

EXECUTIVE SUMMARY

This Vermillion River Watershed Management Plan (Plan) describes how the Vermillion River Watershed Joint Powers Organization (VRWJPO) will address activities in the Metropolitan Area's largest watershed. This Plan is intended as a guide to be used over the next ten years (until 2015). This Plan strives to integrate stakeholder needs with VRWJPO capabilities, while recognizing Vermillion River Watershed (Watershed) physical characteristics. It was a challenging planning exercise, because the ideas, wants and needs of local citizens and governments are as diverse as the land uses within the Watershed and the issues facing it. Many of the issues that can impact a watershed are evident in this Watershed, including: rapid suburban growth; intensely worked agricultural land; water quality impairments; designated trout stream areas; and high levels of nitrates in the groundwater.

The Executive Summary provides a history of the Watershed, lists basic Watershed statistics, describes the planning process, identifies organizational purposes, defines Plan terms, highlights priority Watershed issues, and identifies VRWJPO goals. Data and information from a variety of studies and assessments of the Watershed are discussed in this Plan; and, additional information is included as appendices. Additionally, the Plan provides an extensive set of maps illustrating numerous Watershed features.

Vermillion River Watershed Location and History

The Watershed is located in the southwest part of the Twin Cities Metropolitan Area, encompassing 335 square miles in central Dakota County and extreme southeast Scott County. The headwaters of the Vermillion River (River) are located in New Market Township in Scott County. From there, the River flows northeast through central Dakota County to the City of Hastings where the River drops 90 feet at a falls. East of Hastings, the river splits: one branch flows north to the Mississippi River; the other branch flows south, paralleling the Mississippi River for 20 miles through Ravenna and Welch Townships before joining the Mississippi River near the City of Red Wing in Goodhue County. The Vermillion is the only river in Minnesota that has mouths that flow both north and south. There is a 420-foot elevation change between the source and the mouth of the Vermillion River. Table ES.1 provides some basic Watershed statistics.

Table ES.1: General Vermillion River Watershed Information	
Area:	335 square miles
Stream Length:	38 miles (Main Branch)
Tributary to:	Mississippi River
Land Use:	Agricultural, with suburban areas and small urban growth centers
Number of Communities:	21
Number of Counties:	2
Trout Designation:	About 49 stream miles (main stem & tributaries)

The Vermillion River, often referred to as a "prairie river," is a relatively slow flowing river that winds its way through alternating rural agricultural and developing suburban areas, through cultivated fields and pasture lands, forested areas and suburban backyards. The Vermillion River

supports a naturally reproducing population of trout. A portion of the main branch of the river and some of its tributaries, beginning in the southeast corner of Lakeville and central Eureka Township and stretching east through Farmington and Empire Township to a

point just east of Highway 52 in Vermillion Township, have been designated as trout streams by the Minnesota Department of Natural Resources.

Although the Vermillion River is healthy enough to support trout, the U.S. Environmental Protection Agency lists it as impaired for high levels of fecal coliform bacteria from the headwaters to the falls in Hastings. This stretch of the river is also high in nitrates. Downstream of the falls, the Vermillion River is listed as impaired due to high turbidity (cloudiness), PCBs and mercury.

**Table ES.2:
Communities wholly
or partly within the
Watershed:**

Apple Valley, City of
Burnsville, City of
Castle Rock Township
Coates, City of
Douglas Township
Elko, City of
Empire Township
Eureka Township
Farmington, City of
Hampton, City of
Hampton Township
Hastings, City of
Lakeville, City of
Marshan Township
New Market, City of
New Market Township
Nininger Township
Ravenna Township
Rosemount, City of
Vermillion, City of
Vermillion Township

All or part of 21 cities and townships are included in the Watershed area (Table ES.2). In 1984, these 21 communities signed a Joint Powers Agreement to manage the Watershed. In August 2000, the original watershed management organization dissolved and Dakota and Scott Counties became statutorily responsible for managing the Watershed.

The VRWJPO is administered through a Joint Powers Agreement (JPA) signed by Dakota and Scott Counties in September 2002. The JPA allows for a three-member Joint Powers Board composed of two Dakota County Commissioners and one Scott County Commissioner.

A nine-member, citizen advisory Watershed Planning Commission supports the Joint Powers Board, and was instrumental in the development of this Plan, as was a long list of local, State and federal agency and organization representatives who were involved in providing comments throughout the Plan drafting process (Table ES.3). Citizens were invited to participate in the Plan development process via the VRWJPO website and public meetings.

Dakota and Scott Counties jointly fund the administration and activities of the VRWJPO. Based on tax capacity, Dakota County contributes 96.5% and Scott County contributes 3.5% of total VRWJPO management costs. Dakota County and Scott Counties established special tax districts within their

portions of the Watershed to provide the primary mechanism for funding their shares of the VRWJPO's costs.

**Table ES.3: Regional, State and Federal
Agencies and Organizations Involved in
Plan Development:**

Dakota County Environmental Mgmt. Dept.
Dakota Co. Soil & Water Conservation Dist.
Elko/New Market Joint Sewer Board
Friends of the Mississippi River
Metropolitan Council
MN Board of Water and Soil Resources
MN Dept. of Agriculture
MN Dept. of Health
MN Dept. of Natural Resources
MN Dept. of Transportation
MN Farm Bureau
MN Pollution Control Agency
Natural Resource Conservation Service
Scott County Natural Resources Dept.
Scott Co. Soil & Water Conservation Dist.
Sierra Club

Watershed Management Purposes

The Metropolitan Surface Water Management Act states that the purposes of watershed management organizations and water management programs are (Minn. Stat. Chapter 103B.201) to:

1. Protect, preserve, and use natural surface and groundwater storage and retention systems.
2. Minimize public capital expenditures needed to correct flooding and water quality problems.
3. Identify and plan for means to effectively protect and improve surface and groundwater quality.
4. Establish more uniform local policies and official controls for surface and groundwater management.
5. Prevent erosion of soil into surface water systems.
6. Promote groundwater recharge.
7. Protect and enhance fish and wildlife habitat and water recreational facilities.
8. Secure the other benefits associated with the proper management of surface and groundwater.

In 1992, the Board of Water and Soil Resources (BWSR) developed rules (Minnesota Rules Chapter 8410) for the content of watershed management plans. The rules require, among other items, more specificity in citizen participation, control of erosion and sedimentation, wetland assessment, and the design of new storm water conveyance, ponding, and treatment systems. The rules also require the establishment of the necessary authorities to ensure implementation of programs.

Watershed Management Plan Term Definitions

Certain terms used in a variety of plan documents can be confusing because they are used differently from document to document. For the purposes of this Plan, the following Plan terms have the meanings indicated in Table ES.4.

Table ES.4: Vermillion River Watershed Management Plan Term Definitions		
Terms	Definitions/Explanations	Examples (see Plan for specific information)
Issue (problem)	<i>“a point, matter, or question to be disputed or decided”</i> An issue is an identified problem or concern that exists in the Watershed.	Water quality: Vermillion River water quality is impaired.
Goal (achieved outcome)	<i>“an objective or end that one strives to attain”</i> A goal is what the VRWJPO wants to ultimately	Improve Vermillion River water quality such that the River is removed from the MPCA’s impaired waters list.

	achieve long-term in addressing Watershed issues. The JPO's goals should be stated in a format that indicates a measurable outcome.	The impaired waters list is based on the exceedence of certain water quality thresholds, which is what makes this a measurable goal.
Policy (supporting or underlying philosophy)	<i>"a principle, plan or course of action, as pursued by a government, organization, individual, etc."</i> A policy should express the JPO's philosophy about certain watershed management concepts. What does the VRWJPO support; what does the VRWJPO value?	The VRWJPO supports research-based projects to improve river water quality. The VRWJPO supports surface water quality improvement as a means to improve groundwater quality.
Objective (measurable outcome)	<i>"real; actual;... designating a kind of test;... something aimed at or striven for"</i> Answers the question: "How are we going to measure our goal?"	Reduce fecal coliform bacteria levels in river water by 25%. This objective is more specific than the goal and the percentage provides the measure of success.
Action (strategy or activity)	<i>"the doing of something; an act or thing done"</i> An action should be an actual activity, something specific the VRWJPO intends to do to achieve its goals and objectives, and address its issues.	Adopt riparian vegetation standards that require buffers along the main channel of the River, specified tributaries, lakes, ponds and wetlands in the Watershed. Distribute non-point source pollution brochures to landowners living on waterbodies in the Watershed.
Standards	<i>"something established for use as a rule or basis of comparison in measuring or judging capacity, quantity, content, extent, value, quality, etc."</i> A standard is used to set a level of excellence, protection or attainment; it is used as a measure of adequacy.	Vegetative buffers will be maintained adjacent to high quality wetlands.
Rules	<i>"an authoritative regulation for action, method, procedure, arrangement, etc. a complete set of code or regulations."</i> The legal language or framework used to apply and enforce standards.	A stormwater management plan and a permit are required for land disturbing activities that include more than one acre of impervious surface.

Watershed Issues

As stated in Table ES.4, Watershed issues are problems or concerns that have been identified that need attention and the implementation of corrective measures. Eight Watershed issues are addressed throughout this Plan, accompanied by background data and information (see Section 3):

- River flow volumes have increased
- Surface water quality is threatened or impaired
- Vermillion River channel/corridor is impacted and sensitive to change
- Sensitive resources are present and/or threatened or impaired
- Groundwater quality is threatened or impaired
- Additional development is expected
- Data for making informed decisions is limited
- Public awareness about water resources in the Watershed and appropriate stewardship is limited.

Watershed Goals

There are eight goal areas identified in Section 4 of this Plan. The goal areas are not designed to specifically match the eight issues identified above; however, the VRWJPO intends to address the issues by achieving a combination of the goals and objectives in the Plan. Table ES.5 is the list of Plan goals:

Table ES.5: Vermillion River Watershed Joint Powers Organization Goals
Surface Water Quantity: Manage the rate and volume of runoff entering rivers, streams, lakes and wetlands within the Watershed.
Surface Water Quality: Protect and enhance surface water quality in the Vermillion River Watershed.
Open Space and Recreational Uses: Develop or improve recreational, fish and wildlife, and open space areas in conjunction with water quality improvement projects.
Wetlands and Habitat: <ul style="list-style-type: none"> • Maintain and enhance, where possible, the functions and values of existing wetlands and habitats within the Watershed. • Promote the restoration and/or creation of wetlands.
Groundwater: Protect groundwater quality and quantity to preserve it for sustainable and beneficial purposes.
Land Use Management: Protect and conserve water resources by promoting sustainable growth, integrated land use and land use planning, rural land conservation methods that reduce non-point sources of pollution from agricultural lands, and water resource management.
Floodplains: Manage and protect the floodplains of the Watershed from encroachment.
Education: Offer programs, educational opportunities, and information that facilitate an understanding of watershed principles.

Watershed Standards and Rules

Minnesota Statutes Chapter 103B.211 gives the VRWJPO the authority of a watershed district, under Minnesota Statutes Chapter 103D.341 to regulate the use and development of land in the Vermillion River Watershed, when one or more of the following conditions exist:

- A local government does not have an approved and adopted local water management plan, or has not adopted the implementation program described in the plan;
- A permit application to a local government would require an amendment or variance from the adopted local water management plan or implementation program; and/or
- The local government has authorized the VRWJPO to require permits for the use and development of land within its jurisdiction.

The VRWJPO will ensure this Plan's implementation by establishing standards and adopting them as a minor amendment to this Plan. The standards are a primary performance/objective/outcome mechanism for Plan implementation. The VRWJPO will also develop rules, which are the legal language/framework to apply and enforce the standards. The main reasons for the VRWJPO to develop standards and rules are to:

- Establish standards for incorporation into local ordinances;
- Form the basis for oversight of local ordinance implementation;
- Administer a watershed permitting program;
- Establish criteria for approval of local plans; and
- Form the basis for watershed-based NPDES general or individual permits.

Through this Plan and amendments, the VRWJPO Joint Powers Board (JPB) will decide how extensive the VRWJPO's regulatory function will be. The VRWJPO will implement a consultative decision-making process to develop standards and rules, using consultation with other entities, but with final decisions made by the JPB.

The VRWJPO can develop performance-based and/or prescriptive-based standards. Performance-based standards/rules specify an outcome. For example, 60% phosphorus removal will be achieved. How this standard is achieved is not specified, and can vary based on individual factors in individual municipalities. Prescriptive-based standards/rules prescribe the activities designed to achieve an outcome. For example, water quality treatment ponds will be installed according to NURP criteria. This standard establishes how an outcome will be achieved through a specific type of design – there is no choice regarding how the outcome will be achieved.

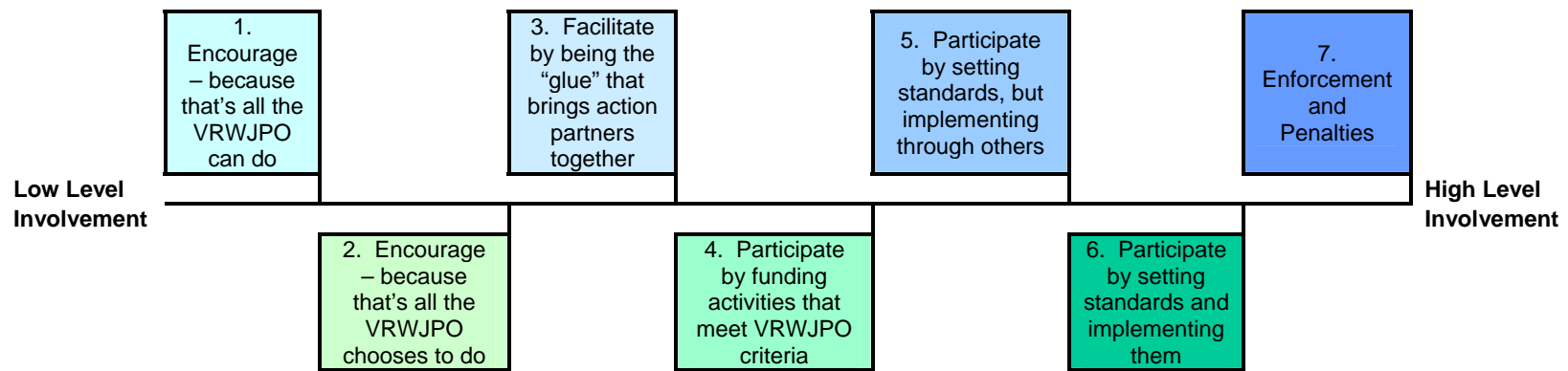
The standards and rules adopted by the VRWJPO will apply to local governments. Local governments will need to adopt local plans with equivalent rules, programs or ordinances within two years of the VRWJPO Plan adoption. The term "equivalent" will be defined early in the standards development process. Local government rules, programs, and ordinances can be more restrictive than the

VRWJPO standards and rules. The standards and rules will also apply to landowners, developers, industries, and local transportation authorities via permits for new development, redevelopment, and other land disturbing activities.

Standards

The VRWJPO can adopt varying levels of standards, depending on JPB decisions regarding desired levels of regulatory function and the importance of implementing various portions of this Plan. The Standards Continuum (Figure ES.1) shows the standards approaches available to the JPB.

Figure ES.1: Watershed Standards Continuum



The points along the standards continuum are fairly self-explanatory; however, additional detail is provided here:

1. Examples of where the VRWJPO would not have authority include: Federal and State projects, endangered and threatened species, and wildlife game harvest limits.
2. Examples of areas where the VRWJPO would likely defer to other government entities include: floodplain and sewage treatment permitting, landfill operations, and feedlot permitting.
3. The VRWJPO could provide the “glue” to bring other entities together by facilitating groups that would develop educational efforts, local stormwater plan contents, grant applications, and research.
4. Funding options for the VRWJPO to provide for certain Watershed activities including: easements, cost-share on projects, loans and matching funds.
5. The VRWJPO could set standards that would be implemented by other entities (e.g., cities, townships, Dakota and Scott Counties), including: standards for runoff rate, volume, infiltration, and thermal thresholds; buffers; and low impact development practices.

6. Implementation by the VRWJPO where other entities do not have the authority to implement a standard, do not have the capacity to implement the standard, refuse to implement the standard, or it makes more sense for the VRWJPO to implement the standard.
7. Enforcement would require developing a process for the VRWJPO to provide oversight of other entities' implementation decisions and oversight of Watershed-specific requirements. The VRWJPO would conduct periodic audits and selected decision reviews, and be responsible for permits, site inspections and fees. Penalties would focus on the consequences of not complying with VRWJPO standards and rules, and could include: civil fines, increased fees, criminal proceedings, and moratoriums.

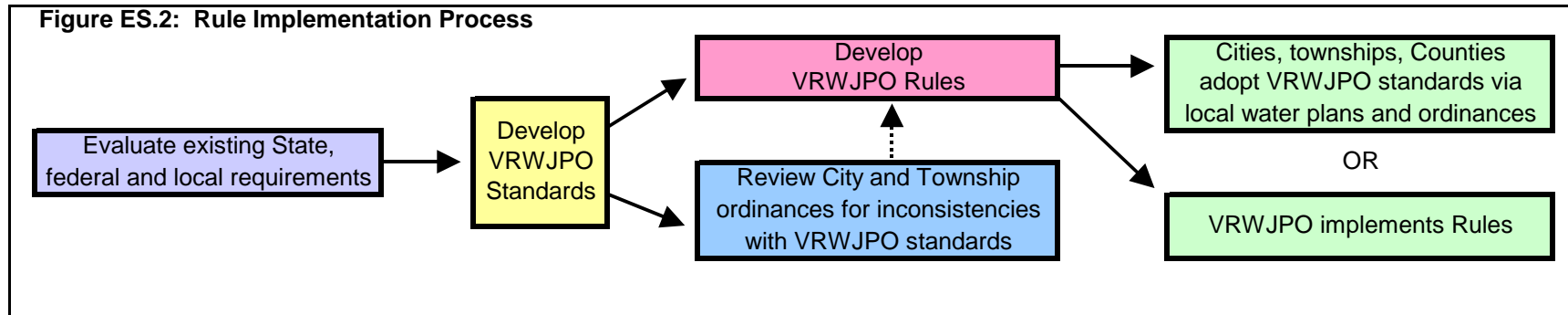
The VRWJPO anticipates establishing a variety of standards. General standards may be needed for administrative processes, technical criteria, financial controls and enforcement procedures. The VRWJPO will strive to make these and all other standards understandable, achievable, adaptable and enforceable. The framework for developing the standards will include a review of current goals, objectives and policies; identification of current rules and regulations; identification of gaps; and development of a framework and philosophy related to current standards and identified gaps.

Rules

The general structure of the Watershed rules will include: policies, regulations, criteria, exhibits, maintenance provisions and exceptions. The following is a typical outline of rules:

- | | |
|---|---------------------------------|
| Policy statement | H. Bridge and culvert crossings |
| Relationship w/local governments and State/federal programs | I. Drainage alterations |
| A. Definitions | J. Groundwater |
| B. Procedural requirements | K. Security |
| C. General standards | L. Variances |
| D. Stormwater management | M. Appeals |
| E. Erosion and sediment control | N. Enforcement |
| F. Floodplain alteration | O. Fees |
| G. Wetlands | |

Figure ES.2 is a flow chart illustrating the VRWJPO process of rule implementation.



The JPB may adopt rules following a public notice and hearing. The rules must be submitted to the Minnesota Board of Water and Soil Resources (BWSR) for review and comment. The BWSR’s review is considered advisory. The VRWJPO must publish a notice of hearings and adopted rules in one or more legal newspapers in Dakota and Scott Counties. The VRWJPO must file adopted rules with the Dakota and Scott County recorders. The rules must also be mailed to the governing bodies of each community in the Watershed. Cities and townships will be notified by the VRWJPO when a rule or regulation affects land or water within their boundaries.

Plan Organization

This Plan document is about the Vermillion River Watershed and its management, and therefore, much of the information presented is technical. Background information regarding scientific terms and processes is provided where practical; and a term glossary and acronym list are provided at the back of the document. Readers are encouraged to consult area professionals or professional references for more information as necessary.

The Plan is divided into the following sections:

Executive Summary. Provides a general overview of the VRWJPO and the Watershed, the Metropolitan Surface Water Management Act and the components of this plan.

Section 1: Existing and Future Environment, provides existing and historical background and inventory information regarding the physical, biological and human environment of the Watershed.

Section 2: Water Resources (or Hydrologic Systems), presents current and historic information regarding climate, aquifers, wetlands, lakes, rivers, streams, and flood plains; water quantity; and water quality.

Section 3: Issues Identification, provides an overview of the priority issues (the problems, concerns and needs) identified during the planning process that the VRWJPO intends to address during the next ten years. The issues are broken out into two groups, those that should be addressed during the next five years, and those to be addressed beyond the first five years.

Section 4: Goals, Policies, Objectives and Actions, presents and describes the Plan framework (goals, policies, objectives and actions) adopted by the Joint Powers Board to address the priority issues identified in Section 4. The goals are general and represent what the VRWJPO wants to accomplish long-term. The objectives are more specific, measurable statements of what the VRWJPO wants to achieve. The policies define the VRWJPO's approach to Watershed management. And, the actions describe the specific activities the VRWJPO will undertake to achieve its goals and objectives. A Reason Statement is included for each goal, and each objective is accompanied by a Rationale.

Section 5: Vermillion River Watershed Joint Powers Organization (VRWJPO) Governance and Administrative Authority, presents the structure of the VRWJPO, its regulatory controls and financial mechanisms. This section also provides State and local regulatory framework and regulatory controls tables.

Section 6: Vermillion River Watershed Joint Powers Organization (VRWJPO) Plan, Review, Adoption, Update, and Revision, provides plan review, approval and adoption procedures, the Plan update process, and Plan revision and amendment procedures.

Section 7: Local Water Management Plans, discusses the relationship between the Watershed Plan and local water management plans, requirements for local water management plans, and VRWJPO review of local water plans.

Section 8: Implementation Program, describes the implementation of this Plan and its impact on residents and local governments. This section provides an implementation program table or Capital Improvement Program (CIP) for the Watershed.