



# 2019 Annual Report



Above: (Clockwise from upper left) Adopt-A-Raingarden volunteers; Woodbury family nature event; Wyoming landscaping workshop; Stillwater family nature event

## Members of the East Metro Water Resource Education Program:

Brown's Creek Watershed • Carnelian-Marine-St. Croix Watershed •  
Comfort Lake-Forest Lake Watershed • 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  
2019 Annual Report**

TABLE OF CONTENTS

[About the Program](#) ..... 3

[2019 Executive Summary](#).....4

Program Activity Details

[Public Education and Engagement](#)..... 12

[Outreach Support for Partner Projects and Programs](#)..... 20

[Professional Trainings for Business and Local Government](#) ..... 24

[New Materials and Resources – MS4 Toolkit](#)..... 27

Appendix A: [Education Program Budget for 2019-2021](#) .....31

## **About the East Metro Water Resource Education Program**

**Background:** The East Metro Water Resource Education Program (EMWREP) is a partnership formed in 2006 to implement a comprehensive water education and outreach program for the east metro area of St. Paul, MN. Current EMWREP partners include:

- 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: Cottage Grove, Dellwood, Forest Lake, Grant, Hugo, Lake Elmo, Newport, Oakdale, Oak Park Heights, Stillwater, St. Paul Park, Willernie, and Woodbury, West Lakeland Township

**Purpose:** The purpose of the shared education program is 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.

**Partnership Structure:** EMWREP is guided by a steering committee comprised of representatives from each of the 24 partner organizations. The committee generally meets twice a year to provide recommendations on the program budget and activities. The EMWREP coordinator communicates regularly with partner staff, council members and board members; prepares an annual report on program activities; provides outreach data and statistics for partners' MS4 Permit reports; and communicates one-on-one with individual partners on projects throughout the year. All EMWREP reports, plans, and education updates are available on-line at [www.mnwcd.org/emwrep](http://www.mnwcd.org/emwrep).

**Staff:** Angie Hong is the EMWREP program coordinator. Additional education support in 2019 was provided by Lauren Haydon (0.5 FTE), Cameron Blake (0.1 FTE), and Bobbie Law (0.1 FTE).

**Coordination with Other Regional Education Efforts:** The EMWREP partnership helps to strengthen relationships between Washington Conservation District, Washington County and the eight watershed management organizations and 14 cities that constitute the partnership. This translates into better coordination and less overlap in the management of local water resources.

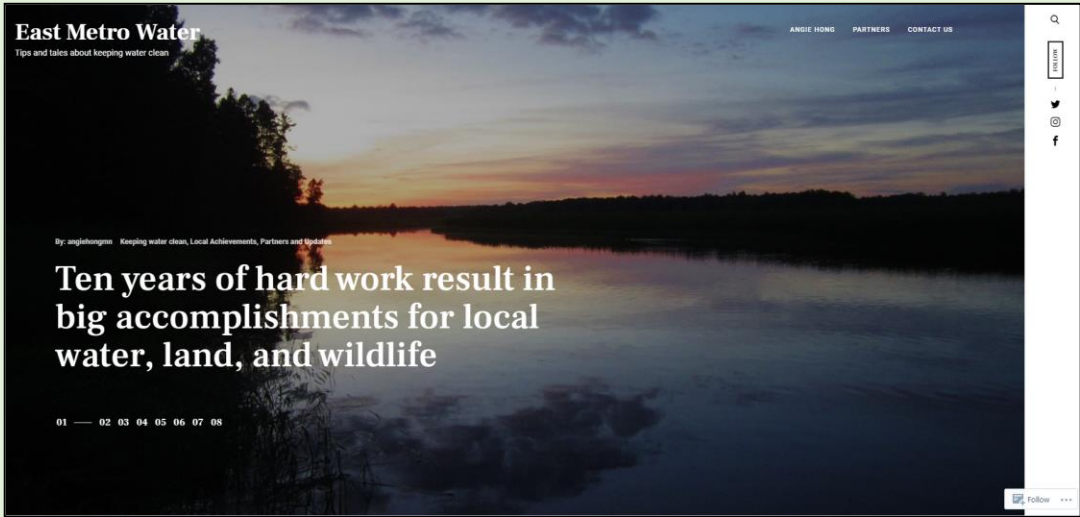
EMWREP staff provide leadership for Watershed Partners (a collaborative of more than 60 non-profit and public entities in the Twin Cities metro area), participate in the Blue Thumb partnership and Master Water Stewards programs, and work actively with organizations in the St. Croix Basin, including partners in the Lower St. Croix "One Watershed" Plan.

**Accolades:** EMWREP was the 2012 MAWD Watershed Program of the Year.

# 2019 EXECUTIVE SUMMARY

## PUBLIC EDUCATION AND ENGAGEMENT

PUBLIC EDUCATION				
4600 face-to-face interactions with the public at workshops and events				
17 Community Events	15 Workshops	12 Presentations	8 Classes for Water Stewards	3 Clean-Up Events
52 weekly articles in local newspapers: <a href="http://www.eastmetrowater.org">www.eastmetrowater.org</a>				



<b>VOLUNTEER ENGAGEMENT</b>	
<b>Master Water Stewards</b>	
13 trained in 2019 (20 total)	
50-hours of training + capstone project + 25-50 hours of volunteer support	
Organize raingarden clean-up events Join watershed district CACs Promote Adopt-a-Drain Promote BMP programs	Attend community events Remove invasive species Plant native gardens and raingardens Grow trees for community plantings
<b>Adopt a Drain</b>	
285 drains adopted in <u>Washington County</u> since April 9981 drains adopted in the Twin Cities	
A partnership with Hamline University and Watershed Partners	
Residents help to prevent stormwater pollution by cleaning leaves, litter and sediment away from storm drains near their homes	
<b>Adopt a Raingarden</b>	
55 raingardens adopted in Stillwater and Oak Park Heights	
Master Water Stewards Stephanie Wang and Anna Barker used the model to organize two raingarden clean-up events in Woodbury	
100 volunteers engaged at clean-up events in Stillwater and Woodbury	
<b>AIS Detectors</b>	
4 trained in 2019 (14 total)	
8 hours of training + 25 hours of volunteer support	



YOUTH EDUCATION			
<b>30 groundwater/watershed lessons</b> taught to 4 <sup>th</sup> grade students			
<b>5</b> Forest Lake Elementary	<b>5</b> Lake Elmo Elementary	<b>2</b> Newport Elementary	<b>7</b> Oneka (Hugo)
<b>4</b> Royal Oaks (Woodbury)		<b>5</b> St. Peter's (North St. Paul)	<b>2</b> Wyoming Elementary
<b>Campus Greening:</b> Valley Crossing (Woodbury) + Crestview (Cottage Grove)			
<b>8</b> outdoor family nature events; <b>4</b> informal youth programs; St. Croix Summit			
<b>Teacher Workshop</b> in Oakdale (Aug. 6)			



## OUTREACH SUPPORT FOR PARTNER PROJECTS AND PROGRAMS

BMP & COST-SHARE PROGRAMS			
<b>6 Blue Thumb Workshops</b>			
Wyoming – Hugo – Scandia – Oakdale - Lake Elmo - Cottage Grove			
<b>154</b> Workshop Attendees	<b>193</b> Site Visits by WCD staff	<b>116 lbs TP</b> Total Phosphorus Reduction	<b>29,793 lbs TSS</b> Total Suspended Solids Reduction
Downloadable calendar for Outlook and Google <a href="http://www.mnwcd.org/maintenance-guide">www.mnwcd.org/maintenance-guide</a>			
BMP maintenance guidance – print materials <a href="http://www.mnwcd.org/adoptaraingarden">www.mnwcd.org/adoptaraingarden</a>			



### Wiessner Property



In 2013, the Washington Conservation District worked with landowner Grant Wiessner to install a sediment basin and stabilize a gully on his property in Afton, which drains to Kelle's Creek.

The sediment basin treats runoff from 11 acres of land and reduces the amount of phosphorus flowing to Kelle's Creek and the St. Croix River by 42.5 pounds per year.

In 2016 and 2019, Grant Wiessner worked with the WCD again to install a grade control structure and repair two additional gullies on his property. The 2016 project reduces phosphorus going to Kelle's Creek by 21 pounds per year, and the 2019 project reduces phosphorus loading by another 30 pounds.

All three projects address major erosion issues that were causing trees to topple and sending large amounts of sediment downstream.

Partners and grants include: Clean Water Fund, Valley Branch Watershed District, St. Croix River Association, MPCA 319.

The steep topography in Afton can make erosion control difficult.

#### Conservation Benefits

<p><b>Habitat</b></p> <p>Previously, major erosion was causing trees to topple. Now vegetation has been re-established on steep slopes.</p>	<p><b>Clean Water</b></p> <p>Benefit = Keeping 93lb of phosphorus out of Kelle's Creek every year. The creek flows through downtown Afton to the St. Croix River.</p>
<p><b>Erosion Control</b></p> <p>Three major gullies stabilized to prevent further erosion.</p>	<p><b>Civic Engagement</b></p> <p>This is a voluntary project on private land and demonstrates successful civic engagement.</p>

**OUTREACH & AUDIENCE RESEARCH:  
AGRICULTURAL LANDOWNERS**

<b>12</b> Interviews	<b>387</b> Survey Responses	<b>95</b> Workshop Participants
<b>“One Watershed, One Plan” Listening Session</b> Feb. 2, Scandia (45 attendees)		
<b>Oriental bittersweet</b> Oct. 10, Oakdale (10 attendees)		
<b>Perennial Crops, Conservation Grazing and Conservation Planning</b> Oct. 22, Scandia (30 attendees)		
<b>Large acreage restoration</b> Nov. 4, Stillwater (10 attendees)		
<i>What do they want to do?</i>		
<p><b>soil health</b> conservation easements <b>physical projects</b></p> <p><b>cover crops</b> convert cropland to natural areas</p> <p><b>repair gullies and ravines</b> conservation plans</p> <p>transition cropland to hay or grazing install monitoring equipment in fields</p> <p>try new perennial crops MN Ag Water Quality Certification</p>		





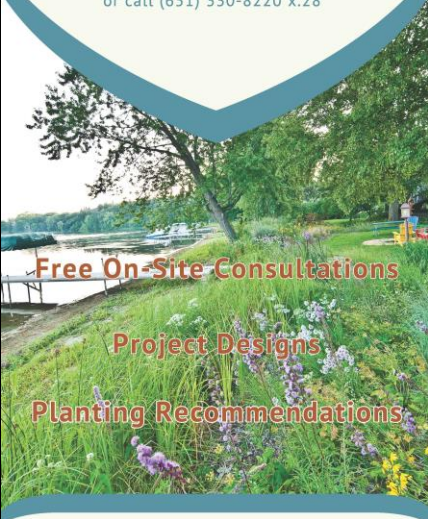
## EDUCATION SUPPORT FOR PARTNER PROJECTS

Comfort Lake – Forest Lake WD Community Survey	South Washington Trout Brook Project Signs	Washington CD Board Tour	Valley Branch WD 50 <sup>th</sup> Anniversary
Brown’s Creek WD Community Event	Woodbury Wetland Outreach	Forest Lake Shoreline Outreach	County Groundwater Education

### Incentive grants for lake friendly landscaping

Frustrated by shoreline erosion?

Beautify your property, create habitat, and help protect Forest Lake. To schedule a free site visit, email [tkline@mncwd.org](mailto:tkline@mncwd.org) or call (651) 330-8220 x.28



Free On-Site Consultations

Project Designs

Planting Recommendations

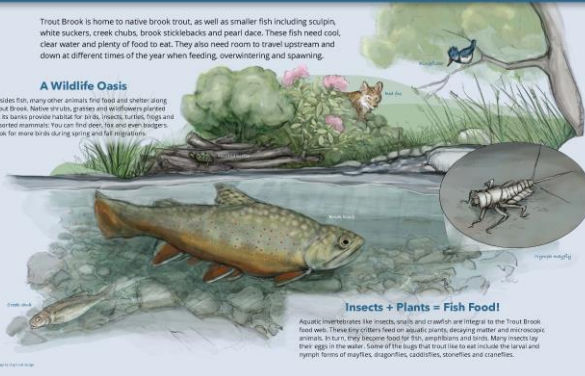
*In partnership with the  
Comfort Lake - Forest Lake Watershed District*

### Here Fishy Fishy!

Trout Brook is home to native brook trout, as well as smaller fish including sculpin, white suckers, creek chubs, brook sticklebacks and gizzard shad. These fish need cool, clear water and plenty of food to eat. They also need room to travel upstream and down at different times of the year when feeding, overwintering and spawning.

#### A Wildlife Oasis

Brooks fish, many other animals find food and shelter along Trout Brook. Native grasses, golden and white-flowered plants on its banks provide habitat for birds, insects, turtles, frogs and assorted mammals. You can find deer, fox and even beavers. Look for more birds during spring and fall migrations.



#### Insects + Plants = Fish Food!

Aquatic invertebrates like insects, snails and crayfish are vital to the Trout Brook food web. These living critters feed on aquatic plants, decaying matter and microalgae animals. In turn, fish breathe food for fish, amphibians and birds. Many insects lay their eggs in the water. Some of the bugs that trout like to eat include the larval and nymph forms of mayflies, dragonflies, caddisflies, stoneflies and chironomids.



**PROFESSIONAL TRAININGS FOR BUSINESS AND LOCAL GOVERNMENT**

EMWREP provides professional training for businesses and local government through Stormwater U, NEMO, and partnerships with MN Extension, U of MN Erosion and Stormwater Management Program, MN Erosion Control Association (MECA), Fortin Consulting, St. Croix River Association, and MN Department of Natural Resources (DNR).

<b>PROFESSIONAL TRAININGS</b>
<b>4 SMART salting workshops</b>
Targeted outreach to contractors and businesses <b>Cottage Grove - Forest Lake – Hugo – Oakdale - Stillwater – Woodbury</b> Via direct mail, email, and in-person visits
<b>Presentations</b>
Minnesota Cities Stormwater Coalition (April 10) Water Summit (May 9) EWRI Conference (Aug. 6) St. Croix Research Rendezvous (Oct. 22) Illicit discharge detection and elimination – Oakdale Public Works (Oct. 23) Washington County Water Consortium (Sept. 4 and Dec. 4)
Coordination of monthly <b>Watershed Partners</b> meetings and workshops Planning support for <b>Washington County Water Consortium</b>



*we are*  
**SALT SMART**

We are using less salt this winter to protect clean water



**Did you know?**  
Everything that goes down a storm drain ends up in a nearby lake, creek, or wetland. That includes salt and salty melted ice and snow, which pollute clean water.

**Help us!**  
Do your part to protect clean water:

- Walk slowly
- Wear sturdy shoes
- Use less salt at home



## **NEW MATERIALS AND RESOURCES**

In 2019, EMWREP developed dozens of new education materials for the Minnesota MS4 Toolkit, through a contract partnership with the Minnesota Pollution Control Agency.

Completed resources can be accessed online at the [MPCA Stormwater Wiki](#). We will continue to add new resources to the toolkit in 2020.

Please refer to the [full report](#) for example images and materials lists.

## Public Education and Engagement

### Minimum Control Measure

<input checked="" type="checkbox"/> Public education & outreach	<input type="checkbox"/> Construction site runoff controls
<input checked="" type="checkbox"/> Public participation & involvement	<input type="checkbox"/> Post-construction storm water management
<input type="checkbox"/> Illicit discharge detection and elimination	<input type="checkbox"/> Municipal pollution prevention & good housekeeping

**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.

### 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 ACTIVITIES IN 2019

### 1) Public Education

<b>4600</b> face-to-face interactions with the public at workshops and events		
<b>17</b> Community Events	<b>12</b> Presentations	<b>3</b> Clean-Up Events

#### Community Events and Presentations

(x) = approximate number of attendees

- March 7: Pollinator Summit
- April 25: Stillwater Noon Rotary (20)
- April 26-27: WCD Tree sale (258)
- April 27: Mahtomedi RITE of Spring (150)
- April 30: CLFLWD State of the Water (30)
- May 4: Stillwater raingarden clean-up (24)
- May 4: Grant community clean-up (100+)
- May 7: Newport bluffland meeting (10)
- May 16: Family Hike at Schuneman Marsh Wildlife Preserve (Grant) (6)
- May 19: Master Gardeners Plant Sale (100+)
- May 18: Belwin Bison Release (Afton) (100+)
- May 30th: Family Hike at Tamarack Nature Preserve, (Woodbury) (65)
- June 1: WaterFest (St. Paul) (500+)
- June 1: Sunfish Lake Park Family Nature Day (Lake Elmo) (200)
- June 8: Landscape Revival Native Plant Expo & Market (Oakdale) (1000)
- June 26: Water Critters Program at Edgewater Park (Woodbury) (40)
- July 10: Water Critters Program The Lakes in Stillwater (40)
- July 13: Campfire Program (St. Croix Bluffs) (30)
- July 17: Water Critters Program at Highlands Park (Cottage Grove)
- July 20: Learn and Grow with Us, Master Gardener Garden Tour (Lake Elmo) (50)
- July 31 – Aug. 4: Washington County Fair (Lake Elmo) (500+)
- Aug. 22 – Sept. 2: Minnesota State Fair (500+)
- Sept. 7: River Rally (Stillwater) (30)
- Sept. 12: Valley Branch Watershed District 50<sup>th</sup> Anniversary celebration (50)
- Sept. 14: Brown’s Creek Watershed District Community Event (150)
- Sept. 19: Cottage Grove Public Works Open House event (100)
- Sept. 21-27: Comfort Lake – Forest Lake Watershed District tour and 20<sup>th</sup> Anniversary activities (30)
- Sept. 26: Presentation at Master Gardener monthly meeting (Bayport) (75)
- Oct. 12: Afton Alps Fall into Winter Fair
- Oct. 15: Presentation at Wild Ones monthly meeting (Stillwater) (30)
- Nov. 1: Master Water Stewards and St. Croix Watershed Stewards gathering (Marine on St. Croix) (30)
- Nov. 13: Septics, wells and healthy homes: A groundwater class for homeowners (Hugo)
- Dec. 2: “A salty tale for Minnesota lakes and streams” (Forest Lake) (5)

### Engaging lake associations

- May 13 Lake Association workshop in Mahtomedi (24 attendees)
  - Guest speaker: Julia Bohnen, MN Aquatic Invasive Species Research Center
- E-newsletter sent semi-monthly to 150 lake association leaders. Includes information about programs, AIS research, and upcoming events
- Postcards mailed to residents on Demontreville, Lily, Long, and Square Lakes advertising the UMN AIS Detectors program. Four (4) signed up through this outreach. (AIS)
- Flyers created for distribution by Big Marine and Silver Lake Associations (AIS)
- Mailing and door-knocking to residents on Forest Lake (shoreline erosion)

### 2) Volunteer engagement:

Master Water Stewards
13 trained in 2019 ( <b>20 total</b> )

In 2018, EMWREP received an \$81,000 Clean Water grant to train 20 Master Water Stewards and install up to 10 stormwater management capstone projects.

Volunteers participate in 50-hours of in-person and on-line training, then 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.

#### We trained 13 Master Water Steward volunteers in 2019:

- Leslie MacKenzie – Carnelian-Marine-St. Croix WD
- Jean & John Schreckeis – Comfort Lake – Forest Lake WD
- Jared Kooiker, South Washington WD
- Deb Wall, John Hodler, Kimberly Myhers, Martin Hyndman and Pamela Kelly – Valley Branch WD
- Barb Bickford, Michael McCarthy, Katherine Mahoney, and Gabriel Curell – Middle St. Croix WMO

There are now a total of 20 Master Water Stewards trained in Washington County.

Our stewards continue to work on wonderful projects in their communities, including:

- 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

### **Adopt a Drain**

**285 drains** adopted in Washington County since April  
[www.adopt-a-drain.org](http://www.adopt-a-drain.org)

The [Adopt-a-Drain](http://www.adopt-a-drain.org) 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.

We have worked hard to launch and promote the program in 2019 through efforts, including:

- Press releases, city newsletter articles, utility bill inserts
- Website, social media, cable television videos
- Door-hangers distributed by volunteers
- Storm drain stenciling events
- Presentations to community groups and youth groups

### **AIS Detectors**

4 trained in 2019 (**14 total**)

Using Washington County aquatic invasive species (AIS) funds we have helped 4 local residents to become AIS Detectors through a partnership with the University of Minnesota.

- Program details: Participants complete 6-8 hours of on-line training and attend one full-day, in-person workshop. They learn how to identify invasive species including: Eurasian watermilfoil, hydrilla, starry stonewort, spiny waterflea, rusty crayfish, zebra mussels, quagga mussels, bighead carp, silver carp, round goby, and ruffe. Volunteers received a certificate upon completion of training and are asked to volunteer 25 hours per year.
- 2019 AIS Detectors:
  - Doug Joens (Forest Lake)
  - Jim Arkell (Tri-Lakes)
  - Lynn and John Mecum (Square Lake)
- 2019 volunteer projects:
  - Conducting AIS surveys on area lakes
  - Volunteering at the AIS Summit, MAISRC research and Management showcase, and Upper Midwest Invasive Species Conference
  - Other AIS education/outreach, including staffing booths at the State Fair and community events and creating newsletter articles

<b>Adopt a Raingarden</b>
<b>55 raingardens</b> adopted in Stillwater and Oak Park Heights
Master Water Stewards Stephanie Wang and Anna Barker used the model to organize two raingarden clean-up events in Woodbury
<b>100 volunteers</b> engaged at clean-up events in Stillwater and Woodbury

Last year, EMWREP launched a pilot “Adopt-a-Raingarden” program in Stillwater, which has now expanded to include raingardens in Oak Park Heights. Volunteers can sign-up and find resources at [www.mnwcd.org/adoptaraingarden](http://www.mnwcd.org/adoptaraingarden).

### 3) Youth education:

<b>30 groundwater/watershed lessons</b> taught to 4 <sup>th</sup> grade students
<b>Campus Greening:</b> Valley Crossing (Woodbury) + Crestview (Cottage Grove)
4 informal youth programs + St. Croix Summit
<b>Teacher Workshop</b> in Oakdale

**School programming:** EMWREP staff taught 30 groundwater and watershed lessons to 4<sup>th</sup> grade classes through classroom visits, field trips, and Children’s Water Festival

- Groundwater education: Taught lessons to three 4<sup>th</sup> grade classes at Royal Oaks Elementary (Woodbury) with a field trip component, seven classes at Oneka Elementary (Hugo), and five classes at St. Peter’s Elementary (North St. Paul).
- Children’s Water Festival: 1700 4<sup>th</sup> grader students from 23 schools attend the event each year. Lessons focus on water conservation, water quality, stormwater and runoff, groundwater and wells, native plant benefits to water, aquatic species (fish, macro-invertebrates and invasive species), mercury, and more. EMWREP staff talked about groundwater using the interactive model and displays. Local schools attending:
  - Forest Lake Elementary (5 classes)
  - Lake Elmo Elementary (5 classes)
  - Newport Elementary (2 classes)
  - St. Peter’s School (Hugo) (4 classes)
  - Wyoming Elementary (2 classes)
- Campus Greening: Met with principals and facilities’ staff at Valley Crossing (Woodbury) and Crestview (Cottage Grove) schools to plan campus greening projects for 2020. Coordinated educational programming with Carpenter Nature Center.
- Informal youth education:
  - Feb. 28: St. Croix Youth Summit
  - March 1: St. Croix Preparatory Career Day
  - June 26: Cottage Grove Safety Camp
  - Oct. 19: Groundwater program at R.H. Stafford Library (Woodbury)



**WaterWorks Teacher Workshop** – Aug. 6, Oakdale (40 attendees)

- EMWREP collaborated with Hamline University to host a workshop for local teachers. Teachers from around the area attended and learned about Project WET, groundwater, watersheds, and available teaching resources. Angie facilitated the groundwater model and the K12 Watershed Game and shared contact information for area watershed district, as well as displays.

4) **Media and communications:**

**52 weekly articles** in local newspapers: [www.eastmetrowater.org](http://www.eastmetrowater.org)

**Newspaper articles:** Angie Hong continues to write articles about water and conservation for local newspapers. Read them on-line at [www.eastmetrowater.org](http://www.eastmetrowater.org). Tailored versions are sent to local community papers, including:

- **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)
- **Oakdale-Lake Elmo Review** (Circulation – 11,066) *\*Went out of business in September*
- **Ramsey Review** (Circulation – 24,326) *\*Went out of business in September*
- **Scandia Country Messenger** (Circulation - 1075)
- **South Washington County Bulletin** (Circulation - 8616)
- **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)
- **Woodbury Bulletin** (Circulation - 7811)

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

- Afton (pop. 3010) - [newsletters](#)
  - Jan – Valley Branch Watershed District Awarded the 2018 Program of the Year from the Minnesota Association of Watershed Districts
  - May – Middle St. Croix Watershed Updates
  - June Adopt-a-Drain
  - July – Invasive Plants and Noxious Weeds
- Bayport (pop. 3735) [newsletters](#)
  - Summer – Smart Outdoor Water Use and Middle St. Croix watershed project update
- Birchwood (pop. 875) - [newsletter](#)
  - Summer – Illicit Discharge
- Browns Creek Watershed District – content for annual newsletter
- Carnelian-Marine-St. Croix Watershed District – content for annual newsletter

- Cottage Grove (pop. 37,000) - [newsletter](#)
  - February - Crews search the city for emerald ash borer
  - April - Arbor Day event, Buckthorn removal, and irrigating with smart controllers
  - May - Irrigation with smart controllers & Goats to control Buckthorn & Garlic Mustard
  - June – Stencil Your Storm Drain
  - Sept – Green garden award winners,
- Forest Lake (pop. 18,600)
  - April - utility bill insert about Adopt a Drain
- Lakeland (pop. 1830) - [newsletter](#)
- Mahtomedi (pop. 8200) - [newsletter](#)
  - Nov/Dec – white oak problems
  - July/Aug – Non-toxic fishing tackle
  - May/June – Great river greening
  - March/April – Rebates program for water conservation
  - Jan/Feb – Smart salting
- Oakdale (pop. 28,083) – [newsletter](#)
  - Summer – Do your part one drop at a time (storm drains), sweep, rake, pick up
- Oak Park Heights (pop. 4918) - [newsletter](#)
  - March – Adopt-a-Drain
- Stillwater (pop. 19,368) - [newsletter](#)
- Stillwater Twp. (pop. 2000) - [newsletter](#)
- St. Paul Park (pop. 5,392)
  - Spring - Illicit Discharge, Sewer maintenance, And Adopt-a-Drain
  - Fall - Don't leaf the lakes you love
- Washington Conservation District – content for bi-annual newsletters
- White Bear Lake (pop. 25,888) - [newsletter](#)
  - Spring – Illicit discharge, street sweeping, rain barrels available for purchase
  - Fall - Adopt-a-Drain live!
- Woodbury (pop. 69,756)
  - Feb – SMART Irrigation Controller program
  - Jun – Lawn watering policy
  - Sept –Irrigation Controller program
- Wyoming (pop. 7,887)
  - Winter – Smart Salting

**Minnesota Water – Let’s Keep it Clean:** Through our participation in Watershed Partners, EMWREP partners get access to additional stormwater education resources, including a blog-style website with monthly articles about local water heroes ([www.cleanwatermn.org](http://www.cleanwatermn.org)), photography and print materials, professional trainings and networking meetings, and a large exhibit space at the Minnesota State Fair, Eco Experience.

EMWREP and its partners provide funding support for the Minnesota Water – Let’s Keep it Clean campaign and Angie Hong serves on the partnership’s steering committee.

Articles for 2019 included:

- Jan. – [GreenCorps Fight to Keep Salt Out of Minnesota Lakes](#)
- Feb. – [Bloomington Public Schools Improve Safety and their Bottom Line with Anti-Icing Strategies](#)
- March – [Announcing the Nation’s Largest Adopt-a-Drain Program](#)
- April – [Transform Your Yard into a Monarch Oasis](#)
- May – [Bee-Friendly Yard Becomes Neighborhood Sanctuary](#)
- June – [Paddling to Protect the Mississippi](#)
- July – [Smart Irrigation Reduces Water Waste](#)
- Aug. – [Blaine’s Wetland Restoration Revives Endangered Species](#)
- Sept. – [Fighting to Understand Bees in Decline](#)
- Oct. – [Brooklyn Park Preserve Fosters Community](#)
- Nov. – [Cleaning the Streets Before the Snow Flies](#)
- Dec. - [A Song to Sweep to from Frassati Academy](#)

**Websites and Social Media:** EMWREP uses the following websites and social media accounts to share information and promote programs and events.

**Websites:**

- East Metro Water: <https://eastmetrowater.org>
- Washington Conservation District: [www.mnwcd.org](http://www.mnwcd.org)
- Blue Thumb – Planting for Clean Water: [www.bluethumb.org](http://www.bluethumb.org)
- Clean Water Minnesota: [www.cleanwatermn.org](http://www.cleanwatermn.org)

**Social Media:**

- Twitter
  - @angiehongwater
  - @EMWREP
- Facebook
  - @mnwcd
  - @CLFLWD
  - @BlueThumbMN
  - @ricecreekwd
  - @
  - @RWMWD
  - browns creekwatersheddistrict
  - @SoWashWD
  - @cmswd
- Instagram:
  - @wcd\_mn

**Outreach Support for Project Implementation**

**Minimum Control Measure**

<input checked="" type="checkbox"/> Public education & outreach	<input type="checkbox"/> Construction site runoff controls
<input checked="" type="checkbox"/> Public participation & involvement	<input checked="" type="checkbox"/> Post-construction storm water management
<input type="checkbox"/> Illicit discharge detection and elimination	<input type="checkbox"/> Municipal pollution prevention & good housekeeping

**Program Goals:**

1. Publicize EMWREP partner programs and projects.
2. Promote BMP (Best Management Practices) and cost-share incentive programs.
3. 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 other regulatory programs.
4. Engage public and private land owners to complete activities funded through state and federal grants.

**Educational Objectives:**

1. Citizens will be aware of water-quality improvement projects and programs happening in their communities and understand the benefits of these activities.
2. Citizens will be aware of and utilize BMP and cost-share incentive programs to complete water protection projects on their land.
3. EMWREP will help partners to identify, reach out to, and engage public and private landowners and managers in targeted locations in order to complete water resource improvement and protection projects.

## OUTREACH AND PROJECT SUPPORT IN 2019

### 1) Promotion of watershed BMP and cost-share incentive programs

#### PLANTING FOR CLEAN WATER WORKSHOPS

Residents learn how to add beauty to their yards with native plants, raingardens, and other landscaping features that protect water and provide habitat for birds and pollinators.

During our “Wonderful Wetlands” workshops, we talked about unique plants and animals that are found in wetlands, invasive species, and rules that affect what landowners can and can’t do with wetlands on their properties.



Workshops help residents to connect with resources including: Incentive grants - Free site visits - Garden designs - Plant lists - Conservation plans for larger properties

#### Planting for Clean Water – Blue Thumb Basics

- Thursday, April 4: Wyoming Area Library – 41 registrations
- Thursday, April 11: Cottage Grove City Hall – 30 registrations

#### Planting for Clean Water –Wonderful Wetlands

- Thursday, April 25: Hugo City Hall – 33 registrations
- Thursday, May 23: Oakdale Discovery Center – 18 registrations
- Thursday, June 6: Sally Manzara Nature Center, Lake Elmo – 12 registrations

#### Building resiliency for climate change

- Tuesday, April 30: Scandia – 20 attendees

#### **This year’s outreach helped to support:**

- 193 landowner site visits with Washington Conservation District staff
- 116 lbs/yr of phosphorus kept out of surface waters
- 29,793 lbs/yr of total suspended solids kept out of surface waters

#### BMP PROJECT MAINTENANCE CALENDAR FOR LANDOWNERS

Lauren Haydon created a virtual BMP (best management practice) maintenance calendar that can be added to a Google or Outlook calendar. Landowners with raingardens and native plantings can download this calendar to receive monthly reminders when common maintenance activities should happen (ie. cleaning inlets or weeding): [www.mnwcd.org/maintenance-guide](http://www.mnwcd.org/maintenance-guide).



Additional resources for raingarden maintenance are also available at [www.mnwcd.org/adoptaraingarden](http://www.mnwcd.org/adoptaraingarden).

## OUTREACH AND ENGAGEMENT WITH LOCAL FARMERS

In 2019, EMWREP staff worked with local partners to:

- Conduct twelve one-on-one interviews with local farmers
- Send surveys to more than 1000 agricultural landowners in Chisago, Pine and Washington Counties (387 responses received)
- Host four workshops for landowners in Chisago and Washington Counties:
  - Feb. 2, Scandia. One Watershed, One Plan (45 attendees)
  - Oct. 10, Oakdale. Oriental bittersweet (10 attendees)
  - Oct. 22, Scandia. Perennial Crops, Conservation Grazing and Conservation Planning (30 attendees)
  - Nov. 4, Stillwater. Large acreage restoration (10 attendees)



We are very excited about the level of interest and engagement we are seeing from our local farmers. In addition to providing us with input for the Lower St. Croix “One Watershed Plan,” landowners have expressed interest in a wide variety of conservation projects and programs. [Mary Jo Youngbauer](#), the new Conservation Planner for the Lower St. Croix Watershed, has also been meeting with farmers to develop conservation plans for their properties.

Survey respondents provided important information about their water resource concerns and conservation practices they are most interested in implementing. For example:

### **What 3-5 water issues in the Lower St. Croix Watershed are most important to address? (173 responses)**

- (52) Agricultural issues (runoff, erosion, pesticides, fertilizers)
- (23) Groundwater/well water pollution
- (24) Runoff / Chemicals / Contaminants
- (21) Protecting / Improving water quality
- (19) Invasive species (aquatic and terrestrial)

### **How interested are you in the following projects or practices?**

(#) = number of people who were very or somewhat interested in the practice

\*\* = practices with the most “very interested” responses

- \*\*Improving soil health (241)
- \*\*Installing physical projects on your land such as grassed waterways, windbreaks, sediment basins (169)
- \*\*Converting less productive land to natural areas - woods, wetlands or prairie (156)
- Planting cover crops for the winter (155)
- \*\*Repairing gullies or ravines (152)
- Developing a Whole Farm Conservation Plan (148)

**Please share any other input you'd like included in the watershed plan.**

(Brief sample of reponses)

- I have already installed grassed waterways and repaired gullies on my property. I manage fertilizer and lime, plant cover crops, and have hay land. I work with NRCS. I haven't converted less productive land to habitat because there is no tax break.
- I rent the land. They raise crops. Not interested.
- We just completed a project in 2018 to inhibit erosion of a small stream. Thanks!
- I think big money doesn't admit or share the info that would educate us all on the effects of all the chemicals in relation to water quality. Thank you.
- The portion of our land that has row crops (corn & soybeans) was laid out to minimize erosion. The forest & wetlands are self sustaining natural areas. I would welcome any help to control the spread of buckthorn.
- Apply stricter rules on septic tank enforcement, junk and junk vehicles on property

Please contact Angie Hong for a full summary of interview, survey and small group conversations.

**EDUCATION SUPPORT FOR PARTNER PROJECTS AND PROGRAMS**

EMWREP provided education support for numerous special projects and events during the year. Some of these included:

- **Brown's Creek WD**
  - Helped to plan, promote and attend Sept. 14 community event at Brown's Creek Park
- **Carnelian-Marine-St. Croix WD**
  - Helped to develop a community engagement plan for the watershed plan update
- **Comfort Lake - Forest Lake WD**
  - Developed an on-line community survey to support the watershed plan update process. To date the watershed has received 131 responses.
  - Helped to promote April 30 "State of the Water" event and September 21-27 20<sup>th</sup> Anniversary events
  - Attended and presented at the Sept. 21 district tour
  - Direct mailing and door-knocking to shoreline owners on Forest Lake
- **South Washington WD**
  - Helped to design four new interpretive signs for installation at Afton Alps
  - Outreach and coordination support for campus greening projects
- **Washington Conservation District**
  - Created a map and project fact sheets for the annual board tour
- **Washington County**
  - Support for groundwater education
  - Support for AIS education
- **Woodbury – South Washington WD – Ramsey-Washington WD**
  - Developed a special mailing for residents near city park and wetland projects
- **Valley Branch WD**
  - Helped to plan, promote and attend the Sept. 12 50<sup>th</sup> Anniversary event

## Professional Trainings for Business and Local Government

### Minimum Control Measure

<input checked="" type="checkbox"/> Public education & outreach	<input type="checkbox"/> Construction site runoff controls
<input type="checkbox"/> Public participation & involvement	<input checked="" type="checkbox"/> Post-construction storm water management
<input checked="" type="checkbox"/> Illicit discharge detection and elimination	<input checked="" type="checkbox"/> Municipal pollution prevention & good housekeeping

**Audience:** Water resource professionals, municipal staff, consultants and contractors, local elected and appointed officials, business owners, realtors, 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.
4. Offer professional trainings for area business owners, realtors, 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.
3. Area business owners, realtors, 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. Talking with home buyers and sellers about shoreline landscaping, remodeling, and septic system maintenance;
  - c. Mowing higher and using fewer lawn chemicals; and
  - d. Reducing road salt application by using new technology, calibrating equipment, and adjusting anti-icing and deicing methods based on weather forecasts.



## PROFESSIONAL TRAININGS FOR BUSINESS AND LOCAL GOVERNMENT IN 2019

### 1) Training for local government staff and consultants

EMWREP helps to conduct professional trainings for businesses and local government, as well as connect partners with other training opportunities. Training partners include: U of MN Extension, U of MN Erosion and Stormwater Management Program, MN Erosion Control Association (MECA), Fortin Consulting, St. Croix River Association, and MN Department of Natural Resources (DNR).

#### 4 SMART salting workshops

Targeted outreach to contractors and businesses  
**Cottage Grove - Forest Lake – Hugo – Oakdale - Stillwater – Woodbury**  
Via direct mail, email, and in-person visits

- Sept. 11: [Smart Salting for Parking Lots and Sidewalks](#) (Blaine)
- Sept. 26: [Smart Salting for Property Managers](#) (St. Anthony Village)
- Oct. 14: [Winter Maintenance Certification for Parking Lots and Sidewalks](#) (Cottage Grove)
- Oct. 15: [19<sup>th</sup> Annual Road Salt Symposium](#) (Vadnais Heights)

Certified contractors listed at: [www.pca.state.mn.us/water/salt-application-training](http://www.pca.state.mn.us/water/salt-application-training)

Find a model contract here: <https://www.edinamn.gov/422/Pollution-Prevention>

In addition to helping to plan, promote and host these workshops, EMWREP spent considerable effort to reach out to businesses in our area cities through direct mail, email and in-person visits. Staff reached out to more than 200 businesses in Cottage Grove, Forest Lake, Hugo, Oakdale, Stillwater, and Woodbury.

### 2) Professional partnerships, meetings, and conferences

**Presentations** – staff was invited to present at several professional trainings and meetings

- Minnesota Cities Stormwater Coalition (April 10) – Adopt a Drain
- Water Summit (May 9) – Art of Storytelling
- EWRI Conference (Aug. 6) – Adopt a Raingarden
- St. Croix Research Rendezvous (Oct. 22) – Agricultural audience research project
- Oakdale public works annual workshop (Oct. 23) – Illicit discharge detection and elimination

**Water Consortium** – EMWREP staff help to plan topics and presenters for Washington County water consortium meetings. Angie Hong also was a presenter at the following meetings:

- Sept. 4 – Agricultural audience research project
- Dec. 4 – Master Water Stewards

**Watershed Partners** – EMWREP and its partners contribute financial and staff support to Metro Watershed Partners, a partnership of 60+ public and non-profit organizations in the Twin Cities area. Angie Hong has served on the Watershed Partners’ steering committee since 2006.

Watershed Partners provides learning opportunities for water resource professionals through its monthly meetings. Presentation topics in 2019 included:

- Jan – **RiverFirst Initiative** - Tom Evers
- Feb. – **Integrating Pollinator Protection into Clean Water and Habitat Projects** – Tara Kelly, Dan Shaw, Brianna Gohde
- March – **Legislative update** – Steve Woods
- April – **Community-centered urban water planning** - Mae Davenport
- May – **Moving Communities to Action** - Patience Caso
- Aug. 14 - **Tour: Blaine Wetland Sanctuary** – Jason Husveth and Rebecca Haug
- Sept. 11 –
  - **MS4 Toolkit and MS4 General Permit** – Cha Thao
  - **WaterBar Story Circles** – Shanai Matteson
- Oct. – **Minnesota climate trends** – Kenny Blumenfeld
- Nov. 13 - **Workshop: Building an Inclusive Education Program for Your Organization and Community**
- Dec. 11 – **Workshop: WaterBar Story Circle**

#### **St. Croix Environmental Education Collaborative**

Angie Hong has helped to form a new education partnership with nature centers, parks and other environmental educators working in the St. Croix Valley – both Minnesota and Wisconsin.

- In 2019, the group met four times and developed a mission statement and goals for 2020.
  - **Mission:** We inspire leadership in environmental education through networking, community engagement and collaborative events within the St. Croix River Watershed.
- Learned about volunteer management
- Shared info about projects, programs and events
- Met with staff from ArtReach and adapted the St. Croix SPLASH event calendar to better promote environmental and nature events in the area
- 2020 plans: Celebrate the 50<sup>th</sup> anniversary of Earth Day with a series of events around the watershed and a passport program to allow cross-promotion

## NEW MATERIALS AND RESOURCES

In 2019, EMWREP developed dozens of new education materials for the Minnesota MS4 Toolkit, through a contract partnership with the Minnesota Pollution Control Agency.

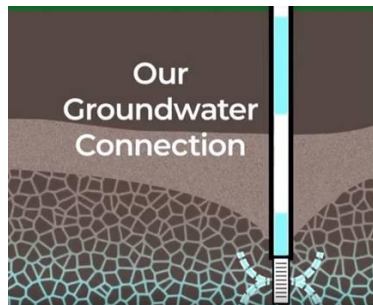
Completed resources can be accessed online at the [MPCA Stormwater Wiki](#). We will continue to add new resources to the toolkit in 2020. Some highlights from the project include:

### Videos:



These three videos are available in Spanish, Hmong and Somali and will be customized with EMWREP partner contact info. *(Click images above to preview English version videos.)*

Additionally, we have adapted “Our Groundwater Connection,” originally produced by Anoka County partners for use in Washington County and other parts of Minnesota.



### Municipal training videos:

**Short videos for municipal staff training that cover topics required in the MS4 permit:**

1. Cleaning and associated wastewater
2. Emergency Response & Spills
3. Herbicides, Pesticides, Fertilizers
4. Right of Way Maintenance
5. Road Maintenance
6. Parking lot & street sweeping
7. Stockpiles
8. Storage of Significant Materials
9. Vehicle care
10. Waste disposal and storage

**Print materials:**

\*All materials can be customized with EMWREP partner logos and contact information

**Impairment fact sheets**

WATER POLLUTION 101

## Pollutants & Stressors

Impairments IMPACT our waters AND our lives

Impacts: Ecology, Human Health & Recreation

### Bacteria

[pca.state.mn.us/water/bacteria](http://pca.state.mn.us/water/bacteria)

Impacts: Ecology & Recreation

### Phosphorus

[pca.state.mn.us/water/phosphorus](http://pca.state.mn.us/water/phosphorus)

Impacts: Ecology & Human Health

### Nitrogen

[pca.state.mn.us/water/nitrogen](http://pca.state.mn.us/water/nitrogen)

Impacts: Ecology & Economy

### Chloride (salts)

[pca.state.mn.us/water/chloride-salts](http://pca.state.mn.us/water/chloride-salts)

Impacts: Ecology & Human Health

### Mercury

[pca.state.mn.us/water/mercury](http://pca.state.mn.us/water/mercury)

Impacts: Ecology & Economy

### Sediment

[pca.state.mn.us/water/sediment](http://pca.state.mn.us/water/sediment)

WATER POLLUTION 101

## Phosphorus

IMPACTS: Ecology

WATER POLLUTION 101

## Nitrogen

IMPACTS: Ecology & Human Health

WATER POLLUTION 101

## Chloride (salts)

IMPACTS: Ecology & Economy

WATER POLLUTION 101

## Mercury

IMPACTS: Ecology & Human Health

WATER POLLUTION 101

## Sediment

IMPACTS: Ecology & Economy

contact your city for mercury disposal information

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).

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 waterways.

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 tiles, 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.

WATER POLLUTION 101

## 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.

Impacts: Ecology, Human Health & Recreation

## Bacteria

[pca.state.mn.us/water/bacteria](http://pca.state.mn.us/water/bacteria)

**Example print materials – Visit [MPCA Stormwater Wiki](#) to access the full collection.**  
 More materials coming in early 2020. Several will be available in Spanish, Somali and Hmong.



**Good for Your Lawn, Good for Our Water**

**Guidance for Lawn Care Providers**

Minnesota state law and city ordinance require that all fertilizer and grass clippings be swept off of hard surfaces including roads and sidewalks. Do NOT sweep any waste into storm drains!

**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!) (2-1.75lb for rich soils) (2-2.5lb for sandy soils)\*\*
  - \* 0.5 - 0.75lb of 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 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.

**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 loses 20min. to apply 1/2 inch of water. A typical rotor-type takes 40min.

**Weed Control**

- If needed, apply a pre-emergent herbicide in the spring for oranges (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
- \*Re-aerate the need for aeration after 2-3 seasons
- Non-compacted soils: Aerate 1 x every few years, as needed

These guidelines are based on recommendations from the Minnesota Pollution Control Agency, University of Minnesota Extension, and turf maintenance experts.  
 Get certified: [www.mn.gov/air/water/summer-turf-grass-maintenance-training](http://www.mn.gov/air/water/summer-turf-grass-maintenance-training)

**Minnesota water - let's keep it clean!**

**CAR AND TRUCK REPAIR**

Remove anything that's on driveways, streets and paved surfaces down storm drains and into lakes and rivers. Chemicals on dirt and gravel can also soak into groundwater. Help keep your water clean!

**Washing Vehicles**

Take your vehicle to a car wash so soapy water doesn't flow into lakes and streams. Or park on your lawn while washing so water can soak into the ground.

**Changing Oil and Other Fluids**

Change oil and other fluids indoors and over concrete. If you need to work outside, use a drip pan. Always take used oil to your county household hazardous waste site or a licensed local business. NEVER dump oil in storm drains! It is illegal and pollutes our water.

**Cleaning Parts**

Rinse and drain parts over a solvent sink or tank, so they do not drip or spill onto the floor. Use drip pans to catch excess solutions and dump them back to a sink or tank. Dispose of used solvents and wastewater at your county household hazardous waste site.

**Storing Materials**

Store chemicals and fluids indoors and off of the floor. Store batteries on open racks, return used batteries promptly and contain cracked batteries to prevent hazardous spills.

**Fixing Leaks & Sweeping-Up Spills**

Is your car or truck leaking oil, gas, antifreeze or battery fluid? Sweep up spills on your garage or driveway before they are washed into the storm drain. Find and fix leaks quickly to help protect our environment.

**MINNESOTA POLLUTION CONTROL AGENCY**

**CLEANING carpets can lead to POLLUTED rivers**

Though our carpets are getting clean, our lakes and rivers are often the recipient of the harmful wastewater created by cleaning our carpets! This wastewater contains chemicals, detergents, dirt, carpet fibers, oils and grease that can pollute our lakes and streams.

**DON'T...** dump the wastewater into a storm sewer, water body, or ditch. This is called an "illicit discharge" and is ILLEGAL.

**DO...** dump the wastewater into your utility sink. If you hire a carpet cleaning company, make sure they do as well. If a utility sink is not available, carpet cleaning companies should transport wastewater off-site and dispose of the water in a sanitary sewer at an approved facility.

If you see illegal dumping, report it to:

**Top 5 Construction stormwater permit violations**

	Noncompliant	Compliant
1. Missing or inadequate soil stabilization	Without proper stabilization, soil is vulnerable to erosion.	Mats, mulches, blankets and other BMPs temporarily stabilize and permanently stabilize vegetation on disturbed soils.
2. Missing perimeter controls	When perimeter controls are missing, stormwater carries sediment off site and into waters of the state.	Silt fence, brush, and other BMPs intercept runoff and settle out sediment while allowing water to run through.
3. Missing or inadequate inlet protection	Missing or inadequate inlet protection allows sediment to enter the storm sewers and/or water bodies.	Inlet protection BMPs capture sediment before it enters the storm sewer.
4. Vehicle tracking	Without a tracking BMP, vehicles track sediment onto paved surfaces.	Rock pads and other sediment tracking BMPs track sediment off site before it tracks onto paved surfaces.
5. Best Management Practices not maintained	Unmaintained BMPs do not function properly and allow sediment to escape and enter waters of the state.	All BMPs must be maintained to ensure effectiveness.

**MINNESOTA POLLUTION CONTROL AGENCY** | [www.mn.gov/air/water/summer-turf-grass-maintenance-training](http://www.mn.gov/air/water/summer-turf-grass-maintenance-training)

**Fall utility inserts**

**LEAVES + STREETS = Scummy lakes and rivers**

Got a small yard? Rake and bag leaves from your yard, sidewalk and driveway.

Got a big yard? Rake areas directly under trees and then use your mower to mulch the rest of the leaves into the grass.

Got a street? Rake and bag leaves along the curb and on top of stormdrain inlets.

**LEAVES + STREETS = Scummy lakes and rivers**

Got a small yard? Rake and bag leaves from your yard, sidewalk and driveway.

Got a big yard? Rake areas directly under trees and then use your mower to mulch the rest of the leaves into the grass.

Got a street? Rake and bag leaves along the curb and on top of stormdrain inlets.

**LEAVES + STREETS = Scummy lakes and wetlands**

Got a small yard? Rake and bag leaves from your yard, sidewalk and driveway.

Got a big yard? Rake areas directly under trees and then use your mower to mulch the rest of the leaves into the grass.

Got a street? Rake and bag leaves along the curb and on top of stormdrain inlets.

**LEAVES + STREETS = Scummy lakes and wetlands**

Got a small yard? Rake and bag leaves from your yard, sidewalk and driveway.

Got a big yard? Rake areas directly under trees and then use your mower to mulch the rest of the leaves into the grass.

Got a street? Rake and bag leaves along the curb and on top of stormdrain inlets.

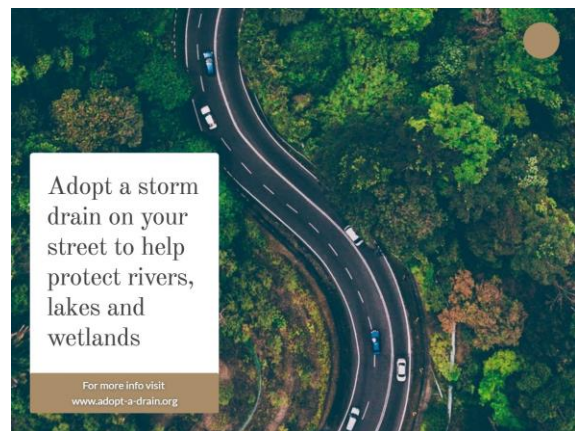
**Remember!**

**It is illegal to dump leaves in your regular garbage or into wetlands and gullies.**

## Media collections:

For each of the following 30 topics, we created full-length newsletter articles, shorter versions for websites and social media, and Facebook formatted images. Example images are included below.

1. Five easy ways to protect our water
2. Adopt a Drain 1
3. Adopt a Drain 2
4. All about wetlands
5. Caring for wetlands
6. Chat about scat
7. Clean streets for clean water
8. Condos and townhomes go green
9. Raingarden myths
10. Frogs
11. Grass clippings
12. Green lawns for blue waters
13. Grimy, green and gross
14. Algae
15. Rake leaves out of streets
16. Mow leaves instead of raking
17. Illicit discharge – urban
18. Illicit discharge - rural
19. Low-mow lawns
20. Reduce household electricity usage
21. Salting the earth
22. Scooping the poop with style
23. Score your shore
24. SMART salting
25. State of the lakes
26. State of the rivers
27. Vehicle care
28. Wetland conservation act
29. Wetland vs stormwater pond
30. Winter yard prep



**Appendix A: 2019-2021 Annual Budget**

<b>Staff Support and Overhead Expenses</b>	<b>Materials</b>	<b>Total</b>
\$144,200	\$10,000	<b>\$154,200.00</b>

**MEMBERSHIP STRUCTURE AND FUNDING CONTRIBUTIONS\***

<b>PARTNER</b>	<b>Annual Contribution</b>
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
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
<b>TOTAL</b>	<b>\$154,200.00</b>