



UPPER MISSISSIPPI RIVER SOURCE WATER PROTECTION PROJECT

2015/2016 Progress Report

Protecting Drinking Water through Partnerships

Summary of UMRSWPP Activities Include:

- 💧 Members of and participation in:
 - 💧 EPA Source Water Protection Team - Source Water Collaborative;
 - 💧 Minnesota Headwaters Fund Committee;
 - 💧 Clean Water Action Steering Committee;
 - 💧 Upper Mississippi River Basin Association – River Defense Network (spill response).
- 💧 Work with the Minnesota Department of Health on creating new criteria for source water protection plans.
- 💧 Updated the web mapping application for priority areas.
- 💧 Active participants and provide feedback for “North Fork Crow River One Watershed, One Plan” and the Upper Mississippi River, Sartell and Coon Creek WRAP studies.
- 💧 Provided feedback to the Minnesota Pollution Control Agency on the Upper Mississippi River TMDL project.
- 💧 Participated in the Minnesota Association of Watershed Districts (MAWD) and Minnesota Rural Water Association (MRWA) conference tradeshows.
- 💧 Active presenters and participants in the monthly National Park Service Mississippi River Forum presentations.
- 💧 Applied for pass-through funding for Watershed Districts, WMOs and Soil and Water Conservation Districts through Minnesota Department of Health (MDH) Implementation Grants.
- 💧 **Grant Opportunities:** The City of St. Cloud received Clean Water Partnership grants for stormwater management.



The **St. Paul Regional Water Services, (SPRWS)** continues to partner with the Vadnais Lake Area Watershed Management Organization, (VLAWMO.) To support the Lambert Creek Bacterial Source Identification Project, SPRWS staff are analyzing *E. coli* levels. The project focus is on determining the source of the *E. coli*. Year three of the Lambert Creek Bacterial Source

Identification Project was completed in October 2016. SPRWS' Water Quality unit has conducted the *E. coli* analysis for this project.

View into County Rd F flume from Centerville Rd. This shows Lambert Creek coming from Grass Lake (left side,) the storm sewer drainage from Centerville Rd (right side) and where they converge, heading towards the flume (top center.) The flume, storm sewer inlet and the Grass Lake inlet were three of the eight areas sampled during storm events.



EPA Administrator Gina McCarthy and Governor Mark Dayton visit SPRWS



April 8, 2015 EPA Administrator Gina McCarthy makes a stop at Saint Paul Regional Water Services on her Clean Water Tour. The purpose of the Clean Water Rule is to restore protections for the streams and wetlands that provide drinking water to 1 in 3 Americans.



Staff from the plant and other sections of the water utility attended the press conference with Governor Mark Dayton, second from left, on the success of the water utility and the challenges urban water utilities face. The press conference included speeches from the Governor, the Mayor of Saint Paul, Chris Coleman, and the President of the Board of Water Commissioners, Matt Anfang. April 29, 2016.

SPRWS hosted tours for “Water Journey Camps,” the current iteration of the Upstream/Downstream project from Jonee Kulman Brigham and the Institute on the Environment. SPRWS staff guided campers on tours of the intake on the Mississippi River, at Sucker Lake, and the McCarron's Water Treatment Plant. The camps serve youth ages 6-8 and 9-11 by getting children outdoors exploring the natural environment, doing service plantings, and teaching the public how to conserve water and improve water quality to help protect natural areas and drinking water.



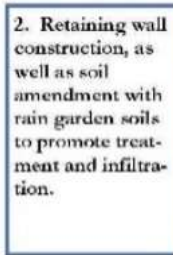
The **City of Minneapolis** is participating in a study by the Environmental Protection Agency that seeks to correlate land cover change (forest loss, agricultural increase, urbanization) to increases in drinking water treatment costs. Additional objectives are to relate land cover change to water quality change and develop land cover change scenario for Minneapolis drinking water watershed. The study area includes all areas upstream of the drinking water intakes serving Minneapolis and surrounding areas served; about one-third of the state.

Installation

Detailed analysis of the SC R3 catchment resulted in the identification of high priority properties for rain garden placement. These locations were identified to maximize the effectiveness of the installed rain gardens by ensuring large drainage areas. Property owners at high priority locations were then contacted for potential rain garden installation. A total of six curb-cut rain gardens were installed in 2014.



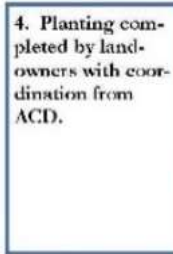
1. Site preparation and soil excavation to achieve desired side slopes and 1 ft. maximum ponding depth.



2. Retaining wall construction, as well as soil amendment with rain garden soils to promote treatment and infiltration.



3. Placement and installation of pretreatment chamber and preparation for new inlets.



4. Planting completed by land-owners with coordination from ACD.

Minneapolis partnered with the Anoka Conservation District and the Coon Creek Watershed District – supplying MDH implementation grant dollars (\$10,000) to help fund rain gardens to decrease stormwater volume and reduce pollutant load by increasing infiltration.

Minneapolis water officials are in the pilot project stage of trying to use about a dozen 3-inch-long, light brown mussels as an early-warning system for potential contaminants in the Mississippi River, from which the city draws drinking water for itself and seven other cities.

The work was initially supported by a U.S. Environmental Protection Agency grant, and more recently by technical help from an EPA scientist. Minneapolis and Moline, Ill., are working with the EPA to see if the freshwater mussels can serve as a warning system for the cities that draw water from the upper Mississippi.

The [mussel's] bivalves are very sensitive to any kind of change in their environment. Normally, they draw water through a slight gap between their shells. That's how they filter nutrients from the water. But they're sensitive enough that a contaminant will cause them to clamp down. It could be a heavy metal such as copper or cadmium, an herbicide such as atrazine, or an industrial solvent such as toluene. In the near future they are hoping to have email alerts sent to lab and operations staff when they detect contaminants.



The City of St. Cloud has completed the following projects in NE St. Cloud to improve water quality of rainwater runoff from the 367-acre drainage area. The City received two Clean Water Grants. The grants are being used for projects like the two showcased below that will capture pollutants (sediment) so they do not enter the Mississippi River.

Street Sweeper 🌿 Located Throughout Area

PROJECT BACKGROUND

The City partnered with Benton SWCD to purchase a regenerative air style street sweeper using a Clean Water Legacy Grant through the Board of Water and Soil Resources. The virtually dustless, regenerative air sweeper uses high velocity air to dislodge sediment and debris from the road surface. The material is stored in the hopper until the unit is emptied. A targeted street sweeping schedule was developed to optimize removal rates to keep sediment and other pollutants from entering the Mississippi River. The 367 acre watershed is split into three priority zones that are swept according to water quality needs. Sweeping is focused in the area to improve fine dust particle removal from the streets.



Annual Pollution Reduction

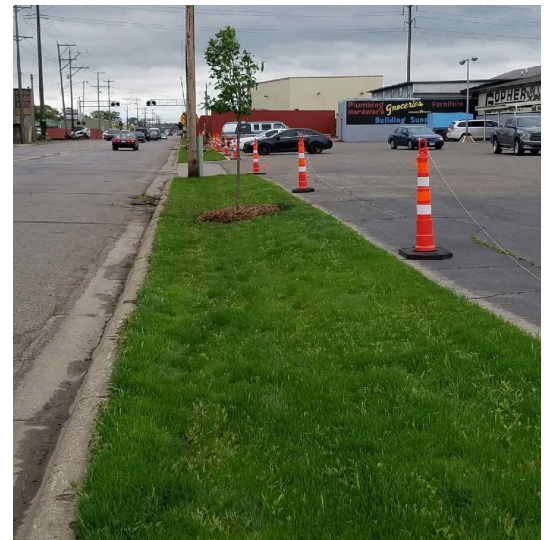
2.0 pounds of phosphorus

7,400 pounds of solids

East Germain Parking Lot 🌿 223 East St. Germain Street

PROJECT BACKGROUND

The City installed parking lot improvements at the intersection of East St. Germain St. and 3rd Avenue NE. The project replaced an eroding gravel parking lot with a paved lot and installed a rainwater garden and underground infiltration system to treat stormwater runoff from the parking lot, adjacent buildings and the street. The project added more greenspace to the area and native flowers and grasses within the rain garden. This project also meets the City's future land redevelopment standards.



PROJECT SUMMARY

- Constructed June 2016.
- Construction cost: \$121,000
- Coordinated project with Economic Development, Planning, and Public Works Departments.

SUSTAINABILITY BENEFITS – This project added seven new trees 650 native plants and will reduce the volume of water and pollutant loading to the Mississippi River.

Annual Pollution Reduction

0.8 pounds of phosphorus

520 pounds of sediment

125,000 gallons of water infiltrated

Pervious Right-of-Way 🌿 Lincoln Avenue & Crescent Street NE

PROJECT BACKGROUND

The paved and gravel surfaces in the City's right-of-way were replaced with green vegetation (grass & trees) using a Clean Water Partnership Grant. The project created 1.3 acres of green space. Runoff from an additional 6.8 acres will flow over vegetation before entering the Mississippi River. The project will remove three tons of sediment annually from the stormdrain system and Mississippi River.

PROJECT SUMMARY

- Construction cost: \$120,000.
- Constructed May-June 2016.
- Coordination with Lincoln Avenue Corridor Plan.

SUSTAINABILITY BENEFITS – This project added 62 new trees, 1.3 acres of green space and will reduce the volume of water and pollutant loading to the Mississippi River.

Annual Pollution Reduction

10.1 pounds of phosphorus

6,000 pounds of sediment

2.5 million gallons of water infiltrated

Conferences: UMRSWPP staffed a tradeshow booth at the 2015 (MAWD) Conference in December. The purpose was networking and education with the other Watershed Districts, Watershed Management Organizations, state and local government agencies, and other private consulting firms. Understanding what the UMRSWPP is about and inclusion of drinking water protection in plan updates is an important step in protecting the drinking water resource.

2015 Financial Expenditures: \$6,727.60 was spent on meetings, grant writing and educational display items. Dedicated funding is committed to this project by all three utilities.

UMRSWPP Dedicated Fund Expenditure 2015	
Beginning Balance (2015)	\$33,711.62
2015 Expenses (non-grant)	-\$6,727.60
2015 Utility Contributions	\$10,000.00
2015 Interest Income	\$275.45
Ending Balance	\$37,259.47

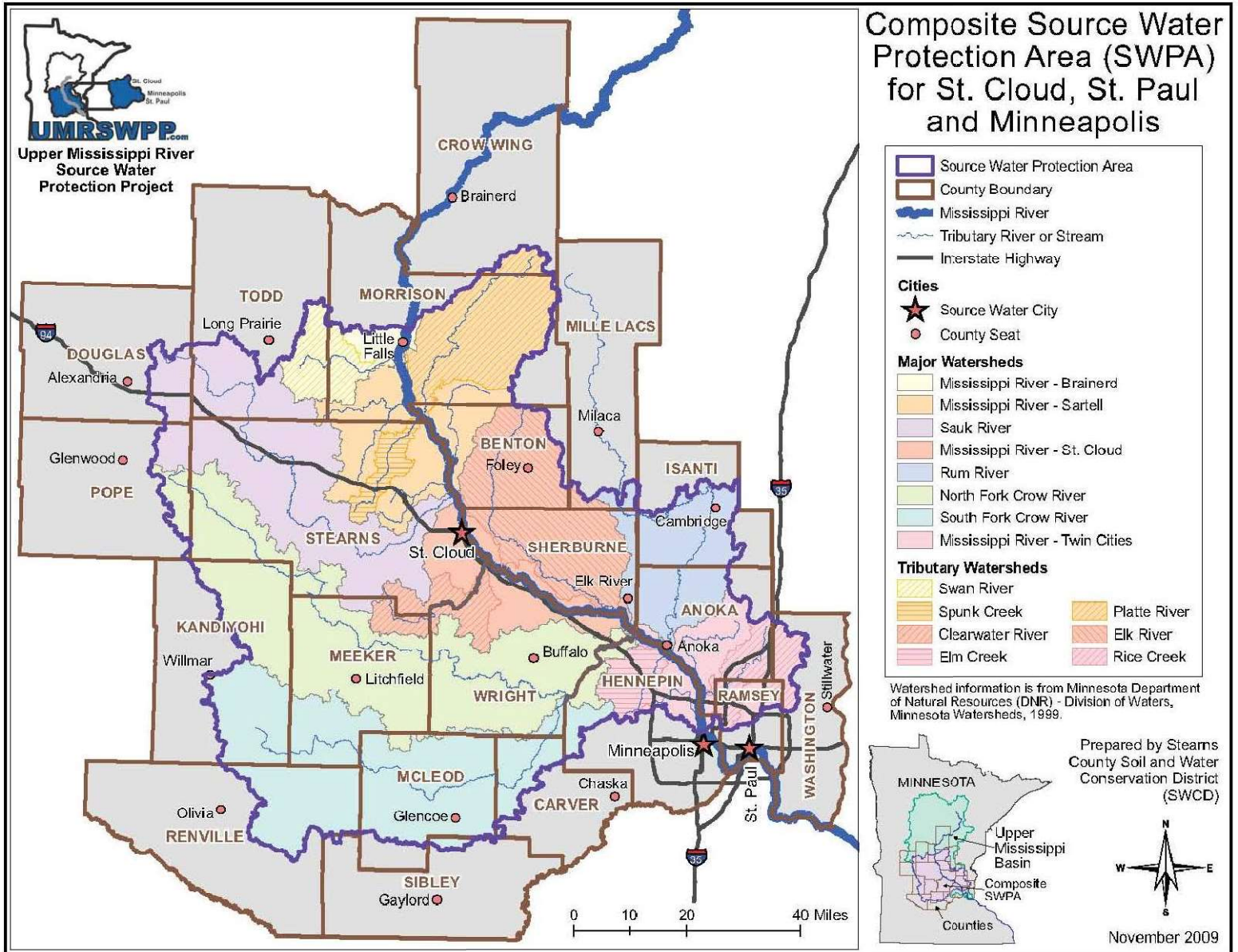
UMRSWPP Plan Update: The UMRSWPP team is working with the Minnesota Department of Health to update the source water protection plan criteria to better reflect the current needs of the drinking water supply and the protection of the resource. UMRSWPP is looking at focusing on stormwater runoff and other threats to the drinking water supply – the Mississippi River. We will also be focusing on maintaining close relationships with the Watershed Districts and the Water Management Organizations and participation in the “One Watershed, One Plan” advisory group. Please contact us if you are interested in participating on our advisory team.

If you or anyone you know wish to be added to our email list, please send a request to

umrswpp@gmail.com

For additional information, contact the following project staff:

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