

# Appendices

## *Eureka Township Local Water Management Plan*

### *Eureka Township Ordinances*

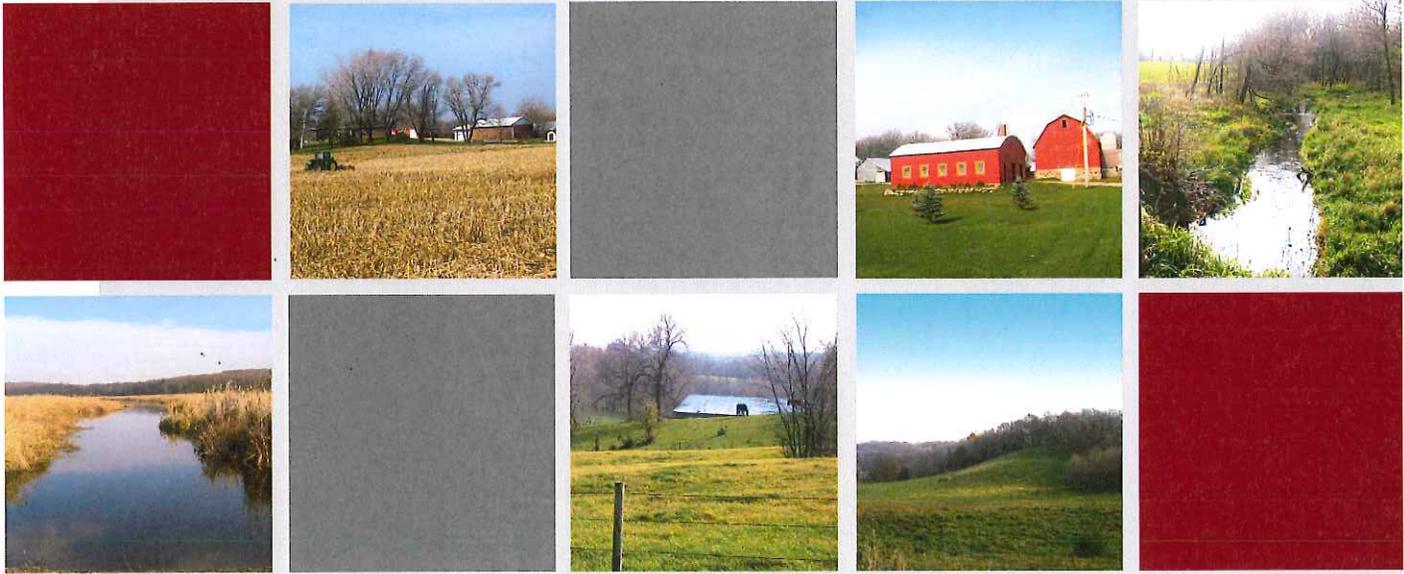
1. Ordinance 9 – Watershed Management (attached)
2. Ordinance 3 – Zoning (available on-line)
3. Ordinance 6 – Mining (available on-line)
4. Ordinance 2010-3 – Subsurface Septic Treatment Systems (available on-line)
5. Ordinance 2015-5 – Subdivision (available on-line)
6. Dakota County Shoreland and Floodplain Management Ordinance (County Ordinance 50, available on-line)

### *Comments from Affected Jurisdictions*

### *Metropolitan Council Approvals*

# EUREKA TOWNSHIP LOCAL WATER MANAGEMENT PLAN

A CHAPTER OF THE TOWNSHIP'S 2040 COMPREHENSIVE PLAN



*Eureka Township, Minnesota*

December, 2016  
TKDA Project No. 15944.000



**EUREKA TOWNSHIP  
LOCAL WATER MANAGEMENT PLAN**

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1. Eureka Township Water Management Ordinances
2. Metro Council Approval of LWMP

## **LIST OF ACRONYMS USED IN THE PLAN**

(listed in alphabetical order)

AGQS	Ambient Groundwater Quality Study (Dakota County, 2006)
DNR	Department of Natural Resources
FEMA	Federal Emergency Management Agency
IBI	Index of Biological Integrity
GIS	Geographic Information System
LWMP	Local Water Management Plan
MCBS	Minnesota County Biological Survey
MCES	Metropolitan Council Environmental Services
MPCA	Minnesota Pollution Control Agency
MS4	Municipal Separate Storm Sewer Permit
NCRWMO	North Cannon River Watershed Management Organization
NWI	National Wetland Inventory
Opdc	Prairie du Chien groundwater aquifer
SSTS	Subsurface Sewage Treatment Systems
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load
VRWJPO	Vermillion River Watershed Joint Powers Organization
WCA	Wetland Conservation Act
WMA	Wildlife Management Area
WMO	Water Management Organization

# I. Executive Summary

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This Local Water Management Plan (LWMP) for Eureka Township contains the elements that Minnesota Statutes 103B and Minnesota Rules 8410 require in local water management plans for communities that are not designated as MS4 (Municipal Separate Storm Sewer Permit) communities. The LWMP includes the following sections:

- The **Water Resource Management Plan and Agreements** with other organizations for water resource management.
- The **Description of the Township's Physical Environment and Land Use** summarizes available data regarding the existing and proposed land use in Eureka Township, and the water resources and natural resources in the Township.
- The **Existing Water Resource Problems** section summarizes the water resource issues identified by each of the Water Management Organizations' Watershed Management Plan.
- **Water Resource-Related Agreements** describes the Township's existing water resource-related agreements with other units of government.
- The **Local Goals and Policies**, section lists the Township's goals and policies adopted to address surface and groundwater management issues.
- The **Implementation** section summarizes the actions the Township will take to address the identified goals and policies.
- The **Amendment Procedures** outlines the process by which plan amendments will be incorporated into the plan.
- The Plan also includes figures and attachments that support the analysis.

This LWMP updates the plan that was included in the Township's 2030 Comprehensive Plan Update, and will be applicable until the Township is required to update its comprehensive plan for 2050. The Township will complete periodic amendments to its LWMP to incorporate changes made to the Watershed Management Plans of the watershed management organizations with jurisdiction in the Township as required by Minnesota Statutes 103B and Minnesota Rules 8410..

## II. Water Resource Management Plan Purpose and Agreements

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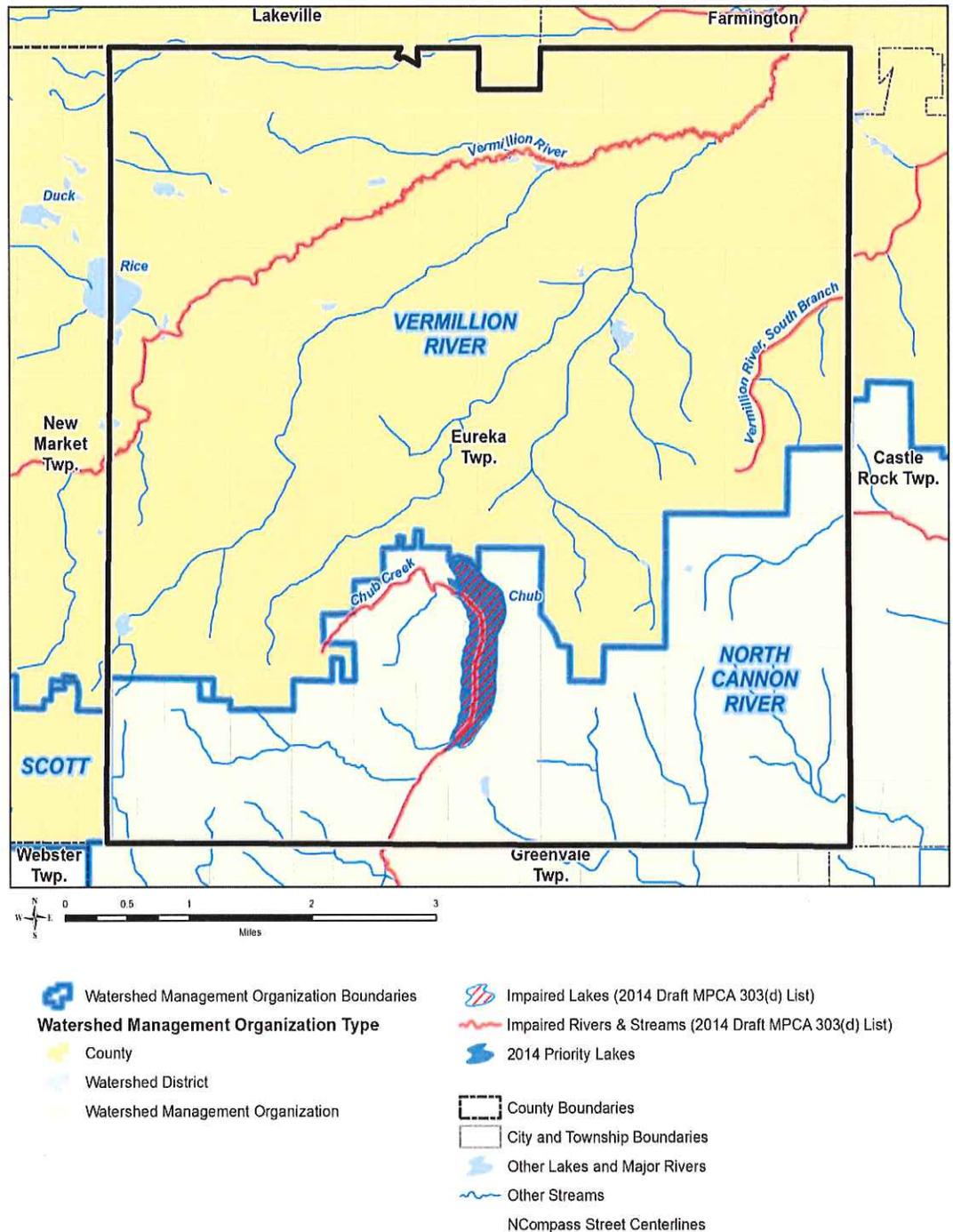
This LWMP has been prepared to guide the Township in conserving, protecting, managing and improving its surface water resources. The plan meets the requirements described in Minnesota Statutes 103B and Minnesota Rules 8410. The plan is also consistent with the goals and policies of the Metropolitan Council's 2040 Water Resources Policy Plan and the plans and rules of the watershed management organizations with jurisdiction in Eureka Township.

Eureka Township is located primarily within two water management organizations: the North Cannon River Watershed Management Organization (NCRWMO) and the Vermillion River Watershed Joint Powers Organization (VRWJPO). The current *North Cannon River WMO Watershed Management Plan* was adopted in 2013, and the *Vermillion River Watershed Management Plan* was adopted in June, 2016.

The Township is one of the eight townships and three cities in southern Dakota County that is part of the Joint Powers Agreement (2000) that created the North Cannon River Watershed Management Organization (NCRWMO).

The Township is also part of the Joint Powers Agreement between Dakota and Scott Counties that created the Vermillion River Watershed Joint Powers Organization (VRWJPO) in 2002.

Activities within the shoreland and floodplain areas in the Eureka Township (and other Townships in Dakota County) are regulated by the County through Shoreland and Floodplain Management Ordinance 50.



**Figure 1. Watershed Management Organization Boundaries and Water Resources**

### III. Physical Environment and Land Use

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#### 1. Land Use

Eureka Township is a rural township in southern Dakota County. Land uses in the Township are dominated by agriculture and rural residential uses on large lots.

Existing land uses in the Township are identified in the Tables below and on Figures 2 and 3.

**Table 1:  
Existing Land Use in Eureka Township**

<b>Land Use</b>	<b>Acres</b>	<b>Percent</b>
<b>Agricultural</b>	15625	69
<b>Farmstead</b>	323	1
<b>Single Family</b>	731	3
<b>Multifamily</b>	2	<1
<b>Mixed Use Residential</b>	35	<1
<b>Extractive</b>	125	1
<b>Airport</b>	235	1
<b>Park, Recreational, or Preserve</b>	358	2
<b>Industry and Utility</b>	71	<1
<b>Institutional</b>	53	<1
<b>Retail and Other Commercial</b>	35	<1
<b>Open Water</b>	379	2
<b>Undeveloped</b>	4838	21
<b>TOTAL</b>	22,811	100

*Metropolitan Council, Community Profile for Eureka Township*

The Township's 2040 Comprehensive Plan includes goals to maintain the current types and patterns of Land Use in the Township through 2040. Land use in the Township is dominated by agricultural and residential uses. The Township is classified as an Agricultural Township by the Metropolitan Council, and its 2040 Land Use and Zoning maps designate the Township for Agricultural Use, with a developed overall density of no more than 1 dwelling unit per quarter-quarter section.

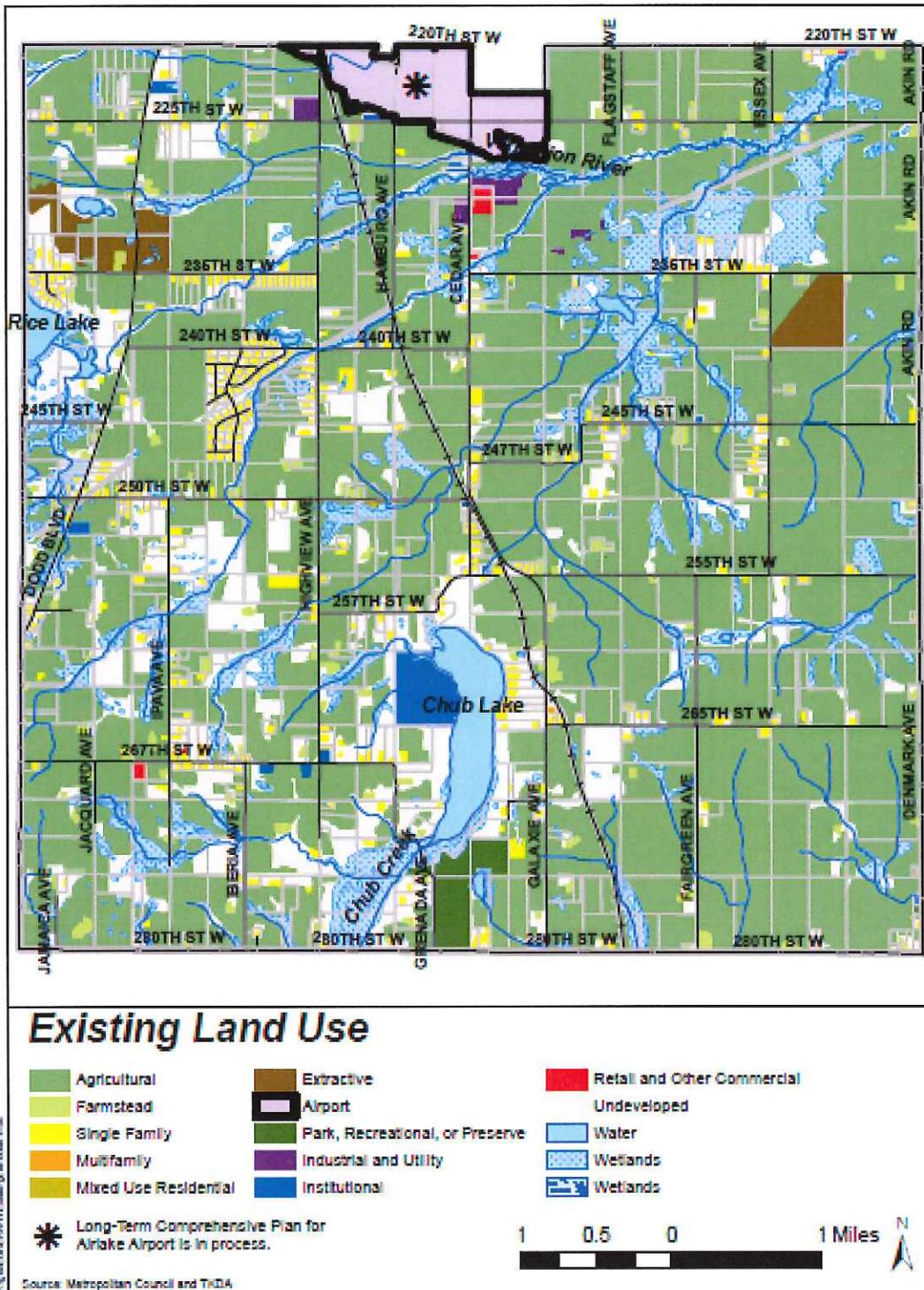


Figure 2. Existing Land Use

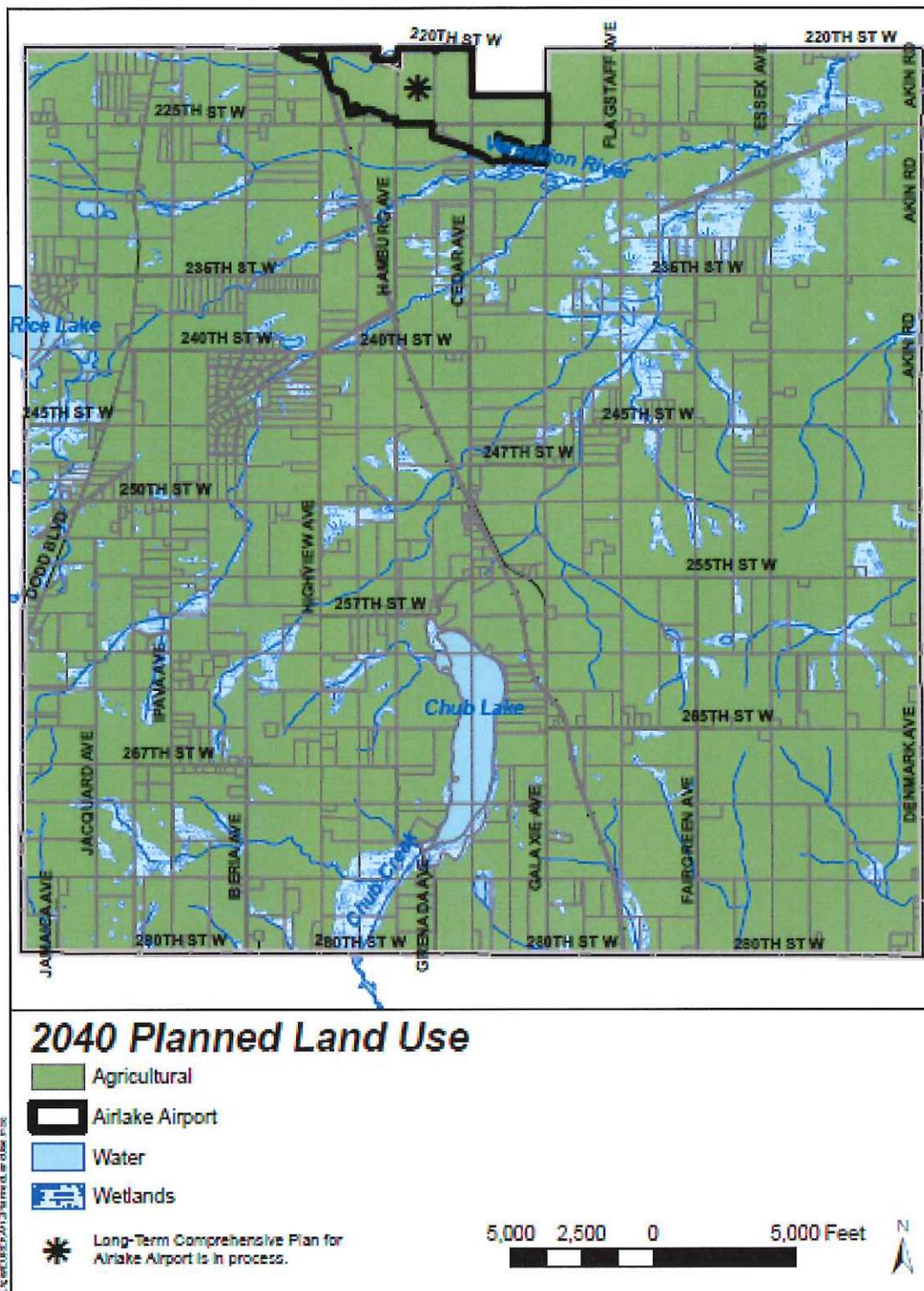


Figure 3. 2040 Planned Land Use

## 2. Key Water Resources and Designations

Eureka Township includes or drains to several significant water resources that are identified on Figure 1:

- Chub Creek – the creek drains to the Cannon River, a state-designated Wild and Scenic River
- Chub Lake – a natural 274-acre lake with a maximum depth of 10 feet, with a large adjacent wetland
- Vermillion River – a designated trout stream
- Vermillion River, South Branch – a designated trout stream
- Rice Lake – the eastern portion of the lake is located within the Township

### Public Waters

The Minnesota DNR designates “public waters” based on criteria in Minnesota Statutes Section 103G.005, Subd. 15. Public Waters wetlands include all type 3, 4 and 5 wetlands that are 10 acres or more in size in unincorporated areas or 2.5 acres or more in size in incorporated areas, as well as lakes and streams. Public Waters within the Township are identified on the following table and on Figure 1. The DNR also classifies stream for Shoreland District management.

**Table 3:**  
**DNR Protected Waters in Eureka Township**

<u>Protected Waters Number</u>	<u>Name of Resource</u>
19-20 p	Chub Lake—Natural Environment Lake
70-1 p	Rice Lake – Natural Environment lake

### 3. *Impaired Waters*

Under the federal Clean Water Act (33 U.S.C.) the Environmental Protection Agency (EPA) requires the Minnesota Pollution Control Agency (MPCA) to set standards and assess Minnesota waters for impairments. The standards are set on a wide range of pollutants, including bacteria, nutrients (phosphorus, for example), turbidity and mercury. A water body is listed as impaired by the MPCA if it fails to meet one or more water quality standard. If a water body is listed as impaired, a Total Maximum Daily Load (TMDL) standard is established for the pollutant. The MPCA or the local watershed organization must complete a TMDL plan to identify actions to reduce the pollutant loading to meet the TMDL. Townships and Cities are required to participate in the implementation of TMDL plans for the water bodies within their communities.

The water bodies listed in Table 4 and shown on Figure 4 are the impaired waters within Eureka Township.

**Table 4:  
Impaired Waters**

<b>Water Body</b>	<b>Type of Impairment</b>	<b>Watershed</b>
Chub Lake	Nutrients	NCRWMO
Chub Creek	Bacteria	NCRWMO
Vermillion River	Aquatic Life (Invertebrate & Fish IBI, Dissolved Oxygen, and Turbidity)  Aquatic consumption (Mercury)  Aquatic recreation (Fecal coliform)	VRWJPO
Vermillion River, South Branch	Aquatic Recreation (Fecal coliform)	VRWJPO

#### ***4. Water and Natural Resources in Eureka Township***

Each of the Watershed Districts has completed extensive inventories of the water and natural resources within their districts in their Watershed Plans. The Township has included a summary of natural resources based on DNR data and maps in its 2040 Comprehensive Plan. This LSWMP includes a summary of the information included in those plans that describes the resources of Eureka Township

##### *Surface Water Resources*

The significant surface water features in the Township include the following:

Chub Creek. Chub Creek originates in Chub Lake. It drains a portion of Dakota County and Rice County. The hydrology of the creek has changed substantially since European settlement in the area due to the loss of wetlands and ditching of tributary streams. Historically, the creek emptied into Lake Byllesby, but the channel was altered to empty into the Cannon River when Highway 56 was constructed. The creek is not a trout stream, but it offers some game fish such as Northern pike and largemouth bass. The riparian areas of the creek offer wildlife habitat and viewing opportunities.

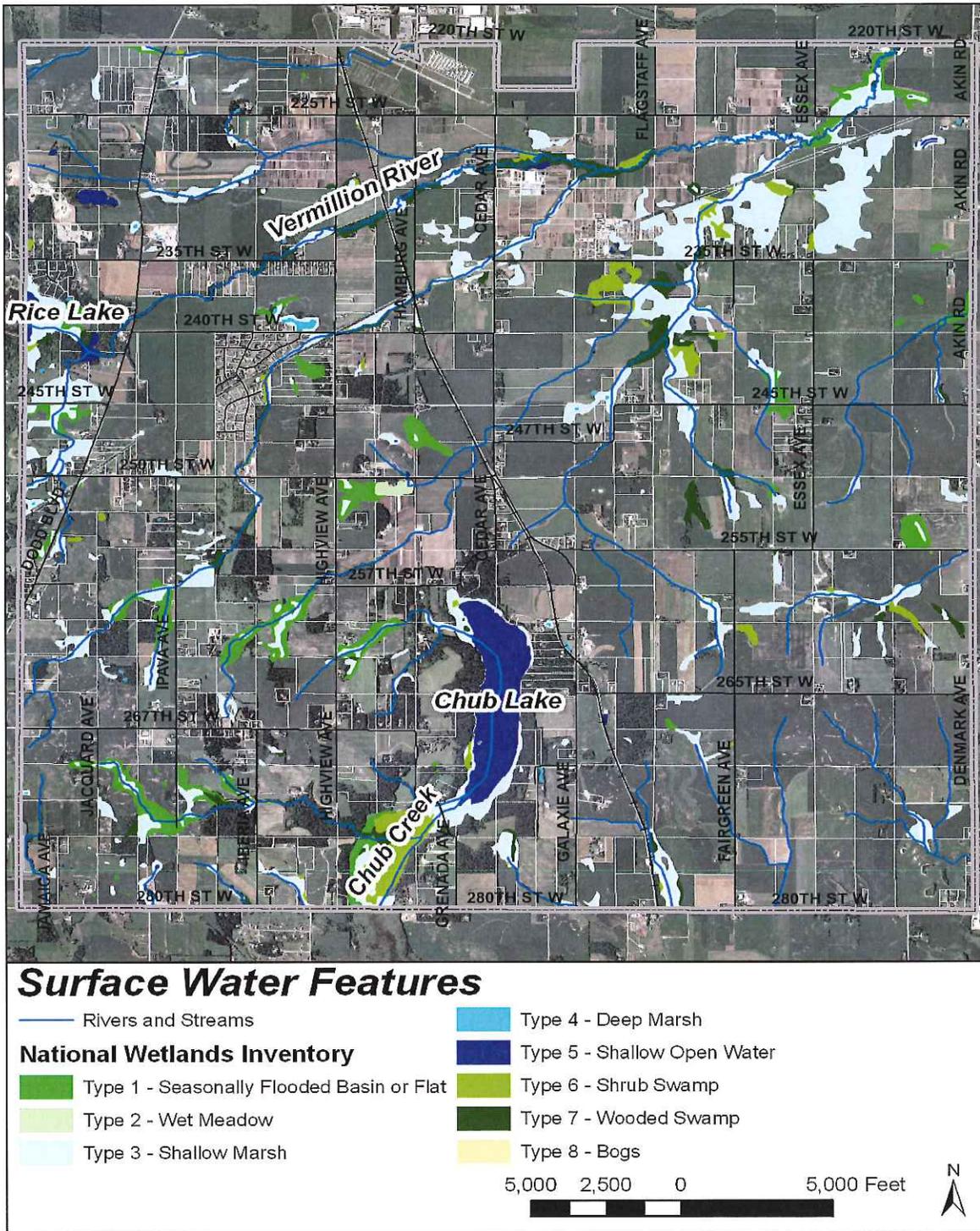
Chub Lake. Chub Lake is a natural 274-acre lake with a maximum depth of 10 feet and a large adjacent wetland. Public access is available at a Minnesota DNR Wildlife Management Area (WMA) on the south shore of the lake. The lake is only 2.5 meters deep, and its average water clarity is 0.5 meters. The lake is on the impaired-waters list for excess nutrients. The lake offers opportunities for canoeing, duck hunting, trapping, and fishing for non-game species.

Vermillion River. The majority of reaches of the Vermillion River and its tributaries were identified as DNR-designated trout streams between 2000 and 2010. Until recently, the MPCA followed the DNR trout stream designation and classified all designated trout streams as 2A cold-water resources. Stringent regulations apply to waters classified as 2A to protect sensitive cold-water species. The VRWJPO has requested that the MPCA consider a site-specific standard for the Vermillion River and its tributary trout streams, which have conditions intermediate to the 2A and 2B (warm-water trout streams) classifications.

Wetlands. The wetlands identified in the National Wetlands Inventory (NWI) are in Eureka Township are shown on Figure 4. In 2007 and 2008, the Dakota County SWCD completed the Wetland and Watercourse Inventory (WWIA) throughout the Vermillion and North Cannon River Watersheds. The project inventoried and remotely assessed the conditions of wetlands and streams within the watersheds. Characteristics of each wetland basin were recorded and mapped,

and high, medium and low value rankings were assigned to each wetland. The information is housed in a GIS database at the SWCD.

Figure 4. NWI Wetlands in Eureka Township



Shoreland Areas. The lakes and streams in the Township include Shoreland areas that are regulated by Dakota County through the Shoreland and Floodplain Management Ordinance. Each of the protected waters listed in the Protected Waters table above and the streams with the Township includes a shoreland management area.

Floodplain Areas. Dakota County recently completed a county-wide floodplain re-study including flood-prone regions in Eureka Township. The study was adopted by Dakota County in 2011 as an amendment to Ordinance 50, and by the Federal Emergency Management Agency (FEMA) in December, 2011. New floodplain maps are available for review at the Dakota County Water Resources Department, at the Town Hall, and on the FEMA website, [www.fema.gov](http://www.fema.gov).

#### Other Natural Resources

Local Geology. The surface geology of the Township was shaped by glacially-derived and deposited materials and some non-glacial deposits. The non-glacial deposits include floodplain, colluvium, and organic deposits. Sand and gravel deposits in the Township are associated with glacial outwash areas. These deposits also allow for the formation of surface aquifers. Aquifers that are close to the surface are particularly susceptible to contamination.

The bedrock underlying the Township was formed during the Paleozoic Era (225-600 million years ago). The formations consist of marine sedimentary rock that includes dolomite, limestone, sandstones, and shales.

Groundwater Resources. Groundwater resources are discussed in detail in the Townships *Water Supply Plan* chapter that is included in the Township's 2040 Comprehensive Plan. The Prairie du Chien Dolostone Aquifer and Jordan Sandstone Aquifer are the primary water supplies for domestic and high-capacity irrigation wells in the area.

Dakota County's *Ambient Groundwater Study* (2006) included an extensive analysis of groundwater supplies and issues in the County. While no specific concerns related to groundwater quality or quantity were noted in Eureka Township, the study noted that the most common groundwater contaminant found in well monitoring in Dakota County is nitrate. The AGQS report notes that "nitrate is not dangerous at natural levels, but can pose health risks at elevated levels. With the increased use of fertilizers, especially in geologically-sensitive areas, nitrate levels are becoming an increasing problem in groundwater." The study recommended that private well owners complete regular testing of their wells to identify potential nitrate contamination.

The *NCRWMO Management Plan* notes that "Groundwater quantity and quality have not been limiting in either the Prairie du Chien or Jordan aquifer, though there is evidence that quality is becoming a concern in the Prairie du Chien."

Quality concerns are related to increases in nitrates noted in some monitoring wells. The *Vermillion River Watershed Management Plan* also noted general concerns related to water quantity in some areas of the Watershed, and quality concerns related to nitrate pollution.

The Minnesota Geological Survey maps for Dakota County (1990) note that there are several known springs within Eureka Township. The Vermillion River and its tributaries are also connected to groundwater resources. Maps in the Township's *Water Supply Plan* note the known areas of surface and groundwater interaction within the Township.

Soils. Eureka Township has well-drained to somewhat poorly-drained soils formed in loam and silt sediments and loamy glacial till. The well-drained loam soils are typically found on gently sloping to moderately-steep hills, and poorly-drained soils are found in depressional areas between the slopes. Hydric and predominantly hydric soils are found in small, scattered depressional pockets or along rivers and streams. The soils have a moderately high susceptibility to channelized erosion due to their texture, slope and permeability. Some highly-erodible soils exist on the steeper slopes adjacent to Chub Lake.

Ecoregions. The Minnesota DNR and U.S. Forest Service developed a statewide Ecological Classification System that is used to identify, describe and map areas with similar ecological features. The western half of Eureka Township is included in the North Central Hardwoods/Big Woods Ecoregion, and the eastern half of the township is included in the Western Corn Belt Plains/Lower St. Croix and Vermillion Valley.

*The Big Woods* ecoregion included a large area of deciduous forest at the time of European settlement. The topography of the area is gently rolling. Northern red oak, sugar maple, basswood, and American elm were common in this forested area. Most of the area is currently dominated by cropland and pasture. Only about 10-15 percent of the ecoregion remains forested.

*The Western Corn Belt Plains* is largely a cultivated area with row crops. At the time of settlement, the land cover was primarily tall-grass prairie, with forested riparian areas, floodplains, and wetlands.

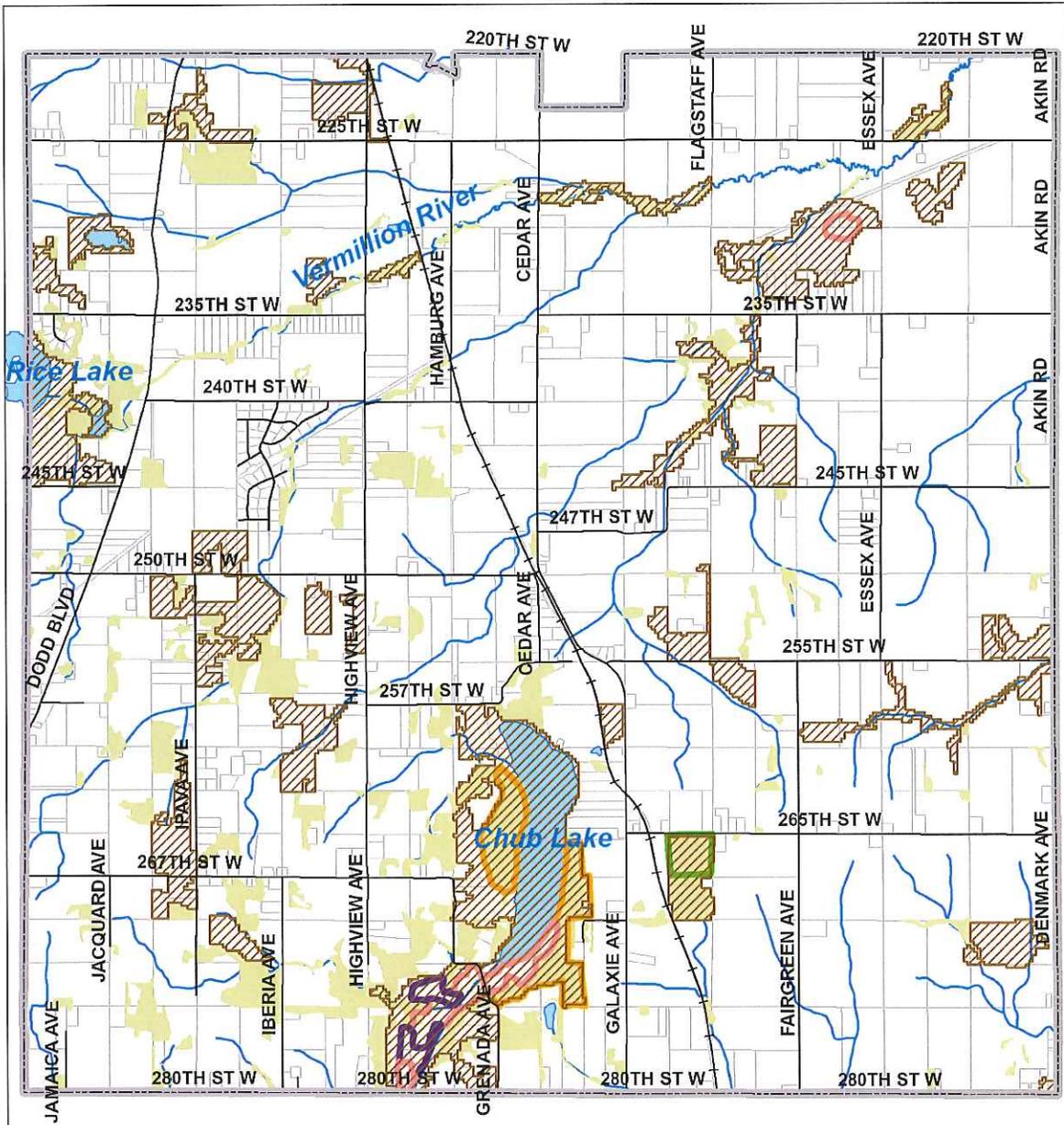
Natural Areas in the Township. The Minnesota DNR identified the native plant communities and natural areas that remain in the township in the Minnesota County Biological Survey (MCBS) and in a later study of areas of ecological significance in 2003. The WMO plans also include lists of rare species located within each watershed area. The remaining native plant communities and natural areas in the Township are significant because they provide habitat, biological diversity, connectivity, and ground water recharge areas. The Natural Areas map included in this plan (Figure 5) shows the remaining natural areas in the Township.

Natural Resource Corridors. The Township identified natural resource corridors that connect water resources and natural areas in the community in its 2030 Comprehensive Plan. The map is included in the 2040 plan and in this Local Surface Water Management Plan (Figure 6). Significant natural resources within and connected by the corridor network include:

- Chub Lake and Chub Creek and associated wetlands
- The Vermillion River corridor
- Rice Lake Area
- Wooded and forested plant communities
- Areas with native species and plant communities

Natural Resource Corridors provide habitat connections among the remaining large patches of natural areas within and outside the Township's boundaries. Dakota County has also identified a network of natural corridors within the County and Township. The location of corridors is similar to those that the Township has identified. County staff indicated that the County's corridors within the Township are primarily natural resource corridors, and the County has not located proposed trails or recreational facilities with the corridors in the Township.

**Figure 5. Natural Areas in Eureka Township Identified by the Minnesota County Biological Survey**



**Natural Areas**

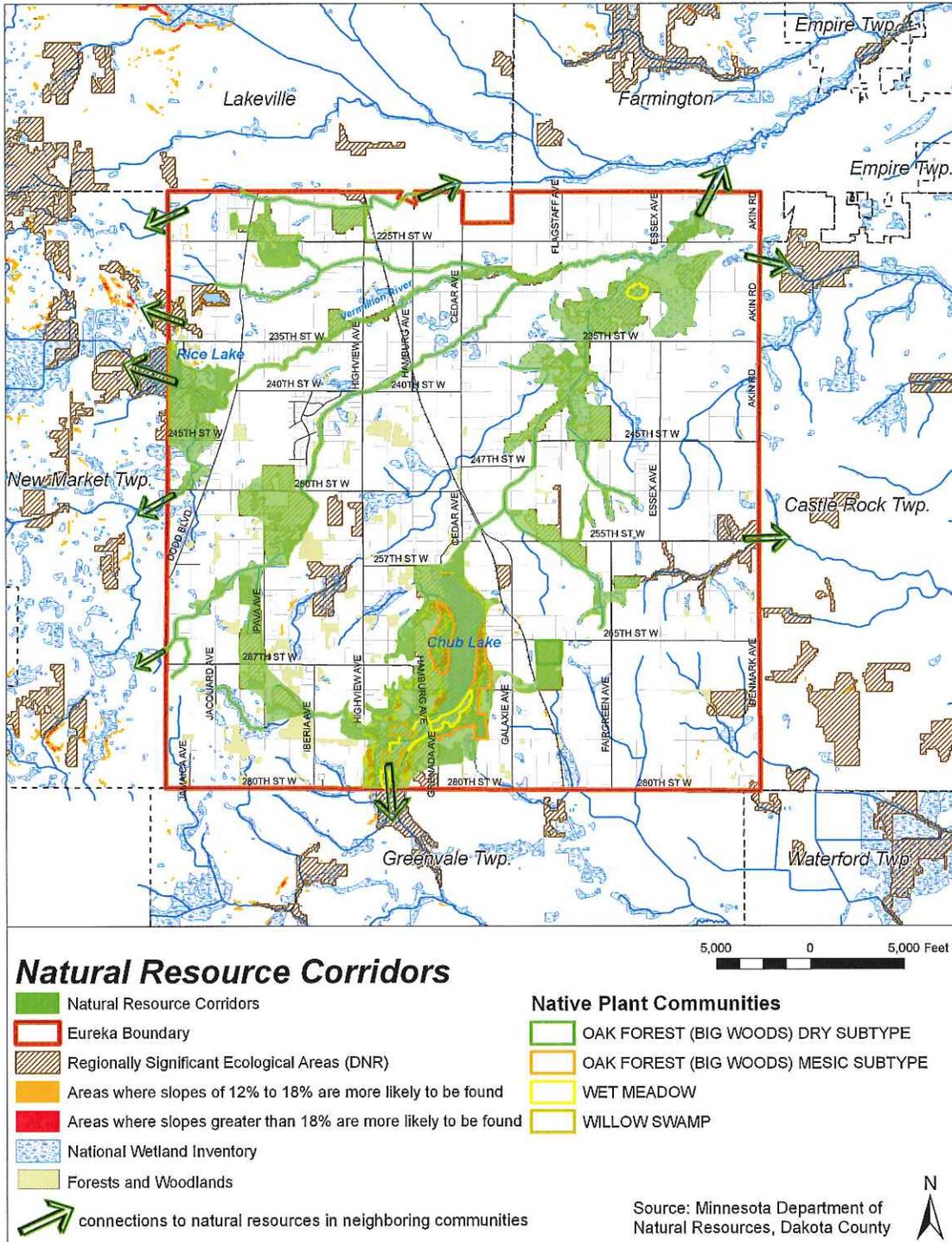
**County Biological Survey**

- OAK FOREST (BIG WOODS) DRY SUBTYPE
- OAK FOREST (BIG WOODS) MESIC SUBTYPE
- WET MEADOW
- WILLOW SWAMP

- Regionally Significant Ecological Areas (DNR)
- Forests and Woodlands



## 6. Natural Resource Corridors in Eureka Township



## IV. Existing and Potential Water Resource Problems

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### 1. *North Cannon River WMO*

The North Cannon River WMO Watershed Management Plan (2013) discusses the major water quality issues within the watershed, including Eureka Township. The District has been monitoring water quality and quantity since 1999. Issues include:

- Bacteria and nitrate concentrations

Chub Creek is on the impaired waters list for bacteria. Potential bacteria sources include failing septic systems, runoff from agricultural fields, livestock in streams, and wildlife. Sediments in water bodies may serve as a reservoir for bacteria. The NCRWMO was included in a region-wide bacteria Total Maximum Daily Load (TMDL) study in 2006. The study identified bacteria sources and possible practices to alleviate that pollution throughout southeast Minnesota.

- Turbidity

Turbidity is a measure of water clarity and is affected by suspended particles in the water. Common turbidity sources include agricultural runoff, in-stream erosion and algae.

The NCRWMO Plan notes that other water quality concerns may exist, but data are not currently sufficient to determine if conditions meet water quality standards. Dissolved oxygen concentrations are frequently near water quality standards, and may drop below levels needed to sustain aquatic life during periods of low flow and high summertime temperatures.

Chub Lake is a shallow, eutrophic lake. The lake was monitored by Metro Council staff in 2010 and 2011. The lake water quality was characterized by high nutrient concentrations and high chlorophyll-concentrations. The lake received a lake grade of F on the Metropolitan Council's lake Grading system in 2010 and 2011.

### 2. *Vermillion River Watershed Joint Powers Organization*

The VRWJPO has implemented a baseline monitoring program on the Vermillion River and its tributaries for more than a decade. A monitoring station is located just west of the Township boundary in New Market Township, and another is located on the boundary between Eureka Township and the City of Farmington. The Minnesota DNR identified most reaches of the Vermillion River as DNR-designated trout streams between 2000 and 2010.

The VRWJPO Watershed Management Plan notes the following trends in monitoring in recent years:

- Phosphorus and nitrate concentrations in the river were dramatically reduced when the MCES Empire Treatment Plant effluent was redirected.
- Nitrate concentrations have been steadily rising in the South Branch Vermillion River subwatershed, though levels do not exceed the state standard. The subwatershed has porous soils, agricultural land use, and artificial drainage systems that are the likely cause of the above-average nitrate concentrations in the South Branch.

The VRWJPO Plan identifies the following WMO-wide issues for water resource management:

- Surface water quality is threatened or impaired.
- Water quality improvement complete with other public, private, and individual priorities.
- Groundwater quality is at risk with known contamination above health risk limits for nitrates in some parts of the Watershed.
- Increasing consumption of groundwater threatens future water supply.
- Changing precipitation patterns, decreasing rainwater infiltration, and increased stormwater runoff have contributed to more intense fluctuations in river flow rate and volume.
- Public awareness and specific knowledge on the impacts of daily activities and appropriate stewardship is lacking.
- Several federal, state, and local agencies manage specific aspects of water protection, and limited coordination and communication among these agencies can create inefficiencies and cause confusion.
- Minnesota's climate is getting warmer and wetter, which poses a threat to water quality, wildlife, and infrastructure.
- The VRWJPO is a "young" organization in a dynamically changing landscape, and has not always been able to fill gaps and address new opportunities.
- Sensitive biological resources – plants fish, insects, and wildlife – in the Vermillion River are not as healthy as those in reference rivers.

Each WMO covers a larger geographic area than Eureka Township. All of the issues identified in the plans do not apply within the Township. The Township understands that management of land uses and activities has impacted water resources in the Township in

the past, and that management is required to protect the surface and groundwater resources of the Township. The next sections include the Township's goals, policies, and implementation plan to protect water resources consistent with the vision and land use plan proposed in the Township's 2040 Comprehensive Plan.

## V. Local Goals and Policies

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The following are the adopted *Surface Water Management Goals and Policies* for Eureka Township:

**Goal 1:** Eureka Township is committed to a goal of no adverse impacts to water resources in the area.

***Policies:***

- The Township will work cooperatively with local Watershed Management Organizations, state agencies, and landowners to protect local wetlands, lakes, streams and groundwater to preserve the values of these resources for future generations.
- The Township concurs with and adopts the NCRWMO and VMWJPO surface water plans and rules by reference through this LWMP.
- The Township will manage land use to support protection of surface and ground waters within the Township through its Zoning Ordinance (Ordinance 3), SSTS Ordinance (Ordinance 2010-3), and Watershed Management Ordinance (Ordinance 9).
- The Township will cooperate with the WMOs and Dakota County in managing land use to protect ground water resources, Shoreland and Floodplain areas.
- The Township will continue its current road maintenance policies that minimize impacts to water resources. Storm water runoff from road surfaces drains to and through the Township's grassy roadway drainage swales. The majority of the storm water is absorbed by vegetation. The established vegetation along the roadways prevents mobilization of roadway pollutants. The Township minimizes the use of sand and salt to the degree possible to maintain safe roadways and intersections.
- As the Township reviews Agricultural Preserves applications, it will include a review of potential erosion problems on the sites, as recommended by Dakota County.
- The Township will use its newsletter and website to periodically provide information and education to residents about surface and groundwater resources and stewardship.

## **VI. Implementation Plan**

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Eureka is a rural place. It is not an MS4 (Municipal Separated Storm Sewer System) community and therefore not subject to those rules of the Minnesota Pollution Control Agency. Instead, to achieve the goals established in this Plan, the Township will continue to manage land use to remain a rural community and will work cooperatively with other agencies, evaluating opportunities as they arise.

The Township adopted the WMO plans and its own surface water management ordinances that are consistent with the watershed organization plans and rules, and enforces the ordinances. A copy of the Watershed Management Ordinance and other ordinances listed below are included in the Appendices.

The Township will complete the specific actions listed below to implement this Local Water Management Plan:

1. The Township concurs with and adopts the Watershed Management Organizations' Watershed Management Plans, standards and rules.
2. The Township has adopted Ordinance 9: Watershed Management, and will enforce the ordinance for erosion control, surface water management, and land disturbance within the Township. The Township will update the ordinance as needed to be consistent with the WMO Management Plans.
3. The Township will continue to manage land use and subdivision to support protection of surface and ground waters through implementation of its Zoning Ordinance, Subdivision Ordinance, Mining Ordinance, and other ordinances.
4. The Township supports the cost-share and monitoring projects included in the WMO Plans and will provide information about these programs to Township residents.
5. The Township will implement its road maintenance policies, including the use of vegetated swales along its roadways to filter and absorb storm water and associated pollutants, and minimizing the use of salt and sand.

### ***Capital Improvement Plan***

The Township makes financial commitments through its annual budget process and its Comprehensive Plan, and does not have a formal capital improvement plan.

The Township does not own or maintain any storm water drainage facilities.

## **VII. Plan Timeline and Amendment Procedures**

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The Township's local surface water plan will be amended as needed with future updates to the District plans and the Township's Comprehensive Plan.

## **ORDINANCE 9: WATER MANAGEMENT ORDINANCE**

### **Chapter 1: EROSION CONTROL AND STORMWATER MANAGEMENT REQUIREMENTS FOR LAND DISTURBANCES**

#### **Section 1: Purpose**

- 1.1 The purpose of this Chapter is to prevent or reduce the negative impacts of storm water runoff and to provide for the protection of water quality and natural resources by requiring that land disturbance activities comply with Township minimum standards for permit requirements, plan reviews, erosion control, storm water management and buffers.
- 1.2 This Chapter requires that all land disturbance activities, whether requiring a permit under this Chapter or otherwise, shall not result in nuisance conditions or threaten public safety, health and welfare. All work must be performed in conformance with the goals and strategies of the North Cannon River WMO Watershed Management Plan.

#### **Section 2: Coverage**

- 2.1 This Chapter covers all land disturbances, within the jurisdictional boundaries of Eureka Township.
- 2.2 Unless the Township has determined the activity to be exempt per Section 2.4, all proposed land disturbances that are equal to or greater than one (1) acre in size, and including the disturbance of less than one (1) acre that is part of a larger common plan of development or sale that will ultimately disturb greater than one (1) acre, and/or result in the temporary or permanent placement of or stockpiling of fifty (50) cubic yards or more of soil materials, shall apply to the Township for a permit and submit a project Storm Water Pollution Prevention Plan (SWPPP) for review and approval.
- 2.3 No land disturbance shall be allowed until the Township has approved the project SWPPP and issued a permit.
- 2.4 The following activities are not regulated under this Chapter and are Exempt;
  - A.) Minor land disturbance activities such landscaping, repairs, and maintenance work that are less than one (1) acre in size and not part of a larger common plan of development or sale.

- B.) Land disturbances to construct, install, or maintain public or private utilities that are less than one (1) acre in size and not part of a larger common plan of development or sale.
- C.) All USDA/NRCS agricultural activities for the production of agricultural, horticultural, or silvicultural crops and livestock production including the installation or maintenance of drainage tile lines and fencing for livestock or other agricultural purposes.
- D.) All wetland activities within or adjacent to a delineated wetland, authorized and performed in conformance with the rules of the Minnesota Wetland Conservation Act (WCA).
- E.) Emergency repair work requiring immediate action, provided the disturbed area is limited to the minimum area needed to address the emergency and the area is stabilized in accordance with this Chapter's requirements as soon as possible. A permit will be required for all subsequent or additional work.
- F.) Commercial mining activities including the extraction, crushing, washing, refining or processing of sand, gravel, rock, black dirt, peat and soils and their removal from the site.

**Section 3: Definitions**

- 3.1 For the purposes of this Chapter, the following terms, phrases, words, and their derivatives must have the meaning stated in Section 3.4 and shall include by reference the definitions found in Appendix "B" of the most current NPDES Construction Permit.
- 3.2 All references to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections.
- 3.3 The words "shall" and "must" are mandatory; the word "may" is permissive.
- 3.4 Definitions:

Applicant Any person or entity that applies to the Township for a permit under this Chapter.

BMPs Best Management Practices as described in the MPCA Protecting Water Quality in Urban Areas Manual.

Buffer Strip An area of dense vegetated ground cover abutting or surrounding a wetland, water body or watercourse that filters sediment and retains nutrients from storm water runoff.

Discharge The runoff or drainage of storm water, including snowmelt, from a project site. The discharge point is the location of a flow outlet or where flows cross a property line.

Exposed Soil Areas All areas where the vegetation (trees, shrubs, brush, etc.) has been removed or has not been established. This includes topsoil stockpile areas, fill/borrow areas and disposal areas.

Impervious Surface A constructed hard surface that either prevents or retards the entry of water and causes water to run off the surface in greater amounts than would have run off prior to the construction of the surface. Examples include: rooftops, sidewalks, patios, driveways, parking lots, storage areas, concrete, asphalt, gravel roads; and includes areas where the native soils have been densely compacted.

Infiltration The percolation of water into the ground to provide water quality treatment, groundwater recharge and reduce the amount of storm water runoff.

Land Disturbance All activities that removes or buries vegetative covers, exposes soil areas and/or results in a change in surface topography including: construction activity, excavation, fill, grading, stockpiling soil, the construction of any structure, and/or any other activity that may cause or contribute to erosion or the movement of sediment. (Agricultural activities are not a land disturbance under this Chapter. See Section 2 for other exempt activities.)

Landlocked Basin A basin that is one acre or more in size and does not have a natural or publicly maintained outlet at or below the calculated flood elevation.

LID Low Impact Development – Site designs to reduce storm water impacts and mimic natural conditions.

MPCA Minnesota Pollution Control Agency – Administrator of the NPDES permit program.

NPDES National Pollutant Discharge Elimination System – State permit program to protect water quality.

Nuisance Condition Any condition resulting in or likely to result in any damages, degraded water quality, increased erosion, unstable conditions, flooding, lack of easement, lack of capacity, disrepair and all threats to public health, safety and welfare.

Ordinary High Water (OHW) The boundary of water basins, watercourses, public waters and public water wetlands and:

- (1) The ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial;
- (2) For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel; and
- (3) For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

Runoff Coefficients (RCNs) An assigned number used in hydrologic models to represent the amount of precipitation that is not infiltrated into the surface upon which it falls. The higher the RCN; the greater the runoff amount.

Structure Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and storage areas.

SWCD Dakota County Soil and Water Conservation District

SWPPP Storm Water Pollution Prevention Plan – A project plan identifying the existing site conditions, the proposed work and specific actions to be taken to protect water quality per the NPDES permit.

USDA/NRCS agricultural activities – All agricultural activities for the production of agricultural, horticultural, or silvicultural crops and livestock production including the installation or maintenance of drainage tile lines and fencing for livestock or other agricultural purposes regardless of whether the land owner or land operator is enrolled in the Federal Farm Program.

**Section 4: Erosion and Sediment Control Standards**

All projects discharging to Special Waters as defined in Minn. R. 7050.0180 shall comply with the additional requirements of most current Appendix "A" of the NPDES Construction Permit. Where provisions of Appendix "A" conflict with the requirements elsewhere in this Chapter, the provisions in Appendix "A" shall take precedence.

- 4.1 All land disturbances requiring a permit under this Ordinance, shall submit a Storm Water Pollution Prevention Plan (SWPPP) to the Township for review and approval.
- 4.2 The SWPPP must clearly show the nature and extent of the proposed work and shall specify the work must be performed in conformance with this Ordinance and the most current requirements of the NPDES Construction Permit.
- 4.3 The Township may require the applicant to submit any additional information or data it determines to be necessary to complete its review. Submittals determined by the Township to be incomplete or otherwise unacceptable for the purposes of this Chapter shall be returned to the applicant for correction and resubmittal.
- 4.4 The minimum submittal requirements are:
  - A.) A detailed SWPPP in compliance with the most current NPDES Construction Permit.
  - B.) The following additional information shall be submitted to the Township for review along with the SWPPP information:
    1. Location of surface waters including wetlands delineations, lakes, streams, shoreland zoning, floodplains, 303(d) Impaired Waters, Outstanding Resource Value Waters and Special Waters.
    2. Identify all unstable areas such as steep slopes, ravines, and gullies.
    3. Discharge points where predevelopment and post development flows cross property lines.
    4. Copies of approved permits from local, state and federal agencies applicable to the work.

**Section 5: Storm Water Management Standards**

All projects discharging to Special Waters as defined in Minn. R. 7050.0180 shall comply with the additional requirements of the most current Appendix "A" of the NPDES Construction Permit. Where provisions of Appendix "A" conflict with the requirements elsewhere in this Chapter, the provisions in Appendix "A" shall take precedence.

- 5.1 In addition to the SWPPP, all land disturbances cumulatively creating a total of one (1) or more acres of new impervious surface must also submit engineered

construction plans and calculations to the Township for review and approval. The cumulative new impervious surface shall include both the onsite areas and the offsite areas where impervious surfaces have been created in association with the work. (i.e., new streets, lane widening, etc)

- 5.2 The engineered construction plans and calculations must clearly show the nature and extent of the proposed work and specify a storm water management system designed to effectively manage storm water, for the both onsite and offsite work areas, in conformance with this Chapter, the most current NPDES Construction Permit and all other applicable Federal, State and/or Local regulatory requirements.
- 5.3 The Township may require the applicant to submit any additional information or data it determines to be necessary to complete its review. Submittals determined by the Township to be incomplete or otherwise unacceptable for the purposes of this Chapter shall be returned to the applicant for correction and resubmittal.
- 5.4 The minimum engineered construction plan submittal requirements are:
  - A) A registered professional engineer must sign all engineered construction plans and calculations.
  - B) The engineered construction plans and calculations must include sufficient information for the Township to evaluate the changes to the storm water drainage characteristics within the watershed areas affected by the proposed land disturbance activity and the designed performance of the new system.
  - C) A written assessment that identifies the potential for downstream nuisances conditions.
  - D) The following information shall be submitted to the Township for review:
    1. A detailed SWPPP in compliance with the most current NPDES Construction Permit.
    2. Engineered construction plans showing all proposed onsite and offsite site improvements and all land disturbance areas.
    3. Drainage exhibits identifying the drainage areas, patterns, pervious/impervious surface covers and assigned RCNs for the pre-developed and post-developed conditions.
    4. Map identifying the hydrological soil types.
    5. A Drainage Summary and Drainage Exhibit Identifying the existing and proposed peak discharge rates at each project discharge point for the 2, 10 and 100-year events and volume for the 1-year event.
    6. Supporting documentation used to determine peak discharge rates and volumes.
    7. First floor and lowest opening elevations for all existing and proposed buildings and information regarding whether the structure is or is not in a land-locked area. Identify location and elevation of all emergency overflows.

- 8. The normal and high water and 100-year flood elevations for all adjacent water bodies whether natural or created and the delineation of all areas subject to flooding at the 100-yr flood elevation.
  - 9. Location and size of all existing public and private drains and tiles lines.
  - 10. Identification of the downstream drainage conditions at each project discharge point.
  - 11. Location of all wetlands, water bodies, watercourses, 303(d) Impaired Waters, Outstanding Resource Value Waters and Special Waters.
  - 12. Copies of approved permits from local, state and federal agencies applicable to the work.
- 5.5 All storm water must be discharged in a manner that shall not cause nuisance conditions, erosion in receiving channels or on down slope properties, or inundation in wetlands causing a significant adverse impact to the wetlands as determined by the regulating governmental agency.
- 5.6 The minimum design capacity of drainage systems shall be the ten (10) year storm event and shall be designed to convey runoff from a one hundred (100) year event without significant damage or significant risk to human health and safety.
- 5.7 Discharge Rate Controls: Storm water discharges shall be controlled so that at each project discharge point, the pre-development two (2), ten (10), and one hundred (100) year storm event peak discharge rates are not increased in the post-developed condition.
- 5.8 The hydrological model calculations used to determine the pre-developed and post-developed discharge rates and volume shall use the Natural Resources Conservation Service (NRCS) SCS TR-20 and TR-55 Methods as defined in the current Hydrology Guide for Minnesota.
- 5.9 The SCS TR-20 and TR-55 model calculations shall use rainfall depths for the one (1), two (2), ten (10) and one hundred (100) year, 24-hour storm events of 2.4, 2.8, 4.2 and 6.0 inches respectively and Type II rainfall distribution.
- 5.10 Pre-development model calculations shall be based on the underlying hydrological soil group and the SCS Runoff Curve Numbers (RCNs) assigned in Table 1.

Table 1 – Pre-Development Runoff Curve Numbers

Hydrologic Group	Soil	A	B	C	D	Impervious
Runoff Number	Curve	39	61	74	80	98

- 5.11 Post-development model calculations shall be based on the underlying hydrological soil group and assigned SCS Runoff Curve Numbers (RCNs) for

urban areas that are most appropriate to the proposed post-developed surface cover.

- 5.12 All RCNs used shall assume an undrained soil condition unless the sub-drainage system is publicly owned and maintained.
- 5.13 All projects creating one (1) or more acres of new impervious surface shall incorporate Low Impact Development (LID) practices into the project design to the extent that the pre-development one (1) year storm event runoff volume is not increased in the post-developed condition.

Examples of LID strategies to reduce runoff volumes may include:

- A. Creating as much un-mowed natural area on the site as possible. RCNs are lower for wooded, meadow and buffer strip areas than mowed areas.
  - B. Minimizing new impervious surfaces wherever possible.
  - C. Directing roof drains and pavement drainage to natural areas rather than to streets, storm sewers and ditches to reduce the total area of connected impervious surface.
  - D. Using raingardens and natural depressions to retain runoff on-site.
- 5.14 Prior to construction, silt fences are required to surround natural areas and areas where infiltration practices will be located. These areas must be protected from construction activity, sediment and compaction. These areas shall receive the same level of protection during construction as that given to Individual Sewage Treatment System (ISTS) septic sites.
  - 5.15 If wet sedimentation basins are part of the storm water management system, the basins shall be designed in compliance with the Walker Method (1987); and must have an armored emergency overflow set at the 100-year level. The top of pond berms must be at least 1-foot above the emergency overflow and be at least 10-feet wide to provide maintenance access. Pond outlets must have a skimming device. The minimum water quality volume that must be treated by the project's permanent storm water management system shall be one half (1/2) inch of runoff from the new impervious surfaces created by the project.
  - 5.16 Public Drainage and Utility Easements are required for all storm water facilities, wetlands, buffer strips, floodplains and connecting drainage routes. All easements shall include a connection to a public road for access and maintenance.
  - 5.17 Public drainage systems shall not rely upon the continued operation of a private drainage system (such as a tile line system). All storm water facilities must be designed assuming that private systems will no longer function unless a permanent easement is provided for future maintenance and a professional engineer has certified the private system has design capacity and service condition that make it suitable as a component of the public drainage system.

5.18 Structure Lowest Floor Elevations shall be based on the following:

In land-locked basins areas: The lowest floor elevation shall be the lesser of 1-foot above the surveyed basin overflow; or 3-feet above the high water level of the basin calculated assuming 100-year back to back events under full build-out conditions for the contributing watershed and assuming all private drainage systems no longer function.

Where the 100-year flood level has been established: The lowest floor elevation shall be the greater of at least 1-foot above the 100-yr flood elevation or 1-foot above the emergency overflow.

For public waters and public water wetlands (DNR protected water bodies) where the 100-yr flood elevation has not been established: The lowest floor elevation shall be at least 3 feet above the ordinary high water level (OHW).

In all other cases: The minimum floor elevation shall be at least 3 feet above the highest known water level.

- 5.19 Subject to Township approval, an applicant may also make an in-kind or a monetary contribution to the development and maintenance of community storm water management facilities designed to serve multiple land disturbing and development activities undertaken by one or more persons, including the applicant.

**Section 6: Vegetated Buffer Protection Standards for Rivers, Streams and Wetlands**

All projects discharging to Special Waters as defined in Minn. R. 7050.0180 shall comply with the additional requirements of the most current Appendix "A" of the NPDES Construction Permit. Where provisions of Appendix "A" conflict with the requirements elsewhere in this Chapter, the provisions in Appendix "A" shall take precedence.

- 6.1 Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, Section 103G.245, the Wetland Conservation Act, and regulations adopted hereunder including the Department of Natural Resources (DNR) and the Corp of Engineers (COE). The applicant is responsible to research and obtain all applicable permits.
- 6.2 All construction storm water discharges into waters of the state shall be in conformance with the most current NPDES Construction Permit and all other applicable local, state and federal regulations. The applicant is responsible to research, obtain permits and perform all work in compliance with all applicable requirements for discharges, including but not limited to:

- A) Into or within 2000-feet of Special Waters (trout waters, fens, scientific natural areas, etc)
  - B) Into 303(d) Impaired waters
  - C) Into outstanding resource value waters (ORVWs)
  - D) Into public waters and wetlands
  - E) Requiring further environmental review (EAW, EIS, AUAR etc)
  - F) Affecting endangered or threatened species
  - G) Affecting historic places or archeological sites
  - H) Dakota County Shoreland and Floodplain Districts
- 6.3 Wetland may be used for storm water storage and treatment only if the use will not adversely affect the function and public value of the wetland as determined by the appropriate regulating governmental agency.
- 6.4 If any land disturbance is within two hundred (200) feet of a wetland, a wetland delineation report and functional assessment for vegetative diversity shall be submitted to the Township and appropriate regulating governmental agency for review and approval prior to Township issuance of a permit.
- 6.5 All structures shall have a minimum setback of 35-feet from the delineated edge of wetlands.
- 6.6 A permanent vegetative buffer strip, at least 25-feet in width, is required parallel to and adjoining all delineated wetland boundaries, water bodies, watercourses and streams to filter storm water runoff. The Township may require wider buffers widths for the protection of higher value resources. Buffer strips are not required around storm water ponds or roadside ditches.
- 6.7 The first 25-feet of the buffer strip as measured from the water body, stream or wetland edge cannot be cleared, graded or otherwise disturbed during construction without prior written Township approval. Grading within the buffer for the purpose of accommodating house pad or yard elevations is prohibited. The buffer perimeter must be surrounded by silt fencing prior to construction. Adjacent construction grading or storm water outlets must not channelize surface flows into or otherwise decrease the effectiveness of the buffer.
- 6.8 Preserving the existing acceptable vegetation within the buffer strip in an undisturbed state is required. Mowing is prohibited unless completed as part of an approved management plan. Acceptable vegetation consists of a continuous, dense layer of perennial grasses and/or an overstory of trees and shrubs that allows sheet-flow surface drainage to slowly pass to filter sediments and retain nutrients.
- 6.9 If unacceptable vegetation is to be removed within a buffer strip, it must be replaced with acceptable vegetation using a MnDOT, NRCS, or BWSR seed mixture and/or native trees and shrubs. This new vegetation must be established

within a timeframe that minimizes bare soil exposure or other erosion-prone conditions. Unacceptable vegetation includes noxious weeds and plants, low density with bare soil areas, channelized flow or other condition making it unlikely to filter sediments and retain nutrients.

**Section 7: Procedural Requirements**

- 7.1 The Township shall only grant approval for work in compliance with this Chapter.
- 7.2 The Township reserves the rights to withhold permit inspections and/or the issuance of new permits for sites that are in violation of any state or local regulations until such violations have been resolved.
- 7.3 The Township shall collect fees as set forth in Ordinance 7 to cover reimbursement for its costs to conduct meetings, plan reviews, permit administration, inspection, enforcement and overall implementation of this Chapter.
- 7.4 The issued permit only authorizes the work identified on the approved SWPPP and approved engineered construction plans. Disturbances outside of those identified on those approved plans are in violation of the permit and subject to enforcement actions.
- 7.5 The applicant shall not make field changes or modify the approved activity or plans without prior written authorizations from the Township. The Township may require the applicant to submit revised plans and/or additional information to evaluate the change.
- 7.6 The Township shall retain written records and approved plans.
- 7.7 The issuance of a permit based on approved plans, shall not prevent the Township from thereafter requiring the corrections of errors found in the plans or prevent corrective actions.
- 7.8 The Township may revoke an approved permit if it was issued in error or on the basis of incorrect information supplied or in violation of any provision of this Chapter.

**Section 8: Financial Securities**

- 8.1 The Township may at its option require a supplemental Developers Agreement to define specific project requirements in addition to the requirements of this Chapter.
- 8.2 If the Township requires a Developers Agreement for the project, a financial security to guarantee the performance of the SWPPP related work as required

under this Chapter shall be retained as a separate item from the balance of the project securities. The SWPPP security shall not be used as securities for other activities such as the earthwork, street construction, water, sanitary and storm sewer utilities, site amenities, etc.

- 8.3 The minimum amount of the SWPPP security held shall be based on three thousand (\$3,000) dollars per cumulative acre of land disturbance. For projects that discharge to a Special Waters, the minimum SWPPP security shall be increased to five thousand (\$5,000) dollars per cumulative acre of land disturbance. The Township may require additional SWPPP securities if needed.
- 8.4 Following a written notice, failure by the applicant to take appropriate action to complete SWPPP related work within the timeframe specified in the NPDES Construction Permit shall be considered sufficient cause for the Township to act against the SWPPP security. The Township shall use the security to finance any corrective or remedial work needed at the applicant's expense including staff time, attorneys' fees.
- 8.5 If at any time the SWPPP security falls below 50% of the required amount, the applicant shall restore the security to the required amount.
- 8.6 When this Chapter has required the plans and calculations to be signed by a registered professional engineer, the applicant's engineer shall provide a written statement to the Township certifying the project is complete and was constructed as per the approved plans in compliance with this Chapter. The Township shall review the project for satisfaction of the permit requirements and issue a Certificate of Completion prior to releasing the SWPPP securities.
- 8.7 At the Township's option, the balance of the SWPPP security may be held until the expiration of the warranty period, if any.

#### **Section 9: Variance**

- 9.1 The Township may grant variances from the literal provisions of this Chapter. However, a variance shall only be granted when the terms of the variance are consistent with and in harmony with the general purpose and intent of the Chapter in cases where the strict enforcement of the Chapter will cause undue hardship. Conditions may be imposed on a granted variance to limit its scope to only those portion of the Chapter found to be a hardship.
- 9.2 "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions of the Chapter; the plight of the applicant is unique to the land and not created by the applicant; and the variance, if granted will not adversely affect the essential character of the locality or other adjacent land. Economic consideration alone shall not constitute a hardship.

- 9.3 Variances must be submitted to the Township in writing and contain sufficient information to describe and support the practical difficulty or particular hardship claimed as the basis for the variance.
- 9.4 Prior to Township Board action, the Township shall submit a copy of the variance request to the North Cannon River Watershed Management Organization (NCRWMO) for review and comment. The review and comment period shall be no greater than 45 days. The Township must consider the NCRWMO's recommendations before deciding whether to grant the variance to the applicant.
- 9.5 The Township's variance response must be in writing, and include the justification for either granting or denying the requested variance.
- 9.6 The variance shall become void one (1) year after being granted, unless used.
- 9.7 If any of the variance's conditions are violated, the Township may revoke the variance.

**Section 10: Enforcement**

- 10.1 The Township shall be responsible enforcing this Ordinance.
- 10.2 Any person, firm, or corporation failing to comply with or violating any of these regulations, shall be deemed guilty of a misdemeanor and be subject to a fine or imprisonment or both. All permits issued by the Township, including land use and building permits may be suspended until the violation is resolved. Each day that a separate violation exists shall constitute a separate offense.

**Section 11: Right of Entry and Inspection**

- 11.1 The applicant shall allow the Township and their authorized representatives, upon presentation of credentials to:
  - A. Enter upon the permitted site for the purpose of obtaining information, examination of records and conducting investigations or surveys.
  - B. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations.
  - C. Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this permitted site.
  - D. Inspect the storm water pollution control measures required by the Township.
  - E. Sample and monitor any items or activities pertaining to permits issued by the Township.

**Section 12: Abrogation and Greater Restrictions**

12.1 The provisions of this Chapter are not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter imposes greater restrictions, the provisions of this Chapter shall prevail. All other Chapters inconsistent with this Chapter are hereby repealed to the extent of the inconsistency only.

**Section 13: Severability**

13.1 The provisions of this Chapter are severable, and if any provisions of this Chapter, or application of any provision of this Chapter to any circumstance, are held invalid, the application of such provision to other circumstances, and the remainder of this Chapter must not be affected thereby.

## Chapter 2: Water Resources Management

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**SECTION 1.  
ORDINANCE**

This chapter shall be known as the "Water Resources Management Chapter" except as referred to herein as "this Chapter."

**SECTION 2. PURPOSE**

The purpose of this Chapter is to protect the public health, safety, and welfare through the effective management of water resources in this Community. It is intended that the requirements, regulations, and performance standards of this Chapter will:

- A. Implement the Dakota County Rural Collaborative Local Water Management Plan,
- B. Protect and preserve the function and value of water resources,
- C. Prevent unregulated land disturbance activities which may harm water resources,
- D. Protect wetland functions consistent with the Wetland Conservation Act,
- E. Reduce harmful effects of erosion and sedimentation,
- F. Reduce property damage by seasonal flooding,
- G. Improve surface and groundwater quality.

**SECTION 3. SCOPE AND AUTHORITY**

3.01 Scope. The terms, standards, and regulations of this Chapter shall apply within the portion of the Community located within the Vermillion River Watershed. No land shall be subdivided or disturbed, except in compliance with the terms, standards, and regulations as set forth herein.

3.02 Authority. The Community shall act as the Local Governmental Unit (LGU) for the permitting and enforcement of this Chapter, except as otherwise specifically provided herein.

3.03 Referral to Vermillion River Watershed Joint Powers Organization (VRWJPO). Prior to the approval of a permit involving any following conditions, the Community must forward land alterations plans to the VRWJPO for review and comment:

- A. Variances from this Chapter that affect surface water or impact surface water/groundwater interactions,
- B. Diversions,
- C. Intercommunity flows (upon request of adjoining communities),
- D. Land disturbance area of 40 acres or more, and
- E. Other proposed activities, as identified in the VRWJPO Plan.

3.04 General Plan Submittal Requirements. In addition to the plan submittal requirements identified by the Community for the various permit applications in

this Chapter; any permit submittal requiring review by the VRWJPO in Section 3.03 above shall include two full sets of plans and two reduced sets (maximum 11" X 17") for referral by the Community to the VRWJPO.

## SECTION 4. DEFINITIONS

4.01 Application and Interpretation. When not inconsistent with the context, words used in the present tense include the past and future tense, and words in the singular number include the plural number. Masculine gender reference includes feminine. The word "person" includes individual, firm, company, corporation, partnership, trust and other legal entities. The words "shall" and "must" are mandatory, while the words "may" or "should" are permissive.

4.02 Definitions. For the purposes of this Chapter, the following terms, words, and phrases have the meaning Stated below. Terms, words, or phrases not defined in this Chapter shall have a dictionary or customary meaning.

Agricultural Activity - The use of land for the growing and/or production and wholesale distribution of field crops, livestock, and livestock products for the production of income or own use, including but not limited to the following:

1. Field crops, including but not limited to, barley, beans, corn, hay, oats, potatoes, rye, sorghum, and sunflowers
2. Livestock, including but not limited to, dairy and beef cattle, goats, sheep, hogs, horses, poultry, game birds and other animals, including deer, rabbits and mink
3. Livestock products, including but not limited to, milk, butter cheese, eggs, meat, fur, and honey
4. Trees, shrubs, bushes, and plants for wholesale distribution
5. Sod farming
6. Orchards

Agricultural Preserve - A land area created and restricted according to Minnesota Statutes 473H to remain in agricultural use

Alteration or Alter - When used in conjunction with public waters or wetlands, any activity that will change or diminish the course, current or cross section of public waters, public water wetlands, or wetlands.

Applicant - A person or entity, or representative thereof, that applies for a building permit, subdivision approval, or a permit to allow land-disturbing activities. Applicant also means that person's agents; employees, and others acting under this person's direction.

Bankfull Channel Width - The channel width of a stream, creek, or river at bankfull stage.

Bankfull Stage - The water level in a stream channel, creek, or river where the flow just begins to leave the main channel and enter the active floodplain.

Best Management Practices (BMPs) – Techniques proven to be effective in controlling runoff, erosion and sedimentation, including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR, 1988); Protecting Water Quality in Urban Areas (MPCA, 2000); the Minnesota Small Sites BMPS Manual (MPCA 2005); and, other sources as approved by the Vermillion River Watershed Joint Powers Organization (VRWJPO).

Board – The Board of Supervisors or Town Board of a township.

BWSR – Minnesota Board of Water and Soil Resources

Buffer – An area of natural, minimally maintained, vegetated ground cover abutting or surrounding a major waterway, public waters wetland, or wetland.

Council – The City Council of a city.

Community – A city or township as defined in Minnesota Statutes 462.352, subdivision 2, and "the Community" shall mean the community adopting this Chapter.

Community Building Inspector – The Building Inspector or building Official hired by the Community to implement and enforce the provisions of this Chapter.

Community Engineer – The registered professional Engineer hired by the Community to implement and enforce the provisions of this Chapter.

Community – A city or township as defined in Minnesota Statutes 462.352, subdivision 2, and "the Community" shall mean the community adopting this Chapter.

Compensatory Storage – Excavated volume of material below the floodplain elevation required to offset floodplain fill.

County – Dakota County

Dakota SWCD or SWCD – The Dakota County Soil and Water Conservation District.

Dead Storage – The volume of space located below the overflow point of a basin, pond or landlocked basin.

Developer – A person, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a subdivision or land disturbance activity.

Development – The construction of any public or private improvement project; infrastructure, structure, street or road, or the subdivision of land.

Easement – A strip of private-owned land which is legally described and encumbered for use by another party or public entity for a specific purpose described in an easement document, recorded by Dakota County.

Erosion - The wearing away of the ground surface as a result of wind, flowing water, ice movement or land disturbing activities.

Erosion and Sediment Control Plan – A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities with standards.

Excavation- The artificial removal of soil or other earth material.

Fill – The deposit of soil or other materials by artificial means.

Filtration – A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed, vegetated strip, or buffer to improve water quality and slow routed through a filter bed, vegetated strip, or buffer to improve water quality and slow down stormwater runoff.

Floodplain – The area adjacent to a waterbody that is inundated during a 100-year flood.

Floodplain Storage – The volume of space available for flood waters within the floodplain.

Fragmentation – The breaking up of an organism's habitat into discontinuous chunks.

Green Acres – Real property or real estate that qualifies as agricultural property having agricultural use under the Minnesota Agricultural Property Tax Law, Minnesota Statutes Section 273.111.

Hydric Soil - A soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper horizon.

Hydrophytic Vegetation – Plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Infiltration – A stormwater retention method for the purpose of reducing the volume of stormwater runoff by transmitting water into the ground through the earth's surface.

Impervious Surface – A constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, roads, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.

Infrastructure - The system of public works for a county, state, or municipality including, but not limited to, structures, roads, bridges, culverts, sidewalks, stormwater, management facilities, conveyance systems and pipes, pump stations, sanitary sewers and interceptors, hydraulic structures, permanent erosion control and stream bank protection measures, water lines, gas lines, electrical lines and associated facilities, and phone lines and supporting facilities.

Land Disturbing Activity (Land Disturbance) – Any change of the land surface, including removing vegetative cover, excavation, fill, grading, stockpiling soil, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into waterbodies. For the purposes of this Chapter, a land disturbing activity does not include agricultural activities.

Landlocked Basin – A water basin one acre or more in size that does not have a natural outlet at or below the existing 100-year flood elevation as determined by the 100-year storm event.

Local Governmental Unit (LGU) – Municipalities located wholly or partly within the VRWJPO with adopted local water management plans and chapters approved by the VRWJPO, and Dakota County within its area of floodplain jurisdiction.

Lot – A parcel of land platted or described by metes and bounds, registered land survey, or other accepted means and separated from other parcels or portions by said description, for the purpose of sale, lease, or separation thereof, as recorded by Dakota County.

Lot of Record – Any lot that legally existed prior to the adoption date of this Chapter.

Major Waterways – Intermittent and perennial streams as shown on Map 1 attached to this Chapter.

Meander – A sinuous bend of a river, stream, or creek.

Meander Belt – The area between lines drawn tangential to the extreme limits of fully developed meanders.

Minimum Impact Alignment - Is the alignment for a proposed road, street, utility, path or access that creates the smallest area of impact to a buffer, waterway, or floodplain for activities that cross a buffer, waterway, or floodplain the minimum impact alignment is one that crosses perpendicular, or near perpendicular, to the

longitudinal orientation of the buffer, waterway, of floodplain as reasonable to serve to intended purpose of the improvement.

Municipality – A city or township.

Native Vegetation – Plant species that are indigenous to Minnesota, or that expand their range into Minnesota without being intentionally or unintentionally introduced by human activity, and are classified as native in the Minnesota Plant Database (Minnesota DNR, 2002).

Noxious Weeds – Any plant listed as a prohibited, restricted or secondary weed under Minnesota Rule Chapter 1505.

Ordinary High Water Level (OHWD) - The boundary of water basins, watercourses, public waters, and public waters wetlands and:

- a. The ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominately aquatic to predominately terrestrial;
- b. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel; and
- c. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

Outlot – A platted parcel of land, designated alphanumerically as an outlot (for example – Outlot A), as recorded by Dakota County, and used to designate one of the following: land that is part of the subdivision but is to be subdivided into lots and blocks at a later date; land that is to be used for a specific purpose as designated in a development agreement or other agreement between the LGU and the developer; or for a public purpose that may have restricted uses, such as a park, stormwater pond, or buffer.

Plat – The drawing or map of a subdivision prepared for filing of record pursuant to Minnesota Statutes Chapter 505, as amended.

Pre-development Condition – The land use on a site that exists immediately prior to a proposed alteration.

Public Waters – Public Waters means:

- a. Water basins assigned a shoreland management classification by the commissioner of the Minnesota Department of Natural Resources under Minnesota Statutes Sections 103F.201 to 103F.202,
- b. Waters of the state that have been finally determined to be public waters or navigable waters by a court of competent jurisdiction,
- c. Meandered lakes, excluding lakes that have been legally drained,

- d. Water basins previously designated by the commissioner of the Minnesota Department of Natural Resources for management for a specific purpose such as trout lakes and game lakes pursuant to applicable laws,
- e. Water basins designated as scientific and natural areas under Minnesota Statutes Section 84.033,
- f. Water basins located within and totally surrounded by publicly owned lands;
- g. Water basins where the state of Minnesota or the federal government holds title to any of the beds or shores, unless the owner declares that the water is not necessary for the purposes of the public ownership,
- h. Water basins where there is a publicly owned and controlled access that is intended to provide for public access to the water basin,
- i. Natural and altered watercourses with a total drainage area greater than two square miles,
- j. Natural and altered water resources designated by the commissioner of the Minnesota Department of Natural Resources as trout streams, and
- k. Public waters wetlands, unless the statute expressly states otherwise.

Public Waters Wetland – All types 3, 4, and 5 wetlands, as defined in United States Fish and Wildlife Service Circular No. 39 (1971 edition), not included within the definition of public waters, that are ten or more acres in size in unincorporated areas or 2-1/2 or more acres in incorporated areas.

Redevelopment – The rebuilding, repair, or alteration of a structure, land surface, road or street, or facility.

Right-Of-Way (ROW) – A strip of land occupied or intended to be occupied by a public street and acquired in fee title, or by registration, or by dedication for public use by the recording of a plat, and including railroad corridors owned in fee title.

Runoff – Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment – Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation – The process or action of depositing sediment.

Sinuuous – The curving patterns of a river, stream, or creek.

Soil – The unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this Chapter, stockpiles of sand gravel, aggregate, concrete or bituminous materials are not considered "soil" stockpiles.

Stewardship Plan – A conservation plan completed for agricultural land and activities accepted by the Dakota Soil and Water Conservation District or the VRWJPO.

Stormwater – Under Minnesota Rule 1077.0105, subpart 41b, stormwater means "precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff and drainage." According to the Federal Code of Regulations under 40 CFR 122.26 [b][13], stormwater means "stormwater runoff, snow melt runoff and surface and drainage." Stormwater does not include construction site dewatering.

Stream Type – One of numerous stream types based on morphology defined by Rogen, D., 1996, Applied River Morphology.

Stormwater Pollution Prevention Plan (SWPPP) – A plan for stormwater discharge that includes erosion prevention measures and sediment controls that, when implemented, will decrease soil erosion on a parcel of land and decrease off-site nonpoint pollution.

Structure – Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures," water and storage systems, drainage facilities and parking lots.

Subdivision - The separation of an area, lot, or tract of land under single ownership into two or more parcels, tracts, or lots.

VRWJPO – Vermillion River Watershed Joint Powers Organization.

Wet Detention Facility – A permanent man-made structure for the temporary storage of runoff that contains a permanent pool of water.

Wetland – Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this definition, wetlands must have the following three attributes:

- A. Have a predominance of hydric soils,
- B. Are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions, and
- C. Under normal circumstances support a prevalence of such vegetation.

Wetland Conservation Act (WCA) – The Minnesota Wetland Conservation Act of 1991, as amended.

Wetland Type – A wetland type classified according to Wetlands of the United States, U.S. Fish and Wildlife Service Circular 39 (1971 edition), summarized as follows:

- A. "Type 1 wetlands" are seasonally flooded basins or flats in which soil is covered with water or is waterlogged during variable seasonal periods but usually is well-drained during much of the growing season. Type 1

- wetlands are located in depressions and, in overflow bottomlands along watercourses, and in which vegetation varies greatly according to season and duration of flooding and includes bottomland hardwoods as well as herbaceous growths.
- B. "Type 2 wetlands" are inland fresh meadows in which soil is usually without standing water during most of the growing season but is waterlogged within at least a few inches of surface. Vegetation includes grasses, sedges, rushes, and various broad-leaved plants. Meadows may fill shallow basins, sloughs, or farmland sags, or these meadows may border shallow marshes on the landward side.
  - C. "Type 3 wetlands" are inland shallow fresh marshes in which soil is usually waterlogged early during a growing season and often covered with as much as six inches or more of water. Vegetation includes grasses, bulrushes, spikerushes, and various other marsh plants such as cattails, arrowheads, pickerelweed, and smartweeds. These marshes may nearly fill shallow lake basins or sloughs, or may border deep marshes on the landward side and are also common as seep areas on integrated lands.
  - D. "Type 4 wetlands" are inland deep fresh marshes in which soil is usually covered with six inches to three feet or more of water during the growing season. Vegetation includes cattails, reeds, bulrushes, spikerushes and wild rice. In open areas, pondweeds, naiads, coontail, water milfoils, waterweeds, duckweeds, water lilies, or spatterdocks may occur. These deep marshes may completely fill shallow lake basins, potholes, limestone sinks, and sloughs, or they may border open water in such depressions.
  - E. "Type 5 wetlands" are inland open fresh water, shallow ponds, and reservoirs in which water is usually less than ten feet deep and is fringed by a border of emergent vegetation similar to open areas of type 4 wetland.
  - F. "Type 6 wetlands" are shrub swamps in which soil is usually waterlogged during growing season and is often covered with as much as six inches of water. Vegetation includes alders, willows, buttonbush, dogwoods, and swamp-privet. This type occurs mostly along sluggish streams and occasionally on floodplains.
  - G. "Type 7 wetlands" are wooded swamps in which soil is waterlogged at least to within a few inches of the surface during growing season and is often covered with as much as one foot of water. This type occurs mostly along sluggish streams, on floodplains, on flat uplands, and in shallow basins. Trees include tamarack arborvitae, black spruce, balsam, red maple, and black ash. Northern evergreen swamps usually have a thick ground cover of mosses. Deciduous swamps frequently support beds of duckweeds and smartweeds.
  - H. "Type 8 wetlands" are bogs in which soil is usually waterlogged and supports a spongy covering of mosses. This type occurs mostly in basins on flat uplands, and along sluggish streams. Vegetation is woody or herbaceous or both. Typical plants are heath shrubs, sphagnum moss, and sedges. In the north, leatherleaf, Labrador-tea, cranberries, carex,

and cotton grass are often present. Scattered, often stunted, black spruce and tamarack may occur.

## Section 5. Stormwater Management

5.01 Erosion and Sedimentation Control Plan. No person shall commence a land disturbing activity under one acre in area, unless exempted, without submitting an Erosion and Sedimentation Control Plan to the Community Engineer or the community Building Inspector. No building permit or land disturbing activity shall be authorized until the Community approves this plan. At a minimum the erosion prevention and sedimentation standards must conform with Best Management Practices (BMPs) defined in this Chapter. Exemptions for preparing an Erosion and Sedimentation Control Plan include the following:

- A. Minor land disturbing activities such as home gardens, repairs, and maintenance work.
- B. Construction, installation, and maintenance of individual sewage treatment systems, other than those on steep slopes (e.g., 6 percent or greater), or on riparian lots within a Shoreland District.
- C. Construction, installation and maintenance of public utility lines or individual service connection unless the activity disturbs more than 1 acre, in which case the requirements in section 5.02 apply.
- D. A land disturbing activity that creates less than 1 acre of new impervious surface and does not cause off-site erosion, sedimentation, flooding or other damage, and disturbs:
  - 1. In a Shoreland District, an area less than 10,000 square feet or less than 100 linear feet of shoreline, or
  - 2. Outside of a Shoreland District, an area of less than 1 acre.
- E. Installation of any fence, sign telephone or electric poles, or other kinds of posts or poles.
- F. Emergency activity necessary to protect life or prevent substantial harm to persons or property.
- G. Minor wetland impacts that have received a de minimus "certificate of exemption or no loss" determination by the LGU administering the Wetland Conservation Act, as amended.
- H. All maintenance, repair, resurfacing, and reconditioning activities of existing road, bridge, and highway systems, which do not involve land disturbing activities outside of the existing roadway surfaces.
- I. Construction of any structure on an individual lot in a subdivision with an approved Stormwater Pollution Prevention Plan (SWPPP), as long as any land disturbing and stormwater management activity complies with the approved plan.
- J. Development or redevelopment of, or construction of a structure on, an individual lot with a land disturbing activity that does not cause off-site erosion, sedimentation, flooding, or other damage, and creates less than 1 acre of cumulative impervious surface.

5.02 Stormwater Pollution Prevention Plan (SWPPP). No person shall commence a land disturbing activity one acre or more in area without submitting an SWPPP to the

Community Engineer for review and approval. No building permit or land disturbing activity shall be authorized until the Community Engineer approves this plan and a permit is issued by the Minnesota Pollution Control Agency (MPCA).

A. The SWPPP shall contain the following general information:

1. The name and address of the applicant and the location of the activity. The property boundary and lot lines.
2. Project narrative including the nature and purpose of the land disturbing activity and the amount of grading, utilities, and building construction involved.
3. Phasing of construction including time frames and schedules for the project's various aspects.
4. A map of the existing site conditions showing: existing topography, property information, steep slopes, existing drainage boundaries and patterns, type of soils, impervious surfaces, waterways, wetlands, vegetative cover, 100-year floodplain boundaries, locations of existing and future buffer strips and labeling the portions of the site that are within trout stream or Outstanding Resource Value Water watersheds. This information should extend a minimum of 300-feet beyond the property lines.
5. A site construction plan that includes the location and limits of the proposed land disturbing activities, stockpile locations, erosion and sediment control measures, construction schedule, and the for the maintenance and inspections of the stormwater pollution control measures.
6. All surface waters and existing wetlands which will receive stormwater from the construction site, during or after construction. Where these sites may not fit on the plan sheet, they must be identified with an arrow, indicating both direction and distance to the surface water or wetland.
7. Designate the site's areas that have the potential for serious erosion problems.
8. Erosion and sediment control measures: the methods that will be used to control erosion and sedimentation on the site, both during and after the construction process.
9. Permanent stabilization: how the site will be stabilized after construction is completed, including specifications, time frames and/or schedules.
10. Location of rock construction entrances.
11. Calculations: any that were made for the design of such items as sediment basins, wet detention basins, diversions, waterways, infiltration zones, pipe networks, and other applicable practices.

B. The SWPPP shall address the following general criteria:

1. Stabilizing all exposed soils and soil stockpiles and the related time frame or schedule.
2. Establishing permanent vegetation and the related time frame or schedule.

3. Scheduling for erosion and sediment control practices.
4. Where permanent and temporary sedimentation basins will be located.
5. Engineering the construction and stabilization of steep slopes.
6. Measures for controlling the quality and quantity of storm water leaving a site.
7. Stabilizing all waterways and outlets.
8. Protecting storm sewers from the entrance of sediment.
9. What precautions will be taken to contain sediment when working in or crossing water bodies.
10. Re-stabilizing utility construction areas as soon as possible.
11. Protecting paved roads from sediment and mud brought in from access routes.
12. Disposing of temporary erosion and sediment control measures.
13. How and when the temporary and permanent erosion and sediment control practices will be maintained.
14. How collected sediment and floating debris will be disposed of.

C. The following additional information shall be submitted along with the SWPPP.

1. Drainage maps for the existing and proposed conditions.
2. A detailed breakdown of existing and proposed curve numbers.
3. Map identifying soil types.
4. A drainage report, certified by a professional engineer, identifying existing and proposed peak runoff rates and volumes flowing off-site to adjacent watersheds for the 2, 10 and 100-year events.
5. All calculations and information used in determining peak discharge rates and volumes utilizing the Soil Conservation Service TR-55/TR-20, or other approved programs/models.
6. First floor and lowest opening elevations for all existing and proposed buildings.
7. Delineation of existing wetlands, as defined in the Wetland Conservation Act.
8. Lakes, streams, shoreland, and floodplains shall also be shown on the plans.
9. Locations of the normal and high water elevations for all water bodies on the plans.
10. Locations of any well locations within 500 feet of the site
11. Additional details required in the VRWJPO Rules for any land disturbance required to be referred to the VRWJPO for review.

D. The following stormwater management practices must be investigated in developing the stormwater management part of the SWPPP in the following descending order of preference:

1. Protect and preserve as much natural or vegetated area on the site as possible minimizing impervious surfaces, and directing runoff to

vegetated areas rather than to adjoining streets, storm sewers and ditches,

2. Flow attenuation of treated stormwater by use of open vegetated swales and natural depressions,
3. Stormwater detention/retention facilities (including on-site filtration/infiltration facilities if required by the Community), and
4. A combination of successive practices may be used to achieve the applicable minimum control requirements. The applicant shall provide justification for the method selected.

E. All modification or amendments to a SWPPP must be reviewed and approved by the Community Engineer and the MPCA.

5.03 Construction Erosion Control Standards. Land disturbances shall be governed by the following minimum construction erosion control standards:

- A. Erosion and sediment control measures shall be consistent with Best Management Practices (BMPs), and shall be sufficient to retain sediment on site.
- B. All temporary erosion and sediment controls shall be installed on all down gradient perimeters before commencing the land disturbing activity, and left in place and maintained as needed until removed per Community approval after the site had been stabilized. All permanent erosion control measures shall be installed and operational per the design and as required by the Community prior to the removal of temporary controls.
- C. Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water Associated With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General construction Permit) Issued by the Minnesota Pollutant Control Agency, August 1, 2008, as amended for projects disturbing more than 1 acre.
- D. Final stabilization of the site must be completed in accordance with the NPDES General Construction Permit requirements.
- E. All on-site stormwater conveyance channels shall be designed and constructed to withstand the expected velocity of flow from a 10-year, 24-hour storm without erosion.
- F. If the activity creates more than 1 acre of disturbed area, and the activity is taking place on a site where soils are currently disturbed (e.g., a tilled agricultural site that is being developed), areas that will not be graded as part of the development and areas that will not be stabilized according to the timeframes specified in the NPDES General Construction permit Part IV.B.S, shall be seeded with a temporary or permanent cover before commencing the proposed land disturbing activity.
- G. The Community may at its discretion use turbidity measurements as an indicator of potential non-compliance with the construction erosion control standards. If Nephelometric Turbidity Unit (NTU)

measurements taken at a point of site stormwater discharge exceeds 50 NTUs (25 NTU for trout stream), a construction erosion control inspection of the site shall be completed by the Community. Enforcement procedures and timeframes to correct non-compliant conditions shall be as specified in this Chapter and the NPDES General Construction Permit. Exceedance of the turbidity indicator alone shall not constitute non-compliance. Sampling and analysis of turbidity shall be completed as follows:

1. Samples should be taken from the horizontal and vertical center of the outflow, and care should be taken to avoid stirring bottom sediments.
2. A written narrative of site-specific analytical methods and conditions used to collect, handle, and analyze the samples will be completed and kept on file, and a chain-of-custody record kept if the analysis is performed at a laboratory.
3. All sampling shall be collected by "grab samples" and the analysis of these samples must be conducted in accordance with methodology and test procedures established by EPA method 180.1 or Standard Method 2130B.
4. Other sampling protocol include:
  - a. Sample containers should be labeled prior to sample collection.
  - b. Samples should be well mixed before transferring to a secondary container.
  - c. Sample jars should be cleaned thoroughly to avoid contamination.
  - d. Sampling and analysis of receiving waters or outfall below the minim detection limit should be reported at the detection limit.

5.04 Post Construction Water Quality Standards. Land disturbances shall be governed by the following minimum post construction water quality standards.

- A. Post construction stormwater runoff quality measures shall meet the standard for the General Permit Authorization to Discharge Storm Water Associate With Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, August 1 2003, as amended; except where more specific requirements are provided in paragraphs B, C, D, and E below.
- B. Infiltration/filtration options, and Credits described under Runoff Volume Control Standard B, are the preferred approach to satisfying the water quality treatment requirements of the NPDES General Construction Permit in areas that drain to the trout stream portions of the Vermillion River and its tributaries where such areas do not first drain to a waterbody with 10 or more acres of open water.
- C. Ponds with permanent wet pools allowed in areas tributary to the trout stream portions of the Vermillion River and its tributaries where such areas do not

first drain to a waterbody with 10 or more acres of open water, if the applicant demonstrates:

1. No net increase in the temperature of the discharge for the 2-year, 24-hour event with the use of alternative technologies and has met the Volume control requirements of these Standards; or
  2. That the wet pond is designed for zero discharge for the 2-year, 24-hour storm; or
  3. That the Volume Control requirements of these Standards are met and the following measures are used to the extent practical in order of decreasing preference:
    - a. The wet pond is designed with a combination of measures such as shading, filtered bottom withdrawal, vegetated swale discharges, or constructed wetland treatment cells that will limit temperature increases.
    - b. Additional volume control measures and credits are used beyond that required to meet the Runoff Volume Standards as a means of limiting the frequency and duration of discharges from the pond.
- D. The water quality control volumes necessary to meet the NPDES General Construction Permit that are satisfied using infiltration or filtration technologies (filtration only on Type C and D soils) can count toward the Volume Control requirements of this Chapter.
- E. Ponds with overflows or outlets located below the seasonally high water table are allowed only where there is a reasonable need for such an outlet to control seepage damage to existing structures.
- F. Redevelopment projects are required to incorporate water quality BMPS to the extent practical.

5.05 Runoff Temperature control Standards. Land disturbances shall be governed by the following minimum runoff temperature control standards.

- A. Post construction runoff criteria for controlling temperature increases relies on the establishment of buffers as specified in Section 7; the prioritization of temperature sensitive BMPs such as infiltration and filtration, and the designation of temperature sensitive wet pond design approaches in the Post Construction Water Standards above; and the control of runoff volume increases and the use of credits with the Runoff Volume Control Standards below. No additional specific temperature criteria are incorporated since these standards emphasize approaches sensitive to runoff temperature. Since these other standards allow flexibility, and in some cases waivers, permit applications involving the creation of one or more acres of new impervious surface in the trout stream portions of the Vermillion River and its tributaries, where such areas do not first drain to a waterbody with 10 or more acres of open water, must include a narrative description of the temperature sensitive practices incorporated.

- B. The Community may require additional runoff temperature BMPs, if the Community finds that the site design does not minimize the potential for runoff temperature increases.

5.06 Peak Runoff Rate Control Standards. Land disturbances shall be governed by the following minimum runoff rate control standards.

- A. A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows and water levels.
- B. Runoff rates for proposed activities, and development shall
  1. Not exceed existing runoff rates for the 1-year, and 10-year critical duration storm events.
  2. Be implemented such that peak runoff rate controls keep future peak flood flows for the Vermillion River 100-year, 4-day event from increasing above existing conditions peak flows.
  3. Not exceed the existing rate for the 100-year critical duration storm event or the VRWJPO Intercommunity Flow study goal flow value for the Community, whichever is more restrictive.
- C. Detention basins with permanent wet pools are allowed in area's tributary to the trout stream portions of the Vermillion River provided Post Construction Water Quality Standard 5.04 C. above is met.

5.07 Runoff Volume Control Standards. Land disturbances shall be governed by the following minimum runoff volume control standards.

- A. Development that creates one acre or more of new impervious surface must incorporate volume control practices into the design sufficient to prevent an increase in the runoff volume for the 2-year 24-hour storm above pre-development conditions, unless waived in accordance with Runoff Volume Control Standard G. below. Determination of the necessary control volume to achieve this standard shall be calculated on a site-by-site basis for each individual proposal.
- B. Credits for site design are the preferred methods for meeting the Volume Control standards and shall be discussed and approved by the Community Engineer prior to the design of infiltration or filtration facilities. Such credits will be considered on a case by case basis and must be consistent with any credit system established by the VRWJPO. Potential credits for Volume Control include:
  1. Natural area conservation credit that gives a credit for the net runoff volume conserved compared to how the property could have been developed.
  2. Rooftop disconnection credit that allows rooftop areas to not be counted as impervious area in the volume control calculation if roof drainage is direct to previous areas.

3. Non-rooftop disconnection credit that allows small developed areas to not be counted for the volume control calculation if these areas are directed as sheet flow to pervious areas.
  4. Permeable paver disconnection credit that allows some fraction or percentage of the surface area covered by permeable pavers to not be counted as developed area.
  5. Grass channel credits that allows some credit for the use of grassed channels instead of lined channels or underground pipe.
  6. Soil amendment credit that allows for a percentage reduction of impervious surface used in the volume control calculation for each acre of soil area amended. Amendment would include deep or chisel plowing and the addition of an amendment such as compost.
  7. Green rooftop credit that allows some fraction or percentage of the area of green rooftop to not be counted as impervious surface in the volume control calculation.
  8. Forest/Prairie cover credit that allows some percentage reduction of impervious surface used in the volume control calculation for each acre of new forest or prairie created.
  9. Reuse of stormwater for irrigation credit that allows for a fraction of runoff volume requirement reduction where stormwater from cisterns or wet ponds is preferentially used for irrigation instead of potable water supplies.
- C. The water quality control volumes necessary to meet the NPDES General Construction Permit that are satisfied using infiltration or filtration technologies (filtration only on Type C and D soils) can count toward the Volume Control requirements of this Chapter.
- D. When using infiltration for volume control:
1. Infiltration volumes and facility sizes shall be calculated using one of the three methods below:
    - a. Using the following hydrological soil group classification and saturated infiltration rate:

Hydrologic Soil Type	Infiltration Rate	Soil Texture
A	0.30 inches/hour	Sand, loamy sand, or sandy loam
B	0.15 inches/hour	Silt, loam, or loam
C	0.07 inches/hour	Clay loam, silty clay loam, silty clay, or clay

- b. Using documented site specific infiltration or hydraulic conductivity measurements completed by a licensed soil scientist or engineer, or

- c. Using the method provided in the Minnesota Stormwater Manual Volume 2 (MPCA 2005) Chapter 12-INF.
  2. The design shall consider the infiltration rates of the least permeable horizon within the first five feet below the bottom of the infiltration practice.
  3. The system shall be capable of infiltrating the required volume in 72 hours.
- E. Constructed infiltration facilities, such as infiltration basins and trenches:
1. Can only be used if there is pretreatment of stormwater runoff designed to protect the infiltration system from clogging with sediment and to protect groundwater quality,
  2. Cannot be used within 400 feet of a municipal or other community supply well or within 100 feet of a private well unless specifically allowed by an approved wellhead protection plan.
  3. Cannot be used for runoff from fueling and vehicle maintenance areas and industrial areas with exposed significant materials,
  4. Cannot be used on areas with less than 3 feet vertical separation from the bottom of the infiltration system and the seasonal high ground water table, and
  5. Cannot be used in Type D soils.
- F. Infiltration areas must be fenced or otherwise protected from disturbance before the land disturbing activity starts.
- G. Volume control amounts may be waived by the LGU or the VRWJPO for sites with predominately Type C and D soils, or where a shallow water table prevents construction of infiltration systems, provided the following are met in order of decreasing preference:\
1. Credits and site design practices to minimize the creation of connected impervious surfaces are used to the extent practical.
  2. Underdrains are used to promote filtration instead of infiltration.
- H. Vegetation used in conjunction with infiltration systems must be tolerant of urban pollutant, and the range of soil moisture conditions anticipated.

#### 5.08 Minimum Stormwater Pollution Prevention Measures and Related Inspections.

These minimum control measures are required where bare soil is exposed. Due to the diversity of individual construction sites, each site will be individually evaluated. Where additional control measures are needed, they will be specified at the discretion of the Community Engineer. The Community Engineer reserves the right to receive comments from the Dakota County Soil and Water Conservation District (SWCD). The Community will determine what action is necessary to prevent excessive erosion from occurring on the site. If the following conditions are not met as outlined below, the MPCA will be notified for lack of compliance, fines may be levied, and prosecution for non-compliance with this Chapter will be pursued

- A. All grading plans and building site surveys must be reviewed by the Community for effectiveness of erosion control measures in the context of the site topography and drainage.

- B. The stormwater pollution prevention plan's measures, the limit of disturbed surface and the location of buffer areas shall be marked on the approved grading plan, and identified with flags, stakes, signs etc. on the development site before work begins.
- C. Sediment control measures must be properly installed by the builder before construction activity begins. Such structures may be adjusted during dry weather to accommodate short-term activities, such as those that require the passage of very large vehicles. As soon as this activity is finished or before rainfall, the erosion and sediment control structures must be returned to the configuration specified by the Community. Sufficient erosion control structures must be in place before a footing inspection will be done.
- D. Diversion of channeled runoff around disturbed areas, if practical, or the protection of the channel.
- E. If a stormwater management plan involves directing some or all of the site's runoff, the applicant or his designated representative shall obtain from adjacent property owners any necessary easements or other property interests concerning the flowing of such water.
- F. Land disturbing activities should be phased or scheduled to minimize the amount of exposed soil at any time to lessen the potential for erosion and sedimentation.
- G. The applicant is required to obtain a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) construction stormwater permit from the Minnesota Pollution Control Agency for any project that disturbs 1 acre or more of land.
- H. Sediment basins related to impervious surface area. Where a project's ultimate development replaces surface vegetation with 1 or more acres of cumulative impervious surface, and all runoff has not been accounted for in the Community's existing stormwater management plan or practice, the runoff must be discharged to a wet sedimentation basin prior to entering waters of the state.
- I. Generally, sufficient silt fence or other sediment control device will be required to hold all sheet flow runoff generated at an individual site, until it can either infiltrate or seep through the device's pores.
- J. Temporary stockpiling of thirty (30) or more cubic yards of excess soil on any lot or other vacant area will not be allowed without issuance of a grading permit for the earth moving activity in question.
- K. For soil stockpiles greater than 10 cubic yards the toe of the pile must be more than 25 feet from a road, drainage channel or stormwater inlet. If such stockpiles will be left for more than 7 days; they must be stabilized with mulch, vegetation tarps or other means. If left for less than 7 days, erosion from stockpiles must be controlled with silt fences or rock check dams.
  - 1. If for any reason a soil stockpile of any size is located closer than 25 feet from a road, drainage channel or stormwater inlet, and will be left for more than 7 days, it must be covered with tarps or controlled in some other manner.
- L. All sand, gravel or other mining operations taking place on the development site shall have a National Pollutant Discharge Elimination System General

- Stormwater permit for industrial activities and all required Minnesota Department of Natural Resources permits.
- M. Temporary rock construction entrances will be required wherever vehicles enter and exit a site, according to specifications required by the Community Engineer. Slash mulch, 4"-10", may be used in lieu of rock if approved by the Community Engineer.
  - N. Parking is prohibited on all bare lots and all temporary construction entrances, except where street parking is not available.
  - O. Streets must be cleaned and swept whenever tracking of sediments occurs and before sites are left idle for weekends and holidays. Regular sweeping must occur on paved roads at least once a week, unless notified by the Community, in which case sweeping will need to occur within 24 hours of being notified by the Community.
  - P. Water (Impacted by the construction activity) removed from the site by pumping must be treated by temporary sedimentation basins, geotextile filters, grit chambers, sand filters, up-flow chambers, hydro-cyclones, swirl concentrators or other appropriate controls. Such water shall not be discharged in a manner that causes erosion or flooding of the site, receiving channels, adjacent property or a wetland.
  - Q. All storm inlets must be protected during construction until control measures are in place with either silt fence or an equivalent barrier that meets accepted design criteria, standards and specifications as contained in the latest version of the Minnesota Pollution Control Agency's publication, "Minnesota Stormwater Manual" or other approved publication.
  - R. Catch Basins and sediment ponds must be cleaned prior to acceptance by the Community.
  - S. Roof drain leaders. All newly constructed and reconstructed buildings must route roof drain leaders to pervious areas (not natural wetlands) where the runoff can infiltrate. The discharge rate shall be controlled so that no erosion occurs in the pervious areas.
  - T. At a minimum, SWPPP inspections shall be done weekly and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours by the applicant or the applicant's representative.
  - U. Follow-up inspections must be performed by the Community on a regular basis to ensure that erosion and sediment control measures are properly installed and maintained. In all cases the inspectors will attempt to work with the developer and/or builder to maintain proper erosion and sediment control at all sites.
    - 1. In cases where cooperation is withheld, construction stop orders may be issued by the Community, until erosion and sediment control measures meet specifications. A second erosion and sediment control/grading inspection must then be scheduled and passed before the final inspection will be done.
  - V. Removal of more than 1 acre of topsoil shall not be done, unless written permission is given by the Community Engineer. Excessive removal of topsoil can cause significant soil erosion problems.

W. Inspection and maintenance. All stormwater pollution control management facilities must be designed to minimize the need for maintenance, to provide easy vehicle and personnel access for maintenance purposes and be structurally sound. These facilities must have a plan of operation and maintenance that ensures continued effective removal of the pollutants carried in stormwater runoff. The NPDES permittee shall inspect all stormwater management facilities during construction in accordance with the NPDES permit requirements. A copy of the inspection records shall be given to the Community. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the stormwater management facilities for inspection and maintenance purpose.

5.09 Minimum Design Standards for Stormwater Drainage Facilities. Stormwater drainage facilities shall be designed to convey the flow of surface waters without damage to persons or property. The system shall insure drainage at all points along streets, and provide positive drainage away from buildings. Drainage plans shall be consistent with local and regional drainage plans. The facilities shall be designed to protect against surface erosion and siltation of surface water, and to prevent the discharge of excess runoff onto adjacent properties.

- A. All storm sewers shall be designed to convey the 10-year critical duration storm event according to methods of accepted engineering practice subject to approval by the Community Engineer.
- B. A map identifying all of the individual drainage areas, and storm sewer design sheets identifying drainage area, runoff coefficient, time of concentration, intensity, runoff, slope, diameter, length, and capacity of the pipe, velocity within the pipe and invert elevations shall be submitted with the plans. All normal and high water levels of existing and proposed stormwater ponds, wetlands, lakes, streams, and rivers shall be included on the plans.
- C. If required by the Community Engineer, 100-feet of 4-inch perforated drain tile shall be installed at all low point catch basins located within Community right-of-way. The drain tile shall be connected to proposed storm sewer facilities.
- D. Catch basins shall have a minimum depth of 3.5 feet.

5.10 Minimum Design Standards for Stormwater Wet Detention Facilities. All stormwater detention basins that do not discharge directly into the Vermillion River or its tributaries shall be designed in accordance with the Walker Method for Wet Detention Basins. The following standards shall be utilized.

- A. The permanent pool shall be equal to or greater than the runoff from a 2.5-inch rainfall for fully developed watershed conditions.
- B. The average pond depth obtained by dividing the permanent pool volume by the permanent pool area shall be a minimum of 3 feet.

- C. Side slopes shall be a maximum of 3:1 above the normal water level (NWL) and a maximum of 3:1 below the NWL with a 10:1 bench located below the NWL.
- D. Pond inlets and outlets shall be located so as not to encourage plug flow.
- E. A 20-foot minimum easement adjacent to a public road shall be provided to all ponds so Community maintenance crews have access to the pond.
- F. Concrete outlet structures shall be provided for all stormwater basins in accordance with Community standards or a standard approved by the Community Engineer.
- G. The lowest opening for all structures adjacent to stormwater ponds, wetlands, lakes or other waterways shall be at least 3 feet above the 100-year high water elevation.
- H. The lowest opening in any structure adjacent to stormwater ponds, wetlands, lakes or other water ways shall be at least 2 feet above the emergency overflow elevation. A minimum freeboard of 1 foot is required between the 100-year flood elevation and the emergency overflow elevation.
- I. The minimum floor elevations for all structures adjacent to land-locked stormwater ponds, wetlands, lakes or other water ways shall be at least 2 feet above the back to back 100-year flood elevation.
- J. A phasing plan for the construction of new and/or temporary detention basins shall be submitted to the Community Engineer for approval. Detention basins shall be constructed prior to other construction. The detention basins shall be cleared of sediment by the contractor at the end of the project. Infiltration basins shall not be constructed until the end of the project to eliminate unnecessary compaction of the soils.

5.11 Permanent Maintenance of Stormwater Facilities. All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The responsibility for maintenance shall be assumed either by the Community with jurisdiction over the structures and facilities, or by the applicant entering into a maintenance agreement with the LGU.

5.12 Stormwater Easements and Covenants. The applicant for stormwater permits shall establish, in a form acceptable to the Community, temporary and permanent drainage and utility easements, or dedicated outlets, for pending, flowage, and drainage purposes over hydrologic features such as waterbodies and public stormwater basins. The easements, or outlots, shall include the right of reasonable access for inspection, monitoring, maintenance, and enforcement purposes. The Community may require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Community, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

5.13 Waivers. The Community may waive runoff rate, water quality, and runoff volume on-site standards, consistent with the Collaborative Local Water Management Plan, and provided the off-site stormwater facilities are capable of meeting the other requirements in this Chapter.

5.14 Trading. Consistent with criteria established by or approved by the VRWJPO, the Community may consider "trading" re-vegetation of streamside areas with inadequate shading for a lower degree of on-site temperature control with individual developments.

## **SECTION 6. WETLAND MANAGEMENT**

6.01 Wetland Alteration Approval Required. No person or political subdivision shall drain, fill, excavate, or otherwise alter a wetland or public waters wetland without completing a wetland application provided by the Minnesota Board of Water and Soil Resources (BWSR), consistent with the requirements of the Wetland Conservation Act (WCA). The application may be referred to the technical evaluation panel appointed by the Community, BWSR, and the Dakota County SWCD for technical findings and recommendations prior to any action on the application by the Community. The Community is the LGU for all WCA review and permitting.

6.02 Wetland Determinations and Delineations. The Community shall refer to all maps and resources available in determining whether a land disturbing activity may impact a wetland. The Community has the authority and responsibility to carefully evaluate all potential wetland impacts. In instances when a potential wetland area is not illustrated on any maps or other resources and its existence is questioned, the Community shall contact the Dakota County WCD and request a determination to whether a wetland may in fact exist. If the SWCD determines that a wetland may exist, the Community shall require the person proposing the land disturbing activity to conduct a field evaluation and delineation of the potential wetland. The SWCD shall approve the evaluation and delineation, if the area is determined to be a wetland. The Community shall reimburse the SWCD for its determination and evaluations, according to fees established by the SWCD. Nothing shall prevent the Community from requiring the person engaged in a land disturbing activity to reimburse the Community for its out-of-pocket expenses incurred in the wetland determination and delineation procedure.

6.03 Wetland Management Priorities. The Community establishes the following priorities in managing wetlands:

- A. Work to achieve no net loss of wetlands.
- B. Replace lost wetlands in the same subwatershed whenever possible.
- C. Provide equal or greater functions and values for lost wetlands at the replacement ratios dictated by the WCA.
- D. Avoid direct or indirect wetland disturbance in accordance with State and Federal requirements and approved local wetland management plans.
- E. Limit the use of high quality wetlands for stormwater management where other alternatives exist.
- F. Prevent direct discharge of stormwater runoff facilities into wetlands.

- G. Avoid fragmentation of natural areas and corridors when feasible and mitigate when unavoidable.

6.04 Wetland Alteration/Mitigation Standards.

1. Any drainage, filling, excavation, or other alteration of a public waters wetland or wetland shall be conducted in compliance with Minnesota Statutes Section 103G.245, the WCA, Minnesota Rule Chapter 8420, including all exemptions, and regulations established herein.
2. In order to preserve WCA exemption or no loss determination, projects involving excavation in Types 1, 2, 6, and 7 wetlands must demonstrate a beneficial purpose, such as habitat or water quality improvements, and minimize loss of wetland function as determined by the LGU.
3. Wetlands on agricultural land enrolled in the Federal Farm Program retain the WCA exemption as long as wetlands are: 1) not drained, excavated, or filled beyond that necessary to replace, maintain, or repair existing drainage infrastructure with a capacity not to exceed that which was originally constructed; or 2) replaced at a ratio of 1:1 or greater under United States Department of Agriculture provisions as supported by documentation from the United States Department of Agriculture, which must be included as evidence to support this exemption.
4. Per the WCA, if the activity would result in loss of eligibility or conversion to non-agricultural land within 10 years, the landowner cannot qualify for the exemption.
5. A high quality (or equivalent value) public waters wetland or wetland (as determined by methods acceptable to the VRWJPO for vegetative diversity) may not be used for stormwater management and treatment unless the use will not adversely affect the function and public value of the wetland and other alternatives do not exist.
6. Wetland replacement/mitigation siting must follow the priority order below.
  - a. Mitigation on-site.
  - b. Mitigation within the same minor subwatershed as established by the Minnesota Department of Natural Resources for the "1979 Watershed Mapping Project" pursuant to Minnesota Laws 1977, chapter 455, section 33, subdivision 7, paragraph (a).
  - c. Mitigation within the VRWJPO boundary.
  - d. Mitigation within Dakota County.
  - e. Mitigation within major watershed number 38: Mississippi & Lake Pepin, excluding minor subwatersheds 3800400, 3800500, 3800401, 3801700, 3800402, 3800200, 3800302, 3800600, 3800800, 3800301, 3800300, 3800700, 3801601, 3800100, 3801800, 3801200, 380100, 3801000, and 3800900, which are located in Goodhue County and are tributary to the Mississippi River instead of the Vermillion River.
7. Transportation projects shall pursue wetland mitigation projects to the extent practical using the standards above; however, this does not preclude the use of the BWSR Replacement Program.

**SECTION 7. WETLAND AND WATERWAY BUFFERS**

7.01 Wetland and Waterway Protection. It is a stated purpose of this Chapter to protect and preserve the function and value of water resources in the Community. The provisions of this Section identify requirements for land preservation adjacent to wetlands and waterways for the purpose of protecting the function and value of water resources.

7.02 Buffers Required. A buffer of land adjacent to wetlands, public waters wetlands, and major waterways shall be established according to the requirements of this Section and encumbered by permanent easement or other formal mechanism as described in Section 7.06, for all lots created after the effective date of this Chapter, except as follows:

- A. A division of land exempt from local subdivision regulation as defined in Minnesota Statutes.
- B. A court-ordered division of land that precludes the Community from establishing these regulations.
- C. A division of land, where the resulting lots qualify for Green Acres agricultural tax classification.
- D. An authorized division of land enrolled in an Agricultural Preserve.

7.03 Structure Setbacks in Lieu of Buffers. All non-agricultural structures approved after the date of this Chapter shall comply with a setback standard equal to the minimum buffer widths prescribed in Section 7.04 and Section 7.05 of this Chapter, in areas where buffers have not been established.

7.04 Wetland Buffer Criteria and Dimensions. For all wetlands and public waters wetlands requiring buffers according to this Chapter, a wetlands delineation shall be required and a wetlands functional assessment for vegetative diversity shall be completed by the person required to establish the buffer, unless such assessment has been completed by the Dakota County SWCD. The functional assessment shall be consistent with standards established or recommended by the SWCD. Buffer dimensions shall be established, based on the value of wetlands, identified as follows:

Buffer Dimension	Exceptional Quality	High Quality	Medium Quality	Low Quality
Average Width	50 feet	40 feet	30 feet	25 feet
Minimum Width	30 feet	30 feet	25 feet	16.5 feet

7.05 Major Waterways Buffer Criteria and Dimensions. Major Waterways in the Community are identified by the VRWJPO, as illustrated on Map 1, October 26, 2006, attached to this Chapter as Appendix A. At any point in time that Map 1 is updated and formally adopted by the VRWJPO, and the updated map of Major Waterways is formally

transmitted to the Community by the VRWJPO, the Community shall replace Map with the updated map. For all Major Waterways requiring buffers according to this Chapter, required buffers shall meet the following dimensions, based upon the following classifications of the waterways.

Waterway Classification	Buffer Dimensions and Standards
Conservation Corridor	Lower Reach (Vermillion River downstream of Biscayne Avenue): 150-foot average, 100-foot minimum, measured from the edge of the meander belt of the river
Conservation Corridor	Upper Reach (Vermillion River upstream of Biscayne Avenue and South Branch Vermillion River): 150-foot average, 100-foot minimum, measured from the edge of the meander belt of the river
Aquatic Corridor Principal Connector	100-foot average, 65 feet minimum, measured from the edge of the meander belt of the river
Aquatic Corridor Principal Connector with Trout Stream Designation	100-foot minimum, no averaging, measured from the edge of the meander belt of the river
Aquatic Corridor Tributary Connector	50-foot average, 35-foot minimum: plus 2 feet for every 1 percent of slope,
Water Quality Corridor	30-foot average, 20-foot minimum where there is a flow path for concentrated surface runoff, measured from the center line of the flow path

**7.06 Buffer Standards.** The following standards shall apply to all buffers established in this Section.

- A. Where acceptable natural vegetation exists in buffer areas, the retention of such vegetation in an undisturbed state is required unless approval to replace such vegetation is received. A buffer has acceptable vegetation if:
  1. Has a continuous, dense layer of perennial grasses that has been uncultivated or unbroken for at least 5 consecutive years, or
  2. Has an overstory of trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years, or
  3. Contains a mixture of the plant communities in 1 and 2 above that has been uncultivated or unbroken for at least 5 years.

- B. Buffers shall be staked and protected in the field prior to construction unless the vegetation and the condition of the buffer are considered inadequate. Existing conditions vegetation will be considered unacceptable if:
1. Topography or sparse vegetation tends to channelize the flow of surface water, or
  2. Some other reason the vegetation is unlikely to retain nutrients and sediment.
- C. Where buffer vegetation and conditions are unacceptable, or where approval has been obtained to replant, buffers shall be replanted and maintained according to the following standards:
1. Buffers shall be planted with a native seed mix approved by MnDOT, BWSR, NRCS, or the Dakota SWCD, with the exception of a one-time planting with an annual nurse or over crop. Plantings of native forbs and grasses may be substituted for seeding. All substitutions must be approved by the Community. Groupings/clusters of native trees and shrubs, of species and at densities appropriate to site conditions, shall also be planted throughout the buffer area.
  2. The seed mix and planting shall be broadcast/installed according to MnDOT, BWSR, NRCS or Dakota SWCD specifications. The selected seed mixes and plantings for permanent cover shall be appropriate for the soil site conditions and free of invasive species.
  3. Buffer vegetation (both natural and created) shall be protected by erosion and sediment control measures during construction.
  4. During the first five full growing seasons, except where the Community has determined vegetation establishment is acceptable, the owner or applicant must replant buffer vegetation where the vegetative cover is less than 90%. The owner or applicant must assure reseeding or replanting if the buffer changes at any time through human intervention or activities.
- D. Where a buffer is required, the Community shall require the protection of the buffer under a conservation easement, or include the buffer in a dedicated outlot as part of platting and subdivision approval, except where the buffer is located in a public transportation right-of-way. For all buffers established, the edge of the buffers shall be identified with permanent markers (post and sign), noting the location and purpose of the buffer. The specifications for markers and the interval spacing of the markers shall be determined by the Community.
- E. Alterations, including building, storage, paving, routine mowing, burning, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal, or fertilizer application are prohibited Within any buffer. Periodic mowing or burning, or the use of fertilizers and pesticides for the purpose of managing and maintaining native vegetation is allowed with approval of the Community. Noxious weeds may be removed and mechanical or spot herbicide treatments may be used to control noxious weeds, but aerial or broadcast spraying is not acceptable. Prohibited alterations would not include plantings

that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards, or as otherwise clarified in Standard F.

F. The following activities shall be permitted within any buffer, and shall not constitute prohibited alterations:

1. The following activities are allowed within both the minimum and average buffer width areas:

- a. Use and maintenance of an unimproved access strip through the buffer, not more than 10 feet in width, for recreational access to the major waterway or wetland and the exercise of riparian rights;
- b. Structures that exist when the buffer is created.
- c. Placement, maintenance, repair, or replacement of public roads and utility and drainage systems that exist on creation of the buffer or are required to comply with any subdivision approval or building permit obtained from the municipality or county, so long as any adverse impacts of public road, utility, or drainage system on the function of the buffer have been avoided or minimized to the extent practical.
- d. Clearing, grading, and seeding is allowed if part of an approved Wetland Replacement Plan, or approved Stream Restoration Plan.
- e. Construction of a multipurpose trail, including boardwalks and bridges, provided it is constructed to minimize erosion and new impervious surface, and has an undisturbed area of vegetative buffer at least ten (10) feet in width between the trail and the wetland or public waters wetland edge, or the bank of the major waterway; or where needed to cross the major waterway, the minimum impact alignment is used.
- f. The construction of underground utilities such as water, stormwater, and sanitary sewers and pipelines provided the minimum impact alignment is used, the area is stabilized in accordance with Standard 7.06A above, and setbacks established in the Floodplain Alterations Standard 8.03D are met.

2. The following activities are allowed within those portions of the average buffer width that exceed the minimum buffer width:

- a. Stormwater management facilities, provided the land areas are stabilized in accordance with Standard 7.06B above, and alterations prohibited in Standard 7.06E above are upheld.
- b. The area of shallow vegetated infiltration and biofiltration facilities, and water quality ponds not to exceed 50 percent of the pond area, adjacent to wetlands and major waterways may be included in buffer averaging provided the facilities do not encroach into the minimum buffer width, and the land areas are stabilized in accordance with Standard 7.06C above, and alterations prohibited in Standard 7.06E above are upheld.

7.07 Exceptions.

- A. The Buffer Standards do not apply to any wetland or public waters wetland with a surface area equal to or less than the area of wetland impact allowed without replacement as de under the WCA, and to those portions of wetlands that will be filled under approved wetland replacement plans per the WCA.
- B. If the Community has adopted a BWSR or VRWJPO approved Comprehensive Wetland Management Plan (prior to March 9, 2007), which prescribes required buffer widths for public waters wetlands, wetlands, and major waterways; the applicable chapter shall govern buffer widths, restrictions, allowable uses, and monumentation until such time as the VRWJPO completes second generation Watershed Plan in 2015. With the 2015 Plans the LGUs need to include standards equivalent to the VRWJPO Buffer Standards, or have updated plans approved by BWSR or VRWJPO.
- C. The Buffer Standards for Water Quality Corridors do not apply to lots of record as of the date of the published VRWJPO Rules, March 9, 2007, that are less than one acre in size.
- D. The Buffer Standards do not apply to existing outlots that received preliminary plat approval in the two year period (or more if the preliminary plat approval was extended by the Community) preceding the date of the published VRWJPO Rules, March 9, 2007.
- E. Where a stream meandering project has been completed, the buffer width shall be established by the LGU and shall be no less than the minimum.
- F. Consistent with criteria established by or approved by the VRWJPO, the Community may consider "trading" re-vegetation of streamside areas with inadequate shading or inadequate stabilization for smaller buffer widths, or trading reduced buffer widths in one area for establishing buffers in identified critical areas.

7.08 Required Submittals. When buffers are established as required in Section 7.02, the following information shall be submitted to the community:

- A. Construction plans and specifications showing the delineated wetland edge, buffer strip location(s), the location of buffer monuments and the location of any temporary fencing required.
- B. A narrative description of each buffer strip identifying its current condition.
- C. A legal description and drawing of each buffer strip, signed forms for conservation easements; or record of an administrative land split, preliminary plat or final plat demonstrating that the buffer area is contained in an dedicated Outlot.
- D. A landscaping and vegetation-management plan according to Criteria 3 below, including a compliance monitoring and certification plan and a cost estimate, for buffer strips with unacceptable vegetation as defined by Criteria 2 below or where grading in a buffer strip is proposed.

**SECTION 8. FLOODPLAIN ALTERATION**

8.01 Floodplain Alteration Approval Required. No person or political subdivision shall alter or fill land, or build a structure or infrastructure below the 100-year critical flood elevation of any major waterway, public waters, public waters wetland, or other wetland without first obtaining a permit from the Community or Dakota County, acting as the LGU. Where Dakota County has floodplain management jurisdiction, the provisions of this Section and Dakota County Chapter No. 50 Shoreland and Floodplain Management Chapter shall apply.

8.02 Floodplain Management Priorities. The Community establishes the following priorities in managing floodplains.

- A. Protect the natural function of the floodplain storage areas from encroachment.
- B. Work to maintain no net loss of floodplain storage.
- C. Manage floodplains to maintain critical 100-year storage volumes.
- D. Limit floodplain alterations in order to obtain "no net loss" of floodplain storage, and including the preservation, restoration, and management of floodplain wetlands.
- E. Require compensatory storage for new developments within the floodplain.

8.03 Floodplain Management Standards. Land disturbing activities in or near the 100-year critical flood elevation shall be subject to the following standards.

- A. Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 100-year critical flood elevation unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.
- B. Where 100-year flood critical elevations have been established, all new structures shall be constructed with the low floor consistent with the minimum elevations as specified State of Minn. R. Ch. 6120 Shoreland and Floodplain Management, and Dakota County Chapter No. 50 Shoreland and Floodplain Chapter, as applicable.
- C. Projects involving development, redevelopment, or the subdivision of land, shall establish flood storage, flowage, and drainage easements over areas below the 100-year critical flood elevation of any public water, public waters wetland, or wetland.
- D. Setbacks for floodplain alterations, fill, and new underground utilities, such as water, sanitary and storm sewers and interceptors, gas lines, phone lines, and pipelines; shall be established and used along major waterways. These setbacks shall be established as follows: (the exception is for utilities that need to reach or cross the major waterway, provided the minimum impact

alignment is used) Limit floodplain alterations in order to obtain "no net loss" of floodplain storage, and including the preservation, restoration, and management of floodplain wetlands.

1. Where a major waterway has a sinuous flow pattern and a meander belt can be identified, the setback for new underground utilities shall be setback 15 feet from the outer edge of the meander belt.
2. Where a sinuous flow pattern and meander belt are not readily identifiable because of past channel alterations and/or the geomorphology of the channel, the setback established for new underground utilities shall provide for the potential for restoration and a sinuous flow pattern as follows.
3. Where there are existing encroachments that limit full restoration of the stream to the meander widths appropriate for the stream type, the setback shall be 15 feet from the reasonably achievable restoration width for the meander belt given the existing encroachments.
4. Where full restoration is possible, the setback shall be 15 feet from a meander belt width established along the stream reach that has a width 10 times the bankfull channel width. An assessment of the stream type may be completed, and meander belt widths established according to the stream type, in place of using the above 10x formula. Note: the 1999 Vermillion River Assessment Report, available at the Dakota SWCD or the Dakota County offices of the VRWJPO, provides assessment of stream type for many reaches of the Vermillion River.
5. Where buffers are required, above ground encroachments, alterations, and fill shall be consistent with the prohibited and allowed uses and widths specified in the Buffer Standard.
6. Projects that alter floodplain boundaries, such as bridge crossings and regional ponds that increase upstream high water levels are allowed provided that:
  - a. The applicant submits easements or other documentation in a form acceptable to the LGU or the VRWJPO demonstrating and recording the consent of the owner of any land affected by the increased high water levels,
  - b. The action is consistent with other portions of these Standards; and Local, State, and Federal Regulations, and
  - c. The upstream impacts, riparian impacts and habitat impacts of the proposed action are analyzed and no detrimental impacts result, or adverse impacts are mitigated:

**8.04 Required Submittals.** For any permit required in this Section, the following information shall be submitted to the Community and/or Dakota County:

- A. Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 100-year critical flood elevation. All elevations shall be referenced to NGVD, 1929 datum.
- B. Grading plan showing any proposed elevation changes.

- C. Draft preliminary plat of any proposed subdivision.
- D. Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.
- E. Computation of the change in flood storage capacity as a result of the proposed alteration or fill.
- F. Erosion control and sediment plan, or Stormwater Pollution Prevention Plan, which complies with the Stormwater Management Rule.
- G. Soil boring results if available.

## SECTION 9. DRAINAGE ALTERATION

9.01 Drainage Alteration Approval Required. No person or political subdivision shall artificially drain surface water, or obstruct or divert the natural flow of runoff so as to affect a drainage system, or harm the public health, safety, or general welfare of the Community, without first obtaining permit from the Community.

9.02 Drainage System Priorities. The Community establishes the following priorities in managing existing drainage systems:

- A. Use existing natural retention and detention areas for stormwater management to maintain or improve existing water quality.
- B. Manage stormwater to minimize erosion.
- C. Allow outlets from landlocked basins, provided such outlets are consistent With State and Federal regulations, and the downstream impacts,-riparian impacts, and habitat impacts of such outlets have been analyzed and no detrimental impacts result.
- D. Mitigate and reduce the impact of past increase in stormwater discharge on downstream conveyance systems.
- E. Address known flooding/erosion problems that cross jurisdictional boundaries and address other boundary issues and the diversion/alteration of watershed flows in local water plans.
- F. Address gully erosion problems in the watershed.
- G. Maximize upstream floodwater storage.

9.03 Drainage Alteration Standards. Land disturbing activities affecting existing drainage systems shall be subject to the following standards.

- A. Outlets from landlocked basins with a tributary drainage area of 100 acres or more will be allowed, provided such outlets are consistent with other portions of these Standards, State and Federal regulations, and the downstream impacts, riparian impacts, and habitat impacts of such outlets have been analyzed and no detrimental impacts result. The analysis and determination of detrimental impacts shall:
  - 1. Use a hydrograph method based on sound hydrologic theory to analyze runoff for the design or analysis of flows and water levels,

2. Ensure a hydrologic regime consistent with the Peak Runoff Rate Control Standards and the Runoff Volume Control Standards of this Chapter,
  3. Ensure the outlet does not create adverse downstream flooding or water quality conditions, or materially affect stability of downstream major waterways,
  4. Maintain dead storage within the basin to the extent possible while preventing damage to property adjacent to the basin,
  5. Ensure that the low floors of new structures adjacent to the basin are set consistent with the Floodplain Alterations Standards, and
  6. Ensure that proposed development tributary to the landlocked basin has incorporated runoff volume control practices to the extent practical.
- B. Artificial drainage, flow obstruction, and diversions involving waterways, public waters, public water wetland, wetlands with drainage areas of 640 acres or more will be allowed provided such alterations or diversions are consistent with other portions of these Standards, State and Federal regulations, and the downstream impacts, riparian impacts and habitat impacts of such alterations or diversions have been analyzed and no detrimental impacts result. Proposals for drainage alterations and diversions shall demonstrate that:
1. There is a reasonable necessity for such drainage alteration or diversion to improve or protect human health and safety, or to improve or protect aquatic resources;
  2. Reasonable care has been taken to avoid unnecessary injury to upstream and downstream land;
  3. The utility or benefit accruing to the land on which the drainage will be altered reasonable outweighs the gravity of the harm resulting to the land receiving the burden; and
  4. The drainage alteration or diversion is being accomplished by reasonably improving and aiding the normal and natural system of drainage according to its reasonable carrying capacity, or in the absence of a practicable natural drain, a reasonable and feasible artificial drainage system is being adopted.
- C. Drainage alterations, diversions, and landlocked basin outlets shall be provided with stable channels and outfall.

#### 9.04 Exceptions.

- A. No permit shall be required where it is demonstrated that the proposed drainage alteration or diversion does not cause off-site erosion, sedimentation, flooding, or other damage.
- B. The LGU may waive the requirements regarding upstream and downstream flooding impacts if the applicant submits easements or other documentation in form acceptable to the LGU, demonstrating and recording the consent of the owner of any burdened land to the proposed alteration.

9.05 Required Submittals. For any permit required in this Section, the following information shall be submitted to the Community, the VRWJPO, and Dakota County if the LGU:

- A. Map showing location of proposed alteration and tributary area.
- B. Existing and proposed cross sections and profile of affected drainage area.
- C. Description of bridges or culverts required.
- D. Narrative and calculations verifying compliance with the following criteria.

#### **SECTION 10. APPLICATIONS, PERMIT FEES, ESCROWS, AND SURETY**

10.01 Applications. All requests for approvals required in this Chapter shall be made on application forms or by procedures prescribed by the Community, and reviewed and acted upon through procedures established by the Community, and according to timeframes established by state law.

10.02 Permit Fees. All requests for approvals required in this Chapter shall be obligated to pay applicable permit fees established by the Community and review procedure fees, including the reimbursement of out-of-pocket expenses incurred by the Community in the review and approval process. Out-of-pocket expenses include but are not limited to consulting fees, other agency review fees, public hearing publications, mailings, and similar expenses.

10.03 Escrow Fund. The Community may require a cash escrow fund, in amounts as established by the Community, to cover the anticipated out-of-pocket expenses incurred by the Community identified in Section 10.02 above. A person seeking approvals from the Community shall be obligated to cover all out-of-pocket expenses regardless of the existence of an escrow fund or the amount required in an escrow fund.

10.04 Financial Surety. The Community may require cash, a letter of credit, or performance bond, or other surety, in a form and amount determined by the Community, to guarantee satisfactory completion of any land disturbing activities and to protect the public health, safety and welfare.

#### **SECTION 11. APPEALS AND VARIANCES**

Appeals for the interpretation of any provision of this Chapter and variances from the literal application of the provisions in this Chapter may be appropriate in certain circumstances. The appeals and variance procedures to consider interpretations or relief from the provisions of this Chapter shall follow the procedures and requirement, and shall require the same findings and considerations for granting appeals or variances, as are prescribed in the Community Zoning Chapter. In addition to the Community's appeals and variance procedures, written notification shall be made by the Community to the VRWJPO of any proposed appeal or variance proceeding no later than at the time notice of the proceedings delivered to the official newspaper for

publication. The Community must take into consideration any comments from the VRWJPO before acting on any appeal or variance.

#### **SECTION 12. AMENDMENTS**

Amendments to this chapter may be initiated by petition of any person or by direction of the Community. Any consideration for an amendment to this Chapter shall require a public hearing, including publication of the public hearing in the Community's official newspaper at least 10 days prior to the date of the public hearing. The public hearing may be held by the Planning Commission or the governing body, as determined by the Community. Prior to action on any amendment to this Chapter by the governing body, the Community must forward a notice of the public hearing to the VRWJPO at the time notice of the proceeding is delivered to the official newspaper for publication. The Community should review and consider any comments from the VRWJPO prior to acting on any amendment.

#### **SECTION 13. ABROGATION AND STRICTER PROVISIONS**

It is not intended by this Chapter to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. Where any provision of this Chapter is in conflict with a provision of other Community chapters, the stricter provisions shall prevail.

#### **SECTION 14. VIOLATIONS AND PENALTIES**

14.01 Civil Remedy. In the event of a violation of this Chapter, the Community may institute appropriate actions or proceedings to include injunctive relief to prevent, restrain, correct or abate such violations or threatened violations, and the Community Attorney may institute such action.

14.02 Criminal Remedy. Any person, firm or corporation who shall violate any of the provisions of this Chapter or who shall fail to comply with any of the provisions of this Chapter or who shall make any false statement in any document required to be submitted under the provisions of this Chapter, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished as provided by law. Each day that a violation continues shall constitute a separate offense.

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#### **SECTION 15. SEVERABILITY**

The provisions of this Chapter are severable, and if any provisions of this Chapter, or application of any provision of this Chapter to any circumstance, are held invalid, the application of such provision to other circumstances, and the remainder of this Chapter must not be affected thereby.