

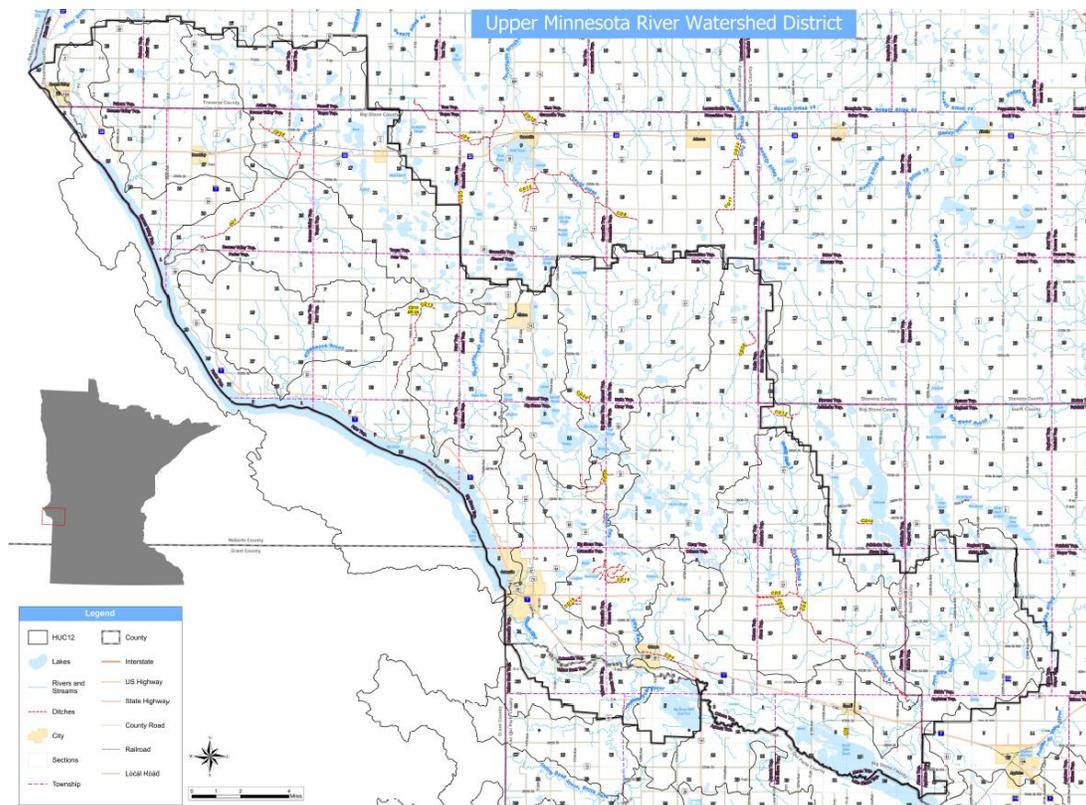


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## 2022 Annual Report



# 1. Introduction

The Upper Minnesota River Watershed District was formed by Order of the Minnesota Water Resources Board on September 7, 1967. The Big Stone County Board of Commissioners signed a nominating petition for the District on September 8, 1966. The first overall plan was developed in 1970 and the Watershed District Board of Managers adopted it on December 15, 1970. The Minnesota Water Resources Board, as part of the state review and approval process, conducted a public hearing on the plan on March 11, 1971. On July 14, 1971, the Minnesota Water Resources Board approved the Upper Minnesota River Watershed District's first Overall Plan. The Watershed District encompasses approximately 505 square miles primarily in Big Stone County, with smaller areas in Traverse County, Swift County, Lac Qui Parle County, and Stevens County.

The District continued operation under the policies identified in the first overall plan until approval of a Revised Plan, initiated in 1984 and adopted and approved on November 30, 1988. The District operated under the policies identified in the revised Overall Plan from 1988 through 1999. In November of 1999 the District submitted their third-generation plan, approval of the plan was granted by the Minnesota Board of Water and Soil Resources in August of 2001. In July of 2013 the District submitted their fourth-generation plan, approval of the plan was granted by the Minnesota Board of Water and Soil Resources in September of 2013.

## **District Structure**

The organizational structure of the Board of Managers remains unchanged since inception. The County Board of Commissioners for Big Stone appoints three of the District's Board of Managers, the County Board of Commissioners for Swift County appoints one Board Manager, and the County Board of Commissioners for Traverse County appoints one Board Manager. Each Manager must be a resident of the District. Managers are prohibited from being a public official of the county, state or federal government. Each Manager serves a three-year term, which is renewable by approval of the County Board of Commissioners.

## **Location**

The Watershed District is located in west-central Minnesota. Big Stone Lake and the South Dakota border form the western boundary of the District. The continental divide and Traverse County are located to the north. Areas south of the continental divide contribute runoff southerly to the Minnesota and Mississippi Rivers and north of the divide northerly to the Hudson Bay via the Red River of the North. Generally, the watershed district includes all of the land east of Big Stone Lake draining into Big Stone Lake and into the north side of the Minnesota River above the Marsh Lake Dam.

Approximately 80% of the land area of Big Stone County is in the District. The small area of north central and northeast Big Stone County, not in the District, casts its runoff northward through the west branch of the Mustinka River. In Stevens County the few acres in the District are along the west line of the township situated in the southwest corner of Stevens County. Most of Shible Township in southwestern Swift County is in the District.

On the south, southwest of the Minnesota River, the District includes the northern part of Agassiz and Yellow Bank Townships in Lac Qui Parle County west of State Highway 75. The territory of the District in northwestern Lac Qui Parle County includes the Big Stone National Wildlife Refuge.

All subwatersheds within the District flow to the Minnesota River, some through Big Stone Lake and others directly to the Minnesota River. Subwatersheds flowing into Big Stone Lake include Little Minnesota River, Hoss Creek, Fish Creek, Salmonson Creek, Lindholm Creek and Meadowbrook Creek. Direct drainage areas in or near Ortonville and several small-scattered tributaries outlet directly to Big Stone Lake as well.

Subwatersheds whose tributaries outlet on the northeast of the Minnesota River include: Stony Run, Upper Stony Run, County Ditch No.4, Five-Mile Creek, Shible Lake and a few areas that contribute runoff directly to the Minnesota River. On the southwest side of the District Boundary there are about 18 square miles that contribute runoff directly into the Minnesota River.

### **District Goals**

Like many early water management agencies, the original goals and objectives of the District focused on managing water quantity. The early goals and objectives of the District included: To slow down weed and algae growth in the District's Lakes. To reduce the pollution of the water in the lakes and water courses within the District. To intelligently regulate the water levels of the various lakes within the District. To keep adequate records of the water levels, the chemistry, and other useful data. To enhance the recreational facilities and scenic beauty of the District. To improve the needed drainage, prevent excessive runoff or seepage, and provide needed soil and water conservation in the District. To provide funds to accomplish these objectives and to engage technical assistance and advice. Investigate the possibility of securing additional watershed area to supplement the present water supply. To preserve, maintain, and improve habitat for fish and wildlife.

The Board of Managers understood the plan's purpose as providing a framework for operation of the District, rather than identifying all possible future projects. As technology, societal attitudes and economic conditions changed, the Board of Managers understood plan review and revision might be needed.

The District has undertaken and completed several activities in an effort to achieve their original objectives. The District has initiated and completed many projects since formation. Past District projects have included surface and groundwater quality studies, flood control, surface water level management, wetland restorations, natural resource management, ag BMP implementation, education and erosion control projects.

## **2. Mission Statement**

The mission of the Upper Minnesota River Watershed District is to serve the residents of the District by wisely and judiciously managing water, in a manner that sustains and enhances the social, economic and natural resources of the District. The District prefers the use of innovative water management methods, which recognize the unique agricultural, community, lake and stream, and natural resources within the District. These innovative approaches as reflected by the policies of the District should be oriented toward ensuring the economic viability of the District's agrarian community.

### 3. FINANCIAL REPORT

#### 3.1 2022 Audit

3.1.1 A complete copy of the 2022 Audit is included in Appendix B of this report.

#### 3.2 2022 Budget

A hearing for the 2022 proposed operation budget was held on August 10, 2021 during the regular board meeting. No public attended the hearing. The proposed budget was presented and a levy amount of \$242,500 for the year was proposed. The Board of Mangers approved the budget and the levy amount of \$242,500.

### 4. ANNUAL ACTIVITY REPORT

#### 4.1 Board Manager's, Staff and Consultants

Manager	Position	Term Expires	County
Wanda Holker U.S. Highway 75 Ortonville, MN 56278	Chairperson	08/09/2025	Big Stone County
Gary Haugen 30453 710 <sup>th</sup> Street Clinton, MN 56225	Vice-Chair	08/15/2024	Big Stone County
Terry Gillespie 30787 660 <sup>th</sup> Avenue Clinton, MN 56225	Treasurer	08/09/2023	Big Stone County
Gene Meyer 2411 60 <sup>th</sup> St. SW Appleton, MN 56208	Secretary	8/15/2024	Swift County
Jon Bork 87288 303 <sup>rd</sup> Street Beardsley, MN 56211	Manager	8/09/2022	Traverse County

Employees	Position	Address	Telephone	E-mail
Amber Doschadis	Administrator	211 2 <sup>nd</sup> Street SE Ortonville, MN 56278	320-839-3411	amber@umrwd.org
Consultant	Services	Address	Telephone	E-mail
Houston Engineering	Engineer	6901 East Fish Lake Road, Maple Grove, MN 55369	763-493-4522	www.houstonengineering inc.com
Rinke Noonan	Attorney	1015 W St. Germain Street St. Cloud, MN 56302	320-251-6700	www.rinkenoonan.com

**Technical Advisory Committee:**

Amber Doschadis, UMRWD Administrator  
Tammy Neubauer, Big Stone SWCD  
Darren Wilke, BS County Environmental Officer  
Danny Tuckett, BS County Environmental Office  
Chris Domeier, MN DNR Fisheries  
Jay Gilbertson, East Dakota Water Development District  
Todd Larson, BS County Highway Engineer  
Ryan Bjerke, MN DNR Area Hydrologist  
Dennis McAlpine, Houston Engineering  
Lisa Odens, Houston Engineering

**Citizens Advisory/WRAPS Committee:**

Amber Doschadis, UMRWD Administrator  
Chessa Frahm, LqP SWCD  
Trudy Hastad, LqPYB Watershed District  
Darren Wilke, BS County Environmental Office  
Andy Albertson, Swift County SWCD  
Jennifer Breberg, LqP Environmental Office  
Tammy Neubauer, Big Stone SWCD  
Ryan Bjerke, MN DNR Area Hydrologist  
Jay Gilbertson, East Dakota Water Development District, SD  
Dennis Skadsen, Day County Conservation District, SD  
Dan Morrill, Big Stone SWCD Manager  
Jeff Nodsle, Citizens for Big Stone Lake  
Rick Robinson, Citizens for Big Stone Lake  
Cassandra Olson, Bonanza Education Center

## 4.2 2022 Annual Work Plan

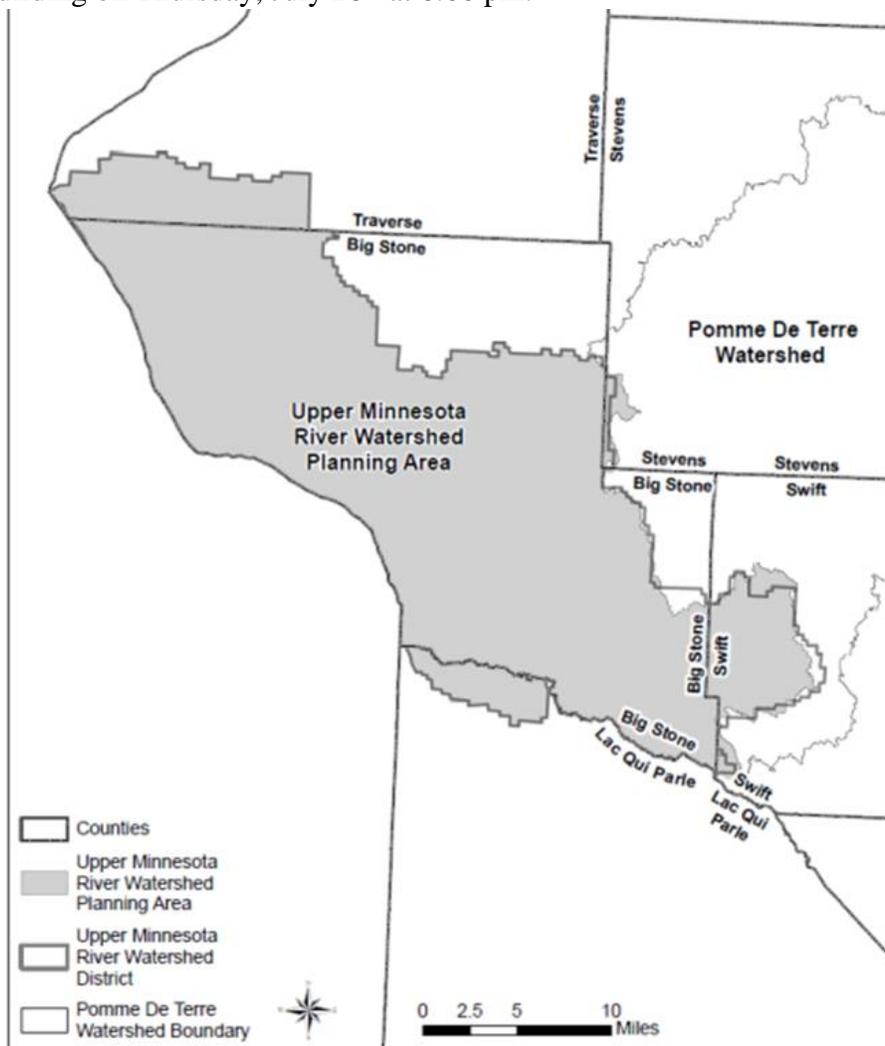
### One Watershed, One Plan

The Upper Minnesota River Watershed District along with Big Stone, Traverse and Swift Counties and Soil and Water Conservation Districts have joined forces develop a One Watershed, One Plan (1W1P) for the Upper Minnesota River Watershed.

This 1W1P program allows partners to transition from separate water plans to one combined watershed-based plan. The program is designed to foster collaboration between upstream and downstream neighbors to work where it is most important in the watershed, not limited to county or other jurisdictional boundaries.

Once completed this plan will provide funding for conservation projects that are considered a priority for improving and protecting our resources as identified and agreed upon by the plan partners.

Work began in early 2022 to identify water quality and quantity, drinking water, recreation, and other issues across the planning area. A Public Kick-Off Meeting was held at the Clinton Memorial Building on Thursday, July 28<sup>th</sup> at 6:00 pm.



## 4.2.1 Water Quantity

### The Browns Valley Flood Mitigation Project:

The annual bridge inspections were completed.

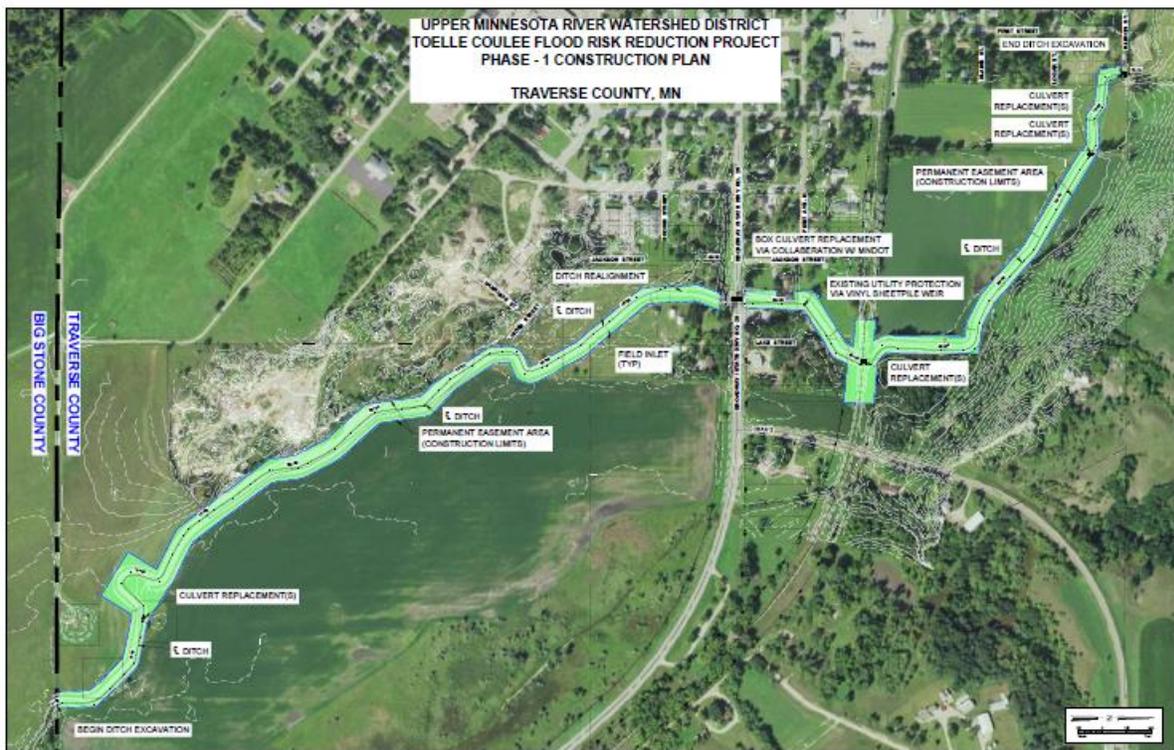
The annual inspection of the weir structure, box culvert and floodway were completed.

Staff monitored growth of vegetation following the 2020 sediment cleanout.

Haying of the diversion channel continued in 2022. Additionally, tall grass and shrub mowing was completed east of County road 4 to promote adequate flow through the channel.

UMRWD has begun forming a partnership with several local and state agencies to improve fish passage through the diversion channel. This will allow fish to travel upstream from Big Stone Lake into the Little Minnesota River, accessing quality habitat for spawning in the Spring.

### The Toelle Coulee – Phase One



The goal of the Toelle Coulee Project – Flood Damage Reduction is to provide 100-year flood protection to the rural community of Browns Valley. There are five elements to the Toelle Coulee Project, Phase I consisted of the west ditch improvements and was completed in 2020 and inspections were completed in 2021. Routine maintenance checks to track volunteer tree growth were completed.

Funding is still needed for constructing Phase II which consists of constructing the Reinart-Appel Levee, the East Levee, County State Aid Hwy 2 culvert replacement and the Trunk Highway 28 culvert replacement.

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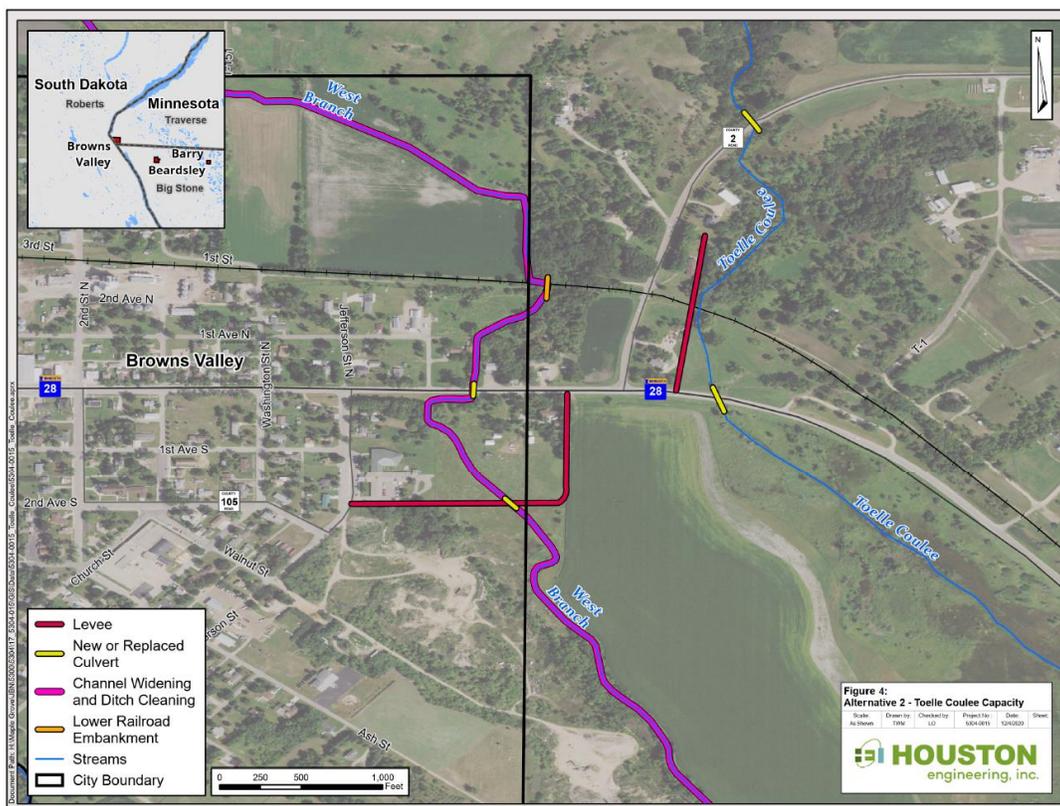
## The Toelle Coulee – Phase Two

Flooding in the east side of Browns Valley is primarily the result of flows which overtop the banks of Toelle Coulee and flow down the west side of CSAH 2. In 2008, three alternatives were conceptualized and evaluated:

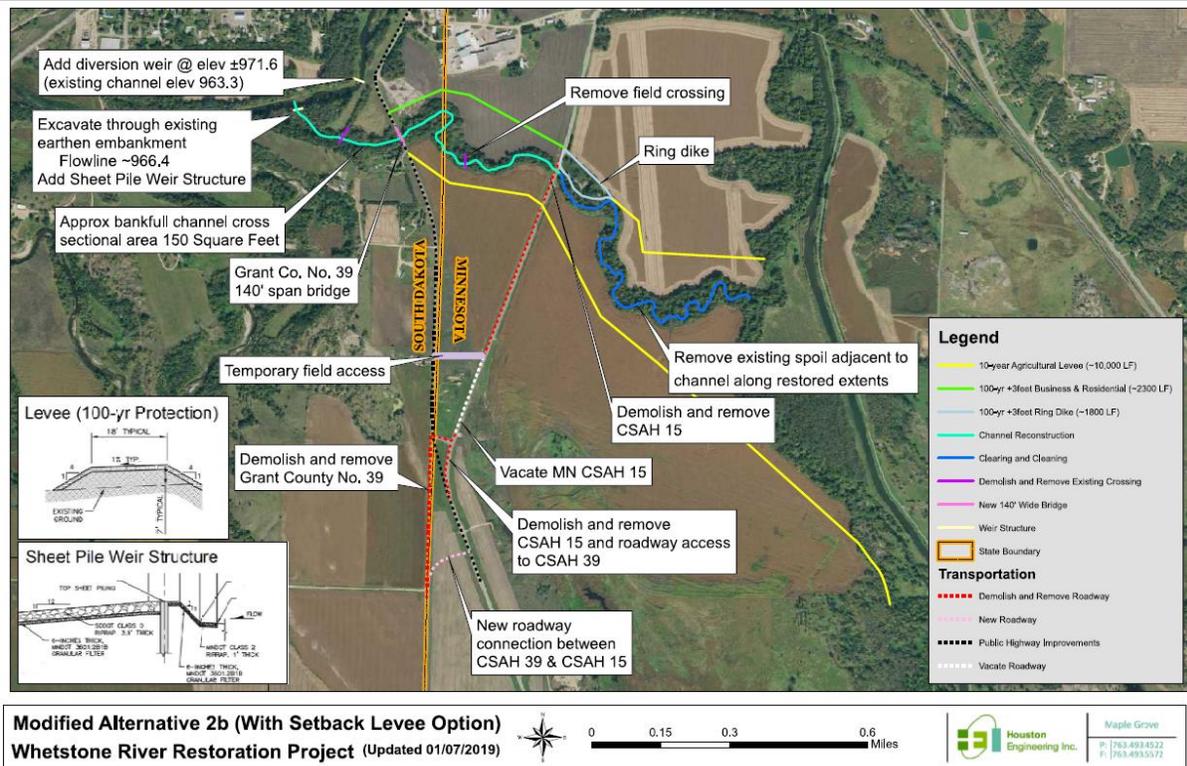
1. **Overflow Capacity West of CSAH 2:** This alternative would provide for a lowered and larger capacity overflow channel to the west side of CSAH 2. This alternative will include levees to ensure that floodwaters for the 100-year rainfall event stay within the overflow channel.
2. **Toelle Coulee Capacity:** This alternative would increase capacity of the Toelle Coulee culvert under CSAH 2 and TH28. The alternative would provide a levee between the homes east of CSAH 2 and Toelle Coulee. This alternative also includes a levee south of State Trunk Highway (TH) 28 to prevent Toelle Coulee from backing up into adjacent homes.
3. **Toelle Coulee Impoundment:** This alternative will impound Toelle Coulee upstream of CSAH 2 to prevent the overflow of peak flood waters to the west side of CSAH 2 and decrease the peak flows in Toelle Coulee downstream of CSAH 2.

All three alternatives also require improvements to the West Branch, including channel widening, a larger capacity TH 28 culvert, and a lowered embankment at the railroad crossing. Each of these solutions will decrease the frequency of flooding at the east side of the City of Browns Valley and decrease the likelihood of damage to public infrastructure such as the TH 28 roadway. Each alternative would result in approximately 80 acres removed from the 100-year floodplain north of TH 28.

The 2008 Houston Engineering, engineer's report recommended Alternative 2 (**Toelle Coulee Capacity**) and they continue to recommend implantation of that alternative. See Figure Below The District continues to seek funding through the state's Flood Hazard Mitigation Program to complete this project.



# Whetstone River Restoration



The Little Minnesota River and the Whetstone River are the two primary tributaries to Big Stone Lake, which was the focus of intensive restoration efforts during the early 1990's under the Environmental Protection Agency's Clean Lake Program, administered by the MPCA. Big Stone Lake is located at the Headwaters of the Minnesota River and is a Minnesota, South Dakota border water. MPCA lists aquatic life, aquatic recreation and industrial consumption as beneficial uses of Big Stone Lake. MPCA has also noted stressors in Big Stone Lake of excess nutrients and mercury in fish tissue which have both directly affected the lakes ability to provide aquatic life and aquatic recreation. Big Stone Lake was listed as impaired for aquatic consumption in 2006 for excess mercury found in fish tissue and was listed in 2018 as impaired for aquatic recreation due to excess nutrients.

The hydrologic modification most affecting the water quality of Big Stone Lake and the headwaters of the Minnesota River was when the Whetstone River was diverted into Big Stone Lake from its historic channel which originally flowed directly into the Minnesota River. The US Army Corp of Engineers (USACE) accomplished this by diverting the Whetstone into Big Stone Lake and constructing a dam at the outlet of the Lake.

By disconnecting the Whetstone River from the floodplain, river water quality became poorer and contributed additional nutrient loads to Big Stone Lake, which were previously filtered by floodplain wetlands along the 9000 foot historic channel.

The Whetstone River Restoration project covers two state jurisdictions and two county jurisdictions and is a priority to the Upper Minnesota River Watershed District (UMRWD) based on three areas of the Watershed District Plan. Those three areas are Big Stone Lake water quality, Big Stone Lake water levels, and river biotic diversity.

**Whetstone (continued)**

The most pressing need is related to water quality. The Plan essentially includes a loading capacity established using the data gathered during and evaluated through the EPA Clean Lakes study. Contained in the Plan are Big Stone Lake Water Quality Goals. The present total phosphorus and total nitrogen loads to Big Stone Lake for a "normal" hydrologic year are 16,346 kg/yr and 80,054 kg/yr, respectively. Monitoring necessary for completing the TMDL has been completed and a draft document should be available soon.

Water from the Whetstone River and Big Stone Lake flow south through the Big Stone Lake Dam which is where the Minnesota River begins. Flows continue south toward the Big Stone Refuge and proceeds to Marsh Lake. The reach of the Minnesota River from Big Stone Lake to the Marsh Lake Dam is listed as impaired for aquatic consumption, aquatic life and Escherichia coli (E.coli).

Biotic diversity is also addressed in the Plan. "The District recognizes the value of its biotic resources and will seek to maintain the conditions and habitats critical to the existence of these resources." By restoring the historic Whetstone Channel, the Big Stone Lake Dam will be bypassed as a barrier that inhibits upstream movement of both fish and various invertebrates.

The District was awarded a grant through MN DNR Flood Damage Reduction, along with a zero-interest loan from the MN PCA to complete design, permitting and land purchases. The Whetstone River Restoration project is slated to begin construction in fall 2024.

## Beardsley Dry Lake Flood Control Project



In 1996-97 over 100 inches of snowfall covered the City of Beardsley. Runoff during the melting period caused flooding in Dry Lake, located just north of town. The lake's water surface rose 19 feet and the surface of the lake grew eleven times larger than the levels recorded in the last survey.

The flooding of Dry Lake inundated the Beardsley wastewater treatment system, overtopped two state highways and a county road and caused wide-spread basement flooding to those within the city limits of Beardsley. After exploring several solutions, the city, FEMA and many other agencies, agreed that building a gravity pipe system would be the best way to combat Beardsley's flooding problems.

In summer of 1997 crews constructed a 2.6 mile, 36" reinforced concrete pipe, drain line with maximum depths of 28 feet to drain the excess water out of Dry Lake and provide a long-term outlet for Dry Lake to protect Beardsley from future flooding.

The pipe has since experienced seepage, sinking, and erosion issues resulting in a sinkhole forming during the summer of 2019. The sinkhole was temporarily repaired by removing approximately 80 feet of pipe and cutting back side slopes, then in 2020 the open areas were replaced with 36" HDPE and closed.

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## Beardsley Dry Lake (continued)

The UMRWD contracted with Johnson Jet-Line Sewer Cleaning & Pipe Inspection to perform televising of the 2.6-mile-long pipe in the summer and fall of 2019/ early 2020. The pipe was accessed using the existing manholes in 14 segments. Some segments of the pipe were not televised due to either grade, sediment, or complications with backwater.

**Cracking:** Some segments of the pipe exhibit multiple transverse cracks and longitudinal cracks. Not all cracks require repair, rehabilitation or replacement. However, longitudinal cracks can be an indicator that the steel has taken a portion of the loading.

**Cracking or sprawling** that has reached a point of exposed reinforcement, is a candidate for repair, depending on severity of the cracking and the soil conditions, i.e. corrosivity of the water. Exposed reinforcement was observed in one location and exposed aggregate was observed in several locations. Feasibility of reusing and rebedding the cracked pipe segments cannot full be known until the pipe is exposed.

**Pipe Settlement / Pipe Grade Issues:** Significant portions of the pipe appear to have settled unevenly or been placed an improper grade, as indicated by standing water in the pipe (including locations televised under water or not televised at all). Sediment or other blockages may contribute to some of these standing water levels. However, it is likely most of these segments have flat or negative grades. These grade issues may be from initial construction or settling over time

5 OF 8

**Infiltration and Joint Issues:** Several portions of the pipe have prevalent infiltration or joint offset issues. Records from construction are unavailable but given the extent of infiltration it is likely the joints were not wrapped. This, combined with pipe separation due to settling, allows adjacent sediment to enter the pipe, which creates a cavity. These cavities and infiltration issues are likely contributing to the other observed issues, such as settling and cracking.

**Sediment and Blockages:** Likely related to the infiltration and joint issues, there are several locations where sediment or blockages were observed in the pipe. In one instance, sediment caused the televising to be abandoned. Some blockages appear to be caused by roots growing into the pipe joint, and/or debris entering from the lake outlet structure.

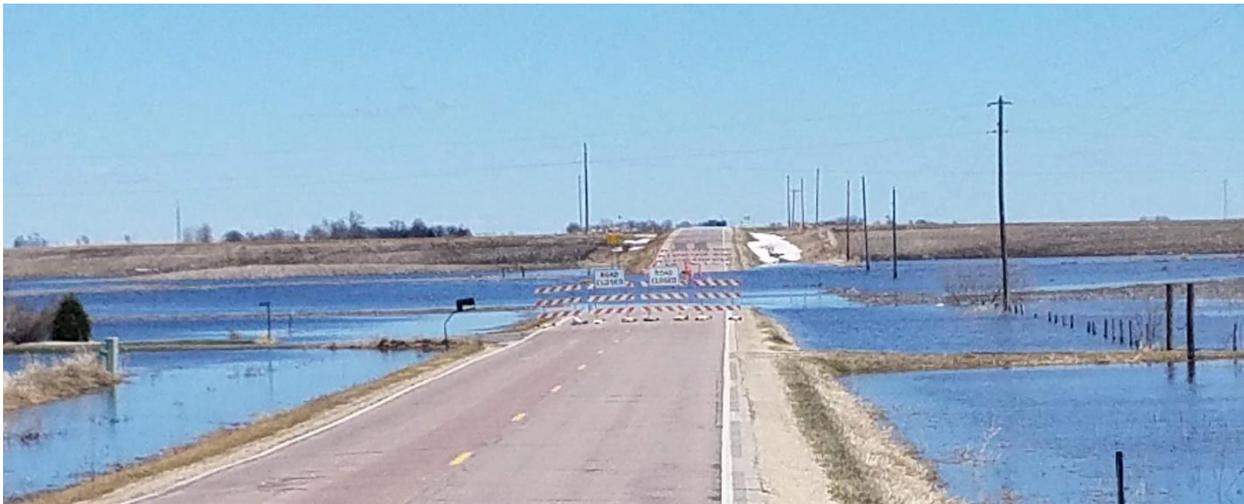
A public hearing was held in 2020 where the information above was provided, and landowners asked the District to repair the current breaks and work with Representative Backer's office on funding for large scale repair/ replacement of the system in the future. Repairs were made to the system and operations of the inlet will be reviewed with MN DNR as Dry Lake is a public water.

Staff continues to work with various agencies and partners on securing funds to repair this system, keeping the folks in and around Beardsley protected from high water in Dry Lake.

## **Highway 12**

Highway 12, approximately 1 mile east of Ortonville, has had frequent flooding and inundation over the past several decades. At this location, a wetland is divided by US Highway (Hwy.) 12 with a 30-inch culvert under the highway that functions as an equalizer pipe. This wetland is drained by two drain tiles which flow into a detention area and eventually to the Minnesota River. In 1916, Ortonville Township installed a 15-inch clay tile to control the elevation of the wetland. In 1994, a portion of this tile was replaced with an 8-inch polyethylene tile (the location and length of this repair is unknown). This repair was found to be insufficiently sized to effectively convey flows from the wetland.

In 2011 a multi-phase project was completed to add an additional outlet, which consisted of 2600 LF of new 18-inch dual wall polyethylene tile and 950 feet of new open channel.



In the spring of 2019, Highway 12 was inundated for over 3 weeks, resulting in the adjacent landowners requesting the Upper Minnesota River Watershed District to evaluate potential solutions in conjunction with an upcoming MnDOT highway improvement project. MnDOT made revisions to their original plan and the highway improvement project was completed in 2021, replacing a 30-inch corrugated metal pipe (CMP) with a 42-inch reinforced concrete pipe (RCP) with flared end sections.

The project also raised the overtopping elevation of the road from 1090.2 to 1093.6 (Station 96+00)

The annual Inspection of the Highway 12 Flood Mitigation Project was completed and the District will continue to work the MNDOT and their consultants on additional measures that could be taken to provide additional protection to the area surrounding the Project.

### **Branch to County Ditch 13**

The annual Inspection of the tile into branch 3A to County Ditch 13 was also performed.

#### **4.2.2 Drainage Systems**

The district continued with its permitting program, reviewing all permits for drainage work in the UMRWD boundary. The District Board and staff worked with several landowners throughout the year to help resolve drainage issues.

#### **4.2.3 Lake Level Management**

District staff performed lake level readings of Big Stone Lake and submitted them to the North Central Rivers Forecast Center, and USGS.

Gate adjustments to the Big Stone Lake/Whetstone River Flood Control Structure were performed as necessary by staff. Routine Maintenance and tree removal were also performed.

#### **4.2.4 Water Quality**

Water quality monitoring of Big Stone Lake continued during the year. The District has partnered with Big Stone County and Citizens for Big Stone Lake to complete this effort.

#### **4.2.5 Erosion and Sedimentation**

The District Administrator worked with multiple individual landowners on the installation of shoreline stabilization and ice ridge projects on Big Stone Lake.

#### **4.2.6 Intergovernmental Relations**

The District Staff worked with DNR, Big Stone National Wildlife Refuge, Citizens for Big Stone Lake, the Cities of Ortonville and Big Stone City, Big Stone and Roberts Counties and the East Dakota Water Development District, on the Whetstone River Restoration Project.

The District staff continues to work with the MN DNR and US Army COE on the operations of the Marsh Lake Ecosystem Restoration Project which was completed in 2020.

District staff has re-initiated conversations with MN DNR, US Fish and Wildlife Service and the USA COE on the historic MN River Channelization Project and goals for the structures and operations going forward.

#### **4.2.7 Public Information and Education**

The District Administrator gave presentations to several organizations during the year.

The District Administrator presented water quality information at the Bonanza Environmental Learning Center.

The District posted several articles on their website concerning the Browns Valley Toelle Coulee, Whetstone River Restoration and other projects completed or under construction.

#### **4.3.8 Implementation of Goals and Objectives**

The long-term Maintenance Fund for the Browns Valley Flood Mitigation Project had a balance of \$68,746.33. Additional funds will be contributed to the accounts from a future annual levy against the City of Browns Valley and payments from the District's haying contract. It is possible that this maintenance fund may need to contribute to the Toelle Coulee Phase Two Project.

During 2022 the Board of Managers held 12 Regular Meeting and 1 Public Hearing.

The Board of Managers approved the 2023 Annual Work Plan and Budget.

The District completed the 2022 annual audit and workman's comp. audit. District staff submitted the 2023 levy information to Big Stone, Traverse, Swift and Stevens Counties.

## **APPENDIX B**

### **2022 Annual Audit**

*Please return to our website and click on Appendix B to access the Audit File*