most read post: June 25 - 918 readers
- **Rumor has it there's a rumor in town**

  "Tanners Lake is part of the Ramsey-Washington Metro Watershed District (RWMWD), and the district has worked hard to improve and protect water quality in the lake over the past 20 years."

Most popular webinar: Planting for Pollinators

- 6 workshops + 450 registrations + 100 views on YouTube

Pinterest – 12,600 total impressions in 2020

- Most popular pin: Butterfly hike at Lost Valley Prairie SNA (226 impressions)

Websites:

In addition to individual partner websites, EMWREP uses the following websites to share education and information:

- Washington Conservation District: www.mnwcd.org
  - /events – event info and registration
  - /emwrep – annual reports and plans
  - /planting-for-clean-water – resources for planting projects
  - /virtual-tour – short videos highlighting outdoor destinations and activities
- East Metro Water: https://eastmetrowater.org
  - Blog posts on a variety of topics
- Blue Thumb – Planting for Clean Water: www.bluethumb.org
  - Resources for raingardens, native plants, shoreline buffers, and Lawns to Legumes
- Clean Water Minnesota: www.cleanwatermn.org
  - Watershed Partners produces high quality photos and articles for partners to use in their communications. Blog stories highlight actions that Minnesotans are taking to protect water.

- In 2020, Clean Water MN published the following articles:
  - **January:** A Song to Sweep to from Frassati Academy
  - **February:** Mayo Clinic Takes a Smart Approach to Salt
  - **March:** Adopt-a-Drain reaches 10,000 drains milestone
  - **April:** Community Cleanup Lifts Spirits
  - **April:** Minnesotans invited to Adopt a Drain in honor of 50th "Earth Day Birthday"
  - **May:** Street Sweeps Keep the City Clean
  - **June:** Making space to confront systemic racism
  - **September:** Masjid An-Nur leads the way as an 'Eco-Mosque'
  - **October:** Rake up to protect lakes and rivers from leaf litter

Interpretive Exhibits and Signs

Over the years, EMWREP staff have helped to design dozens of high-quality displays, interactive exhibits, and interpretive signs. Examples include the Blue Thumb retractable "root pull" display; two suitcase-style interactive exhibits about groundwater; interpretive signs at Square Lake Regional Park, Afton Alps, and Joy Park; and AIS information signs at public boat launches in Washington County.

In 2020, EMWREP worked with KORT Design to produce a new table-top version of the Blue Thumb root-pull display.

OUTREACH SUPPORT FOR PROGRAM AND PLAN IMPLEMENTATION

Audience: General public, landowners and land managers

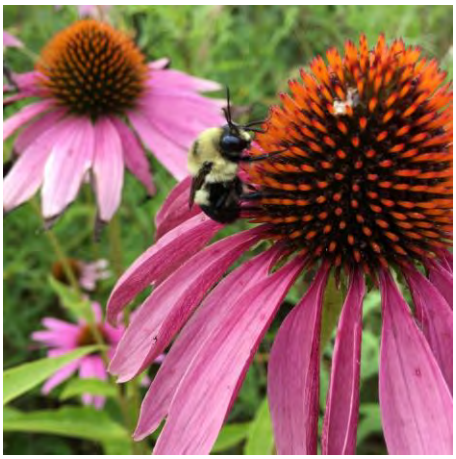
Program Goals:

1. Publicize EMWREP partner programs and projects.
2. Engage public and private land owners to complete habitat and water quality improvement projects on their land.
3. Promote partners' BMP (Best Management Practices) and cost-share incentive programs and connect landowners with state and federal grants for water quality improvement projects.
4. Engage community members and other stakeholders to help meet water quality goals identified through local water plans, TMDL (Total Maximum Daily Load) studies, WRAP (Water Restoration and Protection) strategies, and regulatory programs.
5. Educate the public and engage community members to support implementation of the Lower St. Croix Comprehensive Watershed Management Plan.

Educational Objectives:

1. Community members will be aware of partner projects and programs happening in their communities and understand the benefits of these activities.
2. Landowners will develop the knowledge and skills to complete habitat and water quality improvement projects on their land, including: native plantings, raingardens, and native shoreline buffers.
3. Landowners will be aware of and utilize BMP, cost-share and other incentive programs to complete projects.
4. Community members will participate in public meetings, provide input for plans, and take action to support the goals outlined in local and regional plans.

1) Blue Thumb – Planting for Clean Water



The Blue Thumb – Planting for Clean Water Program is a Minnesota partnership hosted by Metro Blooms. Approximately 60 public, private and nonprofit partners work together to educate the public about native plants, raingardens and shoreline plantings and encourage homeowners to complete projects on their land. The program operates the www.BlueThumb.org website, hosts workshops and other events, delivers educational messaging through several media platforms, and has produced numerous print resources, including the Blue Thumb Guide to Year Round Yard Care.

Initially, the partnership emphasized the water quality benefits of native planting projects; however, in recent years, pollinators have become a major focus as well. Blue Thumb is now affiliated with the Minnesota Lawns to Legumes program and offers web resources and workshops to help landowners develop pollinator-friendly gardens and plantings.

EMWREP helped to launch the Blue Thumb partnership in 2007 and developed many of the original education materials for the program. Currently, we use the website as a resource for the public and collaborate with Blue Thumb / Metro Blooms staff to conduct workshops in our region. Workshops help residents to connect with local resources including, incentive grants, free site visits, garden designs, plant lists, and conservation plans for larger properties.

2020 Workshops

In 2020, EMWREP conducted workshops online and saw attendance numbers triple in comparison with our traditional in-person workshops. Our Blue Thumb webinars engaged more than 800 participants via Zoom and 400 via YouTube.

Four of our workshops sold out with more than 100 people registering for each. Planting for Pollinators and Wild Edibles were big crowd favorites. However, we also learned that people don't always log on to join the webinars once they've registered. Here's what some of our workshops participants had to say about the classes:

"Thanks for the great webinar. It was very informative, presented very well, and really interesting. Thanks as well for the follow up email, all this is appreciated." – Francis

"Thanks so much, I really enjoyed the conference." – Elizabeth

"Thank you for doing this webinar – I've always found ethnobotany knowledge to be useful!! - Misty

Workshops in 2020 included:

- **Planting for pollinators** – March 25, April 7, April 28, May 14, Aug. 26 and Sept. 8
  - Co-taught by EMWREP staff (Lauren Haydon and Angie Hong) and James Wolfin from Blue Thumb (formerly of Minnesota Bee Lab).
- **Planting for wildlife** – April 23
- **Wild Edible Plants:** May 5 and May 12
- **All things raingarden** – July 15
- **Landscaping for wildlife** (Scandia Lions lecture series) – Aug. 19
- **Planting for pollinators** (Izaak Walton League lecture series) – Nov. 10

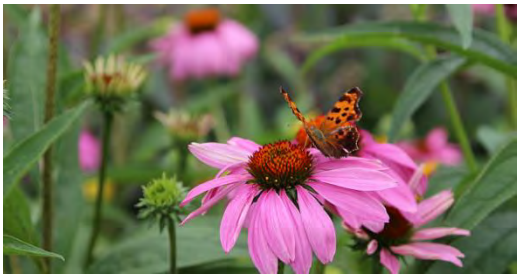
By introducing native plants to their yards, local residents can provide habitat for pollinators, birds and wildlife while also reducing runoff from their properties. Native plant roots grow deep into the soil, channeling and filtering stormwater while also storing carbon and reaching water and nutrients.

At our workshops, participants learn how to design and install planting projects, which plants to select, and how to connect with funding opportunities.

To find video recordings, presentation slides, and print resources from these and other workshops, head to: www.mnwcd.org/planting-for-clean-water.

BMP Project Maintenance Support

Two years ago, EMWREP created a project maintenance calendar for Google and Outlook to provide landowners with raingardens monthly reminders for common maintenance activities (ie. cleaning inlets or weeding): www.mnwcd.org/maintenance-guide.



Additional resources for raingarden maintenance are also available at www.mnwcd.org/adoptaraingarden.

2) Promotion of BMP and cost-share incentive programs

Blue Thumb provides educational tools and resources for EMWREP to promote partners' BMP and cost-share incentive programs. In addition to conducting workshops for the general public, this often includes direct outreach to landowners in priority locations through mailings, door-knocking, and outreach to lake associations and homeowners' associations.

The Washington County BMP map shows locations of urban and agricultural conservation projects, installed with EMWREP partner support. The map shows the location of 1500 voluntary urban BMP projects: http://www.mapfeeder.net/wcdbmp/.

In 2020, EMWREP outreach generated 150 new site visits to help landowners plan conservation projects such as raingardens, shoreline buffers, and native plantings.

2015-2020 Program Participant Survey

In January 2020, EMWREP sent an e-survey to 556 people who have attended workshops, scheduled site visits, or completed conservation projects with Washington Conservation District, Watershed District, or WMO assistance between 2015 and 2020. A total of 159 people responded (29% response rate). Similar surveys were conducted in 2015 and 2010.

Of the people who responded to our survey:

- 44% attended a workshop or presentation
- 69% received a site visit
- 55% installed a project at their home (raingarden, shoreline planting, etc.)
    - 68% with grant support; 32% without
- On average, survey respondents were older, have higher household incomes, and are more likely to identify as white than the general population in Washington County

Motivations: People who completed BMP projects most often said they were motivated by protecting a nearby water body from polluted runoff; improving habitat for wildlife and pollinators; or beautifying their yard's existing landscaping.

Barriers: Common barriers to completing a project include time, funding, and communication during the grant application and approval process.

What they like: People like our staff and the knowledge they are able to bring to the process. They also like the overall education and information we provide.

Complaints: Most people expressed no complaints with our programs. Some complained about lack of funding, grant requirements and paperwork, or delayed communications.

Suggestions for improvement: People want us to advertise, educate, and promote our work more! (This was also the most common suggestion in 2015.)

3) Stakeholder engagement

EMWREP helps to coordinate stakeholder engagement for partner's watershed plan updates. In 2020, this included:

- Lower St. Croix Comprehensive Watershed Management Plan (1W1P)
- Carnelian-Marine-St. Croix Watershed District 10-year watershed management plan update
- Comfort Lake – Forest Lake Watershed District 10-year watershed management plan update

EMWREP support included creating surveys, helping to facilitate public meetings, and participating in Technical Advisory Committee and Citizen Advisory Committee meetings. In addition, Angie Hong has acted as the staff liaison for the Lower St. Croix Policy Committee.

With the planned expansion of EMWREP in 2021 to serve the entire Lower St. Croix watershed, partners will be hiring an agronomy and outreach specialist and developing an outreach and education program for farmers and rural landowners.

During development of the Lower St. Croix CWMP in 2018-2020, EMWREP staff conducted a number of stakeholder engagement activities with farmers and rural landowners, including:

- Surveying 387 agricultural landowners in Chisago, Pine and Washington Counties
- Conducting twelve one-on-one interviews with local farmers; and
- Holding small group conversations with 45 agricultural stakeholders during a Feb. 2, 2019 meeting

Feedback from these surveys, interviews and small group conversations will be used to develop the new Lower St. Croix agricultural outreach and education plan.

Background and previous work: Washington Conservation District has been working with farmers and rural landowners since 1942. In previous years, EMWREP has provided limited support for agricultural education initiatives in Washington County, including workshops and targeted mailings.

In 2020, EMWREP staff helped to plan a Soil Health webinar for local farmers and created a video to highlight the work of Pam Arnold, a Scandia farmer and conservation cooperator.

Virtual Soil Health Field Day Oct. 8

- 50 participants on Zoom + 46 via YouTube

This event included a video tour of Pam Arnold's farm in Scandia, as well as presentations on Soil Health by Jennifer Hahn of the Minnesota Soil Health Coalition, and Cropland Grazing Exchange by Kelly Anderson of Minnesota Department of Agriculture. Presenters also talked about local cost share programs and financial assistance for sustainable farming.

Pam Arnold farms 40-acres of land in Scandia along the St. Croix River and is the owner of Salt-n-Pepper Farm LLC. She is certified through the Minnesota Ag Water Quality program and was recognized as the Washington County Outstanding Conservationist in 2018. Salt-n-Pepper Farm produces honey and fresh produce for local markets and CSA members. The farm uses conservation practices including cover crops, no-till, and companion planting.

Video tour of Pam Arnold's farm: https://youtu.be/US2Kjbiv7-g

Professional Trainings for Business and Local Government

Audience: Water resource professionals, municipal staff, consultants and contractors, local elected and appointed officials, business owners, lawn care providers, winter maintenance providers

Program Goals:

1. Provide technical training to help EMWREP partners meet MS4 Permit requirements and reduce stormwater pollution.
2. Work in partnership with University of Minnesota to provide high-quality professional education at a local level.
3. Provide local decision makers (city councils, planning commissions, watershed boards, county commissioners, etc.) with information and training needed to implement policies, programs, and practices that protect and restore water resources. This includes, but is not limited to, Minimal Impact Development Standards (MIDS) and Shoreland/Buffer rules.
4. Offer professional trainings for area business owners, lawn care providers, and winter maintenance contractors to share information about local water issues and encourage business practices that protect surface and groundwater resources.

Educational Objectives:

1. Municipal employees will understand that stormwater runoff, erosion, and illicit discharge contaminate surface and groundwater resources and, also, that there are best management practices to reduce these causes of water pollution.
2. Local decision makers will understand that land use impacts water quality and that there are a variety of policies, programs and practices cities, counties, and watershed management organizations can implement to protect their water resources, including MIDS and shoreland/buffer rules.
3. Area business owners, lawn care providers, and winter maintenance contractors will learn how to conserve groundwater resources and reduce surface and groundwater pollution through a variety of practices, including:
    a. Completing water efficiency audits;
    b. Mowing higher and using fewer lawn chemicals; and
    c. Reducing road salt application by using new technology, calibrating equipment, and adjusting anti-icing and deicing methods based on weather forecasts; and storing salt properly to reduce leaching.
    d. Using and storing pesticides and fertilizers safely.

1) Training for Municipal Staff and Businesses

MS4 Municipal Training Resources

MS4 Permitees are required to provide training for staff on a variety of topics related to stormwater and pollution prevention. Below are links to eleven short videos developed by EMWREP. Partners are encouraged to share these via email or incorporate into staff meetings and training workshops.

- Stockpile Management
- Use and Storage of Significant Materials
- Routine Street and Parking Lot Sweeping
- Pesticides and Fertilizers
- Right of Way Maintenance
- Vehicle Maintenance
- Road Maintenance
- Waste Disposal
- Emergency Response
- Cleaning of maintenance equipment, building exteriors, and dumpsters
- Illicit Discharge Detection and Elimination
- Raingarden Maintenance
- Parks Maintenance

In addition to the videos listed above, EMWREP educators are available to speak at staff trainings on request. In 2020, in-person training opportunities were limited due to COVID-19.

SMART Salting Workshops

EMWREP works with Fortin Consulting and the Minnesota Pollution Control Agency to hold SMART Salting workshops for public works staff, winter maintenance contractors, and property management companies.

Certified contractors listed at: www.pca.state.mn.us/water/salt-application-training
Find a model contract here: https://www.edinamn.gov/422/Pollution-Prevention

No local workshops were held in 2020.

Turf Maintenance Workshops

EMWREP also works with Fortin and MPCA to hold Turf Maintenance workshops for public works staff, lawn care providers, and property management companies.

In 2020, EMWREP sponsored one online workshop Turf Maintenance workshop on April 20.

2) NEMO and MIDS for Local Decision-Makers

EMWREP conducts workshops and presentations to provide local decision makers (city councils, planning commissions, watershed boards, county commissioners, etc.) with information and training needed to implement policies, programs, and practices that protect and restore water resources. This includes, but is not limited to, Minimal Impact Development Standards (MIDS) and Shoreland/Buffer rules.

Our education program builds on the NEMO model (non-point source education for municipal officials) that was originally developed by University of Connecticut and implemented in Minnesota through a partnership with Minnesota Extension.

MIDS – Minimal Impact Development Standards

Background: In 2010, Washington Conservation District leveraged funds from an EPA 319 grant to develop and pilot a Minimal Impact Development Standards (MIDS) Community Assistance Package in the St. Croix Basin. The four pilot communities - Centre City, Chisago, Lindstrom and East Bethel - received free education, training and consulting services to update plans, ordinances and codes to protect their local water resources and the St. Croix River. The community assistance package developed includes performance goals, a calculator for determining stormwater credits for best management practices, and ordinance guidance for communities.

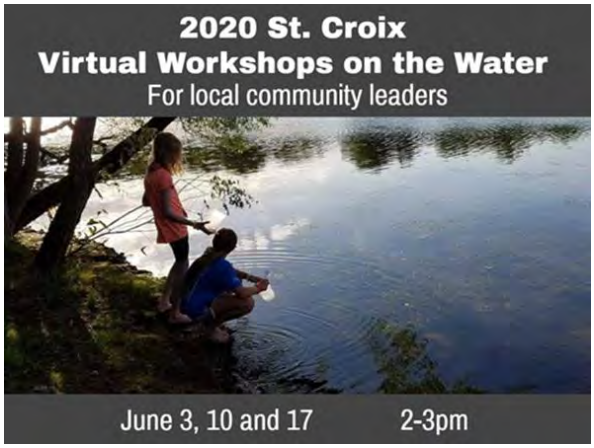
Later, in 2014, Middle St. Croix Watershed Management Organization (MSCWMO) was awarded a Clean Water Fund Accelerated Implementation Grant through the Minnesota Board of Water and Soil Resources (BWSR) to help eight communities in Washington County update their existing ordinances to incorporate MIDS - Bayport, Baytown Twp., Lake St. Croix Beach, Lakeland Shores, Oak Park Heights, St. Mary's Point, and West Lakeland Twp.. MSCWMO staff and consultants met one-on-one with city and township staff, attended council and planning commission meetings, and provided ongoing education for community staff and leaders to guide the ordinance update process.

EMWREP provided education support for both of these projects.

Next steps: With the expansion of EMWREP to implement the Lower St. Croix CWMP, we hope to engage local decision-makers in the northern planning region and provide the information and assistance necessary for those communities to update their ordinances and policies to incorporate MIDS as well.

Shoreland / Buffer Rules / View Corridors

EMWREP provides the information and assistance necessary for communities to update their shoreland ordinances and policies as needed.



In 2020, EMWREP offered a series of free webinars for local community leaders in lieu of our usual St. Croix Workshop on the Water.

Lake and Shoreline Management: June 3
PDF or VIDEO

- Who's in charge? Understanding the different roles of state and local government - Angie Hong, EMWREP
- Common scenarios: Can I do that with my property? - Angie Hong, EMWREP
- Vegetative removal and land alteration standards along shorelines - Matt Bauman - MN DNR

Landscaping and Habitat: June 10
PDF or VIDEO

- Planting for clean water and wildlife - Angie Hong, EMWREP
- Policies to protect pollinators - Laurie Schneider, Pollinator Friendly Alliance
- St. Croix virtual wildlife safari - Greg Seitz, St. Croix 360

St. Croix Riverway: June 17
PDF or VIDEO

- St. Croix Riverway land use regulations –Matt Bauman, MN DNR
- Ideas for innovative local shoreland, floodplain, and St. Croix land use ordinances –Matt Bauman, MN DNR and Kay Lutze, WI DNR

3) Racial Equity

The death of George Floyd in May 2020 and subsequent civil unrest across the nation highlighted the need for EMWREP to think critically about diversity, inclusion and racial equity in our work.

Workshops and trainings
During the summer, Angie Hong and Lauren Haydon helped to facilitate the following racial equity trainings:

- July 1 - Washington Conservation District staff
- July 23 - Comfort Lake – Forest Lake Watershed District staff
- Sept. 16 - Comfort Lake – Forest Lake and Carnelian-Marine-St. Croix Watershed District boards

In addition, racial equity was a focus of Watershed Partners' July and October meetings.

EMWREP staff also participated in several additional racial equity webinars and initiated conversations with GARE (Government Alliance on Race and Equity).

Examining demographics in Washington County
Often, we think we know who our constituents are, based on the people that show up at public meetings or apply for building permits and cost-share grants. The reality, however, is that the people we engage with most often tend to be older, whiter and more affluent than the general population.

This year, EMWREP staff looked at demographics from elementary schools in our area, as a way to identify potentially underserved neighborhoods in Washington County. Looking at elementary school data can also help us to predict what our future demographics might look like.

Here is a quick look at the most and least racially diverse elementary schools in each school district:

- **Maplewood – Oakdale – NSP School District: 61%** students of color
  - Castle Elem (Oakdale) – 64% minority, primarily Black and Asian
  - Eagle Point (Oakdale) – 46% minority, primarily Asian
- **South Washington School District** – **33%** students of color
  - Woodbury Elem – 50% minority, primarily Black and Asian
  - Grey Cloud (Cottage Grove) – 23% minority, primarily Latino and Asian
- **Stillwater School District** – **18%** students of color
  - Lake Elmo – 39% minority, primarily Black and Latino
  - Stonebridge (Stillwater) – 10% minority students
- **Forest Lake School District** – **13%** students of color
  - Forest View Elem. – 22% minority, primarily Latino and Asian
  - Scandia Elementary – 5% minority students
- **White Bear District** – **26%** students of color
  - Hugo Elem –16% minority, primarily Asian
  - Oneka Elem – 16% minority, primarily Latino
- **Mahtomedi** – **12%** students of color
  - O.H. Anderson – 17% minority, primarily Latino and Asian
  - Wildwood Elem – 16% minority, primarily Latino and Asian

Next Steps: Watershed Partners has formed a subcommittee to focus on implementing more inclusive watershed education across the Twin Cities area and Angie Hong is part of that committee. EMWREP staff will continue to examine current programming and look for ways to better engage communities of color in education, as well as other watershed work.

Staff have recommended that Washington Conservation District become a GARE partner in 2021.

Appendix A: 2019-2021 Annual Budget

Staff Support and Overhead Expenses	Materials	Total
$144,200	$10,000	**$154,200.00**

MEMBERSHIP STRUCTURE AND FUNDING CONTRIBUTIONS*

PARTNER	Annual Contribution
SWWD	$25,000
VBWD	$19,300
BCWD	$19,300
CLFLWD	$19,300
CMSCWD	$12,700
RWMWD	$12,700
RCWD	$3,000
Washington County	$12,800
MSCWMO	$6,300
Bayport	$700
Cottage Grove	$2,700
Forest Lake	$2,700
Lake Elmo	$2,700
Hugo	$2,700
Oakdale	$2,700
Stillwater	$2,700
Woodbury	$2,700
Dellwood	$700
Grant	$700
Newport	$700
Oak Park Heights	$700
St. Paul Park	$700
West Lakeland	$700
Willernie	$700
TOTAL	**$154,900.00**

Appendix B: New print materials

Low-resolution PDFs of new print materials including:

- **MS4 Toolkit**
  - Guidance for lawn care providers
  - Mapping and inspections of stormwater infrastructure
  - MS4 Permit
  - Waste disposal
  - Small-scale construction
  - Stormwater management
  - Water pollution 101 – Pollutants and stressors
  - Water governance flow chart

- **Groundwater**
  - Well water testing postcard
  - Caring for septic systems to protect water resources

- **Aquatic Invasive Species (AIS)**
  - Lake service provider postcard

Good for Your Lawn, Good for Our Water

What to ask for from your lawn care provider

Fertilizer

◊ Take a soil test to determine nutrient needs*
- N-P-K ratios of 4-0-2 or 4-0-3 work for most Minnesota lawns

◊ Irrigated lawns: Apply 1.5-2lb Nitrogen (N) per 1000 sq ft annually (50% slow-release) (1.25-1.75lb for rich soils) (2-2.5lb for sandy soils**)
- 0.5 - 0.75lb at first mowing***
- 0.25 - 0.5lb around Memorial Day
- 0.5-0.75lb around Labor Day

◊ Non-irrigated lawns: Apply 0.5-1lb N per 1000 sq ft annually

**Minnesota law requires zero-phosphorus fertilizer unless a soil test shows you need it or you're establishing a new lawn.*
***Sandy soils require more applications with less fertilizer per application to avoid polluting our groundwater.*
****Don't apply fertilizer when soils are less than 50° F.*

Weed Control

◊ If needed, apply a preemergent herbicide in the spring for crabgrass (may be combined with spring fertilizer application)
◊ Spot treat for broadleaf annual weeds in June
◊ Spot treat for broadleaf perennial weeds (dandelions) in fall

**The best defense against weeds is healthy grass*

Core Aeration

◊ Compacted soils: Aerate 1 x yearly around Labor Day
- The goal is 20-40 holes / sq ft, which requires two passes
- Reassess the need for aeration after 2-3 seasons

◊ Non-compacted soils: Aerate 1 x every few years, as needed

Mowing

◊ Mow often - mow high
- Spring & Fall: 2-2.5 inches tall
- Summer: 3 in. tall

◊ Leave clippings on lawn
◊ Sweep up clippings on the pavement
◊ Mow less frequently or not at all during dry spells

Irrigation

◊ Install rain and soil moisture sensors and check them annually
◊ Calibrate your system*
- Spring & Fall: 1/2 in. water, 2 x weekly
- Summer: 1/4 in. water, 4 x weekly

◊ If there's enough rain, don't irrigate
◊ Check sprinkler heads annually & fix as needed

**A typical pop-up spray head takes 20min. to apply 1/2 inch of water. A typical rotor-type takes 40min.*

These guidelines are based on recommendations from the Minnesota Pollution Control Agency, University of Minnesota Extension and turf maintenance experts.

Is your provider certified? www.pca.state.mn.us/water/summer-turf-grass-maintenance-training

MINNESOTA POLLUTION CONTROL AGENCY

MS4 General Permit: Stormwater Systems Mapping and Inspections

The new Minnesota MS4 General Permit, issued in November of 2020, requires permittees to map and inspect stormwater systems within their jurisdictions.

MAPPING

You must develop and maintain a map of your stormwater system that shows:

Pipes: The location and direction of flow for all stormwater pipes that are 12-inches in diameter or larger

Outfalls: Where stormwater leaves your system to enter a public water or another entity's system

- All outfalls should be assigned a unique identification number and labeled with geographic coordinates

BMPs: Structural stormwater best management practices such as stormwater ponds, infiltration basins, and bioretention basins. The map should include:

- All structural BMPs that are part of your MS4; and
- BMPs owned and operated by other entities that were built after Aug. 1, 2013 or include an executed legal mechanism with the owner that is responsible for long-term maintenance.

All receiving waters. Lakes, rivers, and streams

In addition, you must maintain a written or mapped inventory of facilities you own or operate that contribute to stormwater pollution. This may include:

Waste management:

- Landfills; recycling; composting; and solid waste handling and transfer
- Hazardous waste disposal, handling and transfer

Parks and recreation:

- Parks and public golf courses
- Public swimming pools
- Public parking lots

Public works:

- Vehicle and equipment storage and maintenance
- Pesticides, salt, and materials storage
- Public works yards
- Snow storage

Along with creating a map or inventory, you must implement best management practices to prevent or reduce stormwater discharges from the above facilities.

MS4 GENERAL PERMIT: STORMWATER SYSTEMS MAPPING AND INSPECTIONS

INSPECTIONS

In addition to mapping stormwater systems, you must conduct periodic inspections of your BMPs, stormwater ponds, and outfalls, and repair, replace, and maintain these as needed.

WHEN TO CONDUCT INSPECTIONS:

>> Once a year

Structural stormwater BMPs

>> Once every 5 years

Stormwater ponds and outfalls

More info:

- Some stormwater BMPs may require inspections and maintenance more than once per year.
- If no maintenance or sediment removal is required after two years of inspections, you may reduce inspections to once every two years
- Inspections are only required for outfalls (when it leaves your system to enter a public water or another entity's stormwater system), not every outlet in your system.

Completing maintenance and repairs:

- Ensure that stormwater BMPs and stormwater ponds are functioning properly and in good structural condition.
- Remove sediment and complete other needed maintenance.
- Document a schedule for maintenance that can not be completed within one year.

For more information on the Minnesota MS4 General Permit, go to: pca.state.mn.us/water/2020-ms4-general-permit

MINNESOTA POLLUTION CONTROL AGENCY

Stormwater Pollution and the MS4 Permit Program

In urban areas, storm sewers drain rain and melting snow off of roads quickly to prevent flooding. From there, the runoff water travels away safely through underground stormwater pipes. In most communities built before the late 1970's, stormwater pipes carry runoff directly to nearby wetlands, lakes, streams and rivers without treatment.

Storm sewer systems help to protect communities against flooding, but they also carry pesticides, fertilizers, oils, metals, bacteria, salt, sediment, litter, and other debris into our waterways.

STORMWATER IS THE LARGEST SOURCE OF WATER POLLUTION IN URBAN AREAS.

The **Clean Water Act** establishes a structure for the U.S. Environmental Protection Agency (EPA) and state agencies to regulate water pollution and set water quality standards for rivers, lakes and streams.

Within this structure, the **Municipal Separate Storm Sewer System (MS4)** permit program regulates cities and other entities that manage storm sewer systems. In Minnesota, the program is administered by the Minnesota Pollution Control Agency.

MS4 permit holders include cities, watershed districts, counties, and townships, as well as large campuses such as universities, hospitals and prison complexes that operate their own private roads and drainage systems.

MS4 permit holders are required to develop stormwater pollution prevention programs, educate the public about stormwater pollution, and engage citizens in solving local water pollution problems. The permit also requires these MS4 entities to identify and stop illegal dumping (called illicit discharges), take steps to reduce runoff from construction and development, and practice "good housekeeping" to avoid polluting waterways during routine road and park maintenance. In addition, there are separate permit programs to regulate industrial sites and construction sites.

What's NOT included in the MS4 program

The MS4 permit program does not address issues such as flooding or aquatic invasive species that are not related to stormwater pollution. Likewise, it does not apply to agricultural or rural water pollution outside of permitted cities and townships.

Do you have concerns about stormwater management in your area?
Contact your community's MS4 Permit Coordinator to share comments and suggestions.

REQUIREMENTS OF THE MS4 GENERAL PERMIT:

1: Public Education and Outreach

Permittees must educate the public about stormwater pollution and suggest actions that people can take to reduce stormwater pollution in their communities.

Required topics include:

- Illicit discharge recognition and reporting (illegal dumping in ditches and storm sewer systems)
- Winter salt and deicing materials
- Pet waste

In addition, permittees must educate the public about at least two other high priority stormwater issues in their communities (ex. yard waste, lawn chemicals, raingardens, etc.)

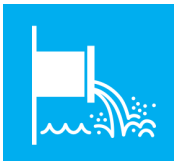
2: Public Participation and Involvement

Permittees should seek input from the public on their Stormwater Pollution Prevention Program (SWPPP) and involve the public in activities to protect water.

Each year, there must be:

- At least one public input opportunity (could be a meeting)
- At least one participation event (ex. e.g., rain barrel distribution event, rain garden workshop, cleanup event, storm drain, stenciling, volunteer water quality monitoring, adopt a storm drain program, household hazardous waste collection day, etc.)

3: Illicit Discharge Detection and Elimination (IDDE)



Permittees must develop, implement, and enforce regulations and implement a program to detect and eliminate illicit discharges.

These program should address:

- Illegal dumping in ditches and storm sewer systems
- Proper disposal of pet waste on municipal property
- Proper storage of salt at commercial and industrial facilities (indoors or under cover and over an impervious surface such as concrete)

In addition, permittees should:

- Provide training for staff
- Map areas where illicit discharges are most likely to occur
- Investigate potential illicit discharges and enforce regulations as needed

4: Construction Site Stormwater Runoff Control

Permittees must develop, implement and enforce rules for construction activity that disturbs one or more acres of land and discharges to the municipal stormwater system.

Permittees should regularly inspect to ensure that construction sites:

- Stabilize exposed soils, stockpiles, ditches and swales
- Install practices to prevent sediment from leaving their sites
- Protect storm drains
- Contain liquid and solid waste from concrete, stucco, paint, form release oils, curing compounds, and other construction materials; and
- Preserve natural buffers within 50 ft of waterways or incorporate additional sediment controls if that is not possible.

5: Post-Construction Stormwater Management

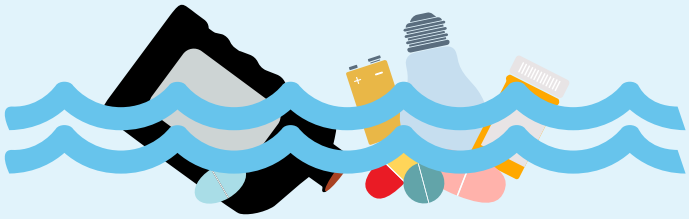
Permittees must also develop rules to address stormwater pollution after construction is complete. Developers must install practices to treat stormwater runoff from any projects that create one acre or more of new or reconstructed impervious surface (roads, parking lots, buildings, etc.), Where practical, practices that infiltrate water into the ground are recommended.

6: Pollution Prevention and Good Housekeeping

Permittees must map all municipal facilities that may contribute stormwater pollution (compost sites, parks, salt storage, and public works facilities, etc.) and use best practices in their operations to minimize stormwater pollution. Permittees must also inspect and maintain their stormwater treatment devices (ponds, infiltration basins, rain gardens, etc.) and provide training for staff.

MINNESOTA POLLUTION CONTROL AGENCY

KEEP YOUR JUNK OUT OF OUR WATER



DON'T THROW THAT IN THE GARBAGE!

Household chemicals...

Take motor oil, paint, pesticides and other household hazardous waste to your county drop-off site or a licensed local business.

Find your drop-off site:

www.pca.state.mn.us/waste/find-your-household-hazardous-waste-collection-site

Old and unused medications...

Drop off old and unused medicines at a drug take-back event or collection site.

Find an unwanted medications disposal site:

www.pca.state.mn.us/living-green/managing-unwanted-medications

If there is no drug take-back program...

We need your help to keep our waters clean!

Learn more about Minnesota water at www.pca.state.mn.us/waste

IF IT'S WINDY... OR YOU'VE GOT BEARS

Keep your garbage cans inside until collection time.

PUT A LID ON IT!

Be sure to keep lids closed on dumpsters and garbage cans!
Also, don't fill dumpsters with liquid waste or try to hose them out.

USE YOUR UTILITY SINK, NOT YOUR LOCAL STORM DRAIN!

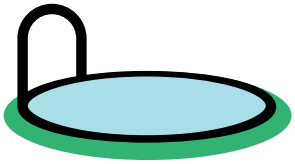
Dumping chemicals into a storm sewer or ditch is called an "illicit discharge" and is ILLEGAL.

Take your car to the car wash or...

Or wash your car over the grass, not the street or your driveway, so that soapy water doesn't end up in our lakes and streams.

If you have a pool or hot tub...

Don't dump chlorinated water into the street or pond! Before you empty it in stop adding chlorine and leave the water uncovered for 3-5 days.



Use your utility sink!

Use your utility sink to wash off paint brushes and solvent soaked rags, to dump soapy water, and to empty swimming pools and spas.

If you see illegal dumping or see water that is cloudy, colored, or has an oil sheen report it to:

[Insert local contact here]

Thanks for doing your part to protect Minnesota water!

Small-scale Construction

Prevent erosion and protect Minnesota's water during construction, remodeling and landscaping projects.

Bare soil can erode easily during construction and landscaping projects. Though soil is natural, it can pollute lakes, rivers and streams by smothering habitat and making the water cloudy and unsafe for swimming.

Stormwater Pollution Prevention

Building a new home?

Refer to the diagram on the back of this page for guidance on preventing erosion and stormwater pollution.

When construction is in progress, verify that your builder has installed silt fence or other sediment control measures along the down slope perimeter of your property and near curbs, gutters, ditches, streams, lakes and wetlands. All bare soil must be covered and soil piles must be stabilized as well.

As a homeowner, you are responsible for inspecting and maintaining temporary stabilization measures until permanent ground cover is established on your yard. Reinstall or replace ripped, collapsed, or decomposed silt fence and remove sediment if deposits reach 1/3 of the silt fence height. Use downspout extenders to protect temporarily stabilized areas from roof runoff until permanent vegetation is established.

Establishing a new lawn?

Cover bare soil with erosion control fabric, mulch, or quick-growing annual grasses such as annual rye, oats or winter wheat until you are able to lay sod or seed your lawn. Erosion control fabric can also help to protect hilly areas until new grass is fully established.

Beginning a landscaping project?

Schedule large landscaping projects for dry weather. Cover bare soil with mulch and avoid disturbing the soil along stream banks and lakeshores. Study how water flows across your property and use trees, shrubs, deep-rooted native plants, and raingardens to slow down runoff and prevent erosion.

We need your help to keep our waters clean!

Learn more about Minnesota water at www.pca.state.mn.us/water/construction-stormwater

10 Steps to Stormwater Pollution Prevention on Small Residential Construction Sites

Note: this graphic does not address post-construction stormwater treatment permit requirements.

1 Protect Any Areas Reserved for Vegetation or Infiltration and Preserve Existing Trees

If you will be installing infiltration-based features such as rain gardens or bioswales, make sure these areas are designated as off limits to avoid compaction.

Save time and money by preserving existing mature trees during construction. Preserving mature trees minimizes the amount of soil that needs to be stabilized once construction is complete, and minimizes the amount of runoff during and after construction activity.

2 Stockpile Your Soil

MPCA's CGP requires operators to preserve native topsoil on site unless infeasible and protect all soil storage piles from run-on and runoff. For smaller stockpiles, covering the entire pile with a tarp may be sufficient.

3 Protect Construction Materials from Run-On and Runoff

At the end of every workday and during precipitation events, provide cover for materials that could leach pollutants.

4 Designate Waste Disposal Areas

Clearly identify separate waste disposal areas on site for hazardous waste, construction waste, and domestic waste by designating with signage, and protect from run-on and runoff.

5 Install Perimeter Controls on Downhill Lot Line

Install perimeter controls such as sediment filter logs or silt fences around the downhill boundaries of your site. Make sure to remove accumulated sediment whenever it has reached halfway up the control.

6 Install Inlet Controls

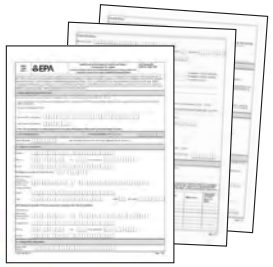
Sediment control logs, gravel barriers, and sand or rock bags are options for effective inlet controls. Make sure to remove accumulated sediment whenever it has reached halfway up the control.

7 Install a Concrete/Stucco Washout Basin

Designate a leak-proof basin lined with plastic for washing out used concrete and stucco containers. Never wash excess stucco or concrete residue down a storm drain or into a stream!

8 Maintain a Stabilized Exit Pad

Minimize sediment track out from vehicles exiting your site by maintaining an exit pad made of crushed rock spread over geotextile fabric, a shaker rack, or a wash rack at the construction site exit. If sediment track-out occurs, remove deposited sediment within 24 hours of discovery.



9 Keep an Up-to-Date Copy of Your SWPPP on Site

Keep a copy of your complete and up-to-date SWPPP, including site maps showing where each BMP is or will be installed, and records of the site inspections completed by a trained inspector on site and easily accessible.

10 Site Stabilization

Immediately stabilize exposed portions of the site whenever construction work will stop for 14 or more days, even if work is only temporarily stopped. Remember, final stabilization is required prior to terminating permit coverage.

Keep in mind that temporary or permanent stabilization must be completed within 7 days if your project is within 1 mile of a special or impaired water.

Small-scale Construction Considerations

Thanks for doing your part to protect Minnesota water!

www.pca.state.mn.us/water/construction-stormwater

For more information, contact:
[Insert local contact here]

Stormwater Management

Policies that protect water in your community

From city streets to lakes and streams–following the journey of urban water pollution

In urban areas, storm sewers drain rain and melting snow off of roads quickly to prevent flooding. From there, the runoff water travels away safely through underground stormwater pipes.

In most communities built before the late 1970's, stormwater pipes carried runoff directly to nearby wetlands, lakes, streams and rivers without treatment.

Storm sewer systems help to protect communities against flooding, but they also carry pesticides, fertilizers, oils, metals, bacteria, salt, sediment, litter, and other debris into our waterways.

Stormwater is the largest source of water pollution in urban areas.

A regulatory program to address the problem – The Clean Water Act & the Municipal Separate Storm Sewer System (MS4) permit program

The Clean Water Act establishes a structure for the U.S. Environmental Protection Agency (EPA) and state agencies to regulate water pollution and set water quality standards for rivers, lakes and streams.

Within this structure, the **Municipal Separate Storm Sewer System (MS4) permit program** regulates cities and other entities that manage storm sewer systems. In Minnesota, it is administered by the Minnesota Pollution Control Agency.

MS4 permit holders include cities, watershed districts, counties, and townships, as well as large campuses such as universities, hospitals and prison complexes that operate their own private roads and drainage systems.

MS4 entities are required to develop stormwater pollution prevention programs, educate the public about stormwater pollution, and engage citizens in solving local water pollution problems. The permit also requires MS4s to identify and stop illegal dumping (called illicit discharges), take steps to reduce runoff from construction and development, and practice "good housekeeping" to avoid polluting waterways during routine road and park maintenance. In addition, there are separate permit programs to regulate industrial sites and construction sites.

We need your help to keep our waters clean!

Learn more about stormwater in Minnesota at www.pca.state.mn.us/water/municipal-stormwater-ms4

TOOLS to MANAGE STORMWATER in YOUR COMMUNITY

Stormwater ponds

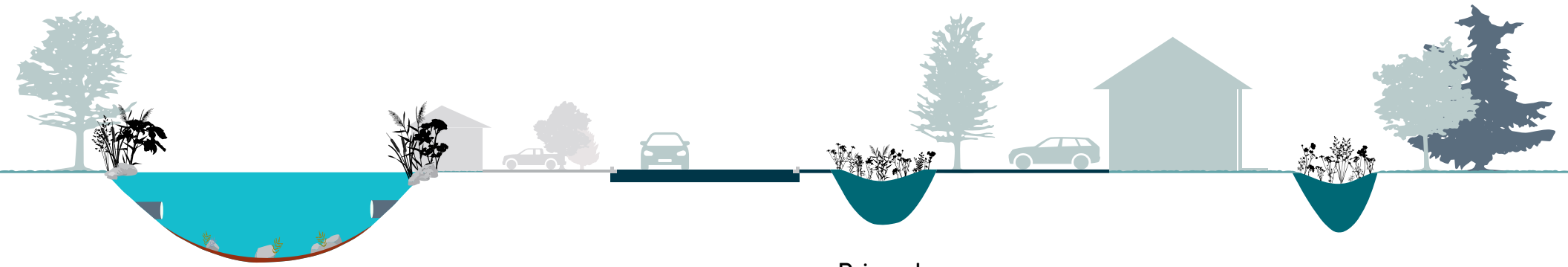
Most commercial and residential developments built since the 1980's utilize stormwater ponds to reduce flooding and partially treat stormwater runoff. Though these ponds may look natural, they are actually highly engineered systems, designed to control the rate of runoff and hold water back until sediment and other solids can settle out. Stormwater ponds have inlet and outlet pipes and need to be dredged periodically to remove the accumulated sediment.

Because stormwater ponds are designed to capture sediment and nutrients, they frequently turn green with algae in the summer. This is normal. Though you might see ducks and geese landing in these ponds, they are NOT safe for fishing or swimming.

Low Impact Development

Minnesota communities also use low impact development to reduce stormwater pollution. Common strategies include building narrower roads and smaller parking lots; protecting trees and buffer areas during development; and using raingardens and other practices that help water soak into the ground instead of running off into storm sewer systems.

TIP: If you are considering a building or remodeling project, talk to your city to get ideas for Low Impact Development strategies to avoid harming nearby water resources.



Protect stormwater ponds and buffers

Never dump leaves or grass clippings into wetlands or stormwater ponds – doing so is illegal and harms the ecosystem. In addition, most stormwater ponds are surrounded by a buffer of un-mowed native vegetation. These buffers are often identified on plat maps as drainage and utility easements and sometimes are marked with a sign. Avoid placing fences and permanent structures in these locations.

Raingardens

Raingardens are bowl-shaped gardens designed to capture runoff from rain and melting snow before it flows into storm sewer systems or nearby lakes and streams. Water in a raingarden evaporates or soaks into the ground within two days.

Homeowners can create small raingardens to catch stormwater runoff from rooftops and driveways. On commercial sites, larger raingardens called infiltration basins are often used to treat runoff from parking lots. In addition, many Minnesota communities install raingardens along streets during construction and re-construction projects.

Thanks for doing your part to protect Minnesota water!

www.pca.state.mn.us/water/municipal-stormwater-ms4

For more information, contact:

[Insert local contact here]

WATER POLLUTION 101

Pollutants & Stressors

Impairments IMPACT our waters and our lives


Ecology


Recreation


Health


Economy

Impacts: Ecology, Human Health & Recreation

Bacteria

www.pca.state.mn.us/water/bacteria

Impacts: Ecology & Recreation

Phosphorus

www.pca.state.mn.us/water/phosphorus

Impacts: Ecology & Human Health

Nitrogen

www.pca.state.mn.us/water/nitrogen

Impacts: Ecology & Economy

Chloride (salts)

www.pca.state.mn.us/water/chloride-salts

Impacts: Ecology & Human Health

Mercury

www.pca.state.mn.us/water/mercury

Impacts: Ecology & Economy

Sediment

www.pca.state.mn.us/water/sediment

MINNESOTA POLLUTION CONTROL AGENCY

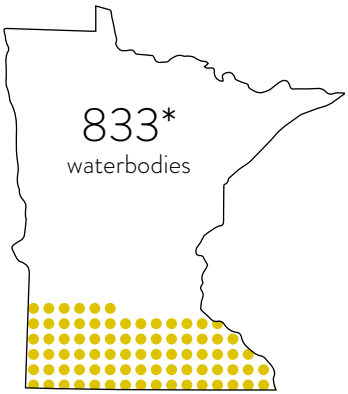
Bacteria

IMPACTS:
Ecology, Human Health & Recreation

WATER QUALITY STATS

833 water bodies in Minnesota are impaired by E. coli & fecal coliform. (MPCA 2020)

Bacteria make up 14% of all water quality impairments in Minnesota.



* 1 dot represents 10 waterbodies

BACTERIA are part of nature. They help dead plants and animals to decompose and are usually safe for people and animals. When we find E. coli & fecal coliform in our lakes and streams, however, it is a sign that feces and harmful diseases could be in the water. Common sources of fecal waste include failing septic systems, wastewater treatment plants, and manure from livestock. Urban stormwater also carries feces from dogs, geese and other animals.

Avoid swimming or playing in lakes and streams with bacteria impairments and stay out of the water in ANY lake, river or stream for 2 days after a heavy rain. Young children and the elderly are most at risk of getting sick and can experience diarrhea, nausea, jaundice, headaches, and fatigue.

COMMON SOURCES

SUMMARY

Finding E. coli & fecal coliform in lakes and streams indicates that fecal waste and harmful diseases could be in the water.

Children and adults who swim or play in contaminated water could get sick if they get water in their mouths. Symptoms may include: diarrhea, nausea, jaundice, headaches, and fatigue. Young children and the elderly are most at risk.

WHAT YOU CAN DO

1. **Inspect your septic system** at least once every three years, pump as needed, and replace when needed.
2. **Avoid swimming or playing in lakes and streams with bacteria impairments**, and stay out of the water in any lake, river or stream for 2 days after a heavy rain.
3. **Pick-up and throw dog poop in the trash**, and don't feed ducks or geese.
4. **Work with your soil and water conservation district** to manage manure if you have farm animals.

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology, Human Health & Recreation

Bacteria

www.pca.state.mn.us/water/bacteria

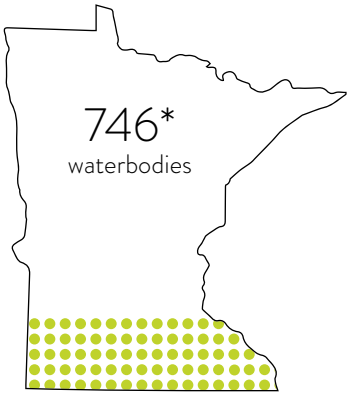
Phosphorus

IMPACTS:
Ecology & Recreation

WATER QUALITY STATS

746 water bodies in Minnesota impaired by nutrients. (MPCA 2020)

Phosphorous makes up 13% of all water quality impairments in Minnesota.

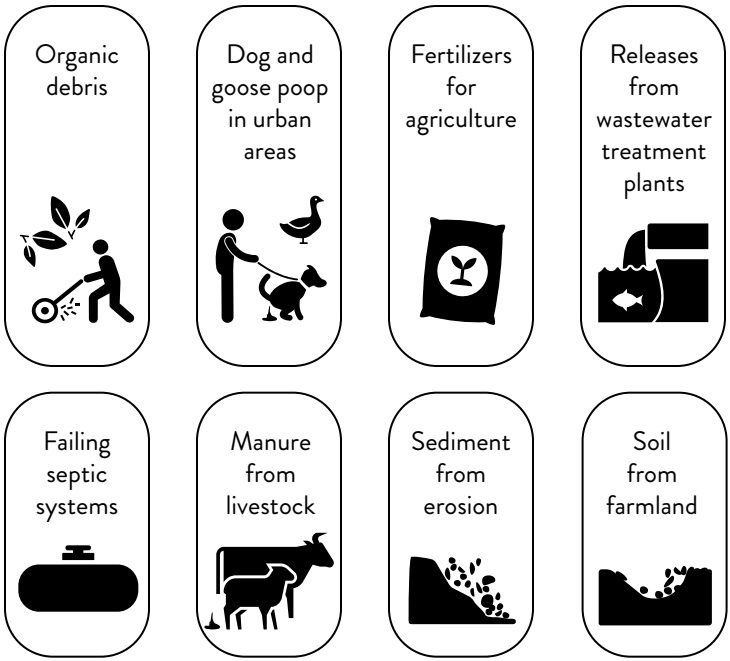


* 1 dot represents 10 waterbodies

PHOSPHORUS is a naturally occurring element found in leaves, grass clippings, soil and other organic matter. In the water, phosphorus feeds aquatic plants and algae. Too much algae makes the water green and smelly, keeps people from enjoying fishing, swimming, and boating. In some cases, algae can even create toxic conditions that are unsafe for children and pets.

Though aquatic plants need *some* phosphorus, stormwater pipes and ditches send much more than is needed into many of our waterways.

COMMON SOURCES



SUMMARY

Phosphorus is a naturally occurring element that feeds algae. Too much phosphorus can cause algae blooms that make the water green and smelly and can be harmful to people and animals.

WHAT YOU CAN DO

1. **Rake and sweep leaves, grass clippings and debris** off of the pavement and out of the street along your curb line.
2. Follow the law—**use zero-phosphorus fertilizer** on your lawn.
3. Plant a raingarden or convert some lawn to native plants. **Cover bare dirt and repair erosion.**
4. **Inspect your septic system** at least once every three years, pump as needed, and replace when failing.

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology & Recreation

Phosphorus

www.pca.state.mn.us/water/phosphorus

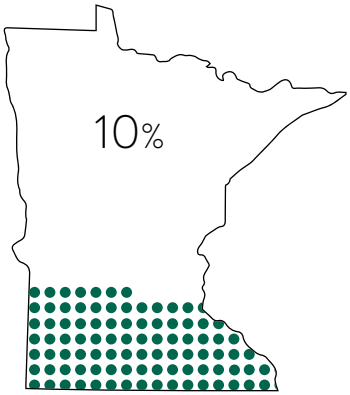
Nitrogen

IMPACTS:
Ecology & Human Health

WATER QUALITY STATS

5 rivers used for municipal drinking water supplies have too high of nitrates. (MPCA 2018)

In 113 townships, **10% or more of private wells** have too high of nitrates. (MDA 2018)

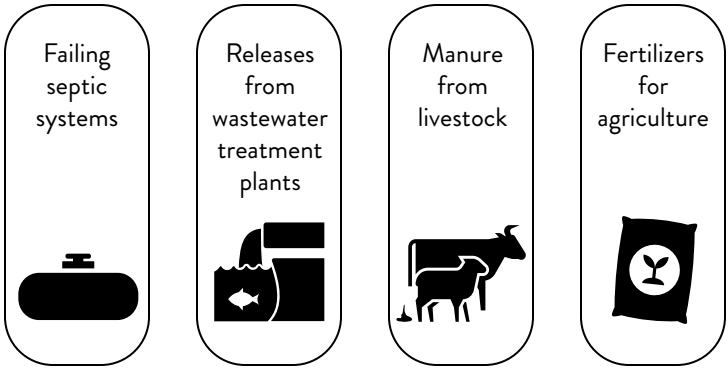


* In 113 townships, more than 10% of wells have too much nitrates

NITROGEN is a naturally occurring element found in soil, as well as manure, human sewage, and fertilizers. Nitrogen in the Mississippi River flows downstream to the Gulf of Mexico, causing a hypoxic "dead zone." It is harmful to fish and aquatic life in Minnesota lakes and streams, and can also make surface and groundwater unsafe to drink.

Studies show that nitrogen concentrations are increasing in both surface and groundwater in Minnesota. The majority – 72% - of this nitrogen comes from cropland. Smaller amounts come from wastewater treatment plants and septic systems. Urban stormwater is responsible for only 1% of all nitrate in Minnesota waters.

COMMON SOURCES



SUMMARY

Nitrogen is a naturally occurring element that feeds algae in saltwater systems. Nitrogen in the Mississippi River flows downstream to the Gulf of Mexico and feeds algae, causing a hypoxic "dead zone." Nitrogen also combines with oxygen to form nitrate, which can make water unsafe to drink. Many communities in southeastern, southwestern and central Minnesota have elevated nitrates in their groundwater.

WHAT YOU CAN DO

1. **Inspect your septic system** at least once every three years, pump as needed, and replace when failing.
2. **Use less nitrogen fertilizer**, especially in areas with sandy soils or karst geology.
3. Support programs that **encourage conservation farming.**
4. Work with your soil and water conservation district to **manage manure if you have farm animals.**

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology & Human Health

Nitrogen

www.pca.state.mn.us/water/nitrogen

Chloride (salts)

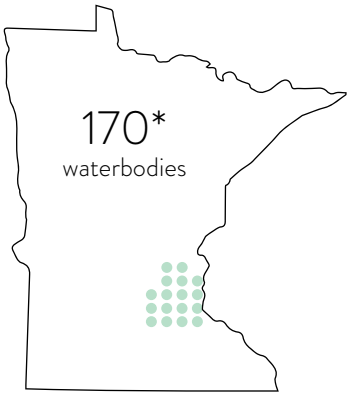
IMPACTS:
Ecology & Economy

WATER QUALITY STATS

50 lakes and streams in Minnesota are impaired by too much salt.

120 water bodies are threatened by salt.

30% of shallow groundwater wells in the Twin Cities metro area have elevated chlorides.



* 1 dot represents 10 waterbodies

SALTS are used to melt snow and ice during the winter, suppress dust on gravel roads, and soften water. But, salt has become a major source of water pollution in Minnesota – especially in the Twin Cities metro area.

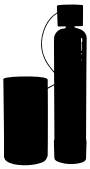
Salt kills fish and aquatic life, corrodes roads and bridges, and can even harm wildlife and our pets. We currently have no practical technology to remove salt from surface or groundwater once it is there. It takes only one teaspoon of salt to permanently pollute five gallons of freshwater.

COMMON SOURCES

Winter road & sidewalk salt and de-icers

Dust suppression for dirt and gravel roads

Water softeners



SUMMARY

Chloride (salt) is a major source of water pollution in Minnesota, especially in urban areas. Salt permanently pollutes surface water and groundwater and harms fish and wildlife.

WHAT YOU CAN DO

1. **Slow down.** Leave early, drive slower, and give plow trucks plenty of space to do their work.
2. **Be patient.** Just because you don't see salt on the road doesn't mean it hasn't been applied. Salt takes time to work.
3. **Shovel first.** Whether you use a shovel, snow blower, snow plow, or ice scraper, get out there as early as you can to shovel your driveway and sidewalk. The more you shovel, the less salt you'll need.
4. **Use salt wisely.** A 12 oz. mug of salt is enough for 10 sidewalk squares or a 20' driveway. Clean up leftover salt and sand to save and reuse. Salt does not melt ice when it is colder than 15° F. Wait until it warms up to avoid wasting money.

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology & Economy

Chloride (salts)

www.pca.state.mn.us/water/chloride-salts

Mercury

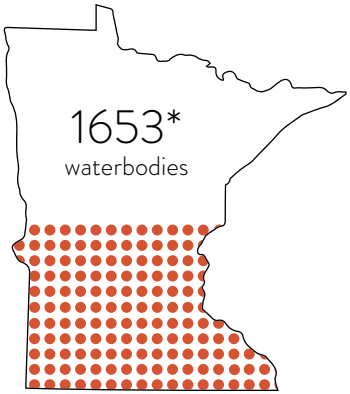
IMPACTS:
Ecology & Human Health

contact:
your city for mercury disposal information.

WATER QUALITY STATS

1653 lakes and rivers in Minnesota are impaired by too much mercury. (2020)

99% of the mercury in our lakes and rivers comes from the atmosphere.



* 1 dot represents 10 waterbodies

MERCURY is a naturally occurring element that is toxic to humans and animals. It affects human nervous systems, and is particularly harmful to young children and fetuses. Mercury is the most common pollutant in Minnesota's surface water.

Ninety-nine percent of the mercury in our lakes and rivers comes from atmospheric deposition. This happens when mercury is released into the atmosphere during industrial processes. The mercury eventually "falls out" of the air and onto the landscape. When it lands in lakes, the mercury ends up in the water and fish.

There are approximately 1653 water bodies in Minnesota with too much mercury (2020). As a result, the Minnesota Department of Health has issued fish consumption advisories for these lakes and rivers indicating that it may not be safe to eat fish from them more than once a week or once a month.

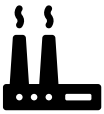
COMMON SOURCES

Atmospheric deposition from regional, national and global sources:

Iron-mining and production in Minnesota

Artisanal and small-scale gold mining

Coal-burning power plants



Industrial processes

Volcanoes

SUMMARY

Mercury is a naturally occurring element that is toxic to humans and animals. Mercury is the leading cause of surface water pollution in Minnesota. Nearly 100% of this mercury comes from atmospheric deposition.

WHAT YOU CAN DO

1. **Reduce electricity consumption.** Shut down your computer and monitor at night, switch to LED light bulbs, unplug idle electronics, and turn off the lights when you leave a room.

2. **Dispose of household hazardous waste properly.** The mercury in thermostats, thermometers, fluorescent lights, gauges, medical and scientific equipment, electrical devices, and household appliances must be removed for reuse or recycling before these products can safely be disposed of or scrapped.

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology & Human Health

Mercury

www.pca.state.mn.us/water/mercury

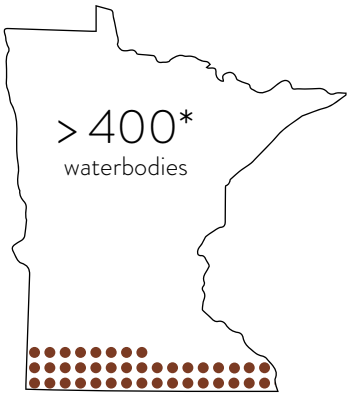
Sediment

IMPACTS:
Ecology & Economy

WATER QUALITY STATS

The Minnesota River needs a 90% reduction in sediment loading to meet water quality goals; the **South Metro Mississippi requires a 50% reduction.**

More than 400 water bodies are impaired by turbidity or total suspended solids (caused by sediment).



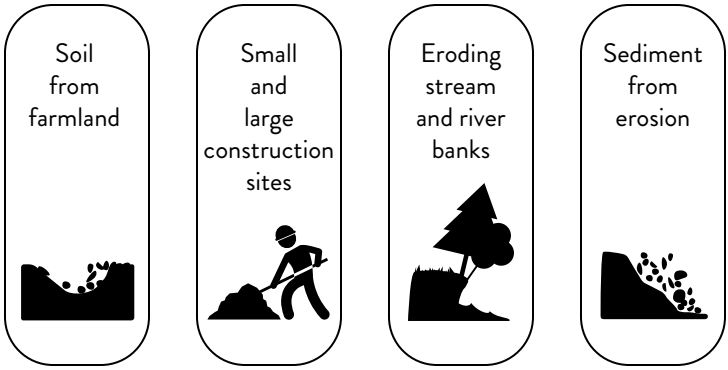
* 1 dot represents 10 waterbodies

SEDIMENT – soil, dirt, sand, and silt – is a normal part of nature. It becomes a problem for our lakes, rivers and streams when there is too much loose sediment in the water. Sediment can clog the gills of fish and aquatic animals, smother spawning sites, fill-in rivers and streams, and make the water cloudy and unsafe for swimming. In addition, sediment also carries phosphorus with it into our water.

One major source of sediment is erosion along stream and river banks, gullies, ravines, ditches, and river bottoms due to too much flowing water. The erosion is indirectly caused by storm sewer systems, ditches and drain tile, and other alterations that quickly carry rain and melting snow off the land and into our waterways.

Sediment is also washed off of construction sites, farm fields, and patches of bare soil.

COMMON SOURCES



SUMMARY

Sediment – soil, dirt, sand, and silt – washes into lakes, rivers, and streams as a result of erosion. It is a major cause of water pollution in the Minnesota and Mississippi Rivers.

WHAT YOU CAN DO

1. **Cover bare soil** on your property during landscaping and construction projects.
2. **Use erosion control fabric** to protect steep hills and shoreline areas while establishing new vegetation.
3. **Plant trees, shrubs, and deep-rooted native plants** along lakeshores and streambanks to prevent erosion.
4. **Plant a cover crop** after the corn and soybeans are harvested in the fall.

MINNESOTA POLLUTION CONTROL AGENCY

Impacts: Ecology & Economy

Sediment

www.pca.state.mn.us/water/sediment

Water Governance in Minnesota

Federal

Clean Water Act 1972
Set a goal to restore and maintain the chemical, physical and biological integrity of the nation's waters.

Safe Drinking Water Act 1974
Authorizes EPA to establish and enforce health-based standards for drinking water.

U.S. Army Corps of Engineers
Oversees flood prevention and construction activities within U.S. waters, including wetlands

Anishinaabe & Dakota Tribes
Tribes have their own natural resource management programs and strive to maintain healthy ecosystems that allow their members to practice traditional hunting, fishing, and gathering.

Environmental Protection Agency (EPA)
Oversees Clean Water Act and Drinking Water Act

U.S. Fish and Wildlife Service
Administers Endangered Species Act for freshwater and terrestrial species

Natural Resources Conservation Service (NRCS)
A division of the U.S. Department of Agriculture that provides farmers and ranchers with assistance for voluntary conservation projects

State

Minnesota Governor's Office
Oversees state agencies responsible for water management and the Environmental Quality Board

Pollution Control Agency (MPCA)
Implements Clean Water Act in MN; oversees industrial, construction, and municipal separate storm sewer system (MS4) stormwater permits; establishes water quality standards for lakes, rivers, streams & wetlands; maintains list of impaired waters.

Department of Natural Resources (DNR)
Manages public waters. Responsible for ordinary high water levels; groundwater appropriations; shoreland and floodplain management; aquatic invasive species; fisheries.

Board of Water and Soil Resources (BWSR)
Oversees soil and water conservation programs conducted by local government; MN Wetland Conservation Act; local water plans.

Department of Health
Protects drinking water quality; establishes health-based standards for groundwater contaminants; issues fish consumption advisories

Department of Agriculture
Regulates the use of pesticides and fertilizers to protect water resources

Local

Cities & Towns
Cities establish local policies, ordinances, and zoning. Towns may do planning and zoning. Many cities and towns manage stormwater through MS4 programs.

Metropolitan Council
Operates within the 7-county metropolitan area. Responsible for wastewater treatment; lake and river water quality monitoring; water supply planning; regional parks and trails; future growth planning.

Watershed Districts
Independent units of government with taxing and rule-making authority. Conduct flood prevention and water quality protection. Established by petition from citizens or local officials. 46 districts in MN. Only exist in some parts of the state.

Watershed Management Organizations
Created and funded through joint-powers agreements among cities in a watershed. Conduct flood prevention and water quality protection. Required in the 7-county metro area (if no watershed district exists).

Counties
Do local water planning outside the metro area.

Soil and Water Conservation Districts (SWCDs)
Provide support for voluntary conservation projects. Exist statewide.

Have you tested your well water?

Testing is even more important if infants or young children drink the water.

Water Testing Resources

Private well water users should test their water regularly to ensure clean water. The Department of Public Health and Environment provides well water testing services to county residents for a modest fee.

For more information on testing kit fees and drop off locations, please visit:

www.co.washington.mn.us/637/Water-Tests

Washington County

To order a testing kit, you can call 651-430-6655 or email phe@co.washington.mn.us

Washington County
Public Health and Environment
14949 62nd Street North, Room 4600
Stillwater, MN 55082

Well Water Testing Services

See details on back

Washington County

Subsurface Sewage Treatment System (SSTS):

More information & resources can be found online at *www.co.washington.mn.us/618/Septic*

Maintenance

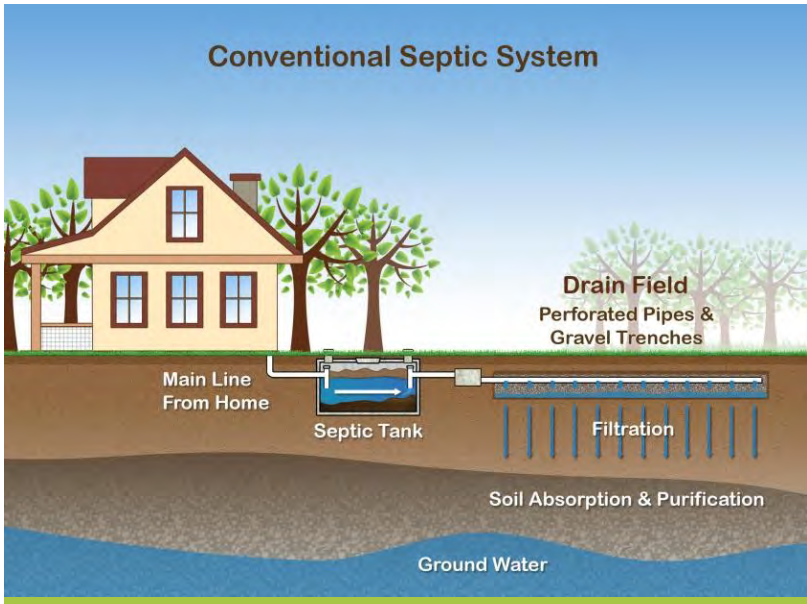
Required to be done every 3 years.

Similar to changing the oil in your car, pumping your septic tanks helps keep the whole system in good shape by preventing solids from reaching the soil treatment area where pipes can clog and ruin the soils. Septic tank additives cannot be used in place of pumping and may harm a septic system.

Remember, a maintenance event is not the same thing as an inspection and cannot be used to determine compliance.

What is considered a "full" tank?

When the top of the sludge layer reaches 12 inches below the bottom of the outlet baffle, or when the scum layer reaches to 3 inches above the outlet baffle.



Get to know your Septic System

A septic system has three parts:

- household plumbing
- a tank to collect sewage and solids
- a soil treatment area (Mound or Drainfield)

All three parts must be working to provide effective sewage treatment.

Inspections & Compliance

Only a Licensed Septic Inspector can determine if a system is compliant.

Required when selling or transferring a property with a septic system, remodeling more than 50% of a home, when adding an addition to a home.

An inspection involves determining if the septic tanks are watertight and functioning properly, investigating the soil treatment area for leaks or ponding, and sampling the soil to ensure it meets the required separation above periodically saturated soil or bedrock.

How Can I Apply for a Septic Permit?

Washington County has an online permitting portal! This can be used by septic owners or contractors to apply for permits, check on the status of a permit, and even look up past inspection reports.

Financial Assistance

Low interest loans and Fix Up grants are available to Washington County landowners in order to finance the repair or replacement of failing SSTS. Applications are reviewed on a rolling basis and awarded when funds are available.

Completed or underway projects are not eligible for funding.

Flood Preparedness

Follow these steps to help mitigate the effects flooded SSTS may have on public health & the environment.

Empty tanks can become buoyant during flooding and cause serious damage.

Before

Install a plastic sheet over any below grade drains and place a sandbag on top to prevent sewage from backing up. Do NOT pump the contents of the septic system. Keep all traffic off the soil treatment area to avoid compaction.

During

It is required to discontinue discharging wastewater to the system. All water use must cease during the flood. If you have a pump tank, remember to disconnect it.

After

Conduct a visual inspection of the systems components, including tanks, pumps, manhole covers, and vegetation over the septic tank and soil treatment area to see if there is any damage. After flood waters recede, contact a licensed SSTS Maintainer to have all tanks pumped prior to resuming use.

Washington County

TIPS FOR HIRING A BUSINESS TO INSTALL OR REMOVE YOUR BOAT, DOCK, LIFT, OR OTHER EQUIPMENT

Washington Conservation District

Big Marine Lake Association BMLA Member

St. Croix River Association

WHEN HIRING A LAKE SERVICE PROVIDER MAKE SURE TO:

- Ask if they have completed Aquatic Invasive Species (AIS) Training.
- Confirm that they are on the DNR's list of permitted service providers: *bit.ly/MNDNR_LSP*

WHEN REMOVING EQUIPMENT YOURSELF, REMEMBER:

- It is illegal to transport any equipment with zebra mussels or other prohibited invasive species away from a water access or shoreland property.
- Docks, boat lifts, and swimming platforms must dry for 21 days before entering another waterbody.

REMINDER: Minnesota invasive species laws regulate the transport of invasive species equipment, and water to help prevent the spread of AIS which threaten mative species and aquatic ecosystems and impair recreational activities like boating and fishing.

Learn more: *www.dnr.state.mn.us/invasives/ais/index.html*

Thank you for protecting our lakes!

MINNESOTA POLLUTION CONTROL AGENCY

You are currently logged in as:

Lake Elmo City MS4

If this is correct, click the 'Next' button. If this information is incorrect, contact Cole Landgraf (651-757-2880, cole.landgraf@state.mn.us).

Before you begin...

A fillable Microsoft Word document with all of the questions is available at https://stormwater.pca.state.mn.us/index.php?title=MS4_Annual_Report (for personal use only, not for submittal).

The MS4 Annual Report for 2020 will automatically save your answers when you hit the 'Next' button at the bottom of each page.

If you wish to leave the MS4 Annual Report for 2020 and complete the document at another time, you may do so by clicking 'Next' at the bottom of your current page to save your progress before exiting the document. Return to the survey by following the previously used web link, and again login using your email and assigned password credentials. Once you successfully log in, your previous answers will appear.

The MPCA will email a formatted version of your MS4 Annual Report for 2020 to you in a confirmation email within three business days after you submit this form.

You may print a copy of the MS4 Annual Report for 2020 for your records at any time by pressing the 'Print' button at the bottom of the page.

Additionally, it is possible to save a PDF copy of the MS4 Annual Report for 2020 if you are working on a computer with OneNote (a program often included in Microsoft Office packages). Detailed saving instructions are available at stormwater.pca.state.mn.us/index.php/Guidance_for_saving_MS4_annual_reports.

MS4 Annual Report for 2020

Reporting period: January 1, 2020 to December 31, 2020

Due: June 30, 2021

Instructions: Complete this annual report to provide a summary of your activities under the 2013 MS4 Permit (Permit) between January 1, 2020 and December 31, 2020. MPCA staff may contact you for additional information.

Fillable document available at https://stormwater.pca.state.mn.us/index.php?title=MS4_Annual_Report (for personal use only, not for submittal).

Questions: Contact Cole Landgraf (cole.landgraf@state.mn.us, 651-757-2880)

MS4 General Contact Information

Full name	Marty Powers
Title	Public Works Director
Mailing address	3880 Laverne Ave N, Suite 100
City	Lake Elmo
State	MN
Zip code	55042
Phone	651-747-3941
Email	mpowers@lakeelmo.org

Preparer Contact Information (if different from the MS4 General Contact)

Full name	
Title	
Organization	
Mailing address	
City	
State	
Zip code	
Phone	
Email	

MCM 1: Public Education and Outreach

The following questions refer to Part III.D.1. of the Permit.

Q2 Did you select a stormwater-related issue of high priority to be emphasized during this Permit term? [Part III.D.1.a.(1)]

- (●) Yes
- ( ) No

Q3 What is your stormwater-related issue(s)? Check all that apply.

- [ ] TMDL(s)
- [ ] Local businesses
- [x] Residential BMPs
- [ ] Pet waste
- [x] Yard waste
- [ ] Deicing materials
- [ ] Household chemicals
- [ ] Construction activities
- [x] Post-construction activities
- [ ] Other

Q4 Have you distributed educational materials or equivalent outreach to the public focused on illicit discharge recognition and reporting? [Part III.D.1.a.(2)]

- (●) Yes
- ( ) No

Q5 Do you have an implementation plan as required by the Permit? [Part III.D.1.b.]

- (●) Yes
- ( ) No

Q6 How did you distribute educational materials or equivalent outreach? Check all that apply and provide circulation/audience associated with each item. [Part III.D.1.a.]

- [ ] Brochure
- [x] Newsletter
- [ ] Utility bill insert
- [ ] Newspaper ad
- [ ] Radio ad
- [ ] Television ad
- [ ] Cable access channel
- [x] Stormwater-related event
- [ ] School presentation or project
- [x] Website
- [ ] Other (1)
- [ ] Other (2)
- [ ] Other (3)

Q7 Intended audience? Check all that apply.

	Residents	Local Businesses	Developers	Students	Employees	Other
Newsletter	☑	☑	☐	☐	☐	☐
Stormwater-related event	☑	☐	☐	☐	☐	☐
Website	☑	☑	☐	☐	☐	☐

Q8 Enter the total circulation/audience (if unknown, use best estimate):

Newsletter	8500
Stormwater-related event	2000
Website	2000

Provide a brief description of each activity related to public education and outreach (e.g. rain garden workshop, school presentation, public works open house) held and the date each activity was held from January 1, 2020 to December 31, 2020. [Part III.D.1.c.(4)]

Q9 Date of activity	Q10 Description of activity
Date (mm/dd/yyyy)	Two Lake Elmo Residents took part in the Water Steward Program graduating in 2020.
Date (mm/dd/yyyy)	Adopt a Drain thought the year
Date (mm/dd/yyyy)	MS4 Took Kit
Date (mm/dd/yyyy)	
Date (mm/dd/yyyy)	
Date (mm/dd/yyyy)	
Date (mm/dd/yyyy)	
Date (mm/dd/yyyy)	

Q11 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your public education and outreach program? [Part IV.B.]

- ○ Yes
- ◉ No

MCM 2: Public Participation/Involvement

The following questions refer to Part III.D.2.a. of the Permit.

Q12 You must provide a minimum of one opportunity each year for the public to provide input on the adequacy of your Stormwater Pollution Prevention Program (SWPPP). Did you provide this opportunity between January 1, 2020 and December 31, 2020? [Part III.D.2.a.(1)]

- ◉ Yes
- ○ No

Q13 What was the opportunity that you provided? Check all that apply.

- ☑ Public meeting
- ☐ Public event
- ☐ Other

Q14 Did you hold a stand-alone meeting or combine it with another event?

- ☐ Stand-alone
- ☑ Combined

Enter the date of the public meeting (mm/dd/yyyy): 06/16/2020

Enter the number of citizens that attended and were informed about your SWPPP: 11

Q17 Between January 1, 2020 and December 31, 2020, did you receive any input regarding your SWPPP?

- ○ Yes
- ◉ No

Q19 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your public participation/involvement program? [Part IV.B.]

- ○ Yes
- ◉ No

MCM 3: Illicit Discharge Detection and Elimination

The following questions refer to Part III.D.3. of the Permit.

Q20 Do you have a regulatory mechanism which prohibits non-stormwater discharges to your MS4? [Part III.D.3.b.]

- ◉ Yes
- ○ No

Q21 Did you identify any illicit discharges between January 1, 2020 and December 31, 2020? [Part III.D.3.h.(4)]

- ○ Yes
- ◉ No

Q30 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your illicit discharge regulatory mechanism(s)? [Part III.B.]

- ◉ Yes
- ○ No

Q31 Between January 1, 2020 and December 31, 2020, did you train all field staff in illicit discharge recognition (including conditions which could cause illicit discharges) and reporting illicit discharges for further investigations? [Part III.D.3.e.]

- ◉ Yes
- ○ No

Q32 How did you train your field staff? Check all that apply.

- ☐ Email
- ☐ PowerPoint
- ☐ Presentation
- ☑ Video
- ☐ Field Training
- ☐ Other

The following questions refer to Part III.C.1. of the Permit.

Q33 Did you update your storm sewer system map between January 1, 2020 and December 31, 2020? [Part III.C.1.]

- ◉ Yes
- ○ No

Q34 Does your storm sewer map include all pipes 12 inches or greater in diameter and the direction of stormwater flow in those pipes? [Part III.C.1.a.]

- (●) Yes
- ( ) No

Q35 Does your storm sewer map include outfalls, including a unique identification (ID) number and an associated geographic coordinate? [Part III.C.1.b.]

- (●) Yes
- ( ) No

Q36 Does your storm sewer map include all structural stormwater BMPs that are part of your MS4? [Part III.C.1.c.]

- (●) Yes
- ( ) No

Q37 Does your storm sewer map include all receiving waters? [Part III.C.1.d.]

- (●) Yes
- ( ) No

Q38 In what format is your storm sewer map available?

- ( ) Hardcopy only
- (●) GIS
- ( ) CAD
- ( ) Other

Q39 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your illicit discharge detection and elimination (IDDE) program? [Part IV.B.]

- ( ) Yes
- (●) No

MCM 4: Construction Site Stormwater Runoff Control

The following questions refer to Part III.D.4. of the Permit.

Q40 Do you have a regulatory mechanism that is at least as stringent as the Agency's general permit to Discharge Stormwater Associated with Construction Activity (CSW Permit) No. MN R100001 (http://www.pca.state.mn.us/index.php/view-document.html?gid=18984) for erosion and sediment controls and waste controls? [Part III.D.4.a.]

- (●) Yes
- ( ) No

Q41 Have you developed written procedures for site plan reviews as required by the Permit? [Part III.D.4.b.]

- (●) Yes
- ( ) No

Q42 Have you documented each site plan review as required by the Permit? [Part III.D.4.f.]

- (●) Yes
- ( ) No

Q43 Enter the number of site plan reviews conducted for sites an acre or greater of soil disturbance between January 1, 2020 and December 31, 2020:

36

Q44 What types of enforcement actions do you have available to compel compliance with your regulatory mechanism? Check all that apply and enter the number of each used from January 1, 2020 to December 31, 2020.

- [x] Verbal warnings
- [x] Notice of violation
- [ ] Administrative orders
- [x] Stop-work orders
- [ ] Fines
- [x] Forfeit of security of bond money
- [ ] Withholding of certificate of occupancy
- [ ] Criminal actions
- [ ] Civil penalties
- [ ] Other

Enter the number of verbal warnings issued: 15

Enter the number of notice of violations issued: 4

Enter the number of stop-work orders issued: 0

Enter the number of forfeitures of security bond money issued: 0

Q45 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your construction site stormwater runoff control regulatory mechanism(s)? [Part III.B.]

- (●) Yes
- ( ) No

Q46 Enter the number of active construction sites an acre or greater that were in your jurisdiction between January 1, 2020 and December 31, 2020:

24

Q47 Do you have written procedures for identifying priority sites for inspections? [Part III.D.4.d.(1)]

- ( ) Yes
- (●) No

Q49 Do you have a checklist or other written means to document site inspections when determining compliance? [Part III.D.4.d.(4)]

- (●) Yes
- ( ) No

Q50 Enter the number of site inspections conducted for sites an acre or greater between January 1, 2020 and December 31, 2020:

50

Q51 Enter the frequency at which site inspections are conducted (e.g. daily, weekly, monthly): [Part III.D.4.d.(2)]

weekly (for active priority sites)

Q52 Enter the number of trained inspectors that were available for construction site inspections between January 1, 2020 and December 31, 2020:

1

Q53 Provide the contact information for the inspector(s) and/or organization that conducts construction stormwater inspections for your MS4. List your primary construction stormwater contact first if you have multiple inspectors.

(1) Inspector name	Dave Klocker
Organization	Focus Engineering
Phone (Office)	
Phone (Work Cell)	651-300-9302
Email	dmklocker@gmail
Preferred contact method	cell phone
(2) Inspector name	
Organization	
Phone (Office)	
Phone (Work Cell)	
Email	
Preferred contact method	
(3) Inspector name	
Organization	
Phone (Office)	
Phone (Work Cell)	
Email	
Preferred contact method	

Q55 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your construction site stormwater runoff control program? [Part IV.B.]

- ○ Yes
- ☑ No

MCM 5: Post-Construction Stormwater Management

The following questions refer to Part III.D.5. of the Permit.

Q56 Do you have a regulatory mechanism which meets all requirements as specified in Part III.D.5.a. of the Permit?

- (●) Yes
- ( ) No

Q57 What approach are you using to meet the performance standard for Volume, Total Suspended Solids (TSS), and Total Phosphorus (TP) as required by the Permit? [Part III.D.5.a.(2)]
Check all that apply.

Refer to the link http://www.pca.state.mn.us/index.php/view-document.html?gid=17815 for guidance on stormwater management approaches.

- [ ] Retain a runoff volume equal to one inch times the area of the proposed increase of impervious surfaces on-site
- [ ] Retain the post-construction runoff volume on site for the 95th percentile storm
- [ ] Match the pre-development runoff conditions
- [x] Adopt the Minimal Impact Design Standards (MIDS)
- [ ] An approach has not been selected
- [ ] Other method (Must be technically defensible--e.g. based on modeling, research and acceptable engineering practices)

Q58 Do you have written Enforcement Response Procedures (ERPs) to compel compliance with your post-construction stormwater management regulatory mechanism(s)? [Part III.B.]

- (●) Yes
- ( ) No

Q59 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your post-construction stormwater management program? [Part IV.B.]

- ( ) Yes
- (●) No

MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations

The following questions refer to Part III.D.6. of the Permit.

Q60 Enter the total number of structural stormwater BMPs, outfalls (excluding underground outfalls), and ponds within your MS4 (exclude privately owned).

Structural stormwater BMPs	59
Outfalls	54
Ponds	112

Q61 Enter the number of structural stormwater BMPs, outfalls (excluding underground outfalls), and ponds that were inspected from January 1, 2020 to December 31, 2020 within your MS4 (exclude privately owned). [Part III.D.6.e.]

Structural stormwater BMPs	59
Outfalls	22
Ponds	23

Q62 Have you developed an alternative inspection frequency for any structural stormwater BMPs, as allowed in Part III.D.6.e.(1) of the Permit?

- (●) Yes
- ( ) No

Q63 Based on inspection findings, did you conduct any maintenance on any structural stormwater BMPs? [Part III.D.6.e.(1)]

- (●) Yes
- ( ) No

Q64 Briefly describe the maintenance that was conducted:

Cleaned out flared ends and sumps

Q65 Do you own or operate any stockpiles, and/or storage and material handling areas? [Part III.D.6.e.(3)]

- (●) Yes
- ( ) No

Q66 Did you inspect all stockpiles and storage and material handling areas quarterly? [Part III.D.6.e.(3)]

- (●) Yes
- ( ) No

Q67 Based on inspection findings, did you conduct maintenance at any of the stockpiles and/or storage and material handling areas?

- (●) Yes
- ( ) No

Q68 Briefly describe the maintenance that was conducted:

added erosion logs around pile

Q69 Between January 1, 2020 and December 31, 2020, did you modify your BMPs, measurable goals, or future plans for your pollution prevention/good housekeeping for municipal operations program? [Part IV.B.]

- (●) Yes
- ( ) No

Describe those modifications:

added containment devices to piles

Discharges to Impaired Waters with a USEPA-Approved TMDL that Includes an Applicable WLA

You must complete the **TMDL Annual Report Form**, available at: https://stormwater.pca.state.mn.us/index.php?title=Annual_TMDL_forms_submitted_by_MS4_permittees. Attach your completed TMDL Annual Report Form to this Annual Report as instructed below. [Part III.E.]

Q71 Click the "up arrow" icon below to upload your TMDL Annual report form. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.

ref:0000000106:Q71

Partnerships

Q78 Did you rely on any other regulated MS4s to satisfy one or more Permit requirements?

- (●) Yes
- ( ) No

Q79 Describe the agreements you have with other regulated MS4s and which Permit requirements the other regulated MS4s help satisfy: [Part IV.B.6.]

Lake Elmo is located within Valley Branch Watershed District, South Washington District, and Brown's Creek Watershed District. Each of these entities have jurisdiction over construction activities within a portion of the City.

Additional Information

If you would like to provide any additional files to accompany your annual report, use the space below to upload those files. For each space, you may attach one file. You may provide additional explanation and/or information in an email with the subject *YourMS4NameHere_2020AR* to ms4permitprogram.pca@state.mn.us.

Q80 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.

ref:0000000106:Q80

Q81 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.

Q82 Click the "up arrow" icon below to upload a file. When it has uploaded successfully, a unique ID will appear in the box. Only files less than 10 MB in size will upload.

Q83 Optional, describe the file(s) uploaded:

EMWREP 2020 Annual Report - Pertaining to MCM 1 and MCM 2

Owner or Operator Certification

The person with overall administrative responsibility for SWPPP implementation and Permit compliance must certify this MS4 Annual Report. This person must be duly authorized and should be either a principal executive (i.e., Director of Public Works, City Administrator) or ranking elected official (i.e., Mayor, Township Supervisor).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete (Minn. R. 7001.0070). I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Minn. R. 7001.0540).

☐ Yes

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that information can be used for the purpose of processing my MS4 Annual Report.

Name:

Title:

Date: (mm/dd/yyyy)

When you are ready to submit, you must click the 'Submit' button at the bottom of this page.

Provide the email(s) of the individual(s) you would like to receive the MS4 Annual Report for 2020 submittal confirmation email from the MPCA. After you click the Submit button below, please allow up to three business days to receive this email.

Email (1)

Email (2)

Email (3)

Print or save a copy of your completed MS4 Annual Report for 2020 for your records. The MPCA will email a formatted version of your MS4 Annual Report for 2020 in a confirmation email within three business days after you submit this form to the email(s) you provided above.

You may print a copy of the MS4 Annual Report for 2020 for your records by pressing the 'Print' button at the bottom of the page.

Additionally, it is possible to save a PDF copy of the MS4 Annual Report for 2020 if you are working on a computer with OneNote (a program often included in Microsoft Office packages). Detailed saving instructions are available at stormwater.pca.state.mn.us/index.php/Guidance_for_saving_MS4_annual_reports.

If you have any questions, contact MPCA staff Cole Landgraf (cole.landgraf@state.mn.us, 651-757-2880).