2021

Annual Report

2021 Annual Report

Middle-Snake-Tamarac Rivers Watershed District

MISSION STATEMENT

The mission of the Middle-Snake-Tamarac Rivers Watershed District is to manage the District's resources for the efficient movement of water across the District for purposes of reducing flooding, providing agricultural drainage and to protect and improve water quality.

LETTER FROM THE CHAIRMAN

Pursuant to the Minnesota Watershed Act, Chapter 103D, we submit this 52nd Annual Report for the Middle-Snake-Tamarac Rivers Watershed District (MSTRWD) for the year 2021.

Greetings and welcome to the 2021 Annual Report of the Middle Snake Tamarac Rivers Watershed District. The Middle Snake Tamarac Rivers Watershed District (MSTRWD) publishes an annual report each year on the various activities and projects that are taking place within the district. This report also includes comments on the maintenance of various ditch systems, the financial condition of the district, as well as other items that may be of interest to the public.

2021 again proved to be a challenging year with the continued Covid-19 pandemic. All District meetings including the regularly Scheduled Board Meeting had a virtual option so that everyone had the opportunity to attend.

2021 was a very dry year (Abnormal to Severe drought according to the National Integrated Drought Information System.) Although not favorable conditions for farming, it was a good year for ditch cleaning activities with some risk for seeding afterward.

In 2021, we removed sediment from 7 ditches totaling about 40 channel miles. We also continued to work on our 4 capital Improvement Projects including: City of Newfolden Flood Prevention Project, Judicial Ditch #19 /Nelson Slough, Judicial Ditch #14 / Lilac Ridge project, and Swift Coulee project. These capital projects have all progressed in design, permitting and funding processes.

The District has also been busy with different ditch maintenance projects i.e. air spraying, trapping and beaver dam removal.

The Board of Managers and District staff would like to thank you as we conclude another year. Together we will continue with our mission of reducing flooding, providing continued maintenance of agricultural drainage and in protecting and improving water quality throughout the MSTRWD.

I invite you to read this report, and if you have any questions or comments do not hesitate to contact us.

Respectfully Submitted,

_____

Bill Petersen
Chairman

BOARD OF MANAGERS

The MSTRWD is governed by a seven-member Board of Managers, appointed by the County Commissioners for Marshall and Polk Counties. Marshall County appoints six Managers and PolkCounty appoints one Manager. The terms are set so two Manager positions are appointed each year.

The Marshall County Board of Commissioners, in March of 2021, appointed Mr. Keith Szczepanski from Stephen to a three-year term. Manager David Bakke retired from his position on the Board in August of 2021. Mr. Bakke served the District for 15 years. Manager Roger Mischel also retired from his position in August of 2021. Mr. Mischel served on the board for 6 years who was also the district's representative at the Red River Watershed Management Board.

Chairman Nelson presenting a plaque to Manager Bakke

Chairman Nelson presenting a plaque to Manager Mischel

Bill Petersen, John W. Nelson, Roger Mischel, Robert Kovar, David Bakke, Brad Blawat, Keith Szczepanski

The terms of the Managers are for 3 years. The following table lists the position they hold, the

county they represent and their term.

The Middle-Snake-Tamarac Rivers Watershed District Board of Managers

NAME	OFFICE	HOMETOWN	COUNTY REPRESENTED	TERM ENDS
BILL PETERSEN	President	Middle River	Marshall	Aug 27, 2023
JOHN W. NELSON	Vice President	Oslo	Marshall	Aug 27, 2022
ROBERT KOVAR	Treasurer	E. Grand Forks	Polk	Jan 1, 2024
BRAD BLAWAT	Secretary	Viking	Marshall	Aug 27, 2022
KEITH SZCZEPANSKI	Assistant Sec/Tre	Stephen	Marshall	Aug 26, 2023
VACANT	Manager		Marshall	
VACANT	Manager		Marshall	

BOARD MEETINGS

The Board of Managers held 24 regular scheduled meetings in 2021. Due to the continued Covid-19 pandemic, 21 meetings were held at the district office with a virtual option using Microsoft Teams, 2 meetings were held virtually and 1 meeting was held at the Marshall County Courthouse. These meetings are normally held on the first and third Monday of each month, at the District Office, at 8:30 a.m., (unless the date falls on a federal holiday or postponement due to inclement weather).

The week prior to each meeting, the Watershed District posts a notice in the Watershed District office, publishes a notice in the Warren Sheaf and the Middle River Honker, posts a notice on the district website and the notice is sent by mail to those who request it.

Agendas for the upcoming meeting can be viewed here: http://mstrwd.org/about/agendas/
Meeting minutes can be viewed here: http://mstrwd.org/about/minutes/

The public is welcome at meetings. Anybody wishing to address the Board can do so, although it is appreciated if the office is notified prior to the meeting so guests can be placed on the agenda.

DISTRICT STAFF

Morteza, Kyle, Danny, Connie, Katrina, Tyler

Name	Position	Email	Phone
Morteza Maher	Administrator	Morteza.Maher@mstrwd.org	218-230-5703
Connie Kujawa	Administrative Assistant	Connie.Kujawa@mstrwd.org	218-745-4741
Katrina Haugen	Administrative Assistant	Katrina.Haugen@mstrwd.org	218-745-4741
Danny Omdahl	Technician	Danny.Omdahl@mstrwd.org	218-201-0495
Kyle Schlomann	Technician	Kyle.Schlomann@mstrwd.org	218-230-4016
Tyler Larson	Technician	Tyler.Larson@mstrwd.org	218-230-1955

OFFICE

Middle-Snake-Tamarac Rivers Watershed District Office

Address
453 North McKinley Street
Warren, MN 56762

Mail
PO Box 154
Warren, MN 56762

Office Hours
8:00 am to 4:30 pm
Weekdays

Phone: 218-745-4741
Fax: 218-745-5300
Email: info@mstrwd.org

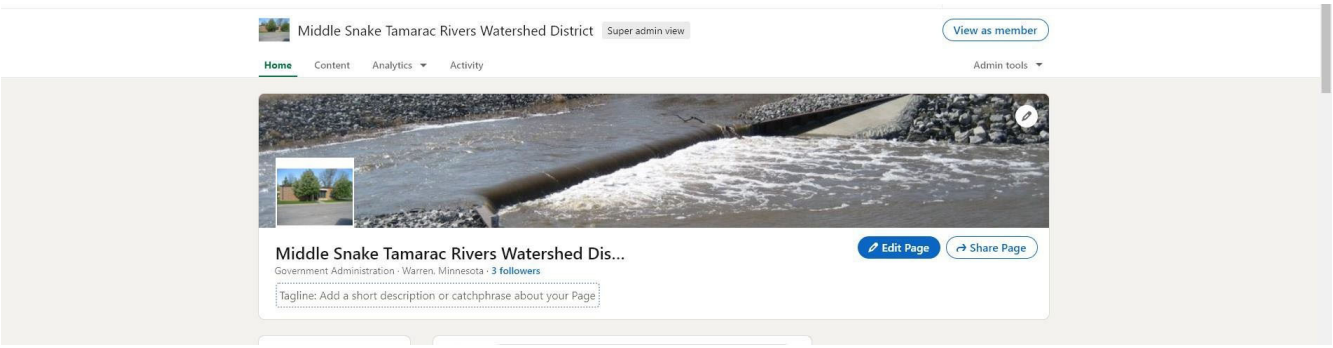
District Garage/Shop

WEBSITE

The district maintains a website (www.mstrwd.org) where staff posts notices, Board meeting agendas and minutes, reports and updates on District Projects, stream gauge levels, maps, and information about legal drainage systems (ditches) under MSTRWD jurisdiction and their benefited areas. The website also provides links to other websites that provide information of interest to our constituents.

Screenshot of MSTRWD Website

LinkedIn



The Watershed District Staff maintain LinkedIn and Facebook pages where meeting notices, photos, and updates are shared. Everyone is welcome to follow our page, you can find us by searching Middle Snake TamaracRivers Watershed District.

Engineering Services

The district's designated consulting engineering firm is Houston Engineering Inc. The District also utilizes the services of HDR Engineering, both have local offices in Thief River Falls, MN.

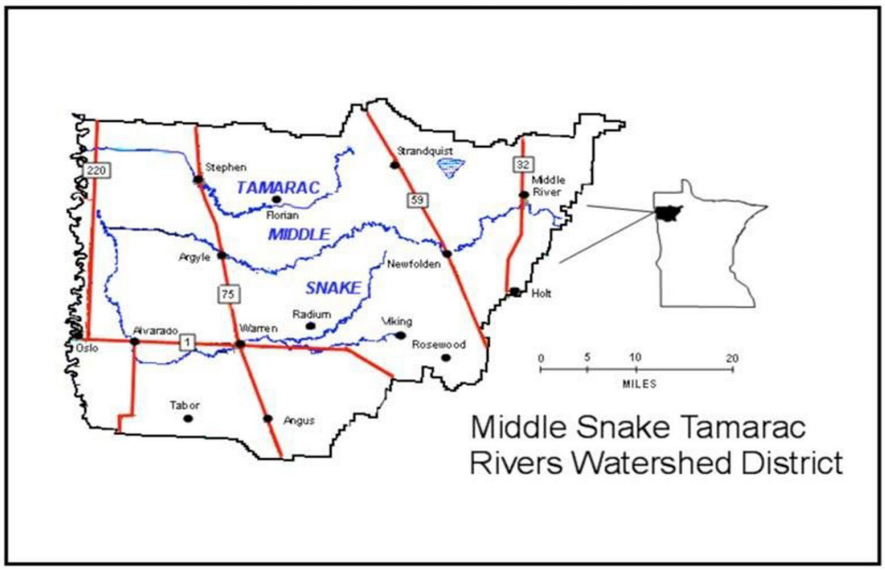
Legal Services

The district's general legal counsel is the law firm of Brink Lawyers located in Hallock MN.

Accounting Services

The district uses the accounting services of Brady Martz & Associates, P.C.

HISTORY OF THE MIDDLE-SNAKE-TAMARAC RIVERS WATERSHED DISTRICT



Map of the Middle-Snake-Tamarac Rivers Watershed District

After a landowner petition, the Middle River Snake River Watershed District was established by an order of the Minnesota Board of Water and Soil Resources (BWSR) on August 28, 1970. The purpose was to address water resource management issues and to alleviate flooding in the Red River Valley. The district comprised 1,020 square miles. Since its establishment, the district has worked primarily to develop projects that manage surface water.

In 1973, jurisdiction over the judicial drainage systems within the district - Marshall County Ditch #1, Marshall County Ditch #4, Marshall County Ditch #39 and Lateral #7 of Marshall County Ditch #44 - was transferred to the Watershed District Board of Managers by the District Court. In 1974, the district adopted rules that regulate certain works in the District. These rules were modified in 1978, 1999, 2004, 2018 and 2021.

In 1977, the Board entered a Joint Powers Agreement with eight other watershed districts in the Red River Basin to form the Lower Red River Watershed Management Board. That name was changed in 1991 to the Red River Watershed Management Board. The Red River Watershed Management Board currently consists of seven watershed districts. It has its own taxing authority, for which it contributes funds towards watershed flood damage reduction projects.

In April 2002, at the request of residents, the Marshall County Board of Commissioners successfully petitioned BWSR to add the Tamarac River Watershed area to the Middle River Snake River Watershed District jurisdiction.

The petition also requested two changes: increasing the number of District Managers from 5 to 7 members, and a new name: the Middle-Snake-Tamarac Rivers Watershed District. In September 2002, BWSR granted the petition, which increased the area of the Watershed District by about 44%. No legal drainage systems in the Tamarac Watershed were added.

Today, the District consists of approximately 1,476 square miles in Marshall, Polk, Pennington, Kittson, and Roseau Counties. The boundary of the district has been modified five times by boundary change proceedings. The district includes the drainage basin of the Snake River (approximately 750 square miles), the Middle River, a tributary of the Snake River, (approximately 295 square miles), the Tamarac Watershed Area (approximately 431 square miles), and the drainage basin of several Legal Drainage Systems draining directly into the Red River of the North.

In 2003, both the MSTRWD and the Two Rivers Watershed District successfully petitioned BWSR to change the district boundaries to follow a hydrologic boundary. The net effect of this petition was to move approximately 14 square miles into the Two Rivers Watershed District and to move about 2 square miles into the MSTRWD.

In 2004, the district petitioned BWSR to amend the *1994 Watershed Management Plan* to include the Tamarac Watershed area in the district. A Hearing on the proposed Amended Plan was held in December 2004. In January 2005, the Board approved the Amended Plan. The Amended Plan was published in May of 2005.

In 2009, the district began the process to update their *10 Year Management Plan*. The process continued through 2010 and was approved at a hearing before BWSR in June 2011.

In 2010, the Polk County Commissioners gave jurisdiction of Polk County Ditches #43 and #44 (approximately 16 square miles in Angus Township) to the district. This increased the total miles of legal drainage system in the district to 336.

In 2020, the Minnesota Association of Watershed Districts presented the district with a plaque for 50 years of Watershed Management.

In 2021 the Board of Water and Soil Resource presented the district a plaque for 50 years of Water management and conservation. The presentation of this plaque was delayed due to the COVID-19 pandemic.

ANNUAL REPORT

Under MN Statute 103D.351 the watershed district board of managers are required to prepare a yearly report of the financial conditions of the watershed district, the status of all projects, the business transacted by the watershed district, other matters affecting the interest of the watershed district, and a discussion of the managers' plans for the succeeding year. Copies of the report must be transmitted to the Board of Water and Soil Resources, the commissioner, and the director within a reasonable time.

Copies of past annual reports are available online at http://mstrwd.org/about/annual-report/ or a hard copy can be made available from the district's office, per request.

10-YEAR PLAN

Under MN Statute 103D.401 the Managers must adopt a Watershed Management Plan for any or all of the purposes for which a watershed district may be established. The Watershed Management Plan (WMP) must provide a narrative description of existing water-related problems within a watershed district, possible solutions to the problems, and the general objectives of the watershed district. The board of managers are also required under MN Statute 103D.405 to revise or update a WMP for the district every ten years.

The WMP is an important tool for identifying problems and issues, goals, and long and short term strategies to address these issues and attain the goals. The WMP also inventories resources, assesses resource quality, and establishes regulatory controls, programs, or infrastructure improvements needed to manage the resources within the watershed.

The original "Ten Year Updated Watershed Management Plan" was prepared with the assistance of the landowners, the Marshall, West Polk, and Pennington SWCDs, the County Commissioners for Marshall, Polk, and Pennington counties, BWSR, DNR's Division of Waters, Wildlife, Fisheries, and MPCA. The latest plan revision was completed in 2011. The current plan was extended until the One Watershed One Plan planning process is finished. The 1W1P will then replace the existing 10-year plan.

A copy of the latest 10 -Year Plan is available online at http://mstrwd.org/about/10-year-plan/. A hard copy can be made available for review at the District office.

WATERSHED DISTRICT ADVISORY COMMITTEE

The Watershed District, on behalf of the Committee, holds at least one Advisory Committee meeting every year. Statutorily, the Advisory committee has, if possible, a supervisor of a SWCD, a County Commissioner, a representative of a sporting group, and a representative of a farm organization that are selected by the Managers to provide recommendations on matters affecting the watershed district, including all contemplated projects and improvements.

Along with participatory landowners, this group can play an important role in ensuring that the Watershed District is fulfilling the needs of the communities and is aware of citizens' concerns. The meeting is advertised in each county newspaper within the District, and the District sends invitations to previous attendees and township officials. The Advisory Committee meeting is open to the public and is encouraged to attend and participate.

On November 15, 2021, the Advisory Committee meeting was held at the Bremer Bank Basement, in Warren, Minnesota. District Attorney, Jeff Hane, opened the meeting and election of officers ensued. Cecil Deschene was chosen to serve as Chairman and by acclamation, Kyle Schlomann, assumed the Secretary position.

2021 ADVISORY COMMITTEE MEETING ATTENDEES

Committee Members	Affiliation
Brad Blawat	Asst Sec/Treas, Middle-Snake-Tamarac Rivers WD
Bill Petersen	President, Middle-Snake-Tamarac Rivers WD
Bob Kovar	Treasurer, Middle-Snake-Tamarac Rivers WD
John Nelson	Vice Pres, Middle-Snake-Tamarac Rivers WD
Keith Szcepanski	Manager, Middle-Snake-Tamarac Rivers WD
Danny Omdahl	Technician, Middle-Snake-Tamarac Rivers WD
Kyle Schlomann	Technician, Middle-Snake-Tamarac Rivers WD
Mori Maher	Administrator, Middle-Snake-Tamarac Rivers WD
Rolland Miller	Marshall County Commissioner
Sharon Bring	Marshall County Commissioner
Larry Nybladh	Marshall County Commissioner
Warren Strandell	Polk County Commissioner
Gary Toren	Mayor, City of Alvarado
Cecil Deschene	Middle River Township Supervisor
Dean Danielski	Farley Township Supervisor
Arlyn Dvergsten	Huntly Township Supervisor
David Nelson	Landowner
Mark McGregor	Landowner
Tracy Anderson	Landowner

After introductions, District Administrator, Mori Maher presented a power point which reviewed projects undertaken this year and ditch maintenance works performed in 2021. He specifically reviewed sediment removal projects on Watershed Ditch #5 and #6, Judicial Ditch #16, Judicial Ditch #20 and Judicial Ditch #29. He also gave an update on the status of the Swift Coulee/CD #3 project and the Newfolden Flood Prevention Project. He also gave an update on the Judicial Ditch #14 and Judicial Ditch #19 RCPP projects as both RCPP funding agreements concluded on September 30th.

Mr. Deschene then opened the meeting to comments and questions from the participants.

Some discussion were held on Swift Coulee and Nelson Slough projects. Also a request to help cleaning deadfall trees from rivers. Conversations were recorded by the appointed secretary (Mr. Schlomann). The 2022 Advisory Board Meeting will be held November 21, 2022 at 1:30 P.M. at the Bremer Bank in Warren, MN.

ONGOING PROJECTS

NRCS RCPP Projects

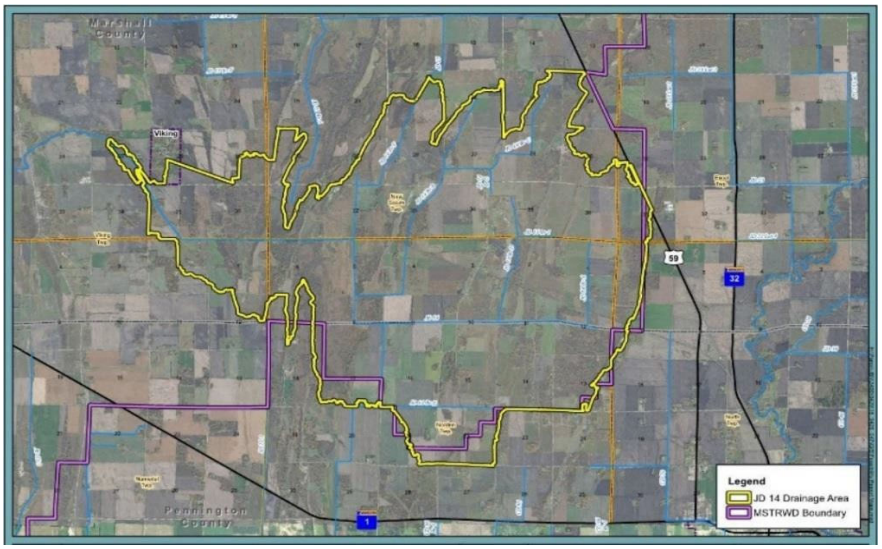
In the spring of 2016, the MSTRWD secured funding provided by the NRCS through the Regional Conservation Partnership Program (RCPP). This funding allocated $12 million dollars to eligible applicants as determined by the Red River Retention Authority (RRRA). The RCPP funding was made available to the MSTRWD for watershed planning in the Judicial Ditch #14, in the Snake River sub watershed and Judicial Ditch #19, in the Tamarac River sub watershed. Because these funds are provided by the NRCS, watershed planning must follow Federal agency guidelines for compliance with the National Environmental Protection Act (NEPA) requirements. Tasks required for the NRCS Watershed Plan are available in the *Feasibility Study and Plan of Work* document.

Judicial Ditch #14 RCPP/Lilac Ridge

A Project Team was developed for the JD #14 RCPP Project. Manager Brad Blawat with Manager Robert Kovar as the alternate, serve as the MSTRWD Team representatives. Landowner representatives are John Hams, Carl Roger Van Horn, and Gregory Dyrdal, with Donovan Dyrdal as an alternate.

Spring and summer flooding has resulted in problems in the JD #14 project area. The area is drained primarily by artificial channels which do not provide sufficient capacity for agricultural production nor does the system have an adequate outlet. Roads and culverts in the area are also impacted.

A grant agreement was entered with the NRCS on February 16, 2016, in the amount of $500,000.00. The funding cost share is 70% NRCS and 30% Middle-Snake-Tamarac Rivers Watershed District. This work includes developing a Purpose and Projected Outcomes document, evaluating various flood damage reduction strategies, and working with impacted landowners in areas with potential to store runoff.



Drainage area of Judicial Ditch #14

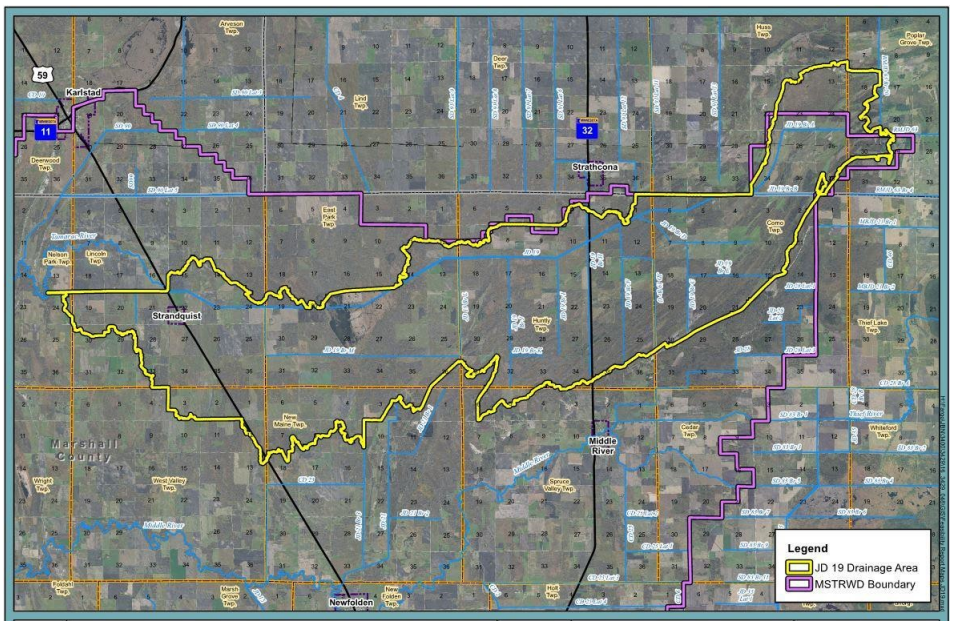
The project received a contract extension through NRCS with a deadline date of September 30, 2020. As a result of the Coronavirus pandemic a second request was submitted to the NRCS requesting to extend the deadline, for one year. In 2021, the District completed a topographic survey, geotechnical borings, wetland delineation and archeological field work.

Regional Conservation Partnership Program (RCPP) funding for watershed planning efforts expired as of September 30, 2021. During this process, the District used the project team process to develop a project purpose and need, develop and analyze alternatives, and select a locally acceptable preferred alternative. This process included getting Concurrence Points 1-3 approval from the US Army Corps of Engineers and completing an Environmental Assessment Worksheet (EAW). The Board approved moving forward with preliminary design which was completed on the preferred alternative in 2021. The proposed project consists of an impoundment site with capacity to hold 2,275 acre-feet of gated storage and a 2-mile grade stabilization of JD #14 that includes increasing the waterway opening through Lilac Ridge Road. Going forward, the District will look to finalize its discussions with landowners of the proposed impound site, obtain the remaining permits, and funding with the hope of construction beginning in 2023 or 2024. Up-to-date information about the project and project team can be found at http://mstrwd.org/current-projects/jd-14-rcpp.

Judicial Ditch #19 RCPP/ Nelson Slough

JD #19 RCPP Project Team, formerly known as the Tamarac sub-watershed Project Work Team, have Managers Bill Petersen and Brad Blawat serving as the MSTRWD representatives. Neil Widner, Larry Eftefield, Ken Borowicz, J Myron Larson, Mark Anderson, Dennis Olson, Richard Hanson, Paul St. Germain and Earl Anderson represent the landowner team members.

Regional Conservation Partnership Program (RCPP) funding for the Judicial Ditch #19 (JD 19) watershed planning efforts expired as of September 30, 2021. During this process, the District used the project team process to develop a project purpose and need, develop and analyze alternatives, and select a locally acceptable preferred alternative. This process included getting Concurrence Points 1-3 approval from the US Army Corps of Engineers and assisting the Department of Natural Resources (DNR) with completing an Environmental Assessment Worksheet (EAW). The Board approved moving forward with preliminary design which was completed on the preferred alternative in February 2021. The proposed project consists of improving flood damage reduction and natural resource benefits on the existing East Park Wildlife Management Area Nelson Slough Impoundment. The improvement will provide the site with capacity to hold 6,837 acre-feet of gated storage in the spring and more flexibility to operate water levels during bird nesting season. The proposed project includes replacing the existing outlet structure, raising the existing levees approximately 3.5 feet, and stabilizing several miles of JD 19 upstream and downstream of Nelson Slough. Going forward, the District will look to finalize a Joint Powers Agreement with the DNR and Drainage Authority, address any easement needs for the project, obtain the remaining permits, and funding needs with the hope of construction beginning in 2023-2024.



Drainage area of Judicial Ditch #19

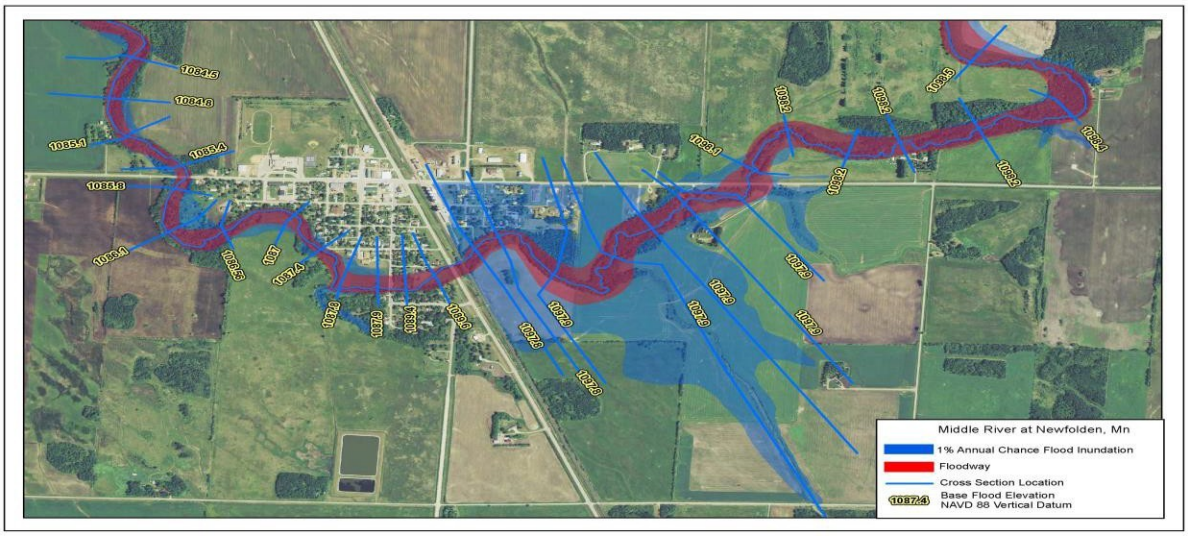
The project received a contract extension throughNRCS with an expiration date of September 30, 2020. As a result of the Coronavirus pandemic, a 2nd request was submitted to the NRCS requesting to extend the deadline for one year. The extension was granted with the contract set to expire September 2021. A Step 1 Submittal was submitted to the Red River Watershed Management Board in 2021.

Nelson Slough Open House held in Strandquist

Up-to-date information about the project and project team can be found at http://mstrwd.org/current-projects/jd-19-rcpp/.

Newfolden / Middle River Sub-watershed Flood Damage Reduction Project

A Project Team was developed for the Newfolden / Middle River sub-watershed Flood Damage Reduction project. The City of Newfolden had been mapped for the 100-year Flood Plain Zoning (FPZ) for the first time, in 2015. The Federal Emergency Management Agency (FEMA) and the MNDNR produce Digital



Current mapping from DNR HEC-RAS Model as of May 6, 2016

Flood Insurance Rate Maps (DFIRM) for selected counties in the state. These maps are often referred to as FEMA Floodplain maps. This resulted in numerous properties with homes on the east side of US Highway 59 and some on the west side, being placed in the 100 year FPZ. The City contacted HDR Inc. and reached out to the MSTRWD for guidance and assistance. An appeal was given to the MNDNR to seek alternatives.

Brad Blawat and Bill Petersen serve as the MSTRWD Project Work Team (PWT) representatives. Landowner representatives are David Lokstad, David Myhrer, David Thompson, Roger Rivera, Jr., Glenn Meekma, Norman Lindemoen and Derrick Converse.

The PWT has discussed mitigation alternatives such as to construct a levee along the river, diverting a portion of water around the city, potentially adding culvert(s) to the Canadian Pacific Railway and possible impoundment sites. The purpose of the project is to remove the City of Newfolden from the 1% annual (100 year) FEMA floodplain.

The MSTRWD submitted a task order to HDR Engineering to develop a preliminary engineers report to identify and breakdown potential alternatives for flood prevention measures. Soil boring tests along two possible impoundment sites and a potential diversion have been completed by NTI, a geotechnical company, and integrated in the development of the preliminary engineer's report that was presented to the public, the PWT, and the MSTRWD on April 15, 2019.

May 6, 2019, a public hearing was held and the MSTRWD Board of Managers ordered the project to be officially established and titled "The City of Newfolden Flood Prevention Project." On May 19, 2020 HDR Engineering submitted Step 2 to the Red River Watershed Management Board and to the Flood Damage Reduction Work Group on May 27, 2020. Right-of-way discussions continued with the landowners located within the proposed impoundment site and those along the inlet channel. Easement Purchase Options and Pre-Construction Agreements were signed by all the affected landowners in 2021.

At the September 8, 2020 Regular Board Meeting, the Board accepted the Task Order #3-Final Engineering for the City of Newfolden Flood Prevention Project and directed HDR Engineering, to proceed with the final engineering and construction documents. Meetings with the Canadian Pacific Railroad continued which resulted in the execution of a Memorandum of Understanding regarding the replacement of the railroad bridge within the City of Newfolden. FEMA's new floodplain maps became effective March 23, 2021 for the City of Newfolden.

Progress on the project continued throughout 2021. A legal survey and geotechnical borings were completed for both the railroad and impoundment sites. The permitting process is underway with applications to be submitted to the US Army Corps and MN DNR in early 2022. An application for funding to the State Flood Hazard Mitigation Program was submitted in 2021 as well. Approval of FHM application will be known in 2022 upon the finalization of the State's 2022 Bonding Bill.

Since it is not known when funding will become available, the project will likely be built in 2 phases. The first phase will likely be the railroad bridge replacement, with funding and preliminary plans already in place. Depending on contractor availability, construction could begin in the fall of 2022. Because of funding uncertainties, construction of impoundment will not likely occur until 2023 or 2024.

Up-to-date information about the project and project team can be found at http://mstrwd.org/current-projects/middle-river-sub-watershed-feasibility-study/

Swift Coulee / Marshall County Ditch #3 Project

The Swift Coulee's drainage area starts approximately ½ mile southeast of the Old Mill State Park. The flow in the drainage area is primarily to the southwest. The Coulee empties into CD #3, 1.2 miles west of US Hwy #75. The Coulee can regularly overtop its banks causing local flooding. Sediment in the Swift Coulee causes a bottleneck to flow on the west side of US Hwy #75.

CD #3 drains westerly for 11 miles and into the Snake River. Flooding issues along CD #3 see water leaving the ditch both on the north and south sides, as there is no set spoil or road height to control outbreaks. Much of the drainage area of the Swift is not in the Benefited Area of the CD #3.

CD #3 is part of a MNDNR Protected Water, along with the lower approximate 7.5 miles of Coulee, extended across 5 sections.

The Project Team's District representatives are Brad Blawat and John Nelson. Landowner representatives are Ken L. Johnson, Stuart Nordling, Jim Vansickle, Mark Yutrzenka and Fred Nicholls

Swift Coulee Open House held at the Marshall County Courthouse

In the summer of 2017, District staff assisted Houston Engineering in surveying the Swift Coulee/County Ditch #3 area. The generated information was used for the preliminary hydraulics and hydrology modeling report.

The District held a Project Work Team meeting in August 19, 2020 to discuss possible channel restoration along the Swift and possible impoundment sites within the area and how to proceed with moving the project forward. One comment made by the Project team is they would like the flooding burden to spread over the upstream landowners. Houston Engineering was directed to further study alternatives surrounding setback levees and culvert sizing changes due to a lack of interest for an impoundment site by several landowners.

A Project Work Team Meeting was held on February 11, 2021 to discuss the results of the new alternatives involving channel restoration and setback levees. It was noted that if landowner thoughts change, a future impoundment was still possible through the setback levee alternative. The PWT voted to move forward with the setback levee alternative.

Concurrence Points 1 & 2, which include the Purpose and Need statement and development of alternatives have been approved by USACE. Concurrence Point 3 was approved in 2021 which identified the preferred alternative that would improve conveyance through the Swift Coulee without causing downstream impacts to CD #3.

The District held an open house meeting on November 18, 2021 to discuss the Reinvest in Minnesota (RIM) program. Easements, Property taxes, public access, and CRP contracts were among the topics that

were discussed.

Up-to-date information about the project and project team can be found at http://mstrwd.org/current-projects/swift-coulee-pt/

Oslo Access Study

In December of 2014, the MSTRWD entered into a grant agreement with the Minnesota Department of Transportation to conduct a hydraulic analysis of Minnesota Trunk Highway #1, in the vicinity of Oslo, Minnesota to analyze various options to address ingress/egress into Oslo during times of flooding.

Arial photo of the City of Oslo

Houston Engineering presented the Oslo Area Hydraulic Analysis – Phase 2 Report to the MSTRWD and the Walsh County Water Resource District. The study began with the identification and evaluation of over 70 potential flow restrictions within the study area, with modifications to 5 bridges being part of the initially identified restrictions. Early model simulations indicated that with all of the initially identified restrictions being removed there would be a significant reduction in peak water surface elevation near Oslo for the synthetic and historic flood events that were simulated. Multiple iterations of model simulations were completed in order to prioritize the over 70 restrictions and to eliminate potential restrictions that were not affecting the flood elevations. The prioritization of the potential flow restrictions resulted in the elimination of approximately half of the initially identified restrictions.

The road raise/levee component was incorporated to keep floodwaters closer to the river channels and to convey more water through the modified bridges. This alternative was eventually defined as Alternative B. Model results for Alternative B indicate benefits to the transportation infrastructure by reducing overtopping depths and durations for the range of flood events.

The scope of the study is to evaluate the effects of removing flow restrictions within the Red River

floodplain. Alternative B has an estimated probable cost of $39 million for Minnesota and $57 million for North Dakota with a total estimated probable cost of $96 million.

The Board appointed Manager John W. Nelson as the District's representative to the steering committee and Manager Bill Petersen as the alternate.

In 2021, the Border Township Associative Group (BTAG) drafted a Joint Powers Agreement (JPA). They also applied for funding to make minor changes to the hydraulic model in the Hwy 317 area. Funding was secured from both the Red Board and Walsh County Water Resources Board.

Up-to-date information about the project and project team can be found at https://mstrwd.org/current-projects/oslo-access-study/

One Watershed One Plan

The purpose of BWSR's One Watershed One Plan program is to develop a comprehensive watershed management plan that align local water planning purposes and procedures on watershed boundaries to create a systematic, watershed-wide, science-based approach to watershed management.

The Grant for the Middle Snake Tamarac Rivers 1W1P planning process was executed in February of 2021. With the help of Houston Engineering the Steering Committee comprised of individuals from Marshal County, Marshall County SWCD, West Polk SWCD, Polk County, and the Middle Snake Tamarac Rivers Watershed District started working on putting the plan together. On June 23, 2021, a Public Kick-Off meeting was held in the basement of the Marshall County Courthouse for members of the public to give feedback on what they would like to see included in the plan.

Rachel Olm from Houston Engineering giving a presentation at the Public Kick off meeting

Projected timeline for completion of the 1W1P planning process

JUDICIAL DRAINAGE SYSTEMS

In 1973, the maintenance authority of some drainage systems within the District was transferred by the District Court to the District. The District is responsible for the maintenance and repair of these systems. Since that time, additional drainage systems have been transferred to the District and proceedings have been held concerning the establishment of legal drainage systems.

The following table lists the Public Drainage systems under the jurisdiction of the MSTRWD.

Drainage System	Date Established	Approximate Length (Miles)
JD 1	1903	15
JD 14	1912	30
JD 15	1911	39
JD 16	1910	11
JD 17	1910	6.5
JD 20	1910	36
JD 21	1910	13.5
JD 24	1911	3.5
JD 25-1	1912	12.5
JD 25-2	1912	17
JD 28	1913	16
JD 29	1917	40
JD 68	1919	1.5
JD 75	1928	21
MCD 39	1948	1.5
MCD 39 Improvement	1996	0.40
PCD 175	1969	12
SD 3	1896	10
SD 5	1896	3
WD 2	1992	1
WD 4	1902	2.5
WD 5	1999	14
WD 6	1999	15
WD 7	1999	3.25
WD 7 Improvement	2000	0.12
PCD 43	1903	10
PCD 44	1904	5
Total # of Ditches: 27		**Total Length: 340**

DITCH MAINTENANCE

The District maintains the legal drainage systems under its jurisdiction. Sediment removal, mowing, spraying and beaver dam removal account for most of the maintenance work.

There are some designated ditches for which culvert replacement is performed, as needed. However, the District is responsible to maintain culverts on all ditches that were established after March 25, 1947.

To control cattails, bulrushes and brush in 2021, the District hired an aerial applicator to spray legal drainage ditches under its jurisdiction and impoundment areas. The contractor sprayed 67.03 miles of ditch.

Beavers, beaver dams and gophers continue to be a problem in drainage systems and in project areas. In 2021, contractors removed beavers, their dams and debris from ditches, culverts and impoundment areas, while gophers continue to be trapped at the District Impoundment sites.

The District had approximately 190 miles of ditch grass strip and slopes mowed in 2021. The mowers also work at the District's impoundment properties. Typically, the related ditches, dikes and some areas of the impounds are mowed. Brushing and aerial spraying are also utilized, as needed, at the impoundments.

Watershed Ditch #5

RJ Zavoral & Sons of East Grand Forks was hired to remove sediment from 12 miles of the ditch. The work began at the confluence with PCD #175 in Section 10 Esther Twp. Due to a lack of snow during the winter, the work was able to commence the first week of April. The sediment removal was the first major maintenance work on the ditch since its construction in 1999.

WD #5 looking West at NE4 Section 15 Northland

Watershed Ditch #6

Gowan Construction of Oslo was hired to remove sediment from 12 miles of the ditch. The work began at County Road #64 in Section 23 Esther. Like WD #5, the sediment removal was the first major maintenance work on the ditch since its construction in 1999.

WD #6 looking East at Section 19 Northland

Judicial Ditch #16

Following landowner requests, JD #16 was surveyed and it was determined sediment could be removed from 6.5 miles of the ditch. The work didn't start until late November and due to snowfall, only 3 miles were able to be complete. The remaining miles are to be cleaned in 2022. Gowan Construction was hired to perform the work.

JD #16 Looking West from Section Line 34-35 Vega Twp

Judicial Ditch #20

In the fall, Branch B saw sediment removed from 8.5 miles of ditch. Due to snowfall, leveling of the spoil will occur in the fall of 2022. This work was a continuation of the work that had started in 2018 but stopped due to a lack of ditch funds. Triple D Construction of Plummer was hired to do the work.

JD #20 Looking West at Section 11 Oak Park

Judicial Ditch #29

In the fall, 10.5 miles of Lateral 1 had sediment removed. Triple D Construction completed the work.

JD #29 Looking East at Section 30 Parker

Judicial Ditch #68

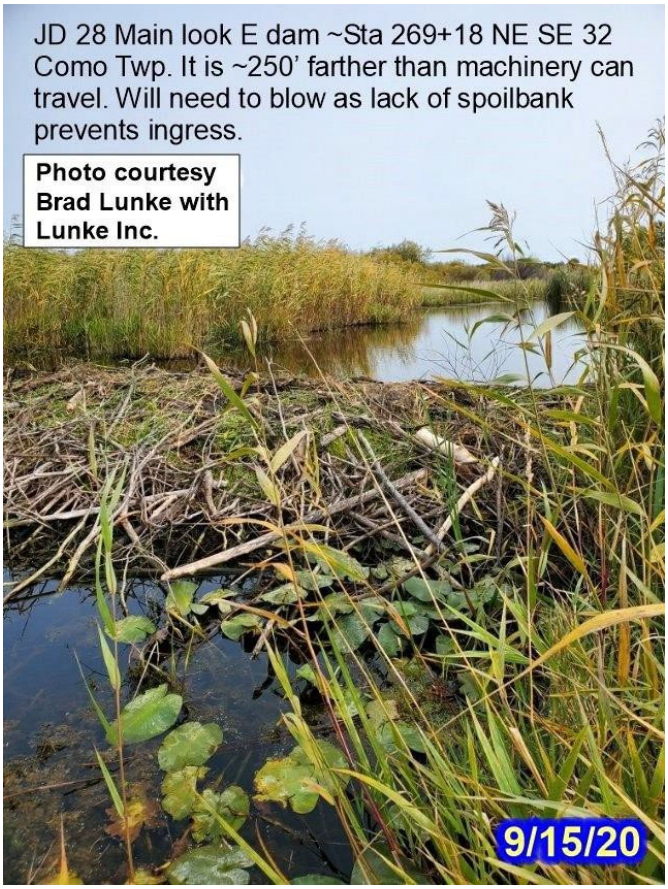
As a result of numerous flooding events, sediment was removed from the entirety of the ditch. Gowan Construction was hired to do the work. The 2 affected landowners had a use for the sediment and hauled the material away.

JD #68 Looking West along CSAH #22, Section 33 Higdem

Beavers

Again in 2021, beavers continue to be a nuisance within the impoundments and legal drainage ditches of the District. The District hires trappers to remove the beavers and reimburses the trappers for each beaver trapped. The District also hired contractors to remove beaver dams at SD #3, JD #14, JD #21, JD #25-1, JD #25-2, JD #28 and JD #75. Dams were also removed at the PL-566 Off Channel Storage Site (NE of Radium), Angus Oslo 4 and Agassiz Valley Impoundment Projects.

The District does not participate in the trapping of beavers in rivers unless they immediately affect a legal ditch or impoundment under the District's authority.



RAINFALL PROGRAM

The District has volunteers, throughout the Watershed, who record and submit monthly rainfall amounts. We appreciate our faithful reporters, and we are in need of others who would like to participate to be rainfall reporters. The District will supply the rain gauge, reporting forms, and stamped envelopes to mail your reports to the office. If you are interested in volunteering for the program, please contact the District office.

The following chart is the reported rainfall amounts for 2021:

2021 ANNUAL SUMMARY OF MONTHLY RAINFALL
MIDDLE-SNAKE-TAMARAC RIVERS WATERSHED DISTRICT

Ref	Observer	Township	Sec	Twp	Rg	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
31	Ron Ueland	New Maine	22	157	44	1.49	4.04	1.61	0.65	5.46	1.40	4.34	**18.99**
33	RLWD	Rocksbury	4	153	43	1.23	0.79	2.01	0.39	4.96	2.72	4.92	**17.02**
36	Nick Drees	Excel	34	155	43	no report	1.07	1.80	0.50	5.28	no report	3.62	**12.27**
37	Harold Maijala	Spruce Valley	36	157	43	1.07	1.96	1.93	0.66	5.81	1.41	3.53	**16.37**
54	Nick Smieja	West Valley	28	157	45	1.33	4.17	1.61	0.49	5.01	1.45	4.69	**18.75**
56	Dennis Erickson	Foldahl	31	156	46	0.95	3.08	1.18	0.46	no report	no report	no report	**5.67**
90	Alvin Nybladh	Donnelly	35	158	49	0.61	3.50	2.15	0.30	4.45	1.15	5.40	**17.56**
91	Sharon Bring	West Valley	29	157	45	1.26	3.85	1.63	0.73	6.12	1.49	4.79	**19.87**
93	Peter Solem	Higdem	7	154	50	1.15	2.63	2.80	0.94	5.64	2.04	3.07	**18.27**
101	J Bolduc	Parker	7	157	49	0.78	4.33	1.29	0.31	4.01	1.19	4.85	**16.76**
102	MSTRWD					0.76	2.70	1.48	0.39	5.55	1.19	3.35	**15.42**
104	Paul Morken	Comstock	10	155	46	1.40	2.65	1.65	0.15	3.39	1.65	4.35	**15.24**
105	Dean Danielski	Farley	18	154	48	1.00	3.26	1.79	0.30	6.25	1.45	3.03	**17.08**
106	Rodney Larson	Brandt	27	153	46	1.06	1.18	2.76	0.34	6.67	1.68	3.14	**16.83**

WATERSHED DISTRICT RULES AND REGULATIONS

In 2021 the District amended portions of its rules to further clarify permitting requirements. A copy of these rules can be found at our website (mstrwd.org) or at the District office.

It is the intention of the Managers to promote the use of the waters and related resources within the District in a provident and orderly manner to improve the general welfare and public health for the benefit of its residents.

The requirement for a permit from the Managers for certain uses of water or for certain works within the District are not intended to delay or inhibit development, rather the permits are needed so that the Managers are kept informed of planned projects. The Managers can advise, in some cases provide assistance and ensure that development of the resources of the District is orderly and in accordance with the overall Management Plan of the District. Below are pieces of the District Rules amended in 2021; for a more comprehensive text, please use the District Rules that can be found at our website.

○ Works Requiring Permits from the Board of Managers

A Permit shall be obtained from the MSTRWD prior to any work being commenced for:

A. Waste disposed of directly or indirectly into any drainageway, including public drainage systems.
B. Any in-field drainage, including installation of surface and subsurface drains, which create new or improved existing downstream outlet control on a public drainage system.
C. Any installation of a new or improvement to an existing subsurface tile drainage system which increases drainage coefficient.
D. Any new diking, excavating or levee construction or improvement to an existing bridge, dike, levee or culvert in or adjacent to any drainageway that will change the hydraulic efficiency of the drainageway or restrict flows adjacent to the drainageway.
E. Any work causing the flow or drainage of surface water to cross a sub-watershed boundary and thereby deliver water into another sub-watershed.
F. Any diversion or acceleration of water into any public drainage system from any land not assessed to that drainage system.
G. Any construction, installation or alteration of a road or utility crossing beneath a public drainage system.
H. Any pumping of water, including the use of temporary or portable pumps, into a public drainage system or other drainageway. In emergency situations such pumping may be subject to an after-the-fact permit as provided in these Rules.
I. Any installation, extension or alteration of a dike, if the final dike (taken as a whole) has a cumulative effect of altering the drainage of more than ten (10) acres of land.

As a condition of a Permit, the Board may require monitoring of the work proposed by a Permit applicant. The Board may require the applicant to be responsible for some or all monitoring costs and expenses incurred as a condition of the permit.

A Permit granted by the MSTRWD does not relieve the applicant of the responsibilities of obtaining any other authorization required by law or regulation or alter the applicant's responsibility or liability under statutory or common law.

- Works Administratively Approvable

The MSTRWD Administrator is authorized to approve the following Permit applications without Board consideration or approval:

A. Emergency repairs requested by a governmental agency concerning public safety.
B. Lengthening of an in-place culvert.
C. To maintain or replace culverts or crossings, so long as the replacement or maintenance does not increase or change the hydraulic capacity, size, elevation or location of the culvert or crossing.
D. Requests from other governmental agencies (township, city, county, state) that include hydraulic analysis performed by a Licensed Professional Engineer.
E. Culverts installed in drainageways that conform to the MSTRWD's Culvert Size Chart contained in Appendix II.
F. Relocation of crossings that do not alter the hydrology of a drainageway.
G. Improvements to culverts of less than eighteen (18) inches to a culvert size of eighteen (18) inches or less, provided the elevation and location of the culvert remains the same.
H. Permits for tile drainage installation for a farm yard, homestead, bin site, commercial site, or permits for sub-surface drainage involving similar small-impact projects.

In addition to the other guidelines and standards outlined herein, when considering the types of Permit applications described under Works Administratively Approved paragraphs A, B, C, D, E, F, G,H the following Rules shall apply:

I. The MSTRWD Administrator shall not approve Permit applications which propose to change the elevation or grade of a drainageway.
J. The MSTRWD Administrator may add reasonable conditions to the approval of a Permit to address site-specific or work-specific concerns. Conditions requiring performance prior to the initiation of work shall be met before the applicant can begin work. All conditions of the Permit, to the extent possible, shall be met before the Permit installation can be deemed complete.
K. If a Permit application meets the administrative approval requirements (under Works Administratively Approved paragraphs A, B, C, D, E, F, G) but the MSTRWD Administrator determines that administrative approval is inappropriate due to unusual circumstances or additional information is required, the Permit application shall be brought before the Board for their review and approval.
L. The MSTRWD Administrator shall report all administratively approved Permits to the Board.
M. The MSTRWD Administrator is not authorized to deny a permit but may provide the Board with a recommendation for denial of the Permit application, including reasons for denial.

- Works Not Requiring Permits

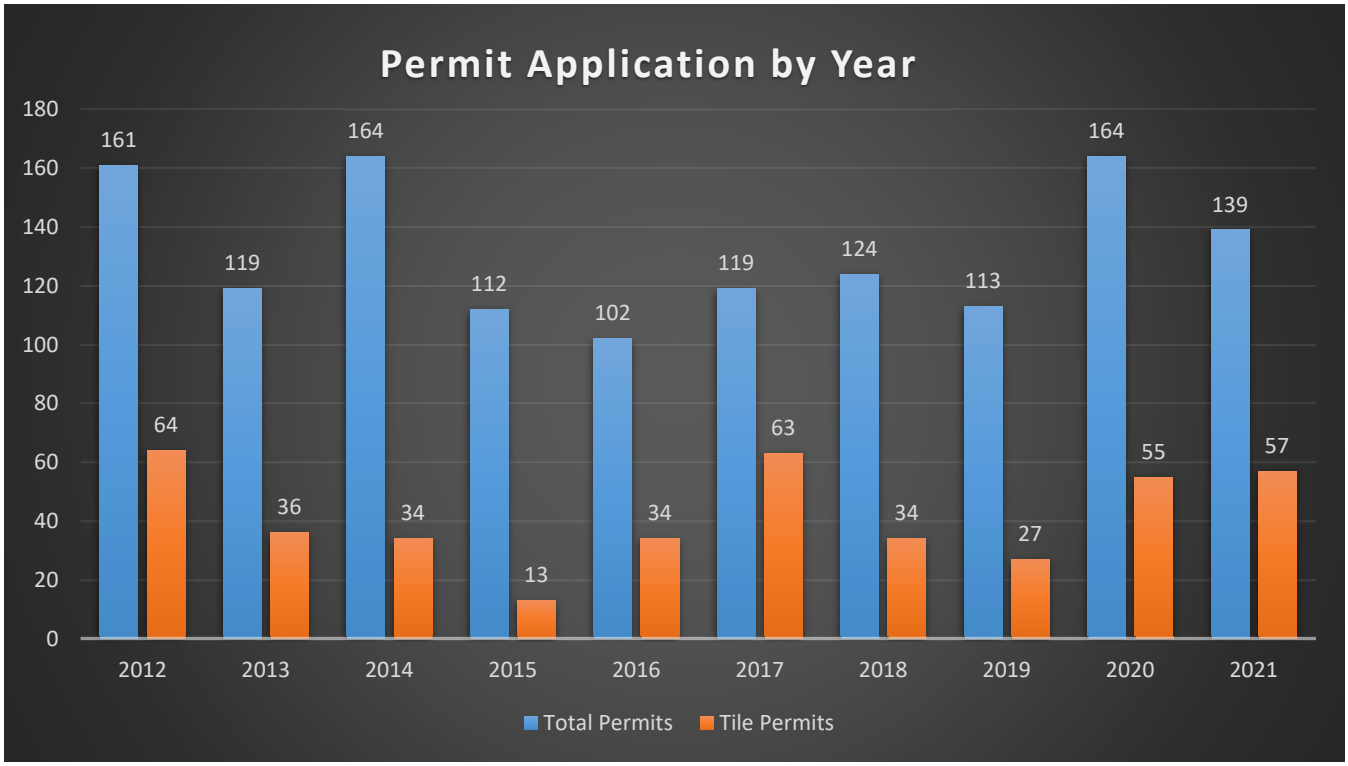
No Permit from the MSTRWD is required:

A. To perform maintenance on an existing drainageway that is not under the authority of the MSTRWD. A landowner or public entity performing maintenance is responsible for ensuring the work constitutes maintenance as defined on Page 28 in these Rules. If a landowner is unsure whether proposed work constitutes maintenance, they may seek technical assistance from the MSTRWD.
B. To maintain, repair or replace damaged subsurface tile drainage or subsurface tile drainage pump within a private drainageway without altering the original permitted design of the system.
C. To install in-field drainage improvements where the outlet for such improvements is not a public drainage system and the immediate downstream outlet control (i.e. a culvert or other restriction) is not improved.
D. To perform maintenance or repair on levees and dikes which does not alter the original works permitted by the MSTRWD.
E. To install, extend or alter a dike, if the final dike (taken as a whole) does not have a cumulative effect of altering the drainage of more than ten (10) acres of land.
F. Nothing herein shall relieve the applicant of the responsibilities of obtaining any other authorization required by law or regulation, or alter the applicant's responsibility or liability under statutory or common law.

Permit applications need to be submitted by Wednesday at noon, prior to the next Board Meeting. The Board reviews permit applications at each regular meeting. Anyone contemplating work described above is urged to contact the Watershed District office for additional information. To get a copy of the Amended Rules & Regulations an individual may stop by the office or access it in our website.

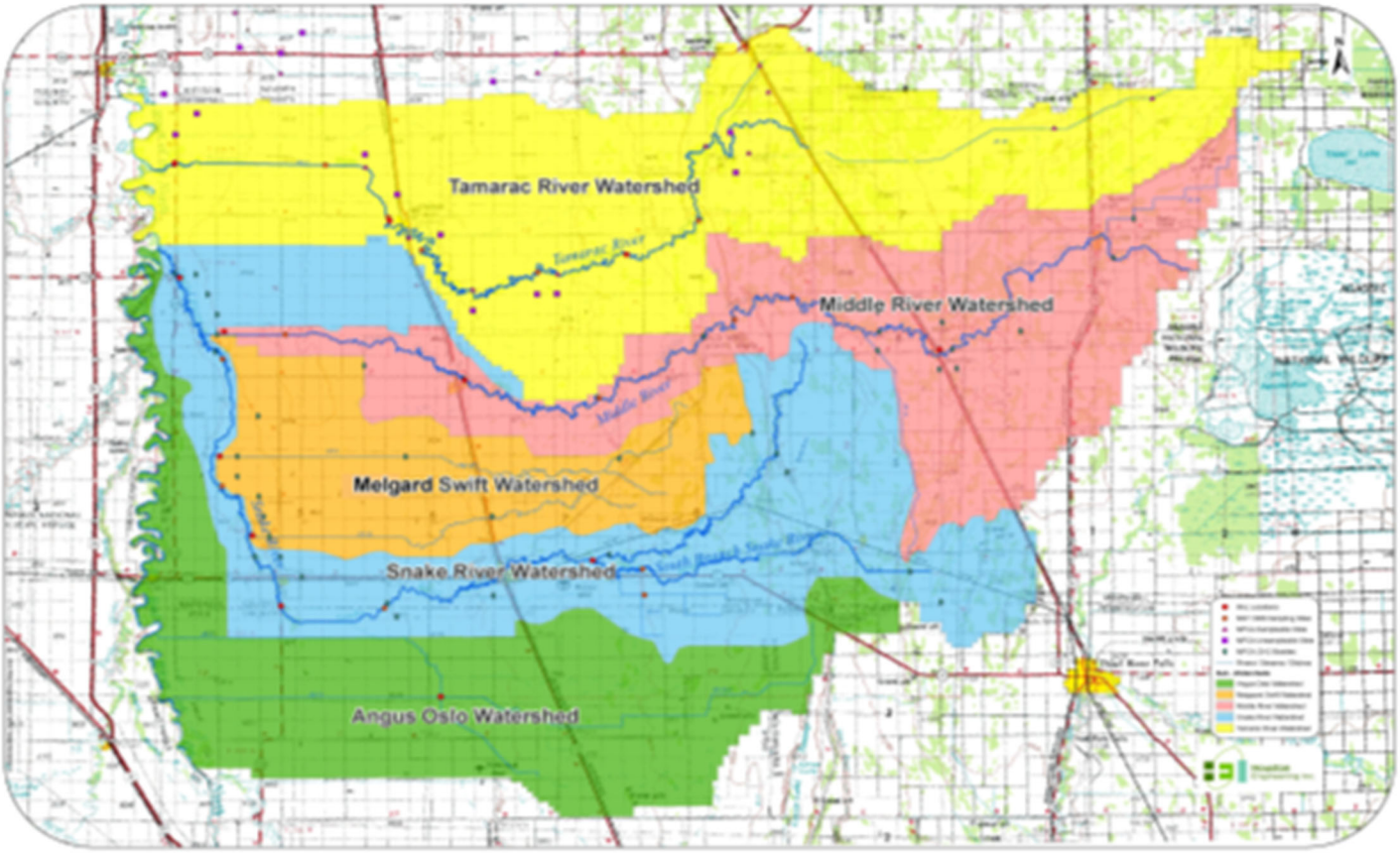
PERMITS

The District Board requests that all permit applications be submitted by Wednesday, at noon, prior to the next Board Meeting to allow for staff to gather information for the Managers in a timely manner. In 2021, the District received 139 permit applications of which 57 were for drain tile, and 27 were for new crossings that were reviewed by the Board. The following table demonstrates the number of permit applications per year from 2012 to 2021.



Total number of permit applications per year

FIVE PLANNING REGIONS OF THE MSTRWD



Each of the five planning regions of the MSTRWD are highlighted in different colors

Tamarac River Planning Region

In general, issues within this planning region are associated with flooding/runoff reduction, erosion and sediment control, channel maintenance, water quality, wildlife and land use management.

Flooding is common throughout the District during spring melt and heavy rains. Floodwaters from both the Tamarac and Middle Rivers frequently break out of the banks near Stephen and east of Argyle, which cause overland flooding. Additionally, runoff initially designated for the Roseau River is being diverted into this planning region and continues to aggravate flood conditions. The region also struggles with providing adequate drainage, while minimizing erosion and maintaining channel stability. Throughout the region, channels appear to be undersized. This is evident by the widespread instability of the channels as they down cut and widen to handle flows. In addition to water erosion, soils within the region are highly susceptible to wind erosion. Wildlife and water quality issues include fish passage concerns, low base flow conditions and the impaired status of the river.

For more information on current projects within this planning region please see Judicial Ditch #19 RCPP Project Team and Tamarac River WRAPS under the Ongoing Projects section of this document.

Middle River Planning Region

As with the Tamarac River, the Middle River planning region exhibits a number of problem areas associated with flooding, erosion, channel stability, loss of habitat, and water quality. Accelerated runoff from the eastern portion of the region contributes to higher flows and flooding in the middle and western portions of the region. Despite the accelerated runoff, drainage systems in the eastern portion are undersized for the flow they receive. This contributes to the bank instability and erosion observed across the region. The accelerated runoff also created low flow conditions in the regionthat do not adequately support aquatic life, as is evident by the impaired status of the river.

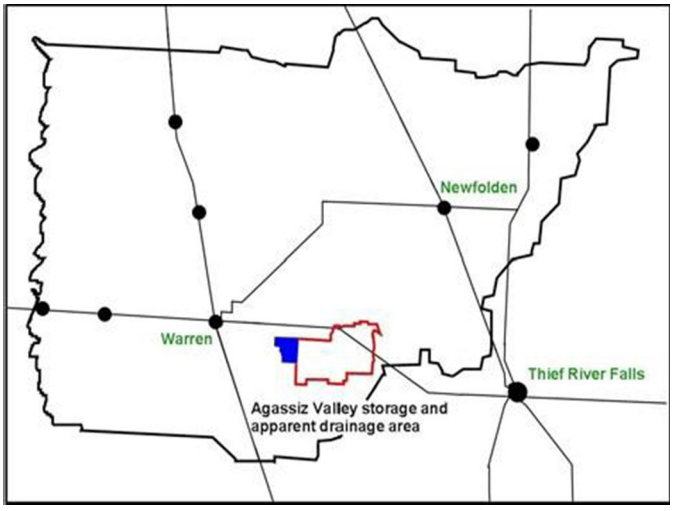
For more information on current projects within this planning region please see Newfolden/Middle River Sub watershed Flood Damage Reduction Project Team and the Snake & Middle River WRAPS under the Ongoing Projects section of this document.

Snake River Planning Region

Overland flooding, channel instability and insufficient channel size are persistent problems through this planning region. Channel improvements and restoration projects are needed along the Snake River, contributing ditches and coulees, to remove sediment and debris, to stabilize stream banks. The intent of these efforts is to prepare the stream to handle the flows without floodwaters spilling over the banks. As in other regions, soil erosion caused by wind, conversion of CRP land and the farming of riparian buffer strips are prevalent concerns. Wildlife management issues in the region include a need for clarification of DNR permits/requirements when cleaning Protected Waters, ditches and streams, a request to shift emphasis from managing public land from waterfowl to all wildlife species, and concerns about effect low base-flow conditions in the streams affecting fish habitat.

For more information on current projects within this planning region please see Judicial Ditch #14 RCPP Project Team and the Snake & Middle River WRAPS under the Ongoing Projects section of this document.

Agassiz Valley Water Resources Management Project



Agassiz Valley Water Resource Management
Location and Drainage Area

The Agassiz Valley Water Resource Management Project (Agassiz) was developed from the outcome of the Mediation Agreement between the State of Minnesota and the Red River Watershed Management Board. The project was one of four funded by the State Legislature at a cost share of 75% State and 25% local. A multi-purpose project, it combines flood control and environmental enhancement features. Groundbreaking for the project was held June 24, 2008 and the entire flood control project was operational in the spring of 2010.

Project Statistics	
Drainage Area (square miles)	~31.6 square miles
Total Floodwater Storage (acre-feet)	10,670 acre-feet = 6.4 inches of runoff
Gated Flood Storage (acre-feet)	6,840 acre-feet = 4.1 inches of runoff
Temporary Flood Storage (acre-feet)	3,830 acre-feet = 2.3 inches of runoff
Approximate Land Requirements	2,600 acres
Prairie and Emergent Wetland Areas	~ 480 acres
Estimated Total Cost	$10,700,000

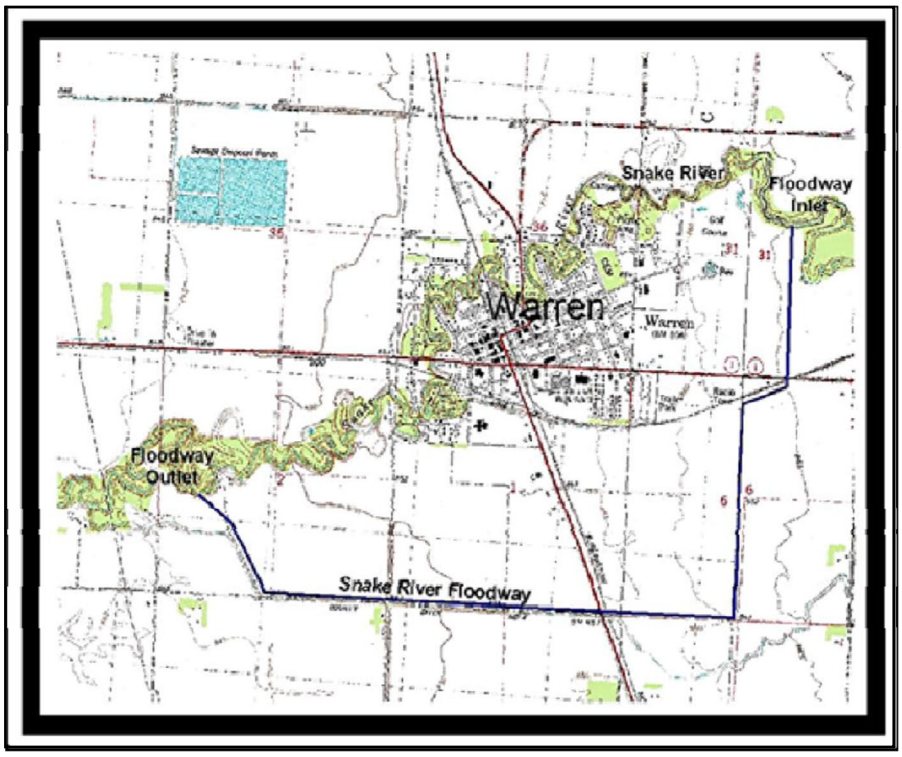
Agassiz occupies four sections of land and includes inlet ditches to total approximately 2,600 acres in the vicinity of Comstock Strip Township & McCrea Strip Township in Marshall County and Helgeland Township & Brislet Township in Polk County. The impoundment temporarily stores floodwater originating in the drainage area of Judicial Ditch #25-1. The project includes the construction of approximately 5.25 miles of embankment; associated inlet and outlet work; approximately 5.5 miles of inlet channels and approximately 2 miles of bypass channel.

Figure 1 Agassiz Valley aerial photo looking southeast, the outlet structure is located at the bottom of the photo. JD #25-1 is the ditch that Agassiz outlets into, which flows to the Snake River.

Agassiz has a significant impact in reducing flood damages in the Snake River Basin and also reduces flood damages in the Red River Basin. In addition to providing significant flood control and water quality benefits, the project provides grassland and woodland habitat, increased species diversity, educational and recreational opportunities, interpretive trails and overlooks, and a summer base flow augmentation for the Snake River.

Snake River PL-566 Project

Throughout its history, the City of Warren has endured numerous floods. In 1996 and 1997, the City suffered 3 major floods that caused an estimated $12.7 million dollars in damages. The late Mayor of the City of Warren, Richard P Nelson, had a dream to spare his City from more years of ravaging floods from the Snake River. Mr. Nelson recognized the opportunity provided by the USDA/NRCS Small Watershed Program, and set out to make his dream become a reality.

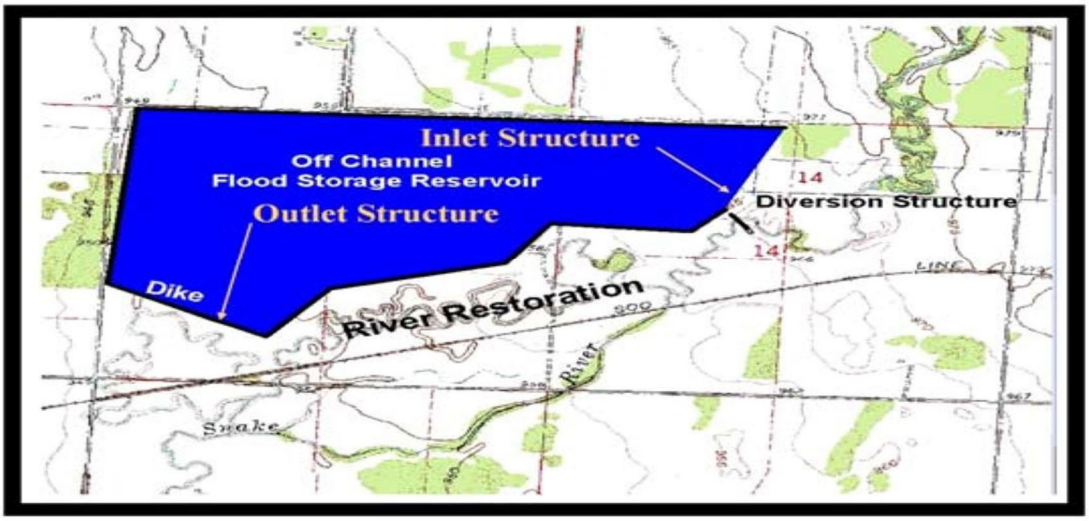


PL-566 Richard P Nelson Floodway map

In 1997, the City of Warren and the MSTRWD, the local sponsors of the project, asked the Natural Resources Conservation Service (NRCS) for assistance on planning and construction on the Snake River Watershed Project.

In November 1999, project plan consisted of 4 phases of construction: the lower mile of the floodway and outlet chute, the off-channel floodwater storage site, the Snake River diversion structure and upper 3 miles of floodway, and the establishment of the mitigation features. In 2000, the MSTRWD held two public hearings and unanimously passed the Order for the Establishment of the PL-566 Project. The Snake River PL-566 Project groundbreaking ceremony *"Soaring to a Bright Future"* was held on October 26, 2001.

Although the project was not totally complete, it was operational in the spring of 2006 and it saved the City of Warren from flooding. The NRCS's estimation was approximately $8.7 million of flood damages that could have occurred. The PL-566 Project was officially dedicated in the summer of 2010. The Natural Resources Conservation Service and the MSTRWD provided funding for the landscaping of the Richard P. Nelson monument.



Map showing the location of the Off-Channel Flood Storage Reservoir located in Comstock Township

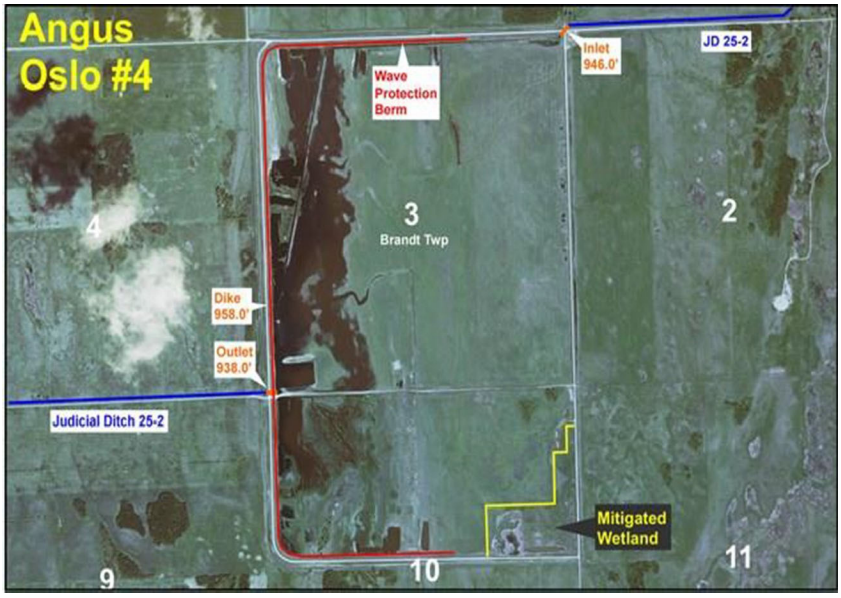
The Off-Channel Flood Storage Reservoir and Diversion ditch were funded by PL-566 which requires that the NRCS do yearly inspections of the project. Dave Jones from the NRCS completed an inspection of the Snake River Off Channel Storage Site. Cracking and deterioration along the inlet channel to the outlet drop structure has not changed from the 2016 inspection. Varmint digging continues to be an issue on the outside face of the embankment. This will require ongoing maintenance by the Watershed District. Dave Jones also inspected the Richard P Nelson Diversion Ditch around Warren.

Aerial photo of the Off-Channel Storage Reservoir located in Comstock Township

Melgard-Swift Coulee Planning Region

Overland flooding is the major concern in this region, particularly in the vicinity of CSAH 3 and TH 75. In addition, there is a general concern about channel instability and capacity in the areas of CD3 and along both the Melgard and Swift coulee channels. Soil erosion caused by water and wind has been deposited in the channel beds. The process is thought to be exacerbated by the conversion of CRP land to farmland and the farming of coulee edges, resulting in the need for more frequent channel maintenance. As with other regions, additional storage is likely needed to correct accelerated runoff timing and mitigate both minimum and peak flows. For more information on current projects within this planning region please see the Swift Coulee/ Marshall County Ditch 3 Project under the Ongoing Projects section of this document.

Angus-Oslo Planning Region

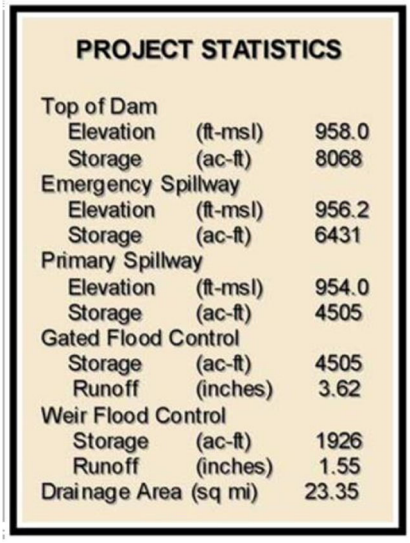


Map of Angus Oslo #4 Impoundment

Overland flooding, channel stability, soil erosion and ditch maintenance are issues in this planning region. During flood events access to the city of Oslo is limited. Restricted access to Oslo can be as long as five weeks. Portions of townships roads are under water with the worst problems being near the Red River. The channelization of streams in this region has reduced aquatic habitat diversity. Three of the District's five projects are in this Planning Region.

Angus Oslo #4 Impoundment

Angus Oslo #4 Outlet Structure



Angus Oslo #4 Project Statistics

In December 1994, the Board of Managers initiated by resolution for a new project to establish an off-channel impoundment in the vicinity of Sections 3 and 10 of Brandt Township, Polk County, Minnesota. Construction of the impoundment started in 1999 and has been operational since 2001. The total estimated cost of the project is $3.3 million. The Red River Watershed Management Board funded approximately 85% of the construction cost. The Watershed paid approximately 15%, with additional funding from a State of Minnesota Flood Damage Reduction Program Grant.

The drainage area above the project is approximately 23.4 square miles. The project can store 4,500 acre-feet of water (5.2 inches of runoff) - up to the emergency spillway.

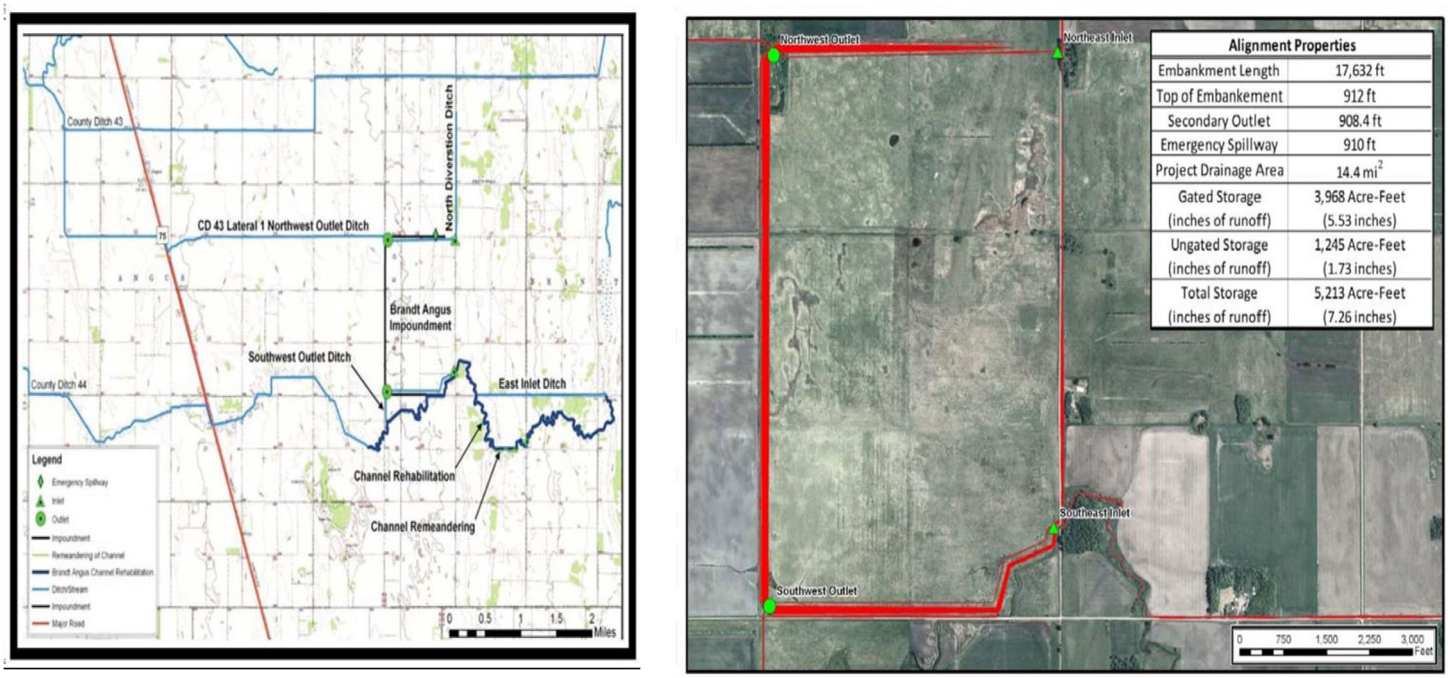
Following the impoundment construction, downstream landowners had expressed concerns about water leaving the bypass ditch during previous high flow events. Originally planned for 2019, the Bypass Raise project had been delayed until 2020 due to wet conditions. The exterior spoil bank was built up upwards of 2.5' and was tied back into the existing ridge. Kraulik Excavating of Karlstad was awarded the job and they used clay from a borrow pit inside the impoundment to build up the dike.

Brandt/Angus Coulee Project

The Brandt/Angus impoundment is a multi-purpose off channel flood control project combining both flood control and environmental enhancement features through Wetland Reserve Program (WRP). It became operational in 2012 and it occupies approximately 1.5 sections of land (960 acres) 3.5 miles southeast of Angus in Polk County. The impoundment can hold 5,213 acre-feet of water (3,968 acre feet of gated and 1,245 of un-gated to the emergency spillway) from a calculated 7.26" of runoff.

The primary purpose of the Brandt-Angus project is to reduce flood damages downstream, reduce the frequency of summer storm flooding of agricultural land and to restore/maintain/enhance the natural stream habitat in the Brandt Angus Coulee. Secondary features are to provide for environment enhancement features such as wet prairies, stream restoration and water quality benefits.

The Red River Watershed Management Board and the MN Department of Natural Resources partnered with the Brandt/Angus Project through the Flood Damage Reduction Program and the MSTRWD.



Maps of Brandt-Angus Impoundment

When Brandt Angus Coulee was being planned, the MSTRWD agreed to assume the responsibility of maintaining the coulee up and downstream from the impoundment. In August, Olson Construction TRF Inc removed sediment from about 4,850’ of the coulee in section 25 Angus Twp, downstream from the impoundment.

In 2010, the Project received Step II approval from the RRWMB and entered into a Flood Damage Reduction grant agreement with the MN DNR. With the natural resource enhancements that have been incorporated into the project, a 65% State 35% local cost share was obtained.

In addition, the District was able to utilize the Natural Resource Conservation Service WetlandRestoration Program (WRP) to offset land acquisition costs. Over 575 acres were enrolled into a conservation easement at a savings of over $450,000 to the Project. Restoration of wetlands relates to the District's management plan by increasing quality wetlands.

Wetland Reserve Programs signs are posted around the property mapping the boundaries of the wetland restoration

Following the wet fall of 2019, landowners upstream of the impoundment inquired if there was a way to get water into the impoundment faster. In 2020 the District hired Kraulik Excavating to regrade the northeast inlet ditch allowing water to enter the impoundment at a quicker rate. The District also had the Brandt/Angus coulee cleaned downstream of the southwest outlet to improve the rate of releasefrom the impoundment.

Photo taken at the Brandt Angus Coulee Project. This was taken looking west from the NE corner of the Project and is of the NE Inlet Ditch.

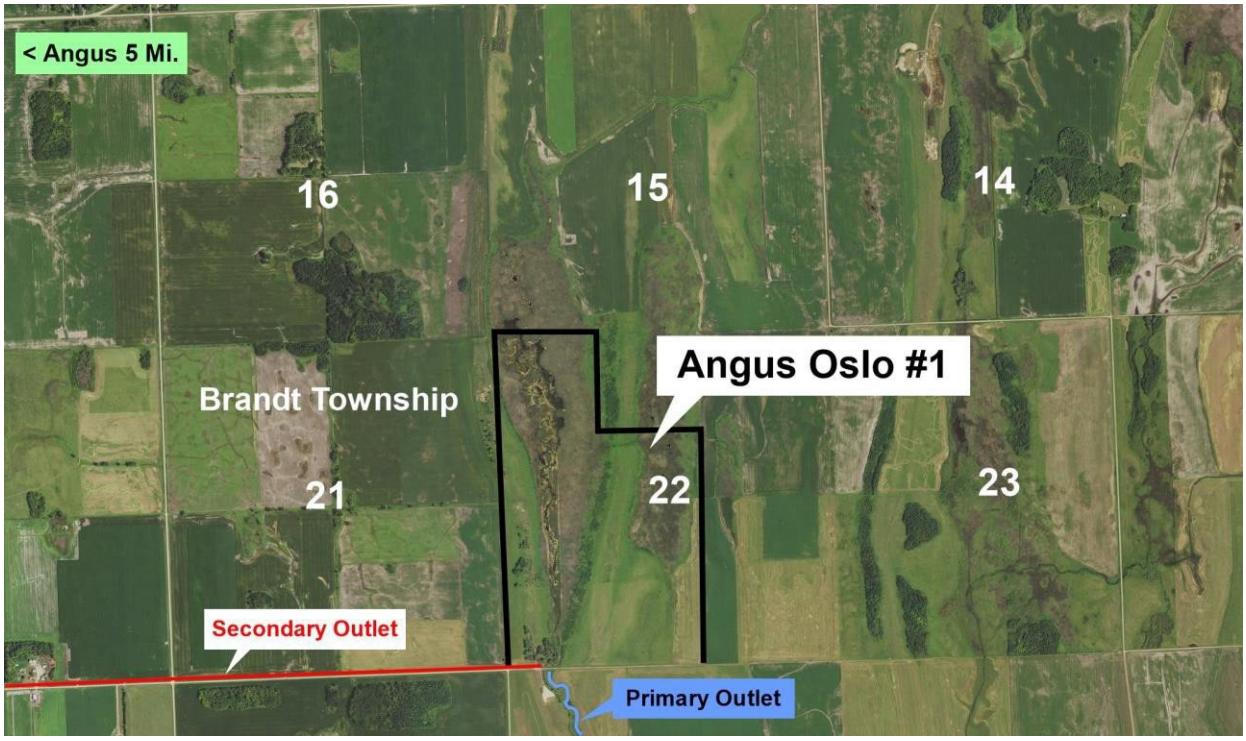
The ditch was deepened to increase the westerly grade to allow for improved drainage from the North Inlet Ditch along 260th Ave NW.

Angus Oslo Site #1 Impoundment

SELECTED STATISTICS		
100 yr		
Storage	(ft.-msl)	941.8
Volume	(ac-ft)	570
10 yr		
Storage	(ft.-msl)	940.8
Volume	(ac-ft)	340
Gated Storage		
Storage	(ft.-msl)	940.5
Volume	(ac-ft)	295
Drainage area	(sq mi)	3.1

Angus Oslo 1 statistics

The Board of Managers of the Middle River Snake River Watershed District (now the Middle-Snake-Tamarac Rivers Watershed District) established the Angus Oslo Site #1 Impoundment in 1982. Primarily a flood control project, Angus-Oslo #1 also provides incidental wildlife benefits. The affected area includes a wetland area totaling approximately 125 acres and approximately 145 acres of cropland. Completed in 1983, the $152,000 project was funded by the Legislative Commission on Minnesota Resources (LCMR), the Red River Watershed Management Board and the Middle River Snake River Watershed District project fund.



Map of Angus Oslo #1 Impoundment

THE RED RIVER WATERSHED MANAGEMENT BOARD

The MSTRWD is a member of the Red River Watershed Management Board. In 2021, Manager Bill Petersen was appointed as the District's representative and Manager John W Nelson, the alternate.

As a member, the District coordinates with the RRWMB on the following projects:

- The District cost-shares with the RRWMB on Flood Damage Reduction Projects.
- The District supports the RRWMB River Watch program with high schools in the Red River Basin. Students from Warren-Alvarado-Oslo, Marshall County Central and Stephen-Argyle Central collect water samples in the District. The resulting data is forwarded to the International Water Institute.
- The District partners with the RRWMB on cost-sharing with the US Geological Survey in the maintenance and operation of stream gauges.
- In 2010, the RRWMB entered into an agreement with the Red River Joint water resources Board in North Dakota to form the Red River Retention Authority (RRRA) whose purpose is to seek funds to construct flood retention projects on both sides of the Red River of the North.

The RRWMB website https://www.rrwmb.us/ features RRWMB news, current projects, meeting documents, governing documents, policies, maps, contact information of RRWMB members and more!

MARSHALL COUNTY WATER RESOURCE ADVISORY COMMITTEE

The District is a member of the Marshall County Water Resources Advisory Committee (WRAC). District staff attends quarterly WRAC meetings along with landowner and Marshall County Township Association representatives and staff from the Minnesota Pollution Control Agency, Red Lake Watershed District, the Soil & Water Conservation District, the Natural Resources Conservation Services, US Fish & Wildlife Service, Board of Water and Soil Resources, Agassiz National Wildlife Refuge, MN DNR and the Marshall County Commissioners.

POLK COUNTY WATER RESOURCE ADVISORY COMMITTEE

The District is a member of the Polk County Water Resources Advisory Committee (WRAC). District staff attend quarterly WRAC meetings along with Polk County Commissioners, East Polk Soil & Water Conservation District, West Polk Soil & Water Conservation District, Board of Water & Soil Resources, Polk County Environmental Services, MN Department of Natural Resources, Sand Hill River Watershed District, Red Lake Watershed District, MN Pollution Control Agency, The Nature Conservancy, River Watch, and International Water Institute.

EDUCATION AND OUTREACH

District staff encourage college and high school students, birdwatchers, community groups, outdoor recreation clubs and tourists to contact the District for tours of the MSTRWD flood control projects.

The MSTRWD and the Red Lake Watershed District have 5 locations where informational kiosks have been placed along impoundment sites to aid in educating bird enthusiasts and others interested in the natural resource enhancements impoundment sites have to offer within the area. The 5 locations are listed below.

Agassiz Valley Water Resource Management Project

5 miles east of Warren on 280th Ave NW and 1 mile south of Warren on 210th ST NW.

Agassiz Audubon

5 miles east of Warren on 280th Ave NW and 3 miles south of Warren on 190th ST NW.

Brandt-Angus Impoundment

2 miles south of Angus on US HWY #75 and 2.5 miles east of Angus on 120th St NW.

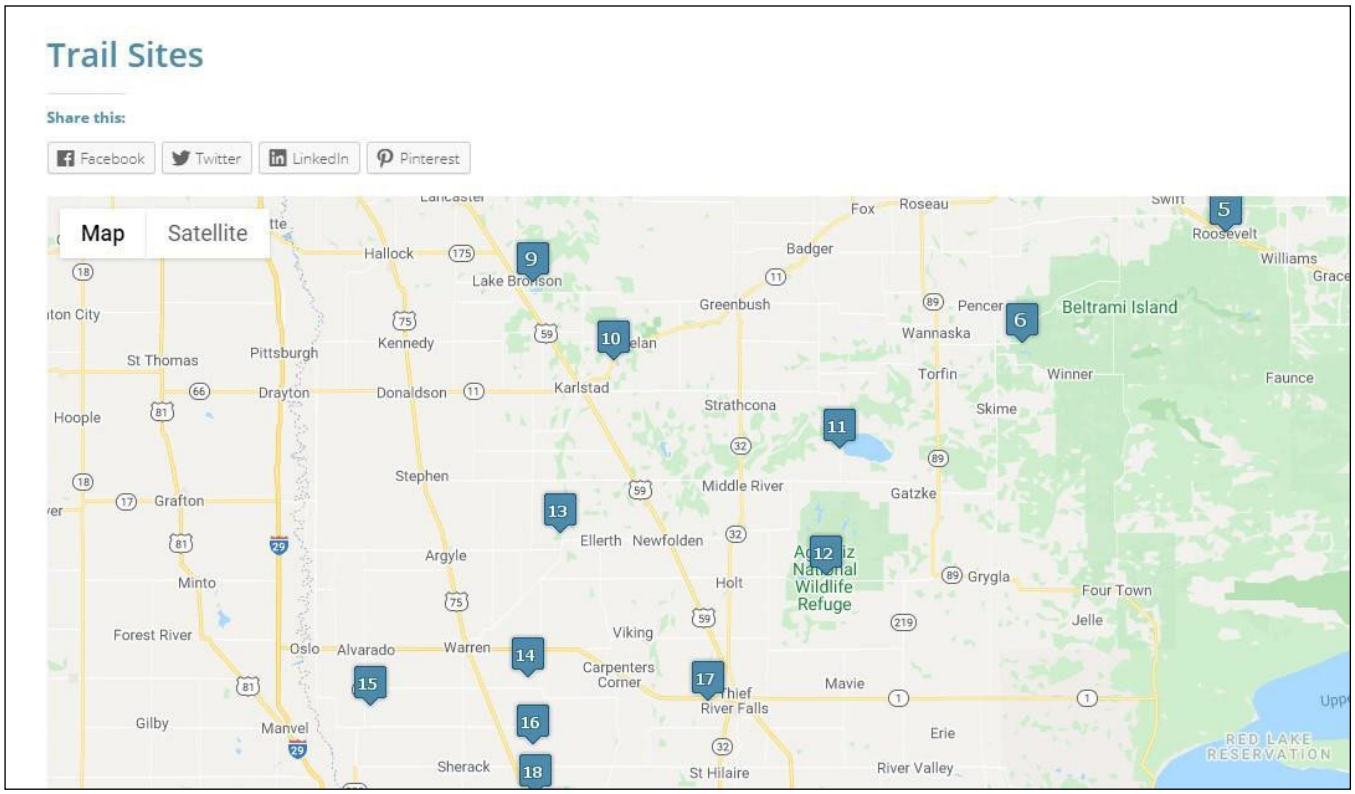
Euclid East Impoundment

1 mile east of Euclid on County Road #19.

Parnell Impoundment

4.5 miles south of Euclid on US HWY #75 and 2.5 miles east on County Road #17.

The Agassiz Valley Water Resource Management Project, Angus Oslo #4 Impoundment and the Brandt/Angus Impoundment sites were added to the Pine to Prairie Birding Trail. The Minnesota Trail is over 200 miles in length with 45 sites to view birds. The Pine to Prairie International Birding Trail extends another 300 miles north of Minnesota into Manitoba, Canada with an additional 23 sites and bird species.



Locations: #14 Agassiz Valley Water Resource Management Project; #15 Angus-Oslo #4; #16 Brandt/Angus

Additional information can be found on the Pine to Prairie International Birding Trail website, https://mnbirdtrail.com/about/.

Photographs taken by Heidi Hughes

MSTRWD Staff photo

Photograph taken by Heidi Hughes

The ditch systems and impoundments in the MSTRWD bring lots of wildlife and birds to the area. Impoundments such as Agassiz Valley and Brandt Angus Coulee, have great viewing areas that are open to the public. There are a spectacular variety of waterfowl especially during the migration seasons. The photos above, taken by Heidi Hughes who works with the Agassiz Audubon Society, are just a few birds that one can see. The Agassiz Audubon Society does bird conservation, habitat restoration, nature field trips, public programs, and more. They provide lots of opportunities to go birding and experience nature throughout the Red River Valley and the 480-acre property formerly known as the Agassiz Audubon Center at Wetlands Pines and Prairie Audubon Sanctuary. The property is owned and operated by the MSTRWD. If you would like more information about this organization, check out their Facebook page https://www.facebook.com/agassizaudubon/ or e-mail at agassizaudubon@gmail.com. You can even call to report bird sightings at 218-745-5663.

Photographs taken by Heidi Hughes

PUBLIC ACCESS

The District encourages the public to use the District properties for recreation opportunities such as canoeing, hiking, bird watching, photography, horseback riding, fishing, trapping and hunting. No motorized vehicles or boat motors are allowed on the properties.

HUNTING

The District has a public access permit procedure whereby an applicant reads and understands the District's access rules. The rules were developed from citizens within the District and based upon MNDNR hunting regulations, which were edited and approved of by the District Board. There were 198 people that obtained permits to hunt, trap and fish on the District's properties in 2021.

PROJECTIONS FOR 2022

Impoundments

The District will continue to maintain the impoundments. Inspections will continue by staff and engineers.

Ditch Maintenance

The MSTRWD will continue to maintain ditch systems to keep them in good conditions based on District staff inspections and reports received from citizens and based on priorities set forth and on the financial standing of the ditch system.

Water Quality

The new 1W1P plan focus on water quality and the information available through WRAPS reports on different sub-watersheds, the District will continue to incorporate Water Quality benefits into the design of its future maintenance, repair and capital improvement projects.

The Red River Watershed Management Board

The District will continue to work with the Red Board in constructing flood control projects through the Mediation Agreement of 1998. The MSTRWD is committed to the RRWMB goal of 20% reduction of Red River peak flows from its tributaries into the Red River.

Stream Maintenance

The rivers and streams in the MSTRWD are important to the managing of surface water in the MSTRWD. Therefore, we will continue to assist landowners and agencies in the removal of deadfall trees from the channels, using programs such as Sentence to Serve (STS). The District historically has expended up to $5,000 per year contracting with STS.

Outreach and Education

Tours of the PL-566 Richard P Nelson Floodway and Off Channel Storage Site, the Agassiz Valley Water Resources Management Project can be arranged. Trail kiosks installed at Agassiz Valley, Brandt/Angus and the Agassiz Audubon Society location are available for viewing. To go along with the installation of the kiosks, all of these sites including Angus/Oslo #4 have been designated bird friendly sites mapped out by Pine to Prairie. The walking trails created and maintained by the Agassiz Audubon Society are open for exploration during the growing season and cross-country skiing in the winter months.

Drainage Management

Whether staff and the Board are working on the next flood damage reduction project, a ditch maintenance project or stream debris removal, the District will strive to incorporate its management plan. While the District's funding partners have been an important ally towards improving our natural resources, we anticipate further future opportunities in coordinating approaching projects with fellow agencies.

DITCH LEVIES

The following page has the list of the 2021 ditch levies to be collected in 2022, for the drainage systems under the jurisdiction of the District and the "Independent Auditors Report" for the year ending December 31, 2021. Once the levies are set, they are given to the Marshall, Pennington and Polk County Auditors.

2021 Ditch Levies for Drainage Systems under the Jurisdiction of the MSTRWD

			Redetermination of Benefits		2021 Levy	
System	County	Portion	Year	Benefits	%	($)
JD #1	Marshall	13.56%	1993	$497,195	4.00%	$19,888
	Polk	86.44%	1992	$3,168,795	2.50%	$79,220
WD #2	Marshall	100.00%	1991	$40,513	1.23%	$498
SD #3	Marshall	100.00%	1958	$98,435	15.00%	$14,765
WD #4	Marshall	73.33%	1990	$97,791	1.25%	$1,222
	Polk	26.67%	1990	$35,575	2.00%	$712
WD #5	Polk	100.00%	1999	$2,568,049	0.50%	$12,840
WD #6	Polk	100.00%	1999	$1,940,736	0.50%	$9,703
WD #7	Marshall	58.40%	2000	$304,504	0.50%	$1,522
	Polk	41.60%	2000	$34,063	0.50%	$170
WD #7 Imp	Marshall	58.40%	2000	$76,133	0.25%	$190
	Polk	41.60%	2000	$54,237	0.25%	$136
JD #14	Marshall	74.92%	2014	$983,879	3.00%	$29,516
	Pennington	25.08%	2014	$329,416	5.00%	$16,470
JD #15	Marshall	100.00%	1980	$1,535,665	2.75%	$42,231
JD #16	Marshall	100.00%	1987	$929,352	0.50%	$4,647
JD #17	Marshall	6.48%	1982	$43,470	0.00%	-
	Polk	93.52%	1982	$627,149	1.00%	$6,271
JD #20	Marshall	100.00%	1985	$2,354,906	1.70%	$40,033
JD #21	Marshall	100.00%	1985	$279,838	1.80%	$5,037
JD #24	Marshall	72.78%	1990	$247,353	0.75%	$1,855
	Polk	27.22%	1990	$92,494	0.75%	$694
JD #25-1	Marshall	38.34%	2014	$388,653	4.00%	$15,546
	Polk	56.33%	2014	$571,047	4.00%	$22,842
	Pennington	5.33%	2014	$54,032	4.00%	$2,161
JD #25-2	Marshall	9.21%	1989	$70,810	4.50%	$3,186
	Polk	55.66%	1989	$427,954	4.50%	$19,258
	Pennington	35.13%	1989	$270,062	4.50%	$12,153
JD #28	Marshall	100.00%	1913	$55,990	20.00%	$11,198
JD #29	Marshall	100.00%	1981	$2,237,910	2.50%	$55,948
CD #39	Marshall	100.00%	1990	$125,681	0.99%	$1,244
CD #39i	Marshall	100.00%	1996	$108,466	0.99%	$1,074
CD #43	Polk	100.00%	1989	$1,176,137	4.30%	$50,574
CD #44	Polk	100.00%	1989	$1,001,112	2.00%	$20,022
JD #68	Polk	100.00%	1995	$248,110	0.15%	$372
JD #75	Polk	100.00%	1990	$3,653,439	3.00%	$109,603
CD #175	Polk	100.00%	2019	$1,288,554	2.75%	$35,435
CD #175 BRF	Polk	100.00%	2019	$1,288,554	5.09%	$65,587

CONCLUSION

2021 was identified as an extreme dry year in the area, although in some instances we received some rain with Argyle reviving a record setting amount of 6.5 inches. The dry year gave us an opportunity to work on some of the sediment removal and ditch maintenance projects. However, this was not just our District who was trying to hire contractors to use the opportunity and that is why the contractors' availability was a limiting factor. The lack of moisture delayed cover crop germination, which leaves the soil subject to erosion over the winter.

The public often comments that it seems like we are getting more water than we used to, which is true. Depending on where a person's property is, land use probably provides the biggest change. Following that, is the ditching methods have vastly improved. Spotty, heavy rain events continue to cause localized flooding and damages. The one thing District staff hasn't seen, is drainage changes from one sub-watershed to another. Occasionally, staff does meet with landowners to view suspected alterations in drainage.

The City of Newfolden 100 Year floodplain and Flood Prevention Project is planned to see construction in 2022-2023.

Nelson Slough/ JD19 is in permitting process and is anticipated to see construction start in 2023.

Lilac Ridge/ JD14 progressed some but is still in early permitting process. It is anticipated if the project passes the DNR's requirements, construction can start in 2024.

The Swift Coulee project will still look for funding to acquire lands in 2022. As a successor, the planning for permitting and construction will follow.

The One Watershed One Plan, administered through the Board of Water and Soil Resources, will be approved in 2022 and will serve as the Districts 10 year Watershed Management Plan. With the input from three committees including: Policy, Advisory and Steering, and the prioritizing of goals, it is anticipated to be a comprehensive and workable plan.

If you have any questions, comments or concerns related to the mission of the MSTRWD, please contact a Board Manager or the staff at the District office.

INDEPENDENT AUDITOR'S REPORT

Management's Discussion and Analysis

Basic Financial Statements

Notes to Basic Financial Statements

Supplementary Information

Supplementary Statements

Independent Auditor's Report on Legal Compliance