



SOUTH WASHINGTON  
WATERSHED DISTRICT

## 2020 Annual Report

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## Board of Managers

2020

Manager	Position	Term Expires	City/County
Mr. Don Pereira 8232 River Acres Road 6859 Ideal Avenue South Cottage Grove, MN 55016 651-769-0429	President	05/01/2021	Cottage Grove/Washington
Mr. Brian Johnson, 4353 Dorchester Drive Woodbury, MN 55129 612-710-8585	Vice-President	05/01/2022	Woodbury/Washington
Mr. Kevin ChapdeLaine 601 2 <sup>nd</sup> Avenue Newport, MN 55055 612-508-1284	Treasurer	05/01/2022	Newport/Washington
Mr. Mike Madigan 2366 Hidden Lake Cove Woodbury, MN 55125 651-702-0488	Secretary	05/01/2023	Woodbury/Washington
Mr. Jack Lavold 6859 Ideal Avenue South Cottage Grove, MN 55016 651-459-9981	Manager	05/01/2020	Cottage Grove/Washington
Ms. Sharon Doucette 8966 Jasmine Lane South Cottage Grove, MN 55016 651-216-2555	Manager	05/01/2023	Cottage Grove/Washington

## Introduction

The Cottage Grove Ravine Watershed Management Organization (WMO) was formed in 1984 to manage the resources of the watershed. This WMO was based on a joint powers agreement among the five cities in the watershed. A draft watershed management plan for the WMO was completed in April 1988; however, this plan was never approved or adopted by the WMO.

The WMO was later disbanded, and, in 1993, the Cottage Grove Ravine Watershed District was formed as the 42<sup>nd</sup> watershed district in Minnesota. The watershed district changed its name to the South Washington Watershed District (SWWD) in 1995. The SWWD was formed under, and operates in accordance with, Minnesota Statutes, Chapter 103B, "Metropolitan Surface Water Management Act", and Chapter 103D, "Watershed Districts." In 2018, the SWWD celebrated its 25<sup>th</sup> year Anniversary as the 42<sup>nd</sup> watershed district in Minnesota. SWWD partnered with Great River Greening in October to host a volunteer planting and anniversary celebration at the SWWD prairie. In December 2018, the SWWD anniversary milestone was recognized at the Minnesota Association of Watershed District Annual Meeting.

The SWWD completed development of the watershed plan in 1996, approval of the plan was granted by the State Board of Water and Soil Resources in 1997, and later amended in 2002. Since that time the SWWD has focused its efforts on determining potential flood risk and developing a comprehensive flood relief system. The proposed system is designed in two phases; 1) reduce potential flood damages for existing developed areas of the watershed; 2) develop a comprehensive solution that provides stormwater management and flood control with capacity for the planned growth included in the 2020 comprehensive land use plans.

In April 2003, the SWWD petitioned the Minnesota Board of Water and Soil Resources to enlarge the boundary and include the East Mississippi Water Management Organization. The East Mississippi Water Management Organization included all or portions of Grey Cloud Island Township, Cottage Grove, Woodbury, St. Paul Park, and Newport. The enlargement was completed as a part of recommendations from the Washington County Water Governance Study (1999). The enlargement petition was approved on May 28, 2003 by the Board of Water and Soil Resources (BWSR). SWWD again petitioned BWSR in May 2010 to enlarge the SWWD boundary and include portions of the dissolved Lower St. Croix Watershed Management Organization (LSCWMO) which included all of Denmark Township and portions of Afton, Cottage Grove and Hastings. BWSR approved the enlargement in September 2010.

SWWD updated the Watershed Management Plan (WMP) through 2007, with BWSR approval in September of 2007, and SWWD Board adoption in November 2007. The updated plan lays out guidance on the management of water and natural resources through the year 2017. The WMP plan was amended in 2010 to include the new Coordinated Capital Improvement Program and three additional capital improvement projects. Another amendment to incorporate areas in its expanded boundary and the priorities and projects identified in the LSCWMO plan was completed in 2011.

In 2016, the SWWD updated the WMP dated 2007, amended in 2010 and 2011. On October 26, 2016, BWSR approved the October 2016 WMP, and the SWWD Board adopted the WMP in November 2016.

This third generation WMP once again builds on past work in the District and is intended to serve SWWD for decades to come. It is structured in three parts.

Part I serves as a summary of various District plans and assessments and points the reader to more regularly updated District data, all of which is available on the District's website, [www.swwdmn.org](http://www.swwdmn.org). The website which includes the District's water quality database and web map viewer with extensive spatial data and serves as a repository for District plans and reports. Part II includes identified issues and goals and serves as the basis for all actions that the District takes. Progress toward achieving goals will be routinely assessed and implementation actions adjusted as necessary. Should additional issues be identified by SWWD they will be incorporated through amendment. Part III serves as the District's implementation plan, establishing District programs, Long Range Workplan, and Administrative procedures. This part will be routinely updated through amendment to continue to serve the District.

The WMP complies with Minnesota Rules Chapter 8410, "Metropolitan Area Local Water Management," (July 13, 2015), the Metropolitan Surface Water Management Act, and Minnesota Statute 103D.

This report has been prepared in accordance with Minnesota Rules Chapter 8410.0150, Annual Reporting Requirements. Content of this report pertain to the calendar year 2020.

## 2020 Financial Report

The 2020 audit report is in Appendix A. Revenue and program expenditure summaries 2020-2021 are presented below.

### Revenue

Revenue Source	2020	2021*
<b>Ad Valorem Levy</b>	\$ 1,183,128	\$ 1,219,8058
<b>Stormwater Utility</b>		
Northern Area	\$ 1,292,748	\$ 0**
SWWD Area	\$ 988,038	\$ 2,288,116
E. Mississippi	\$ 362,045	\$ 374,550
Lower St. Croix	\$ 102,545	\$ 106,500
<b>Total Revenue</b>	<b>\$ 3,928,504</b>	<b>\$ 3,988,971</b>

\*Anticipated Revenue \*\*Beginning in 2021 there is no revenue in the Northern Area. The area is included in the SWWD Area

### Program Expenditures

Program Area	2020 Budget	2020 Actual/Unaudited	2021 Budget
<b>1.0 Planning</b>	\$ 226,213	\$ 64,730	\$ 365,950
<b>2.0 Regulatory</b>	\$ 27,950	\$ 22,483	\$ 26,550
<b>3.0 Implementation &amp; Maintenance</b>	\$ 2,794,929	\$ 8,788,417	\$ 3,063,154
<b>4.0 Education &amp; Information</b>	\$ 157,100	\$ 134,893	\$ 179,150
<b>5.0 Operational</b>	\$ 458,312	\$ 374,278	\$ 446,925
<b>6.0 Debt Service</b>	\$ 264,000	\$ 261,095	\$ 275,000
<b>Total Budget</b>	<b>\$3,928,504</b>	<b>\$9,645,896</b>	<b>\$4,356,729</b>

## 2020 Activity Report

### Fund 1-Planning

*PURPOSE: TO PROVIDE CURRENT, SOUND GUIDANCE FOR IMPLEMENTATION*

#### Surface Water

- Climate Adaptation and Resiliency Plan. In September 2017, SWWD held a two-day climate adaptation and resiliency plan workshop. The workshops were focused on adaptation and building resiliency into infrastructure and systems. This planning effort is an opportunity for our communities to address risks due to non-climate concerns as well; including poor planning, under-design, lack of maintenance, etc. Representative from local governments, institutions, and businesses participated in the workshops. The workshops resulted in a plan that identifies vulnerabilities and prioritizes actions to address them ([https://www.swwdmn.org/wp-content/uploads/2018/03/FINAL\\_SWWD-Climate-Resiliency-Plan-3\\_26\\_2018.pdf](https://www.swwdmn.org/wp-content/uploads/2018/03/FINAL_SWWD-Climate-Resiliency-Plan-3_26_2018.pdf)). That completed plan was adopted by the SWWD Board in 2018 and has been incorporated into the Watershed Management Plan as a guidance document. One of the common concerns across cities was a need to coordinate on flood response. In early 2019 SWWD worked with HDR, Inc to update SWWD's flood response and mitigation plan. In 2020, additional efforts will focus on updating operation and maintenance plans for active stormwater controls throughout the primary drainage path running north to south through SWWD including SWWD's central draw storage facility at the Woodbury/Cottage Grove border. In 2020, SWWD was awarded the 2021 Organization Award from the Minnesota Climate Adaptation Partnership for providing local leadership for climate adaptation and resiliency. The award reflects SWWD's accomplishments and ongoing work.



- Development of XPSWMM models in SWWD’s East Mississippi area is included in SWWD’s Watershed Management Plan. Those models were completed in 2018 and cover all of Newport, St. Paul Park, and Grey Cloud Island Township.
- In 2018, SWWD completed the Newport retrofit analysis that identifies targeted BMPs within the City to most cost effectively achieve District goals. Included in the report is an underground filtration BMP in existing City right of way at 15<sup>th</sup> and Cedar which would tie in to the City of Newport’s storm sewer system. The system will primarily target sediment that would otherwise discharge directly to the Mississippi River. The project was constructed in 2020 and was funded in part from the Watershed based Clean Water Fund grants.
- In 2019, SWWD updated its flood response and mitigation plan. That plan identified a need to coordinate system operation between SWWD, Woodbury, and Cottage Grove. Those three agencies are currently working to evaluate and operate the interconnected system. Additionally, the effort will identify potential improvements to increase resiliency of the overall system. The effort will be completed in 2021.
- SWWD completed development of data and work products associated with PTMapp for SWWD’s Lower St. Croix area in 2018. PTMapp will help staff identify and target rural BMPs to benefit Trout Brook and Lake St. Croix both at the field and watershed scale. The first of those identified projects are ready to construct in 2020, funded in part through funds from the St. Croix River Association.

## **Natural Resources**

- Glacial Valley Interpretative Center. SWWD’s Watershed Management plan, identifies the potential and need for a facility (learning center) on the CDSF Prairie site to carry out desired functions of the site. In 2017 SWWD and its partners began work on scoping and designing a future facility and evaluating the need for the facility. A completed schematic design includes parking, regional and interior trail alignments and circulation, a shelter facility with restrooms, informational/interpretive kiosks, and gateway and wayfinding signage/structures. That schematic design has been incorporated into the SWWD Watershed Management Plan as a guidance document. SWWD and its partners will continue pursuing funding opportunities. The SWWD in partnership with Washington County and MNDNR updated the management plan for the prairie to include the conceptual design in early 2020. Plans for the Learning Center, trails, and interpretive features will be finalized in 2021.
- Trout Brook Ravine Inventory. In 2017, the SWWD began working with the Washington Conservation District to inventory and prioritize ravines within the Trout Brook subwatershed that have the greatest potential for pollutant load reduction for Trout Brook. The completed assessment was adopted as a guidance document to the SWWD Watershed Management Plan. Staff is moving forward with plans to address priority ravines. SWWD continues to seek funding to address priority ravines.



## Water Quality Assessment

- SWWD Lake Management Plans. Consistent with the SWWD Watershed Management Plan, SWWD worked with its consultants to review existing SWWD lake management plans and develop a new plan for La Lake throughout 2017 and 2018. The completed plan has been adopted as a guidance document to SWWD's Watershed Management Plan and provides updated load reductions necessary to meet SWWD goals and State water quality standards. Analysis completed as part of the review indicated that SWWD's lakes are seeing more inflow and higher internal loading than previously thought. SWWD continues to monitor and assess water quality annually.
- Regional BMP Feasibility. Concurrent with review of SWWD's lake management plans, SWWD, its consultants, and City staff evaluated feasibility of potential regional BMPs in the Armstrong, Wilmes, and Powers Lake watersheds. Several potential BMPs were identified to make large reductions in lake nutrient loading. In 2019, SWWD and the City of Woodbury completed 30% design for a regional stormwater filter that will benefit Wilmes Lake. That project will be constructed in 2021. Additional regional BMPs are currently in design and should be ready for construction in 2022-2023.

## Fund 2-Regulatory

*PURPOSE: TO LIMIT THE AFFECTS OF LAND ALTERATIONS AND PROTECT THE PUBLIC HEALTH, WELFARE, AND NATURAL RESOURCES OF THE DISTRICT*

## Development Reviews

- Development Reviews. SWWD ensures compliance with rate and volume requirements by coordinating development reviews with Municipalities that have adopted a local surface water management plan and updated official controls. Staff conducts full development reviews of projects in Municipalities that have yet to adopt their plan or update controls. In Municipalities with an adopted plan and updated controls, SWWD reviews projects for regional impact. SWWD staff provided development review support for several Cities throughout 2020.
- In 2014, SWWD began the process for updating the SWWD Rules and Standards. SWWD's current rules were adopted December 13, 2011. Since that time, a new MS4 general permit has been issued, the District has updated its hydrologic guidance documents to include Atlas 14 rainfall rates, and the District updated its Ravine Lake management plan. All of these changes necessitate changes to District Rules. After the public comment period, the Rules were formally adopted by the SWWD in early 2015.
- SWWD monitored potential floodplain impacts from projects as part of its development review process. Multiple projects within the floodplain were reviewed, none of which decreased floodplain storage.
- Multiple projects within the Wilmes Lake watershed were reviewed for potential downstream impact at Wilmes Lake which has exhibited past flooding. No projects reviewed in 2020 are expected to exacerbate existing flooding concerns.

- SWWD maintains extensive hydraulic and hydrologic modeling of the District. Staff continues to work with City staff to accommodate incoming development while preserving critical floodplain storage in the District as identified in District models.

### **Wetland Conservation Act**

- Wetland Conservation Act Administration. In 2012, SWWD became the Local Governmental Unit (LGU) for wetland permits within the SWWD boundary. In 2020, SWWD reviewed 17 applications. SWWD staff conducted development reviews to ensure compliance with SWWD wetland standards and participated as part of the Technical Evaluation Panel (TEP) to evaluate wetland impacts of proposed projects.

### **Erosion and Sediment Control**

- Erosion and Sediment Control. SWWD standards require projects to meet NPDES requirements for erosion and sediment control. SWWD's Stormwater Pollution Prevention Plan (SWPPP) calls for SWWD to complete up to four inspections annually on active construction sites. Additionally, SWWD rules require Municipalities to identify an inspector and conduct regular inspections. In 2020, SWWD staff continued providing those inspections for the Cities of Woodbury and Cottage Grove in addition to supporting other District Cities as needed. SWWD works with City staff to enforce compliance on issues identified in inspections.

## Fund 3-Implementation and Maintenance

*PURPOSE: TO PROVIDE INFORMATION NECESSARY TO ASSESS STATE OF DISTRICT RESOURCES AND IMPACT OF DISTRICT ACTIONS*

### Monitoring

- SWWD continued to operate an extensive stormwater monitoring network. Data collected as part of the program is used to identify trends in water quality which are largely driven by changes in stormwater runoff. Monitoring reports for 2018 were completed and added to the SWWD website. The monitoring data is available on the SWWD Web-based database that allows users to access District data and performs basic statistical and plotting functions. 2020 data is now available on the web database and reports will be uploaded to the website when complete.

### Maintenance

- In 2020, Great River Greening continued contract work on the prairie restoration and maintenance at SWWD's Central Draw Storage Facility. The contract includes proposed work through June 2020 and includes prairie/savanna establishment and maintenance, development and coordination of volunteer events, development and oversight of a simulated grazing (i.e. haying) program, and development of research opportunities with the University of Minnesota. This work will partially be funded through LCCMR funds through Great River Greening. Once restored, the basins will provide regional water quality treatment and flood control while also serving as public open space and providing key connections in regional greenway and trail corridors.
- SWWD, the City of Woodbury, and Great River Greening (GRG) initiated work through GRG's Pollinator Seed Initiative to address the shortage of pollinator-friendly seed. The primary goal of the initiative is to create a sustainable future for pollinator habitat restoration and conservation by creating local sources of genetically appropriate seed which could be harvested when commercial seed suppliers lack sufficient inventory. In 2018, over 10 acres of Koch pipeline corridor and adjacent parkland from Bailey Road to Ojibway Park in Woodbury was planted in native vegetation. This corridor is a prime location not only for seeding and propagation - where the corridor is accessible by trail and the current vegetation needs improvement, but also as an ideal setting to engage the neighborhood and schools adjacent to the corridor – over 1,500 households and 3 schools within 0.5 miles of corridor. Maintenance of the corridor was ongoing throughout 2019.

### Implementation

- SWWD implements projects to achieve District goals and objectives. Projects include:
  - Newport 15<sup>th</sup> and Cedar TSS filter system (2020)
  - Nuevas Fronteras TSS and TP filter system (2021)
  - Seasons Park Stormwater Filter (2021)
  - McQuade Ravine Stabilization (2021)

## Capital Improvement Plan

- SWWD has now completed construction of its Central Draw Storage Facility and Central Draw Overflow projects. Together, this system provides flood control for stormwater draining out of SWWD's Northern Watershed. The system is designed to capture and infiltrate all runoff from the former design storm event and continue to function even under more extreme events. That event has now increased both in rainfall amount and intensity which SWWD's system will continue to handle effectively in order to protect communities at the Woodbury/Cottage Grove border. Additional work is ongoing with both Woodbury and Cottage Grove to analyze their systems that connect to SWWD's Central Draw in order to optimize operation of those systems and identify potential improvements to protect against increasing storm intensity.
- Central Draw Overflow Media Production. In 2018, SWWD Contracted with North Star Aerial to produce photo, video, and aerial footage capturing the watershed overflow project. Phase III and Phase IV post-construction footage was documented along with grading of the final basin in CDSF as part of Ravine Parkway construction Cottage Grove. Construction progress flights continued through 2020 and will be completed in 2021.
- Restoration of Trout Brook was identified as a local priority by the former Lower St. Croix Watershed Management Organization which previously managed SWWD's Trout Brook watershed. SWWD and its partners developed and implemented a channel remeander and restoration project at Afton Alps Ski Area. That project relocated a ditched stream section out from the middle of the Afton Alps parking lot to the south side of the lot and recreated natural stream features. Construction was completed in 2019. Planning for additional project phases is underway with funding already secured through Lessard Sams Outdoor Heritage Fund.

## Incentives

- In 2020 SWWD continued its performance-based cost-share program. Instead of reimbursing land owners for a specific percentage of total project cost, SWWD reimburses land owners based on the amount of phosphorus that their project is expected to retain. SWWD's 2020 reimbursement rate was \$5,000.00 per pound of phosphorus retained with reimbursement capped at total project cost. SWWD allocated \$70,000 to 13 projects in 2020. Together, the projects are expected to capture 47 lbs of phosphorus. 7 of the projects were completed in 2020 along with 5 cost share projects funded through past years' programs. The remaining projects are pending. Projects with higher funding levels typically treated runoff from several properties.
- In 2020 the SWWD continued to implement a BMP Maintenance Program. The SWWD has recently installed several stormwater BMPs in conjunction with road improvements projects with Cities where vegetation maintenance is the responsibility of the SWWD. Other older stormwater BMPs installed were also in need of maintenance. Maintenance was performed through contract by Washington Conservation District staff.
- SWWD used Lower St. Croix Stormwater Utility Fees (SUFs) to secure match funding to install several grade rural BMPs in Denmark Township. That work includes grade stabilization, grassed waterways, ravine stabilization, and stormwater filters.

- The SWWD Board of Managers awarded \$636,368 through its Coordinated Capital Improvement Program (CCIP) in 2020. \$26,960 was awarded to the City of Cottage Grove for pond maintenance. \$194,403.50 was awarded to the City of Cottage Grove for the construction of an underground infiltration system at the old city hall site. \$163,219 was awarded to the City of Cottage Grove for infiltration system in the Eastbrooke development. \$150,000 was awarded to the City of Woodbury for a stormwater BMP for the new trail to provide treatment for Erin Court before the runoff enters Bailey Lake. \$100,000 was awarded to the City of Woodbury to restore stormwater basins in the Bailey's Arbor development. \$1,785.50 was awarded to City of Lake Elmo for de-icing equipment to improve operations on one vehicle.
- SWWD staff worked with Washington Conservation District and the Minnesota Pollution Control Agency to continue development and operation of a groundwater quality regional assessment program. The program consists of collecting seasonal water quality samples from wells existing around the CD-P85 and CD-P86 regional infiltration basins and Bailey Lake. Collected data are included in the SWWD monitoring report and will be used to monitor groundwater quality and serve as an indicator of potential impacts resulting from use of regional infiltration facilities. This effort is part of a larger initiative by State agencies to evaluate potential effects of large scale infiltration.
- SWWD continued its collaboration with the Minnesota Department of Natural Resources with monitoring wells on SWWD property as part of an effort to expand the State's groundwater monitoring network. Information on these wells located on SWWD property can be found at <http://www.dnr.state.mn.us/waters/cgm/index.html>.
- The SWWD maintains communications with Municipal water suppliers to understand the implications of the North and East Metro Groundwater Management area draft plan. A major effort of the draft plan is promoting water conservation. The SWWD partners with Municipal water suppliers to promote water conservation through residential irrigation retro-fits, education, smart technology and stormwater reuse.
- In 2020, the SWWD continued to partner with the Cities of Woodbury and Cottage Grove to address water conservation through smart irrigation, a City wide Residential Irrigation Controller program.

## Fund 4-Education and Information

*PURPOSE: TO EFFICIENTLY INFORM AND EDUCATE DISTRICT RESIDENTS AND STAKEHOLDERS*

- SWWD participated and continued support of the East Metro Water Resource Education Program (EMWREP). The EMWREP annual activities report is in Appendix B.
- SWWD contracted with Carpenter St. Croix valley Nature Center in 2020 to provide education activities and workshops with 5th graders. Due to schools closing because of the COVID-19 pandemic, education programming stopped in 2020. Carpenter Nature Center will resume programming in Fall of 2021. Programming will include a 6-week, in-class program focused on water quality and watershed science. The program culminates with a daylong field trip to Minnesota Valley National Wildlife Refuge.
- In 2020 SWWD was a Road Salt Symposium Sponsor. The symposium was presented by the Freshwater Society, and it encourages smart salt use which protects the environment, reduces expense, and ensures safe roads.
- SWWD continued using social media as well as the Districts website as a communication platform. A Facebook and Twitter account were created in 2017.
- WD staff continues to collect and organize all SWWD monitoring data from the Washington Conservation District. SWWD maintains an online database for accessing monitoring data through the SWWD website.
- In 2020, SWWD and the South Washington County School District (ISD833) continue its campus greening efforts. As part of ISD833 school improvement projects, SWWD works with ISD833 and school staff to plan and implement campus greening projects. Those projects generally include conversion of turf to prairie, woodland restoration or tree planting, and construction of outdoor classrooms. Projects are complete or ongoing at Lake Middle and Middleton Elementary campus, Nuevas Fronteras Elementary, Valley Crossing Elementary, Crestview Elementary, and the Cottage Grove Middle and Grey Cloud Elementary campus. When complete, campus greening results in a more resilient landscape while also providing expanded opportunities for on-site outdoor education, increased stormwater infiltration and requires less irrigation, fertilizer, and pesticide use. South Washington County School District Campus Greening.
- In 2020, the SWWD continued to provide funds to the MN Stormwater Research Council (MSRC). The MSRC is an independent organization of stormwater professionals, practitioners, managers, engineers, and researchers working cooperatively to facilitate applied stormwater research in MN. Identified research priorities for 2019 include stormwater reuse, chloride effectiveness and deicing alternatives, and development or evaluation of stormwater practices and technologies.

## **Fund 5-Operational**

- The SWWD District Board annually prioritizes work activities from the long range work plan constituting targeted efforts for the coming year. These work activities translate into the annual work plan and budget for the SWWD. The annual work plan allows the District Board to establish a short term operating budget while maintaining connection to the overall long term management goals of the District. Six Management areas have been defined through which the SWWD will work to execute the annual work plan. The areas are: (1) Planning, (2) Regulatory, (3) Implementation & Maintenance, (4) Education & information, (5) Operational, and (6) Debt Service Fund. According to Minnesota Statute 103D.911 the SWWD must hold a hearing and adopt a preliminary budget on or before September 15th of each year. The Final budget certification is due to Washington County by December 31st of each year.
- In 2020, SWWD continued collecting stormwater utility fees in the South Washington Watershed, East Mississippi, and Lower St. Croix management units. Revenue will be used to fund water quality projects only within each of the management units.
- The SWWD maintains an operational general fund for daily operations of the district. Operational general funds include, staff, managers, office expenses, insurance, audit and legal services.

## **Fund 6-Debt Service**

- In 2011, the SWWD issued general obligation bonds for the construction of three projects within the East Mississippi management area. In 2016, SWWD refinanced the 2011 general obligation bonds. In March 2019, the 2011 general obligation bonds crossed over to general obligation refunding bonds resulting in a principal payment made by SWWD in the amount of \$3,145,000. In 2020, SWWD continued principal and interest payments on the 2016A General Obligation Refunding Bonds, and will continuing paying on these bonds through March 2031.

## **2021 Workplan**

As part of its annual reporting, the District evaluates performance of programs and progress toward meeting goals through implementation indicators established in this Plan and adopted guidance documents. SWWD has developed a workplan layout matching issues and program categories and subcategories outlined in the Watershed Management Plan:





**Progress Evaluation for the Issue: FLOODING**  
**Subcategories: FLOOD DAMAGE REDUCTION AND MITIGATION**

Issue Goal:

Minimize existing and complete establishment of a controlled overflow from SWWD’s Northern Watershed to the Mississippi River resources due to flood events.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Prevent increases in runoff from development activity through development and enforcement of District Rules;	Ongoing.	-	Enforce SWWD rules.
2	Prevent increases in flooding risk due to development (e.g. Wilmes, Ravine, and O’Conner’s Lakes);	Ongoing.	-	Enforce SWWD rules.
3	Achieve no net loss in inventoried key flood storage areas;	Ongoing.	-	Enforce SWWD rules.
4	Achieve progress towards identified inter-community flow limits as development occurs;	Ongoing. Currently working with Woodbury and Cottage Grove to review the current West Draw flow limit.	-	Enforce SWWD rules. Review inter community flow limits from Woodbury into Cottage Grove as part of model update process.
5	Maintain implementation flexibility (program framework and funding) to respond to identified flood damage reduction/mitigation needs that may arise.	Limited funds budgeted to begin building a reserve balance. Engaged Woodbury and Cottage Grove to begin review and update of flood response and mitigation plan.	-	Continue to budget for unexpected flooding issues. Complete review and optimization of the NWS/CDSF/CDO drainage system. Begin development of any capital improvements identified from that effort.



**Progress Evaluation for the Issue: FLOODING**

**Subcategories: CENTRAL DRAW STORAGE FACILITY AND OVERFLOW**

Issue Goal:

Complete establishment of a controlled overflow from SWWD’s Northern Watershed to the Mississippi River.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Phase III, modification of the Ravine Lake outlet by 2017;	Complete	-	None
2	Phase IV, stabilization of Ravine Park by 2018	Complete	-	Monitor vegetation establishment, Continue to manage invasive species
3	Phase V, construction of remaining pipe sections by 2019;	Complete	-	Monitor vegetation establishment, incorporate new structures into routine inspections
4	Completion of functioning overflow system by January 1, 2020 as specified in SWWD/Lower St. Croix WMO consolidation agreement, unless otherwise agreed to by Cottage Grove, Woodbury, and SWWD.	Complete	-	None



**Progress Evaluation for the Issue: WATERSHED ALTERATIONS**  
**Subcategories: SURFACE WATER DEGRADATION AND IMPAIRMENT**

Issue Goal:

Protection and restoration of District resources to meet local resource goals and State standards.

Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Adoption of completed TMDLs for Statewide and Regional resources for which implementation actions are identified for SWWD;	N/A	Review TMDLs as they are finalized.
2	Colby Lake: Restore Colby Lake to state eutrophication standards by reducing the annual total phosphorus load by 1,303 lbs/yr.	SWWD estimates that the annual TP load has been reduced by 220 lbs.	Accelerate implementation with existing fund balance  Develop and implement upstream regional BMPs. Prepare for potential aquatic invasive weed control program.
3	Wilmes Lake: Restore North and South Wilmes Lake to state eutrophication goals by reducing the annual total phosphorus load by 265 and 108 lbs, respectively.	SWWD estimates that the annual TP load to Wilmes Lake has been reduced by 99 lbs.	Accelerate implementation with existing fund balance  Develop and implement regional BMPs. Construction of the Seasons Park stormwater filter is planned for 2021. The potential Wilmes alum facility is at 30% design.
4	Powers Lake: Protect Powers Lake from exceeding state eutrophication standards by maintaining existing watershed phosphorus load.	Powers Lake continues to meet State standards.	Accelerate implementation with existing fund balance  Complete 30% design for a regional BMP between Fish Lake and Powers Lake
5	Armstrong Lake: Protect Armstrong Lake from exceeding state eutrophication standards by reducing the annual total phosphorus load by 89 lbs	2020 construction of 15 <sup>th</sup> and Hilo IESF will reduce annual total phosphorus load by 6.2 lbs,	Accelerate implementation with existing fund balance  Opportunistically pursue projects as part of development and redevelopment.
6	Markgrafs Lake: Restore Markgrafs Lake to state eutrophication standards by reducing the annual total phosphorus load by 209 lbs/yr	N/A	Conduct a Subwatershed Retrofit Analysis to identify BMP opportunities  Complete a Subwatershed Retrofit Analysis in 2021 to identify BMP opportunities

7	Ravine Lake: Restore Ravine Lake to state eutrophication standards by reducing the growing season total phosphorus load by 141 lbs/yr at full build-out through enforcement of established total phosphorus loading standards.	Construction of the Cottage Grove Hero Center provided additional WQ treatment. Grant funding was provided through SWWD's CCIP program.	-	Completion of new County park facility will provide additional WQ treatment adjacent to the lake.
8	Mississippi River: Meet proposed TMDL loading rate of 154 lbs/ac/yr of Total Suspended Solids;	SWWD's MS4 meets the TMDL with zero discharge. SWWD continues to assist Cities in achieving reductions in their systems. Conducted a Subwatershed Retrofit Analysis (SWA) for City of Newport in 2018; Underground TSS BMP at 15 <sup>th</sup> and Cedar in Newport; Proposed developments tributary to the Mississippi River are being reviewed for compliance with the TMDL loading rate.	-	Underground filter BMP to be constructed at Nuevas Fronteras elementary school in St. Paul Park in 2021.
9	Lake St. Croix: Achieve 36%, or approximately 315 kg of total phosphorus load reduction for Trout Brook as specified in the Lake St. Croix TMDL.	Multiple BMPs have been installed in the Trout Brook watershed to date. Monitored stream load at SWWD's regional assessment location meets the proposed TMDL loading rate.	-	Continue project development in the Trout Brook watershed. Projects under development include land cover conversion, stream restoration, and ravine stabilization.
10	No net loss in wetland acreage or function;	Ongoing.	-	Enforce SWWD and WCA rules.
11	Protect/promote soil health as part of District projects and through District rules as a means to limit hydrological impacts of land alteration.	N/A	-	
12	Continue existing Incentive programs to encourage voluntary implementation of BMPs;	Programs are ongoing.	-	Distribute up to \$70,000 for BMP cost share.
13	Coordinate CIP plan with municipalities through engagement of a standing Technical Advisory Committee and implementation of the District's CCIP program;	Program is ongoing.	-	Distribute up to \$550,000 for CCIP projects.
14	Evaluate impact of emerging contaminants and identify	District staff and Board participated in various	-	Ongoing participation in PFAS work.

	District programs or actions to control or mitigate that risk.	PFAS work grounds related to 3M settlement fund.		
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**Progress Evaluation for the Issue: WATERSHED ALTERATIONS**  
**Subcategories: EROSION**

Issue Goal:

Prevent resource degradation of District resources from bluff, streambank, shoreland, and construction site erosion.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	In partnership with State and Municipal programs, promote and ensure erosion and sediment control compliance at active construction sites.	SWWD rules require compliance with ESC rules. SWWD staff assists its municipalities in site inspections during the construction season.	-	Enforce SWWD rules. Continue to support municipalities with ESC inspections.
2	Develop and implement buffer regulatory measures to comply with State requirements;	N/A	-	None
3	Establish and maintain a 50 foot, permanently vegetated buffer along all bluffs, ravines, lakes, and streams;	N/A	-	Work with developers to ensure adequate buffers as part of development.
4	Identify and prioritize actively eroding ravines and address as budget allows;	Inventory complete for Trout Brook – McQuade ravine prioritized. Ongoing for rest of St. Croix watershed.	-	Construct McQuade Ravine Stabilization in <del>2020</del> 2021. Feasibility study for stabilization of ravine at 65 <sup>th</sup> and Geneva in Newport. Continue to seek funding opportunities to address additional ravines.
5	Maintain and enforce rules which prevent increased channel instability due to development;	Rule is in place and enforced during development.	-	Enforce SWWD rules.



**Progress Evaluation for the Issue: GROUNDWATER SUSTAINABILITY**

**Subcategories: SUPPLY**

Issue Goal:

Implement conservation efforts to ensure long term viability of groundwater resources in South Washington County.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Participate in development of a county-wide groundwater monitoring effort as identified in the County Groundwater Plan;	N/A	-	Continue partnership with MPCA to monitor SWWD wells as part of the MPCA ambient groundwater monitoring program.
2	Maintain rules and permitting program necessary to adequately protect groundwater resources, protect recharge potential, and promote low impact development as identified in the County Groundwater Plan	Ongoing.	-	Enforce SWWD rules.
3	Implement conservation actions identified through regional planning efforts identified in the County Groundwater Plan;	Ongoing. SWWD routinely funds improvements in municipal de-icing operations through its CCIP program.	-	Continue to support cities in improving De-icing operations.
4	Incentivize practices that reduce demand on groundwater supply;	Ongoing. SWWD is currently assisting Woodbury and Cottage Grove with several pilot conservation programs.	-	Continue to support pilot conservation programs.
5	Promote and incentivize feasible re-use of water;	Ongoing. Re-use is routinely used for required treatment on development projects, especially where soils, bedrock, or karst make infiltration infeasible.	-	Support use of re-use in development and re-development applications.

6	Promote use of infiltration as a tool for recharge where appropriate;	Not started.	-	Nothing planned.
7	Evaluate feasibility of active recharge.	UMN has completed a feasibility report on active storage of water within aquifers. The report identifies Woodbury as having high potential. Existing PFAS concerns and its likely solutions makes active recharge less of a priority.	-	Nothing planned.





**Progress Evaluation for the Issue: GROUNDWATER SUSTAINABILITY**

**Subcategories: PROTECTION (POLLUTION PREVENTION)**

Issue Goal:

Protect groundwater resources through pollution prevention and management of surface water groundwater interactions.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Continue enforcement of existing karst rules;	Ongoing.	-	Enforce SWWD rules.
2	Consider pollution potential in siting and design of District funded stormwater BMPs;	Ongoing.	-	Enforce SWWD rules.
3	Utilize alternative compliance sequencing for meeting District development rules in areas where infiltration is not appropriate;	Ongoing. Several proposed developments in SWWD have used alternative compliance sequencing due to shallow bedrock, wellhead protection, and poor soils.	-	Enforce SWWD rules.
4	Participate in State and regional efforts to quantify risks to groundwater resources from de-icing operations;	SWWD is partnering with MPCA to include SWWD's groundwater monitoring sites as part of the MPCA ambient groundwater monitoring program.	-	Continue monitoring program.
5	Supplement County incentive programs to prevent pollution from septic systems and abandoned wells;	Not started.	-	Nothing planned.
6	Incentivize road authority upgrades to de-icing operations to prevent overuse of road salt;	Ongoing. SWWD continues to incentivize improvements through its CCIP program.	-	Continue to support cities in improving De-icing operations.

7	Continue groundwater quality monitoring at District regional infiltration facilities sufficient to identify potential impacts to groundwater from large scale infiltration practices.	Ongoing.	-	Continue monitoring program.
8	Consider additional protection of surface water features with potential to impact groundwater quality with guidance from State Agencies.	SWWD continues to engage Cottage Grove and Washington County in identifying and pursuing protection for Vandenberg Lake which has risen 20+ feet in the past 5 years, mirroring aquifer level increases.	-	Pursue protection for Vandenberg Lake if and when acceptable strategy is identified by SWWD and its partners.



## Progress Evaluation for the Issue: **NATURAL RESOURCES**

Issue Goal:

Protect, restore, and reconstruct native terrestrial and aquatic habitat for the benefit of resource management.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Protect, restore, and reconstruct native terrestrial and aquatic habitat for the benefit of resource management.	Ongoing. SWWD continues restoration efforts on its Central greenway which includes over 200 acres of prairie and 50 acres of woodland restoration; Campus greening efforts ongoing at several school campus sites.	-	Continue current restoration efforts at SWWDs CDSF, Ravine Park, and school campuses throughout the District.
2	Participate in development of regional programs to address spread and management of invasive terrestrial and aquatic invasive species;	Not started.	-	Begin preparing for a potential control program on most impacted District lakes.
3	Implement local actions identified in regional planning efforts;	Not started.	-	Nothing planned.
4	Avoid impacts to rare, unique, and high quality habitats as part of all District projects;	Ongoing.	-	Nothing planned.
5	Maintain natural buffers or riparian areas on all District water resources;	Ongoing.	-	Nothing planned.
6	Promote use of site appropriate native plants as part of District funded projects;	Ongoing.	-	Continue use of native plants on SWWD projects and promote their use throughout the District.
7	Promote compliance with guidance for pollinator friendly design practices as	Ongoing. Continued campus greening effort at Lake/Middleton and	-	Work with ISD 833 schools to continue turf to prairie conversions. Continue use of pollinator-focused native plants

	part of District funded projects;	beginning additional campus greening projects throughout District.		on SWWD projects and promote their use throughout the District.
8	Consider preservation or restoration of native habitat and benefits to pollinators and other wildlife in allocation of incentive funding.	Ongoing.	-	Continue use of pollinator-focused native plants on SWWD projects and promote their use throughout the District.
9	Evaluate potential credit mechanisms to incentivize developers to maintain mature trees during development within 3 years;	Woodbury has altered development review policies to allow consideration of hydrologic and water quality benefits of natural land cover, including trees.	-	Evaluate options in cooperation with Cities. Continue to pursue school campus greening program as alternative to traditional BMPs and expand to other sites as development conditions allow.
10	Implement habitat improvement practices identified in completed Resource Management Plans.	SWWD has completed an update of its Lake Management Plans and continues to monitor vegetation in its lakes. While there are potential improvements that could be made, SWWD's focus in the near term will remain on reducing watershed nutrient loading. Reductions to watershed loads will make in-lake management more effective in the future.	-	Develop and pursue watershed loading reductions. Continue vegetation monitoring of lakes. Prepare for AIS control program in most impacted lakes.



## Progress Evaluation for the Issue: CLIMATE CHANGE

Issue Goal:

Facilitate increased resilience of District resources and public infrastructure through development of information and strategies and implementation of accepted climate adaptation practices.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Consider adaptive capacity—ability of a system to adjust to climate change to mitigate potential damages, take advantage of opportunities, or cope with consequences— of District systems and resources in Developing projects and management plans;	Ongoing	-	Consideration being made as part of planning for ongoing campus greening projects. District CCIP program now includes projects that build resilience in District resources and infrastructure.
2	Require use of up to date hydrologic data for meeting District development and redevelopment standards;	Ongoing. SWWD requires use of Atlas 14.	-	Enforce SWWD rules.
3	Utilize District surface water modeling and County Groundwater model to explore changes in surface water/groundwater interactions as a result of predicted changes in hydrologic conditions and water demand;	Not started.	-	Nothing planned.
4	Utilize District CCIP or similar program framework to assist Cities in adapting their infrastructure systems to increase resiliency—capability to anticipate, prepare for, respond to, and recover from significant threats with minimum damage to social well-being, the economy, and the environment;	SWWD’s CCIP program has been modified to include resiliency focused projects as eligible for funding.	-	Continue CCIP program.

<p><b>5</b></p>	<p>Promote use of alternative landscapes which require less water;</p>	<p>Ongoing partnership with ISD 833 on campus greening projects throughout District</p>	<p>-</p>	<p>Continue to implement turf to prairie conversion on utility corridors and at school campuses.</p>
<p><b>6</b></p>	<p>Promote water re-use where feasible to reduce demand on aquifers;</p>	<p>Re-use routinely used where constraints prevent traditional treatment.</p>	<p>-</p>	<p>Continue to pursue opportunities that arise.</p>
<p><b>7</b></p>	<p>Work with local partners to improve delivery of soil conservation programs to prevent increased field erosion from changing precipitation patterns.</p>	<p>SWWD and its partners will begin engaging landowners on soil conservation efforts as part of the Lower St. Croix 1W1P development.</p>	<p>-</p>	<p>Work with partners to engage landowners in SWWD.</p>



**Progress Evaluation for the Issue: INFORMATION AND EDUCATION**

**Subcategories: RESOURCE ASSESSMENT**

Issue Goal:

In partnership with Local, State, and Regional partners, operate a monitoring program adequate to establish baseline water quality and quantity measures and identify long-term trends. Operate a monitoring program adequate to detect changes in loading rate as a result of District implementation actions.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Maintain equipment inventory to quickly establish additional monitoring locations in response to identified resource concerns;	Ongoing.	-	Repair and replace monitoring equipment as needed.
2	Biennially, complete trend analyses for all lakes and Regional Assessment Locations and complete a review of the District’s Monitoring Plan;	Ongoing.	-	Complete SWWD monitoring reports for inclusion on the website.
3	Expand groundwater monitoring program in partnership with Washington County, MnDNR, MDH, and MPCA to adequately characterize groundwater resources in the District;	Ongoing.	-	Continue partnership with MPCA to monitor SWWD wells as part of the MPCA ambient groundwater monitoring program.



**Progress Evaluation for the Issue: INFORMATION AND EDUCATION**  
**Subcategories: DISTRICT-WIDE HYDROLOGIC MODELING**

Issue Goal:

Maintain updated, District-wide hydrological modeling to inform District and Municipal management of resources and infrastructure.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Complete development of subwatershed models to complete District-wide coverage within 6 years;	Ongoing. Completed model update for West Draw;	-	Nothing planned.
2	Calibrate completed models to collected monitoring data once every 3 years.	Ongoing, along with model development and update.	Calibrate to available data during model updates.	Nothing planned.
3	Promote use of District models and modeling specifications through dissemination on SWWD website.	Ongoing. Draft modeling spec is available on web. Models are available through request.	-	Update website to ensure that stakeholders can access models as needed.





**Progress Evaluation for the Issue: INFORMATION AND EDUCATION**

**Subcategories: RESEARCH**

Issue Goal:

Work with local and regional partners to advance knowledge of watershed management issues.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Further identify and refine research and information needs as ongoing role of Technical Advisory Committee;	Identified climate related topics as part of climate adaptation plan. Staff participates as member of MN Stormwater Research Council. MSRC routinely works to identify and prioritize research needs.	Participation in MSRC	Continued participation in MSRC.
2	Pursue research opportunities to provide for identified information needs;	Ongoing. SWWD staff participates on the Stormwater Research Council advisory board and contributes funds to the collaborative effort.	Participation in MSRC	Participate in the MSRC through staff participation on advisory board and through contribution of funds.
3	Biannually publish a summary of completed and ongoing research efforts as part of annual reporting.	Not started.	-	SWWD will work to disseminate results of research completed as part of the MSRC.
4	As part of annual reporting, review existing District web tools for improvements and incorporation of new technologies.	Completed PTMapp model for the rural portions of SWWD; Updated monitoring database to improve function	-	Regular website info updates.



**Progress Evaluation for the Issue: INFORMATION AND EDUCATION**  
**Subcategories: EDUCATION**

Issue Goal:

Heighten the awareness of key constituencies within the District, sufficient to modify behavior to improve the recognition and implementation of District policies, programs, and activities.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Heighten the awareness of key constituencies within the District, sufficient to modify behavior to improve the recognition and implementation of District policies, programs, and activities.	Ongoing. Participating in the Master Water Steward Program	-	Continue to support the Master Water Steward Program by sponsoring interested residents, See EMWREP
2	Actively participate in regional education efforts as an active partner in the East Metro Water Resources Education Partnership (EMWREP);	Ongoing.	-	See EMWREP
3	Develop District facilities for use as interpretive and educational sites as user demand grows with development (i.e. Signage trails, programming at CDSF);	Ongoing. Developed conceptual plan for future learning center at CDSF with Cities and stakeholders	Funding allocated for design and construction	Complete final design for CDSF learning center, trail, and interpretive facilities.
4	Evaluate the need and opportunity for shared Learning Center at the Central Draw Storage Facility;	Complete	-	None
5	Develop shared interpretive and educational programming through EMWREP for use at Municipal and District facilities focused on identified District issues;	Ongoing. Developed and installed signage at outdoor classrooms and Trout Brook.	-	Continue to develop and construct outdoor classrooms as part of campus greening program.
6	Engage local public, private, and NGO partners to develop experiential programming for children;	Ongoing. Pilot effort continued with Refuge Friends, the successor to Kids 4 conservation.	-	Re-launch effort with Carpenter Nature Center, a local non-profit. Resume as covid-19 allows.

7	Maintain a website to disseminate consistent information and coordinate program implementation;	Ongoing.	-	Update website as needed.
8	Utilize existing Municipal committee structure to educate residents and disseminate information as part of the District’s Citizen Advisory Committee;	Ongoing.	-	Re-engage CAC following covid-19.
9	Develop a mechanism to gauge effectiveness of educational programming efforts.	Not started.	-	Nothing planned.



**Progress Evaluation for the Issue: EFFICIENCY AND ACCOUNTABILITY**

**Subcategories: PROGRESS EVALUATION**

Issue Goal:

Utilize a Results Based Accountability approach in evaluating and refining implementation strategies for achieving resource goals and to evaluate and improve program performance.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Ongoing development and use of documented strategies and actions (i.e. Management plans and other guidance documents) to achieve established resource goals;	Ongoing. Minor plan amendment adopted in April 2019.	-	Nothing planned.
2	Incorporate strategy documentation, progress evaluation, and annual workplan into annual report;	Ongoing.	-	Continue to refine reporting and documentation methods.
3	Amend Watershed Plan as necessary to provide the District with programs and tools necessary to implement identified strategies.	Minor plan amendment adopted in April 2019.	-	Complete plan review and prepare plan amendment.



**Progress Evaluation for the Issue: EFFICIENCY AND ACCOUNTABILITY**

**Subcategories: UNIFORM STANDARDS**

Issue Goal:

Establish and maintain District controls necessary to achieve established District resource goals, comply with mandated permits and programs, and maximize regulatory consistency with neighboring jurisdictions.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Regularly review and update District Rules as necessary to keep pace with changing resource issues and mandated regulatory programs;	Ongoing.	-	Revise Rules to maintain MS4 compliance.
2	Ensure uniform MS4 program coverage across District using a documented cooperative approach;	Ongoing.	-	Complete required MS4 reporting. Apply for continued coverage under new permit. Revise SWPPP and Rules as necessary to maintain compliance.
3	Work with neighboring Watershed Districts to develop uniform standards where possible;	Not started.	-	Review neighboring WD rules during rule update.
4	Require municipal adoption of District Rules within 2 years of any completed update;	Ongoing.	-	Assist municipalities in Comp Plan and ordinance updates as requested.



**Progress Evaluation for the Issue: EFFICIENCY AND ACCOUNTABILITY**

**Subcategories: COLLABORATION AND COORDINATION OF EFFORTS**

Issue Goal:

Limit duplication of planning and implementation efforts by the District and its State and Local partners by improving collaboration and coordination of efforts. Create efficiencies in implementation through partnerships.

	Implementation Indicator	Issue Progress	Recommended Change /Action	Current Year Workplan
1	Collaborate and coordinate agency efforts through engagement of a standing Technical Advisory Committee;	Ongoing. TAC was engaged as part of climate adaptation planning in 2017. TAC members were engaged as part of regional BMP feasibility study.	-	Continue to work with City staff as members of TAC to develop and pursue regional projects. SWWD meets quarterly with City of Woodbury staff to develop and implement regional BMPs.
2	Incorporate local input into District planning efforts through engagement of a standing Citizens Advisory Committee	Ongoing. Standing CAC chooses to only meet when input needed, not for routine matters. No meetings were held in 2020 due to covid-19.	-	Re-engage CAC as part of planning for future learning center.
3	Inform State and Regional agencies and organizations of local efforts through participation in their advisory committees;	Ongoing.	-	Participate as opportunities arise.
4	Combine local implementation to gain economy of scale;	Ongoing.	-	Nothing planned.
5	Incorporate implementation actions identified in regional planning efforts into District programs.	Not started.	-	Nothing planned.



**Progress Evaluation for the Program: Planning**

**Subcategories:** RESOURCE, FLOOD DAMAGE REDUCTION & MITIGATION PLAN, CLIMATE ADAPTATION PLAN, NATURAL RESOURCES, GROUNDWATER, GUIDANCE DOCUMENTS, ADVISORY COMMITTEES, MODELING

Program Purpose:

Through its various planning efforts, SWWD evaluates resource issues, risks, and uncertainty in formulating a strategy or identifying practices to address identified issues. The District routinely collects information to evaluate success of implemented practices and better informed understanding of resource issues. Using that information, the District re-visits planning efforts to revise strategies as necessary.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
1 Maintain up to date planning documents necessary to guide District Implementation (staff time);	Ongoing.	\$ 532,206	\$ 235,688	Review plan in 2021, begin preparing likely plan amendment.	As Planned	-	\$125,950
2 Complete SWWD Flooding Emergency Response Plan within 6 years;	Complete by 2023.	\$ 45,000	\$ 45,000	Plan completed. Subsequent work in 2020-21 will review and optimize operation plans for active stormwater controls throughout the District.	Ahead of schedule	-	\$
3 Complete development of subwatershed hydrologic models within 6 years;	Complete by 2023.	\$ 160,000	\$ 171,895	Complete	Ahead of schedule	-	\$225,000

4	Update/calibrate completed hydrologic models every 3 years	Ongoing.	\$ 390,208	\$ -	On schedule. Models calibrated at they are developed or updated.	As Planned	-	\$
5	Review and update inter-community flow limits within 3 years (modeling);	Review/ update by 2020.	N/A, included above	\$ -	Discussions ongoing between SWWD and Cities re inter community flow follow West Draw model update. Cities are now reviewing their models and plans.	Behind schedule	-	\$ -
6	Complete resource management plans for all lakes and perennial open channel streams within the District within 6 years;	All plans completed by 2023.	\$ 100,000	\$ 100,000	Plans were completed in 2018 and included in the minor amendmen t submittal in 2019	Ahead of schedule	-	\$
7	Re-assess completed management plans at a minimum of once every 3 years to evaluate progress and review and adjust strategies;	Re-assess all plans by 2020. Every 3 years thereafter.	\$ 227,821	\$ -	Review and update of plans were completed in 2019.	As Planned	-	
8	ID excessively eroding bluff ravines within 3 years;	Completed by 2020.	\$ 45,000	\$ 6,806	ID process underway via WCD. SWWD is pursuing stabilizatio n of prioritized ravines.	As Planned	-	\$



9	Update the District's Greenway Plan within 3 years;	Completed by 2020.	\$ 30,000	\$ -	Plan will be updated as part of County's greenway plan update process	N/A, will be evaluated when County undertakes an update.	-	
10	Develop a Climate Adaptation Plan within 6 years;	Completed by 2023.	\$ 105,000	\$ 107,000	Complete	Ahead of schedule		
11	Participate in State or Regional planning efforts to coordinate groundwater resource assessment and regulation.	Ongoing.	N/A, included above	\$ -	Not Started	N/A, on hold indefinitely while PFAS workgroups assess and plan.	-	\$ -
12	Work with partners to develop a Strategic Groundwater Assessment Plan to guide and coordinate groundwater monitoring efforts within 3 years;	Completed by 2020.	\$ 8,000	\$ -	Limited coordination with MPCA. SWWD's groundwater monitoring efforts now under umbrella of MPCA ambient groundwater monitoring program.	Monitoring is ongoing.	-	\$ -
13	Work with partners to develop a Strategic Groundwater Regulatory Coordination Plan within 3 years;	Completed by 2020.	\$ 15,000	\$ -	Not started.	N/A, on hold indefinitely while PFAS workgroups assess and plan.	-	\$ -
14	Update and finalize the Districts Wetland inventory within 3 years.	Completed by 2020.	\$ 50,000	\$ -	Planned for 2020 2021.	Behind schedule	-	\$15,000



**Progress Evaluation for the Program: REGULATORY**  
**Subcategories:**

**Program Purpose:**

Established under authorities granted in MN Statute 103D.341, District Rules seek to limit the affects land alterations to protect the public health, welfare, and natural resources of the District, reduce the need for additional storage capacity and the potential need for the construction of systems to convey storm water, preserve floodplains and wetland storage capacity, maintain or improve the chemical and physical quality of the surface and groundwater, reduce sedimentation, preserve the hydraulic and navigational capacity of water bodies, preserve natural shoreland features, and minimize the public expenditure to avoid or correct such problems in the future.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
1 Development Reviews and Assessments	Ongoing	\$ 343,916	\$ 119,219	Ongoing	As planned	-	\$ 9,050
2 Wetland Conservation Act (Staff Time)	Ongoing	\$ 30,000.00	\$ 10,474	Ongoing	As planned	-	\$5,500
3 Erosion and Sediment Control (Staff Time)	Ongoing	\$ 140,000.00	\$ 74,607	Ongoing	As planned	-	\$6,600
4 Rules (Staff Time)	Ongoing	\$ 10,000	\$ 4,600	Ongoing	As planned	-	\$4,400



## Progress Evaluation for the Program: **IMPLEMENTATION AND MAINTENANCE**

**Subcategories: MONITORING**

**Program Purpose:**

To optimize monitoring efforts for regional assessment, the District has designated key locations at critical crossings and checkpoints throughout the watershed as regional assessment locations (Chapter 6, Section 8 of the SWWD 2007 WMP, Houston Engineering). Locations were chosen to characterize water quality and quantity entering or leaving a region and are included on the District's web viewer. Data collected at these locations is used to identify trends in regional water quality and quantity as well as potential areas for concern, develop and verify regional models, set benchmarks for regional water quality, evaluate effectiveness of District Rules and evaluate regional effects of proposed development projects. Once established, all regional assessment locations are part of the District's permanent monitoring program and will be operated until deemed unnecessary by analysis and modeling.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
<b>1</b> Survey aquatic vegetation of District Lakes a minimum of every 3 years;	Survey completed in 2015. Re-survey every 3 years.	N/A, included in monitoring budget	\$ -	Surveyed in 2018, again in 2021	As Planned	-	\$ -
<b>2</b> Annually implement District's monitoring plan;	Ongoing.	\$ 1,776,901	\$ 604,793	Ongoing.	As Planned	-	\$185,454
<b>3</b> Monitor levels and water quality of all publicly accessible lakes annually;	Ongoing.	N/A, included in monitoring budget	\$ -	Ongoing.	As Planned	-	\$
<b>4</b> Monitor established Regional Assessment Locations a minimum of 3 out of every 6 years;	Monitor established sites 3 of every 6 years.	N/A, included in monitoring budget	\$ -	Ongoing.	As Planned	-	\$ -
<b>5</b> Implement recommendations of the Strategic Assessment Plan once complete.	TBD	N/A, included in monitoring budget	\$ -	Not started.	N/A	-	\$ -



## Progress Evaluation for the Program: **IMPLEMENTATION AND MAINTENANCE**

**Subcategories: WATERSHED RESTORATION, RECONSTRUCTION, AND RESILIENCY**

**Program Purpose:**

The District's Watershed Restoration, Reconstruction, and Resiliency program provides implementation funds to address problems that these changes cause including altered hydrographs or increase in peak flows as water runs off of the watershed more quickly, stabilization of natural drainage systems to withstand anticipated discharges, protection and restoration of rare and native communities, increasing resiliency of natural and man-made systems against climate changes, reducing habitat fragmentation by creating or maintaining linear corridors, managing invasive species, and protecting groundwater resources.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
1  Establishment and protection of identified greenway corridors (Greenway Plan);	Limited implementation on ongoing under SWWD's existing greenway plan.	\$ 700,000	\$ 250,000	Work continues on the Central Greenway (Lake Elmo to Ravine Park) in cooperation with Washington County, Woodbury, Cottage Grove, and S Washington School District.	As Planned	-	\$175,000
2  Implementation of completed resource management plans as guided by accompanying retrofit analyses;	Ongoing.	\$ 3,875,000	\$480,953	Underground TSS BMP completed in Newport in 2020. Seasons Park stormwater filter to be constructed in 2021. Nuevas	As Planned	Accelerate implementation.	\$900,000

					Fronteras BMP to be constructed in 2021. Several others in development for future construction.			
3	Establishment and protection of vegetated buffers along streams, ravines, bluffs and around lakes and wetlands (Buffers, Part II);	TBD	\$ 100,000	\$ -	Not started.	Not started.	-	\$ -
4	Stabilization of identified ravines to prevent downstream transport of sediment and nutrients (Ravine Survey and Assessment Plan);	TBD	\$ 179,591	\$ -	Survey of Trout Brook is complete. Stabilization of a top identified ravine is under contract for 2020-2021 construction	As Planned	-	\$ 75,000
5	Implementation of yet to be identified practices to increase resiliency of natural and man-made systems against land use and climate change (Climate Adaptation Plan)	TBD	\$ 1,000,000	\$ 250,000	Plan complete. Resiliency efforts now eligible for funding through SWWDs CCIP program.	Ahead of schedule	-	\$190,000
6	Implementation of regionally identified strategies to address aquatic and terrestrial invasive species.	TBD	\$ 40,000	\$ -	Necessary data will be collected during 2021 veg monitoring to prepare for start of veg control program.	N/A, developing program	-	\$ -
7	Implement yet to be identified flood damage reduction and mitigation projects and practices (Flood	TBD	\$ 101,423	\$ -	Work is wrapping up on a system review and optimization study. Identified	N/A, will be evaluated in 2020.	-	\$ -

	Damage Reduction and Mitigation Plan;				projects will be developed in cooperation with the Cities.			
<b>8</b>	Identify willing landowners and begin operation of pilot agriculture BMP research program within 6 years;	Identify participants, develop program, and roll out by 2023.	\$ 383,123	\$ -	Working with a farmer to showcase cover crop techniques in Denmark Twp.	N/A, will be evaluated in 2021.	-	\$72,000
<b>9</b>	Provide adequate funding for local implementation actions identified in the Washington County Groundwater Plan		\$ 132,026	\$ -	Not started.	N/A, will be evaluated in 2021.	-	\$ -



## Progress Evaluation for the Program: **IMPLEMENTATION AND MAINTENANCE**

**Subcategories:** INSPECTION AND MAINTENANCE

**Program Purpose:**

Communities rely on public watercourses, both natural and piped, for conveyance of stormwater runoff. Additionally, the District and its partners utilize an increasingly long list of BMPs to meet local resource goals. Conveyance systems and physical BMPs need routine inspection and maintenance to ensure long term functionality.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
<b>1</b> Maintain database of all physical BMPs;	Ongoing.	\$ 185,000	\$ 7,400	Work completed annually in cooperation with WCD and other Washington County WMOs.	As Planned	-	\$3,900
<b>2</b> Inspect BMPs at a minimum of 10, 33, and 66% of expected BMP lifetime;	Ongoing.	\$ 50,000	\$ 16,000	Work completed annually in cooperation with WCD and other Washington County WMOs.	As Planned	-	\$6,000
<b>3</b> Perform maintenance or enforce maintenance agreements as necessary to maintain full resource benefits of BMPs.	Ongoing.	\$ 523,194	\$ 59,018	SWWD currently contracts with WCD to complete maintenance needs identified as part of annual inspection program.	As Planned	-	\$70,000



## Progress Evaluation for the Program: IMPLEMENTATION AND MAINTENANCE

Subcategories: CAPITAL IMPROVEMENT

Program Purpose:

Consistent with MN Rule 8410.0080 subp. 2, SWWD defines Capital Improvement Project (CIP) as a physical improvement with an extended useful life. For the purposes of its CIP Program, the District further defines a CIP as having a lifetime of greater than 25 years and a total project cost greater than \$50,000. Generally, projects implemented under the District's CIP are developed and analyzed through completion of a feasibility study

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
1 Provide adequate funding to carryout identified capital projects	Ongoing.	N/A	N/A	Current funding levels are adequate to complete planned work.	As Planned	-	N/A; broken out below
2 Deliver Capital improvements as scheduled in the long-range workplan	Ongoing.	\$ 18,183,123	\$ 11,233,438	Work on phases 3 and 4 of the CDO were completed in 2018. Excavation of regional basins at CDSF began in 2018 and will continue through 2020. Phase 5 was completed in 2020. Trout Brook Remeander was completed in 2019. Subsequent phase is being planned.	As Planned	-	\$538,500





## Progress Evaluation for the Program: IMPLEMENTATION AND MAINTENANCE

### Subcategories: INCENTIVES

Program Purpose:

Implementation need outpaces the District's implementation capacity. To address that need and gain efficiency by drawing on the capacity of public and private entities in the District, SWWD operates several incentive programs to facilitate implementation by District residents and partners. Those programs are briefly described here. Additional information is available on the SWWD website.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
1  Maintain and refine existing incentive programs to adequately leverage community interest;	Ongoing.	\$ 6,738,742	\$ 2,702,243	Programs were modified for use as incentivizing improvements identified in development of SWWD's climate adaptation and resiliency plan. Includes funds granted to Woodbury for their irrigation controller cost share program.	As Planned	-	\$ 848,600
2  Expand existing cost share program to effectively target rural areas for source reduction within 3 years;	Expand/refine program by 2020.	N/A, included above.	\$ -	Not started.	N/A, will be evaluated in 2021.	-	\$ -
3  Annually review District's role in and need for supplementing County groundwater focused cost share and loan programs.	Ongoing.	N/A	\$ -	Not started.	N/A, will be evaluated in 2021.	-	\$ -



## Progress Evaluation for the Program: **INFORMATION AND EDUCATION**

**Program Purpose:**

SWWD is a member of the East Metro Water Resource Education Program. EMWREP is a partnership formed in 2006 that serves 20 local units of government in the east metro area. The purpose of the shared education program is to provide education to District communities and their residents about the impacts of non-point source pollution (e.g. Nutrients, de-icing chemicals) on local lakes, rivers, streams, wetlands and groundwater resources and to engage them in projects that will help to protect and improve water quality in the region.

SWWD intends for this plan and its website to serve as a repository of water resource related information. The District's website includes several tools which serve to deliver information to District residents and stakeholders including: Resource Library, Water Quality Monitoring Database, Web Map Viewer and project Story Maps.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
<b>1</b> Continue support of and participation in EMWREP; Local Education Programs	Ongoing.	\$ 366,844	\$ 314,408	Ongoing. Includes support for EMWREP, Master Water Stewards, Watershed Partners, and SWWD's experiential education programming	As Planned	-	\$97,100
<b>2</b> Increase use of Website and Web Tools (staff time); Research; Databases; GIS	Ongoing.	\$ 261,376	\$ 294,133	Continue to maintain up to date website.	As Planned	-	\$82,050
<b>3</b> Annually update story mapping as part of annual report to reflect current project status;	Ongoing.	N/A, included above	\$ -	Ongoing	As Planned	-	\$ -
<b>4</b> Annually update water quality database to	Ongoing.	N/A, included above	\$ -	Database is current through the 2020	As Planned	-	\$ -

	include previous year's data;				monitoring season.			
<b>5</b>	Annually update web viewer to reflect most recent spatial data;	Ongoing.	N/A, included above	\$ -	Ongoing.	As Planned	-	\$ -
<b>6</b>	Distribute semi-annual newsletter to District residents and stakeholders regarding District efforts and progress in addressing identified resource issues.	Ongoing. News distributed in 2018 via website, Twitter, and Facebook.	N/A, included above	\$ -	Information distributed via social medial and website.	Continue to increase news distribution via web.	-	\$ -
<b>7</b>	Maintain up to date files on electronic library;	Ongoing.	N/A, included above	\$ -	Ongoing.	As Planned	-	\$ -



## Progress Evaluation for the Program: **ADMINISTRATION**

Program Purpose:

Watershed administration program has five focus areas to develop and maintain: District Boundary, Funding, Local Water Plans, Reporting and Progress Evaluation and Long Range Workplan.

Performance Indicator	Implementation Schedule	Long Range Work plan Budget	Amount Spent to Date	Status	Program Performance	Recommended Change	Current Year Work plan
<b>1</b> Annually, evaluate District progress in achieving identified issue goals and effectiveness of District programs (staff);	Ongoing.	\$2,226,090	\$ 1,375,493	Ongoing.	As Planned	-	\$446,925
<b>2</b> Maintain funding levels adequate to meet implementation demand of the District;	Ongoing.	N/A, included above	N/A, included above \$ -	Ongoing.	As Planned	-	N/A, included above \$ -
<b>3</b> In partnership with neighboring Districts, maintain legal boundary that reflects SWWD's hydrological boundary.	Ongoing.	N/A, included above	N/A, included above \$ -	Ongoing.	As Planned	-	N/A, included above \$ -



## Progress Evaluation for the Program: **DEBT SERVICE**

### Program Purpose:

Not specifically mentioned in the 2007 SWWD Watershed Management Plan as a management area, debt service is included in the SWWD annual budget as an accounting fund. In 2002 the SWWD issued \$5.8 million in General Obligation Bonds for the purchase of real property as described in the 1997 watershed plan. The SWWD completed acquisition of 150+ acres for increased downstream stormwater system capacity, flood control and stormwater management. Bonds were paid off in 2017. In 2011, SWWD bonded for three projects in the East Mississippi watershed (Newport Ravine, Clear Channel Pond, and Grey Cloud Slough). In 2016, SWWD refinanced the 2011 general obligation bonds. In 2019, the 2016 general obligation bonds crossed over to general obligation **refunding** bonds, which will save the SWWD \$186,134.

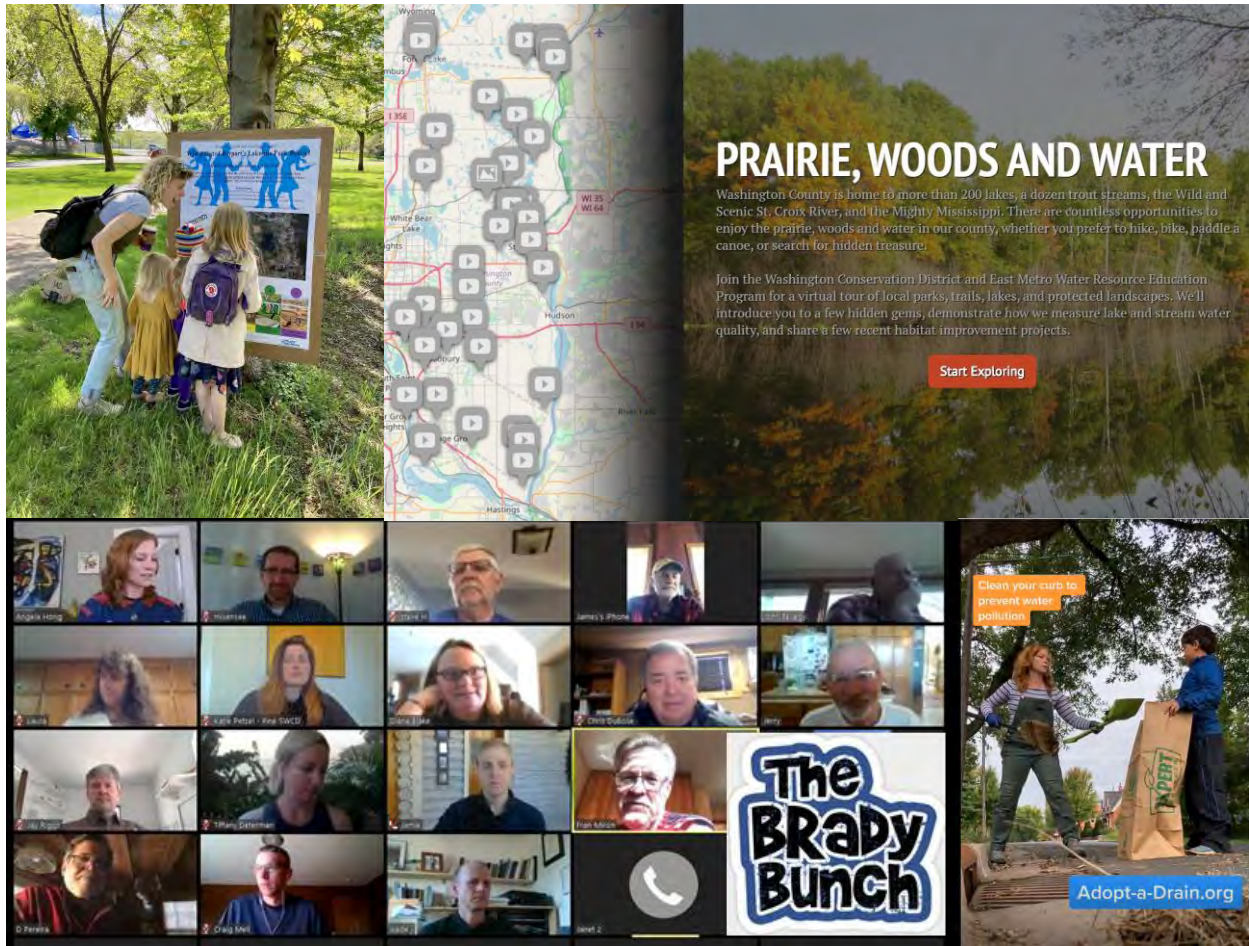
Appendix A      2020 Audit Report on Compliance

The 2020 Financial Audit will be completed and submitted in May 2021.

## Appendix B      Education



# 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](http://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

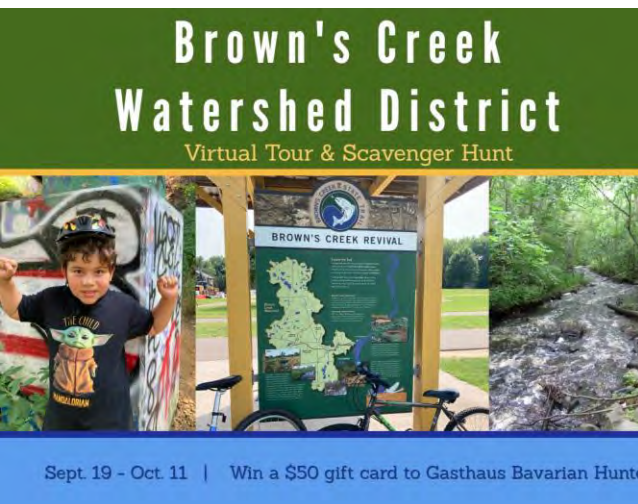
### Program Goals:

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

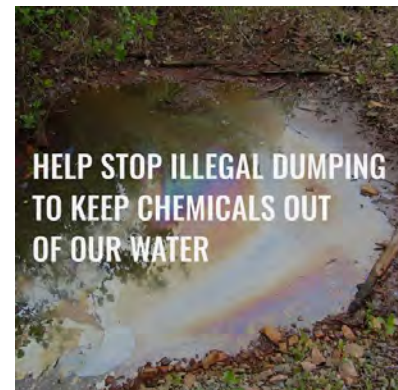
Videos, newsletter articles, fact sheets and other tools for stormwater education

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/AlhvFzNb2tA>
- 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](https://youtu.be/L_Zz0biHTkE)
- Hmong: [https://youtu.be/\\_15o2FCDsmw](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/CA9KzcvQnU>
- 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.

# We water critters!

**Directions:**

1. Use a spoon to gently scoop up plants and animals to see them more easily.
2. Use the identification key below to help identify critters that you find.
3. When you are done, take your spoon with you to another station or drop it in the disposal bucket at the beginning.

**How's the water?**  
In general, you will usually find a wide variety of species in healthy ponds, lakes and streams.

In a lake, based on the types of species you find. Mosquito larvae, aquatic worms, and snails can survive in fairly polluted water. Mayfly and mayfly nymphs, hellgrammids and hellgrammids larvae, and other beetles are very tolerant of pollution and are only found in clean, moving water.



← High tolerance of pollution      Low tolerance of pollution →



**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/bc wd-map20>
- Video: <https://youtu.be/I3dinsHjAAo>

## 2. Volunteer engagement:

<b>Minnesota Water Stewards</b>
<b>20 Stewards</b> 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.

<b>Adopt a Drain</b>
<b>550 drains</b> 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.

<b>Adopt a Raingarden</b>
<b>55 raingardens</b> 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](http://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:

<b>Watershed Partners</b>
<b>70 partners</b> 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](http://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 through 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/gRSHJpe8pg8>
  - 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)

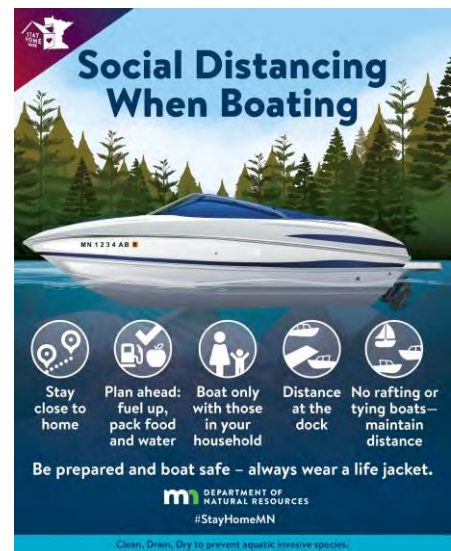
- Well water testing postcard
- Caring for septic systems to protect water resources

## 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](http://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](http://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](http://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.

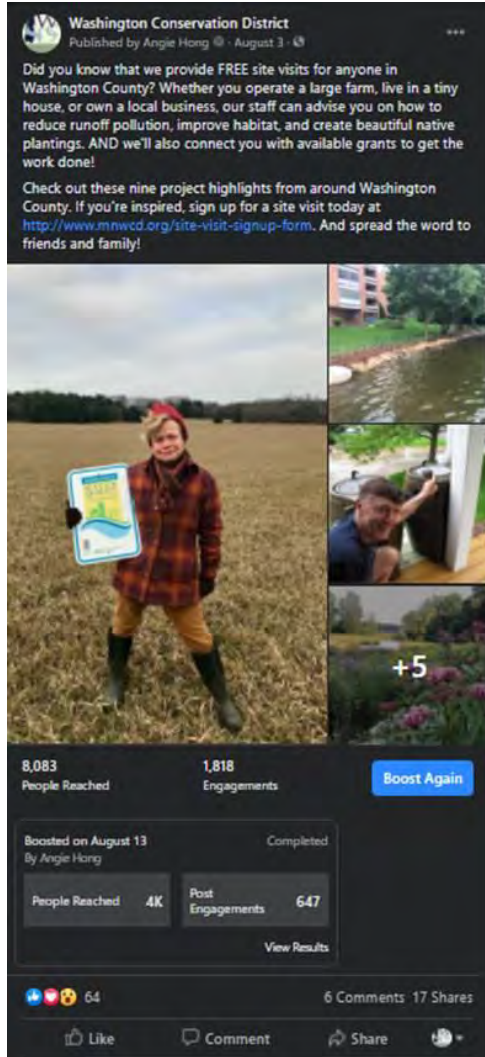
- **Facebook** has 2.45 billion monthly users, is used by 70% of Americans, and continues to be our primary platform for promoting workshops and other events; share partner success stories; and advertise site visits, cost-share grants, and other services that we offer. It is also easy and inexpensive 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 platforms:** 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



Washington Conservation District  
Published by Angie Hong · August 3 ·

Did you know that we provide FREE site visits for anyone in Washington County? Whether you operate a large farm, live in a tiny house, or own a local business, our staff can advise you on how to reduce runoff pollution, improve habitat, and create beautiful native plantings. AND we'll also connect you with available grants to get the work done!

Check out these nine project highlights from around Washington County. If you're inspired, sign up for a site visit today at <http://www.mnwcd.org/site-visit-signup-form>. And spread the word to friends and family!

8,083 People Reached 1,818 Engagements [Boost Again](#)

Boosted on August 13 By Angie Hong Completed

People Reached	4K	Post Engagements	647
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[View Results](#)

6 Comments 17 Shares

Like Comment Share

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

- 2106 views + 79 “likes”



angiehongmn  
Ciara · Level Up

angiehongmn Minnesotans have adopted more than 12,000 storm drains to protect urban lakes and rivers!

It is seriously the easiest thing you can do to prevent water pollution in your community. Take up the leaves and gunk in the street so it doesn't wash into storm drains that connect to our waters.

Find a drain near you at [www.adopt-a-drain.org](http://www.adopt-a-drain.org).

#adoptadrain #stormwater #cleanwater #minnesotalakes #mississippiriver #stcroixriver

13w

79 likes  
SEPTEMBER 11

Add a comment...

**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](http://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](http://www.bluethumb.org)
  - Resources for raingardens, native plants, shoreline buffers, and Lawns to Legumes
- Clean Water Minnesota: [www.cleanwatermn.org](http://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.

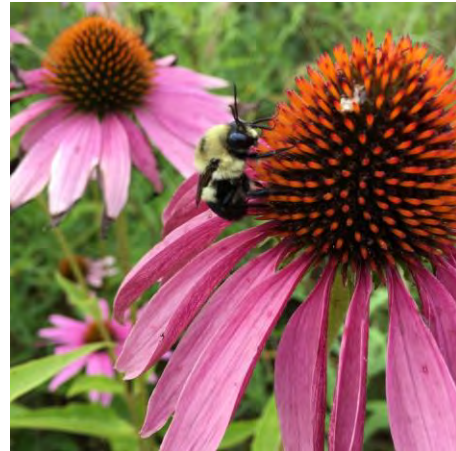
**Educational Objectives:**

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.

## OUTREACH SUPPORT: STRATEGIES & ACTIVITIES

### 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](http://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 Wolfen 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.

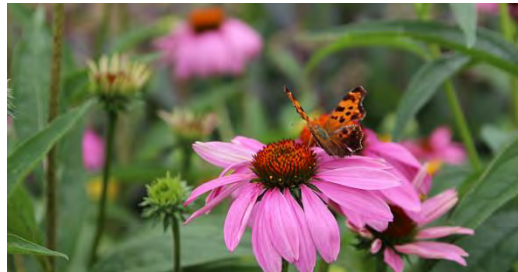
At our workshops, participants learn how to design and install planting projects, which plants to select, and how to connect with funding opportunities.

To find video recordings, presentation slides, and print resources from these and other workshops, head to: [www.mnwcd.org/planting-for-clean-water](http://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](http://www.mnwcd.org/maintenance-guide).

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

## EDUCATION AND OUTREACH TO FARMERS AND RURAL LANDOWNERS

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.

## PROFESSIONAL TRAININGS FOR BUSINESS AND LOCAL GOVERNMENT

### 1) Training for Municipal Staff and Businesses

#### MS4 Municipal Training Resources

MS4 Permittees 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](http://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**

<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
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
<b>TOTAL</b>	<b>\$154,900.00</b>

## **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](http://www.pca.state.mn.us/water/summer-turf-grass-maintenance-training)

# 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.**



## 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.

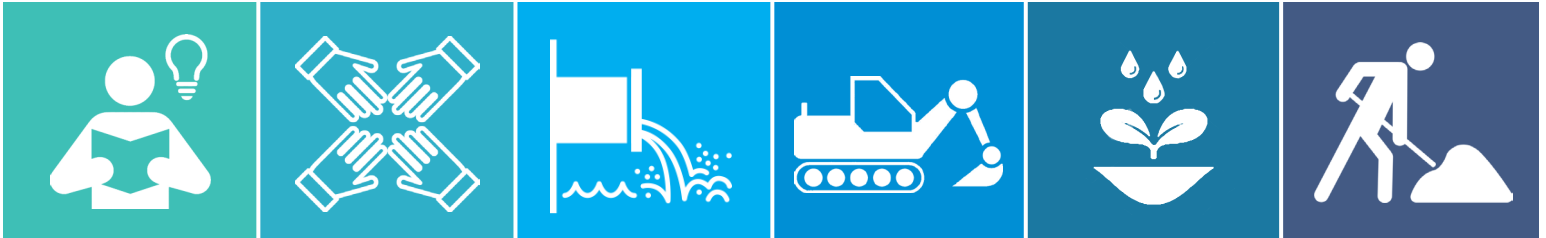
#### Completing maintenance and repairs:

- 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](http://pca.state.mn.us/water/2020-ms4-general-permit)**



# 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.)

## 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

## 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.

## 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.)

## 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.

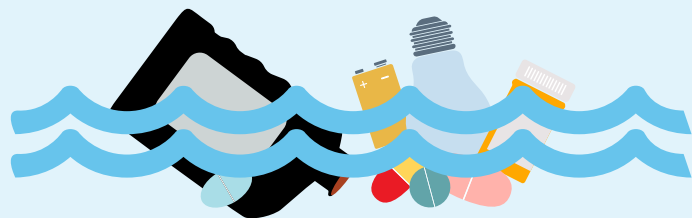
## 6: Pollution Prevention and Good Housekeeping



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.

# 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](http://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](http://www.pca.state.mn.us/living-green/managing-unwanted-medications)

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



FDA U.S. FOOD & DRUG ADMINISTRATION

Follow these simple steps to dispose of medicines in the household trash\*

**MIX**  
Mix medicines (do not crush tablets or capsules) with an unpalatable substance such as dirt, kitty litter, or used coffee grounds;



**PLACE**  
Place the mixture in a container such as a sealed plastic bag;



**THROW**  
Throw the container in your household trash;



**SCRATCH OUT**  
Scratch out all personal information on the prescription label of your empty pill bottle or empty medicine packaging to make it unreadable, then dispose of the container;



We need your help to keep our waters clean!

Learn more about Minnesota water at [www.pca.state.mn.us/waste](http://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.

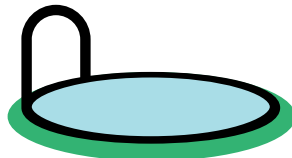
### Take your car to the car wash or...

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!

[www.pca.state.mn.us/waste](http://www.pca.state.mn.us/waste)

# 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](http://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

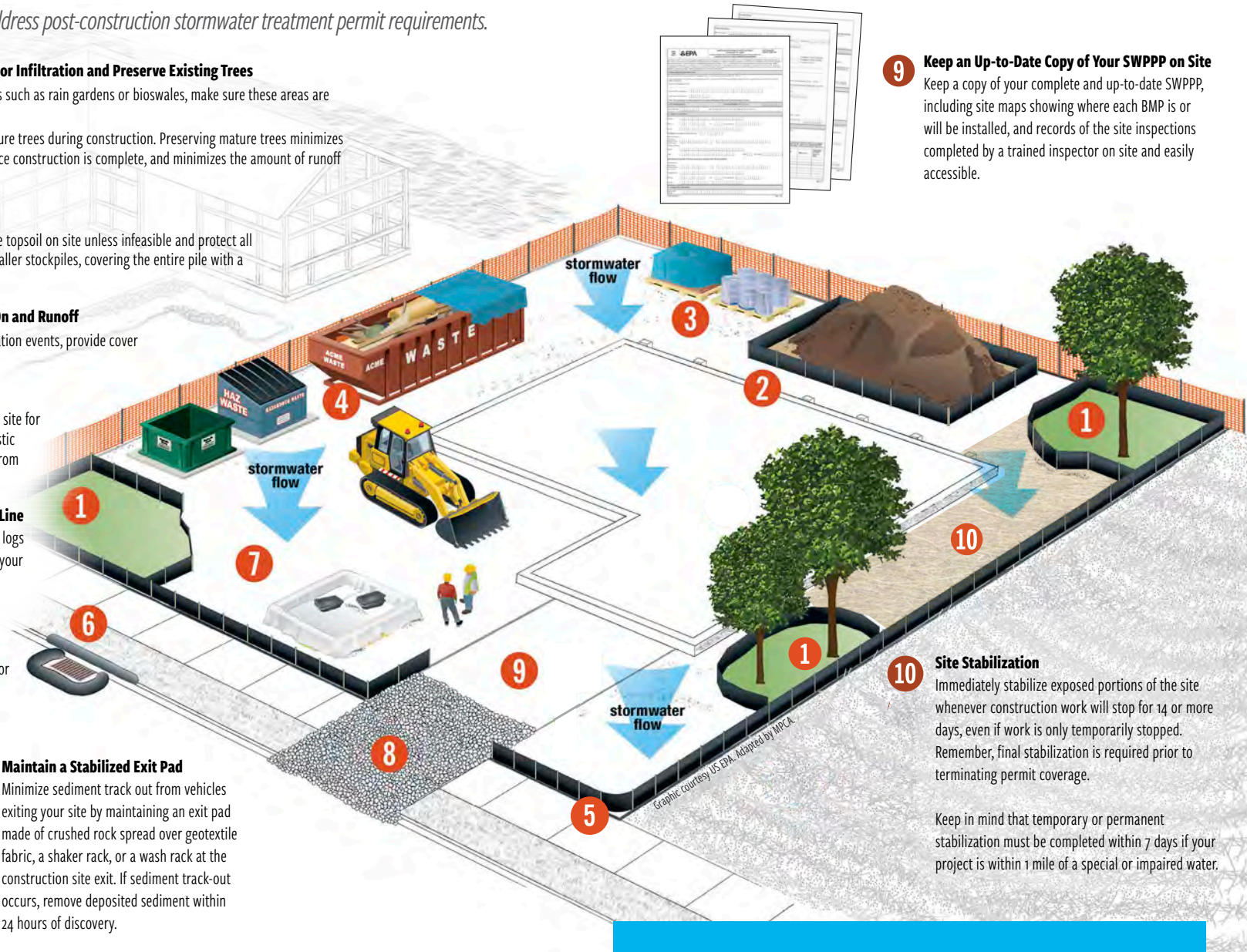
Designate a leak-proof basin lined with plastic for washing out used concrete and stucco containers. Never wash excess stucco or concrete residue down a storm drain or into a stream!

## 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.



## Small-scale Construction Considerations

Thanks for doing your part to protect Minnesota water!

[www.pca.state.mn.us/water/construction-stormwater](http://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](http://www.pca.state.mn.us/water/municipal-stormwater-ms4)

# TOOLS to MANAGE STORMWATER in YOUR COMMUNITY

## Stormwater ponds

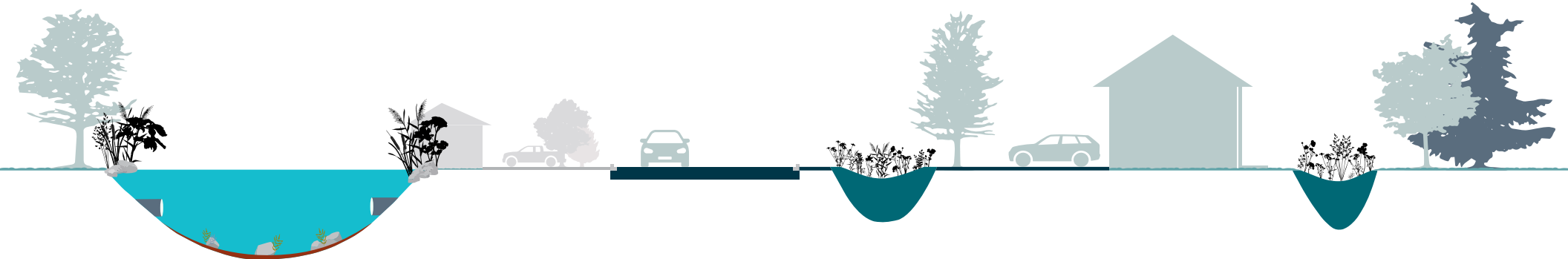
Most commercial and residential developments built since the 1980's utilize stormwater ponds to reduce flooding and partially treat stormwater runoff. Though these ponds may look natural, they are actually highly engineered systems, designed to control the rate of runoff and hold water back until sediment 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](http://www.pca.state.mn.us/water/municipal-stormwater-ms4)

For more information, contact:

[Insert local contact here]





Ecology



Recreation



Health



Economy

# Pollutants & Stressors

Impairments IMPACT our waters and our lives

Impacts: Ecology, Human Health & Recreation

## Bacteria

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

Impacts: Ecology & Recreation

## Phosphorus

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

Impacts: Ecology & Human Health

## Nitrogen

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

Impacts: Ecology & Economy

## Chloride (salts)

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

Impacts: Ecology & Human Health

## Mercury

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

Impacts: Ecology & Economy

## Sediment

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

# Bacteria

## IMPACTS:

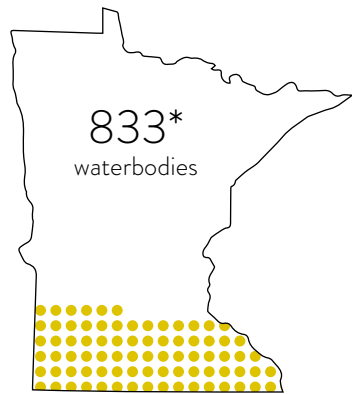
Ecology, Human Health & Recreation



## 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

Failing  
septic  
systems



Releases  
from  
wastewater  
treatment  
plants



Dog and  
goose poop  
in urban  
areas



Manure  
from  
livestock



## 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.

# Phosphorus

## IMPACTS:

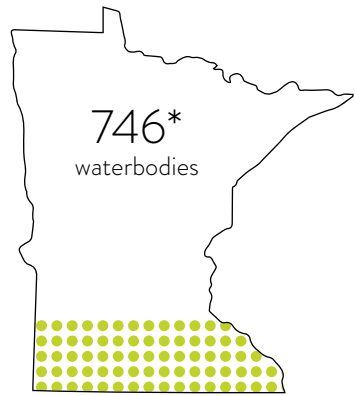
Ecology & Recreation



## 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

Organic debris



Dog and goose poop in urban areas



Fertilizers for agriculture



Releases from wastewater treatment plants



Failing septic systems



Manure from livestock



Sediment from erosion



Soil from farmland



## 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.

# Nitrogen

## IMPACTS:

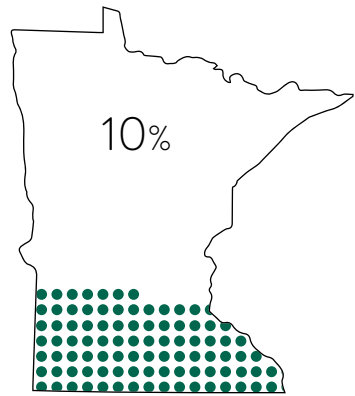
Ecology & Human Health



## 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

Failing  
septic  
systems



Releases  
from  
wastewater  
treatment  
plants



Manure  
from  
livestock



Fertilizers  
for  
agriculture



## 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**.

# Chloride (salts)

## IMPACTS:

Ecology & Economy

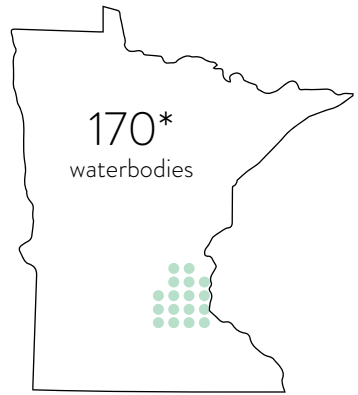


## WATER QUALITY STATS

**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.



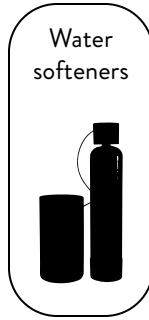
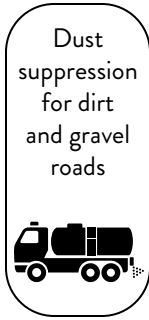
\* 1 dot represents 10 waterbodies

**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



## 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.

# Mercury

## IMPACTS:

Ecology & Human Health



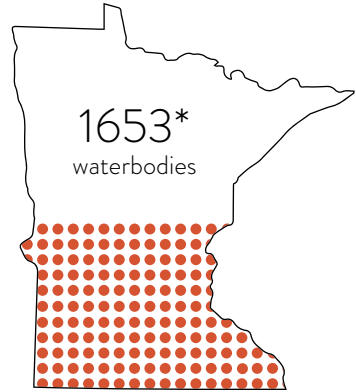
## contact:

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

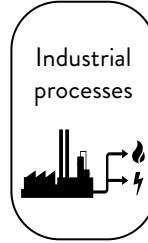
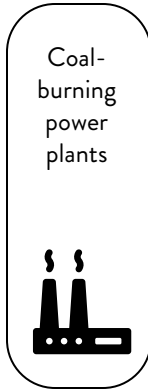
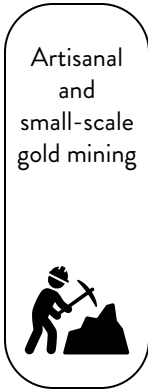
**MERCURY** is a naturally occurring element that is toxic to humans and animals. It affects human nervous systems, and is particularly harmful to young children and fetuses. Mercury is the most common pollutant in Minnesota's surface water.

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:



## 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.

# Sediment

## IMPACTS:

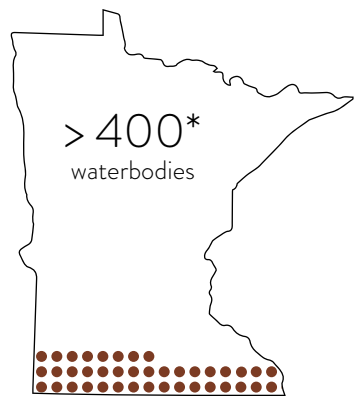
Ecology & Economy



## 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).



**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.

# Water Governance in Minnesota



# Have you tested your well water?

## Protect your health!

Test your well water for:



- Coliform Bacteria**  
(Every year)
- Nitrate**  
(Every other year)
- Arsenic**  
(At least once)
- Lead**  
(At least once)
- Manganese**  
(At least once)

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](http://www.co.washington.mn.us/637/Water-Tests)



To order a testing kit, you can call 651-430-6655 or email [phe@co.washington.mn.us](mailto: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*





# Subsurface Sewage Treatment System (SSTS):

More information & resources can be found online at [www.co.washington.mn.us/618/Septic](http://www.co.washington.mn.us/618/Septic)

## Maintenance

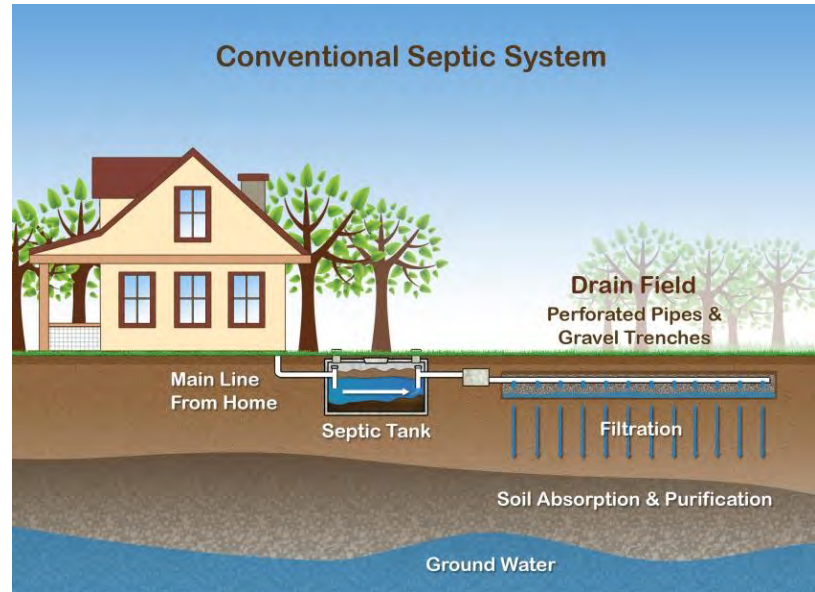
**Required to be done every 3 years.**

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 bed-rock.

## 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.

### 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, man-hole 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.



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



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



## 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](https://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.

Thank you for protecting our lakes!

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

Learn more: [www.dnr.state.mn.us/invasives/ais/index.html](http://www.dnr.state.mn.us/invasives/ais/index.html)

## Appendix C      Local Articles

[https://www.hometownsource.com/stillwater\\_gazette/news/campus-greening-projects-planned-for-valley-crossing-crestview-elementary/article\\_486de05a-f3a7-11ea-9b7b-3f80d3027247.html](https://www.hometownsource.com/stillwater_gazette/news/campus-greening-projects-planned-for-valley-crossing-crestview-elementary/article_486de05a-f3a7-11ea-9b7b-3f80d3027247.html)

## Campus greening projects planned for Valley Crossing, Crestview Elementary

Sep 11, 2020



September has arrived and with it grey skies, crisp autumn air (oh, so crisp), and children heading back to school. School this year will look completely different from anything we've seen before. Some students will stay home and begin fully distant learning programs, while others head back to school twice a week on alternating days.

Last spring, before COVID-19 swept the globe, staff from South Washington Watershed District began working with the South Washington County School District 833 to plan an overhaul of the outdoor campuses at Valley Crossing and Crestview Elementary Schools. At Valley Crossing in Woodbury, the school will convert 3.7 acres of turf to oak savanna and work with the watershed

district to 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 projects are part of the watershed district's Campus Greening program and are intended to reduce stormwater runoff, while also restoring and enhancing habitat, and creating unique outdoor learning spaces for the students. A previous project at Lake and Middleton Schools in Woodbury in 2018 converted 15 acres of non-active use turf to prairie and native plantings in addition to adding 200 trees and two outdoor classrooms to the school properties.

When public land surveyors mapped southern Washington County in 1848, they found few trees beyond the scattered oaks growing in upland savanna and the floodplain forests along the rivers. Where Valley Crossing and Crestview stand today, surveyors describe the land as rolling prairies with "second rate" soils. Oak barrens – a fire-dependent habitat with oaks growing among prairie grasses and forbs - were found nearby.

Following European settlement, the land was nearly entirely cleared for farming. The earliest available air photo from Crestview, taken in 1936, shows the entire site farmed in row crop agriculture. A 1953 air photo from the Valley Crossing site shows most of the site was row cropped as well, with a small lake and farmstead located along what is now Valley Creek Road. The Cottage Grove site remained in agriculture until the early 1960s when both Crestview Elementary and Park High School were built. The Valley Crossing site, meanwhile, was farmed until the 1990s.

Today, both schools have pockets of natural habitat that were created on school land decades ago but have degraded over time due to lack of maintenance and invasive species. This spring, South Washington Watershed District secured a \$49,920 Conservation Partners Legacy Grant from the Minnesota Department of Natural Resources to help fund 10-acres of woodland restoration at Crestview. The small prairie at Valley Crossing is in better condition and will be easier to restore to good health. This past spring, the watershed district coordinated a controlled burn on the site, after which restoration specialist Tony Randazzo said that he observed a great flush of native grasses and flowers in the early summer.

The watershed district created its Campus Greening program as an alternative way for schools and other large campuses to meet their stormwater management requirements during construction and redevelopment. So, instead of building a large stormwater retention pond near a parking lot, schools

can take a more holistic approach to protecting nearby waterways. These campus greening projects use less groundwater for irrigation, capture more rainwater on-site, create habitat for wildlife, and provide unique hands-on learning opportunities for students.

In addition to the physical transformations planned for the Crestview and Valley Crossing campuses, South Washington Watershed District also hopes to provide environmental education for the students at both schools and engage them in the planting projects. Last spring, special programming with the Carpenter Nature Center had to be canceled when the schools closed, but the watershed district hopes to re-engage the nature center for alternative programming this year. The Campus Greening projects will take two years to complete and will require regular maintenance into the future.

*Angie Hong is an educator for East Metro Water - [www.mnwcd.org/emwrep](http://www.mnwcd.org/emwrep) - which has 25 local government partners. Follow her outdoor adventures on YouTube at @Angie Hong MN Nature Mom. Contact her at 651-330-8220 extension 35 or [angie.hong@mnwcd.org](mailto:angie.hong@mnwcd.org).*



Appendix D      Biennial Solicitation for Professional Services



# SOUTH WASHINGTON WATERSHED DISTRICT

October 3, 2019

Mr. Paul Dierking  
HDR Engineering, Inc.  
701 Xenia Avenue South, Suite 600  
Minneapolis, MN 55416

**RE: South Washington Watershed District Request for Professional Services.**

Dear Mr. Dierking:

The South Washington Watershed District (SWWD) is required to biannually solicit for professional services. The SWWD is requesting letters of interest for Engineering, Legal, and Financial consulting services. This request was published in the Bulletin newspaper for two consecutive weeks beginning October 2, 2019. Enclosed is a copy of the request for HDR Engineering, Inc. If your firm is interested in providing services, please submit **3 copies** of the requested information by November 6, 2019. If you have any questions or need additional information, please contact me at 651.714.3729 or [matt.moore@woodburymn.gov](mailto:matt.moore@woodburymn.gov)

Thank you.

Sincerely,  
South Washington Watershed District

Matt Moore  
Administrator

c: SWWD Board of Mangers



# Memo

**To:** SWWD Board of Managers  
**From:** Matt Moore. SWWD Administrator  
**CC:**  
**Date:** December 3, 2019  
**Re:** 2020-2021 Professional Services

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**\*\*\* Please note in an interest of saving paper we are not providing copies of the consultant information, if you would like this information please contact the SWWD office \*\*\***

The SWWD received 16 responses for engineering services, 1 legal response and 2 financial responses. There are 13 firms in the engineering pool that are returning responses.

Engineering:

- 1) AECOM
- 2) Barr Engineering
- 3) Bridge & Stream Engineering, Inc.
- 4) Burns & McDonnell
- 5) Emmons & Olivier Resources, Inc.
- 6) HDR Engineering Inc.
- 7) HR Green, Inc.
- 8) Houston Engineering Inc.
- 9) Inter-Fluve
- 10) ISG
- 11) Kimley-Horn and Associates, Inc.
- 12) MSA Professional Services, Inc.
- 13) RESPEC
- 14) SRF Consulting Group
- 15) Stantec Consulting Services
- 16) Wenck

Other:

- 1) Sunde Land Surveying

## Legal

- 1) Jack W. Clinton P.A.

## Financial

- 1) Abdo, Eick & Meyers, LLP
- 2) Redpath and Company

The Board could choose one of the following processes to establish engineering services for the 2020-2021 calendar years.

- 1) Place all responders in the pool and delegate work on a project by project basis.
- 2) Select a preferred vendor list using the information we have or request additional information.
- 3) Generate a short list from the twelve responders and conduct interviews to select one or multiple firms.
- 4) Other options

Each engineering firm has ample qualifications, personnel and experience in the types of watershed projects the SWWD is completing. Billing rates average \$215/hour for Principals, \$170/hour for Professional Engineers, \$150/hour for Scientists and \$120/hour for Technicians.

## **Requested Board Action**

- The Board Sub-Committee recommendations:
  - Approval of 2020-2021 engineering services pool to include all respondents, providing a wide range of capabilities to address upcoming SWWD projects.
  - Approval of 2020-2021 legal services with Mr. Jack Clinton, Jack W. Clinton Law.
  - Approval of 2020-2021 financial services with Redpath and Company.
  - Approval of the 2020 and 2021 financial audits with Abdo, Eick, & Meyers, LLC.