



## 2015 Annual Activity Report and Financial Statement







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Vermillion River Watershed  
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April 2016





# Actions by the Vermillion River Watershed Joint Powers Board in 2015

## January

VRW 15-00: Election of Officers

VRW 15-03: Authorization to Execute a Joint Powers Agreement with Dakota County Soil and Water Conservation District (SWCD) for Services in 2015

VRW 15-04: Authorization to Execute a Joint Powers Agreement with Scott Soil and Water Conservation District (SWCD) for Services in 2015

VRW 15-05: Authorization to Sign Audit Entry Letter with the Office of the State Auditor (OSA)

## February

VRW 15-08: Authorization to Execute a Grant Agreement with Friends of the Mississippi River (FMR) for Vermillion River Stewards Program in 2015

VRW 15-09: Authorization to Execute a Contract with the Minnesota Department of Natural Resources (DNR) to Collect and Compile Discharge Data and Develop Rating Curves at Sites on the Vermillion River

VRW 15-10: Authorization to Issue a Request for Proposal (RFP) to Develop an Implementation Program and Capital Improvement Program for the Vermillion River Watershed Plan Update and Amending the Vermillion River Watershed Joint Powers Organization (VRWJPO) 2015 Budget

VRW 15-11: Appointment of Brian Rohrenbach of Rosemount, Jeanie Fredlund of Eureka Township, and James Guttman of Lakeville to the Vermillion River Watershed Planning Commission (WPC)

## March

VRW 15-14: Authorization to Execute a Joint Powers Agreement with Dakota County to Provide Cost Share for the Middle Creek Restoration as Part of the Dakota County CSAH 64 Road Project

VRW 15-15: Authorization to Execute a Contract with Wenck Associates for Fish Sampling, Trend Analyses, and Technical Support Services in 2015 to Develop Recommendations for a Site Specific Water Quality Standard for Biota and Amend the Vermillion River Watershed Joint Powers Organization (VRWJPO) 2015 Budget

## April

VRW 15-18: Authorization to Execute a Stewardship Grant with Southern Dakota County Sportsmen's Club for Watershed Clean-up and Trout Stocking, Environmental Education, and Streambank Planting

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- II. Vermillion River Monitoring Network 2015 Report Summary
- III. Fact Sheets on Capital Improvement Projects, WRAPS
- IV. Public Communication about the Vermillion River Watershed

VRW 15-19: Authorization to Submit 2014 Vermillion River Watershed Joint Powers Organization (VRWJPO) Annual Activity Report and Financial Statement to the Minnesota Board of Water and Soil Resources (BWSR)

VRW 15-20: Authorization to Execute a Contract with Emmons & Olivier Resources (EOR) to Develop an Implementation Plan and Capital Improvement Program (CIP) for the Vermillion River Watershed Plan Update

VRW 15-21: Authorization to Allocate Cost Share for Wetland and Stream Restoration Projects in Partnership with the City of Lakeville and Mattamy Homes' Avonlea Residential Development

#### **May**

VRW 15-24: Approval of Proposed Amendments to the Vermillion River Watershed Joint Powers Organization (VRWJPO) 2015 Budget

VRW 15-25: Authorization to Execute a Grant Agreement with the Minnesota Department of Natural Resources (DNR) for the Middle Creek Restoration, in Conjunction with the Dakota County CSAH 64 Project

VRW 15-26: Delegation of a Limited Authority for Contracts and Expenses to the Vermillion River Watershed Joint Powers Organization (VRWJPO) Administrator

VRW 15-27: Adoption of a Proposed Vermillion River Watershed Joint Powers Organization (VRWJPO) Mission Statement

#### **June**

VRW 15-30: Authorization to Execute a Grant Agreement with Carpenter St. Croix Valley Nature Center for Water Quality Outreach Activities in the City of Hastings

#### **July**

VRW 15-33: Schedule a Public Hearing to Receive Comments on the Draft Vermillion River Watershed Joint Powers Organization (VRWJPO) 2016 Budget and Watershed Management Tax District Levy

VRW 15-34: Appointment of Chuck Clanton of Hampton Township to the Vermillion River Watershed Planning Commission (WPC)

VRW 15-35: Authorization to Issue a Request for Proposals for Redesign of the Vermillion River Watershed Website

VRW 15-36: Authorization to Execute a Joint Powers Agreement with the City of Lakeville to Cost Share a Stormwater Treatment Project as Part of the Hamburg Avenue Reconstruction

VRW 15-37: Authorization to Execute a Joint Powers Agreement with the City of Lakeville to Cost Share a Stream and Wetland Restoration Project within the Avonlea Development

VRW 15-38: Authorization to Execute a Joint Powers Agreement with the City of Rosemount to Cost Share an Update to the VRWJPO Hydrologic Model

#### **August**

VRW 15-41: Conduct a Public Hearing to Receive Comments on and Adoption of the Preliminary VRWJPO 2015 Budget and Vermillion River Watershed Management Tax District Levy

**September**

VRW 15-44: Authorization to Release the Draft 2016-2025 Vermillion River Watershed Management Plan for Public and Stakeholder Comment

VRW 15-45: Authorization to Amend the Joint Powers Agreement with the City of Lakeville to Cost Share a Stormwater Treatment Project as Part of the Hamburg Ave. Reconstruction and Amend the VRWJPO 2015 Budget

**October**

VRW 15-48: Authorization to Execute a Grant Agreement with ISD 194 Lakeville South High School to Provide Transportation for the “Trout in the Classroom” Program Field Days

VRW 15-49: Authorization to Execute a Grant Agreement with Minnesota Trout Unlimited to Produce Educational Videos Featuring the “Trout in the Classroom” Program at ISD 194 and Watershed Activities of the Vermillion River Watershed Joint Powers Organization (VRWJPO)

VRW 15-50: Authorization to Execute a Joint Powers Agreement (JPA) with Dakota County Environmental Resources for Public Outreach and Communication Services in 2016

VRW 15-51: Authorization to Execute a JPA with the Metropolitan Council to Implement Stormwater Improvements at the Minnesota Zoo and Amend the Vermillion River Watershed Joint Powers Organization (VRWJPO) 2015 Budget

VRW 15-52: Authorization to Execute a JPA with the Minnesota Zoo for Design and Construction of a Stormwater Re-use Project and Amend the VRWJPO 2015 Budget

VRW 15-53: Authorization to Execute a Contract with a Selected Vendor for VRWJPO Website Redesign Services

**December**

VRW 15-56: Adoption of 2016 VRWJPB Meeting Schedule

VRW 15-57: Adoption of Final VRWJPO 2016 Budget

VRW 15-58: Authorization to Amend the Joint Powers Agreement (JPA) with the City of Rosemount to Cost Share an Update to the Vermillion River Watershed Joint Powers Organization (VRWJPO) Hydrologic Model





## 2015 Annual Activity Report and Financial Statement



### Introduction

The Vermillion River and its tributaries wind through rural, suburban, and urban landscapes, traveling from the headwaters in Scott County to two confluences with the Mississippi River at the cities of Hastings and Red Wing. The Vermillion River Watershed encompasses 335 square miles of land and portions of 20 cities and townships. It is the largest watershed in the seven-county Twin Cities Metropolitan area.

Approximately 49 miles of the Vermillion River's main stem and tributaries are Minnesota Department of Natural Resources (DNR) designated trout streams. The Vermillion River Watershed's self-sustaining population of brown trout makes the river a rare natural resource in a rapidly growing metropolitan area.

The river and watershed are managed according to a Joint Powers Agreement signed by Dakota and Scott Counties in 2002. This agreement formed the Vermillion River Watershed Joint Powers Organization (VRWJPO) to manage the watershed as required by Minnesota law (Minn. Stat. Chapter 103B.201).

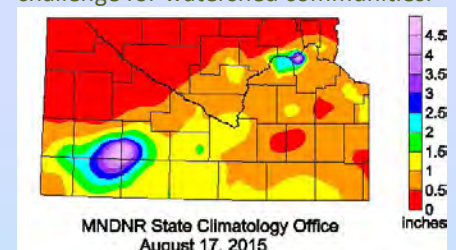
The governing body of the VRWJPO is the Vermillion River Watershed Joint Powers Board (VRWJPB), consisting of two Dakota County Commissioners and one Scott County Commissioner. The VRWJPB directs watershed administration, policy, budget, and implementation of the Vermillion River Watershed Management Plan. A nine-member citizen advisory group, the Watershed Planning Commission (WPC), supports and advises the VRWJPB in developing

### 'Mega-rain' events in 2015

Minnesota Public Radio News broadcast a January 30, 2015, report on climate change in Minnesota. An excerpt follows:

In Minnesota and the Midwest generally, 37 percent more rain falls in these big 2½-inch-plus storms than did 50 years ago, said researcher Ken Kunkel of the National Climatic Data Center in North Carolina. "We've found that the last decade actually has the largest number of these events since the network began in the late 19th Century."

Locally, two mega-rain events hit the upper Vermillion River Watershed in 2015, with the City of Burnsville in the bullseye. On July 6, Burnsville received 4.73 inches of rain and Farmington more than 3.55 inches. On August 16-17, a summer storm brought another whopping 5.29 inches of rain to Burnsville. Managing these large inflows of stormwater will be an ongoing challenge for watershed communities.



and implementing the Watershed Plan. The VRWJPO also consults with a Technical Advisory Group (TAG) consisting of local and state government partners to discuss emerging scientific, technical, and policy impacts on the Vermillion River Watershed.

The VRWJPO is staffed with an administrator from Dakota County and a co-administrator from Scott County; other Dakota and Scott county employees serve as VRWJPO staff.

The counties' respective Soil and Water Conservation Districts (SWCDs) provide extensive marketing, monitoring, and technical assistance services for the VRWJPO. Additional technical or specialized services are provided through contracts with consultants.

Dakota and Scott counties established special tax districts within their portions of the watershed to provide the primary funding for watershed planning and activities. This *2015 Annual Activity Report and Financial Statement* summarizes the VRWJPO's activities in 2015 and plans for 2016 to protect and improve the Vermillion River Watershed.

## Vermillion River Watershed Joint Powers Board

- ❑ Commissioner Mike Slavik, Dakota County District 1 (Chair), 701 5th Street West, Hastings, MN 55033
- ❑ Commissioner Tom Wolf, Scott County District 2 (Vice-chair), 19225 Foxfield Drive, Prior Lake, MN 55372
- ❑ Commissioner Mary Liz Holberg, Dakota County District 6 (Secretary/Treasurer), 12195 Upper 167th Street West Lakeville, MN 55044

## Watershed Planning Commission (during 2015)

A nine-member WPC consisting of citizens of the watershed appointed by the VRWJPB advises the Board regarding its duties under the Joint Powers Agreement. The WPC is responsible for guiding implementation of the Watershed Plan, annual work plan, and budget. The WPC also recommends actions regarding disputes that occur over the elements of the Joint Powers Agreement. The WPC members during 2015 were:

- ❑ Ron Mullenbach, Chair, 9816 211<sup>th</sup> Street West, Lakeville, MN 55044
- ❑ Ken Betzold, 1950 220<sup>th</sup> Street East, Farmington, MN 55024
- ❑ Chuck Clanton, 23005 Lewiston Blvd, Hampton, MN 55031



Ron  
Mullenbach

**Mullenbach ends 6-year WPC term**  
*Retiring chair supported “fair and equitable standards across all property types.”*

Commissioner Ron Mullenbach joined the Vermillion River Watershed Planning Commission (WPC) in 2010. As a land manager for the residential development firm D.R. Horton, Inc., in Lakeville, Ron appreciates the relationship between land use and water quality. His practical knowledge about land management, regulatory compliance, and environmental issues served the Vermillion River Watershed well in his six years as a WPC Commissioner and WPC chair in 2015.

During 2015, the WPC played a major role in reviewing and improving the draft 2016-2025 Vermillion River Watershed Management Plan, a 10-year “road map” for the watershed. Ron’s leadership style was focused, detail-oriented, and effective in ensuring that the WPC completed its work on time. His WPC colleagues and the VRWJPO staff thank Ron for his dedicated service, common-sense perspectives, and commitment to environmental outcomes that benefit all segments of the community.

- Jeanie Fredlund, 23680 Jersey Court, Lakeville, MN 55044
- John Glynn, 939 Hopewell Lane, Apple Valley, MN 55124
- James Guttman, 9282 178<sup>th</sup> Street West, Lakeville, MN 55044
- Mark Henry, 1535 230<sup>th</sup> Street West, Farmington, MN 55024
- Brian Rohrenbach, 12485 Blanca Avenue West, Rosemount, MN 55068
- Vacancy (Scott County)

## VRWJPO Administrators and Staffing

The VRWJPO is housed in the Dakota County Environmental Resources Department. Each county provides a VRWJPO co-administrator to work on watershed issues, and other Dakota and Scott county staff members provide support for specific projects.

- Mark Zabel, VRWJPO Administrator (Dakota County),  
14955 Galaxie Avenue, Apple Valley, MN 55124, Phone: 952-891-7011, Fax: 952-891-7031,  
[mark.zabel@co.dakota.mn.us](mailto:mark.zabel@co.dakota.mn.us)
- Melissa Bokman, VRWJPO Co-administrator (Scott County),  
200 Fourth Avenue West, Shakopee, MN 55379, Phone: 952-496-8887, Fax: 952-496-8496,  
[mbokman@co.scott.mn.us](mailto:mbokman@co.scott.mn.us)
- Travis Thiel, Environmental Specialist, Watershed (Dakota County),  
14955 Galaxie Avenue, Apple Valley, MN 55124, Phone: 952-891-7546, Fax: 952-891-7031,  
[travis.thiel@co.dakota.mn.us](mailto:travis.thiel@co.dakota.mn.us)
- Paula Liepold, Environmental Specialist, Water Education (Dakota County),  
14955 Galaxie Avenue, Apple Valley, MN 55124, Phone: 952-891-7117, Fax: 952-891-7031,  
[paula.liepold@co.dakota.mn.us](mailto:paula.liepold@co.dakota.mn.us)
- Katherine Carlson, Environmental Specialist, Water Resources (Dakota County),  
14955 Galaxie Avenue, Apple Valley, MN 55124, Phone: 952-891-7086, Fax: 952-891-7031,  
[katherine.carlson@co.dakota.mn.us](mailto:katherine.carlson@co.dakota.mn.us)

## Legal Consultant

The Joint Powers Agreement for the VRWJPO provides for consultation from the Dakota County Attorney's Office on legal and contractual matters, including revisions to the Watershed Plan, Rules, and Standards. The current attorney assigned to the VRWJPO is:

- Helen Brosnahan, Assistant County Attorney, 1560 Hwy. 55, Hastings, MN 55033, Phone: 651-438-4404, [helen.brosnahan@co.dakota.mn.us](mailto:helen.brosnahan@co.dakota.mn.us)

## Technical Advisory Group (TAG)

The TAG consists of agencies and organizations with interest and expertise in watershed issues. The TAG generally meets quarterly to discuss projects and policies from a scientific and technical perspective. In 2015, the TAG met almost every month to provide consultation on the draft 2016-2025 Vermillion River Watershed Management Plan. Representatives include, but are not limited to:

- ❑ Cities and townships within the Vermillion River Watershed;
- ❑ Dakota and Scott counties;
- ❑ Dakota and Scott County SWCDs;
- ❑ Metropolitan Council;
- ❑ Minnesota Pollution Control Agency (MPCA);
- ❑ Minnesota Department of Agriculture (MDA);
- ❑ Minnesota Department of Health (MDH);
- ❑ Minnesota Department of Natural Resources (DNR);
- ❑ Minnesota Board of Water and Soil Resources (BWSR);
- ❑ Natural Resource Conservation Service (NRCS);
- ❑ Environmental Consulting Firms;
- ❑ University of Minnesota Extension;
- ❑ Environmental Groups; and
- ❑ Other interested parties.

## Consultants

The VRWJPO enters into contracts with Dakota and Scott County SWCDs to perform services, including design and implementation of Capital Improvement Projects, water-quality monitoring, database management, reporting, and other tasks.

- ❑ Brian Watson, Manager, Dakota County SWCD, 4100 220<sup>th</sup> Street West, Suite 102, Farmington, MN, 55024, Phone: 651-480-7777, Email: [brian.watson@co.dakota.mn.us](mailto:brian.watson@co.dakota.mn.us)
- ❑ Troy Kuphal, Manager, Scott SWCD, 7151 West 190<sup>th</sup> Street, Suite 125, Jordan, MN, 55352, Phone: 952-492-5425, Email: [tkuphal@co.scott.mn.us](mailto:tkuphal@co.scott.mn.us)

In February 2015, the VRWJPB authorized staff to issue a **Request for Proposal (RFP)** seeking the assistance of an environmental consultant with the appropriate technical, regulatory, and financial experience to help develop the Vermillion River Watershed Management Plan Implementation Section and Capital Improvement Program (Res. No. VRW 15-10). The VRWJPO received seven proposals, and selected Emmons & Olivier Resources to complete the project. The RFP is included in Appendix I.

In July 2015, the VRWJPB authorized staff to issue a **Request for Proposal (RFP)** for a website design company to update and improve the VRWJPO website (Res. No. VRW 15-35). The VRWJPO received several proposals and scheduled interviews with the top three candidates. The VRWJPO staff recommended 144design to begin the website redesign. The RFP is included in Appendix I.

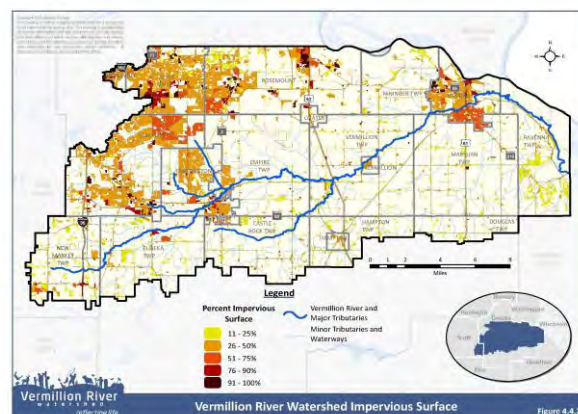


In November 2015, the VRWJPO issued a **Request for Proposals** for a study of water quality, pollutant sources, and proposed improvements for the Minnesota Zoo's Main Lake, one of four major initiatives planned as part of the Metropolitan Council's grant to implement stormwater improvements on the zoo campus.

In 2014, the VRWJPO issued a **Request for Qualifications (RFQ)** to develop a general consultant list for 2014-2015, as is required by Minn. Rules 8410, which was in effect through December 2015.

## Consultant List for 2014-2015

Consultant	Contact	Street Address	City	State	Zip Code
Barr Engineering	Len Kremer	4700 W. 77 <sup>th</sup> St., #200	Edina	MN	55435
Bolton & Menck, Inc.	William Douglas	1960 Premier Drive	Mankato	MN	55601
Cardno JFNew	Mark Prancus	P.O. Box 1528	Eau Claire	WI	54703
Emmons & Olivier	Brett Emmons	651 Hale Avenue N.	Oakdale	MN	55128
Houston Engineering	Chris Otterness	6901 E. Fish Lake Rd., #140	Maple Grove	MN	55369
Howard R. Green Co.	Jonathon Kusa	2550 University Ave. W.	St. Paul	MN	55114
Hydromethods	Kent Brander	1551 Livingston Avenue #104	W. St. Paul	MN	55118
Inter-Fluve Inc.	Marty Melchior	301 S. Livingston St. #200	Madison	WI	53714
Limno-Tech Inc.	Hans Holmberg	7300 Hudson Blvd. #295	Oakdale	MN	55128
MSA	David Wierzba	60 Plato Blvd. E. #140	St. Paul	MN	55106
Stantec Consulting	Bradley Schleeter	2335 Hwy. 36 West	St. Paul	MN	55113
Tetra Tech Environ.	Scott Tracy	P.O. Box 61	Stillwater	MN	55082
TKDA	Patrick McLarnon	444 Cedar Street, #1500	St. Paul	MN	55101
Wenck Associates	Joe Bischoff	1800 Pioneer Rd. Creek Ctr.	Maple Plain	MN	55359



One GIS map is worth a thousand words

How can the VRWJPO show the complex physical conditions in the Metro area's largest watershed? The VRWJPO consulted with the Dakota County Geographic Information Systems (GIS) staff. GIS technician Beth Koch used data analysis, mapping, and design expertise to convey watershed features intrinsic to the draft 2016-2025 Vermillion River Watershed Management Plan; see one example, left.

## 2015 Work Plan Activities

The Vermillion River Watershed Joint Powers Organization (VRWJPO) is poised to move into the next decade of watershed management after a successful year of intensive planning.

The VRWJPO and Minnesota Pollution Control Agency (MPCA) completed the [Watershed Restoration and Protection Strategy \(WRAPS\)](#) and Total Maximum Daily Load (TMDL) study for the Vermillion River Watershed. The U.S. Environmental Protection Agency (EPA) approved the WRAPS in December 2015.

The WRAPS process integrated research, science, local consultation, and civic engagement to achieve significant results, identifying:

- ▣ Primary and secondary stressors affecting watershed fish and macroinvertebrates – turbidity, low dissolved oxygen, elevated stream temperature, and habitat loss.
- ▣ Clear association between the heaviest pollutant loads and high-flow events, such as the intense rainstorms documented in the watershed during the past few years.
- ▣ Prevalence of bacterial impairment throughout the watershed, without obvious sources to account for that prevalence.
- ▣ Priorities for protection, such as reducing nitrate in surface water prior to establishment of new allowable limits for nitrate in surface water.
- ▣ Tables showing strategies for restoration and protection by subwatershed, allowing local governments and communities to focus efforts to achieve pollutant reductions.
- ▣ Waste load allocations for municipal separate storm sewer system (MS4) permittees and load allocations for unincorporated communities.
- ▣ More effective methods of civic engagement, the benefits of which extend beyond the WRAPS process into all VRWJPO activities.

## Partners Plus: Lake Alimagnet

It is shallow, impaired for nutrients (primarily phosphorus), and surrounded by developed areas. But Lake Alimagnet, located in the Cities of Burnsville and Apple Valley, has many friends supporting a quest for better lake water quality.

The **Cities of Burnsville** and **Apple Valley** completed a [lake management plan for Alimagnet](#) in 2005, and have been working for 10 years on improvements in the lake and surrounding neighborhoods. Among the actions taken by many partners:

- ▣ **Alimagnet Lake Association**, composed of about 60 lakeside homeowners, helped fund a winter aeration system.
- ▣ The cities dredged three stormwater basins that were draining pollutants to the lake.
- ▣ The cities, **Department of Natural Resources (DNR)**, and lake association periodically remove rough fish and invasive weeds.
- ▣ The lake association removes curlyleaf pondweed every spring.
- ▣ Homeowners completed shoreline planting and two raingarden installations with technical assistance from **Dakota County Soil and Water Conservation District (SWCD)** and small grants (\$250) from the **VRWJPO**.
- ▣ **Friends of the Mississippi River (FMR)** hosted a rain barrel workshop for Lake Alimagnet homeowners in 2015.
- ▣ **Great River Greening** hosted a buckthorn removal and plant restoration project at Lake Alimagnet in 2014.

The *Star/Tribune* (April 3, 2012) reported on improvements seen in lake monitoring data collected by **Metropolitan Council Environmental Services (MCES)**. Data show that in 10 years lake clarity has more than doubled and phosphorus and chlorophyll-a levels have been cut in half.



These civic engagement approaches characterized many of the VRWJPO's activities in 2015, including meetings with two cities, three townships, a lake association, and the Dakota County Township Officers to discuss proposed pollutant-reduction waste load allocations or load allocations in the draft WRAPS.

The [draft 2016-2025 Vermillion River Watershed Management Plan](#) activities in 2015 involved integrating the public's issues and priorities (gathered throughout 2014) with the scientific, technical, and public outreach findings gathered during the term of the prior Watershed Plan. The findings included information from:

- ▣ The VRWJPO's standard data-collection processes (Vermillion River Monitoring Network, Biomonitoring Plan);
- ▣ Routine staff and contractor programs (Wetland Health Evaluation Program, Vermillion River Stewards Program, Landscaping for Water Quality projects); and
- ▣ Special studies (WRAPS, subwatershed assessments, geomorphic assessments).

Throughout the development of the Plan, the Watershed Planning Commission (WPC) and Technical Advisory Group (TAG) consulted with the VRWJPO. WPC and TAG participation was crucial in ensuring that the draft Watershed Plan was practical, accurate, and implementable.

The VRWJPO contracted with Emmons & Olivier Resources (EOR) to develop the Watershed Plan implementation section and compile and weave together all of these pieces. In the process, EOR consulted with cities about their planned Capital Improvement Programs, working to incorporate prospective projects into the Plan. VRWJPO staff met weekly to shape and draft the 2016-2025 Vermillion River Watershed Management Plan throughout 2015. Dakota County GIS staff developed maps of watershed conditions based on the most recent data layers.

The Implementation Plan Table developed by EOR integrated the citizen- and stakeholder-based Plan goals, objectives, and actions in three ways. Some of the action steps were ongoing or part of VRWJPO staff functions and were categorized as such. Other action steps focused on installing or promoting practices in specific subwatersheds, so each subwatershed has a plan incorporating these actions and recommendations from the geomorphic assessments, WRAPS, local CIP, and other work targeting specific locations. The remaining action steps tend to be new initiatives, programs, and projects that require additional planning, research, or resources.

The VRWJPO released the draft Watershed Plan for the 60-day public and state agency review on October 1, 2015, advertising its availability by posting the Plan on the website, sending the link to members of the WPC and TAG, issuing a news release, and providing state agency contacts with the Plan. The VRWJPO received more than 200 distinct comments on the Watershed Plan from state agencies, local government, advisory group members, and others during the 60-day comment period. These comments inspired changes in the Plan, including the addition of sections on Plan evaluation, figures, and references. The Plan sections on biomonitoring, implementation, and amendments also reflect many comments provided by stakeholders.

The VRWJPO held a Public Hearing on the draft 2016-2025 Vermillion River Watershed Management Plan on January 26, 2016. Members of Trout Unlimited (TU), an organization known for its commitment to cold-water fisheries and volunteer habitat improvement efforts in the Vermillion River Watershed, showed up to express concerns about a site-specific standard. The TU members had been informed that the draft Watershed Plan requested 2A cold-water streams be reclassified as 2B warm-water streams. This language (or intent) appeared nowhere in the draft Watershed Plan. The request for a “site-specific standard” had been interpreted as a stream classification change that would affect all stream standards and reduce water quality protection for the Vermillion River’s 2A reaches. The VRWJPO changed language in the draft Plan to clarify its intention to protect and improve water quality in the Vermillion River’s 2A streams.

The final draft Watershed Plan was released for the state agency 90-day review process in early March 2016. The VRWJPO anticipates that the Minnesota Board of Water and Soil Resources (BWSR) will approve the Plan in May or June 2016. The VRWJPB is expected to adopt the Plan in June or July 2016.

The VRWJPO’s [Biomonitoring Plan](#) and efforts to find an achievable biotic standard for fish and macroinvertebrates in the Vermillion River’s 2A cold-water streams have been met with both acknowledgement and opposition in 2015 and early 2016 (see paragraph above on the Watershed Plan public hearing). The MPCA suggested in 2014 that the VRWJPO develop recommendations about how to protect and improve fish and macroinvertebrates in its “cool” water streams. In 2015, the VRWJPO contracted with Wenck Associates (the consulting firm that conducts fish sampling for the Biomonitoring Plan) to provide a technical review of six years of biomonitoring data to the MPCA for agency consideration. Wenck Associates will provide this technical review in 2016. The MPCA is proposing to amend the rule that establishes water quality standards for Class 2 waters (Minn. Rules 7050.0222), which it announced in December 2015. The amendment would incorporate a tiered aquatic life uses (TALU) framework that may affect biotic standards for rivers and streams, but it is unclear whether the TALU would apply to the Vermillion River’s 2A streams.

The only wetland bank located within the Vermillion River Watershed sold its final credits in 2014, and the VRWJPB allocated \$500,000 from the Capital Improvement Program (CIP) budget for [development of a wetland bank](#). In 2015, the VRWJPO, Minnesota Board of Water and Soil Resources (BWSR), Dakota County, and Dakota County SWCD identified an interested landowner with an estimated 110 acres of potentially restorable wetland. Work on establishing a wetland bank will continue in 2016.

The VRWJPO’s studies on thermal impacts to the Vermillion River’s trout streams recommended two main strategies for mitigating the impacts of elevated stream temperature on the brown trout population. The first was maintaining cold groundwater inflow to the gaining reaches in the upper watershed. The second was to plant trees to reduce erosion, filter sediment and nutrients, reduce runoff temperatures, and improve habitat. The VRWJPO developed a [Trees Aiding Water Quality \(TAWQ\) project to install trees](#) along streams with low dissolved oxygen, elevated summer stream temperatures, or insufficient vegetation. The VRWJPO applied for grants (Clean Water Partnership, Clean Water Fund) to implement the tree-planting initiative in 2014, but did not receive an award. The search for funding will continue in 2016. Tree shading is a proven and inexpensive method of reducing stream



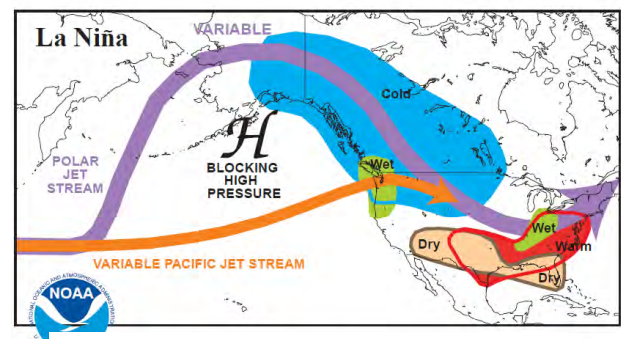
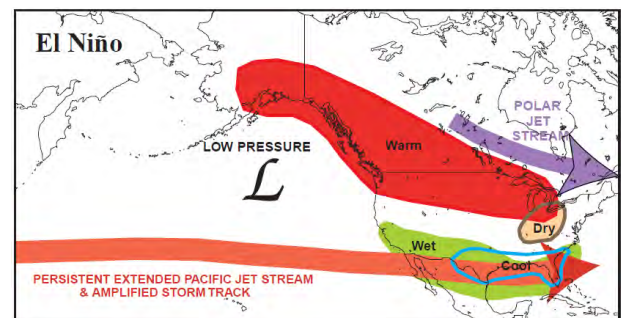
temperature, stabilizing banks to reduce erosion, filtering stormwater, providing wildlife habitat, and sequestering CO<sub>2</sub>. In 2015, the VRWJPO developed plans for several CIP stream restoration projects that provide multiple benefits, including tree planting for improved water quality.

The [Vermillion River Headwaters subwatershed assessment](#), completed by Scott SWCD in 2014, identified 24 prospective BMP implementation projects in the City of Elko New Market and New Market Township.

The VRWJPO worked with a citizen Watershed Engagement Team (WET) in 2013 to outline how best to engage people living, working, or playing in the watershed in efforts to improve water resources. The WRAPS Civic Engagement Plan developed by the WET influenced public outreach and communication activities in 2014 and 2015, with substantial results in 2015. The VRWJPO launched a [Stewardship Grant](#) program in 2015 to stimulate water-quality awareness, engagement, and action projects. Four proposals were funded in 2015, representing a variety of groups and interests, and the VRWJPO hopes to see more in 2016. The VRWJPO staff attended more public events in 2015 than in 2014, but the real achievement in 2015 has been the increase in initiatives launched by schools, church groups, businesses, fish and wildlife advocates, parks, city and county employees, and others.

Economic, regulatory, scientific, and societal issues likely to affect the Vermillion River Watershed in 2016 include:

- **El Niño and La Niña weather impacts.** Minnesotans track weather trends, and the very strong 2015-2016 El Niño made for a mild winter and early spring. There have been two very strong El Niño events since 1950 (1982-83 and 1997-1998), and both were followed by a moderate to strong La Niña. The National Climate Prediction Center indicates “an increased likelihood of above-median precipitation across the southern tier of the United States, and below-median precipitation over the Midwest and part of Pacific Northwest. Above-average temperatures are favored across the North and West, with below-average temperatures favored in the south-central region.” How these predictions will play out in the Vermillion River Watershed is uncertain. However, the Vermillion River Hydrologic Model projections, now based on NOAA Atlas 14, Volume 8 precipitation frequency analyses, indicate that big precipitation events could significantly increase water volumes and flow watershed-wide.



*Typical January-March weather anomalies and atmospheric circulation during moderate to strong El Niño & La Niña*

- **Nitrate contamination of groundwater and surface water.** The already substantial concern about nitrate contamination of private drinking water wells in Dakota County's townships increased in 2015 and may continue to build. On the eve of Governor Mark Dayton's (D-MN) Clean Water Summit on February 26, 2016, the Minnesota Pollution Control Agency issued a report on widespread nitrate contamination in groundwater. This followed a series of reports in major news media outlets (Minnesota Public Radio, *Star/Tribune*, *St. Cloud Times*, WCCO-TV) beginning in May 2015 about the threat of nitrate contamination to drinking water supplies.

In 2016, MDA will begin implementation of its state-wide Nitrogen Fertilizer Management Plan in a township within the Vermillion River Waters (township still to be identified). This township will be a pilot area for farmer engagement in addressing nitrate contamination of groundwater, evaluation of Best Management Practice (BMP) adoption, and promotion of BMPs. MDA has also launched the rule-making process to establish potential regulatory responses to townships with persistently high nitrate levels in groundwater and insufficient rates of BMP adoption.

- **Minnesota Department of Natural Resources (DNR) trout stream aquifer characterization study.** DNR concerns about appropriation permits and their impacts on the Vermillion River and other Dakota County trout streams alarmed many agricultural irrigators in the watershed. The DNR sought better data about the interactions of the Quaternary, Prairie du Chien, and Jordan bedrock aquifers with three designated trout streams, one of which is the Vermillion River. The DNR planned to conduct at least four separate aquifer tests and test-specific monitoring of stream flow at nearby locations. Permanent continuous stage, rainfall, and temperature stations were installed or upgraded in 2015. The results released in 2016 should give the DNR and stakeholders a better idea about how agricultural irrigation influences the Vermillion River trout streams.
- **Capital Improvement Project partnerships.** The VRWJPO has developed creative synergies with many partners to plan CIP projects that take place concurrently with new residential development, road projects, and other infrastructure improvements. Many of these projects will be completed in 2016 and are described in the Feasibility Study section of this report. Relationships with city staff, the Dakota County Transportation Department staff, parks and recreation staff, and others have led to design and installation of several exceptional and cost-effective water quality improvement projects.
- **Changing communication vision and functionality.** The VRWJPO contracted with a website design firm to redesign [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org). The goal of the redesign is to make watershed information easier for users to find, more engaging, more interactive, and oriented toward action. The VRWJPO plans to introduce the new website in mid-2016.
- **Leveraging resources** to achieve measurable improvements. In 2015, the VRWJPO applied for grants, committed cost-share to several multi-party water-quality improvement projects, and stretched the dollars Dakota and Scott Counties provide through the special tax district watershed management levy to implement big projects in key locations. It is hoped that the flow of funding, partners, and projects will continue throughout 2016.

## Administrative

Administrative responsibilities include: staff recruitment, hiring, training, and supervision; coordinating and documenting VRWJPB meetings, decisions, and directions; coordinating and documenting WPC and TAG meetings, decisions, and recommendations; managing the budget; setting priorities and developing work plans; managing contracts; reporting; and seeking funding. In 2015, the VRWJPO:

- ❑ Coordinated and documented 11 VRWJPB meetings, for which Requests for Board Action and draft Joint Powers Agreements were prepared, presented, and submitted to the Board members.
- ❑ Conducted annual election of officers (Res. No. VRW 15-00).
- ❑ Coordinated and documented 10 Watershed Planning Commission (WPC) meetings.
- ❑ Held a strategic planning session with the VRWJPB on June 1, 2015, to develop the annual work plan for 2016.
- ❑ Appointed Brian Rohrenbach of Rosemount, Jeanie Fredlund of Eureka Township, and James Guttman of Lakeville to the WPC (Res. No. VRW 15-11).
- ❑ Appointed Chuck Clanton of Hampton Township to the WPC (Res. No. VRW 15-34).
- ❑ Coordinated six meetings of the TAG focused on draft portions of the Watershed Plan, update of the VRWJPO Standards, cost-sharing policy, and other issues.
- ❑ Managed and reported on the VRWJPO budget, providing expense reports (including staff costs) and treasurer's reports for Board approval at VRWJPB meetings.
- ❑ Amended the 2015 budget to add expenses for a consulting firm to work on the Watershed Plan implementation section (Res. No. VRW 15-10).
- ❑ Amended the 2015 budget to include work by Wenck Associates to provide a fish sampling data analysis and technical report on the current state Index of Biological Integrity (IBI) criteria (Res. No. VRW 15-15).
- ❑ Amended the 2015 budget following reconciliation of the 2014 budget to reflect carry forward amounts, new opportunities, and changing circumstances (Res. No. VRW 15-24).
- ❑ Amended the 2015 budget to reflect increased cost share on the stormwater improvements associated with the Hamburg Avenue reconstruction (Res. No. VRW 15-45).
- ❑ Amended the 2015 budget to accept a \$350,000 grant from the Metropolitan Council for the Minnesota Zoo stormwater improvement project (Res. No. VRW 15-51).
- ❑ Submitted the *2014 Annual Activity Report and Financial Statement* to BWSR (Res. No. VRW 15-19).
- ❑ Completed two VRWJPO quarterly progress reports for the VRWJPB and County management. This report was eliminated, as it was no longer providing value to management.
- ❑ Developed a proposed 2016 Work Plan, budget, and special watershed management tax district levy for public hearing and VRWJPB approval (Res. No. VRW 15-41) and final 2016 budget approval (Res. No. VRW 16-57).
- ❑ Set VRWJPB 2016 meeting dates (Res. No. VRW 15-56).
- ❑ Requested and received delegation of authority to the VRWJPO administrator for contracts under \$50,000 (Res. No. VRW 15-26).
- ❑ Adopted a Mission Statement for the VRWJPO (Res. No. VRW 15-27).
- ❑ Issued a Request for Proposals for redesign of the VRWJPO website, evaluated proposals, interviewed applicants, and selected a contractor (Res. No. VRW 15-35).

- Made a successful application for a BWSR Clean Water Fund grant for a stormwater improvement and re-use project at King Park in the City of Lakeville.
- Provided two orientation sessions for new VRWJPB members, new WPC members, and new staff working with the VRWJPO on administrative issues such as contracts and finances.

## Monitoring and Data Analysis

Water quality and quantity monitoring data are essential for effective management of the Vermillion River Watershed. Surface water and groundwater monitoring allow the VRWJPO to determine the current condition of the resource, any trends (positive or negative) occurring over time, highest priorities for protection and restoration, and effectiveness of water-quality improvement projects. The following activities reflect the VRWJPO's commitment to evidence-based watershed management.

- **Vermillion River Monitoring Network** – Dakota County and Scott SWCDs sample, maintain, and upload information to statewide databases from the Vermillion River Monitoring Network, reporting annually to the VRWJPO and citizens on the river's condition and trends. The SWCDs' staff collected water samples, monitoring for nitrate/nitrite, total Kjeldahl nitrogen, total phosphorus, dissolved phosphorus, total suspended solids (TSS), volatile suspended solids, pH, *E. coli*, transparency, dissolved oxygen, temperature, and conductivity. Both routine and event monitoring take place throughout the year, primarily between April and November, but also during snowmelt runoff events that took place during the winter months. A summary of results for the 2015 monitoring season is included as Appendix II, *Vermillion River Monitoring Network 2015 Report* Executive Summary.

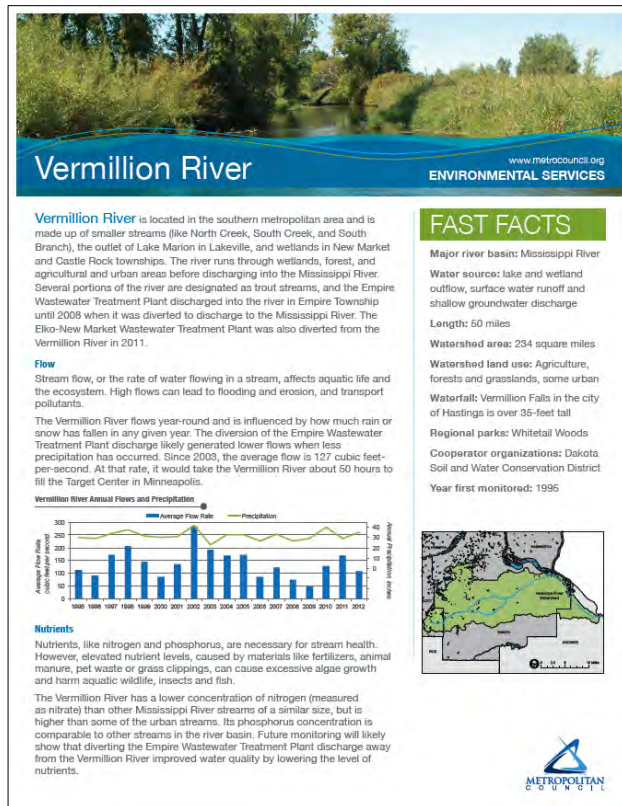
The FLUX stream load computation tool (Walker, 1999) has been used to calculate nitrate and TSS pollutant loads for each monitoring station and/or associated tributary. This tool to provide estimates of the pollutant loading from individual subwatersheds helps the VRWJPO identify areas that may require more scrutiny for possible sediment- or nitrate-reduction best management practices.

In response to potential impacts to the quantity of water within the Vermillion River from groundwater withdrawals via appropriations, the DNR is conducting an intensive monitoring effort. In 2015, the DNR assumed responsibility for stream gaging at five of the seven stations the VRWJPO has previously contracted with Dakota County SWCD to conduct. The DNR installed two new stream gaging stations within the watershed as part of this effort. The VRWJPO continues to provide cost share for the operation of the U.S. Geological Survey (USGS) Blaine Avenue gaging station, which has the longest continuous record of flow in the watershed. Real-time stage and flow data is available from the USGS station, and this information can be accessed at [http://waterdata.usgs.gov/usa/nwis/uv?site\\_no=05345000](http://waterdata.usgs.gov/usa/nwis/uv?site_no=05345000).

Two continuous turbidity probes were installed within the turbidity impaired reach (AUID 07040001-517). Continuous turbidity data was collected at 15-minute intervals in 2015. The turbidity data has allowed VRWJPO staff to determine how often the Vermillion River is violating the water quality



standard and under what conditions the violations are occurring. Continuous temperature monitoring was conducted at the seven stream gaging stations the SWCD and DNR operate, as well as at the Metropolitan Council's Watershed Outlet Monitoring Program (WOMP) station in Hastings.



## Partners Plus: Metropolitan Council

*Comprehensive Water Quality Assessment of Select Metropolitan Area Streams provides another perspective on Vermillion River water quality*

Metropolitan Council Environmental Services (MCES) released its report in December 2014, *Comprehensive Water Quality Assessment of Select Metropolitan Area Streams*, which included the Vermillion River as one of its 21 monitoring stream segments. Stream data collected between 1989 and 2012 consisted of 13 million flow measurements and 9,400 water samples, collected by MCES in cooperation with local water management organizations, cities, conservation districts, and counties. “Long-term data analysis and computer modeling indicate the Vermillion River’s water quality has improved because phosphorus, nitrate and sediment levels have decreased,” according to the report. The watershed’s monitoring results are more widespread and detailed, and show a more complex picture of nitrate levels. Visit [www.metrocouncil.org/streams](http://www.metrocouncil.org/streams) for the complete report or a summary fact sheet (shown at left).

- Biomonitoring Plan** – In 2015, the VRWJPO continued implementing the watershed’s Biomonitoring Plan, developed in 2009 to provide both baseline data and an ongoing assessment of the watershed’s health through fish and macroinvertebrate sampling and habitat monitoring (with Dakota County SWCD) at 14 locations throughout the watershed. The VRWJPO now has six continuous years of fish and macroinvertebrate sampling. The results of the fish and macroinvertebrate Indices of Biological Integrity (IBIs) has provided the VRWJPO with information regarding the health of the biological community. The greatest stressor on aquatic life in the Vermillion River Watershed is turbidity, which can injure fish and macroinvertebrates, carry pollutants on particles, and impair the ability of aquatic species to find prey or food sources. See more in the **Watershed Restoration and Protection Strategy (WRAPS)** section of this report.

Macroinvertebrate monitoring provides a window on water quality that is extremely valuable in assessing stream health. Macroinvertebrates are sensitive to ecosystem changes, live in an ecosystem more than a year, can’t escape changes in water quality, and can be collected easily and inexpensively. Low IBI scores at Vermillion River Watershed sites are driven by an abundance of

pollution-tolerant species and a limited number of pollution-sensitive species. Overall, the 14 monitoring sites within the Vermillion River Watershed show consistency in scores under the new MPCA Statewide IBI scoring protocol. In general, the warm water streams in the Southern Headwaters Category had consistently high scores (not impaired) and showed very little variation in the scores from year to year. The reaches within the Southern Coldwater and Southern Streams categories also scored consistently, as impaired, with some variation across monitoring years.

- ▣ **Drinking Water Monitoring** – Dakota and Scott Counties manage several ongoing programs to monitor and address water quality in private drinking water wells. Dakota County has widespread issues with nitrate and herbicide detections in private drinking water wells in rural parts of the County. In 2013-15, the County and the Minnesota Department of Agriculture (MDA) conducted a special monitoring project in conjunction with the implementation of MDA’s Nitrogen Fertilizer Management Plan. The results highlighted Dakota County as one of the State of Minnesota’s most intensive areas of nitrate contamination of groundwater. In 2013 and 2014, all the households that rely on private wells within the targeted communities were given the opportunity to have their well water tested for nitrate. In 2014 and 2015, MDA staff contacted the well owners whose first testing results were 5 mg/L or greater to give them an opportunity to have their well retested and also collect herbicide samples.

**Nitrate Results “Township Testing” Communities within the Vermillion River Watershed**

2013-15 Private Well Nitrate Sampling	Estimated number of households on private wells	Number of test kits returned to lab	Number of samples exceeding health risk limit of 10mg/L nitrate	Percentage of samples exceeding 10mg/L nitrate
Castle Rock Township	473	101	15	15%
City of Coates	55	11	6	55%
Douglas Township	250	68	24	35%
Empire Township	220	58	18	31%
Eureka Township	525	123	8	7%
City of Farmington	80	18	0	0%
Hampton (Twp. And City)	326	80	24	30%
Marshan Township	401	115	61	53%
Nininger Township	301	88	31	35%
Ravenna Township	804	298	113	38%
City of Rosemount	528	165	10	6%
Vermillion Township	417	83	37	45%
<b>Total for Study Area</b>	<b>4380</b>	<b>1208</b>	<b>347</b>	<b>29%</b>

- **The Ambient Groundwater Quality Study** – The Dakota County Ambient Groundwater Quality Study (AGQS) is a county-wide private well monitoring program, partially supported by the VRWJPO, with periodic sampling events. The participating wells, about two-thirds of which are within the watershed, are tested for general water-quality parameters, nitrate, pesticides and pesticide breakdown products, and contaminants of emerging concern. From 1999 through 2013, the study enabled the County to monitor trends in groundwater contamination from non-point sources, including nitrate and herbicides from agriculture, chloride from road salt, and other sources. The AGQS has also enabled the County to identify areas where the groundwater is at risk from naturally occurring contaminants, such as manganese or arsenic, and to monitor the County’s groundwater for Contaminants of Emerging Concern (CECs) such as perfluorochemicals (PFCs) and organic wastewater compounds.

Major findings of the AGQS:

- 1) Approximately 60 percent of the sampled wells contained one or more contaminants at a concentration that exceeds current Minnesota Department of Health (MDH) drinking water guidelines for private water supply wells. Contaminants that exceeded human health standards included naturally occurring manganese (33 percent of the sampled wells), agriculturally derived nitrate (29 percent) and the herbicide cyanazine and its degradants (19 percent).
  - 2) Nitrate levels are increasing in the eastern portions of the County. (Trend data for nitrate contamination in private wells, analyzed with a threshold of at least five years of sampling events, is scarce in Minnesota.)
  - 3) Agricultural chemicals usually occurred as mixtures. Herbicide breakdown products were most commonly identified in mixtures with other herbicide breakdown products, and nitrate commonly co-occurred with herbicide breakdown products. Nitrate co-occurred with herbicide breakdown products in 51 percent of the sampled wells and 97 percent of the wells with nitrate levels above background.
  - 4) Cyanazine, an herbicide that was banned in 1999, still has breakdown products being found in AGQS wells at levels that exceed drinking water guidelines, although the levels are decreasing. Other herbicides considered to be “in common detection” by the MDA – i.e., metolachlor, acetochlor, and atrazine – are widely detected at levels that appear to be stable. Alachlor, an herbicide no longer in use, has declining concentrations.
  - 5) Manganese, which occurs naturally, was detected in every well sampled. Humans need trace levels of manganese, but manganese is unhealthy for infants above concentrations of 100 micrograms per liter (ug/L) and above 300 ug/L for older children and adults. A third of the wells tested had manganese above the infant health risk level.
  - 6) Other CECs, in particular PFCs, organic wastewater compounds, and antibiotics, are present at trace levels in Dakota County groundwater but not at levels that pose a health risk.
- **Maintaining Monitoring Infrastructure** – The VRWJPO provides cost share to maintain the USGS Blaine Avenue flow-gaging station and contracts annually with specialists at the DNR for assistance with maintenance and rating-curve development at its seven other automated flow-monitoring stations.

## Public Outreach and Communication

Communicating the value of clean water continues to be an essential part of the VRWJPO's mission and civic engagement has taken on greater importance in watershed processes. The VRWJPO has maintained its previous outreach efforts while adding new strategies to increase awareness and action among the public, especially about impaired waters.

Communication efforts in 2015 achieved the VRWJPO's two major goals: increased public awareness and civic engagement to restore impaired waters, and active participation by citizens and stakeholders in developing the final draft 2016-2025 Vermillion River Watershed Management Plan.

Public outreach and communication take many forms, including ensuring that the public understands what a watershed is, how the Vermillion River Watershed is different from other watersheds, what problems exist, how we can work together to find solutions, how citizens can engage in protecting the watershed, and what resources are available to assist in achieving watershed goals. Among the outreach and communication programs partially funded or conducted by the VRWJPO in 2015:

- ▣ **Stewardship Grants** – The Vermillion River Watershed Joint Powers Board (VRWJPB) authorized a Stewardship Grant program in July 2014 (VRW 14-35). Applicants can receive up to \$5,000 to promote water quality awareness, engagement, and action locally. The VRWJPO received and funded four proposals in 2015, its first year, and in the process, identified ways to improve the Stewardship Grant process going forward. The projects are described on the following page.
- ▣ **Vermillion River Stewards Program** – Vermillion River Stewards Program is implemented by the Friends of the Mississippi River (FMR) and partially funded by the VRWJPO. Volunteers participate in hands-on stewardship and educational programs throughout the Vermillion River Watershed. The program provides a great way for watershed residents to actively help protect the Vermillion River. The Stewards program involves partnerships with local cities, SWCDs, schools, and other organizations.



FMR had a very successful year in 2015, both in organizing events “upstream” in the watershed and targeting some events on impaired waters issues important to the VRWJPO. In 2015, FMR organized 16 stewardship events in the watershed (15 held, 1 cancelled), of which 10 were funded by the VRWJPO. FMR helped organize, carry out and/or supported three other events at sites across the watershed. The Vermillion Stewards activities drew an estimated 620 volunteers, 333 on the VRWJPO-funded events. Participants spent 1,019 volunteer hours on learning about the watershed and engaging in activities such as “make and take” rain barrel workshops, native planting, tree planting, seed collection, river cleanups, and educational tours of interesting natural resource areas. FMR surveys volunteers annually, and of the volunteers who responded, 61 percent live in the Vermillion River Watershed.

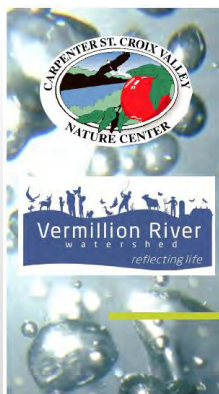




**Southern Dakota County Sportsmen's Club (SDCSC)** organized three events: Rainbow trout stocking in Farmington, a children's fishing contest, and planting 40 trees and 40 shrubs along the Vermillion River to provide habitat, bank stabilization, and shade. Volunteers (shown above) installed trees with tree tubes to prevent damage from foraging animals during the first year's growth. *Photo: SDCSC*

#### Partners Plus: Trout Unlimited

The **Minnesota Department of Natural Resources (DNR)** manages the Vermillion River Aquatic Management Area (AMA), several properties along the main stem and South Branch. In 2015, a coalition of volunteers tackled restoration of the Vermillion River AMA on the South Branch. The **Twin Cities Trout Unlimited (TU) Vermillion Riverkeepers** (seen at right) held three events in 2015 to clear buckthorn from 4,600 feet of shoreline, contributing 643 hours, in total, to rehabilitation of the Kasel unit of the Vermillion AMA. TU has provided substantial funding for restoration of other Vermillion AMA parcels, including two streambank projects involving bank stabilization, re-meander of straightened stream reaches, and habitat features both in-stream and on the banks.



Carpenter St. Croix Valley Nature Center Presents

## Vermillion River Water Quality Program Series

Brought to you by a generous grant from the Vermillion River Watershed Organization

### Pollutants in Our Waters

**Carpenter St. Croix Nature Center (CNC)** staff completed 12 one-hour presentations on four watershed topics: water pollutants, raingardens, invasive species, and erosion/turbidity. The Tilden Community Center, Pleasant Hill Library, and Veterans Home in Hastings hosted the presentations, which were attended by 59 people. Participants liked that presentations used content specific to Hastings and Dakota County, showed connections within ecosystems, and led to a better understanding of soil and water conservation. One participant reported interest in joining citizen science efforts, some were intrigued by the prospect of controlling invasive species by using them in cuisine, and still others pledged to make an effort to decrease fertilizer and pesticide use.

In 2015, **Trout Unlimited** joined forces with **Lakeville South High School** to engage students in the "Trout in the Classroom" program. Students will study watershed ecology, raise brown trout (provided by **DNR**) in the classroom, monitor water quality, and release their young-of-the-year to South Creek nearby in 2016. Lakeville South applied for a Stewardship Grant to provide students with transportation for field work on the project. **Minnesota TU** applied for a Stewardship Grant to create a video centered around the project, but delving further into Vermillion River Watershed water quality and habitat, practices to protect and improve the river, and efforts of the VRWJPO and many partners to reduce pollutants.



*Photo: Minnesota Department of Natural Resources*

- Wetland Health Evaluation Program (WHEP)** – Participating cities each select up to four wetlands to be monitored each season by trained volunteers. The Minnesota Pollution Control Agency trains volunteer teams on wetland monitoring protocols, as well as macroinvertebrate and plant identification. The program turns volunteers into “citizen scientists”; it is an excellent opportunity for environmental education and natural resource information gathering.

In 2015, ten cities and Dakota County participated in WHEP, monitoring 33 different wetlands. Three wetlands were monitored for the first time in 2015, including two for Dakota County. Volunteers collected data on the macroinvertebrates and plants that live in the wetlands, identified the species, and used the MPCA’s Index of Biotic Integrity (IBI) to estimate the health of each wetland. Two wetlands rated “excellent” for invertebrates and five rated “excellent” for vegetation.

Overall, wetland conditions for invertebrates improved in 48 percent of wetlands and declined in nine percent. Vegetation improved in 29 percent of the wetlands monitored, while 19 percent showed declining vegetation. WHEP volunteers donated more than 1,917 hours in training, sample collection, and sample identification while conducting this valuable monitoring program. Teams report to the sponsoring cities on wetland health within their jurisdictions at the end of the monitoring cycle.

Since WHEP began in 1997, volunteers have sampled 173 wetlands total, many in multiple years. Fortin Consulting conducts data analysis and reporting. They also evaluated factors that may be influencing wetland scores, including

## Partners Plus: Wetlands

*Wetland monitoring, banking, and restoration involve multiple partners and serious commitment*

- The Wetland Health Evaluation Program (WHEP, described at left) was the brain child of Mark Gernes and Judy Helgen, **MPCA** biologists, and the **Minnesota Audubon Society**. In 2015, Dakota County and the **cities** of Apple Valley, Burnsville, Eagan, Farmington, Hastings, Lakeville, Mendota Heights, Rosemount, South St. Paul, and West St. Paul and **Dakota County** participated in WHEP, fielding 103 “citizen-scientist” **volunteers** to monitor 33 wetlands.
- Building a wetland banking system is a complicated multi-party planning process, as the VRWJPB knew in 2014 when it allocated \$500,000 to develop a bank. The **VRWJPO** is partnering with the **Minnesota Board of Water and Soil Resources** and **Dakota County** to identify and acquire an easement for an appropriate wetland banking site. Brian Watson, district manager and wetland specialist for **Dakota County SWCD**, has taken the lead role in finding potential locations.
- Before launching its new Avonlea development in Lakeville, **Mattamy Homes** met with the VRWJPO and city staff to decide how to meet local stormwater requirements. Mattamy chose to restore a wetland on the property, to meet wetland mitigation requirements and as an amenity for home buyers. The developer was required to install buffers along a stretch of Middle Creek that runs through the property. The **VRWJPO** and **City of Lakeville** are completing a concurrent project to improve Middle Creek and its connection with the floodplain.



Photo: WHEP Program



impacts of invasive species and impervious surfaces, as well as whether a wetland is natural, altered (to collect stormwater, for example), or created.

- **Vermillion River Watch** – In 2015, Dakota SWCD continued working with educators and students at Rosemount and Hastings High Schools to collect macroinvertebrates and habitat data, identify macroinvertebrates, and compare species type and abundance to biological metrics. This is a successful way to interest students in scientific disciplines and engage them in protecting and improving water resources.
- **Landscaping for Clean Water/Blue Thumb, Technical and Financial Assistance** – Raingarden installation engages many watershed residents in hands-on water quality and landscape improvements. The VRWJPO maintained its support in 2015 for Landscaping for Clean Water (in the Dakota County portion of the watershed) and Blue Thumb – Planting for Clean Water (in Scott County) to educate citizens about the benefits of raingardens, native gardens, and shoreline restoration to water quality.

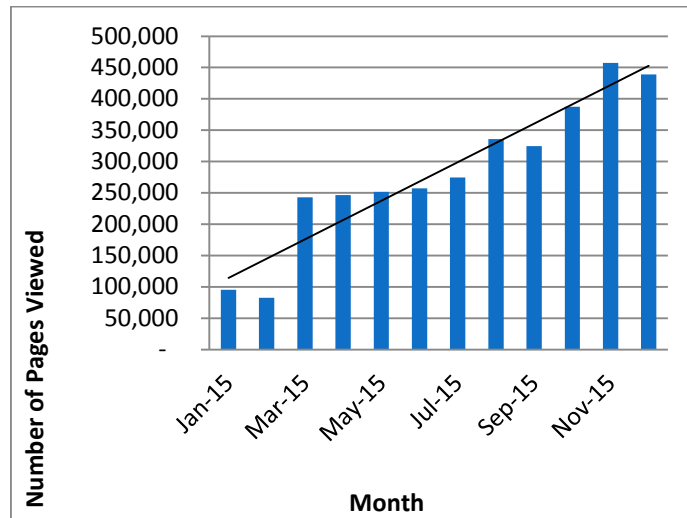
Dakota County SWCD held six introductory workshops that attracted 107 residents and six design workshops with 78 people attending in 2015. This effort resulted in 62 project designs, 15 applications for grants, 14 projects funded, and 14 raingardens, shoreline restorations, or native garden projects completed. The Landscaping for Clean Water program drives 80 percent of Dakota SWCD's inquiries for larger urban conservation projects in the watershed. Scott SWCD offers Blue Thumb workshops and native prairie planting workshops that cover the Elko New Market/New Market Township portion of the watershed and installed one raingarden in 2015. Fact sheets showing Landscaping for Water Quality, Blue Thumb, and other 2015 CIP projects are contained in Appendix III.

- **Publications** – In 2015, the VRWJPO moved to strengthen the watershed's e-newsletter and discontinue the print version. The newsletter is provided to interested residents in the watershed twice a year (see Appendix IV for the Spring and Fall 2015 issues). The staff is building the e-mail list by adding contacts who sign up during VRWJPO meetings and events. The VRWJPO's beneficial activities and educational messages are also featured in news media reports, internal and external newsletters, and other publications. The VRWJPO develops Frequently Asked Questions fact sheets to explain watershed standards and policies to citizens, also included in Appendix III.

**Website** – The VRWJPO continued to build its website in 2015 to provide easily accessible information about the watershed to a wide range of users. The page views of the site increased throughout the year. The site features an up-to-date calendar of VRWJPO meetings, volunteer opportunities, and public events. An interactive map shows users where the VRWJPO has implemented or cost-shared capital improvement projects. The “Doing Business” web pages provide VRWJPB and WPC agendas and minutes, frequently asked

questions (FAQs) about policy issues, instructions on permit application, criteria for cost sharing projects, and other helpful information. On the “Learn” web pages, visitors can find out about monitoring data, assessments, and studies. The website has been very successful in conveying information to users, as indicated by the number of web pages viewed over time. In mid-2016, the VRWJPO plans to roll out a redesigned website (see 2016 Work Plan for more).

**Website Page Views in 2015**



- **Agricultural Outreach** – Dakota County partners with the University of Minnesota Extension to work with agricultural producers on: management of fertilizers and pesticides; demonstration projects; the Annual Crops Day and Field Day events, bringing together farmers and experts in agricultural sciences for an all-day discussion of issues and trends; a newsletter with information about effective agricultural strategies; and other efforts to improve water quality and land conservation. In 2015, the VRWJPO consulted with the agricultural educator on issues involving impaired waters, the draft 2016-2025 Watershed Plan, and groundwater appropriations issues.
- **Community Event Participation** – In 2015, the VRWJPO participated in the City of Farmington’s Earth Day/Arbor Day Celebration and the City of Lakeville’s Earth Day Celebration, staffing watershed displays on impaired waters.

- Interpretive Signage** – The VRWJPO developed contracts in 2015 to design and install interpretive signs at project sites where it is either desirable or required under grant agreements. A restoration project on Middle Creek in Farmington (see CIP Projects) served as the first example.



- Partnership Building and Collaborative Efforts** – The VRWJPO supports WaterShed Partners, a coalition of watershed organizations, cities, and interest groups providing effective water-oriented messages to the general public. The VRWJPO provided in-kind support for workshops by Fortin Consulting, Inc., one on winter roads maintenance (October 23, 2015) and another on summer turfgrass maintenance (April 21, 2015). Dakota County staff took a leadership role in the Children's Water Festival, and the VRWJPO provided financial support for schools in the watershed participating in the popular event.
- Scott Clean Water Education Program** – Scott SWCD focused activities, outreach, and publicity on the overall theme of "Clean Water Starts with Me." Among those initiatives to engage the public throughout Scott County in environmental action: three native prairie workshops, one raingarden workshop, and two shoreline restoration workshops; coordinating Raingarden in a Box, a method for citizens to order all the necessary plants for raingarden installation; and the 30<sup>th</sup> annual Outdoor Education Days, bringing together 5<sup>th</sup> grade students (including those from Elko New Market) in Bisek Woods for interactive activities and learning stations on environmental issues.

## Inventory/ Assessment

The VRWJPO supports inventories of land, water, and groundwater features and investigates the causes and status of existing or emerging issues. Projects begun, continued, or completed in 2015:

- **Watershed Restoration and Protection Strategy Investigation (WRAPS)** – The WRAPS investigation was completed and pollutant load reductions were calculated. See the WRAPS section of this report for more information.
- **Subwatershed Assessments for South Creek and Lake Alimagnet** – The VRWJPO contracted with Wenck Associates to complete subwatershed assessments to identify high-priority projects in South Creek in Lakeville and Alimagnet Lake in Burnsville and Apple Valley. Wenck completed a draft South Creek Subwatershed Assessment and Lake Alimagnet Subwatershed assessment in January 2016 that identified projects on properties that were city-owned or publicly owned, county-owned, and privately owned. Estimates were developed for construction costs, volume reductions, and pollutant load reductions for total suspended solids and total phosphorus for each project. VRWJPO staff, staff from the Cities of Lakeville, Burnsville, and Apple Valley, Dakota County, and Minnesota Department of Transportation staff will review the assessments and explore viability of specific projects for incorporation into the 2017 CIP and future CIPs.

## Capital Improvement Projects

The VRWJPO wants to ensure that Capital Improvement Projects (CIPs) with direct and observable benefits to water quality, quantity, and safety are identified and developed. Through cost-share programs, the VRWJPO provides assistance and incentives for Local Government Units and other partners seeking effective solutions to local water-quality problems. In 2015, the VRWJPO updated its CIP Project Implementation Funding Policy to provide criteria for percentage of cost-share funding available for projects with different watershed-wide priorities. As part of developing the updated Watershed Plan, the VRWJPO included prioritized subwatershed plans as part of the implementation section.

The VRWJPO's primary priorities for improvement are projects that are determined to be of watershed-wide benefit. Those primary priorities include:

- Projects identified within the Vermillion River Watershed Restoration and Protection Strategy (WRAPS), where the VRWJPO is identified as the governmental unit with primary responsibility.

The VRWJPO's secondary priorities for improvement are projects that are determined to be of at least moderate watershed-wide benefit. With the exception of those potential projects already identified within the WRAPS mentioned above, secondary priorities include:

- Reduction of water volume reaching the Vermillion River, primarily from tributaries (North Creek, Middle Creek, South Creek, and South Branch), lakes, or wetlands, unless water volume is required to maintain natural hydrology of these resources. Areas of priority are urbanized areas where

stormwater is currently untreated, subwatersheds where soil types limit the ability to reduce volume via infiltration, and agricultural areas where artificial drainage, ditching and drain tile, exist. Where infiltration is not feasible, filtration projects will be considered as an acceptable practice.

- ▣ Restoring or improving streambank vegetation.
- ▣ Restoring or improving riparian vegetation within buffer zones, as identified in the VRWJPO Standards, which do not fall under a conservation easement or dedicated outlot.
- ▣ Correcting existing erosion problems in the main stem and its primary tributaries.
- ▣ Preserving and improving habitat and suitable stream conditions in those portions of the main stem and its primary tributaries designated by the Minnesota Pollution Control Agency (MPCA) as Class 2A, cold-water streams, through in-stream actions and actions throughout the watershed (e.g., thermal protection measures).
- ▣ Addressing surface water impacts on water supply aquifers.
- ▣ Addressing impacts to surface waters from groundwater withdrawals.
- ▣ Reducing E. coli bacteria in the Vermillion River or its tributaries.

The VRWJPO's tertiary priorities for improvement are projects that are determined to be of low watershed-wide benefit. Excluding potential projects identified within the WRAPS, tertiary priorities include:

- ▣ Lake or pond chemical treatments (i.e. treatment with alum or ferric chloride) when other alternatives have been exhausted or when these projects are identified as a cost-effective method of achieving a water quality goal when considered against other alternatives.
- ▣ Addressing non-Total Maximum Daily Load (TMDL) water quality concerns.
- ▣ Preserving and improving habitat and suitable stream conditions in those portions of the main stem and its primary tributaries considered by the MPCA as Class 2B, warm-water streams, through in-stream actions and actions throughout the watershed.

VRWJPO Priority for Improvement	Project Funding on Public Property or within DNR Public Waters*	Project Funding on Private Property*
<b>Primary</b>	100%	75%
<b>Secondary</b>	75%	50%
<b>Tertiary</b>	50%	25%

\*Percentages indicates the maximum potential amount of funding to be contributed by the VRWJPO

In 2015, CIPs included:

- ▣ **Dakota SWCD Cost Share Programs** – Dakota SWCD receives funding from the VRWJPO to implement a variety of cost-share programs to improve water quality. These include:
  - **Landscaping for Clean Water Technical Assistance and Grant Program** – The Landscaping for Clean Water Program (formerly Blue Thumb) combines incentive funding with training and technical assistance to make it easy for Dakota County residents to plan and



install native gardens, raingardens, and stabilized shorelines. In 2015, the SWCD helped residents install 14 raingardens or other projects, providing grants of up to \$250 for each project.

- **Conservation Initiative Funding Program** – Developers interested in installing practices that protect water quality, improve habitat, manage stormwater, and prevent erosion can receive up to \$20,000 for project costs. Dakota SWCD did not cost-share any CIF projects in 2015 with VRWJPO funds.
- **Incentive Payment Practice Program** – This program leverages state and federal dollars to improve feedlots and other agricultural land. The Dakota SWCD provided technical assistance on eight projects in 2015.

Incentive Payment Practice (IPP) Program Projects Completed in 2015					
Practices Installed	Jurisdiction	VRWJPO	Other	Landowner	Pollutant Reduction/Year
Water and sediment control basins (8)	Empire Twp.	\$12,541	\$18,209 (state)	\$55,223	1,817 tons of soil and 230 lbs. of phosphorus
Grassed waterway	Douglas Twp.	\$1,785		\$967	25 tons of soil, 207 lbs. of phosphorus
Grassed waterway	Hampton Twp.	\$3,613		\$2,735	56 tons of soil, 120 lbs. of phosphorus
Water and sediment control basin	Eureka Twp.	\$4,338		\$766	34 tons of soil, 11 lbs. of phosphorus
Water and sediment control basins (2)	Marshan Twp.	\$9,212		\$3,071	174 tons of soil, 49 lbs. of phosphorus
Grassed waterways (4)	Hampton Twp.	\$5,548		\$1,849	2,309 tons of soil, 533 lbs. of phosphorus
Grassed waterways (4)	Douglas Twp.	\$13,098		\$4,367	930 tons of soil, 171 lbs. of phosphorus
Grassed waterway	Douglas Twp.	\$4,443		\$1,480	43 tons of soil, 46 lbs. of phosphorus

Fact sheets on cost-share projects completed with Dakota County or Scott SWCD assistance and VRWJPO funding are available in Appendix III.

- **Rosemount Cost Share Joint Powers Agreement** – The VRWJPO entered a joint powers agreement with the City of Rosemount in 2007, which required cost share related to the storm drainage improvement project commonly referred to as Eagan Project 905R, a major project that involved Dakota County’s Lebanon Hills Regional Park stormwater management. The VRWJPO agreed to cost share in a principal amount of \$544,829, to be repaid over 10 years in 10 equal annual installments of principal with interest being paid at the rate of four percent per year. In 2015, the VRWJPO continued to provide these cost-share payments.
- **CSAH 64 Stream Restoration** – The VRWJPO staff communicates routinely with county and city transportation authorities, evaluating whether water-quality improvement projects can be incorporated into road projects. Dakota County’s Transportation Department proposed to improve County Road 64/195th Street through a portion of Farmington. VRWJPO staff

identified this as an opportunity to work collaboratively with the County to complete a stream restoration concurrent with the road project. The project was partially completed by the Minnesota Department of Natural Resources (DNR) in 2006, but was abandoned due to the project's potential to flood an upstream property. VRWJPO staff developed a design that addresses potential flooding concerns and applied to the DNR for a Flood Damage Reduction grant to defray the cost of the project. The DNR awarded the VRWJPO a grant of \$197,000 to cover the estimated costs of the Middle Creek Restoration and any contingencies that may arise during construction. Construction began in 2015 and the project will be completed in 2016.

- **Avonlea Stream and Wetland Restoration** – Ontario-based Mattamy Homes submitted its Planned Unit Development Master Plan/Standards and Preliminary Plat for the first phase of the Avonlea residential development on 470 acres along Cedar Avenue in the City of Lakeville. The project will span 8-10 years and will include 704 single-family homes, 138 row townhouses, 128 detached townhouses, and a 60-acre public park. In the first phase, Mattamy Homes and the City restored a seven-acre farmed wetland on the site with 50-percent VRWJPO cost share. Mattamy Homes views a restored wetland as an amenity for future Avonlea residents.

The VRWJPO and City staff wanted to implement a stream restoration project on a reach of Middle Creek that was eroded, unstable, and had a poor connection with the floodplain. The VRWJPO provided 100-percent cost share to complete the stream restoration project. Mattamy Homes furnished the design, plan, and permits for the wetland and stream restoration projects. The City of Lakeville will assume ownership and maintenance of the stream restoration. Construction began in 2015, and the project will be completed in 2016.

- **Hamburg Avenue Stormwater Improvements.** The VRWJPO and the City of Lakeville incorporated stormwater treatment into the reconstruction of Hamburg Avenue in the Air Lake Industrial Park. Incorporating infiltration practices into the highly impervious area would reduce sediment in runoff; reduce runoff volume and, therefore, temperature; and help recharge groundwater. The stormwater treatment project includes replacing crushed culverts with concrete pipes during the road reconstruction project to allow for better drainage. To improve infiltration and reduce maintenance costs for the City, a stormwater chamber/ infiltration system was installed within the ditch bottoms, as the road does not use curb and gutter. The estimated pollutant reduction from this project is 14,236 pounds/year (7.1 tons/year) of total suspended solids and 12.95 pounds/year total phosphorus, with a total water volume reduction of 760,481 cubic feet/year (17.45 acre-feet/year). Construction began in 2015, and the project will be completed in 2016.



### Restoring a stream

The section of Middle Creek that runs through the proposed Mattamy Homes Avonlea development in Lakeville was eroded, unstable, and poorly connected to the flood plain. Restoration work began in 2015 to stabilize and shape the stream to improve water quality.



## Feasibility/Preliminary Studies

Projects depending upon VRWJPO funds or support often require feasibility or preliminary studies to determine whether they are practical, cost effective, and implementable. The Dakota County and Scott SWCDs are integral to this effort, providing marketing, technical assistance, and preliminary design consultations to project proposers. Project explored in 2015 include:

- ▣ **King Park Stormwater Re-use for Irrigation.** The VRWJPO and the City of Lakeville studied the feasibility of incorporating stormwater re-use into a reconstruction of Dodd Road near King Park. King Park is the location of a prior stormwater re-use project in which water from an existing pond is used to irrigate baseball fields. The 2016 Dodd Road reconstruction will require installation of a stormwater pond, and water collecting in the pond can be used for similar irrigation purposes. The VRWJPO submitted a proposal for a Clean Water Fund grant to support the project and were awarded \$78,500, with construction beginning in 2016.
- ▣ **Rambling River Park Habitat Improvement.** The City of Farmington is a popular recreation destination, featuring (among other things) a section of the Vermillion River main stem with a self-sustaining population of brown trout. The section also is impaired for turbidity, insufficient dissolved oxygen, aquatic life, and E. coli bacteria. The VRWJPO, Dakota SWCD, and City's Parks and Recreation staff explored the feasibility of a restoration project to install habitat features that would prevent erosion, improve trout habitat, improve riparian vegetation, and better connect the stream to the flood plain. The VRWJPO submitted a proposal for a Conservation Partners Legacy grant to implement the project.

- ▣ **Stormwater Upgrade at Western Service Center.** Dakota County's Western Service Center plaza in Apple Valley got a facelift in 2015, and the VRWJPO and Dakota County collaborated on preliminary ideas for a stormwater upgrade. A stormwater pond at the entry to the Western Service Center provides less pollutant removal and fewer water quality benefits than the county and VRWJPO would like. A retrofit of the existing pond will integrate a proprietary sediment removal system update of the pond and will add a bioretention system to the pond discharge point. Final planning and design is underway and the project will be constructed in 2016.
- ▣ **Bachman's South Creek Riparian Tree Management.** A project to conduct tree-thinning, invasive and noxious species removal and herbicide treatment, removal of deadfalls from the Vermillion River, and seeding was explored at the Bachman's facility in Eureka Township. The project was identified within the Vermillion River WRAPS as a way to improve the temperature and dissolved oxygen in the Vermillion River while reducing sediment loads. The VRWJPO had Wenck Associates apply to the Conservation Corps of Minnesota (CCM) for Clean Water Funding. The project was not selected as a grant recipient, but other grant funding will be explored.
- ▣ **205<sup>th</sup> Street Stream Stabilization Extension.** In 2009, the VRWJPO partnered with the City of Lakeville to stabilize a portion of a severely eroded channel adjacent to 205<sup>th</sup> St. that drains directly to Lake Marion. In 2016, the VRWJPO plans to partner with the City again to stabilize the remaining portion of the channel in an effort to reduce sediment and phosphorus loads and implement protection strategies identified within the Vermillion River WRAPS.
- ▣ **MN Zoo Stormwater Improvements.** The VRWJPO applied for a Metropolitan Council Stormwater Grant in 2015 for stormwater improvements at the Minnesota Zoo. The VRWJPO was awarded \$350,000 in grant funding, with Dakota County SWCD providing up to \$50,000 and the VRWJPO providing \$100,000 in match respectively. In late 2015, the VRWJPO began evaluating projects that would demonstrate innovative ways to treat stormwater throughout the Zoo campus. Among those being considered are a stormwater reuse system, bioretention, iron-enhanced sand filters, and a snowmelt practice. The projects will be designed in spring 2016, with construction in the fall.

## Evaluation and Policy

The 2016-2025 Vermillion River Watershed Management Plan will be completed in 2016, after a year of writing, meeting, and consulting with advisory groups, local governments, state agencies, and the public. Activities and progress in 2015 include:

- The Minnesota Board of Water and Soil Resources (BWSR) approved revisions in Minn. Rules Chapter 8410, in July 2015. These changes affect metropolitan area local water management and watershed plans. The VRWJPO followed the prior rules for updating the Watershed Plan, but also incorporated important elements of the new rules (in consultation with BWSR).
- The VRWJPO enlisted the Vermillion River Watershed Joint Powers Board (VRWJPB), advisory groups (WPC and TAG), local governments, stakeholders, and the public in identifying issues and priorities, as well as forming and validating goals, objectives, and actions for the Watershed Plan update. The VRWJPO provided sections of the Watershed Plan for discussion, comment, and revision during summer 2015.
- The VRWJPO contracted with Emmons & Olivier Resources (EOR) to develop an implementation plan and summary table incorporating all of the various studies, assessments, inventories, plans, and data available into an organized whole.
- The VRWJPO explicitly integrated WRAPS implementation into several objectives in the Watershed Plan update. Section 6: Goals, Objectives, and Actions, has specific actions that incorporate the WRAPS recommendations. Section 7: Implementation Plan incorporates the WRAPS recommendations into specific subwatershed management plans.
- The VRWJPB authorized the draft 2016-2025 Watershed Plan release to the public and stakeholders on October 1, 2015. As part of the formal review process and in accordance with Minnesota statutes, the Watershed Plan was submitted for 60-day review to the cities and townships within the VRWJPO, as well as state, regional, and local partner agencies with a direct interest in watershed management and the Vermillion River Watershed.
- The VRWJPO posted the draft Watershed Plan on [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org) and widely publicized its availability. In addition to a formal public notice in the newspaper of record, the VRWJPO sent out a news release to local media outlets, attended the September Township Officer's Meeting to discuss the draft Watershed Plan, and conducted outreach to interested parties.
- During the 60-day review, the VRWJPO received 200 distinct comments from members of advisory groups, state agencies, local governments, and the public. The VRWJPO documented its responses to comments, incorporated changes, and clarified its policies in early 2016.
- The VRWJPO held a public hearing on the draft Watershed Plan in January 2016.
- The final draft 2016-2025 Watershed Plan was submitted to state agencies for the 90-day review process in early March 2016.



## Regulatory Review and Regulation

In 2015, Eureka Township, the only jurisdiction all or partly within the watershed not implementing its own permitting program, adopted the necessary official controls to conduct permitting. This eliminated VRWJPO permitting activities for Eureka Township. Other regulatory review and regulation issues that emerged in 2015 include:

- **Hydrologic Model Development and Implementation of Peak Flow Standards** –The VRWJPO provided cost-share assistance for the City of Rosemount, which had not been included in the original model development. The City of Rosemount, not hydrologically well-connected with the Vermillion River or tributaries, has proposed some possible hydrologic connections to the river. The model update is the first step in assessing the feasibility and consequences in Rosemount’s stormwater management on intercommunity flow. The update to include Rosemount will be completed in 2016.
- **Plan Review** –The VRWJPO reviews Land Alteration Plans (LAPs) affecting 40 acres or more. In 2015, VRWJPO reviewed five plans from local governments and other partners, including three residential developments, one commercial development, and one industrial development.

## Coordination with Other Agencies

In collaboration with other government agencies, the VRWJPO works to eliminate duplication of effort, leverage resources, instill consistency, share knowledge and expertise, and make each public dollar go further in achieving water quality, quantity, and safety goals. Coordination efforts in 2015 included:

- **Assistance with Local Reviews, Oversight, and Coordination with Other Agencies** – The watershed includes all or part of 20 separate jurisdictions, each of which has land-use authority. As local government units have been implementing Local Water Management Plans, issues have arisen that require consultation. Consultations in 2015 have included a consultation with Eureka Township on the movement of excavation material to a property in the township without authorization; and a consultation with Castle Rock Township on a proposed solar garden array and its potential stormwater impacts.
- **Serving on Work Groups Considering Local, State, or National Policy Issues** – The political and scientific landscape of water policy is subject to frequent change and reconsideration, and the VRWJPO staff plays a role in these discussions. In 2015, Mark Zabel participated in a work group on re-use of stormwater.

## Watershed Restoration and Protection Strategy (WRAPS)

The VRWJPO, MPCA, and Wenck Associates completed the final draft WRAPS in 2015, placed it on public notice in summer 2015, and received approval from the U.S. Environmental Protection Agency (EPA) in December 2015. The [WRAPS](#) is posted on the MPCA website.

Beginning in late 2014 and early 2015, the VRWJPO scheduled meetings with elected or appointed officials in each community with proposed waste load allocations (incorporated areas) or load allocations (unincorporated areas) to discuss the pollutant-reduction goals. Each jurisdiction received a fact sheet describing the specific impairments, protection priorities, restoration priorities, and BMPs that would be effective in reducing pollutants in local areas (see Appendix III).

Implementation of the WRAPS is included in the final draft 2016-2025 Watershed Plan. Subwatershed plans prioritize practices and actions in each subwatershed (a draft subwatershed plan is included below).

Figure 7-5.1: South Branch Vermillion Subwatershed Management Plan

South Branch Vermillion Subwatershed Management Plan	Original Scenario (All Activities)	500K Annual Scenario 1	Current Balance Scenario
Woodchip bioreactors and other N removal BMPs	\$ 75,000	\$ 75,000	\$ 75,000
Riparian Buffers	\$ 250,000	\$ 250,000	\$ 125,625
Natural Channel Restoration	\$ 100,000	\$ 100,000	\$ 125,625
Culverts/crossings	\$ 50,000	\$ 50,000	\$ 50,000
<b>Ten Year Total Budget (15% of total)</b>	<b>\$ 475,000</b>	<b>\$ 475,000</b>	<b>\$ 376,250</b>



Subwatershed Priorities	
Subwatershed	Priority Factor
Upper Main Stem	25
South Creek	20
North Creek	15
South Branch Vermillion	15
Middle Creek	10
Middle Main Stem	7
Lower Main Stem	5
Mississippi River Direct	3

## Wetland Banking Program

The VRWJPO has shown interest in developing a wetland banking program as a means to 1) restore drained or degraded wetlands; 2) provide mitigation credit opportunities for unavoidable impacts to wetlands within the watershed; and 3) financially support future wetland restorations from proceeds of the sale of VRWJPO-established wetland bank credits. In 2014, the VRWJPO allocated \$500,000 to the potential establishment of a wetland bank within the watershed.

Partners including the Dakota County SWCD, Dakota County Environmental Resources Department, and the Minnesota Board of Water and Soil Resources (BWSR) have been actively pursuing possible wetland restoration/wetland bank opportunities within the watershed in 2015. The need is urgent, as there is currently no wetland bank available to access wetland mitigation credits within the watershed.

## 2016 Work Plan

The VRWJPO Work Plan and Budget for 2016 maintain core activities: administration, monitoring and data analysis, public outreach and communication, inventory/assessment, capital improvement projects, feasibility/preliminary studies, evaluation and policy, regulatory review and regulation, and grant-funded activities. However, after the VRWJPB adopts the 2016-2025 Vermillion River Watershed Management Plan, the framework for future work plans may change.

- The VRWJPO's roles, as defined in the updated Watershed Plan, are categorized in a different way. These roles are **administration and operations, regulation, research and planning, monitoring and assessment, land and water treatment, coordination and collaboration, and public communication and outreach**. The emphasis is on improving land and water through implementation of best management practices (BMPs) that remove or reduce pollutants.

The VRWJPO's highest priorities in 2016 will include:

- Adopting and **implementing the 2016-2025 Vermillion River Watershed Management Plan**. After adoption by the Vermillion River Watershed Joint Powers Board (VRWJPB) in June or July 2016, the VRWJPO will develop activities that will support the Watershed Plan. These include:
  - Assisting cities and townships to integrate VRWJPO Watershed Plan changes into local water management plans (LWMPs) and local controls, which will then be included in the LGU's Comprehensive Plan by the end of 2018.
  - Monitoring implementation of the VRWJPO Standards by local government units through review of local controls and permitting programs.
  - Adapting or revising the VRWJPO Budget, Work Plan, and Annual Activity Report, for example, to be consistent with the updated Watershed Plan.
  - Working on practical, efficient methods of collecting information from local government for purposes of reporting progress on Watershed Plan or WRAPS implementation.
  - Creating a basic VRWJPO policy book and operational rules and guidelines.

The Implementation Plan Table shows the following actions planned for 2016:

- **Administration and Operations:** Establish a riparian habitat improvement program that includes tree shading in trout stream reaches.
- **Coordination and Collaboration:** Assist Dakota and Scott Counties' land protection programs in acquiring permanent conservations easements in riparian areas.
- **Land and Water Treatment:** Conduct one subwatershed assessment.
- **Monitoring and Assessment:** Add continuous DO monitoring to the Monitoring Network sampling for reaches listed as impaired for DO.
- **Public Communication and Outreach:** Host watershed tours for elected and appointed officials to highlight innovative technology, water quality improvement, and restoration.
- **Research and Planning:** Coordinate with other agencies to monitor conditions and trends in groundwater levels and contaminant concentrations.

- **Implementing the WRAPS.** The WRAPS was approved in December 2015, and the VRWJPO has already targeted restoration and protection projects. Subwatershed assessments for South Creek in Lakeville and Lake Alimagnet in Apple Valley/Burnsville identify possible project options in the upper watershed. WRAPS approval also opens the door to more grant opportunities, and the VRWJPO will identify suitable projects for grant applications.
- **Partnering to build a wetland banking system.** The VRWJPO will participate in the restoration and development of a wetland bank in the watershed. The goal is to use the initial investment to provide wetland credits for purchase, and use the proceeds to fund additional wetland restorations. A wetland bank is a multi-year planning proposition supported by local governments.
- **Increasing headwaters CIP projects** in the Scott County portion of the watershed. The Vermillion River Headwaters Subwatershed Assessment identified and prioritized 24 potential BMP implementation projects. Efforts will be made to implement the highest priority projects.
- **Launching an improved website.** Steady growth in website use has elevated the need to provide an updated online presence. Goals for the improved website include: making information easier to find; helping users link to water-related services provided by multiple agencies; engaging people who visit the website in exploring and enjoying the watershed; and inspiring website visitors to learn about and take action on issues important to watershed health and quality of life. The updated website design retains some of the current site's popular features – calendar of events, interactive map that provides information about completed projects, and access point for VRWJPB and WPC materials. It also features a streamlined design, news section (for rapid updates), home page “key message,” and photos that illuminate the beauty of the watershed.
- **Reducing nitrate in surface- and groundwater.** Nitrate contamination of groundwater is a pervasive problem in the eastern watershed, affecting Hastings' municipal water supply and private drinking water wells in rural townships. High nitrate concentration in surface water is another identified problem in the Vermillion River South Branch, and is a protection priority in the WRAPS. The VRWJPO continues to seek a cooperator for a bioreactor or other innovative nitrate-reduction BMP demonstration. In 2016, the VRWJPO, Dakota County, U of M Extension, and Dakota SWCD have proposed a pilot project that would provide landowners enhanced staff services for scheduling irrigation based on soil moisture. The goal is to reduce groundwater use for irrigation and, as a side benefit, possibly reduce leaching of nitrate to groundwater.
- **Building capacity.** The VRWJPO will add an additional FTE in 2016, an engineering and stormwater management position. This will build the VRWJPO's capacity to market, develop, design, and manage on-the-ground land and water treatment projects.
- **Engaging the business community.** The first Stewardship Grant proposal for 2016 came from the Rotary Club of Lakeville, an organization of business leaders, to install a pollinator garden at a city park. For the first time, a Vermillion Stewards event is planned at a local craft brewery, bringing participants an awareness of clean water issues and the business a higher profile. Sustainability policies have become routine in large corporations and common in smaller businesses, leading business leaders to look for ways to engage staff in community projects and customers in environmental conversations. The VRWJPO wants to increase channels to reach businesses in the watershed.

## Final 2015 VRWJPO Budget and Work Plan

Category	Budget Item	Amount
<b>Administrative</b>	1) Administrator and Specialist	130,000
	2) Scott County Staff Time	10,000
	3) Other Dakota County Staff Time	26,000
	4) Legal Support	15,000
	5) Miscellaneous Expenses (Per Diem, Mileage, Postage)	9,000
	6) Training, Conferences, Certifications	3,000
	7) Office Equipment Purchases	3,000
	<b>Subtotal</b>	<b>196,000</b>
<b>Monitoring and Data Analysis</b>	1) Vermillion River Monitoring Network (Dakota)	
	a) Staff Time (Sampling, Maintenance, Downloading)	38,000
	b) Data Analysis, Database Management, Reporting	16,000
	c) Water Quality Sample Analysis and QA/QC Samples	19,000
	d) Equipment and Supplies	8,000
	2) Vermillion River Monitoring Network (Scott)	12,500
	3) USGS Cost Share for Blaine Avenue Station	8,300
	4) DNR Flow Gaging Assistance	16,000
	5) Biomonitoring Plan	
	a) Biological and Habitat Assessments	13,000
	b) Electrofishing	18,000
	6) Ambient Groundwater Study (Alternate Years)	25,000
	7) Monitoring Program Review and Evaluation	13,000
	8) Lower Vermillion Turbidity Monitoring	7,000
	<b>Subtotal</b>	<b>193,800</b>
<b>Public Outreach and Education</b>	1) Communication and Outreach Staff	50,000
	2) Wetland Health Evaluation Program Cost Share	3,000
	3) Vermillion River Watch Program	6,000
	4) Vermillion River Stewards	25,000
	5) Scott County Outreach Efforts	2,700
	6) Vermillion River Signage, Map Updates	5,000
	7) Newsletter, Mailings, Web Site, Communication Materials	20,000
	8) Landscaping for Water Quality	25,200
	9) Children's Water Festival Support	1,000
	10) WaterShed Partners	5,000
	11) Watershed Tour	1,500
	12) South Branch Initiative BMP Marketing	20,000
	13) Building Inspectors Workshop	3,250
	14) Dakota SWCD Outreach Assistance	3,750
	15) Stewardship Grants	50,000
	<b>Subtotal</b>	<b>221,400</b>
<b>Inventory Assessment</b>	1) General GIS Support	5,000
	<b>Subtotal</b>	<b>5,000</b>



Category	Budget Item	Amount
<b>Capital Improvement Projects</b>	1) Rosemount Cost Share	70,000
	2) Cost Share Programs in Dakota County (SWCD)	91,000
	a) Encumbered 2013 Dakota County Projects (SWCD)	0
	3) Cost Share Programs in Scott County (SWCD)	28,400
	a) Encumbered 2013 Scott County Projects (SWCD)	0
	4) Buffer and Floodplain Easements 2014	130,000
	5) South Creek Restoration Projects	35,000
	6) Cost Share Competitive Grants	450,000
	7) Wetland Acquisition	500,000
	<b>Subtotal</b>	<b>1,304,400</b>
<b>Feasibility/Preliminary Studies</b>	1) Design of Restoration Projects in South Creek, Headwaters	75,000
	2) Preliminary Design, Tech. Asst, Marketing (Dakota SWCD)	40,000
	3) Preliminary Design, Tech. Asst., Marketing (Scott SWCD)	15,000
	4) South Branch Bioreactors	10,000
	5) Watershed-wide WRAPS	20,000
	6) South Branch Wetland Restoration Design	10,000
	<b>Subtotal</b>	<b>170,000</b>
<b>Evaluation and Policy</b>	1) Dakota SWCD Incentive Program Policy Assistance	2,000
	2) Scott County Staff	5,000
	3) VRWJPO Staff	30,000
	4) Plan Development Support	25,000
	<b>Subtotal</b>	<b>62,000</b>
<b>Regulatory Review and Regulation</b>	1) Dakota SWCD Assistance with Plan Review	10,000
	2) Engineering Assistance and Review	15,000
	3) VRWJPO Local Program Assistance	20,000
	<b>Subtotal</b>	<b>45,000</b>
<b>Vermillion River WRAPS</b>	1) Administration, Management, Reporting, Coordination	10,000
	2) Civic Engagement	30,000
	3) Sample Collection, Equipment Installation, Maintenance	5,000
	<b>Subtotal</b>	<b>45,000</b>
<b>Total Expenditures</b>		<b>2,242,600</b>
<b>Cash Reserve</b>		<b>360,000</b>
<b>TOTAL ANNUAL EXPENSES</b>		<b>2,602,600</b>

## 2015 Financial Statement

Dakota County, Minnesota	
Statement of Revenues, Expenses, and Changes in Fund Balance	
Vermillion River Watershed	
For the Year Ending December 31, 2015	
<b>Revenues</b>	
Taxes	\$818,175
Interest on Investments	22,959
Licenses and Permits	11
Intergovernmental	56,603
<b>TOTAL REVENUE</b>	<b>\$897,748</b>
<b>Expenditures</b>	
Administrative	
Evaluation/Policy Development	
Monitoring/Data Analysis	
Public Outreach/Communication	
Coordination with Other Agencies	
Regulatory Review/Regulation	
Inventory/Assessment	
Feasibility/Preliminary Studies	
Capital Improvement Projects	
<b>TOTAL EXPENSES</b>	<b>\$937,527</b>
<b>Excess of Revenue Over/Under Expenses</b>	<b>(\$39,779)</b>
<b>Other Financing Sources</b>	
<b>Net Change in Fund Balance</b>	<b>(\$39,779)</b>
<b>Fund Balance January 1, 2015</b>	<b>\$1,925,156</b>
<b>Fund Balance December 31, 2015</b>	<b>\$1,885,377</b>



## Appendix I: Requests for Qualifications and Requests for Proposals

The VRWJPO issued three Requests for Proposals in 2015. The RFP language is attached.







Released on March 9, 2015

## REQUEST FOR PROPOSALS

### Vermillion River Watershed Joint Powers Organization Watershed Plan Implementation

#### I. GENERAL INFORMATION

##### A. Purpose of this RFP.

The Vermillion River Watershed Joint Powers Organization (VRWJPO) is soliciting written proposals for developing the Implementation Section of its 2016-2025 Watershed Management Plan, including a Capital Improvement Program.

##### B. Proposal Due Date.

**Proposals will be accepted until 4:30 p.m. CST on March 27, 2015. Proposals received after 4:30 p.m. on March 27, 2015 will not be considered.**

Proposals may be submitted electronically via email by attaching one pdf format copy sent to [mark.zabel@co.dakota.mn.us](mailto:mark.zabel@co.dakota.mn.us)

Hard copy proposals may be sent to the following address:  
Physical Development Division  
Vermillion River Watershed JPO  
ATTN: Mark Zabel  
14955 Galaxie Ave.  
Apple Valley, MN 55124

A hard copy is not required if a proposal is submitted electronically, and an electronic pdf file is not required if a hard copy is submitted.

Electronic submittal is preferred.

Proposals received prior to the due date and time will be kept secured until officially opened. All proposals shall be held firm for 90 days from the proposal due date.

##### C. RFP Questions.

All questions regarding this RFP must be submitted by email to Mark Zabel, [mark.zabel@co.dakota.mn.us](mailto:mark.zabel@co.dakota.mn.us) by March 25, 2015.

##### D. Proposal Costs.

The VRWJPO is not responsible for any costs incurred by the proposer to respond to this RFP, or participate in proposer presentations. Submittal of proposals does not obligate the VRWJPO to award a contract.

G. Ownership of Proposals.

All submitted proposals become the property of the VRWJPO and will not be returned to the proposers. By submitting a proposal, the proposer agrees that the VRWJPO may copy the proposal for purposes of facilitating the evaluation or to respond to requests for public data. The proposer consents to such copying by submitting a proposal and warrants that such copying will not violate the rights of any third party, including copyrights.

H. Public Records and Requests for Confidentiality.

Pursuant to the Minnesota Government Data Practices Act, Minn. Stat. § 13.591, the names of all entities that submitted a proposal to the VRWJPO will be public once the proposals have been opened. All other information contained in the proposals remains private until the VRWJPO has negotiated a contract with the selected proposer. After a contract has been negotiated, all information in all of the proposals is public, except "trade secret" information as defined at Minn. Stat. §13.37.

Requests for release of information held by the VRWJPO are subject to the provisions of the Minnesota Government Data Practices Act, Minn. Stat. ch.13. Proposers are encouraged to familiarize themselves with these provisions before submitting a proposal.

II. GENERAL CONTRACT REQUIREMENTS

The VRWJPO will require the selected proposer to include the contents of this RFP and all representations, warranties and commitments in the proposal and related correspondence as contractual obligations.

Other contractual requirements will include:

A. Insurance.

Prior to commencement of the contract term the successful proposer shall procure and maintain in full force and effect during the term of the agreement insurance coverage for injuries to persons or damage to property which may arise from or in connection with the performance of work hereunder by the consultant, its agents, representatives, employees or subcontractors. The insurance coverage shall satisfy the requirements set forth in Attachment 1. **A certificate of liability is to be included with the proposal as proof of insurance.** If the selected consultant does not have the insurance coverage as set forth in Attachment 1, a waiver is possible.

B. Standard Assurances.

The selected consultant will be required to comply with the Standard Assurances set forth in Attachment 2.

III. SCOPE OF SERVICES TO BE PROVIDED

The VRWJPO is seeking to contract for the development of the Implementation Section of its 2016-2025 Watershed Management Plan, including a Capital Improvement Plan. The primary desired outcomes are:

- 1) Develop an implementation section that meets the requirements as set out in Minnesota Rules 8410, or is demonstrated as acceptable under authorities of the Minnesota Board of Water and Soil Resources (BWSR) and the VRWJPO; and
- 2) Organize implementation actions geographically on a subwatershed basis for the 9 subwatersheds identified by the VRWJPO; and
- 3) Create a capital improvement program described within the implementation section for structural solutions within each subwatershed, including tables with elements as specified in Minnesota Rule 8410; and

- 4) Coordinate plans and programs of the VRWJPO with other organizations operating within the watershed (e.g. Cities, County Departments, SWCDs, State Agencies, Outdoor Groups, etc.) to address mutual goals and objectives and provide a clear description as to how coordinated implementation will be achieved and funded.

#### IV. GENERAL PROPOSAL REQUIREMENTS

##### A. General Instructions.

1. Proposal Format: Hard copy proposals shall be on 8-1/2" x 11" recycled paper. All proposals by corporations shall bear the official seal of the corporation, if applicable, along with the signature of a duly authorized officer of the corporation. Proposals must be no longer than six pages, excluding letter of submittal and project personnel resumes. Index the proposal and sequentially number all pages throughout or by section. The proposal should be clear and understandable when reproduced in black ink. All text and exhibits should be succinct and relevant to the RFP requirements.

The VRWJPO is not responsible for locating or securing any information that is not identified as the proposal and reasonably available to the VRWJPO.

2. Examination of the RFP: By submitting a proposal, the consultant represents that he/she has thoroughly examined and become familiar with the work required under this RFP and that he/she is capable of performing quality work to achieve the objectives of the VRWJPO. The VRWJPO will not physically release or return any proposal for purpose of modification, withdrawal, or any other purpose.
3. Addenda/ Clarifications: Any changes to the RFP will be made by the VRWJPO through a written addendum. No verbal modifications will be binding. In the case of a variance between written words and figures, the amount(s) stated in written words shall govern.
4. Exceptions/ Deviations: Any exceptions to the requirements in the RFP must be included in the proposal submitted by the consultant. Segregate such exceptions as a separate element of the proposal under the heading "Exceptions and Deviations".
5. Contract Award: The selected firm will be notified upon their successful selection by the Vermillion River Watershed Joint Powers Board. The selected firm will be required to execute a contract and return it to the VRWJPO according to instructions within 7 days after the contract forms have been mailed to them.
6. VRWJPO Rights: Issuance of this RFP and receipt of proposals does not commit the VRWJPO to award a contract. The VRWJPO reserves the right to postpone opening of proposals for its own convenience, to accept or reject any or all proposals received in response to this RFP, to negotiate with firms of its own choosing, to potentially negotiate with more than one firm simultaneously, to waive any defects, to advertise for new proposals where the acceptance, rejections, waiving or advertising of such would be in the best interests of the VRWJPO, or to cancel all or part of this RFP.

The VRWJPO may investigate the qualifications of any firm under consideration, require confirmation of information furnished by the firm, and require additional evidence of qualifications to perform the work described in this RFP.

##### B. General Information

Letter of Submittal and Proposal. Firms must submit both a letter of submittal and a proposal.

The Letter of Submittal shall include:

1. Name, address, phone number, fax number and web address of the firm;
2. Acknowledgement of receipt of RFP addenda, if any;
3. Name, title, address, telephone and fax numbers, and email address (if available) of contact person during period of proposal evaluation;
4. A statement to the effect that the proposal shall remain valid for a period of not less than 120 days from the date of submittal; and
5. Signature of a person authorized to bind the offering firm to the terms of the proposal.

The following information should be provided within the proposal.

1. General Firm Information: List the office location from which work will occur. If a firm has previously provided their firm's qualifications – no further information on the firm is required.
2. Describe your firm's approach, building on the project scope described in section III above. Specifically address:
  1. The firm's proposed approach for including the participation of VRWJPO staff.
  2. The firm's proposed approach for accomplishing the desired outcomes described in the project scope above.
  3. A detailed project schedule including all formal and informal meetings. Describe the scope and intended objective for all meetings. Also provide hours and associated costs for all meetings.
  4. Any additional issues you believe are significant to the project.
  5. Statement that consultant can meet the timeline presented in Section IV.C.
3. Key Personnel:

Project Manager: Describe the project manager's qualifications for this project and a brief list of previous projects managed with the firm that are relevant to this project. Do not only supply a resume of the project manager or key contact persons. If more than one project manager will potentially be assigned to various specialty areas, please provide multiple descriptions. No changes in project manager and key personnel are allowed after the contract is executed unless approved by the VRWJPO staff.

Key Support Staff: List key personnel that will be assigned to this project. Identify their area of expertise and how they have worked with the project manager on previous projects.

Previous planning framework and evaluation experience: Describe previous planning framework projects that the project manager(s) has managed. Provide no more than a 1 page summary of similar projects.

Sub-consultants: Describe the name and location of other sub-consultants that would be used by the firm in the effort. Identify the approximate percentage of the work that would be performed by each of these firms. Where two or more consultants desire to submit a single proposal in response to RFP, they should do so on a prime-subcontractor basis rather than as a joint venture. The VRWJPO intends to contract with a single firm and not with multiple firms doing business as a joint venture.

Fee Estimate. Provide within the proposal, an increment estimate of the project costs. The fee estimate shall be broken into work tasks with an hourly estimate of time required by each project personnel or sub-consultant. Any allowances for project costs, such as mileage or indirect office costs should be identified. The fee structure will be based on a total cost-not-to-exceed agreement/contract amount including reimbursable expenses.

Contract. The successful proposer will need to include a Statement of Compliance to the terms identified for Standard Assurances and Insurance Terms of the Master Service contract used by the VRWJPO/Dakota County, and will need to have an executed Master Service contract.

Conflict of Interest. The consultant must identify any potential conflict of interest it may have providing the services contemplated by this RFP.

References. Include three references that include the name, title, company and phone number of the reference, as well as a short description of the work performed. References should highlight work very similar to what is being asked for within this RFP.

C. Schedule.

This project is expected to take approximately **three** months, with the following general timeframes and milestones:

1.	RFP distributed to consultants	March 9, 2015
2.	Proposals received by the VRWJPO	March 27, 2015
3.	Consultant selection and contract	April 23, 2015
4.	Project Kick-off	April 29, 2015
4.	Draft Implementation Section due	June 26, 2015
5.	Final Implementation Section due	July 24, 2015

V. PROPOSAL EVALUATION CRITERIA

VRWJPO will identify the proposals that most closely meet the needs for the project. Interviews are not anticipated, however, VRWJPO staff may call firms with questions regarding the proposals.

Factors to be considered in making the selection will include but not be limited to the following:

- Project team – qualification and experience of the project manager, key staff and sub-consultants proposed to work on the project, experience on previous similar projects, and availability of the key staff members.
- Grasp of project requirements – the firm's analysis, preparation and level of interest.
- Project approach/methodology – understanding of VRWJPO goals, objectives and technical needs.
- Responsiveness – compatibility between consultant and the key planning participants, general attitude, and ability to communicate.
- Fee estimate – understanding of the work tasks and appropriately assigning qualified personnel and lowest total project cost.

VI. ATTACHMENTS

Attachment 1: Insurance Terms  
Attachment 2: Standard Assurances



## Attachment 1

### INSURANCE TERMS

Contractor agrees to provide and maintain at all times during the term of this Contract such insurance coverages as are indicated herein and to otherwise comply with the provisions that follow. Such policy(ies) of insurance shall apply to the extent of, but not as a limitation upon or in satisfaction of, the Contract indemnity provisions. The provisions of this section shall also apply to all Subcontractors, Sub-subcontractors, and Independent Contractors engaged by Contractor with respect to this Contract, and Contractor shall be entirely responsible for securing the compliance of all such persons or parties with these provisions.

#### APPLICABLE SECTIONS ARE CHECKED



1. Workers Compensation. Workers' Compensation insurance in compliance with all applicable statutes including an All States or Universal Endorsement where applicable. Such policy shall include Employer's Liability coverage in an amount no less than \$500,000. If Contractor is not required by Statute to carry Workers' Compensation Insurance, Contractor agrees: (1) to provide County with evidence documenting the specific provision under Minn. Stat. § 176.041 which excludes Contractor from the requirement of obtaining Workers' Compensation Insurance; (2) to provide prior notice to County of any change in Contractor's exemption status under Minn. Stat. § 176.041; and (3) to hold harmless and indemnify County from and against any and all claims and losses brought by Contractor or any subcontractor or other person claiming through Contractor for Workers' Compensation or Employers' Liability benefits for damages arising out of any injury or illness resulting from performance of work under this Contract. If any such change requires Contractor to obtain Workers' Compensation Insurance, Contractor agrees to promptly provide County with evidence of such insurance coverage.



2. General Liability.

"Commercial General Liability Insurance" coverage (Insurance Services Office form title), providing coverage on an "occurrence" rather than on a "claims made" basis, which policy shall include, but not be limited to, coverage for Bodily Injury, Property Damage, Personal Injury, Contractual Liability (applying to this Contract), Independent Contractors, "XC&U" and Products-Completed Operations liability (if applicable). Such coverage may be provided under an equivalent policy form (or forms), so long as such equivalent form (or forms) affords coverage which is at least as broad. An Insurance Services Office "Comprehensive General Liability" policy which includes a Broad Form Endorsement GL 0404 (Insurance Services Office designation) shall be considered to be an acceptable equivalent policy form.

Contractor agrees to maintain at all times during the period of this Contract a total combined general liability policy limit of at least \$1,500,000 per occurrence and aggregate, applying to liability for Bodily Injury, Personal Injury, and Property Damage, which total limit may be satisfied by the limit afforded under its Commercial General Liability policy, or equivalent policy, or by such policy in combination with the limits afforded by an Umbrella or Excess Liability policy (or policies); provided, that the coverage afforded under any such Umbrella or Excess Liability policy is at least as broad as that afforded by the underlying Commercial General Liability policy (or equivalent underlying policy).

Such Commercial General Liability policy and Umbrella or Excess Liability policy (or policies) may provide aggregate limits for some or all of the coverages afforded thereunder, so long as such aggregate limits have not, as of the beginning of the term or at any time during the term, been reduced to less than the total required limits stated above, and further, that the Umbrella or Excess Liability policy provides coverage from the point that such aggregate limits in the underlying Commercial General Liability policy become reduced or exhausted. An Umbrella or Excess Liability policy which "drops down" to respond immediately over reduced underlying limits, or in place of exhausted underlying limits, but subject to a deductible or "retention" amount, shall be acceptable in this regard so long as such deductible or retention for each occurrence does not exceed the amount shown in the provision below.

Contractor's liability insurance coverage may be subject to a deductible, "retention" or "participation" (or other similar provision) requiring the Contractor to remain responsible for a stated amount or percentage of each covered loss; provided, that such deductible, retention or participation amount shall not exceed \$25,000 each occurrence.



Such policy(ies) shall name Dakota County, its officers, employees and agents as Additional Insureds thereunder.

☒ 3. Professional Liability. Professional Liability (errors and omissions) insurance with respect to its professional activities to be performed under this Contract. This amount of insurance shall be at least \$1,500,000 per occurrence and aggregate (if applicable). Coverage under such policy may be subject to a deductible, not to exceed \$25,000 per occurrence. Contractor agrees to maintain such insurance for at least one (1) year from Contract termination.

It is understood that such Professional Liability insurance may be provided on a claims-made basis, and, in such case, that changes in insurers or insurance policy forms could result in the impairment of the liability insurance protection intended for Dakota County hereunder. Contractor therefore agrees that it will not seek or voluntarily accept any such change in its Professional Liability insurance coverage if such impairment of Dakota County's protection could result; and further, that it will exercise its rights under any "Extended Reporting Period" ("tail coverage") or similar policy option if necessary or appropriate to avoid impairment of Dakota County's protection. Contractor further agrees that it will, throughout the one (1) year period of required coverage, immediately: (a) advise Dakota County of any intended or pending change of any Professional Liability insurers or policy forms, and provide Dakota County with all pertinent information that Dakota County may reasonably request to determine compliance with this section; and (b) immediately advise Dakota County of any claims or threats of claims that might reasonably be expected to reduce the amount of such insurance remaining available for the protection of Dakota County.

☒ 4. Automobile Liability. Business Automobile Liability insurance covering liability for Bodily Injury and Property Damage arising out of the ownership, use, maintenance, or operation of all owned, non-owned and hired automobiles and other motor vehicles utilized by Contractor in connection with its performance under this Contract. Such policy shall provide total liability limits for combined Bodily Injury and/or Property Damage in the amount of at least \$1,500,000 per accident, which total limits may be satisfied by the limits afforded under such policy, or by such policy in combination with the limits afforded by an Umbrella or Excess Liability policy(ies); provided, that the coverage afforded under any such Umbrella or Excess Liability policy(ies) shall be at least as broad with respect to such Business Automobile Liability insurance as that afforded by the underlying policy. **Unless included within the scope of Contractor's Commercial General Liability policy, such Business Automobile Liability policy shall also include coverage for motor vehicle liability assumed under this contract.**

☐ Such policy, and, if applicable, such Umbrella or Excess Liability policy(ies), shall include Dakota County, its officers, employees and agents as Additional Insureds thereunder.

☐ 5. Additional Insurance. Dakota County shall, at any time during the period of the Contract, have the right to require that Contractor secure any additional insurance, or additional feature to existing insurance, as Dakota County may reasonably require for the protection of their interests or those of the public. In such event Contractor shall proceed with due diligence to make every good faith effort to promptly comply with such additional requirement(s).

☒ 6. Evidence of Insurance. Contractor shall promptly provide Dakota County with evidence that the insurance coverage required hereunder is in full force and effect prior to commencement of any work. At least 10 days prior to termination of any such coverage, Contractor shall provide Dakota County with evidence that such coverage will be renewed or replaced upon termination with insurance that complies with these provisions. Such evidence of insurance shall be in the form of the Dakota County Certificate of Insurance, or in such other form as Dakota County may reasonably request, and shall contain sufficient information to allow Dakota County to determine whether there is compliance with these provisions. At the request of Dakota County, Contractor shall, in addition to providing such evidence of insurance, promptly furnish Contract Manager with a complete (and if so required, insurer-certified) copy of each insurance policy intended to provide coverage required hereunder. All such policies shall be endorsed to require that the insurer provide at least 30 days' notice to Dakota County prior to the effective date of policy cancellation, nonrenewal, or material adverse change in coverage terms. On the Certificate of Insurance, Contractor's insurance agency shall certify that he/she has Error and Omissions coverage.

☒ 7. Insurer: Policies. All policies of insurance required under this paragraph shall be issued by financially responsible insurers licensed to do business in the State of Minnesota, and all such insurers must be acceptable to Dakota County. Such acceptance by Dakota County shall not be unreasonably withheld or delayed. An insurer with a current A.M. Best Company rating of at least A:VII shall be conclusively deemed to be acceptable. In all other instances, Dakota County shall have 15 business days from the date of receipt of Contractor's evidence of insurance to advise Contractor in writing of any insurer that is not acceptable to Dakota County. If Dakota County does not respond in writing within such 15 day period, Contractor's insurer(s) shall be deemed to be acceptable to Dakota County.

☒ 8. Noncompliance. In the event of the failure of Contractor to maintain such insurance and/or to furnish satisfactory evidence thereof as required herein, Dakota County shall have the right to purchase such insurance on behalf of Contractor, which agrees to provide all necessary and appropriate information therefor and to pay the cost thereof to Dakota County immediately upon presentation of invoice.

☒ 9. Loss Information. At the request of Dakota County, Contractor shall promptly furnish loss information concerning all liability claims brought against Contractor (or any other insured under Contractor's required policies), that may affect the amount of liability insurance available for the benefit and protection of Dakota County under this section. Such loss information shall include such specifics and be in such form as Dakota County may reasonably require.

☒ 10. Release and Waiver. Contractor agrees to rely entirely upon its own property insurance for recovery with respect to any damage, loss or injury to the property interests of Contractor. Contractor hereby releases Dakota County, its officers, employees, agents, and others acting on their behalf, from all claims, and all liability or responsibility to Contractor, and to anyone claiming through or under Contractor, by way of subrogation or otherwise, for any loss of or damage to Contractor's business or property caused by fire or other peril or event, even if such fire or other peril or event was caused in whole or in part by the negligence or other act or omission of Dakota County or other party who is to be released by the terms hereof, or by anyone for whom such party may be responsible.

Contractor agrees to effect such revision of any property insurance policy as may be necessary in order to permit the release and waiver of subrogation agreed to herein. Contractor shall, upon the request of Dakota County, promptly provide a Certificate of Insurance, or other form of evidence as may be reasonably requested by Dakota County, evidencing that the full waiver of subrogation privilege contemplated by this provision is present; and/or, if so requested by Dakota County, Contractor shall provide a full and complete copy of the pertinent property insurance policy(ies).

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Revised: 10/07

## Attachment 2

### STANDARD ASSURANCES

1. **NON-DISCRIMINATION.** During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or applicant for employment because of race, color, creed, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without unlawful discrimination because of their race, color, creed, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices which set forth the provisions of this nondiscrimination clause.

The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status.

No funds received under this Contract shall be used to provide religious or sectarian training or services.

The Contractor shall comply with any applicable federal or state law regarding non-discrimination. The following list includes, but is not meant to limit, laws which may be applicable:

A. The Equal Employment Opportunity Act of 1972, as amended, 42 U.S.C. § 2000e *et seq.* which prohibits discrimination in employment because of race, color, religion, sex or national origin.

B. Executive Order 11246, as amended, which is incorporated herein by reference, and prohibits discrimination by U.S. Government contractors and subcontractors because of race, color, religion, sex or national origin.

C. The Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701 *et seq.* and 45 C.F.R. 84.3 (J) and (K) implementing Sec. 504 of the Act which prohibits discrimination against qualified handicapped persons in the access to or participation in federally-funded services or employment.

D. The Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621 *et seq.* as amended, and Minn. Stat. § 181.81, which generally prohibit discrimination because of age.

E. The Equal Pay Act of 1963, as amended, 29 U.S.C. § 206(d), which provides that an employer may not discriminate on the basis of sex by paying employees of different sexes differently for the same work.

F. Minn. Stat. Ch. 363A, as amended, which generally prohibits discrimination because of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, disability, sexual orientation or age.

G. Minn. Stat. § 181.59 which prohibits discrimination against any person by reason of race, creed, or color in any state or political subdivision contract for materials, supplies or construction. Violation of this section is a misdemeanor and any second or subsequent violation of these terms may be cause for forfeiture of all sums due under the Contract.

H. Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 through 12213, 47 U.S.C. §§ 225, 611, with regulations at 29 C.F.R. § 1630, which prohibits discrimination against qualified individuals on the basis of a disability in term, condition or privilege of employment.

I. Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, with regulations at 41 C.F.R. Part 60-250, which prohibits discrimination in employment against protected veterans.

2. **DATA PRIVACY.** For purposes of this Contract all data created, collected, received, stored, used, maintained, or disseminated by Contractor in the performance of this Contract is subject to the requirements of the Minnesota Government Data Practices Act, Minn. Stat. Chapter 13 and the Minnesota Rules implementing the Act now in force or hereafter adopted as well as the Federal laws on data privacy, and Contractor must comply with those requirements as if it were a governmental entity. The remedies in section 13.08 apply to the Contractor. Contractor does not have a duty to provide access to public data to the public if the public data are available from the governmental agency (County), except as required by the terms of this Contract. All subcontracts shall contain the same or similar data practices compliance requirements.

3. **HEALTH INSURANCE PORTABILITY & ACCOUNTABILITY ACT OF 1996.** The Contractor agrees to comply with the requirements of the Health Insurance Portability and Accountability Act (HIPAA) which are applicable to the Contractor's duties under this Contract. In performing its obligations under this Contract, Contractor agrees to comply with the

HIPAA Privacy requirements, the HIPAA Standards for Electronic Transactions, the HIPAA security requirements, and any other applicable HIPAA laws, standards and requirements now in effect or hereinafter adopted as they become law.

4. **RECORDS DISCLOSURE/RETENTION.** Contractor's bonds, records, documents, papers, accounting procedures and practices, and other evidences relevant to this Contract are subject to the examination, duplication, transcription and audit by the County and either the Legislative or State Auditor, pursuant to Minn. Stat. § 16C.05, subd. 5. Such evidences are also subject to review by the Comptroller General of the United States, or a duly authorized representative, if federal funds are used for any work under this Contract. The Contractor agrees to maintain such evidences for a period of six (6) years from the date services or payment were last provided or made or longer if any audit in progress requires a longer retention period.

5. **WORKER HEALTH, SAFETY AND TRAINING.** Contractor shall be solely responsible for the health and safety of its employees in connection with the work performed under this Contract. Contractor shall make arrangements to ensure the health and safety of all subcontractors and other persons who may perform work in connection with this Contract. Contractor shall ensure all personnel of Contractor and subcontractors are properly trained and supervised and, when applicable, duly licensed or certified appropriate to the tasks engaged in under this Contract. Each Contractor shall comply with federal, state and local occupational safety and health standards, regulations and rules promulgated pursuant to the Occupational Health and Safety Act which are applicable to the work to be performed by Contractor.

6. **CONTRACTOR DEBARMENT, SUSPENSION AND RESPONSIBILITY CERTIFICATION.** Federal Regulation 45 CFR 92.35 prohibits the State/Agency from purchasing goods or services with federal money from vendors who have been suspended or debarred by the federal government. Similarly, Minnesota Statutes, Section 16C.03, subd. 2 provides the Commissioner of Administration with the authority to debar and suspend vendors who seek to contract with the State/Agency. Vendors may be suspended or debarred when it is determined, through a duly authorized hearing process, that they have abused the public trust in a serious manner.

By Signing This Contract, The Contractor Certifies That It And Its Principals\* And Employees:

A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from transacting business by or with any federal, state or local governmental department or agency; and

B. Have not within a three-year period preceding this Contract: 1) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (federal, state or local) transaction or contract; 2) violated any federal or state antitrust statutes; or 3) committed embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; and

C. Are not presently indicted or otherwise criminally or civilly charged by a governmental entity for: 1) commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (federal, state or local) transaction; 2) violating any federal or state antitrust statutes; or 3) committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; and

D. Are not aware of any information and possess no knowledge that any subcontractor(s) that will perform work pursuant to this Contract are in violation of any of the certifications set forth above.

E. Shall immediately give written notice to the Contracting Officer should Contractor come under investigation for allegations of fraud or a criminal offense in connection with obtaining, or performing a public (federal, state or local government) transaction; violating any federal or state antitrust statutes; or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property.

\*"Principals" for the purposes of this certification means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager; plant manager; head of a subsidiary, division, or business segment and similar positions).



Directions for On Line Access to Excluded Providers

To ensure compliance with this regulation, identification of excluded entities and individuals can be found on the Office of Inspector General (OIG) website at <http://oig.hhs.gov/fraud/exclusions/listofexcluded.html>.

K/CM/Exh/SA6-Standard-CM





## REQUEST FOR PROPOSALS

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### **Vermillion River Watershed Joint Powers Organization (VRWJPO) Website Redesign**

Issued July 24, 2015. Submittals due September 10, 2015

#### **1. Introduction/Project Purpose**

The Vermillion River Watershed Joint Powers Organization (VRWJPO) seeks proposals from website development and design firms to plan, execute and deliver a custom restructure and redesign of its website, [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org). The VRWJPO requires a consultant who has demonstrated experience in managing website projects and expertise with best practices regarding website design and development.

The desire for a more user-friendly, interactive, solution-oriented website with information and resources for various audience segments prompts the redesign. The website should reflect the professional identity and brand of the VRWJPO in a graphically-appealing and engaging manner.

#### **2. About the Vermillion River Watershed Joint Powers Organization and Current Website**

The Vermillion River Watershed Joint Powers Organization was formed in 2002. A three-member joint powers board governs the organization's activities. The watershed spans central Dakota County and southeastern Scott County, Minnesota. The watershed includes all or part of 20 cities and townships in Dakota and Scott counties. The mission of the VRWJPO is to collaboratively provide education, science, and support to restore and protect the Vermillion River Watershed's natural resources for all who live, work, and play within its boundaries.

The current website was launched in June 2010. The site was developed in Joomla and is hosted by Webhosting Pad. Files are located on a Dakota County server. The analytical tool used to track visitors is Webalizer.

Web statistics generated on July 16, 2015 are presented in the following tables.

[www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org) web statistics

Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
<a href="#">Jul 2015</a>	9104	8458	7904	565	3394	2167094	9050	126468	135336	145672
<a href="#">Jun 2015</a>	9697	9264	8584	694	6729	4818324	20842	257528	277923	290938
<a href="#">May 2015</a>	9302	8529	8119	894	7726	5322957	27731	251698	264424	288364
<a href="#">Apr 2015</a>	9487	8935	8222	712	5708	5112009	21379	246661	268067	284613
<a href="#">Mar 2015</a>	9152	8247	7843	869	6570	9233217	26969	243142	255674	283729
<a href="#">Feb 2015</a>	4091	3234	2952	1031	6379	3650183	28885	82667	90557	114573
<a href="#">Jan 2015</a>	4389	3667	3086	1370	9988	3784873	42480	95672	113682	136075
<a href="#">Dec 2014</a>	8137	6570	5589	2326	18343	7451770	72133	173275	203671	252265
<a href="#">Nov 2014</a>	10001	8764	7166	2553	17497	5230600	76591	215004	262939	300038
<a href="#">Oct 2014</a>	12109	10157	10670	3283	25149	6337852	101788	330784	314877	375409
<a href="#">Sep 2014</a>	28450	20134	27496	3971	26057	5647058	119157	824908	604037	853500
<a href="#">Aug 2014</a>	2653	2219	1552	323	3183	4703274	10021	48129	68811	82273
<b>Totals</b>						<b>63459211</b>	<b>557026</b>	<b>2895936</b>	<b>2859998</b>	<b>3407449</b>

[www.improvethevermillionriver.org](http://www.improvethevermillionriver.org) web statistics

Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
<a href="#">Jul 2015</a>	226	158	148	61	533	19797	976	2380	2536	3619
<a href="#">Jun 2015</a>	266	214	134	55	868	51933	1673	4022	6422	7994
<a href="#">May 2015</a>	2255	2208	2126	72	860	661461	2242	65924	68457	69909
<a href="#">Apr 2015</a>	2431	2363	2282	67	693	695391	2028	68478	70898	72953
<a href="#">Mar 2015</a>	294	236	128	60	853	58911	1871	3996	7316	9125
<a href="#">Feb 2015</a>	308	256	132	65	751	64778	1838	3704	7171	8630
<a href="#">Jan 2015</a>	390	323	211	78	960	84749	2418	6543	10042	12110
<a href="#">Dec 2014</a>	374	305	189	73	1027	78397	2289	5887	9466	11610
<a href="#">Nov 2014</a>	364	285	182	96	1017	65185	2908	5489	8554	10934
<a href="#">Oct 2014</a>	454	360	258	109	1488	77748	3389	8015	11168	14095
<a href="#">Sep 2014</a>	388	280	215	109	1636	70904	3295	6477	8406	11656
<a href="#">Aug 2014</a>	388	288	233	106	1583	73216	3293	7249	8954	12058
<b>Totals</b>						<b>2002470</b>	<b>28220</b>	<b>188164</b>	<b>219390</b>	<b>244693</b>

The target audiences for the site include:

- City and township elected officials and staff
- Watershed residents and landowners
- Businesses, consulting firms
- Developers
- State agencies
- Civic, recreation-based or environmental organizations
- News media

Primary content to be posted includes:

- Vermillion River Watershed Joint Powers Board and Watershed Planning Commission meeting agendas and materials
- Photos
- Calendar of events
- Water quality data and trends, technical reports
- Watershed Standards and Rules
- Financial and technical assistance for capital improvement projects and stormwater retrofits, stewardship grant criteria
- Fact sheets and photos of capital improvement projects placed on the interactive map
- New water resource regulations or policies
- Emerging technologies, tools or services
- Resources for public outreach on water issues, water or watershed-related education, training, and engagement opportunities, entertaining/informational videos relating to water quality
- Information about adding a building or changes in land use that may require compliance with VRWJPO regulations, projects requiring VRWJPO permits
- Water conservation, water reuse or low impact development practices, and water-friendly landscaping best management practices
- RFPs and RFQs
- Training opportunities that we provide and online registration
- Partnership opportunities
- Ecotourism
- Watershed annual report, newsletters, grant reports
- Volunteering opportunities
- Public access locations, fishing and other recreation information
- Watershed tour of interesting, beautiful or historic places
- News releases and publications

### **3. General Project Scope and Requested Consultant Scope of Services**

- Perform an analysis of three other watershed district or watershed management organization's websites and develop an assessment of website structure, content, audiences targeted and tools. Develop pros and cons of each of the websites for staff to evaluate which framework best fits staff needs that is within the project budget and can be created by the consultant.
- Create a unique website design.
- Develop a wireframe or blue print of the structure that includes the content in a companion website, [www.improvethevermillionriver.org](http://www.improvethevermillionriver.org)



- Test the site
- Provide training and documentation
- Launch the website
- Provide post launch support and maintenance to ensure functionality and operation prior to contract expiration

#### 4. **Project Considerations – Desired Functionality**

- VRWJPO staff will write the copy for the redesigned site. It must be built so that a small staff pool can easily add, edit and delete content. Maintenance and upkeep will be completed by the VRWJPO staff.
- The website, [www.improvethevermillionriver.org](http://www.improvethevermillionriver.org), should be incorporated in the architecture of the redesigned site. The VRWJPO will discontinue the improvethevermillionriver.org site once that content is migrated into the redesigned site.
- An interactive map developed by the Dakota County Geographic Information Systems department should interface with the redesigned site. The map is currently on the VRWJPO's home page. VRWJPO staff will provide links for the map.
- Required features include a photo banner, calendar, internal search, information request, event registration, and mobile-version friendly. In addition, the ability to activate a function to accept payments for items for sale, for example rain barrels. Link to YouTube videos.
- Search Engine Optimization should be included in the development of the site.
- Cross-platform and cross-browser compatibility.
- E-newsletter signup and the ability to complement external direct mail program such as Mail Chimp.
- The website should be compliant with the requirements of the Americans with Disabilities Act.
- Traffic reporting.

#### 5. **Deliverables**

- Strategic Planning and Analysis
  - ✓ Project plan with timeline
  - ✓ Site audit describing the strengths and weaknesses of the current website and suggesting which content can be used from the current site and how that content will be migrated, and recommendations from analysis of three other watershed websites as described in Section 3
  - ✓ Assessment of goals, audiences, existing technologies, functional requirements, and development of preliminary strategic plan and timeline
- Design and Site Architecture
  - ✓ Three designs/concepts for homepage and secondary-level pages with demonstration of functionality
  - ✓ Technical and implementation specifications
- Detailed Design and Content
  - ✓ Detailed design and coding
- Content Development
  - ✓ Detailed plan for gathering information, photos, and other assets (maps, graphics, charts, etc.) and an estimate for copywriting needs.
  - ✓ VRWJPO staff will write text
- Site Development
  - ✓ Finished site with all templates
  - ✓ Usability test plan

- Testing and Training
  - ✓ Maintenance training and documentation
  - ✓ Implementation
  - ✓ Migration plan of current content to new website

## **6. Timeframe**

We anticipate work to begin in September 2015 and be completed (site will go live) by April 2016.

## **7. Proposal Guidelines and Submittal Requirements**

Interested parties are asked to provide the following information in their submittals:

- Company information. History of the company and profile of the company today. Names, credentials, experience, and roles of contributing staff.
- Name, address, phone number, and e-mail address of the primary contact.
- A summary of website development experience, including qualifications and core competencies relating to website design and development.
- Description and URLs of watersheds, government, or similar organization websites you have redesigned or other relevant website design experience.
- Scope of work that matches required tasks.
- Provide three references (name, organization, URL, email, and phone number) for similar projects.
- Submit documentation demonstrating insurance coverage as described in the attached Exhibit – Insurance Terms.

## **8. Budget**

- Provide detailed pricing on all aspects of the project, including as many a la carte options as possible.
- Project fees and requested payment schedule.

## **9. Selection and Review Process**

A selection committee of VRWJPO staff will review and evaluate proposals. If questions arise, VRWJPO staff may call firms regarding the proposals. Factors to be considered in making the selection will include, but are not limited to, the following:

- Qualifications and experience of the firm, credentials of staff to be assigned to the project, experience on previous similar projects, and ability to complete the project within the timeframe.
- Demonstrated expertise in the areas of visual design, information architecture, and technical considerations. Strong grounding in customer experience and delivering a user-centric design.
- Functionality
- Cost
- Completeness and clarity of proposal and work plan that addresses the goals and deliverables.
- Any other factors deemed relevant.

**10. Right to Refuse**

The VRWJPO is not responsible for any costs incurred by the proposer to respond to this RFP. Submittal of proposals does not obligate the VRWJPO to award a contract.

**11. Additional Information or Clarification**

All questions regarding this RFP must be submitted by email to Paula Liepold, [paula.liepold@co.dakota.mn.us](mailto:paula.liepold@co.dakota.mn.us) by Thursday, September 3, 2015.

**12. Submission of Proposal**

One electronic copy of the proposal in PDF format should be submitted by 4 p.m. Thursday, September 10, 2015, to Paula Liepold, [paula.liepold@co.dakota.mn.us](mailto:paula.liepold@co.dakota.mn.us). The VRWJPO may reject or return for completion any proposal that is not sufficiently detailed or is in an unacceptable form.

**13. Exhibits**

Standard Assurances

Insurance Terms



## REQUEST FOR PROPOSALS

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### **Vermillion River Watershed Joint Powers Organization (VRWJPO) Study of Water Quality, Pollutant Sources, and Proposed Improvements for MN Zoo's Main Lake**

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Issued by: Vermillion River Watershed Joint Powers Organization  
14955 Galaxie Ave  
Apple Valley, MN 55124

Dated: November 30, 2015

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- A qualified respondent should review the attached request for proposals and submit one (1) electronic version (.pdf format, via email) of its proposal on or before **4:30 p.m. CST on Tuesday, December 22, 2015** to:

Travis Thiel  
Vermillion River Watershed Joint Powers Organization  
Dakota County Physical Development, 3<sup>rd</sup> Floor  
14955 Galaxie Ave  
Apple Valley, MN 55124  
Email: [travis.thiel@co.dakota.mn.us](mailto:travis.thiel@co.dakota.mn.us)

- Questions regarding this proposal must be in electronic format (email), received by the Vermillion River Watershed Joint Powers Organization on or before **4:30 p.m. CST on Wednesday, December 9, 2015** and sent to:

Travis Thiel  
Vermillion River Watershed Joint Powers Organization  
Dakota County Physical Development, 3<sup>rd</sup> Floor  
14955 Galaxie Ave  
Apple Valley, MN 55124  
Email: [travis.thiel@co.dakota.mn.us](mailto:travis.thiel@co.dakota.mn.us)

Responses to the questions will be sent directly via email to the question's originator on or before **4:30 p.m. CST on Thursday, December 17, 2015**.

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## **1. Project Purpose**

The Vermillion River Watershed Joint Powers Organization (VRWJPO) seeks proposals from environmental and engineering firms to collect necessary data, review existing data, evaluate the shallow lake system and contributing subwatershed areas, and provide a report summarizing and prioritizing the pollutant sources contributing to water quality problems in Main Lake on the Minnesota Zoo (Zoo) campus in Apple Valley, MN. Additionally, the report should also include recommendations of practices that would adequately address the highest priority pollutant loading source areas. The VRWJPO requires a firm who has demonstrated experience in monitoring, data analysis, subwatershed delineation, shallow lake management, animal/feedlot runoff quality and management, water and nutrient budgets, stormwater and wastewater infrastructure, internal and external pollutant load analyses and water quality modeling. The VRWJPO will utilize the study as a tool to assist us in working with the Zoo to implement projects on its campus that will improve the quality and aesthetics of Main Lake.

## **2. Background Information**

Main Lake, DNR ID #19-203P, is a small, shallow lake that serves as the centerpiece to the Zoo campus. Many Zoo exhibits and features surround Main Lake, and the aesthetics of the lake directly impact the user experience. Zoo staff has indicated that the lake is of poor quality, has algae blooms and resulting unpleasant odors, has experienced localized flooding, and has the potential to be discharged into both the sanitary sewer and storm sewer systems. Storm sewer discharges have the potential to reach other water bodies on the Zoo campus and waters downstream, including Alimagnet, Long, and Farquar Lakes. These lakes are all impaired for excess nutrients, but only receive water from the Zoo as water is directed via pumps or valves towards these waters on a very limited basis.

Improvement of the water quality in Main Lake is a high priority for the Zoo. The VRWJPO has an interest in improving waters within the Vermillion River Watershed, which includes Main Lake and waters that receive its discharges, including Alimagnet, Long, and Farquar Lakes. The VRWJPO is currently working with the Zoo and the Dakota Soil and Water Conservation District on a series of stormwater improvement projects made possible by a Metropolitan Council grant. Those improvements will likely lead to some improvement in Main Lake, but a significant amount of largely untreated Zoo campus will continue to drain to Main Lake. One large unknown is the amount of internal phosphorus load from within Main Lake. Reducing pollutant load from external sources will likely improve conditions, but phosphorus release within the lake itself may be a large source of the problem that is not currently being addressed. Future efforts by the Zoo, VRWJPO, and other partners will use the results of this study to prioritize and implement projects to improve the water quality within Main Lake.



### 3. Requested Scope of Services

- Task 1 Review of existing facility infrastructure, water resource data, and reports collected or created to date (most information is available at [https://www.dropbox.com/sh/r159bpjat3jo3dh/AACt\\_ZUisTMHtpR4DW7Tleo7a?dl=0](https://www.dropbox.com/sh/r159bpjat3jo3dh/AACt_ZUisTMHtpR4DW7Tleo7a?dl=0))
- Task 2 Collection of additional field samples or data including: water quality samples, aquatic plant information, available fishery information, sediment cores for internal phosphorus release rate analysis, or other data as necessary to complete the evaluation
- Task 3 Subwatersheds were delineated as part of a previous Infiltration and Inflow Study (included at link above). A review of the existing subwatershed delineation and assessment of the current location of all storm sewer and sanitary sewer infrastructure
- Task 4 An analysis and summarization of external and internal pollutant loading
- Task 5 Report including and/or summarizing all of the information listed in Tasks 1-5
- Task 6 Recommendations of practices to best address water quality problems from contributing subwatersheds or the internal loading from the lake and cost estimates for each practice. This evaluation should also include consideration of previously recommended practices to improve Main Lake water quality that were identified in the Infiltration and Inflow Study. All practices recommended should be evaluated and prioritized based on their cost-effectiveness against one another.

### 4. Project Considerations

- Any work on the Zoo campus will require the firm to work directly with Zoo staff and established guidelines for access to Zoo facilities
- Consultant will be part of a project management team of Vermillion River Watershed Joint Powers Organization staff, Dakota County staff, Dakota County Soil and Water Conservation District staff, Minnesota Zoo staff, and Metropolitan Council advisors. Typical project management team meetings will occur monthly. Although it's not expected that the consultant attends all meetings, they may be required to attend some meetings throughout the process to coordinate with staff regarding the results of this study.

### 5. Timeline

This RFP will be conducted according to the following schedule. This schedule may be altered at any time at the discretion of the VRWJPO.

#### Task

Release of RFP  
Deadline for Questions Regarding RFP  
Pre-proposal on-site meeting at the Zoo  
Deadline for VRWJPO's Response to RFP Questions  
Deadline for Submittal of Responses to RFP  
Selection of Consultant

#### Timeline

Monday, November 30, 2015  
Wednesday, December 9, 2015, 4:30 p.m. CST  
Tuesday, December 15, 2015, 1:00-3:00 CST  
Thursday, December 17, 2015, 4:30 p.m. CST  
Tuesday, December 22, 2015, 4:30 p.m. CST  
Mid-January 2016

All work under the contract must be accomplished by **October 31, 2016**.

## 6. Instructions to Proposers

### A. General Information

#### i. Submittal of Proposals.

As set forth on this RFP's cover page, proposers shall submit an electronic copy (via email) of its proposal to:

Travis Thiel  
Vermillion River Watershed Joint Powers Organization  
Dakota County Physical Development, 3<sup>rd</sup> Floor  
14955 Galaxie Ave  
Apple Valley, MN 55124  
Email: [travis.thiel@co.dakota.mn.us](mailto:travis.thiel@co.dakota.mn.us)

**All proposals must be received no later than 4:30 p.m. CST on Tuesday, December 22, 2015.** Proposals received after this time will be rejected. The VRWJPO reserves the right to accept or reject any or all proposals.

#### ii. Proposal Format, Guidelines, and Submittal Requirements

- Proposal should be provided in .pdf format via email as described in the RFP's cover page.
- The proposal should be no more than eight (8) pages total, including staff profiles for those assigned to this project.
- A very brief history of the company and profile of the company today should be provided, as well as names, credentials, experience, and roles of contributing staff.
- Name, address, phone number, and e-mail address of the primary contact.
- A summary of at least five (5) projects on water resources that are comparable to this project, including references (name, organization, email, and phone number)
- Scope of work that matches required tasks.
- Submit documentation demonstrating insurance coverage as described in the attached Exhibit – Insurance Terms.

#### iii. Proposer's Budget for the Project

The requested services under this RFP will be funded through local funds. The Contract Maximum, to be set after determination of the scope of work, is the cap for contractual services including both professional fees and expenses.

#### iv. Examination of RFP

By submitting a proposal, the proposer represents that he/she has thoroughly examined and become familiar with the work required under this RFP and that he/she is capable of performing quality work to achieve the objectives of the VRWJPO.

#### v. Addenda/Clarifications

Any changes to this RFP will be made by the VRWJPO through a written addendum. No verbal modification will be binding.

#### vi. Pre-Contractual Expenses

Pre-contractual expenses are defined as expenses incurred by the proposer in: 1) preparing its proposal in response to this RFP; 2) submitting that proposal to the VRWJPO; 3) negotiating with the VRWJPO on any matter related to this RFP; or 4) any other expenses incurred by the proposer prior to the date of execution of the proposed contract.

The VRWJPO shall not, in any event, be liable for any pre-contractual expenses incurred by the proposers in the preparation of their proposals. Proposers shall not include any such expenses as part of their proposals.

vii. Exceptions and Deviations

Any exceptions to the requirements in this RFP must be included in the proposal submitted by the proposer. Segregate such exceptions as a separate element of the proposal under the heading "Exceptions and Deviations."

viii. Contract Award

Issuance of this RFP and receipt of proposals do not commit the VRWJPO to the awarding of a contract. The VRWJPO reserves the right to postpone opening for its own convenience, to accept or reject any or all proposals received in response to this RFP, to negotiate with other than the selected consultant should negotiations with the selected consultant be terminated, to negotiate with more than one consultant simultaneously, or to cancel all or part of this RFP.

ix. Joint Offers

Where two or more proposers desire to submit a single proposal in response to this RFP, they should do so on a prime-subcontractor basis rather than as a joint venture. The VRWJPO intends to contract with a single firm and not with multiple firms doing business as a joint venture.

x. Contact Person

The proposer's primary point of contact with the VRWJPO for this proposal is Travis Thiel.

xi. VRWJPO Rights

The VRWJPO may investigate the qualifications of any proposer under consideration, require confirmation of information furnished by the proposer, and require additional evidence of qualifications to perform the work described in this RFP. The VRWJPO reserves the right to:

- Reject any or all proposals if such action is in the public interest;
- Cancel the entire Request for Proposals;
- Issue a subsequent Request for Proposals;
- Remedy technical errors in the Request for Proposals process;
- Appoint evaluation committees to review proposals;
- Establish a short list of proposers eligible for interview after evaluation of written proposals;
- Negotiate with any, all, or none of the RFP proposers; and
- Reject and replace one or more sub-consultants.

xi. Ownership of Proposals

All proposals timely submitted become the property of the VRWJPO upon submission and the proposals will not be returned to the proposers. By submitting a proposal, the proposer agrees that the VRWJPO may copy the proposal for purposes of facilitating the evaluation or to respond to requests for public data. The proposer consents to such copying by submitting a proposal and warrants that such copying will not violate the rights of any third party, including copyrights.

xii. Public Records and Requests of Confidentiality

Pursuant to the Minnesota Government Data Practices Act, Minn. Stat. § 13.591, the names of all entities that submitted a timely proposal to the VRWJPO will be public once the proposals have been opened. All other information contained in the proposals remains private until the VRWJPO has completed negotiating a contract with the selected proposer. After a contract has been negotiated, all information in all of the proposals is public, except “trade secrete” information as defined at Minn. Stat. § 13.37.

Requests for release of information held by the VRWJPO are subject to the provisions of the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13. Proposers are encouraged to familiarize themselves with these provisions before submitting a proposal.

All information submitted by a proposer eventually will be treated as public information by the VRWJPO unless the proposer properly requests, and the VRWJPO agrees, that information be treated as private or confidential. A proposer making such a request must include the name, address and telephone number of the individual authorized by the proposer to answer inquiries by the VRWJPO concerning the request. The VRWJPO reserves the right to make the final determination of whether the data identified in such a request is private or confidential within the meaning of the Minnesota Government Data Practices Act. A proposer’s failure to request private or confidential treatment of information pursuant to this section will be deemed by the VRWJPO as a waiver by the proposer of any private or confidential treatment of information included in the proposal.

**B. General Information**

i. Letter of Transmittal

Address the letter of transmittal to the address set forth on the cover page to this RFP and include, at a minimum, the following:

- a. Identification of the offering firm(s), including name, address, and telephone number of each firm;
- b. Acknowledgment of receipt of RFP addenda, if any;
- c. Name, title, address, telephone and fax numbers, and email address (if any) of contact person during period of proposal evaluation;
- d. A statement to the effect that the proposal shall remain valid for a period of not less than 120 days from the date of submittal; and

- e. Signature of a person authorized to bind the offering firm to the terms of the proposal.

- ii. Approach/Methodology

In this section, describe your approach and methodology for fulfilling the tasks specified in Section 3, Requested Scope of Services.

- iii. Project Schedule

Please provide a detailed amount of hours to complete based on each task. Scheduling may require meetings as detailed in the scope, but accurate dates are not required and these meetings can be coordinated after awarding the contract.

- iv. Key Personnel

Description of the Project Manager(s) and key support staff, their qualifications for this project and a brief list of previous projects worked on with the firm that are relevant to this project. No changes in Project Manager(s) and key personnel are allowed after the contract is executed unless approved by VRWJPO staff.

- v. Qualifications/Experience

Provide at least five (5) examples of past projects and experiences similar to the requests in this RFP. Consultant is required to have a firm understanding of shallow lake ecosystems and management. Consultant should also have demonstrated expertise in the areas of data compilation, water quality monitoring and analysis, water resource modeling, GIS and mapping, project feasibility, and reporting.

- vi. Sub-consultant Information

Provide sub-consultants' company name, address, contact person and telephone number. Specify the tasks and amount of work that would be performed by each of the sub-consultants. Describe your previous experience working with each sub-consultant. The VRWJPO reserves the right to reject any sub-consultant who does not meet the requirements of this RFP.

- vii. Fee Estimate

Provide an estimate of the project costs for each item in Section 3, Requested Scope of Services. The fee estimate shall be broken into work tasks with an hourly estimate of time required by each project personnel or sub-consultant. Any allowances for project costs, such as mileage or indirect office costs should be identified.

- viii. Conflict of Interest

The proposer must identify any potential conflict of interest it may have providing the services contemplated by this RFP.

ix. Appendix

Include other information you believe may be valuable in reviewing the qualifications of your firm.

## **7. Evaluation of Proposals**

Each proposal will be assessed as to how well it responds to the RFP. Factors to be considered during the review will include, but will not be limited to the following:

- A. Qualifications and experience of the Project Manager and key staff and sub-consultant(s) proposed to work on the project, experience on previous similar projects, and availability of the key staff members
- B. Grasp of project requirements
- C. Project approach/methodology
- D. Responsiveness to the client and schedules
- E. Fee estimate: Understanding of the work tasks and appropriately assigning qualified personnel and total project cost
- F. Cost of each identified task
- G. Ability to complete the project within the timeframe
- H. Total project cost
- I. Any other factors deemed relevant by the VRWJPO

The VRWJPO reserves the right to consider any additional information gathered by the VRWJPO or submitted by the consultant to evaluate the submitted proposal.

Lowest cost will not be the sole determining factor in awarding a contract. Rather, the VRWJPO may award the contract to the consultant whose proposal represents the best value proposal, as determined by the evaluation criteria above.

## **8. General Contract Term and Conditions**

The VRWJPO will prepare a contract with the selected consultant. The VRWJPO will require the selected consultant to include the contents of this RFP and all representations, warranties and commitments in the consultant's proposal as contractual obligations. Other contractual obligations will include, but are not limited to the following. Any requested changes to the VRWJPO standard contract terms must be included in the consultant's Exceptions/Deviations response to this RFP.

### **A. Audits, Reports, Records, and Monitoring Procedures**

The consultant will maintain records which reflect all revenues, costs incurred, and services provided in the performance of the contract.

The consultant will agree that the VRWJPO, the State Auditor or legislative authority, or any of their duly authorized representatives at any time during normal business hours, and as often as



they may deem reasonably necessary, shall have access to and the right to examine, audit, duplicate and transcribe any books, documents, papers, records, etc., and accounting procedures and practices of the contractor which are relevant to the contract. Said records must be maintained for six (6) years after the date of the completion of the contract.

**B. Insurance**

Prior to commencement of the contract term, the consultant shall procure and maintain in full force and effect during the term of the contract insurance coverage as set forth in Attachment A. Certificates of insurance showing the coverage listed in Attachment A shall be provided to the VRWJPO prior to the effective date of the contract. All such policies shall provide that they shall not be canceled, materially changed, or not renewed without thirty days prior notice thereof to the VRWJPO.

**C. Subcontracting and Assignment**

The consultant shall not enter into any subcontract for performance of any services contemplated under the contract nor assign any interest in the contract without written approval of the VRWJPO and subject to such conditions and provisions as the VRWJPO may deem necessary. The consultant shall be responsible for the performance of all sub-consultants.

**D. Standard Assurances**

The consultant will agree to abide by the Standard Assurances set forth in Attachment B.

**E. Indemnification**

The consultant shall agree to indemnify and save the VRWJPO, including its elected officials, officers, employees and agents, harmless from any and all claims, demands, damages, actions or causes of action arising against the VRWJPO by reason of any act, omission, neglect or misconduct by the consultant.

**F. Independent Contractor**

The consultant and all employees of the consultant shall not be considered employees of the VRWJPO while engaged in the performance of any work or services pursuant to the contract and shall be independent contractors.

**G. Right to Terminate Contract for Lack of Funding**

Notwithstanding any provision of the contract to the contrary, the VRWJPO may immediately terminate the contract if it does not obtain funding from the Minnesota Legislature, Minnesota Agencies or other funding source, or if its funding cannot be continued at a level sufficient to allow payment of the amounts due under the contract. Written notice of termination sent by the VRWJPO to the consultant by facsimile is sufficient notice under the terms of the contract. The VRWJPO is not obligated to pay for any services that are provided after written notice of termination for lack of funding. The VRWJPO will not be assessed any penalty or damages if the contract is terminated due to lack of funding.

#### **H. Compliance with Laws/Standards**

- i. General. The consultant shall abide by all federal, state or local laws, statutes, ordinances rules and regulations for which the consultant is responsible.
- ii. Violations. Any violation of such laws, statutes, ordinances, rules or regulations, as well as loss of any applicable license or certification by the consultant shall constitute a material breach of the contract and shall entitle the VRWJPO to terminate the Contract upon delivery of written notice of termination to the consultant. Notwithstanding any other provision of the contract, such termination shall be effective as of the date of such failure or loss.
- iii. Minnesota Law to Govern. The contract shall be governed by and construed in accordance with the substantive and procedural laws of the State of Minnesota without giving effect to the principals of conflict of laws. All proceedings related to the contract shall be venued in Dakota County, Minnesota.

## ATTACHMENT A: GENERAL CONDITIONS

**NO CONFLICT OF INTEREST.** None of contractor's owners, directors, officers or principals is or is closely related to any Vermillion River Watershed Joint Powers Organization (VRWJPO) employee who has or may appear to have any control over the award, management or evaluation of the contract. If there is a question as to whether there may be an appearance of such a conflict, the contract shall be presented to the VRWJPO board for approval, regardless of the amount of the contract, in accordance with Resolution 01-767.

**INDEPENDENT CONTRACTOR.** Contractor is an independent contractor and nothing in this Contract shall be construed to create the relationship of agents, partners, joint venturers, associates, or employer and employee between the VRWJPO and Contractor.

**OWNERSHIP OF WORK PRODUCT & COPYRIGHTS.** All work product, data compilations, and materials of any kind prepared pursuant to this Contract, regardless of the format in which they exist will become the sole and exclusive property of the VRWJPO and the Minnesota Zoo upon the completion of this Contract. However, upon the prior express written consent of the VRWJPO and the Minnesota Zoo, which may be granted in its discretion, Contractor may use portions or excerpts from the materials prepared pursuant to this Contract. To the extent Contractor uses copyrighted material of the VRWJPO and the Minnesota Zoo, Contractor shall maintain the copyrighted material to protect all right, title and interest of the VRWJPO and the Minnesota Zoo. Where applicable, works created by Contractor for the VRWJPO and the Minnesota Zoo in performance of this Contract shall be considered "works made for hire" as defined in the U.S. Copyright Act and all right, title and interest, including copyright, of the same prepared pursuant to this Contract is owned by the VRWJPO and the Minnesota Zoo. It is further agreed that the VRWJPO and the Minnesota Zoo has unlimited rights to use, duplicate and make derivative works of the same, with no obligation for an accounting to Contractor.

**CONFIDENTIALITY CLAUSE.** Contractor acknowledges that the VRWJPO in connection with Contractor's performance of this Agreement may transmit certain private or Confidential Information, as defined in the Minnesota Data Practices Act, to Contractor. Contractor agrees to implement such procedures as are necessary to assure protection of the private and Confidential Information.

**COMPLIANCE WITH LAWS/STANDARDS.** Contractor shall abide by all Federal, State or local laws; statutes, ordinances, rules and regulations pertaining to this Contract and this Contract shall be construed in accordance with the substantive and procedural laws of the State of Minnesota. All proceedings related to this Contract shall be venued in the VRWJPO of Dakota, State of Minnesota.

**LICENSES.** At its own expense, Contractor shall procure all licenses, permits or other rights required for the provision of services contemplated by this Contract. Contractor shall inform the VRWJPO of any changes in the above within five (5) days of occurrence.

**INDEMNIFICATION.** To the fullest extent permitted by law, Contractor agrees to indemnify the VRWJPO, its officers, employees, agents, and others acting on its behalf and to hold them harmless and defend and protect them from and against any and all loss, damage, liability, cost and expense, specifically including attorneys' fees and other costs and expenses of defense, which result from, or otherwise arise in connection with, any actions, claims or proceedings of any sort and which is caused by any act or omission of Contractor, its officers, employees or agents, or any other person(s) or entity(ies) for whose acts or omissions Contractor may be legally responsible, whether or not also caused in part by a party indemnified hereunder.

**ASSIGNMENT/SUBCONTRACTING.** The Contractor shall not assign or subcontract this Contract without prior written consent of the VRWJPO, in which case Contractor is responsible for the performance of its subcontractors or assignees and follow the requirements of Minn. Stat. § 471.425 (payments to subcontractors).

### **INSURANCE TERMS.** (Check Applicable Provisions)

Contractor shall provide to the VRWJPO, prior to or concurrent with the execution of this Contract, certificate(s) of insurance naming VRWJPO as certificate holder or certified copies of such existing policies of insurance, demonstrating:

- ☒ General liability coverage of at least \$1,500,000 per occurrence and aggregate (check if applicable) ☐ and naming VRWJPO as an additional insured;
- ☒ Automobile liability coverage of at least \$1,500,000 per occurrence and aggregate (check if applicable) ☐ and naming VRWJPO as an additional insured,
- ☒ Professional liability (errors and omissions) insurance coverage of at least \$1,500,000, and
- ☒ Workers' compensation coverage or certification of excluded employment from workers' compensation requirements.

Contractor shall pay all retentions and deductibles under such policies of insurance. *If Contractor does not have existing coverage(s) or has coverage(s) in limits less than that set out above, Contractor must obtain from the VRWJPO, prior to or concurrent with the execution of this Contract, a written waiver of the coverage(s) or agreement to lower coverage limits from the VRWJPO.*

**MODIFICATIONS.** Any alterations, variations, modifications, or waivers of the provisions of this Contract shall only be valid when they have been reduced to writing and signed by the authorized representatives of the parties.

**TERMINATION.** Either party upon thirty days written notice to the other party may terminate this Contract, with or without cause. Notice of termination shall be made by certified mail or personal delivery to the person signing this Contract on behalf of the other party. Termination of this Contract shall not discharge any liability, responsibility or right of any party, which arises from the performance of or failure to adequately perform the terms of the Contract prior to the effective date of termination.

**TERMINATION BY VRWJPO - LACK OF FUNDING.** Notwithstanding any provision of this Contract to the contrary, the VRWJPO may immediately terminate this Contract if it does not obtain funding from the Minnesota Legislature, Minnesota Agencies or other funding source, or if its funding cannot be continued at a level sufficient to allow payment of the amounts due under this Contract. Written notice of termination sent by the VRWJPO to Contractor by facsimile is sufficient notice under the terms of this Contract. The VRWJPO is not obligated to pay for any services that are provided after written notice of termination for lack of funding. The VRWJPO will not be assessed any penalty or damages if the Contract is terminated due to lack of funding.

**RECORDS/AUDITS.** Contractor's bonds, records, documents, papers, accounting procedures and practices, and other evidences relevant to this Contract are subject to the examination, duplication, transcription and audit by the VRWJPO and either the Legislative or State Auditor, pursuant to Minn. Stat. § 16C.05, subd. 5. Such evidences are also subject to review by the Comptroller General of the United States, or a duly authorized representative, if federal funds are used for any work under this Contract. The Contractor agrees to maintain such evidences for a period of six (6) years from the date services or payment were last provided or made or longer if any audit in progress requires a longer retention period.

DATA PRIVACY. For purposes of this Contract all data on individuals collected, created, received, maintained or disseminated shall be administered consistent with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, and the Minnesota Rules implementing the Act now in force or hereafter adopted as well as Federal laws on data privacy, and Contractor must comply with those requirements as if it were a governmental entity. The Contractor will strictly comply with these statutes and rules. All subcontracts shall contain the same or similar data practices compliance requirements.

NON-DISCRIMINATION. Contractor agrees that, in the hiring of all labor for the performance of any work under this Contract, it will not, by reason of race, creed, color, sex, national origin, disability, sexual orientation, age, marital status or public assistance status, discriminate against any person who is a citizen of the United States and who qualifies and is available to perform the work to which such employment relates. Contractor agrees to comply with all Federal, State, and local non-discrimination laws and ordinances, in particular the applicable provisions of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972. When required by law or requested by the VRWJPO, Contractor shall furnish a written affirmative action plan.

CONTRACTOR DEBARMENT, SUSPENSION AND RESPONSIBILITY CERTIFICATION. By signing this Contract the Contractor is certifying that the federal government or the Minnesota Commissioner of Administration has not suspended or debarred the Contractor or its Principals and Employees, based upon Federal Regulation 45 CFR 92.35 and Minn. Stat. §16C.03, subd. 2 respectively. Contractors may be suspended or debarred when it is determined, through a duly authorized hearing process, that they have abused the public trust in a serious manner.

## ATTACHMENT B

### STANDARD ASSURANCES

1. **NON-DISCRIMINATION.** During the performance of this Contract, the Contractor shall not unlawfully discriminate against any employee or applicant for employment because of race, color, creed, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without unlawful discrimination because of their race, color, creed, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices which set forth the provisions of this nondiscrimination clause.

The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, religion, sex, national origin, disability, sexual orientation, age, marital status, veteran's status or public assistance status.

No funds received under this Contract shall be used to provide religious or sectarian training or services.

The Contractor shall comply with any applicable federal or state law regarding non-discrimination. The following list includes, but is not meant to limit, laws which may be applicable:

A. The Equal Employment Opportunity Act of 1972, as amended, 42 U.S.C. § 2000e *et seq.* which prohibits discrimination in employment because of race, color, religion, sex or national origin.

B. Executive Order 11246, as amended, which is incorporated herein by reference, and prohibits discrimination by U.S. Government contractors and subcontractors because of race, color, religion, sex or national origin.

C. The Rehabilitation Act of 1973, as amended, 29 U.S.C. § 701 *et seq.* and 45 C.F.R. 84.3 (J) and (K) implementing Sec. 504 of the Act which prohibits discrimination against qualified handicapped persons in the access to or participation in federally-funded services or employment.

D. The Age Discrimination in Employment Act of 1967, 29 U.S.C. § 621 *et seq.* as amended, and Minn. Stat. § 181.81, which generally prohibit discrimination because of age.

E. The Equal Pay Act of 1963, as amended, 29 U.S.C. § 206(d), which provides that an employer may not discriminate on the basis of sex by paying employees of different sexes differently for the same work.

F. Minn. Stat. Ch. 363A, as amended, which generally prohibits discrimination because of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, disability, sexual orientation or age.

G. Minn. Stat. § 181.59 which prohibits discrimination against any person by reason of race, creed, or color in any state or political subdivision contract for materials, supplies or construction. Violation of this section is a misdemeanor and any second or subsequent violation of these terms may be cause for forfeiture of all sums due under the Contract.

H. Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 through 12213, 47 U.S.C. §§ 225, 611, with regulations at 29 C.F.R. § 1630, which prohibits discrimination against qualified individuals on the basis of a disability in term, condition or privilege of employment.

I. Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212, with regulations at 41 C.F.R. Part 60-250, which prohibits discrimination in employment against protected veterans.

2. **DATA PRIVACY.** For purposes of this Contract all data created, collected, received, stored, used, maintained, or disseminated by Contractor in the performance of this Contract is subject to the requirements of the Minnesota Government Data Practices Act, Minn. Stat. Chapter 13 and the Minnesota Rules implementing the Act now in force or hereafter adopted as well as any applicable Federal laws on data privacy. Contractor must comply with the applicable data management requirements as if it were a governmental entity. The remedies in Minn. Stat.

section 13.08 apply to the Contractor. Contractor does not have a duty to provide access to public data to the public if the public data are available from the governmental agency (County), except as required by the terms of this Contract. All subcontracts shall contain the same or similar data practices compliance requirements.

3. **HEALTH DATA PRIVACY.** The Contractor agrees to comply with the requirements of the Health Insurance Portability and Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health Act (HITECH) when applicable to the Contractor's duties under this Contract. When applicable, Contractor agrees to comply with the HIPAA and HITECH Privacy requirements, Standards for Electronic Transactions, Security requirements, and any other applicable health data laws, rules, standards and requirements in effect during the term of this Agreement.

4. **RECORDS DISCLOSURE/RETENTION.** Contractor's bonds, records, documents, papers, accounting procedures and practices, and other evidences relevant to this Contract are subject to the examination, duplication, transcription and audit by the County and either the Legislative or State Auditor, pursuant to Minn. Stat. § 16C.05, subd. 5. Such evidences are also subject to review by the Comptroller General of the United States, or a duly authorized representative, if federal funds are used for any work under this Contract. The Contractor agrees to maintain such evidences for a period of six (6) years from the date services or payment were last provided or made or longer if any audit in progress requires a longer retention period.

5. **WORKER HEALTH, SAFETY AND TRAINING.** Contractor shall be solely responsible for the health and safety of its employees in connection with the work performed under this Contract. Contractor shall make arrangements to ensure the health and safety of all subcontractors and other persons who may perform work in connection with this Contract. Contractor shall ensure all personnel of Contractor and subcontractors are properly trained and supervised and, when applicable, duly licensed or certified appropriate to the tasks engaged in under this Contract. Each Contractor shall comply with federal, state and local occupational safety and health standards, regulations and rules promulgated pursuant to the Occupational Health and Safety Act which are applicable to the work to be performed by Contractor.

6. **CONTRACTOR DEBARMENT, SUSPENSION AND RESPONSIBILITY CERTIFICATION.** Federal Regulation 45 CFR 92.35 prohibits the State/Agency from purchasing goods or services with federal money from vendors who have been suspended or debarred by the federal government. Similarly, Minnesota Statutes, Section 16C.03, subd. 2 provides the Commissioner of Administration with the authority to debar and suspend vendors who seek to contract with the State/Agency. Vendors may be suspended or debarred when it is determined, through a duly authorized hearing process, that they have abused the public trust in a serious manner.

By Signing This Contract, The Contractor Certifies That It And Its Principals\* And Employees:

A. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from transacting business by or with any federal, state or local governmental department or agency; and

B. Have not within a three-year period preceding this Contract: 1) been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (federal, state or local) transaction or contract; 2) violated any federal or state antitrust statutes; or 3) committed embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; and

C. Are not presently indicted or otherwise criminally or civilly charged by a governmental entity for: 1) commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (federal, state or local) transaction; 2) violating any federal or state antitrust statutes; or 3) committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property; and



D. Are not aware of any information and possess no knowledge that any subcontractor(s) that will perform work pursuant to this Contract are in violation of any of the certifications set forth above.

E. Shall immediately give written notice to the Contracting Officer should Contractor come under investigation for allegations of fraud or a criminal offense in connection with obtaining, or performing a public (federal, state or local government) transaction; violating any federal or state antitrust statutes; or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property.

\*“Principals” for the purposes of this certification means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager; plant manager; head of a subsidiary, division, or business segment and similar positions).

Directions for On Line Access to Excluded Providers

To ensure compliance with this regulation, identification of excluded entities and individuals can be found on the Office of Inspector General (OIG) website at <http://oig.hhs.gov/fraud/exclusions/listofexcluded.html>.

Attycv/ Exh SA6-Standard(03-14)

## Appendix II: Vermillion River Monitoring Network 2015 Report Summary

(See [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org) for the complete report after June 1, 2016.)

### **Monitoring Network Summary**, *Lindsey Albright, Dakota SWCD*

The Vermillion River Monitoring Network includes strategically placed stations throughout the watershed (see map and Table 1), where sampling data has been collected for a decade. A wide variety of chemical, physical, and biological parameters are monitored with relatively high frequency throughout the field season (see Table 2). With this broad and powerful dataset, the Vermillion River Watershed Joint Powers Organization (VRWJPO) is able to characterize and analyze water quality in the Vermillion River and its tributaries. This summary of the Vermillion River Monitoring Network 2015 Report provides general conclusions, but does not replace the detailed analysis and interpretation available in the complete report. Visit [www.vermillionriverwatershed.com](http://www.vermillionriverwatershed.com) to access the most recent version of the annual Vermillion River Monitoring Network Report.

#### ***Weather***

The 2015 monitoring season featured several large storm events beginning in the early summer and running through mid-September. Almost five inches of rainfall in early July significantly increased streamflow throughout the Vermillion River Watershed. At the Minneapolis/St. Paul airport, the 30-year average precipitation for April through October was 24.20 inches and the 2015 precipitation total for April through October was 30.02 inches, a substantial departure. Sporadic rain showers continued through the early part of winter, resulting in an above-average precipitation for the year (slightly higher than what was recorded in 2014). Since weather plays a big role in interpreting stream health, flow is continuously monitored at all active stations.

#### ***Chemical Monitoring***

Annual and historical data are used in combination to understand long-term water quality trends in the Vermillion River Watershed. Many of the parameters monitored during the field season were within state standards in 2015. Conductivity levels in the North Creek tributary appear to be increasing, so further investigation as to the cause is recommended. Nitrate (NO<sub>3</sub>, a form of nitrogen) levels were low, except at one station on the South Branch, which has a significant pollutant load compared to other stations in the network. High levels measured at South Branch (Station SB802) are of concern and are likely related to agricultural nitrogen management and coarse-textured soils that dominate the subwatershed.

Phosphorus, the other primary nutrient monitored, is at an acceptable level for most monitoring stations, except during spring snowmelt and major runoff events. Phosphorus is a limiting nutrient for plants, so when phosphorus is readily available, plants (including algae) grow in size and/or number, which can adversely affect downstream waterbodies.

*Escherichia coli* (*E. coli*) bacteria levels are high in many streams of southeast Minnesota and the Vermillion River and its tributaries are no exception. *E. coli* bacteria pose a human health risk. As previously detailed in the Vermillion River Watershed Restoration and Protection Strategy (WRAPS), low dissolved oxygen concentrations and high levels of suspended solids (contributing to turbid, i.e. cloudy, water) were detected at several sites, especially during high-flow events.

### ***Temperature***

There is great interest in the watershed in maintaining cold water temperatures suitable for the self-sustaining brown trout fishery. Many network monitoring stations are on cold water reaches of the river and its tributaries. Two stations, VR24 and VR803 (see map) are considered warm water reaches and are not compared against the temperature criteria for brown trout and other cold water species. For most stations, median temperatures are within the optimal or tolerable ranges; however, temperatures routinely spike into a temperature range which leads to chronic or acute stress on the brown trout during the June-July-August timeframe.

### ***Biological Monitoring***

The Minnesota Pollution Control Agency (MPCA) developed biological indices (Index of Biological Integrity or IBI) to evaluate the health of the fish and macroinvertebrate communities in warm- and cold-water streams. Results for 2015 are mixed. Biomonitoring results indicate healthy macroinvertebrate communities at some sites, such as the station located in a restored stream reach in the Minnesota Department of Natural Resources (DNR) Vermillion River Aquatic Management Area. At other sites, low species diversity, lack of native species, and an abundance of pollution-tolerant species confirm the aquatic life impairments reported in the WRAPS.

Habitat assessments were completed using the MPCA's Minnesota Stream Habitat Assessment protocol to further evaluate and understand the biological integrity of various stream reaches. These assessments revealed that most sites have a score of 'fair,' with two of the 12 sites earning a consistent score of 'good.'

### ***Conclusions***

The Vermillion River has some areas with good water quality, but there is room for improvement. Vermillion River Monitoring Network data for 2015 suggest issues with water quality that include high nitrate levels in the South Branch, low dissolved oxygen in specific reaches, elevated *E. coli* bacteria levels watershed-wide, spikes in summer stream temperatures in some cold-water reaches, and high levels of suspended solids. These results are consistent with previous trend reports, as well as the WRAPS investigation and final report, which include strategies for improvement.

**Table 1. Vermillion River Monitoring Network Stations**

Station Name	Location Description
VR24	Vermillion River and County 46 (Scott County)
SC806	South Creek at Flagstaff Avenue
VR804	Vermillion River and 220 <sup>th</sup> Street
VR807	Vermillion River and Denmark Avenue
NC808	North Creek upstream of Middle Creek
NC801	North Creek downstream of Middle Creek
SB802	South Branch of Vermillion River and County 66
VR803	Vermillion River and Goodwin Avenue

**Table 2. 2015 Monitoring Activities**

	Number of Active Stations	Frequency of Monitoring (Field season goes from spring snowmelt through November 1)*	Total Samples Collected in 2015
<b>Chemical Monitoring</b>			
Dissolved Oxygen	8	biweekly plus runoff events	158
pH	8	biweekly plus runoff events	153
Specific Conductance	8	biweekly plus runoff events	157
Total Phosphorus	8	biweekly plus runoff events	196
Total Dissolved Phosphorus	8	biweekly plus runoff events	196
Nitrate	8	biweekly plus runoff events	196
Nitrite	8	biweekly plus runoff events	196
Total Suspended Solids	8	biweekly plus runoff events	196
Total Suspended Volatile Solids	8	biweekly plus runoff events	196
<b>Temperature and Flow Monitoring</b>			
Temperature and Flow	8	continuous (15 minute intervals)	~200,000
<b>Biological Monitoring</b>			
<i>Escherichia coli</i> ( <i>E. coli</i> ) bacteria	8	biweekly plus runoff events	196
Aquatic Macroinvertebrates	14	once in August/September	14
Habitat Assessments	14	once in August/September	14

\*Three runoff samples were collected in November and December 2015 due the unseasonably warm temperatures during those months

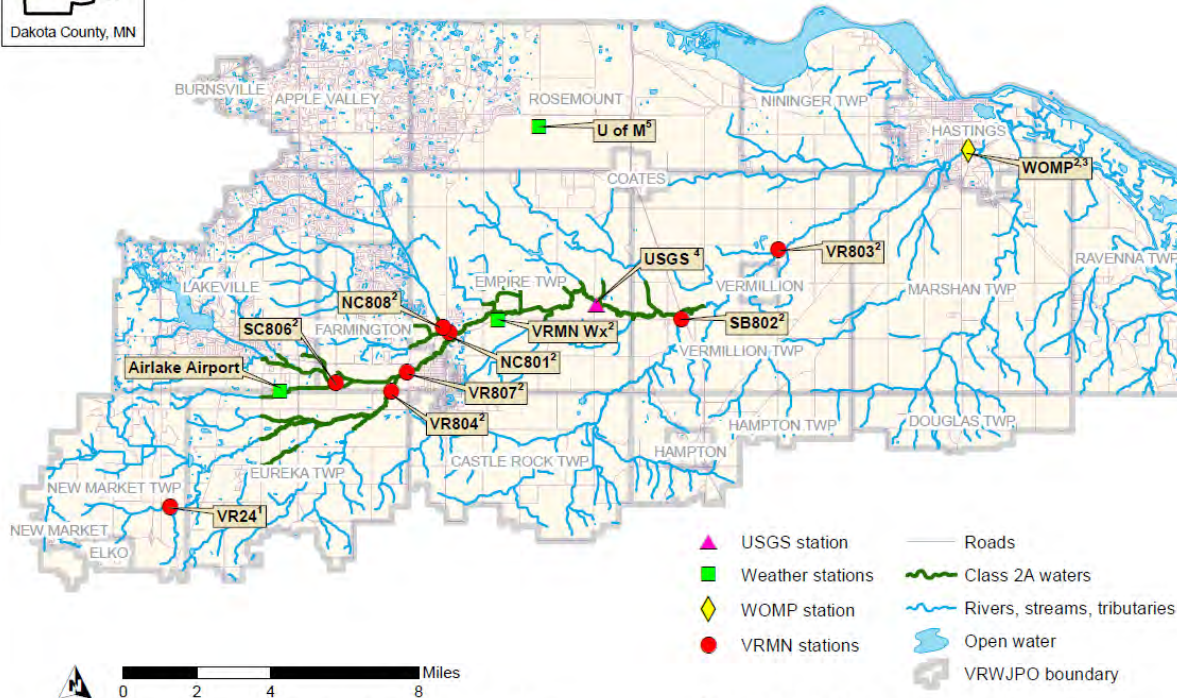


## Vermillion River Monitoring Network

### Chemistry/Flow Stations and Weather Stations



Dakota County Soil & Water  
Conservation District  
Copyright: Dakota SWCD, 2013



This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data located in various City, County, and State Offices and other sources, affecting the area shown, and is to be used for reference purposes only. Dakota County SWCD is not responsible for any inaccuracies herein contained. If discrepancies are found please contact the Dakota County Soil & Water Conservation District at 651.480.7777.

- <sup>1</sup> Monitored by Scott Soil and Water Conservation District
- <sup>2</sup> Monitored by Dakota County Soil and Water Conservation District
- <sup>3</sup> Owned by Metropolitan Council
- <sup>4</sup> Owned by United States Geological Survey
- <sup>5</sup> Owned by University of Minnesota

## Appendix III: Fact Sheets on CIP, WRAPS in the Watershed 2015

### Dakota SWCD

- ❑ 13-IPP-08: Don Peterson Water and Sediment Control Basins, Empire Twp.
- ❑ 14-IPP-02: Dennis Mainz Grassed Waterway, Douglas Twp.
- ❑ 14-IPP-04: Robert Bedard Grassed Waterway, Hampton Twp.
- ❑ 14-IPP-05: John Sauber Water and Sediment Control Basin, Eureka Twp.
- ❑ Rue Residential Raingarden, Apple Valley
- ❑ Kirtz Residential Native Garden, Apple Valley
- ❑ Linser Residential Raingarden, Apple Valley
- ❑ Larsen Residential Raingarden, Apple Valley
- ❑ Johnston Residential Raingarden, Apple Valley
- ❑ Baumhover Shoreline Planting, Apple Valley
- ❑ Hunter Residential Raingarden, Lakeville
- ❑ Schoenecke Residential Raingarden, Farmington
- ❑ Siebenaler Residential Raingarden, Hastings
- ❑ 15-IPP-01: Wayne Kieffer Water and Sediment Control Basins, Marshan Twp.
- ❑ 15-IPP-02: Joe Moes Grassed Waterways, Hampton Twp.
- ❑ 15-IPP-03: Robert Nordling Grassed Waterways, Douglas Twp.
- ❑ 15-IPP-05: Ray Gergen Grassed Waterway, Douglas Twp.
- ❑ Sluiter Residential Raingarden, Lakeville
- ❑ Shursen Residential Raingarden, Lakeville
- ❑ Merchant Residential Raingarden, Lakeville
- ❑ Westermayer Residential Native Garden, Lakeville
- ❑ Fuhrman Residential Raingarden, Lakeville

### Scott SWCD

- ❑ Smith Residential Raingarden, New Market Twp.

### WRAPS Frequently Asked Questions

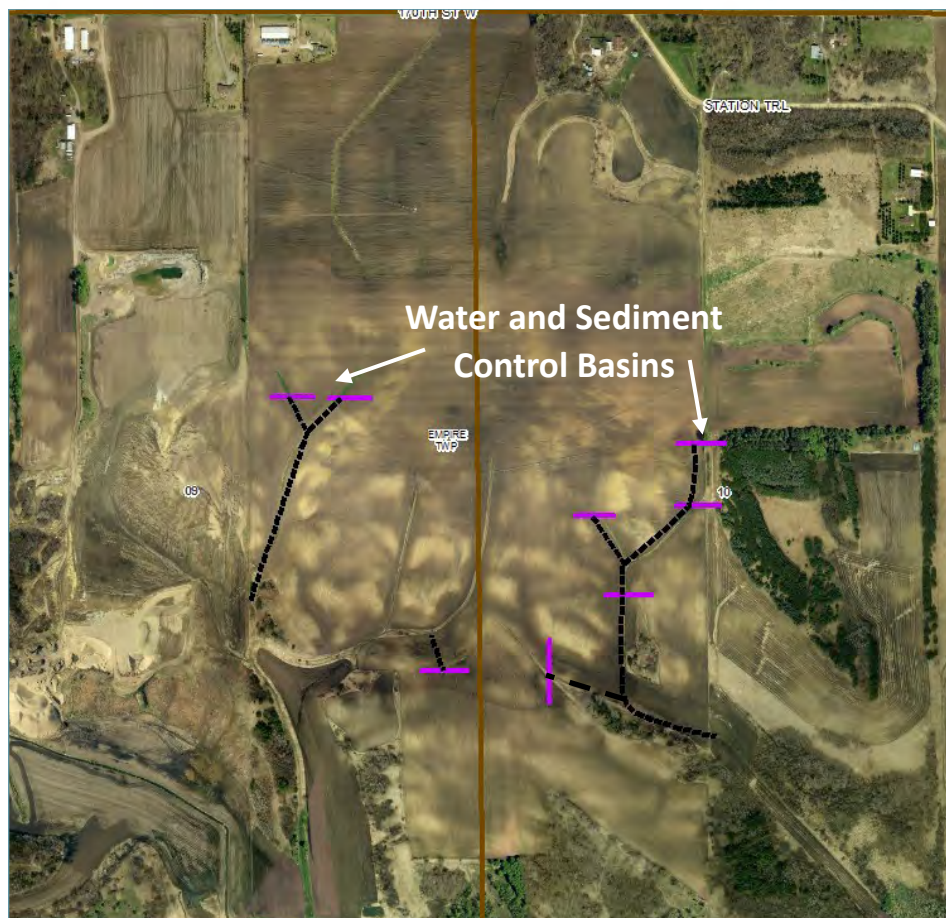
- ❑ FAQ: Best Management Practices
- ❑ FAQ: Castle Rock Township Impairments
- ❑ FAQ: City of Apple Valley Impairments
- ❑ FAQ: City of Burnsville Impairments
- ❑ FAQ: City of Elko New Market Impairments
- ❑ FAQ: City of Farmington Impairments
- ❑ FAQ: Empire Township Impairments
- ❑ FAQ: Eureka Township Impairments
- ❑ FAQ: New Market Township Impairments
- ❑ FAQ: Vermillion Township Impairments





# **DON PETERSON**

## **WATER & SEDIMENT CONTROL BASINS**

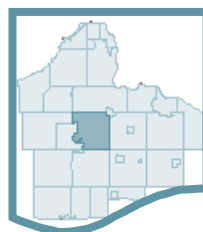


**PROJECT:** Eight Water and Sediment Control Basins were installed to control gully erosion.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$85,973</b>
	<b>Vermillion River Watershed JPO:</b>	<b>\$12,541</b>
	<b>State:</b>	<b>\$18,209</b>
	<b>Landowner:</b>	<b>\$55,223</b>



**LOCATION:**  
Empire Township



### **PRACTICE:**

- Water & Sediment Control Basins

### **BENEFITS:**

- 1817 tons of soil per year prevented from traveling downstream
- 230 lbs. of phosphorous per year prevented from traveling downstream

### **PARTNERS:**

- Vermillion River Watershed Joint Powers Organization
- Minnesota Board of Water and Soil Resources
- USDA - Natural Resources Conservation Service

### **WATERSHED:**

- Vermillion River

### **RECEIVING WATERS:**

- Vermillion River

### **INSTALLATION:**

- Spring 2015

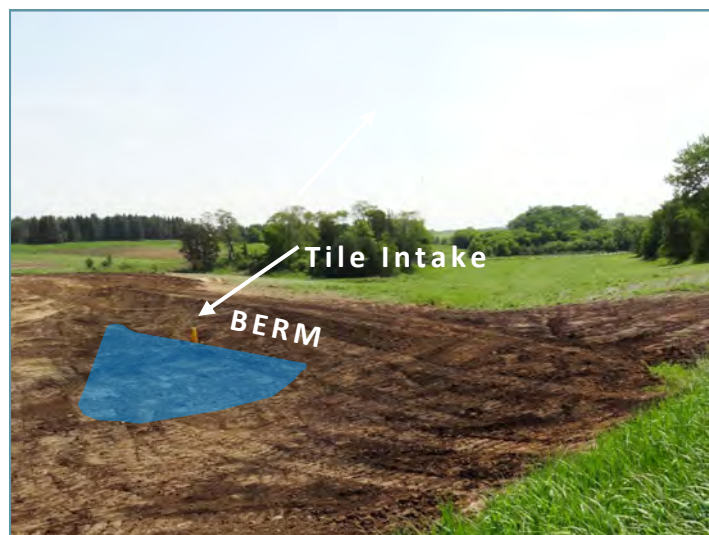
# DON PETERSON WATER & SEDIMENT CONTROL BASINS



One of the gullies that existed before construction.



One of the completed basins.



Basin #7—Narrow base, will be covered in grass.



One of the completed basins



## DENNIS MAINZ

# GRASSED WATERWAY



### PRACTICE:

- Grassed Waterway

### BENEFITS:

- 25 tons of soil per year prevented from traveling downstream
- 207 lbs. of phosphorous per year prevented from traveling downstream

### PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- USDA - Natural Resources Conservation Service

### WATERSHED:

- Vermillion River

### RECEIVING WATERS:

- Sand Coulee

### INSTALLATION:

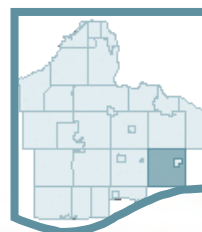
- Spring 2015

**PROJECT:** Installation of 525 foot grassed waterway to reduce soil loss from active gully.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$2,752</b>
	<b>Vermillion River Watershed:</b>	<b>\$1,785</b>
	<b>Landowner:</b>	<b>\$967</b>



**LOCATION:**  
Douglas Township



**DENNIS MAINZ**

# GRASSED WATERWAY

**DAKOTA COUNTY**



— SOIL & WATER —  
CONSERVATION DISTRICT



During Construction



After Seeding





ROBERT BEDARD

## GRASSED WATERWAY



### PRACTICE:

- Grassed Waterway

### BENEFITS:

- 56 tons of soil per year prevented from traveling downstream
- 120 lbs. of phosphorous per year prevented from traveling downstream

### PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- Minnesota Board of Water and Soil Resources
- USDA - Natural Resources Conservation Service

### WATERSHED:

- Vermillion River

### RECEIVING WATERS:

- Vermillion River

### INSTALLATION:

- Spring 2015

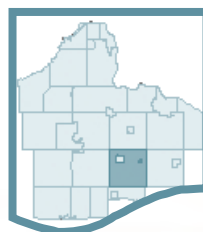
**PROJECT:** Installation of 1,380 feet of grassed waterway to eliminate a 1,000 foot long by 2.5 foot wide by 0.5 foot deep gully.

### FUNDING:

Total Project Cost:	\$6,348
Vermillion River Watershed:	\$3,613
Landowner:	\$2,735



**LOCATION:**  
Hampton Township







Grassed waterway after seeding, mulching and installation of fabric barriers across waterway.



The fabric barriers serve as temporary check dams until grass is fully established.

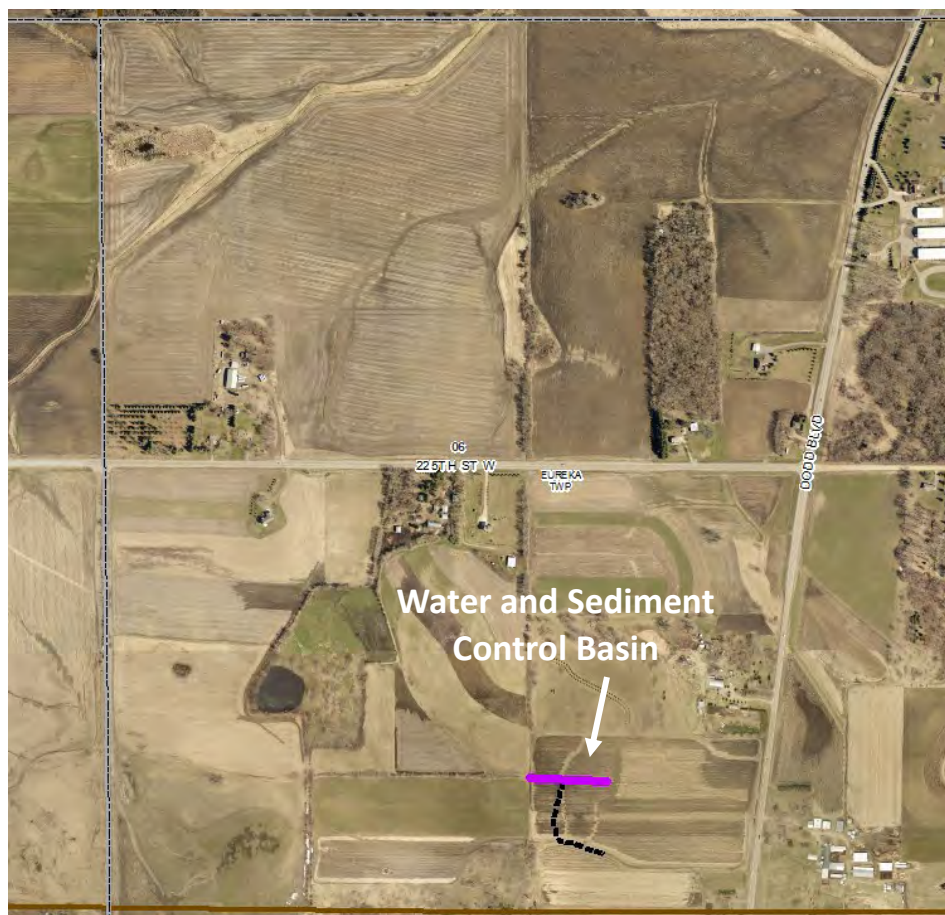


Vegetation starting to establish.



Vegetation starting to establish.

# JOHN SAUBER WATER AND SEDIMENT CONTROL BASIN

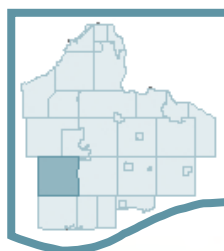


**PROJECT:** Installation of water and sediment control basin to reduce soil loss from active gully.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$5,104</b>
	<b>Vermillion River Watershed:</b>	<b>\$4,338</b>
	<b>Landowner:</b>	<b>\$766</b>



**LOCATION:**  
Eureka Township



## PROJECT:

- Water and Sediment Control Basin

## BENEFITS:

- 34 tons of soil per year prevented from traveling downstream
- 11 lbs. of phosphorous per year prevented from traveling downstream

## PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- USDA—Natural Resources Conservation Service

## WATERSHED:

- Vermillion River

## RECEIVING WATERS:

- Vermillion River

## INSTALLATION:

- Spring 2015





Completed basin with vegetation beginning to grow



Close up of vegetation on the basin



Looking up the slope at the basin



Looking down the slope at the basin



# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 150 square foot residential raingarden

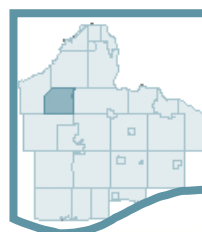
**COST:** Project materials cost estimated at \$600

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
137th Court



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Alimagnet Lake

**INSTALLATION:**

- Summer 2015



## KIRTZ

# RESIDENTIAL NATIVE GARDEN



A native garden, also called natural landscaping, uses plants, trees and grasses that are suitable for growth in a particular geographical area



**PROJECT:** Installation of a 331 square foot residential native garden

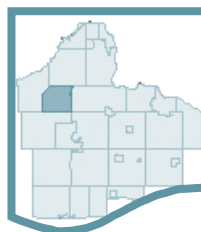
**COST:** Project materials cost estimated at \$710

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
Harrington Place



**PRACTICE:**

- Residential native garden

**BENEFITS:**

- Runoff volume reduction
- Slope stabilization
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Lac Lavan Lake

**INSTALLATION:**

- Summer 2015





## LINSER

# RESIDENTIAL RAINGARDEN

DAKOTA COUNTY



— SOIL & WATER —  
CONSERVATION DISTRICT



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 180 square foot residential raingarden

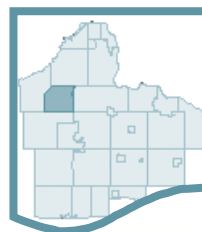
**COST:** Project materials cost estimated at \$1,003

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
133rd St. Ct.



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Long Lake

**INSTALLATION:**

- Summer 2015



# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 90 square foot residential raingarden

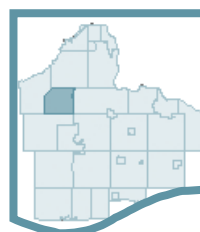
**COST:** Project materials cost estimated at \$785

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
Upper 139th St. W.



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

**INSTALLATION:**

- Summer 2015





## JOHNSTON

# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 304 square foot residential raingarden

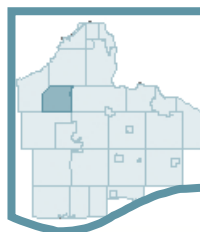
**COST:** Project materials cost estimated at \$2,585

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
Falcon Ridge Trail



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Long Lake

**INSTALLATION:**

- Summer 2015



## BAUMHOVER

# SHORELINE PLANTING



**BEFORE**



Shoreline planting is the use of native vegetation to protect a shoreline from existing or potential erosion

**AFTER**



**PROJECT:** Installation of a 520 square foot native shoreline planting

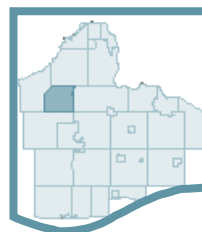
**COST:** Project materials cost estimated at \$950

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Apple Valley, MN  
Florida Lane



**PRACTICE:**

- Residential native shoreline planting

**BENEFITS:**

- Shoreline stabilization and erosion reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Long Lake

**INSTALLATION:**

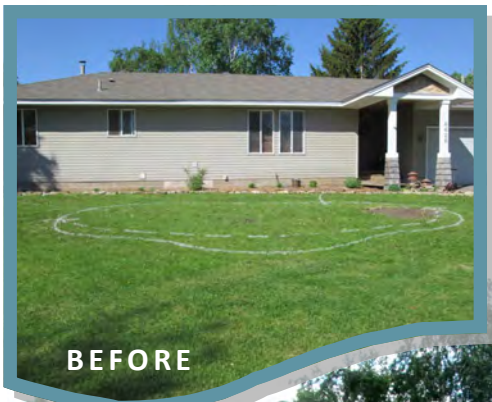
- Summer 2015





## HUNTER

# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 184 square foot residential raingarden

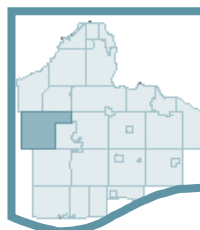
**COST:** Project materials cost estimated at \$567

**FUNDING:** Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
Flounder Court



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

**INSTALLATION:**

- Summer 2015



# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 320 square foot residential raingarden

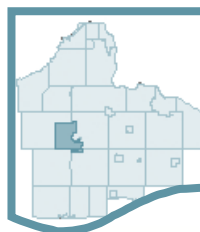
**COST:** Project materials cost estimated at \$856

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Farmington, MN  
Fairhaven Ave.



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

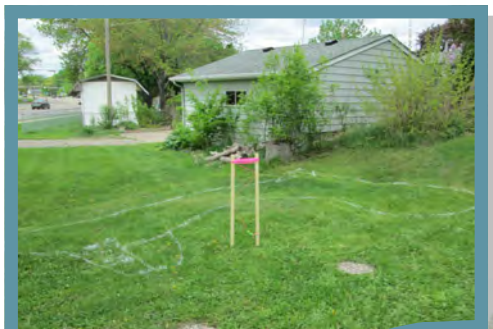
**INSTALLATION:**

- Fall 2015





# RESIDENTIAL RAINGARDEN



**BEFORE**

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



**AFTER**

**PROJECT:** Installation of a 146 square foot residential raingarden

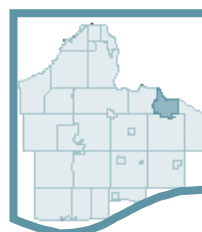
**COST:** Project materials cost estimated at \$327

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Hastings, MN  
814 Walnut Street



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- Vermillion River

**INSTALLATION:**

- Summer 2015



**WAYNE KIEFFER**

# WATER AND SEDIMENT CONTROL BASINS

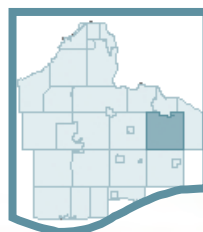


**PROJECT:** Installation of two water and sediment control basins to reduce soil loss from active gully.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$12,283</b>
	<b>Vermillion River Watershed:</b>	<b>\$9,212</b>
	<b>Landowner:</b>	<b>\$3,071</b>



**LOCATION:**  
Marshan Township



## PRACTICE:

- Water and Sediment Control Basins

## BENEFITS:

- 174 tons of soil per year prevented from traveling downstream
- 49 lbs. of phosphorous per year prevented from traveling downstream

## PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- USDA - Natural Resources Conservation Service

## WATERSHED:

- Vermillion River

## RECEIVING WATERS:

- Sand Coulee

## INSTALLATION:

- Spring 2015





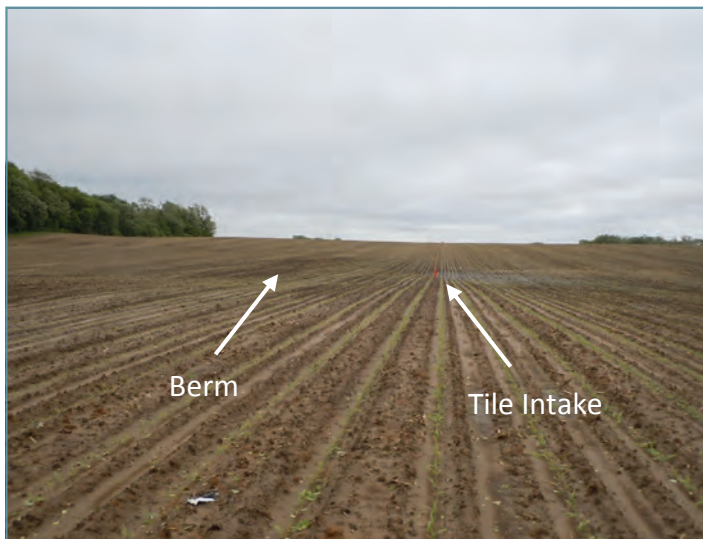
Gully erosion at Basin 1



Gully erosion at Basin 2



Completed Basin 2



Completed Basin 2

**JOE MOES**

## GRASSED WATERWAYS



### PRACTICE:

- Grassed Waterways

### BENEFITS:

- 2,309 tons of soil per year prevented from traveling downstream
- 533 lbs. of phosphorous per year prevented from traveling downstream

### PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- USDA - Natural Resources Conservation Service

### WATERSHED:

- Vermillion River

### RECEIVING WATERS:

- Vermillion River

### INSTALLATION:

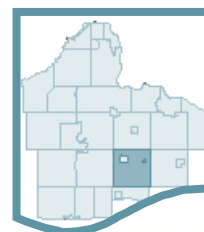
- Fall 2015

**PROJECT:** Installation of four grassed waterways totaling 2,695 feet. This project cleaned sediment out of existing waterways and repaired gullies.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$7,397</b>
	<b>Local:</b>	<b>\$5,548</b>
	<b>Landowner:</b>	<b>\$1,849</b>



**LOCATION:**  
Hampton Township







Erosion and sediment at waterway #4.



Waterway #4, Two weeks after the waterway was seeded and mulched.



Erosion and sediment at waterway #2.



Waterway #2, Two weeks after the waterway was seeded and mulched.



Erosion at waterway #3.



Waterway #3, After the waterway was seeded, mulched and straw wattles were installed.



## ROBERT NORDLING

# GRASSED WATERWAYS



### PRACTICE:

- Grassed Waterways

### BENEFITS:

- 930 tons of soil per year prevented from traveling downstream
- 171 lbs. of phosphorous per year prevented from traveling downstream

### PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- Minnesota Board of Water and Soil Resources
- USDA - Natural Resources Conservation Service

### WATERSHED:

- Vermillion River

### RECEIVING WATERS:

- Vermillion River

### INSTALLATION:

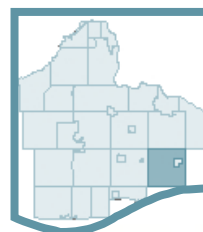
- 2015

**PROJECT:** Installed of 4,162 feet of grassed waterway to alleviate gullies which have formed during rain events.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$17,465</b>
	<b>Vermillion River Watershed JPO:</b>	<b>\$13,098</b>
	<b>Landowner:</b>	<b>\$4,367</b>



**LOCATION:**  
Douglas Township







Gully head cut, facing west



Severe gully, facing northeast



Severe gully, facing east



Looking upstream after mulching and seeding



Looking downstream after mulching and seeding

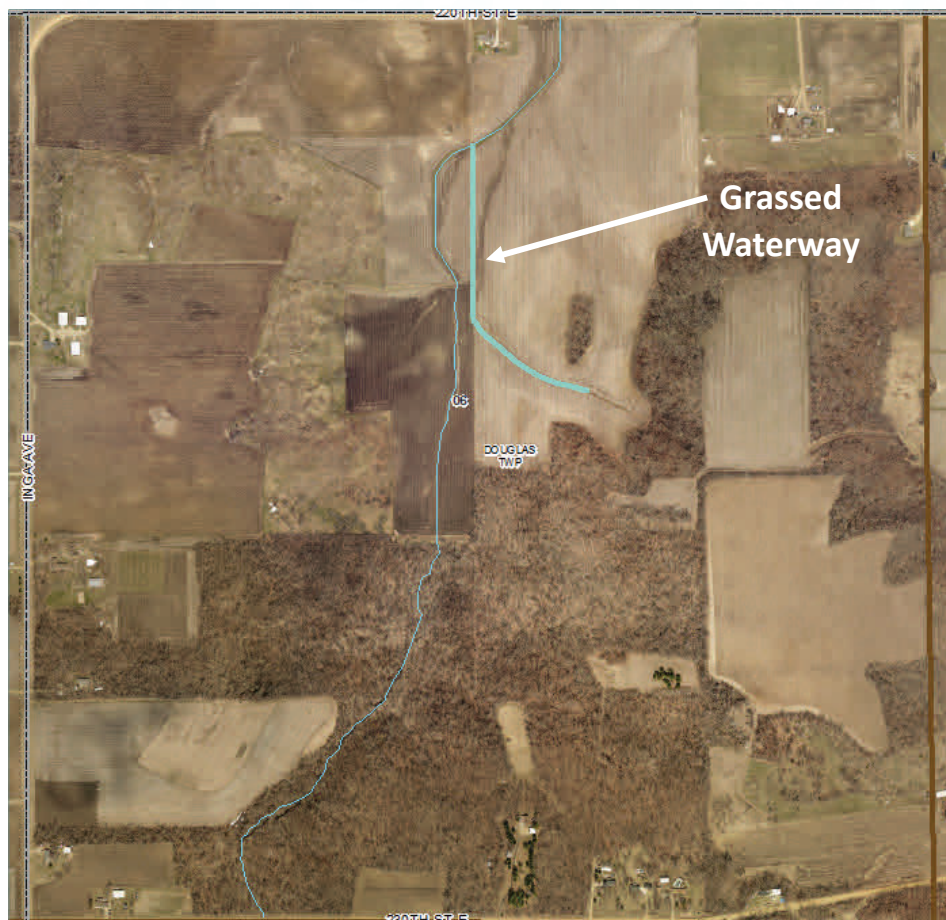


Straw wattles have been installed to control erosion and  
vegetation is starting to grow



## RAY GERGEN

# GRASSED WATERWAY

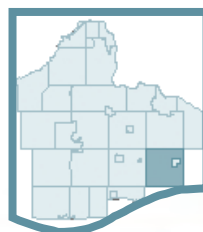


**PROJECT:** Installation of 2,742 foot grassed waterway to reduce soil loss from active gully.

<b>FUNDING:</b>	<b>Total Project Cost:</b>	<b>\$5,923</b>
	<b>Vermillion River Watershed:</b>	<b>\$4,443</b>
	<b>Landowner:</b>	<b>\$1,480</b>



**LOCATION:**  
Douglas Township



### PRACTICE:

- Grassed Waterway

### BENEFITS:

- 43 tons of soil per year prevented from traveling downstream
- 46 lbs. of phosphorous per year prevented from traveling downstream

### PARTNERS:

- Vermillion River Watershed Joint Powers Organization
- USDA - Natural Resources Conservation Service

### WATERSHED:

- Vermillion River

### RECEIVING WATERS:

- Sand Coulee

### INSTALLATION:

- Spring 2015





Eroded portion of field and future location of grassed waterway



Eroded portion of field and future location of grassed waterway



Gully formed within an existing grassed waterway



Gully formed within existing grassed waterway



Erosion blanket, fabric barriers, and crimped straw. Three forms of protection on the recently graded waterway.



Vegetation growing through erosion blanket two weeks after waterway completion.



## SLUITER

# RESIDENTIAL RAINGARDEN



A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



**PROJECT:** Installation of a 250 square foot residential raingarden

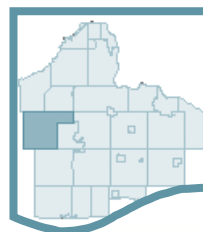
**COST:** Project materials cost estimated at \$838

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
198th St. West



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- South Creek

**INSTALLATION:**

- Summer 2015



## SHURSEN

# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 100 square foot residential raingarden

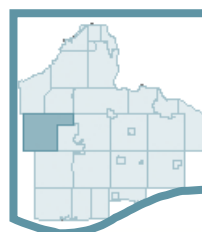
**COST:** Project materials cost estimated at \$550

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
Ixonja Path



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

**INSTALLATION:**

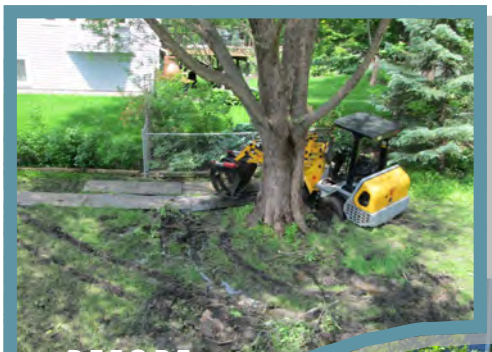
- Fall 2015





## MERCHANT

# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 200 square foot residential raingarden

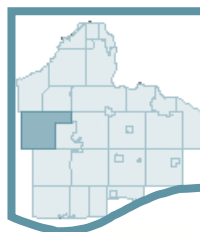
**COST:** Project materials cost estimated at \$588

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
Havelock Way



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

**INSTALLATION:**

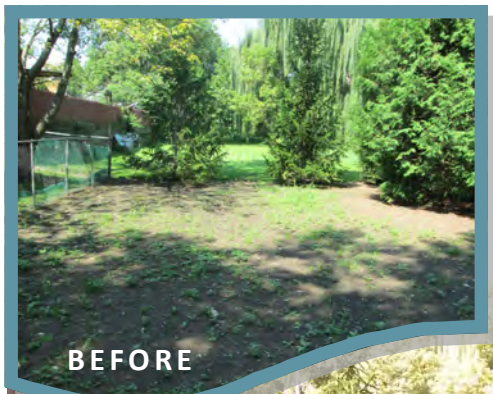
- Summer 2015





## WESTERMAYER

# RESIDENTIAL NATIVE GARDEN



A native garden, also called natural landscaping, uses plants, trees and grasses that are suitable for growth in a particular geographical area



**PROJECT:** Installation of a 1,500 square foot residential native garden

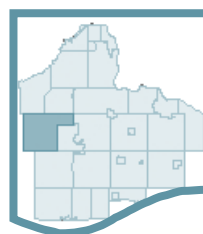
**COST:** Project materials cost estimated at \$605

**FUNDING:** Landowners receive a \$250 Blue Thumb grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
Upper 205th St. W.



**PRACTICE:**

- Residential native garden

**BENEFITS:**

- Runoff volume reduction
- Soil stabilization
- Improved wildlife habitat
- Opportunity for public education and outreach
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- South Creek

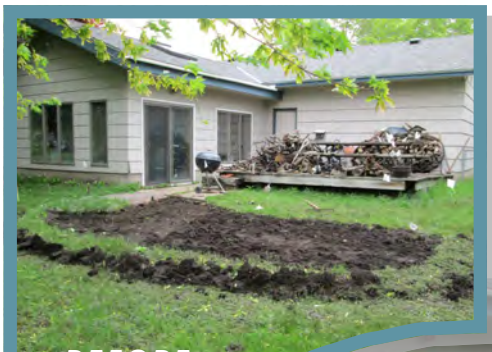
**INSTALLATION:**

- Fall 2015





# RESIDENTIAL RAINGARDEN



BEFORE

A raingarden is a shallow depression that captures rainwater, removes pollutants, and soaks the water into the ground



AFTER

**PROJECT:** Installation of a 170 square foot residential raingarden

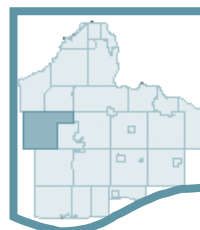
**COST:** Project materials cost estimated at \$288

**FUNDING:** Landowners receive a \$250 Landscaping for Clean Water grant as well as technical assistance provided by the Dakota County Soil and Water Conservation District



**LOCATION:**

Lakeville, MN  
Foliage Avenue



**PRACTICE:**

- Residential raingarden

**BENEFITS:**

- Runoff volume reduction
- Improved water quality
- Improved wildlife habitat
- Opportunity for public outreach and education
- Improved aesthetics

**PARTNERS:**

- Vermillion River Watershed Joint Powers Organization

**WATERSHED:**

- Vermillion River

**RECEIVING WATERS:**

- North Creek

**INSTALLATION:**

- Summer 2015





The Vermillion River Watershed encompasses 335 square miles, including portions of two counties and all or part of 20 cities, towns, and townships. The main stem of the river begins in southeastern Scott County in New Market Township, flows east through central Dakota County, passes over a waterfall in the City of Hastings, and then discharges to the Mississippi River both through a north-flowing outlet near the City of Hastings and a south-flowing outlet near the City of Red Wing, Minnesota.

January 2015

### Structural BMPs (continued from front)

Structural BMPs are engineered, sized, and built to manage stormwater for a specific site or area. These include BMPs such as water and sediment control ponds, stream re-meanders, infiltration practices with underdrains, green roofs, iron-enhanced sand filters, and other purpose-built practices. The BMPs can be designed and constructed to improve water quality, control flow rates, reduce or manage volume, or perform multiple functions. For example:

- A church parking lot is draining stormwater (containing dirt, oil, salt, and other pollutants) into the storm sewer. Using the existing slope of the lot, the church drains stormwater into a raingarden with amended soil that will allow stormwater to soak into the ground and remove the pollutants.
- A township's new fire station is designed to move stormwater from the roof and parking lot to a dry detention basin, a low-lying vegetated area where stormwater can be held until it evaporates or soaks into the soil.
- A homeowner's lake property has a steep bank leading down to the lakeshore, and stormwater is cutting a ravine and washing sediment into the water. The homeowner stabilizes the ravine with erosion-control material to avoid future sediment loss.

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- A farmer is concerned about soil erosion occurring in a low-lying area that channels stormwater within his field. After reshaping the low-lying area, the farmer creates a grassed waterway in the area to convey the stormwater, capture soil, and remove pollutants.

### Finding the right BMP

Resources about stormwater BMPs are available online from a variety of sources, but the best source for BMP information and technical assistance is right around the corner. Dakota and Scott County Soil and Water Conservation Districts (SWCDs) have experienced and knowledgeable staff members who consult with landowners about the best solution to stormwater pollution problems. These experts in water and soil management can provide advice, design assistance, plan review, inspection, referrals, or financial incentives (grant funding, partner cost-share, or payment for conservation easements).

- **Dakota County SWCD**, phone: 651-480-7777, website: [www.dakotaswcd.org/](http://www.dakotaswcd.org/)
- **Scott SWCD**, phone: 952-492-5425, website: [www.scottswcd.org/](http://www.scottswcd.org/)

### Resources on BMPs

Find out more about BMPs by visiting websites with more detailed information, photos, and cost/benefit estimates.

- **Minnesota Stormwater Manual (MPCA)** [http://stormwater.pca.state.mn.us/index.php/Stormwater\\_Manual\\_Table\\_of\\_Contents](http://stormwater.pca.state.mn.us/index.php/Stormwater_Manual_Table_of_Contents)
- **Minnesota Conservation Funding Guide (MDA)** [www.mda.state.mn.us/en/protecting/conservation/funding.aspx](http://www.mda.state.mn.us/en/protecting/conservation/funding.aspx)

### For more information about:

- **The Vermillion River Watershed**, visit [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)
- **Impaired waters**, go to the MPCA website at [www.pca.state.mn.us](http://www.pca.state.mn.us), search "impaired waters"
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### Frequently Asked Questions



## Best Management Practices (BMPs) to Improve Water Quality

### Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as "impaired" by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming or canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

### Best Management Practices (BMPs)

Best management practices (BMPs) can protect clean water resources or restore impaired waters. BMPs are operational or structural systems that treat or remove pollutants before they reach rivers, lakes, streams, or wetlands. Some BMPs work to reduce one type of pollutant; others have a range of functions, including reducing pollutants, slowing runoff rates or controlling volume.

**Operational** BMPs are those that change the way a business, public entity, household, or agricultural producer manages normal operations that affect stormwater. Examples of operational BMPs include:

- A small business owner routes runoff from the roof to a vegetated area (where it will soak in) rather than to a driveway or parking lot (where it will run off into local water resources).
- A city park employee learns how to use less fertilizer (which runs off into water resources), while keeping grass green and healthy.
- A homeowner stops raking leaves into the street (where they add phosphorus to stormwater) and composts yard waste instead.
- A farmer decides not to apply fertilizer to the fields this fall, waiting until spring instead, since most of the fall application will be lost to nutrient leaching.

**Structural** BMPs are those that alter the land to increase its natural capacity to treat polluted stormwater. These can include changes in shape, elevation, vegetation, soil type, or position.

(Continued on the back)

# Vermillion River Watershed Impairments: Best Management Practices and Strategy Options

The table at right lists some common water quality BMPs used in the Vermillion River Watershed.

For each BMP, the table shows:

- 1) which impairments the practice addresses;
- 2) whether practices work best in urban or rural areas; and
- 3) how much the practice costs for the water quality benefit achieved.

Practices/Strategies to Implement*	Impairment					Application Landscape Type		Cost/Benefit Ratio**
	Turbidity	Dissolved Oxygen	Fish/ Macroinvertebrates	E. Coli/Fecal Coliform	Excess Nutrients	Urban/ Suburban	Rural/ Agricultural	
Cover crops	X	X	X	X	X		X	\$
Infiltration basins	X	X	X	X	X	X		\$
Infiltration trench	X	X	X	X	X	X		\$\$
Low impact development (LID)	X	X	X	X	X	X	X	\$
Permeable asphalt or pavers	X	X	X	X	X	X		\$\$
Reduced tillage/no-till farming	X	X	X	X	X		X	\$
Riparian buffers/Filter strips	X	X	X	X	X	X	X	\$
Targeted education/outreach	X	X	X	X	X	X	X	\$
Vegetated swale	X	X	X	X	X	X		\$\$
Water Reuse/Rain barrels/cisterns	X	X	X	X	X	X		\$\$
Underground infiltration chambers	X	X	X		X	X		\$\$\$
Bioretention (filtration)	X		X	X	X	X		\$
Grassed waterways	X		X	X	X		X	\$
Intensive street sweeping	X	X	X		X	X		\$\$
Livestock exclusion	X		X	X	X		X	\$
Poor/Marginal land retirement	X	X	X		X		X	\$\$
Rooftop disconnection	X	X	X		X	X		\$
Wet ponds	X		X	X	X	X		\$\$
Wetland restoration	X		X	X	X	X	X	\$\$
Contour farming	X			X	X		X	\$
Controlled tile drainage	X		X		X		X	\$\$
Erosion and sediment control	X		X		X	X	X	\$
Feedlot improvements		X		X	X		X	\$\$
Good yard-keeping	X			X	X	X		\$
Grade stabilization structure	X		X		X	X	X	\$\$
Green roofs	X	X			X	X		\$\$\$
Manure and fertilizer management		X		X	X	X	X	\$
Proprietary stormwater treatment device	X		X		X	X		\$\$\$
Stormwater pond maintenance/dredging	X		X		X	X		\$\$
Stream remeandering	X	X	X			X	X	\$\$
Water and sediment control basins	X		X		X		X	\$
Parking lot shading		X	X			X		\$\$
Iron-enhanced sand filter	X				X	X		\$\$
Pet waste pickup				X	X	X		\$
Rock riffle construction		X	X			X	X	\$\$
Streambank shading		X	X			X	X	\$
Streambank stabilization	X		X			X	X	\$

\*List of practices is meant to be applicable to the VRWJPO yet comprehensive, and does not include all possible practices that could be implemented

\*\*Cost/benefit ratio illustrates the generalized cost of each practice for the benefit received and does not take into account quantity of practices or feasibility of practice implementation on all sites



(Continued from front)

#### Priority areas for improvement

If nitrate levels in reach 707 can be reduced now, we could prevent the South Branch of the Vermillion River from being listed as impaired for nitrate. (See “Test the Waters” fact sheet to find out more about nitrate in drinking water issues.)

Nitrate data from the cold-water trout streams are compared to the state’s drinking water standard for nitrate of 10 mg/L. State agencies are developing a surface water standard for nitrate, which may be lower than the 10 mg/L standard. Reach 707 in Castle Rock Township may violate the new standard, if it is adopted. Calculations from the 2012 and 2013 Vermillion River Monitoring Network annual reports show that the nitrate yields entering surface water were 10.0 pounds per acre and originate in the South Branch (which includes 707).

Nitrate affecting surface water also seeps into the groundwater, especially in eastern Dakota County. The Dakota County Targeted Townships groundwater sampling program conducted in 2013 showed that 15 percent of private drinking water wells tested in Castle Rock Township have nitrate levels that exceed the health risks limits set by the Minnesota Department of Health.

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#### The biggest challenge

Throughout the Vermillion River Watershed, levels of bacteria in surface water are too high. Reaches 706 and 707 are impaired for fecal coliform bacteria. The bacteria come from the intestines of warm-blooded organisms, so sources of bacteria may include livestock waste, wildlife waste, and failing septic systems. Best management practices (BMPs) can reduce bacteria levels and improve water quality, and state and local incentives are available to landowners.

#### Groundwater impacts on water quality

Reaches 706 and 707 are “gaining,” which means that groundwater moves into the river. This keeps the surface water in 707 cold enough to support cold-water species, such as trout.

#### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction they will be required to achieve. The unincorporated areas **as a whole** that drain to the river are given a load allocation – a pollutant load reduction the unincorporated areas will try to achieve together.

#### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost the local economy, and attract recreational users.
- Clean water attracts wildlife, supports healthy outdoor recreation, and improves the quality of life.

#### For more information about:

- **The Vermillion River Watershed**, visit [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)
- **Impaired waters**, go to the MPCA website at [www.pca.state.mn.us](http://www.pca.state.mn.us), search “impaired waters”
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#### Frequently Asked Questions



#### Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as “impaired” by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming, canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

#### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) is responsible for identifying pollution sources and stresses causing these impairments and creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

## Impaired Waters in Castle Rock Township and the Watershed Restoration and Protection Strategy (WRAPS)

In developing the WRAPS, the VRWJPO is consulting with people in Castle Rock Township to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding. This FAQ describes impaired waters in Castle Rock Township, factors that affect water quality in the area, and general information about pollutant loading.

#### Castle Rock Twp.’s water and land

Castle Rock Township is split between two watersheds. The northern portion of Castle Rock Township is in the Vermillion River Watershed; the southern portion is in the North Cannon River Watershed. This fact sheet covers only the portion in the Vermillion River Watershed.

#### Priority areas for improvement

The impaired river reaches are 706 and 707 (South Branch of the Vermillion River). These reaches are identified on the map in the center of this fact sheet. Reach 706 is classified as a warm-water stream; reach 707 is classified as a cold-water trout stream. Regulations and standard are more stringent for cold-water streams.

(Continued on the back)



# Where are the current water quality impairments in Castle Rock Township?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. Mercury is deposited on water from the air. One major source is coal-burning power plants.

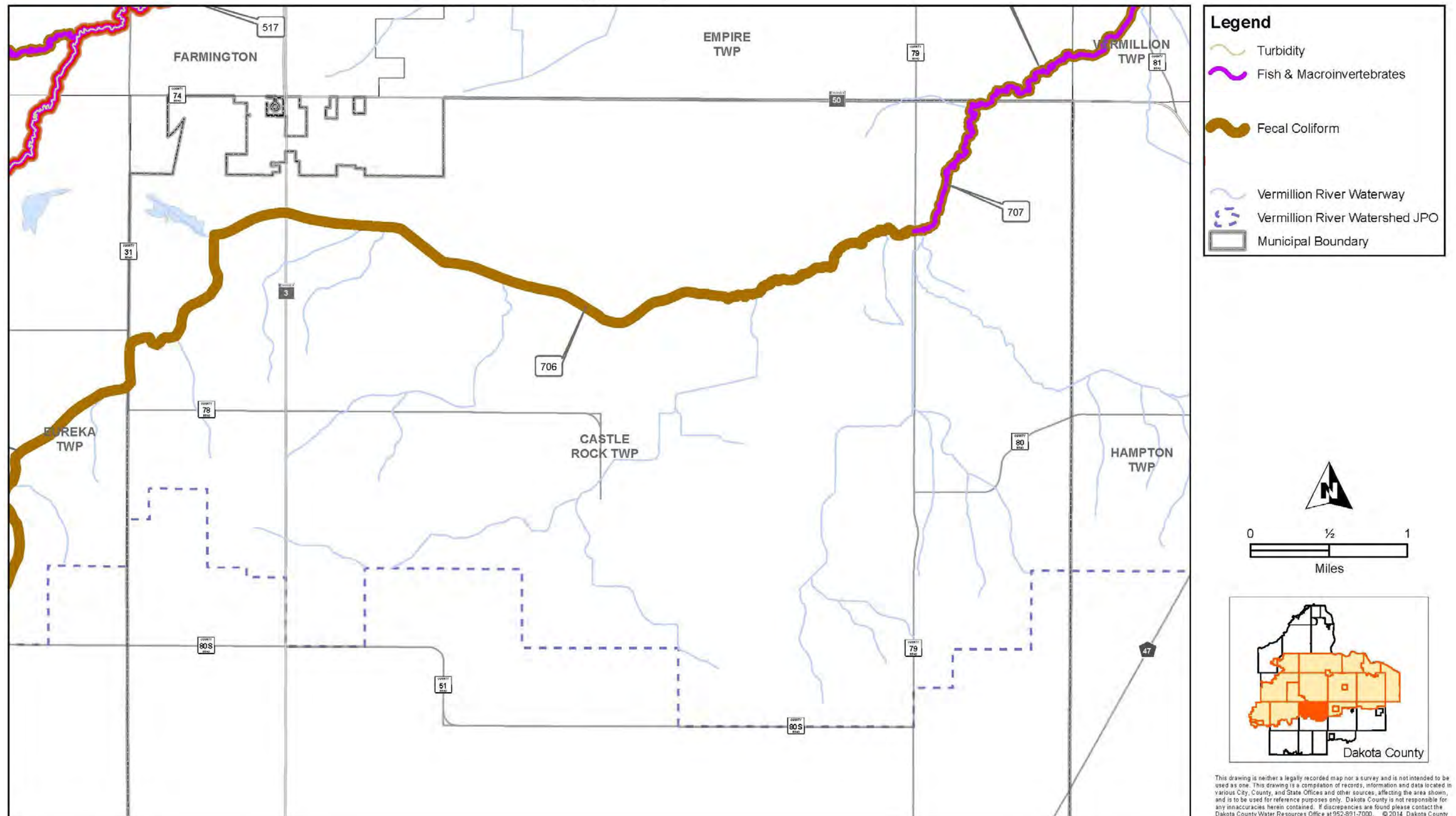
The State of Minnesota is responsible for reducing mercury pollution. To find out more, visit the Minnesota Pollution Control Agency website at [www.pca.state.mn.us/index.php/topics/mercury/index.html](http://www.pca.state.mn.us/index.php/topics/mercury/index.html).

## Impairments in Castle Rock Township

**Bacteria** – The most common pollutant in Castle Rock Township's river reaches (706 and 707) is **fecal coliform bacteria, especially *E. coli***. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support aquatic life, such as fish and macroinvertebrates (aquatic insects). In river segment 707, the make-up of the fish and macroinvertebrate communities is considered unhealthy. The reach does not contain the right kinds of living things in the right amounts, primarily because of environmental stress.

These environmental stresses include turbidity caused by too much sediment eroding into the river or carried to the river by stormwater, areas of degraded habitat, high water temperature, lack of dissolved oxygen, and excess nitrate.





### (Continued from front)

The western half of Lake Alimagnet is in Burnsville, and the eastern half in Apple Valley. Both cities have been working on solutions to the pollution problems in the lake and will continue to do so. Both cities will have a waste load allocation – a nutrient reduction target for each city to achieve.

### Priority area for restoration

Based on pollutant modeling, the largest nutrient loading from stormwater runoff to Lake Alimagnet is coming from the northern-most direct drainage area. (See map on the inside pages showing all drainage areas.)

### The biggest challenges

The area surrounding Lake Alimagnet is completely developed. Practices that reduce phosphorus in runoff take up space – and with little room to spare, creative strategies will be needed to meet water quality goals.

Another challenge is that stormwater runoff from the past has left phosphorus within the lake itself. The study estimates that 58 percent of the phosphorus in Lake Alimagnet comes from sediments in the lake (internal loading) that are taken up by aquatic plants or mixed into the water.

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### Water quality improvement underway

Burnsville and Apple Valley developed a Lake Management Plan for Alimagnet in 2005. The two cities, Alimagnet Lake Association, and other partners have removed rough fish and curly leaf pondweed, dredged stormwater ponds that drain to the lake, and installed a winter aeration system. The statewide ban on phosphorus in fertilizer also helps reduce the pollutant loading.

### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality enough to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction the city will work to achieve.

Burnsville and Apple Valley both have a waste load allocation for Lake Alimagnet. Apple Valley's portion of the reduction is 30.8 pounds of phosphorus a year. The WRAPS will identify strategies to reduce phosphorus loads to Lake Alimagnet and the MPCA, VRWJPO, cities, and other partners will work together to achieve the nutrient reduction and restore the lake.

## Why should we care about impaired waters?

Communities benefit if impaired waters are restored to a condition that is fishable, swimmable, and supports healthy aquatic life.

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost a community's economic status, and attract recreational users and businesses.
- Clean water resources are beautiful, attract wildlife, support healthy outdoor recreation, and improve the quality of life.

## For more information about:

- **The Vermillion River Watershed**, visit [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)
- **Impaired waters**, go to the MPCA website at [www.pca.state.mn.us](http://www.pca.state.mn.us), search "impaired waters"
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## Frequently Asked Questions



Lake Alimagnet,  
Photo: Great River Greening

# Impaired Waters in the City of Apple Valley and the Watershed Restoration and Protection Strategy (WRAPS)

## Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as "impaired" by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming or canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

## Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) identified pollution sources and stresses causing these impairments. The VRWJPO and partners are creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

In developing the WRAPS, the VRWJPO is consulting with people in the City of Apple Valley to identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, as well as be practical, cost-effective, and eligible for grant funding.

This FAQ describes impaired waters in the City of Apple Valley within the Vermillion River Watershed, factors that affect water quality in the area, and general information about pollutant loading (concentration of pollutants in stormwater runoff).

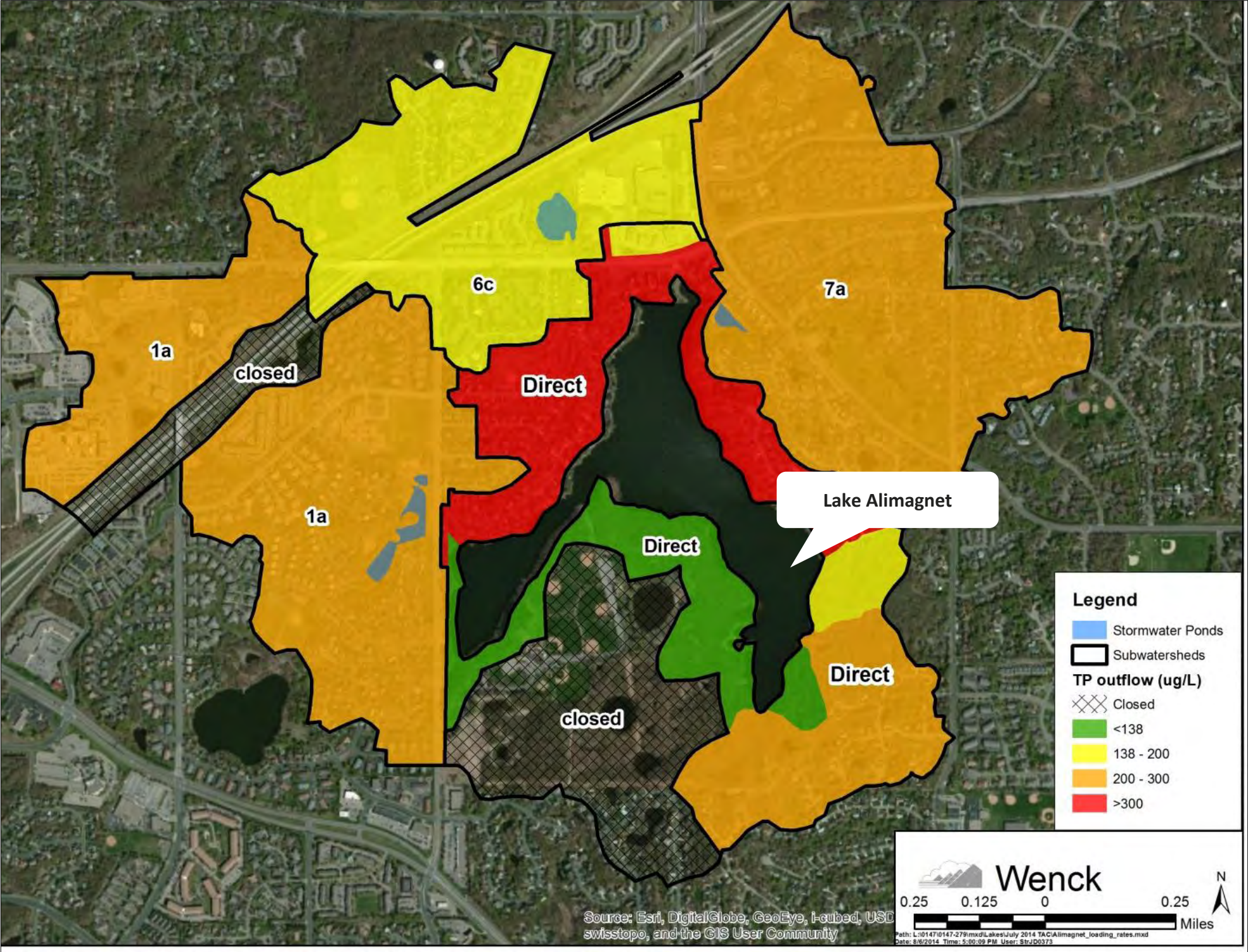
## City of Apple Valley impaired waters

Most of the City of Apple Valley is located within the Vermillion River Watershed, and three lakes in the city have been listed as impaired; Long, Farquar, and Alimagnet. Apple Valley completed an impaired water study and plan for Long and Farquar Lakes in 2009 and has been working to improve water quality in these lakes. Lake Alimagnet is located in both Apple Valley and Burnsville and drains to the Vermillion River. When the VRWJPO began the watershed-wide WRAPS process, Lake Alimagnet was included in this impaired waters study and plan. Lake Alimagnet is impaired for nutrients.

(Continued on the back)



# Water quality impairment in the City of Apple Valley within the Vermillion River Watershed



Map shows areas with the highest total phosphorus concentrations discharging to Lake Alimagnet

The map identifies lake drainage areas (subwatersheds) around Lake Alimagnet. Stormwater containing phosphorus comes from areas with direct drainage to the lake and areas that bring stormwater to the lake indirectly (through pipes, for example).

However, some direct drainage areas bring higher total phosphorus concentrations into Lake Alimagnet than others. The northernmost drainage area (shown in red) is estimated to contribute the highest total phosphorus concentrations. The southern direct drainage area (shown in green) is estimated to contribute the least total phosphorus concentrations.

This is because the southern drainage area is primarily park land. It is vegetated, and trees and plants around the lake filter stormwater and take up phosphorus. The park also has less impervious surface, such as roads and parking lots, than developed areas. Paved surfaces transport stormwater pollutants to water resources much faster than vegetated surfaces.



Lakeside hiking trail, vegetated to filter stormwater before it reaches the lake

## Impairment in Lake Alimagnet

**Nutrient impairment** – Shallow lakes in highly developed areas are often listed for nutrient impairment. Phosphorus (the primary nutrient of concern) is a naturally occurring element needed for plant growth. Phosphorus is an ingredient in fertilizers, detergents, water softeners, and drugs.

Stormwater runoff brings phosphorus compounds from the surrounding developed urban areas to the lake. Lawn, garden, and plant waste contain phosphorus that washes or blows into the lake. Excessive nutrients launch a cycle of deterioration in lakes.

Plants overgrow, die, and release nutrients. This, in turn, promotes more growth, and increases turbidity, oxygen depletion, and algae blooms. As the cycle continues, the lake can become clogged with weeds, covered with algae, and without enough oxygen to support fish or macroinvertebrates.

Because phosphorus has been running off during a long period of growth and development in Apple Valley and Burnsville, many lakes have stored in-lake phosphorus. The phosphorus can be released through different physical and chemical processes that occur naturally in the lake.



### (Continued from front)

The western half of Lake Alimagnet is in Burnsville, and the eastern half in Apple Valley. Both cities will be working on solutions to the pollution problems in the lake.

### Priority area for restoration

Based on pollutant modeling, the largest nutrient loading to Lake Alimagnet is coming from the northern-most direct drainage area. (See map on the inside pages showing all drainage areas.)

### The biggest challenges

The area surrounding Lake Alimagnet is completely developed. Practices that reduce phosphorus in runoff take up space – and with little room to spare, creative strategies and practices will be needed to meet water quality goals.

Another challenge is that stormwater runoff from the past has left phosphorus within the lake itself. The study estimates that 58 percent of the phosphorus in Lake Alimagnet comes from internal loads held by sediments, aquatic plants, or in the water column.

### Water quality improvement underway

Burnsville and Apple Valley developed a lake management plan for Alimagnet in 2005. The cities, Alimagnet Lake Association, and other partners have worked to remove rough fish and curly leaf pondweed, dredged stormwater ponds that drain to the lake, and installed a winter aeration system. The statewide ban on phosphorus in fertilizer also helped reduce the pollutant loading.

### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality enough to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction the city will work to achieve.

The Cities of Burnsville and Apple Valley are both given a waste load allocation for Lake Alimagnet. Burnsville's portion of the reduction is 25.6 pounds of phosphorus a year. The WRAPS will identify strategies to reduce phosphorus loads to Lake Alimagnet and the VRWJPO will work to help the cities achieve the reduction.

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The Vermillion River Watershed encompasses 335 square miles, including portions of two counties and all or part of 20 cities, towns, and townships. The main stem of the river begins in southeastern Scott County in New Market Township, flows east through central Dakota County, passes over a waterfall in the City of Hastings, and then discharges to the Mississippi River, both through a north-flowing outlet near the City of Hastings and a south-flowing outlet near the City of Red Wing, Minnesota.

January 2015



### Frequently Asked Questions



Lake Alimagnet,  
Photo: Great River Greening

## Impaired Waters in the City of Burnsville and the Watershed Restoration and Protection Strategy (WRAPS)

### Impaired waters

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Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming or canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) worked to help identify pollution sources and stresses causing these impairments. The VRWJPO and partners are creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

In developing the WRAPS, the VRWJPO is consulting with people in the City of Burnsville to identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding.

This FAQ describes the impaired water in the City of Burnsville within the Vermillion River Watershed, factors that affect water quality in the area, and general information about pollutant loading.

### City of Burnsville impaired waters

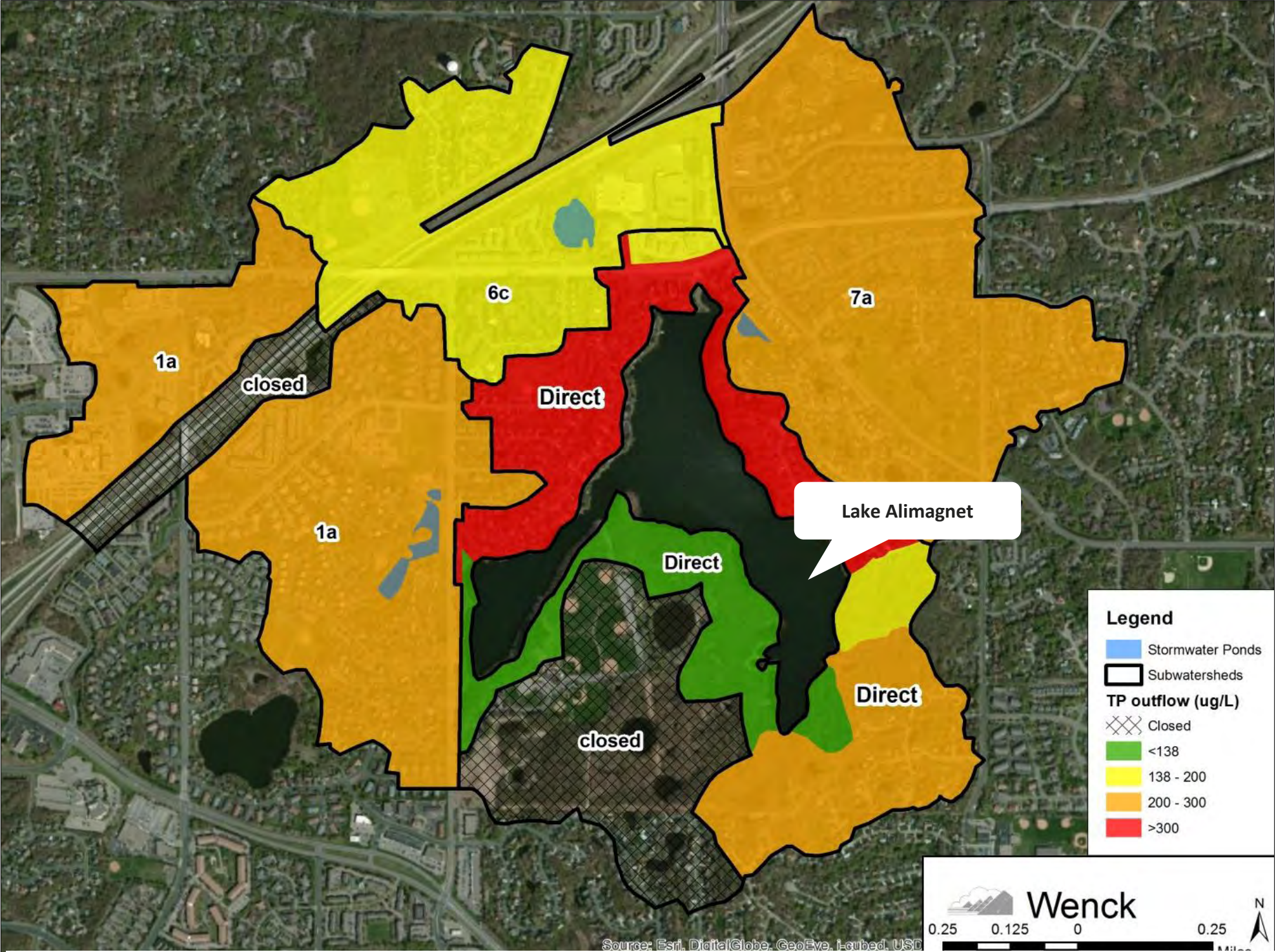
The City of Burnsville is only partly located within the Vermillion River Watershed. In the Vermillion River Watershed, Lake Alimagnet is Burnsville's only impaired water resource. However, the City has had substantial experience in dealing with impaired waters located in the Black Dog Watershed.

The Black Dog Watershed Management Organization, which covers the majority of Burnsville, has studied and prepared plans for Keller and Crystal Lakes. Both lakes are listed as impaired for nutrients (primarily phosphorus), and work is underway to restore them.

(Continued on the back)



# Water quality impairment in the City of Burnsville within the Vermillion River Watershed



Map shows areas with the highest total phosphorus concentrations discharging to Lake Alimagnet

The map shows subwatersheds (identified drainage areas) around Lake Alimagnet. Part of the WRAPS study is focused on identifying source areas for pollutants.

Stormwater containing phosphorus comes from areas with direct drainage to the lake and areas that bring stormwater to the lake indirectly (through pipes, for example). However, some direct drainage areas bring higher total phosphorus concentrations into Lake Alimagnet than others. The northernmost drainage area (shown in red) is estimated to have the highest total phosphorus concentrations. The southern direct drainage area (shown in green) is estimated to have the least total phosphorus concentrations.

This is because the southern drainage area is primarily park land. It is vegetated, and trees and plants filter stormwater and take up phosphorus. The park also has less impervious surface, such as roads and parking lots. Paved surfaces move stormwater pollutants to water resources much faster than vegetated surfaces do.



Lakeside hiking trail

## Impairment in Lake Alimagnet

**Nutrient impairment** – Shallow lakes in highly developed areas are often listed for nutrient impairment. Phosphorus (the primary nutrient of concern) is a naturally occurring element needed for plant growth. People use phosphorus in fertilizers, detergents, water softeners, and drugs.

Stormwater runoff brings phosphorus compounds from the surrounding developed urban areas to the lake. Lawn, garden, and plant waste contain phosphorus that washes or blows into the lake. Excessive nutrients launch a cycle of deterioration in lakes.

Plants overgrow, die off, release nutrients, promote more growth, and increase turbidity, oxygen depletion, and algae blooms. As the cycle continues, the lake can become clogged with weeds, covered with algae, and without enough oxygen to support fish or macroinvertebrates.

Because phosphorus has been running off during a long period of growth and development, many lakes have stored in-lake phosphorus. The phosphorus can be released through different physical and chemical processes that occur naturally in the lake.



(Continued from front)

#### Priority areas for improvement

Due to its close proximity, Elko New Market's primary impaired river reach is 516 (Vermillion River main stem), but because reach 517 is downstream from Elko New Market, the city will be allocated pollutant reductions in both 516 and 517. These reaches are identified on the map in center of this fact sheet.

Stormwater from the city discharges directly to reach 516, which is impaired for mercury and bacteria. Mercury can't be dealt with locally (see sidebar on the inside pages), so reducing bacteria in runoff is one of the priority areas for improvement in Elko New Market. Another priority area for improvement is reducing the amount of sediment in runoff. Turbidity (cloudy water from particles that wash into the water) is the primary stressor on fish and macroinvertebrates.

All of the impaired reaches need help, but perhaps none so much as reach 517. This reach doesn't meet state standards for fecal coliform bacteria, turbidity, dissolved oxygen, mercury, and fish and macroinvertebrate health. Excessive sediment was found to be a significant water quality problem in reach 517.

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#### Strategies for improvement

Elko New Market will have a Waste Load Allocation (WLA) for 517's pollutant impairments because 516 and other headwater tributaries contribute directly to impairments in reach 517. Since the city has both urban and farm land uses, strategies tailored for each land use have been identified.

One key strategy to consider for reducing bacteria in runoff on farm lands within the city is proper agricultural manure management and feedlot or pasture improvements. A key bacteria reduction strategy on the urban lands would be to work on pet waste management.

A strategy for reducing sediment in runoff on the urban lands would be effective erosion and sediment control on any new development. Conservation practices such as grassed waterways, conservation tillage, contour farming, and water and sediment control basins would be extremely effective at reducing sediment loss from the agricultural lands.

#### Reducing pollutant loads

Elko New Market has a state municipal separate storm sewer system (MS4) permit and will receive WLA that will be incorporated into the permit. The WLA, a pollutant-reduction goal, provides the city with a target to help meet water-quality standards.

#### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost the local economy, and attract recreational users.
- Clean water attracts wildlife, supports healthy outdoor recreation, and improves the quality of life.

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#### Frequently Asked Questions



Headwaters of the Vermillion River  
near Elko New Market

#### Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as "impaired" by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming, canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

#### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) and MPCA are responsible for identifying pollution sources and stresses causing these impairments and creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

## Impaired Waters near the City of Elko New Market and the Watershed Restoration and Protection Strategy (WRAPS)

In developing the WRAPS, the VRWJPO is consulting with people in the City of Elko New Market to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws and be practical, cost-effective, and eligible for grant funding. This FAQ describes impaired waters in Elko New Market, factors that affect water quality in the area, and general information about required pollutant reduction goals.

#### Elko New Market's water and land

The City of Elko New Market is partly within the Vermillion River Watershed. The headwaters of the Vermillion River originate near Elko New Market. The Vermillion River main stem emerges just north of the city and flows north and east past the former Elko New Market wastewater treatment plant, and into Eureka Township.

Elko New Market is in an unusual situation, compared to other jurisdictions in the Vermillion River Watershed. The headwaters of the Vermillion River system are located within the Scott County portion of the watershed. Water flows out of the headwaters, but not in.

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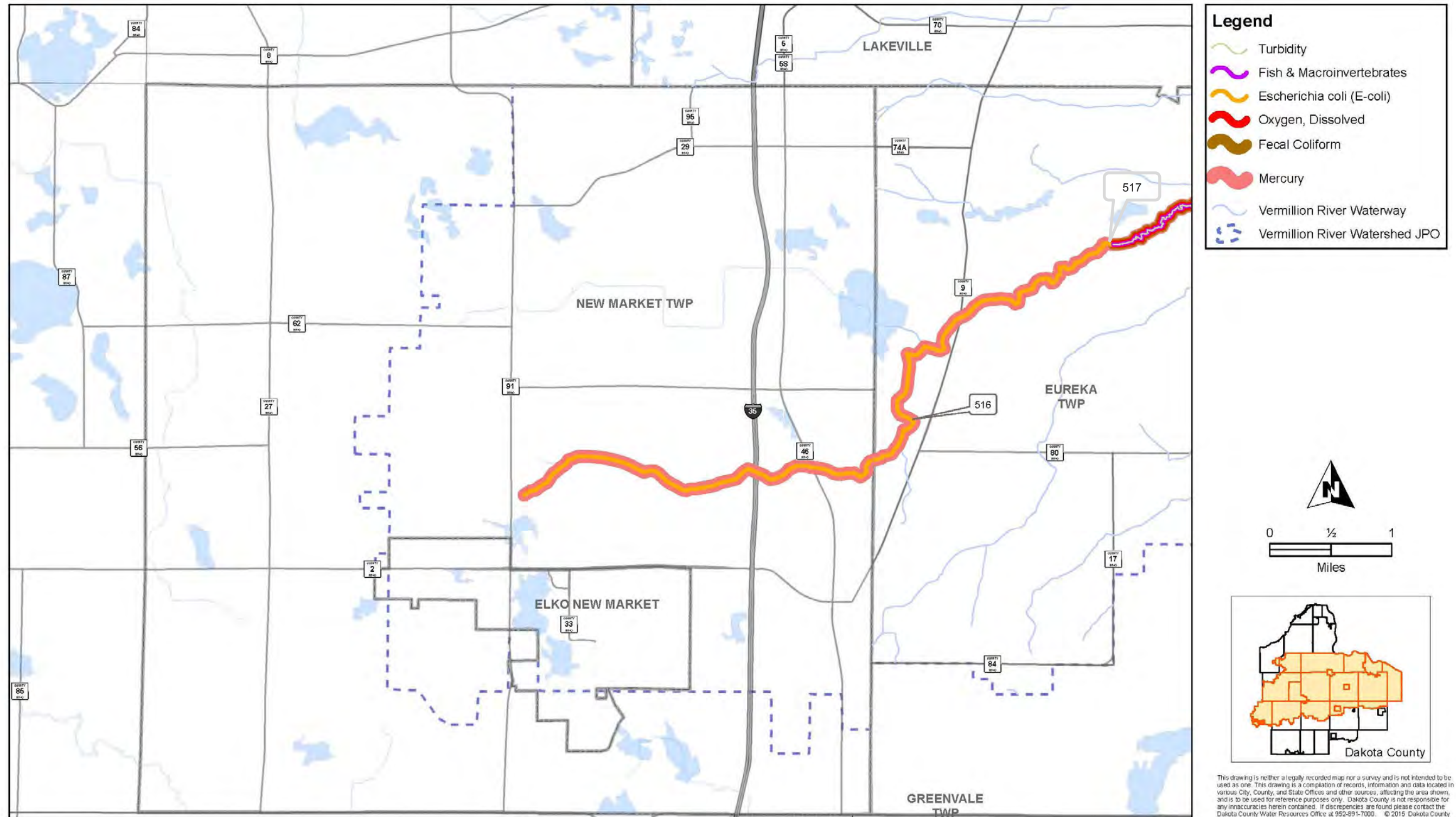
# Where are the current water quality impairments near the City of Elko New Market?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. In Elko New Market, river segments 516 and 517 are impaired by mercury, which is deposited on water from the air. One major source is coal-burning power plants.

The State of Minnesota is responsible for reducing mercury pollution. To find out more, visit the Minnesota Pollution Control Agency website at [www.pca.state.mn.us/index.php/topics/mercury/index.html](http://www.pca.state.mn.us/index.php/topics/mercury/index.html).

## Impairments near Elko New Market



**Bacteria** – The most common pollutant found in Elko New Market’s nearest river reaches is **fecal coliform bacteria, especially *E. coli***, in reaches 516 and 517. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Low dissolved oxygen** – If a river or stream does not have enough dissolved oxygen (as is the case in reach 517), fish and other aquatic organisms are stressed and less able to live and reproduce. Reach 517 has poor oxygen conditions because it is slow moving, becomes stagnant, does not have in-stream features to help aerate the water, and is too warm.

**Turbidity** is cloudiness in water (517) caused by individual particles (typically sediment). Stormwater brings particles from land surfaces to water bodies. High turbidity levels can block light from reaching lower water depths; inhibit growth of aquatic plants and species (such as fish or aquatic insects) that depend on those plants; cover and fill vital habitat, hinder the ability of species to see food, and damage gills.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support living things, such as fish and macroinvertebrates (aquatic insects). In river segment 517, fish and macroinvertebrate populations are impaired. The reach does not contain the right kinds of living things in the right amounts, primarily because of turbidity, but also high temperature, low oxygen, and poor habitat.



(Continued from front)

#### Priority areas for improvement

All of the impaired reaches need help, but perhaps none so much as reach 517. This reach, which is a DNR-designated trout stream, is impaired because it doesn't meet state standards for fecal coliform bacteria, turbidity, dissolved oxygen, mercury, and fish and macroinvertebrate health. Why does this reach have so many listed impairments? A few possible reasons:

- Riparian buffers (vegetated strips along streams and waterways) filter pollutants and sediments out of stormwater and allow infiltration. Many streams have adequate riparian buffers, but some buffers lack tree shading, which stabilizes stream banks, maintains cool water temperatures, and filters pollutants.
- Older parts of the city pre-date regulations for stormwater management. Stormwater running into storm drains in older areas of Farmington go directly to one or four outlets into the Vermillion River – all of which drain into reach 517. Retrofitting older parts of the city with stormwater management practices would improve river conditions.
- The land elevation changes very little in reach 517, so water moves slowly. Adding features to mix and aerate the water would improve oxygen conditions in reach 517.

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#### Priority areas for protection

Rambling River Park is located along much of reach 517, and its streambank vegetation provides some filtration for overland stormwater runoff. The park also contains wetland areas to contain and infiltrate stormwater and provide habitat for macroinvertebrates.

#### Greatest stress on fish and aquatic life

Turbidity (primarily from sediment) is the greatest stressor on fish and aquatic life. (The current method to measure turbidity is total suspended solids, or TSS.) Controlling stormwater runoff by reducing the volume of water reaching the river would reduce sediment loading.

#### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality to meet state standards. Farmington has a state municipal separate storm sewer system (MS4) permit and will receive a waste load allocation – a pollutant load reduction goal the city will be required to achieve to meet water-quality standards on all Farmington river and tributary reaches.

#### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost the local economy, and attract recreational users.
- Clean water attracts wildlife, supports healthy outdoor recreation, and improves the quality of life.

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#### Frequently Asked Questions



Remeandered portion of North  
Creek in Farmington

#### Impaired waters

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Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming, canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

#### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) and MPCA are responsible for identifying pollution sources and stresses causing these impairments and creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

## Impaired Waters in the City of Farmington and the Watershed Restoration and Protection Strategy (WRAPS)

In developing the WRAPS, the VRWJPO is consulting with people in the City of Farmington to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws and be practical, cost-effective, and eligible for grant funding. This FAQ describes impaired waters in Farmington, factors that affect water quality in the area, and general information about required pollutant reduction goals.

#### Farmington's water and land

The City of Farmington is entirely within the Vermillion River Watershed. Parts of the river's main stem, as well as portions of three major tributaries (South Creek, Middle Creek, and North Creek) pass through Farmington from west to east. The Vermillion River main stem passes through Rambling River Park.

#### Priority areas for improvement

The impaired river reaches are 507 and 517 (Vermillion River main stem); 527 (South Creek); 546, 548, and 668 (Middle Creek); and 542 and 670 (North Creek). These are identified on the map in center of this fact sheet.

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The Vermillion River Watershed encompasses an area of approximately 335 square miles, including portions of two counties and all or portions of 20 cities, towns, and townships. The main stem of the river begins in southeastern Scott County in New Market Township flowing east through central Dakota County, passing over a waterfall in the City of Hastings, and then discharging to the Mississippi River both through a northerly flowing outlet near the City of Hastings as well as through a southerly flowing outlet near the City of Red Wing, Minnesota.

Updated: March 2015



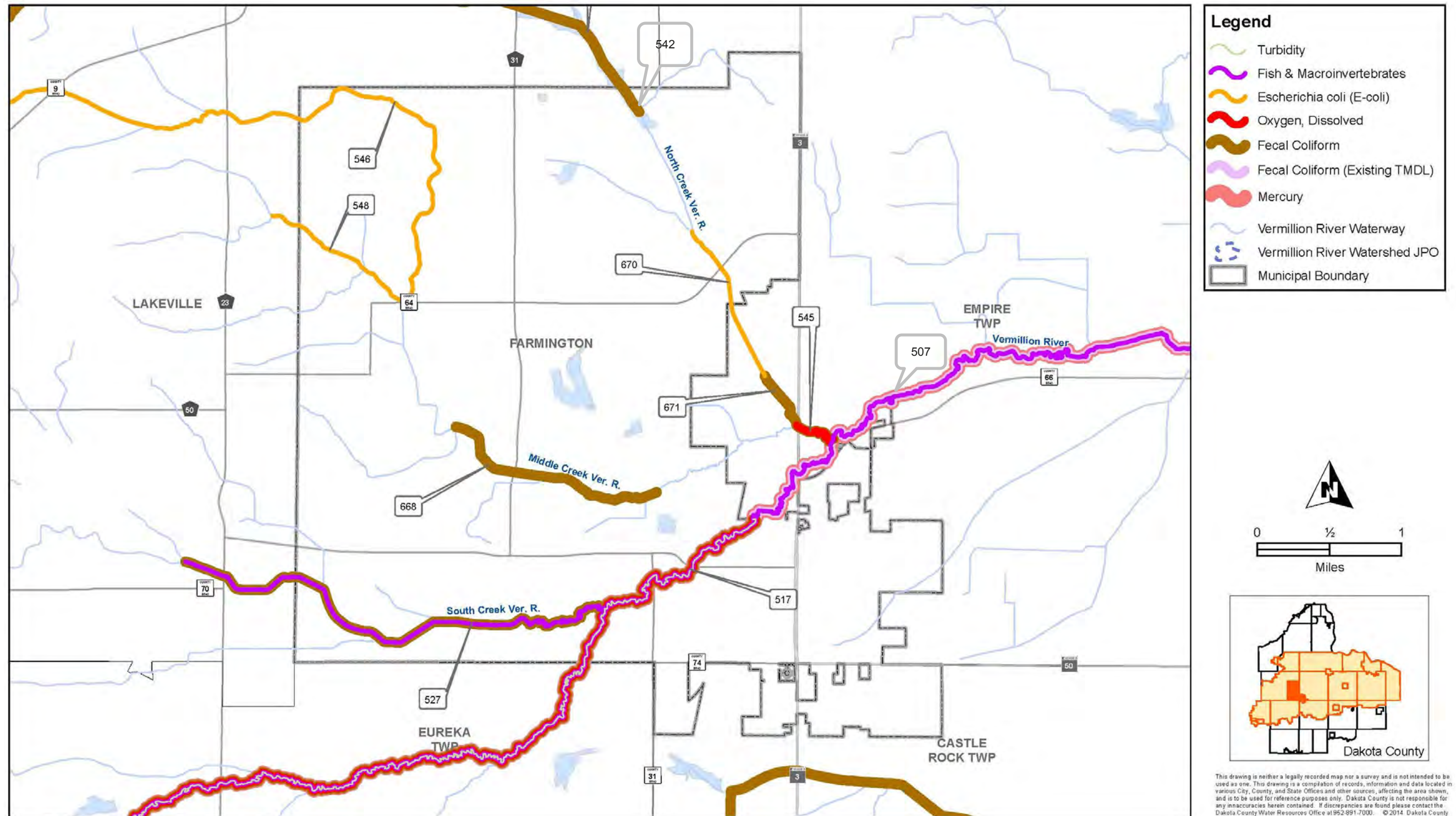
# Where are the current water quality impairments in the City of Farmington?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. In Farmington, river segments (507 and 517) are impaired by mercury, which is deposited on water from the air. One major source is coal-burning power plants.

The State of Minnesota is responsible for reducing mercury pollution. To find out more, visit the Minnesota Pollution Control Agency website at [www.pca.state.mn.us/index.php/topics/mercury/index.html](http://www.pca.state.mn.us/index.php/topics/mercury/index.html).

## Impairments in Farmington



**Bacteria** – The most common pollutant found in all of Farmington’s river reaches is **fecal coliform bacteria, especially *E. coli***. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Low dissolved oxygen** – If a river or stream does not have enough dissolved oxygen (as is the case in reach 517), fish and other aquatic organisms are stressed and less able to live and reproduce. Reach 517 has poor oxygen conditions because it is slow moving, becomes stagnant, does not have in-stream features to help aerate the water, and is too warm.

**Turbidity** is cloudiness in water (517) caused by individual particles (typically sediment). Stormwater brings particles from land surfaces to water bodies. High turbidity levels can block light from reaching lower water depths; inhibit growth of aquatic plants and species (such as fish or aquatic insects) that depend on those plants; cover and fill vital habitat, hinder the ability of species to see food, and damage gills.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support living things, such as fish and macroinvertebrates (aquatic insects). In river segments 507, 517 and 527, fish and macroinvertebrates are unhealthy. The reach does not contain the right kinds of living things in the right amounts, primarily because of turbidity, but also high temperature, low oxygen, and poor habitat.



(Continued from front)

#### Priority areas for protection

A large portion of land in Empire Township is under public ownership, a unique circumstance among the primarily agricultural townships in the Vermillion River Watershed. Efforts to protect or restore environmental resources on these publicly owned properties are already in progress, but there will be many more opportunities in the future.

UMore Park is a large tract of land (5,000 acres) in northern Empire Township and southern Rosemount owned by the University of Minnesota. Potential plans for UMore include: a sustainable community residential development, agricultural research and education, and commercial uses, such as gravel mining. Only one unnamed tributary drains from UMore Park to reach 507.

Dakota County Parks recently opened the 456-acre Whitetail Woods Regional Park, located one mile north of the Vermillion River main stem 507 reach. The new park installed stormwater best management practices (BMPs) and other sustainability measures and has restored and maintained habitat. Opportunities to partner with Whitetail Woods on water quality improvement projects are being actively explored.

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Metropolitan Council Environmental Services (MCES) owns and operates the Empire Wastewater Treatment Plant, which occupies approximately 400 acres on reach 507. MCES has integrated innovative stormwater management practices throughout the MCES property – a green roof, pervious pavers, infiltration practices, and native prairie plantings, for example. As a permitted wastewater treatment facility, MCES is committed to protecting water quality in the Mississippi River (where effluent is discharged) and the Vermillion River.

#### Priority areas for restoration

Reach 507, a designated trout stream, is impaired for bacteria. Bacterial impairments are widespread throughout the watershed, and the sources include feedlots, pet wastes, wildlife wastes, failing septic systems, and land application of manure. Riparian buffers could have a significant beneficial impact in filtering bacteria, nutrients, and sediment before they reach the water.

#### Reducing pollutant loads

Empire Township has a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction the township will be required to achieve.

### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
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### Frequently Asked Questions



Stream reach in Empire Township

## Impaired Waters in Empire Township and the Watershed Restoration and Protection Strategy (WRAPS)

### Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as “impaired” by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

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### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) is responsible for identifying pollution sources and stresses causing these impairments and creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

In developing the WRAPS, the VRWJPO is consulting with people in Empire Township to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding. This FAQ describes impaired waters in Empire Township, factors that affect water quality in the area, and general information about pollutant loading.

### Empire Township’s water and land

The Vermillion River’s main stem (reach 507) flows from west to east across Empire Township. This reach was once the receiving water for the Empire Wastewater Treatment Plant effluent (treated wastewater). The Empire Plant stopped discharging to the Vermillion River in 2006; its effluent is now piped to the Mississippi River.

On the western border of Empire Township, North and Middle Creeks converge and drain into the Vermillion main stem (507). Portions of North Creek (reaches 545, 670, and 671) are located in Empire Township, as is a portion of the South Branch tributary (reach 707) that cuts through the southeastern corner of the township. See the map on the inside pages to see what portions of the river are impaired.

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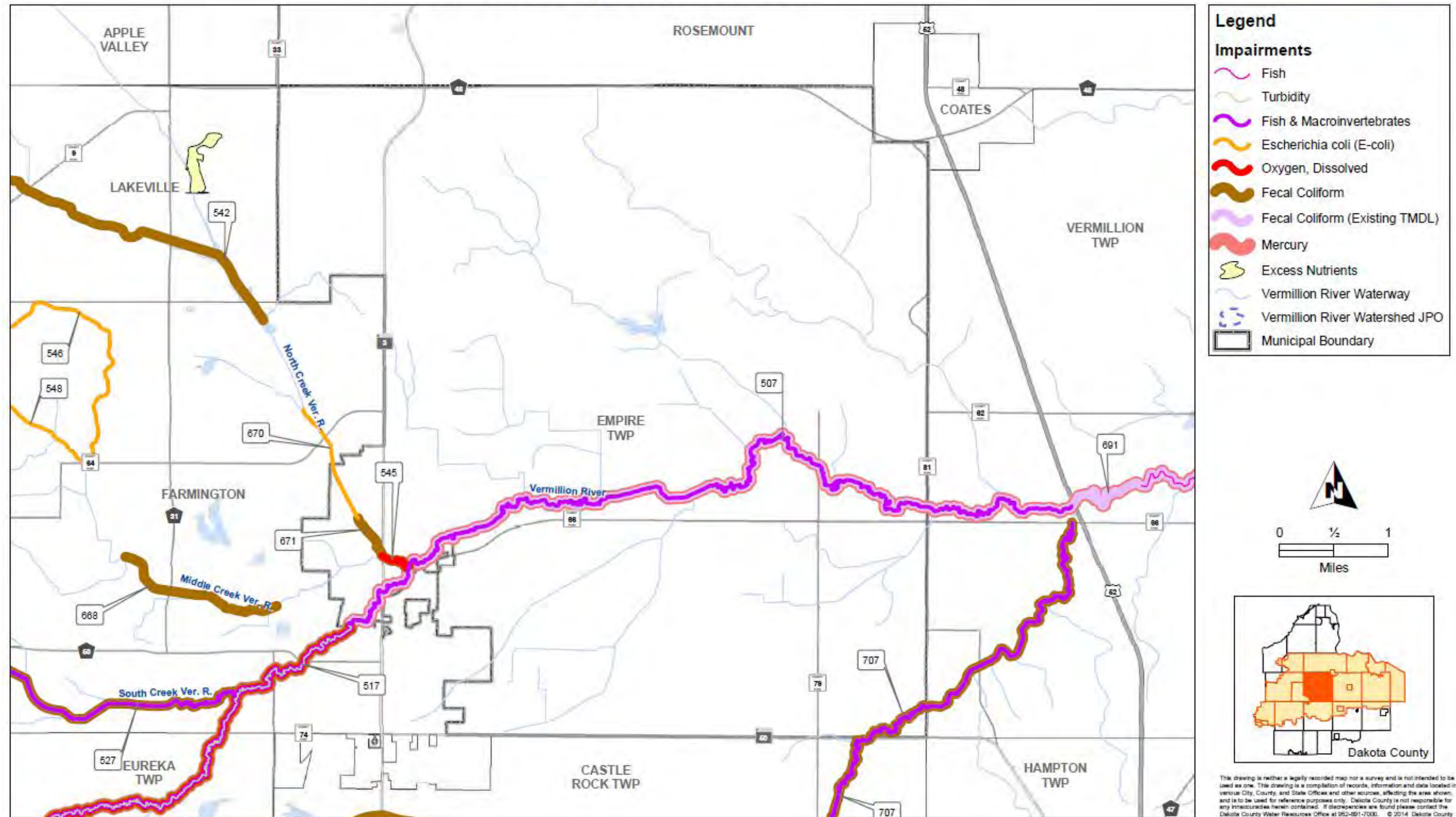


# Where are the current water quality impairments in Empire Township?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. In Empire Township, river segment 507 is impaired by mercury, which is deposited on water from the air. One major source is coal-burning power plants.

The State of Minnesota is responsible for reducing mercury pollution. To find out more, visit the Minnesota Pollution Control Agency website at [www.pca.state.mn.us/index.php/topics/mercury/index.html](http://www.pca.state.mn.us/index.php/topics/mercury/index.html).



## Impairments in Empire Township

**Bacteria** – The most common pollutant in Eureka Township's river reaches (516, 517, and 706) is **fecal coliform bacteria, especially *E. coli***. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Low dissolved oxygen** – If a river or stream does not have enough dissolved oxygen (517), fish and other aquatic organisms are stressed and less able to live and reproduce. Reach 517 has poor oxygen conditions because it is slow moving, becomes stagnant, does not have in-stream features to help aerate the water, and is too warm.

**Turbidity** is cloudiness in water (517) caused by individual particles (typically sediment). Stormwater brings particles from land surfaces to water bodies. High turbidity levels can block light from reaching lower water depths; inhibit growth of aquatic plants and species (such as fish or aquatic insects) that depend on those plants; cover and fill vital habitat, hinder the ability of species to see food, and damage gills.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support living things, such as fish and macroinvertebrates (aquatic insects). In river segment 517, fish and macroinvertebrates are unhealthy. The reach does not contain the right kinds of living things in the right amounts, primarily because of turbidity, but also high temperature, low oxygen, and poor habitat.



(Continued from front)

#### Priority areas for protection

If nitrate levels in reach 706 can be reduced now, we could prevent this reach from being listed as impaired for nitrate. (See “Test the Waters” fact sheet to find out more about nitrate in drinking water issues.)

Nitrate data from the cold-water trout streams are compared to the state’s drinking water standard for nitrate of 10 mg/L. State agencies are developing a surface water standard for nitrate, which may be lower than the 10 mg/L standard. Reach 706 in Eureka Township may violate the new standard, if it is adopted. Calculations from the 2012 and 2013 Vermillion River Monitoring Network annual reports show that the nitrate yields entering surface water were 9.4-10.0 pounds per acre and originate in the South Branch (which includes 706).

#### The biggest challenge

Reach 517 has more impairments than any other reach in the watershed. It is the most polluted and will likely be the most expensive to restore.

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#### Greatest stress on fish and aquatic life

Turbidity (primarily from sediment) is the greatest stressor on fish and aquatic life. (The current method to measure turbidity is total suspended solids, or TSS.) According to the 2012 and 2013 Vermillion River Monitoring Network reports, the TSS yield in reach 517 is 25-45 pounds per acre.

#### Groundwater impacts on water quality

The lower portion of reach 517 is a “gaining” reach, which means that groundwater moves into the river to help maintain or increase the base flow. The lower portion of reach 516 is a “losing” reach, meaning surface water moves into the groundwater. The lower portion of 516 can dry up for part of the year as surface water seeps into groundwater.

#### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction they will be required to achieve. The unincorporated areas **as a whole** that drain to the river are given a load allocation – a pollutant load reduction the unincorporated areas will try to achieve together.

#### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
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#### Frequently Asked Questions



Stream reach in Eureka Township

#### Impaired waters

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#### Watershed Restoration and Protection Strategy

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## Impaired Waters in Eureka Township and the Watershed Restoration and Protection Strategy (WRAPS)

In developing the WRAPS, the VRWJPO is consulting with people in Eureka Township to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding. This FAQ describes impaired waters in Eureka Township, factors that affect water quality in the area, and general information about pollutant loading.

#### Eureka Township’s water and land

Eureka Township is split between two watersheds. The northern portion of Eureka Township is in the Vermillion River Watershed; the southern portion is in the North Cannon River Watershed. This fact sheet covers only the portion of the township in the Vermillion River Watershed.

#### Priority areas for improvement

The impaired river reaches are 516 and 517 (Vermillion River main stem) and 706 (South Branch). These are identified on the map in center of this fact sheet. Reaches 516 and 706 are classified as warm-water streams; reach 517 is classified as cold-water trout streams. Regulations and standards are more stringent for cold-water streams.

(Continued on the back)



# Where are the current water quality impairments in Eureka Township?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. In Eureka Township, river segments (516 and 517) are impaired by mercury, which is deposited on water from the air. One major source is coal-burning power plants.

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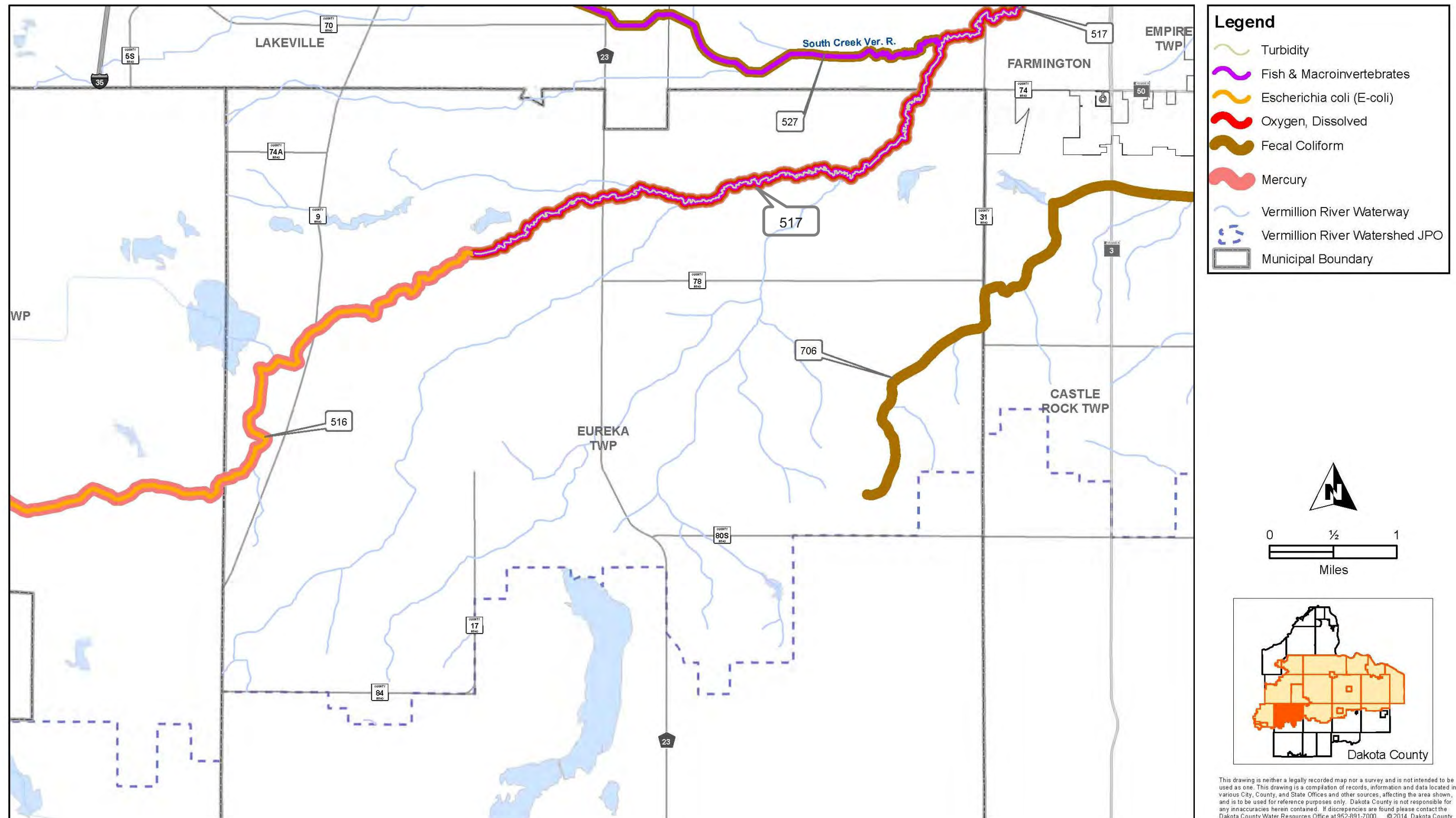
## Impairments in Eureka Township

**Bacteria** – The most common pollutant in Eureka Township's river reaches (516, 517, and 706) is **fecal coliform bacteria, especially *E. coli***. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Low dissolved oxygen** – If a river or stream does not have enough dissolved oxygen (517), fish and other aquatic organisms are stressed and less able to live and reproduce. Reach 517 has poor oxygen conditions because it is slow moving, becomes stagnant, does not have in-stream features to help aerate the water, and is too warm.

**Turbidity** is cloudiness in water (517) caused by individual particles (typically sediment). Stormwater brings particles from land surfaces to water bodies. High turbidity levels can block light from reaching lower water depths; inhibit growth of aquatic plants and species (such as fish or aquatic insects) that depend on those plants; cover and fill vital habitat, hinder the ability of species to see food, and damage gills.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support living things, such as fish and macroinvertebrates (aquatic insects). In river segment 517, fish and macroinvertebrates are unhealthy. The reach does not contain the right kinds of living things in the right amounts, primarily because of turbidity, but also high temperature, low oxygen, and poor habitat.





(Continued from front)

#### Priority area for protection

If nitrate levels in reach 707 can be reduced now, we could prevent the South Branch of the Vermillion River from being listed as impaired for nitrate. (See “Test the Waters” fact sheet to find out more about nitrate in drinking water issues.)

Nitrate data from the cold-water trout streams are compared to the state’s drinking water standard for nitrate of 10 mg/L. State agencies are developing a surface water standard for nitrate, which may be lower than the 10 mg/L standard. Reaches 691, 692, and 707 in Vermillion Township may violate the new standard, if it is adopted. Calculations from the 2012 and 2013 Vermillion River Monitoring Network annual reports show that the nitrate yields entering surface water were 9.4-10.0 pounds per acre and originate in the South Branch (which includes 707).

#### The biggest challenge

Throughout the Vermillion River Watershed, bacteria levels in surface water are too high. Reaches 507, 691, 692, and 707 are impaired for fecal coliform bacteria. Sources of bacteria include livestock waste, wildlife waste, and failing septic systems. Best management practices (BMPs) can help improve water quality. Incentives are available from state and local programs for landowners to implement BMPs.

#### VERMILLION RIVER WATERSHED JOINT POWERS BOARD

Commissioner Mike Slavik,  
(Dakota County)

Commissioner Mary Liz Holberg,  
(Dakota County)

Commissioner Tom Wolf,  
(Scott County)



#### Vermillion River Watershed Joint Powers Organization

14955 Galaxie Avenue  
Apple Valley, MN 55124  
[www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)  
952-891-7000

#### Groundwater impacts on water quality

State Hwy. 52 runs north-south, crossing the Vermillion River main stem in Vermillion Township. The underlying geology of the area changes the river, roughly at the City of Vermillion. The reaches west of Hwy. 52 (507 and 707) are “gaining,” with groundwater moving into surface water and keeping it cold enough for cold-water species, such as trout. The reaches east of Vermillion (691 and 692) are “losing,” with surface water moving into groundwater. Contaminants (such as nitrate) in surface water are seeping into the groundwater and affecting drinking water. The Dakota County Targeted Townships groundwater sampling program conducted in 2013 showed that 42 percent of private drinking water wells tested in Vermillion Township have nitrate levels that exceed the health risk limits set by the Minnesota Department of Health.

#### Reducing pollutant loads

The WRAPS study estimates pollutant load reductions that will improve water quality to meet state standards. Each city with a state municipal separate storm sewer system (MS4) permit will receive a waste load allocation – a pollutant load reduction they will be required to achieve. The unincorporated areas **as a whole** that drain to the river are given a load allocation – a pollutant load reduction the unincorporated areas will try to achieve together.

#### Benefits of restored waters

- Rivers and wetlands reduce the effects of flood or drought on urban and rural property.
- Water resources support many kinds of life. These living things break down wastes, prevent soil erosion, reduce pests, pollinate plants, serve as food, or otherwise benefit human populations.
- Clean rivers and lakes increase property values, boost the local economy, and attract recreational users.
- Clean water attracts wildlife, supports healthy outdoor recreation, and improves the quality of life.

#### For more information about:

- **The Vermillion River Watershed**, visit [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)
- **Impaired waters**, go to the MPCA website at [www.pca.state.mn.us](http://www.pca.state.mn.us), search “impaired waters”
- **E-mail notifications of events** or subscriptions to the VRWJPO newsletter, send an e-mail to [water@co.dakota.mn.us](mailto:water@co.dakota.mn.us)



#### Frequently Asked Questions



Department of Natural Resources (DNR) Kummer  
Aquatic Management Area (AMA)

## Impaired Waters in Vermillion Township and the Watershed Restoration and Protection Strategy (WRAPS)

### Impaired waters

Portions of the Vermillion River, its tributaries, and lakes in the Vermillion River Watershed are listed as “impaired” by the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) under the federal Clean Water Act.

Impaired waters are rivers, lakes, or streams that **do not meet one or more state water-quality standards** and are considered too polluted for their designated uses. Designated uses for water bodies can include consumption (drinking water, eating fish); aquatic recreation (swimming, canoeing); and aquatic life (living conditions for fish, insects, and other aquatic species).

### Watershed Restoration and Protection Strategy

The Vermillion River Watershed Joint Powers Organization (VRWJPO) is responsible for identifying pollution sources and stresses causing these impairments and creating a Watershed Restoration and Protection Strategy (WRAPS) to restore impaired waters and protect waters from becoming impaired.

In developing the WRAPS, the VRWJPO is consulting with people in Vermillion Township to inform them about the impairments and identify strategies to achieve water-quality goals. Strategies taken to achieve these goals must comply with existing laws, be practical and cost-effective, and be eligible for grant funding. This FAQ describes impaired waters in Vermillion Township, factors that affect water quality in the area, and general information about pollutant loading.

### Vermillion Twp.’s water and land

Vermillion Township is entirely located in the Vermillion River Watershed. Vermillion Township contains the main stem of the Vermillion River, small intermittent tributaries to the Vermillion River and the South Branch.

#### Priority areas for improvement

The impaired river reaches in Vermillion Township are 507, 691, and 692 (main stem) and 707 (South Branch). These reaches are identified on the map in the center of this fact sheet. Reach 692 is classified as a warm-water stream; reaches 507, 691, and 707 are classified as cold-water trout streams. Regulations and standards are more stringent for cold-water streams.

(Continued on the back)



# Where are the current water quality impairments in Vermillion Township?

## Mercury is a statewide issue

Some pollutants are widespread in the environment, including mercury (a toxic element) in water resources. Mercury builds up in fish tissue as it moves through the food chain. This makes some species or sizes of fish unsafe to eat in large quantities. Mercury is deposited on water from the air. One major source is coal-burning power plants.

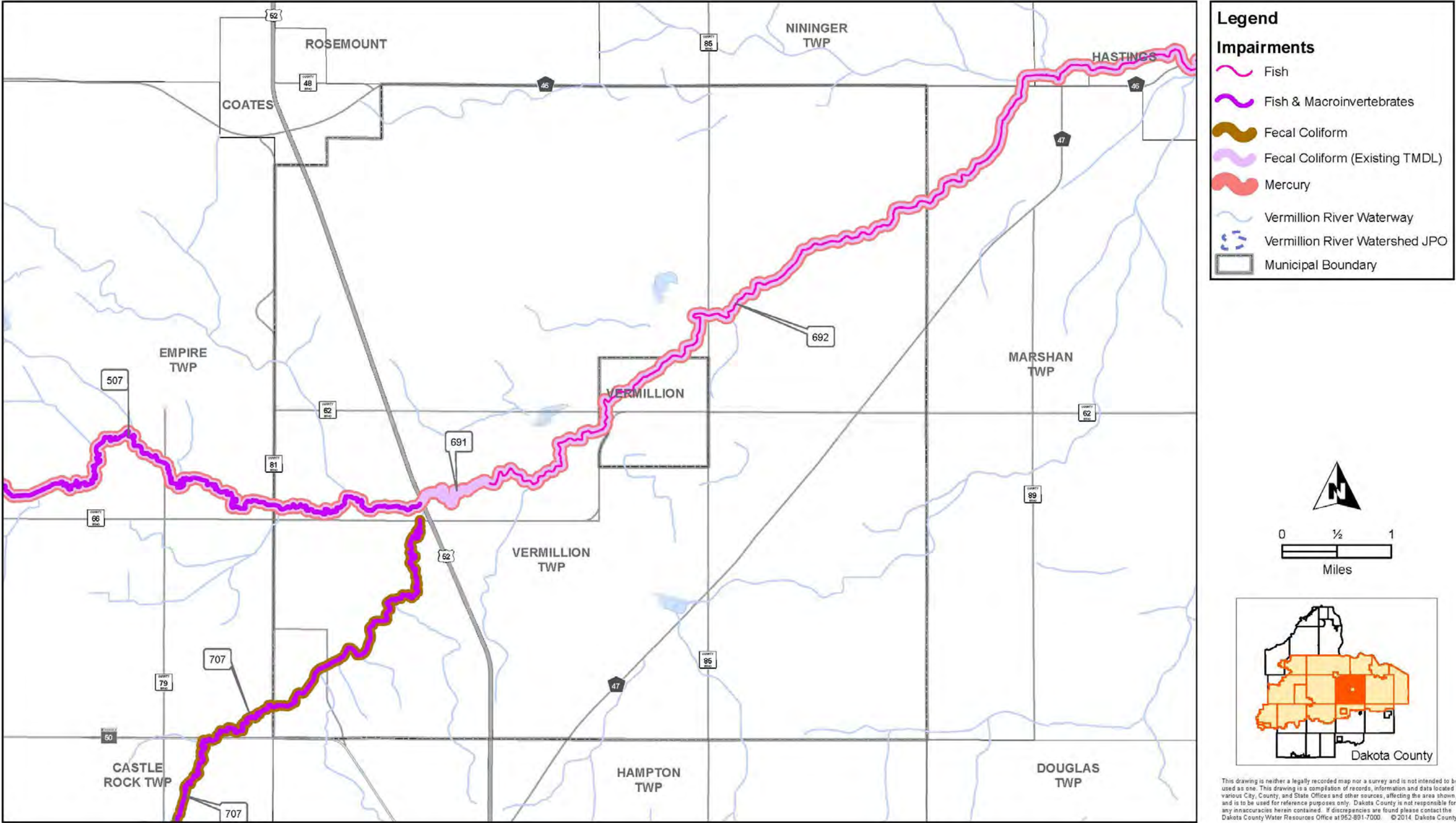
The State of Minnesota is responsible for reducing mercury pollution. To find out more, visit the Minnesota Pollution Control Agency website at [www.pca.state.mn.us/index.php/topics/mercury/index.html](http://www.pca.state.mn.us/index.php/topics/mercury/index.html).

## Impairments in Vermillion Township

**Bacteria** – The most common pollutant in Vermillion Township’s river reaches (507, 692, and 707) is **fecal coliform bacteria, especially *E. coli***. The bacteria come from the intestines of warm-blooded organisms. People exposed to these bacteria can get sick. Where these bacteria occur, they indicate that other diseases that affect human health may be present in the water, too.

**Fish and Macroinvertebrates** – The health of the river is measured, in part, by its ability to support aquatic life, such as fish and macroinvertebrates (aquatic insects). In river segments 507, 692, and 707, the make-up of the fish and macroinvertebrate communities is considered unhealthy. The reach does not contain the right kinds of living things in the right amounts, primarily because of environmental stress.

These environmental stresses include turbidity caused by too much sediment eroding into the river or carried to the river by stormwater, areas of degraded habitat, high water temperatures, lack of dissolved oxygen, and excess nitrate, (reach 707 only).



## Appendix IV: Published Communication (Required by Minn. Rules Part 8410.0100, Subpart 4)

- ▣ VRWJPO Newsletter, Spring 2015
- ▣ VRWJPO Newsletter, Fall 2015





Read about a capital improvement project, stewardship grant, growing nitrate problem and the technical and financial assistance available to help landowners, Watershed Planning Commissioner profile, spring events, and more!



## **The “road” to Middle Creek’s restoration**

In 2006, the Minnesota Department of Natural Resources (DNR) began a restoration project on a half-mile reach of Middle Creek in Farmington. This stream reach is located on Farmington Area Public School (District 192) property, next to Meadowview Elementary School.

The purpose of the project was to re-meander a previously ditched and eroding section of stream. Re-meandering, or putting the bends back in the creek, provides more natural stream function, better floodplain connection, and improved stream habitat. When it was partially completed, the project ran into a roadblock because of potential upstream flooding concerns based on the design. The project was abandoned until a solution could be found.

This year, the section of 195th Street/County Highway 64 adjacent to the earlier restoration project will be reconstructed by Dakota County in partnership with the City of Farmington. The Vermillion River Watershed Joint Powers Organization (VRWJPO) saw this as an opportunity to re-open the plans and possibly complete the stream restoration project as part of the road project. A new stream restoration design was created that could accommodate the original intent of the project while addressing the upstream flooding concerns and was accepted by stakeholders. Construction of the project will include moderate excavation of the partially constructed channel, site grading, backfilling the ditched channel with the excavated material, and stabilizing the site.

Integrating the re-designed stream restoration project into the 195th Street reconstruction project saves administration, design, mobilization, and overall site management costs. The stream restoration project will be completed in the summer of 2015. A good partnership between the VRWJPO, Dakota County, and District 192 was pivotal to organizing and designing this great project, all while saving on overall costs.

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**Water Stewardship Grants are available**

*Vermillion River Watershed JPO launches grants for local, short-term water oriented activities*

The Vermillion River Watershed Joint Powers Organization accepts grant applications year-round for events or activities that educate and engage people in protecting or improving water quality. This grant program is intended to help groups work together to engage in activities that can help protect and improve lakes, rivers, streams, wetlands, and habitat in the watershed. The maximum grant amount is \$5,000. Examples of events and activities considered for a grant are; redirecting runoff from downspouts onto lawns, installing water quality improvement projects, hosting clean-up events, removing invasive plants and planting native species; stenciling storm drains, making and distributing rain barrels, and more.

Applications are welcome from communities, organizations and businesses within the Vermillion River Watershed. More information, including how to apply for a grant, is included in the [stewardship grant guidelines](#). Or call 952-891-7117.

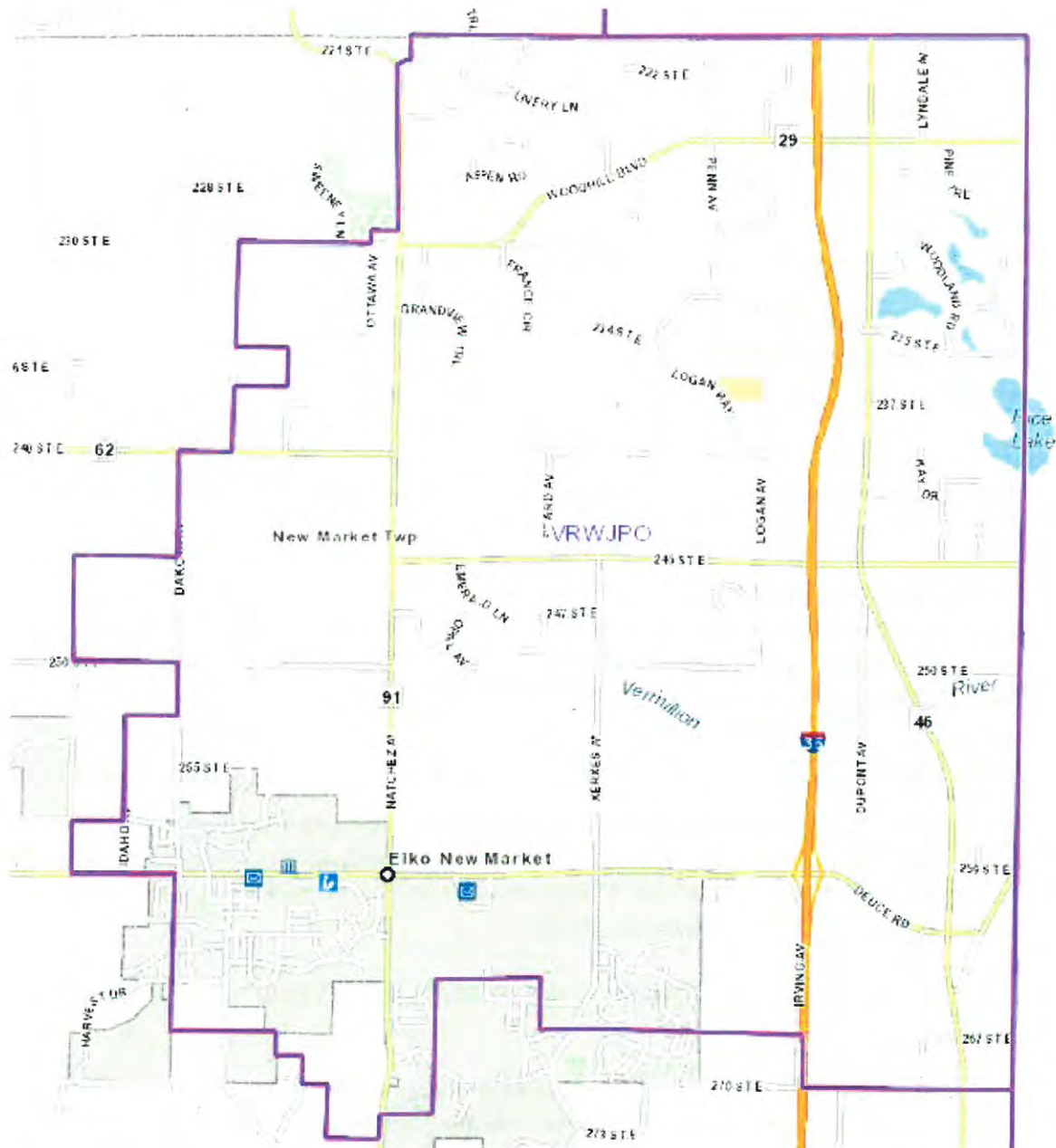
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**Make a splash – as a WPC commissioner**

The Vermillion River Watershed Joint Powers Board (VRWJPB) is seeking applicants from Elko New Market and New Market Township in Scott County for one vacant seat on the Vermillion River Watershed Planning Commission (WPC). The WPC advises the VRWJPB about water quality and quantity issues, policies, and projects in the watershed. The nine-member commission represents the citizens in communities within the watershed. Commissioners serve a three-year term and attend monthly meetings.

The map shows the Vermillion River Watershed Scott County boundary, but for more detail, see the [Scott County website](#). Apply to the [Watershed Planning Commission](#) or call 952-891-7546.





### **Nitrate level in drinking water is increasing**

*We all need to work on solutions*

The Vermillion River Watershed and Dakota County have been monitoring surface water and groundwater quality for years. Results of water quality data show that nitrogen – specifically nitrate – is contaminating surface water and groundwater. Groundwater, either from municipal or private wells, is the source for drinking water consumed by most Dakota County residents.

Surface water data collected from the South Branch Vermillion River, a tributary spanning Eureka, Castle Rock, Empire and Vermillion townships, has a history of high nitrate concentrations. The nitrate level has been climbing since early 2000.

The cause is likely a combination of nitrogen application on porous soils and on land drained by

ditching and tiling, and pollutant runoff. Nitrate comes from human and animal wastes, plant decay, and nitrogen fertilizers. When fertilizer is applied to the land in excess of recommended amounts, at the wrong times of the year, or where shallow groundwater is common, the potential for nitrate contamination is much greater.

Surface water and groundwater in Dakota County are linked and their interaction affects drinking water. Near the City of Vermillion, the Vermillion River's water seeps into the groundwater aquifers. The nitrate in the river's water in turn increases nitrate in the drinking water supply.

Nitrate threatens drinking water wells east of the City of Vermillion not only from the South Branch Vermillion River's contribution but also because porous soils in central and eastern Dakota County allow nitrogen to pass easily through them.

The U.S. Environmental Protection Agency set the drinking water standard for nitrate at 10 milligrams per liter. Drinking water with nitrate concentrations higher than the standard may cause serious health problems for infants under six months, and pregnant or nursing women.

High nitrate can also be toxic to aquatic species such as fish, amphibians, and insects. Nitrate affects the organism's oxygen-carrying capacity to support its vital functions and has negative effects on reproduction, growth, and development. The effects of nitrate in livestock, especially cattle, may include retarded growth and lowered milk production among other things.

Private well water testing results confirm a history of groundwater contaminated by nitrate.

In 2013 and 2014, with funding from the Minnesota Department of Agriculture, Dakota County tested nearly 1,400 private wells in 5 cities and 13 townships; 371 households (27%) exceeded the drinking water standard for nitrate. In one township, 53% of the wells tested exceeded the standard. [See the complete results of the Targeted Townships project.](#)

Private well owners are encouraged to test their wells for nitrate. Dakota County residents can [request water testing kits](#).

If tests come back with high nitrate levels, private well owners can purchase a reverse osmosis treatment system to remove much of the nitrate in their water. A reverse osmosis treatment system may range from \$700 to \$1,500, depending on capacity. Anion exchange systems can also be effective. Boiling water does not remove nitrate.

From 1999 through 2013 to evaluate groundwater quality, Dakota County annually tested a set of private wells that included five wells in the sensitive area between Vermillion and Hastings. Four of the five wells have nitrate near or above the drinking water standard. Two of the wells have a statistically significant upward trend and three are stable for nitrate.

Drinking water from municipalities is frequently tested and monitored by the Minnesota Department of Health and the municipality. The City of Hastings installed a \$3.5 million nitrate removal treatment system so that treated water distributed to households connected to city water meets the drinking water standard for nitrate. Test results of raw water – water that has not been treated to remove nitrate or blended with water from other city wells and is treated before it is distributed to households – show a statistically valid upward trend in the nitrate level for all six of its wells.

Many area farmers have initiated conservation and nutrient management practices – split nitrogen



application, soil nitrate testing, cover crops, and farmland conservation easements – that will improve water quality in the long run.

The Nitrogen Fertilizer Management Plan, which is being revised by the Minnesota Department of Agriculture, will be the state's blueprint for preventing or minimizing impacts of nitrogen fertilizer on groundwater. The University of Minnesota Extension researched nitrogen application and best management practices on test plots within Dakota County and presented research findings to local producers. The Minnesota Department of Agriculture is proposing regulations that call for no fall fertilizer application in Dakota County.

Current efforts to reduce nitrate in surface water and groundwater are not enough. Further adoption of Minnesota Department of Agriculture and University of Minnesota nitrogen fertilizer application recommendations, cover crops, changes in crop rotation, irrigation scheduling, and improved drainage management practices, are needed to reduce nitrate.

Financial and technical assistance for farmers interested in practices reducing nitrate is available by calling the Vermillion River Watershed at 952-891-7000 or the Dakota County Soil and Water Conservation District at 651-480-7777. Innovative and alternative practices and treatment options may be denitrifying bioreactors, saturated buffers, cover crops, forage crops, and other land management alternatives on sensitive fields.

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#### **Ag drainage: Necessity comes at a cost**

Much of Minnesota's landscape was not readily usable for many European settlement practices without some level of drainage improvement. Landowners drained their land to accommodate development needs or the demand for crop production. In southern Minnesota, the majority of historic wetlands have been drained or developed.

More recently, Minnesota has worked to protect its remaining wetlands. Minnesota's Wetland Conservation Act, signed into law in 1991, requires wetland impacts be avoided, minimized, or mitigated. The Wetland Conservation provisions of the 1985 Federal farm bill (Swampbuster) and subsequent farm bills require agricultural producers to protect remaining intact wetlands on the farms they own or operate in order to be eligible for USDA farm program benefits. Unfortunately, wetland drainage prior to these wetland protection requirements comes at a cost. That cost is in the form of impacts to flow, poorer water quality, and significantly less wildlife habitat.

Recent changes in agricultural production have focused on creating as many productive acres as possible or optimizing available acreage to meet market demands. In order to accomplish this, agricultural producers have drained non-wetland areas using drain tile to optimize field conditions for spring tillage and planting. Additional pollutants and water that would have been retained, or would have traveled at a slower rate over the land or through soil to reach its natural discharge, is now intercepted and conveyed via drain tile and ditches.

Landowners can mitigate some of the impacts caused through increased tile drainage by incorporating practices like denitrifying bioreactors, saturated buffers or drainage control structures that act as treatment systems that can reduce the pollutants or volume of water sent through tile drain systems. More holistic options would be marginal land retirement and water retention through drainage modification and wetland restorations.

Fortunately, financial and technical assistance is available to install many of these practices on individual landowners' properties. The VRWJPO in cooperation with Dakota and Scott County Soil and Water Conservation Districts (SWCD) can provide this assistance to landowners. Contact the Vermillion River Watershed at (952) 891-7000, Dakota County SWCD at (651) 480-7777 or Scott SWCD at (952) 492-5422 if you want to know more about these practices and the options available.

**WPC Commissioner Mark Henry digs into potholes, policy, and prairie restoration**

*Avid sportsman works locally to build pheasant habitat and stronger community*

In every community, there are citizens content to leave leadership roles to "someone else." Mark Henry, owner of Henry's Excavating, Dakota County Fair Board member, and wildlife habitat advocate, is that "someone else." He was appointed to a three-year term on the Vermillion River Watershed Planning Commission (WPC) in February 2014.

He has worked for more than 30 years doing road construction and maintenance, currently as road maintenance contractor for Castle Rock Township. His knowledge of the local landscape ensures he is familiar with issues that are on his neighbors' minds. And his commitment to improving habitat and water quality promises to benefit the Vermillion River Watershed's fish and wildlife populations.

Mark played a key role in transforming a 210-acre former agricultural site at the headwaters of the Vermillion River's South Branch into a permanently protected, restored native prairie. The Dakota County Agricultural Society property was farmed until 1999, when the land was enrolled into the Federal Conservation Reserve Program. In 2000, Dakota County Soil and Water Conservation District (SWCD) partnered with the Fair Board and local chapters of Pheasants Forever, Minnesota Waterfowl Association, and Southern Dakota County Sportsmen's Association to secure a grant from the Minnesota Pollution Control Agency to transform the farmland into wildlife habitat and establish the site as an outdoor education facility. Mark then joined the Dakota County Fair Board, which agreed to place a permanent conservation easement on the property in 2012.

When the VRWJPO sought people with special skills, expertise, and knowledge for the Watershed Engagement Team (WET), Mark agreed to serve. The WET developed strategies to get individuals, groups and communities to become aware of the impacts of impaired waters, get engaged, and take action to restore water resources. The VRWJPO is implementing ideas developed by the WET and building relationships with new organizations and groups.

Mark belongs to Pheasants Forever and other sportsmen's organizations, coaches high-school students in trap shooting, and still finds time to serve on the WPC and advise the Vermillion River Watershed Joint Powers Board on land and water quality issues. His ongoing engagement in the watershed makes him a great "someone else" for the job.

Keep up with the [Watershed Planning Commission's meetings](#).





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### Shaping the future through the Watershed Plan update

How has the Vermillion River Watershed changed over the past 10 years – and how might it change in the next decade? These are important questions for the Vermillion River Watershed Joint Powers Organization (VRWJPO) in developing the 2016-2025 Watershed Plan. The draft Plan contains seven major goals. This article highlights one goal – managing how much and how fast water moves through the watershed – and illustrates how changes in conditions affect the goals of the VRWJPO in its planning over time.

#### **2005 Watershed Plan Goal: Manage the rate and volume of runoff entering rivers, streams, lakes, and wetlands in the watershed.**

The 2005 Watershed Plan, using data gathered from 1998 to 2002, suggested that Vermillion River flow volumes had increased and would keep increasing. At the time, urban development was increasing, creating more roads, parking lots, and pavement that can quickly route water to the river. In agricultural areas, producers were installing drainage to convey water from farm fields. Effluent (treated wastewater) volumes from wastewater treatment plants were increasing to keep pace with residential and commercial development. Rainfall amounts also seemed to be increasing (we now have evidence that rainfall amounts have increased). Too much water moving too fast downstream is a prescription for flooding and erosion, so the 2005 Watershed Plan had stabilizing river flow rate and volume as a high priority.

Action, combined with economics, forestalled the substantial river rate and volume increases that the 2005 Watershed Plan anticipated:

- The 2005 Watershed Plan established stormwater runoff standards that require developers to keep a portion of rainfall on the property – in stormwater ponds, infiltration basins, raingardens,

or other storage systems.

- The 2005 Watershed Plan established a preference for infiltration stormwater best management practices (BMPs). When stormwater seeps into the soil, it becomes cleaner, stays where it falls, and helps replenish the groundwater, too. Since 2006, more than 150 BMPs (primarily raingardens and infiltration projects) have been installed in the watershed using VRWJPO dollars for partial project costs.
- The VRWJPO and partners updated the hydrologic model setting intercommunity flow rates, so each jurisdiction properly manages the stormwater within its boundaries.
- The Empire Wastewater Treatment Plant re-routed its effluent to discharge to the Mississippi River rather than the Vermillion River. This reduced river flow volume by approximately 40 acre-feet per day, beginning in 2008.
- The Elko New Market Wastewater Treatment Plant also re-routed its effluent to the Empire Plant in 2012, eliminating its discharge to the Vermillion River.
- The economic downturn of 2008 slowed the amount of urban development in the watershed, so an anticipated rapid increase in new impervious surfaces didn't materialize.

**2016 Watershed Plan Draft Goal: Address more intense fluctuations (both up and down) in river flow rate and volume.**

Multiple intense rain events have hit the watershed over the past few years, with record-setting rainfall in June 2014. However, lack of rain and snow has reduced the Vermillion River to a trickle during other years and parts of the year. These changes in precipitation frequency, reflected in the statistics within the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14, cause concern, not only because of potential flow and volume increases, but because of flow and volume variation extremes.

Planning for intense storms and periods of drought isn't easy, but making the watershed more resilient to precipitation highs and lows is possible. Here are a few suggested ways to potentially stabilize river flow rates and volumes included in the draft 2016 Watershed Plan:

- The VRWJPO can set intercommunity flows to guide planning and prevent potential conflicts about water flows between jurisdictions. Every jurisdiction is responsible for keeping rain falling on streets, yards, and fields properly managed within its boundaries.
- Professionals who design and install infrastructure (pipes, ponds, roads) must design systems that accommodate more water from larger storms. By adopting NOAA's Atlas 14 as a reference, the VRWJPO ensures that water oriented infrastructure will be sized according to appropriate criteria.
- Since the watershed established stormwater rate and volume control standards in 2006, developers have been required to slow, store, infiltrate, or treat most runoff on the property. The Watershed Plan objective for older, pre-2006 developments is to retrofit practices for improved runoff rate and volume control where needed and feasible.
- High river flow rates and volumes create problems for property owners: flooding, erosion, crop losses, and infrastructure "blow-outs." The draft Watershed Plan includes objectives that help Dakota and Scott Counties ensure floodplain alterations don't reduce flood storage capacity, manage obstructions, repair past erosion, and stabilize river channels.

The draft Watershed Plan will be placed in public comment in 2016. For more information about the Plan, contact watershed staff at 952-891-7000, e-mail [water@co.dakota.mn.us](mailto:water@co.dakota.mn.us), or visit the [Vermillion River Watershed website](#).



rain.



### **Spring events: a garden of earthly delights**

*"In the spring, at the end of the day, you should smell like dirt."* Margaret Atwood

Watershed residents eager to dig into spring have more options than ever to grow beautiful gardens that benefit clean water. More details about each event are available on the VRWJPO website, [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org), click on "Meet." Here's a list:

**Vermillion River Stewards Events** allow volunteers to get their hands dirty while cleaning up and restoring exceptional protected natural resource areas in the watershed. Friends of the Mississippi River (FMR) coordinates the events, provides materials (gloves and garbage bags, for example), provides training, and welcomes newcomers. Pre-registration is required, so contact Amy Kilgore at FMR, [akilgore@fmr.org](mailto:akilgore@fmr.org) or 651-222-2193 x 31.

- **Vermillion Stewards Buckthorn Haul** at the Vermillion Aquatic Management Area in Empire Township, one of the Minnesota Department of Natural Resources (DNR) protected areas for wildlife habitat, fishing, hunting, and recreation. Buckthorn, a woody invasive species, will be pre-cut by the DNR and Civilian Conservation Corps, so volunteers haul it off site for disposal. The date is Saturday, May 9, 2015, 9-11 a.m. at the Vermillion AMA location in Empire Township. Call FMR to find out the exact gathering place for volunteers.
- **Vermillion Stewards Floodplain Forest Cleanup** at the Gores Pool Wildlife Management Area downstream from the City of Hastings involves spring trash and debris clean-up that threaten wildlife in a nearby migratory waterfowl refuge. Plans are to work along the forested riverfront and upland oak savanna and woodlands. Expect tires, marine Styrofoam, cans, bottles, and plastic bags. Because some debris is sharp, this event may not be appropriate for younger children. The date is Saturday, May 30, 9:30 a.m. – Noon. Call FMR to find the exact gathering place for volunteers.

**"Blue Thumb: Planting for Clean Water®"** workshops provide inspiration for gardeners interested in planting a native garden, raingarden, or restoring their shoreline. The free introductory workshops help residents learn why and how to design a raingarden, and advanced

workshops provide installation assistance and (for some) a \$250 grant. To sign up, contact Dakota County SWCD at 651-480-7777.

- Farmington: Monday, June 1, 6:15-8 p.m., Farmington Library, 508 3<sup>rd</sup> St.

Call Scott SWCD (952-492-5425) to register for workshops in Scott County:

- Prior Lake: Tuesday, May 5, 6:30-8 p.m., Parkview Room, Prior Lake City Hall
- New Prague: Thursday, May 7, 6:30-8 p.m., Community Room, State Bank of New Prague

**Maintaining Your Native Prairie Workshop** shows prairie owners how to conduct a burn to restore a prairie area. The free workshop is Saturday, May 9, 9-10:30 p.m., Scott County Conservation Center (Fairgrounds) in Jordan. Register by calling Scott SWCD at 952-492-5425.

**Restoring Your Shoreline Workshop** offers shoreline landowners strategies to prevent erosion, improve water quality, and create attractive garden spaces. This free workshop is Thursday, May 14, 6:30-8 p.m., Parkview Room, Prior Lake City Hall. Call Scott SWCD to register, 952-492-5425.

Remember that your church, school, business, or civic organization can plan its own awareness, water quality improvement, or habitat restoration event. The VRWJPO offers Stewardship Grants up to \$5,000 for local projects that meet the criteria. See the [VRWJPO website](#).

### **DNR makes sure water use is sustainable**

Contributed by Department of Natural Resources staff

For the Vermillion River, like most trout streams, groundwater is a very important source of cold water, which is critical for healthy trout populations. The Vermillion River Watershed also contains highly productive agricultural land that is vital to the local communities. These agricultural producers, the communities, and other businesses also use groundwater for their water needs.

The Minnesota Department of Natural Resources (DNR) is charged, under state statute 103G.285 and 103G.287, with regulating surface and groundwater use in the state to ensure that use is sustainable and does not negatively impact protected natural resources. In 2014, statute language was modified slightly to read “groundwater appropriations that will have negative impacts to surface waters are subject to applicable provisions in 103G.285.” Previously, the statute had stated that groundwater appropriations that have potential impacts to surface waters are subject to these provisions.

This small change indicates that the MN DNR must determine how much water can be appropriated from any given resource, specifically the designated trout stream of the Vermillion River and its tributaries, without causing “negative impacts.” The DNR is gathering information on existing appropriations within Dakota County along with technical groundwater and geologic data that can aid in understanding water use and the effects of individual wells as well as cumulative use of all existing wells on groundwater and surface water in the Vermillion River Watershed. Permits determined to allow pumping at a rate and/or volume that have negative impacts on the trout stream may need to be amended by the DNR.

While overall groundwater use in the watershed has increased significantly since the late-1990s, preliminary analysis of current stream flows and groundwater levels indicate the current groundwater use in the watershed is sustainable but individual wells may have a negative impact, especially if they are located in one of the shallower aquifers near the river.

To ensure sustainable use continues and groundwater dependent resources like the Vermillion River are protected, the DNR is increasing the water quantity monitoring in the Vermillion River watershed. This monitoring will include the installation of two new stream gages and upgrades to five stream gages currently monitored cooperatively by the Vermillion River Watershed Joint Powers Organization and DNR. Additional groundwater monitoring includes upgrades to the existing groundwater monitoring wells in the watershed, the addition of three more groundwater monitoring sites and two studies to determine local aquifer characteristics and the connectivity between the aquifers and the river.

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**Vermillion River Watershed Joint Powers Organization**  
14955 Galaxie Ave., Apple Valley, MN 55124

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# Fall 2015 Vermillion River Watershed Newsletter

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Fall 2015 – Read about how to review and comment on the draft watershed plan, stewardship grant opportunities, agricultural film plastic recycling, targeted parcels for conservation practices. Meet WPC member Jeanie Fredlund, learn about a Raingarden in a Box, fish survey results, fall events, and a Watershed Planning Commissioner vacancy in Scott County!

[View this email in your browser](#)



## Vermillion River Watershed Releases Draft Plan for Comment

The Vermillion River Watershed Joint Powers Organization (VRWJPO) released its draft Watershed Management Plan Oct. 1 for a 60-day public review and comment period. The draft plan establishes the organization's goals and guides activities for the next 10 years.

Among the goals noted in the draft plan are:

- Protect or restore water quality in lakes, streams, and wetlands.
- Protect and restore groundwater quality.
- Maintain a sustainable water supply.
- Address more intense fluctuations (up and down) in river flow rate and volume.
- Improve public awareness and stewardship of water resources.
- Improve watershed resilience to changing precipitation and temperature patterns.
- Protect or restore sensitive biological resources, such as plants, fish, insects, and wildlife.

The draft watershed plan is posted on the watershed's website, [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org) (search watershed plan). It is also available at the Elko New Market, Farmington, Galaxie, Heritage, Pleasant Hill, and Robert Trail libraries during normal library hours.

Written comments on the draft plan will be accepted until 4:30 p.m. Nov. 30, 2015. Email comments to [vermillionplan@co.dakota.mn.us](mailto:vermillionplan@co.dakota.mn.us) or mail to Vermillion River Watershed JPO, Dakota County Western Service Center, 14955 Galaxie Ave., Apple Valley, MN 55124.

All or parts of the following cities are in the Vermillion River Watershed: Apple Valley, Burnsville, Coates, Elko New Market, Farmington, Hampton, Hastings, Lakeville, Rosemount, and Vermillion; and the all or parts of the townships Castle Rock, Douglas, Empire, Eureka, Hampton, Marshan, New Market, Nininger, Ravenna, and Vermillion. The Watershed includes approximately 335 square miles and more than 167,000 households in Dakota and Scott counties.

The VRWJPO was established in Sept. 2002 through a joint powers agreement between Dakota and Scott counties to protect water resources in the Vermillion River Watershed. A three-member Joint Powers Board, consisting of Dakota County Commissioners Mike Slavik and Mary Liz Holberg, and Scott County Commissioner Tom Wolf, governs the Joint Powers Organization.

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## Stewardship Grants Promote Protecting and Improving Water Quality

Vermillion River Watershed JPO launches grants for local, short-term water-oriented activities

The Vermillion River Watershed Joint Powers Organization accepts grant applications year-round for events or activities that inform and engage people in protecting or improving water quality. This grant program is intended to help groups work together to engage in activities that can help protect and improve lakes, rivers, streams, wetlands, and habitat in the watershed. The maximum grant amount is \$5,000.

Examples of events and activities considered for a grant may include:

- hosting a neighborhood event to learn benefits of redirecting runoff from downspouts onto lawns and helping neighbors do the work;
- installing water quality improvement projects,
- hosting clean-up events,
- removing invasive plants and planting native species;
- stenciling storm drains,
- making and distributing rain barrels,
- informing dog owners about bacteria problems associated with leaving pet waste and installing bag dispensers in a dog park.

Two stewardship grants have been awarded so far this year. Southern Dakota County Sportsmen's Club was awarded a grant to stock rainbow trout in conjunction with Farmington's Pond and Park Cleanup Day, host a fishing derby during Farmington Dew Days, and plant trees and shrubs along a restored branch of the Vermillion River in Lakeville. Carpenter St. Croix Valley Nature Center received a grant to plan and carry out water quality education and outreach



valley Nature Center received a grant to plan and carry out water quality education and outreach activities in the City of Hastings.

Applications are welcome from communities, organizations, and businesses within the Vermillion River Watershed. More information, including how to apply for a grant, is included in the stewardship grant guidelines available at [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org), search stewardship grant. Or call 952-891-7117.

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## New! Agricultural Film Plastic Recycling is Available

The Rural Solid Waste Commission (Commission) introduced a pilot project to collect and recycle agricultural film plastic from dairy farmers and other agricultural operations in Dakota County. The project provides an environmentally-responsible option for disposal of ag plastics, including silage bags, bunker covers, and bale wraps.

Dakota County farmers can drop off agricultural plastic in labeled containers for free recycling at three locations, listed below. Cut plastic into manageable sizes, and remove all mud, gravel, and dirt. Please call your chosen location to coordinate a drop off time.

Collection locations:

- River Country Co-op, Hampton. Hwy 56 and 250 St. E., Hampton, MN: 507-645-8946
- Interstate Mills Elevator. 4544 384th St. E., Randolph, MN: 507-263-2025
- Donnelly Farm. 20080 Flagstaff Ave., Farmington, MN: 651-463-8597

Materials not accepted include net wraps, nylon twine, and other non-plastic items such as manure, garbage, tires, electronics and farm waste. The Commission is comprised of six cities and 13 townships in rural Dakota County. They received a grant from Dakota County for this pilot project. Collection of agricultural film plastic is anticipated to continue in 2016 for at least part of the year.

For more information, call 952-891-7042.



## Being Targeted is a Good Thing

The VRWJPO has been working to complete its Watershed Restoration and Protection Strategies (WRAPS) for the last couple of years. The WRAPS identified water quality problems, possible sources of these problems, and projects and strategies to improve the waters within the watershed. As we await approval from the Environmental Protection Agency on the project, we've started the process to get some conservation projects in the ground, but are looking to do more.

Previous conservation efforts have focused primarily on voluntary action by landowners throughout the watershed. The VRWJPO appreciates the folks that have volunteered to do what's needed for our waters and we hope that it continues. However, the VRWJPO wants to be as efficient and effective with its funding for projects as possible. The data and analysis we have done to date allows us to be pretty specific about where conservation practices can be most effective. We call it "targeting." It is a process of prioritizing and focusing our efforts on specific parcels and landowners to help us get good projects in the ground.

Being targeted doesn't mean that a landowner is guilty of being careless or a polluter. It simply means that a conservation project on targeted land would be more effective than it would on someone else's. This may be due to various factors including: proximity of the area to the water, location in the watershed, soil types, erosion potential, and others. So, if you receive a letter from the VRWJPO in the future about conservation projects it simply means we want to work with you to get good conservation projects built. Please don't disregard the letter. Consider it an opportunity to take action as you're a critical link in improving our water resources. If you are curious whether or not your land is in a targeted area and want to do something to improve our resources, contact Travis Thiel at (952) 891-7546 or [travis.thiel@co.dakota.mn.us](mailto:travis.thiel@co.dakota.mn.us).

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## Commissioner Fredlund takes interesting path to the WPC

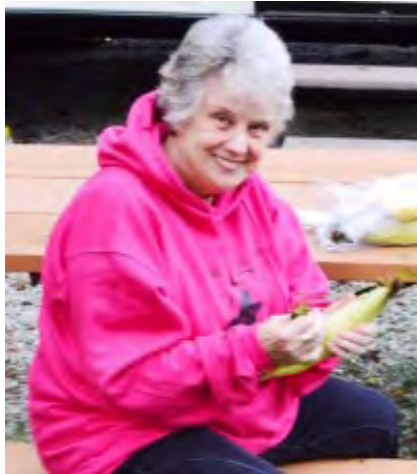
Some of Jeanie Fredlund's best memories center on childhood visits to her grandfather's hobby farm in Kasota, Le Sueur County. She recalls collecting eggs from the chicken coop, unable to reach those that were too far above her head. She remembers riding horses, petting cows, and picking apples and pears from her grandfather's trees. The deep bonds she developed with nature and animals (she is a dedicated dog owner and advocate) persisted throughout her career as a counselor. Working with tough clients struggling with chemical dependency, some of them in correctional settings, fostered her skills in educating people about the different roads to behavior change.

Jeanie has lived in Eureka Township since 2010, frequently drives over Vermillion River crossings, "and always wondered what was going into the river." Now retired and writing about her experiences as a counselor and animal lover, she has observed careless and indifferent treatment of local water resources and wants to find ways to change that dynamic. "I don't think the importance of clean water can be overstated," says Jeanie. "I've been fascinated with the make-up of the river, what is growing in it and what harms it."

She was appointed to the Vermillion River Watershed Planning Commission (WPC) in February 2015, and grapples with the scientific and technical jargon, changing water management practices, and the range of pollutant problems. “There’s so much to learn,” Jeanie admits. “I’m processing so much new information. A little humility goes a long way.”

But Jeanie’s expertise directly applies to one of the most difficult challenges in water resource management today: How do you influence beliefs, attitudes, and behaviors associated with water resource practices? “Education is the bottom line,” she says. “Negotiation is always good, too. We can ask people to change, but should also ask them ‘What can we do to make it easier for you?’”

Jeanie’s WPC service continues to require a steep learning curve which, like behavior change, can only be achieved with patience and persistence. Those are qualities she brings to the table. As a mother and grandmother, Jeanie wants to give the next generation of children the experience of a green and growing childhood like her own.



Jeanie Fredlund was appointed to the Watershed Planning Commission in February 2015.

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## Raingardens build resilience in the watershed

The striking gold-colored two-toned house in New Market Township had a soggy area in the backyard. The standing water consisted of stormwater runoff from the driveway and a 1,200-square-foot roof. The homeowners attended an early spring workshop on how to design and install a raingarden. With technical assistance from Scott Soil and Water Conservation District (SWCD), the homeowners mapped out a location, amended the soil with compost, and ordered a “Raingarden in a Box.”

“We try to make installing a raingarden as easy as possible,” says Meghan Zenner, technician for Scott SWCD. The Raingarden in a Box allows homeowners to order a selection of plants based on the site’s size and exposure to sun. Scott SWCD orders the box, and homeowners pick it up and install the plants according to the design plan. The 200-square-foot raingarden collects stormwater from 2,000-square-feet of impervious rooftop and pavement. The raingarden stops stormwater pollutants (sediment, nutrients, and bacteria, for example) from reaching a Vermillion River headwaters tributary directly south of the property. The water infiltrates down to replenish the groundwater, maintaining healthy wetlands on either side of the property. A

\$250 grant from the Vermillion River Watershed Joint Powers Organization (VRWJPO) paid for materials and the homeowners installed the raingarden themselves, which was completed in July 2015.

Another small raingarden is making a small improvement in water quality and quantity. No big deal. Or is it?

Scott and Dakota County SWCDs, and the VRWJPO, have provided training, technical assistance, and incentives to promote planting for clean water. From 2006 through 2014, residents and organizations (such as churches or homeowners' associations) have installed more than 125 raingardens, native gardens, or shoreline plantings within the watershed. The cumulative impacts – runoff volume reductions, pollutant removal or treatment, groundwater recharge, and wildlife habitat – are substantial. Benefits are also distributed across the watershed, building community resilience to more intense weather events and changes in land use.

Is 2016 your year to install a raingarden? Workshops from Scott and Dakota County SWCDs begin each spring – the introductory workshop is free. For more information, see websites for Dakota County SWCD ([www.dakotaswcd.org](http://www.dakotaswcd.org)) and Scott SWCD ([www.scottswcd.org/](http://www.scottswcd.org/)).



The raingarden is ready for native plants or cultivars.

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## 2015 Fish Survey Results Are Positive

The VRWJPO conducted its annual fish surveys of the Vermillion River and its tributaries in September, and the results are positive. More fish were caught and released at our monitoring sites compared to 2014 results.

Data from previous years of sampling indicated lower numbers of brown trout in the watershed. A higher number of brown trout and other sensitive species caught this year leaves Vermillion River Watershed staff optimistic about stream conditions and future year's fish populations. While more brown trout were caught, a significant amount of the overall brown trout catch was young of year fish. Young of year fish are those born within the past year. If young of year are present, it usually means that conditions were good for fish; young fish are more sensitive to poor conditions.



Stream conditions in 2015 differed greatly from 2014. In 2014, higher than normal flows in the river persisted until mid-July. These higher flows were due to frequent, heavy, and sometimes intense rainfall events that likely carried a significant amount of pollutant runoff to the river. Sediment is harmful to fish species, and is the most common stressor to the river's fish and macroinvertebrates (aquatic insects). In 2015, a drier spring and less frequent, heavy, and intense rainfall events likely contributed to better fish numbers. Another reason is that actions to improve watershed conditions supported by the VRWJPO in conjunction with landowners and best management practices initiated by landowners themselves are making a difference. If you have questions about the results of our fish sampling, you can find reports on our website at [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org), search "fish sampling."

### Fall in! Stewardship events continue through November

School is on, leaves are down, and frost is on the way. Fall's crisp, cool weather and colorful foliage send Minnesotans outdoors to play, learn, and enjoy local natural resources. Environmental education and stewardship events are a great way to end the year. So pull on your duck boots and get out there!

- Vermillion Stewards Buckthorn Haul at Pine Bend Bluffs, Rosemount, coordinated by Friends of the Mississippi River (FMR) along with, Great River Greening, and Flint Hills Resources. Sat., Oct. 24, 9 a.m.–noon, register to receive directions. Contact: Amy Kilgore, FMR, 651-222-2193 x31 or [akilgore@fmr.org](mailto:akilgore@fmr.org).
- Vermillion Stewards Buckthorn Haul at Vermillion Aquatic Management Area, Vermillion Township, coordinated by FMR along with the Minnesota Department of Natural Resources (DNR). Sat., Oct. 31, 9 a.m. to noon, register to receive directions. Contact: Amy Kilgore, FMR, [akilgore@fmr.org](mailto:akilgore@fmr.org), or 651-222-2193 x 31.
- Vermillion River Water Issues: Raingardens, presented by Carpenter Nature Center (CNC). Wed., Nov. 4, 7–8:30 p.m., Pleasant Hill Library, 1490 S. Frontage Road, Hastings. Contact: Jessie Eckroad, CNC Outreach Coordinator, 651-437-4359 x106.
- Vermillion River Water Issues: Raingardens, presented by Carpenter Nature Center (CNC). Thurs., Nov. 19, 10–11:30 a.m., Tilden Community Center, 310 River Street, Hastings. Contact: Jessie Eckroad, CNC Outreach Coordinator, 651-437-4359 x106.

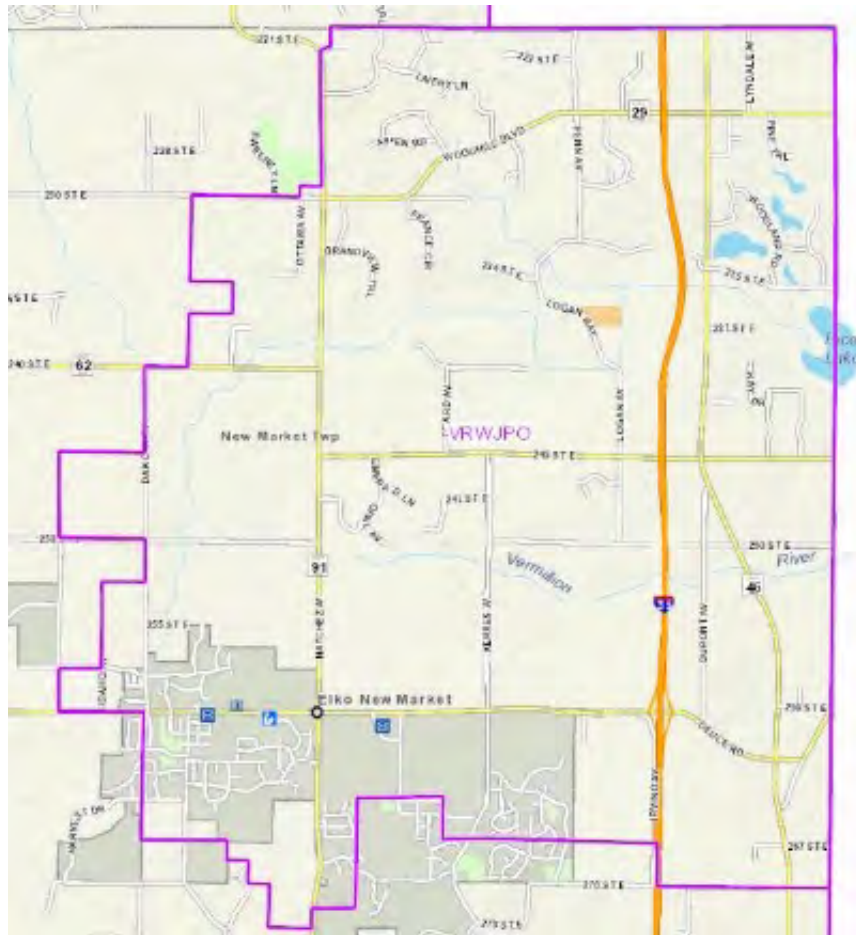
For the most up-to-date calendar of events, visit [www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org) and click "meet."

### Make a splash – as a WPC Commissioner

Joint Powers Board seeks applicants from Scott County

The Vermillion River Watershed Joint Powers Board (VRWJPB) seeks applicants from Elko New Market and New Market Township in Scott County for one vacant seat on the Vermillion River Watershed Planning Commission (WPC). The WPC advises the VRWJPB about water quality and quantity issues, policies, and projects in the watershed. The nine-member commission represents the citizens in communities within the watershed. Commissioners serve a three-year term and attend monthly meetings.

The map shows the Vermillion River Watershed Scott County boundary, but for more detail, see the Scott County website <http://gis.co.scott.mn.us/ScottGIS2.0/>. Apply to the [Watershed Planning Commission](#) or call 952-891-7546.



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Vermillion River Watershed Joint Powers Organization  
14955 Galaxie Ave., Apple Valley, MN 55124  
[www.vermillionriverwatershed.org](http://www.vermillionriverwatershed.org)

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