

Two Rivers
Watershed District
In Roseau, Kittson, & Marshall Counties

2023 Annual Report



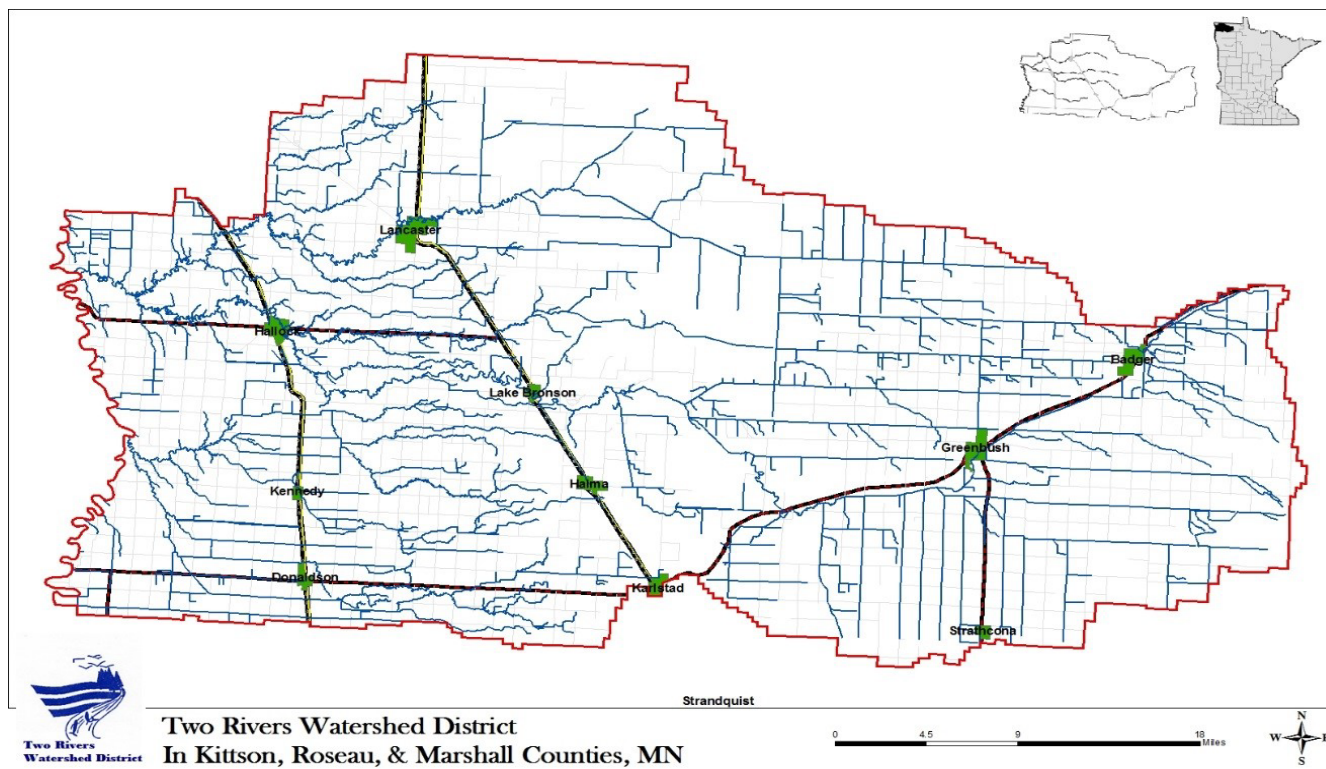
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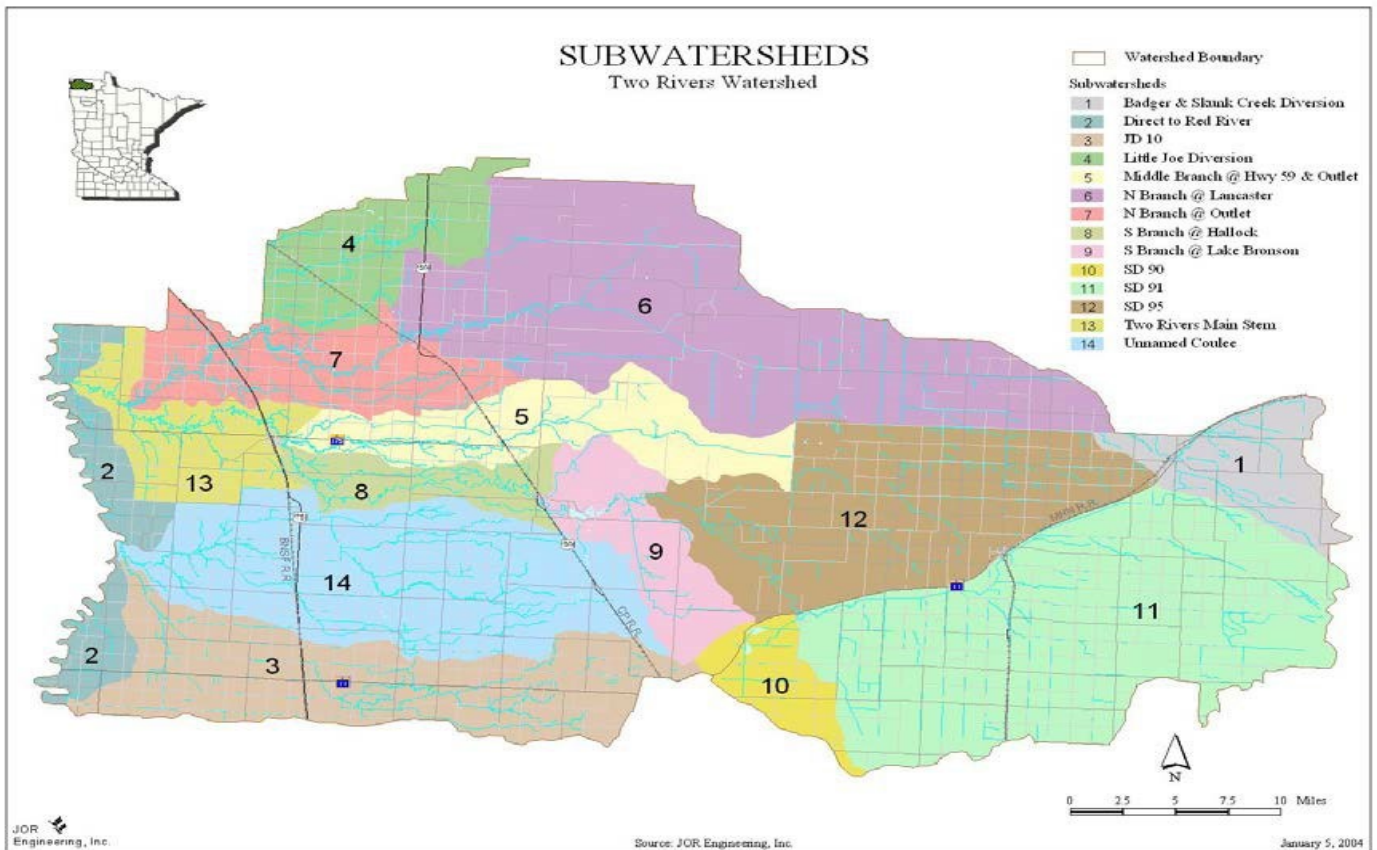
The Two River Watershed District was established by order of the Minnesota Water Resources Board on October 30, 1957. It was the second watershed district to be organized within the State of Minnesota, and the first to write and approve an overall plan. The District is located in much of Kittson County, the western 1/3 of Roseau County, and extreme northwestern Marshall County, all in northwest Minnesota.

The land area of the District encompasses 1,454 square miles. The boundary does not follow political boundaries, rather it follows drainage boundaries. The District stretches 65 miles from the Red River on the western boundary to the eastern boundary located between the cities of Badger & Roseau. At its widest north-south point, the District stretches 33 miles. It is bordered to the north-west by the Joe River Watershed District; the north by the Province of Manitoba, Canada; the east by the Roseau River Watershed District; the south by the Middle-Snake-Tamarac Rivers Watershed District; and to the west by the Red River of the North, which is also the boundary with North Dakota.

The Two Rivers actually consists of three branches – the North, Middle and South Branch. The South Branch arises southeast of Badger, Minnesota and flows in a westerly direction along the south side of Badger and through the cities of Greenbush, Lake Bronson, and Hallock. The Middle Branch drainage area begins east of the Kittson & Roseau County line, travels through the central portion of Kittson County, and outlets into the South Branch just east of the city of Hallock. The North Branch drainage area begins in northwestern Roseau County, travels through Lancaster and Northcote, and joins the South Branch to form the main stem three miles east of its outlet into the Red River.

The southwest portion of the District is a 360 square mile stand alone drainage system that was added to the District in the mid 1980's. This drainage system is comprised of a series of coulees which outlet into legal drainage systems. These legal drainage systems in turn outlet into a series of coulee systems, and in turn they outlet into the Red River. This drainage system flows into the Red River at a point 10 miles south of the outlet of the Two Rivers.





GOVERNANCE

The TRWD Board of Managers is currently made up of 7 members including 2 from Roseau County and 5 from Kittson County. Board members are appointed to a 3 year term by their respective County Commission. The Board of Managers meets once per month to conduct the regular business of the District, and special meetings are occasionally held.

The TRWD established By-Laws and follows them accordingly for meetings and day to day activities. In addition, the Board prescribed their first 'Overall Plan' in 1958, which was the first overall plan of any watershed district in the state of Minnesota. This plan has been updated several times over the years, and was last extensively updated in 2004. The TRWD is updating this plan and when completed, this plan will continue to guide and direct the daily, monthly, and yearly operations of the District.

The District operates under Minnesota Statute, 103D, also known as the 'Watershed Law'. This statute gives watershed districts authority to work on flood control, drainage, water quality, water supply, and other issues that affect water natural resources within rivers, lakes, streams and groundwater. Eleven projects have been constructed and another is in the works to help with drainage and alleviate flooding. Nine projects including 3 impoundments and 40 miles of watercourse channels have been constructed. In addition, the District utilizes Minnesota Statute 103E (the Drainage Code) to maintain 73 miles of legal drainage ditches.

The District Technical and Citizen's Advisory Committees are made up of concerned citizens, appointed officials, and representatives of governmental agencies that in some way

work with or affect the water resources of the District. These committees meet at least once per year to provide input and guidance to the Board of Managers regarding District programs and activities.

The District is a member district of the Red River Watershed Management Board, which was established in 1976 by the MN Legislature. The RRWMB is made up of 7 watershed districts within the Minnesota side of the Red River basin. Its mission is to “institute, coordinate, and finance projects and programs to alleviate flooding and assure the beneficial use of water in the watershed of the Red River of the North and its tributaries”. Through the RRWMB, the TRWD is affiliated with the Red River Retention Authority and the Red River Basin Commission. The District is also a member of MN Watersheds, which is the statewide association of watershed districts.

Since its inception, the Board of Managers have established numerous policies regarding various management issues. Many of these relate to permits issued under the *Rules of the Two Rivers Watershed District*, and others relate to general activities of the District. The District follows its stated policies whenever possible and uses discretion when applying these policies.

Manager & Staff Roster 2023

Board Members	Title	Phone	Email	Address	County	Term Ends
Rick Sikorski	President	218-782-2783		30825 110th Ave, Lancaster, MN 56735	Roseau	10/31/2024
Roger Anderson	Vice President	218-455-6269		1561 110th Street, Drayton, ND 58225	Kittson	10/31/2024
Daryl Klegstad	Secretary	218-265-2073		4151 210th Street, Halma, MN 56729	Kittson	10/31/2025
Gerald Olsonawski	Treasurer	218-843-8094		P.O. Box 293, Hallock, MN 56728	Kittson	10/31/2025
Bruce Anderson	Manager	218-782-3147		18960 170th Ave, Greenbush, MN 56726	Roseau	10/31/2026
Scott Klein	Manager	218-843-2752		1946 200th Street, Hallock, MN 56728	Kittson	10/31/2026
Paul Johnson	Manager	218-843-3791		2464 250th Street, Hallock, MN 56728	Kittson	10/31/2024
Staff Members						
Dan Money	Administrator	218-843-3333	dan.money@tworiverswd.com	410 S. 5th Street, Suite 112, Hallock, MN 56728		
Tyler Coffield	Technician	218-843-3333	tyler.coffield@tworiverswd.com	410 S. 5th Street, Suite 112, Hallock, MN 56728		
Consultants						
Jeff Hane	Attorney	218-843-3686		Brink Lawyers - Hallock, MN 56728		
Blake Carlson	Engineer	218-277-7409		Widseth - Crookston, MN		
Jacob Huwe	Engineer	218-681-6100		HDR Engineering - Thief River Falls		

Meetings

The Board of Managers of the Two Rivers Watershed District generally held meetings on the first Thursday of each month in 2023. An Annual meeting was held in January 2023. Special meetings were held from time to time at the discretion of the Board. All meetings of the TRWD are held in accordance with the MN Open Meeting Law. Meeting minutes are posted on the District's website: www.tworiverswd.com.

Existing & Completed Projects – Authorized under MN Statute 103D

The following are established and proposed projects of the Two Rivers Watershed District. They were built under Minnesota Statute 103D for various purposes including flood control, erosion control, water quality benefits, wildlife enhancement, and drainage for cropland. Each is inspected annually and operated and maintained by the District.

Detailed information regarding each project is on file at the TRWD office. Interested individuals can obtain copies of all project information upon request.

<i>Project Name</i>	<i>Description</i>	<i>Location</i>	<i>Established</i>	<i>Status</i>
Middle Branch Project #1	9.0 mile channel improvement	Thompson & Hazelton Townships, Kittson Co	1968; PL 566	Yearly Inspection & Maintenance
North Branch Project #2	11.8 mile channel improvement	Richardville, St. Joseph, Granville, & Poppleton Townships, Kittson Co.	1969; PL 566	Yearly Inspection & Maintenance
Soler Project #4	5 mile extension of State Ditch #72	Soler & Moose Townships, Roseau Co.	1979; Petition Project	Yearly Inspection & Maintenance
Dewey Project #5	1.8 mile lateral to State Ditch #91	Sections 26 & 35 Dewey Township, Roseau Co.	1980; Petition Project	Yearly Inspection & Maintenance
Nereson Impound Project	Flood Control Impoundment	Sections 27-28 Nereson Township, Roseau Co	1981; Board Initiated	Yearly Inspection & Maintenance
Nereson Modification Project	Flood Control Impoundment	Sections 33-34 Nereson Township, Roseau Co	2005; Board Initiated	Yearly Inspection & Maintenance
Dewey 5 Improvement Project	Improvement of Dewey #5 Ditch System	Sections 26 & 35 Dewey Township, Roseau Co	2002; Petition Project	Yearly Inspection & Maintenance
Horseshoe Lake Project	Drawdown Structure	Section 14, St. Joseph Township, Kittson Co	1968; Modified 2006; Jointly by Kittson Co, DNR, & TRWD	Yearly Inspection & Maintenance; Gate Operation
Kennedy Project #6	2.6 mile ditch to connect Kittson CD4 & CD27	City of Kennedy, MN	November 2009; Petition Project	Yearly Inspection & Maintenance
Ross Project #7	Flood Control Impoundment	Sections 26, 27, 28, 32, 33,34, Ross Township, Roseau Co	November 2007; Board Initiated	Yearly Inspection & Maintenance; Gate Operation
Springbrook Project #10	Set back dikes and Side water inlets along 8.65 miles of waterway	Springbrook Township sections 22,23,28,29,30; Davis Township sections 25,36	December 2013; Petition Project	Yearly Inspection & Maintenance

Ditch Systems – Authorized under MN Statute 103E

The following ditches were established under MN Statute 103E, the ditch law. Most were originally established between 1900 and 1920. Under the statute ditches are either managed by a county or a watershed district. However, if a new ditch is being petitioned or being petitioned to be improved then the petition goes to the watershed district. The statute also provides a process whereby ditches can be turned over by a county to a watershed district. Therefore the ditches listed below are under the jurisdiction of the TRWD.

Legal Ditches Statute 103E	Length (Miles)	Township(s); County	2023 Levy
State Ditch #49	5.25	Norway; Kittson Co	\$ 0
State Ditch #50	4.5	Klondike; Kittson Co.	\$ 1,000
State Ditch #85 Improvement	0.75	Poppleton; Kittson Co	\$ 0
Judicial Ditch #3	5.5	Teien; Kittson Co	\$ 0
Judicial Ditch #10	31	Davis, Svea, Teien, Kittson Co	\$ 9,500
Kittson CD #7	6.5	Svea; Kittson Co	\$ 0
Kittson CD #10	7.0	Deerwood; Kittson Co	\$ 14,000
Roseau CD #4	7.5	Lind, Dewey; Roseau Co	\$ 5,000
Kittson CD #21 & KCD 21 Improvement	6.5	Hallock, Kittson Co	\$ 50,000

These systems are inspected annually and each system is surveyed a minimum of once every 5 years to assess any changes from erosion or sedimentation. Maintenance activities are undertaken if deemed necessary. These activities include beaver dam removal and beaver trapping, spraying of cattail and other nuisance vegetation, removal of silt and sediment, repair of sloughed side slopes or eroded culverts, and other items as needed. Detailed maintenance reports are kept and filed each year in the ditch file.

The District, as the ditch authority for these ditches, is also responsible for maintaining a ditch fund to pay for maintenance expenses. Each year the District assesses the needs of each ditch and a tax is levied against the “benefited area” of each ditch, if necessary and if the funding is needed. Each year the District certifies this levy to the County Auditor of the County where the ditch is located.

As a result of flooding during both the 2022 and 2023 Presidential disaster declarations, sloughing and erosion has occurred along Judicial Ditch #10, North Branch Project/SD 84, and North Branch Project/JD 31. Site visits, surveys and engineering plans were prepared to fix the sloughing and erosion. Some of the work was completed in the fall of 2023 and the rest of the work will be completed in the summer of 2024.

Two petitions for improvement have been received:

- Kittson County Ditch #7 – a petition was received from landowners and engineer Blake Carlson of Widseth was appointed to prepare and submit a preliminary survey report. A public hearing was held and the Board of Managers accepted the report, directed Carlson to prepare a final survey report, and appointed Viewers to determine the benefits. Once the Engineer’s final report and the Viewer’s report are submitted another public hearing will be held.
- Kittson County Ditch #13 – a petition was received from landowners and engineer Erik Jones of Houston Engineering was appointed by the Board of Managers to prepare and submit a preliminary survey report. Once the report is submitted a public hearing will be held.

OTHER PROJECTS

The project listed below was a project that utilized federal, state, and local funding. It was coordinated by the District but is not an official project of the District and therefore future maintenance is the responsibility of the landowners along its course.

Springbrook / CR 61	3.75 mile meandering channel & set back dikes – flood control	Sections 3,5,6 Springbrook & Sect. 1 Davis Twp, Kittson Co	August, 2008	Maintenance responsibility of landowners
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FARMSTEAD RING DIKES

After the historic flood of 1997, the District participated in a cost share program with the State of Minnesota and the Red River Watershed Management Board to design and install farmstead ring dikes. The dikes were designed and engineered by the TRWD and installed by local contractors. The landowner generally paid 12.5% of the cost, the state paid 75%, and 12.5% was paid by the RRWMB/TRWD. Using this program, 25 farmstead ring dikes were built.

Future Projects:

KLONDIKE CLEAN WATER RETENTION PROJECT #11 – This multipurpose impoundment will provide up to 35,000 acre feet of storage, create an adequate drainage outlet for Lateral 1 of State Ditch 95, store floodwater that overflows from the Roseau River into the Two Rivers, reduce damages to public and private infrastructure, improve aquatic habitat, protect a prairie rich fen, and provide water quality benefits to Lake Bronson, the Middle and South Branches of the Two Rivers and the Red River of the North. www.tworiverswd.com/Klondike.html

HORSESHOE (SKULL) LAKE DAM REPLACEMENT – The original outlet structure was constructed in 1968 and is past its expected life span. The structure was discovered to be failing in 2022 and the TRWD is working with the MN DNR to replace it with a new structure.

JUNEBERRY PROJECT WORK TEAM – Historically flooding impacts happen when the Roseau River overflows into the Two Rivers, typically in larger runoff events. This unique work group is made up of representatives of Kittson County, Roseau County, Roseau River Watershed District, Two Rivers Watershed District, DNR, BWSR, MPCA, and local landowners. The PWT is working to find viable solutions to mitigate this flooding, reduce damages, and provide natural resources benefits.

LAKE BRONSON SEDIMENT PROJECT WORK TEAM – A group of cabin owners on Lake Bronson approached the TRWD with the problem they have been witnessing of sediment entering the lake from upstream sources and causing water quality degradation, reduced navigation, habitat issues, and economic issues. The PWT consists of the cabin owners, DNR, MPCA, and TRWD and is in the process of looking at the feasibility of removing sediment from the lake to provide a long term solution to these issues.

Programs

2023 Monitoring – Data Collection – Staff Activities

Surveys:

- ✓ Completed 17 miles of project and ditch surveys
- ✓ Surveyed several erosion damage areas to ditch systems for repair plans
- ✓ Completed several surveys for private individuals

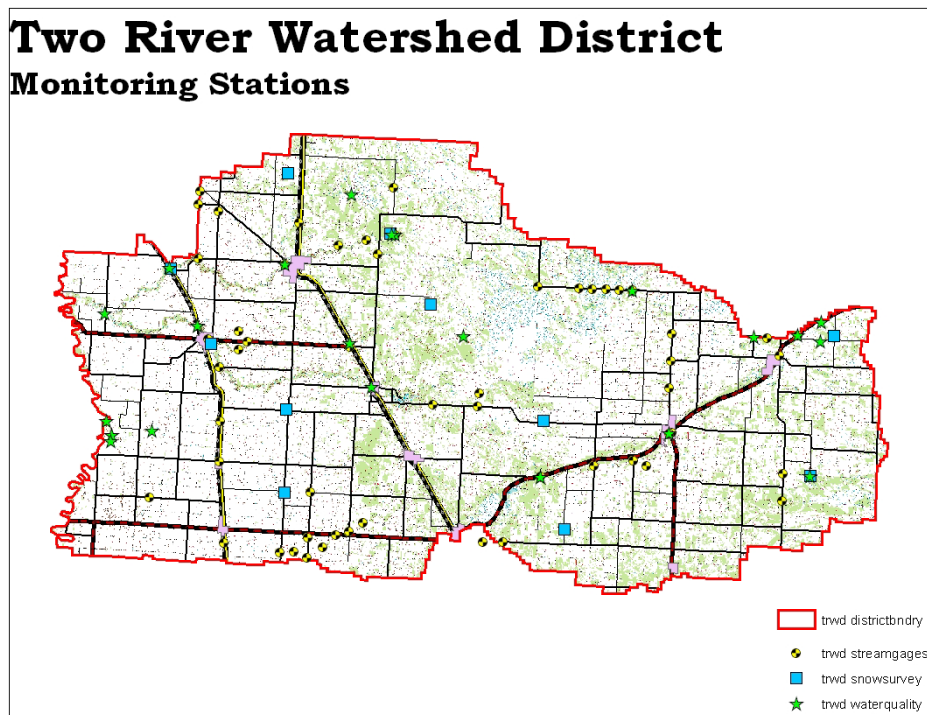
Stream Flow – Flood Fighting:

- ✓ Snow Survey at 12 sites to collect snow depth and water equivalent
- ✓ Erect staff gages & maintenance of existing
- ✓ Monitored several sites for high flow occurrences daily during runoff events (March through October) - Surveyed water elevations during flood events
- ✓ Analyze results & prepare annual stream flow report for distribution
- ✓ Establish rating curves for all stations @ high flow
- ✓ Prepare and distribute daily reports during flooding events – report to NWS, DNR, Others; collaborate with LB dam operators
- ✓ Eventually develop rating curves for all flows, including low flow periods

Water Quality Monitoring

- ✓ Collect water samples at 10 locations throughout the District
- ✓ Monitor on site water temperature, depth, dissolved oxygen, conductivity, ph, transparency, and physical characteristics
- ✓ Send samples to lab for analysis of nitrogen, phosphorous, E. Coli, chloride, total suspended solids, and nitrate
- ✓ Enter all data into spreadsheet database for analysis

Two River Watershed District Monitoring Stations



Operations & Maintenance:

- ✓ Annual Inspection & Tour of Nereson Impoundment with DNR & Roseau Co.;

- ✓ Coordinate operation with DNR during flood events
- ✓ Annual Inspection of Ross 7 Impoundment; operation during flood events
- ✓ Annual Inspection of Skull/Horseshoe Lake with DNR & Kittson Co.; coordination with DNR for structure repair/replacement

Permits:

- ✓ The Rules of the Two Rivers Watershed District were enacted in 1981, and under these Rules, a permit from the District is generally required for any project that alters the flow of water or has the potential to alter the flow of water. This includes but is not limited to ditches, dikes, tile, culverts bridges, diversions and water appropriation.
- ✓ Process & inspect all permit applications as necessary – 56 in 2023
- ✓ Respond to and follow up on permit inquiries, violations and complaints
- ✓ Worked on tile policies and issues and permit procedures

Geographic Information System (GIS)

- ✓ All monitoring data that is collected is entered into ArcMap, the District's computer mapping and data program.

Education & Information:

- ✓ Participate in Envirothon event for high school students & Waterfest for grade school students
- ✓ Continue to coordinate **Northland Conservation News** newsletter with Kittson SWCD 2 editions per year
- ✓ Booth @ Crop Improvement Day, Speak @ Association of Twps
- ✓ News releases, fact sheets, and informational meetings as necessary

Miscellaneous Administrative:

- ✓ Prepare & distribute Annual Report & Audit as required by law
- ✓ Enter & track all financial data using Quickbooks computer program
- ✓ Prepare meeting notices, record & distribute meeting minutes, prepare agendas, etc.
- ✓ Daily office duties including handling phone calls & walk ins, preparing & sending letters, soliciting & administering program funding, grant writing, program coordination, plan writing, and attending RRWMB, FDRWG & MSTC meetings
- ✓ Coordinate staff activities between District Administrator & District Technician
- ✓ Farm Lease Agreements & administration of District owned land
- ✓ Seek funding through legislature, state and federal agencies for projects and programs

Other Activities as Determined by TRWD Board of Managers

Income Sources Used for Staff / Administration

- | | | |
|-------------------|-----------------------------|---------------------------|
| - 2023 TRWD Levy | - RRWMB Water Quality Grant | - Ditch Levy |
| - 2023 RRWMB Levy | - Grants | - State Aid |
| | | - Time Billed to Projects |

Two Rivers Watershed District

2023 Flood Control & Ditch Projects



Ditch Projects & Legal Ditches: The following systems under TRWD jurisdiction are annually inspected for blockages, damages, beavers, etc. and maintenance is scheduled accordingly

- 112 miles of ditch are under TRWD authority / jurisdiction as listed below.

- **North Branch #1 – 11.8 mi:** Visual inspection & regular maintenance; beavers trapped & beaver dams removed; Surveyed – hiring contractor to repair damages
- **Middle Branch #2 – 9.0 mi:** Visual inspection & regular maintenance;
- **Soler #4 – 5.0 mi:** Visual inspection & regular maintenance;
- **Dewey #5 & Improvement – 1.8 mi:** Visual inspection & regular maintenance; Surveyed
- **Kennedy #6 – 2.6 mi:** Visual inspection & regular maintenance; Surveyed & identified damages
- **Springbrook #10 PL566 – 8.65 mi:** Visual inspection and regular maintenance; sprayed vegetation; beavers trapped and beaver dams removed;
- **Roseau CD #4 – 7.8 mi:** Visual inspection & regular maintenance; redetermination of benefits
- **Kittson CD #7 - 6.2 mi:** Visual inspection and regular maintenance; hired viewers and various info meetings on the petition for improvement
- **Kittson CD #10 - 6.5 mi:** Visual inspection and regular maintenance;
- **Kittson CD#13 improvement:** Petition received, appointed engineer, surveyed, etc.
- **Kittson CD 21 & Diversion 1 Improvement – 6.4 mi:** Visual inspection and regular maintenance; Surveyed
- **Judicial Ditch #3- 5.3 mi:** Visual inspection and regular maintenance;
- **Judicial Ditch #10 – 30.1 mi:** Visual inspections & regular maintenance;
- **State Ditch #49 – 5.1 mi:** Visual inspection & regular maintenance;
- **State Ditch #50 – 4.5 mi:** Visual inspection & regular maintenance;
- **State Ditch #85 Improvement – 0.7 mi:** Visual inspection & regular maintenance

Impoundment PROJECTS: The following flood control projects, under the TRWD jurisdiction, were worked on as listed below.

Nereson:

- ✓ Work with DNR to operate as necessary as per Operating Plan
- ✓ Annual Inspection & maintenance
- ✓ held meetings with township officials, County & DNR

Ross #7:

- ✓ Operation as necessary as per Operating Plan during flooding
- ✓ Annual Inspection & Maintenance
- ✓ Management of Farm Lease Agreements

Skull / Horseshoe Lake:

- ✓ Annual inspection and maintenance
- ✓ Worked with HDR and FEMA on replacement of outlet structure
- ✓ Held meetings with DNR / Kittson County / Township

KCWRP#11:

- ✓ Design
- ✓ Permits (USACE, WCA, EAW, SHPO, DNR, etc)
- ✓ Solicit Funding – LSOHC, Legislature, RRWMB, other
- ✓ Land management - maintenance

Other Items As Needed and Directed!!!

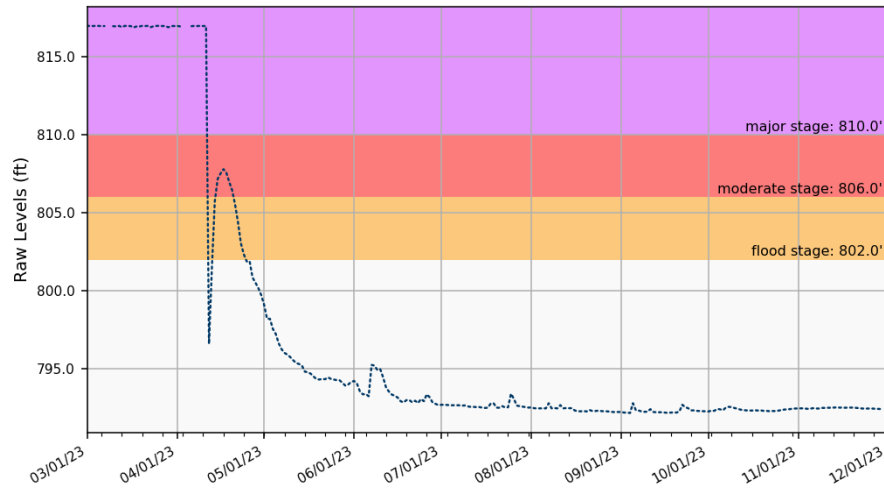
- Survey and data collection during the spring flooding
- Performed numerous private surveys for landownersl

Water Year Summary:

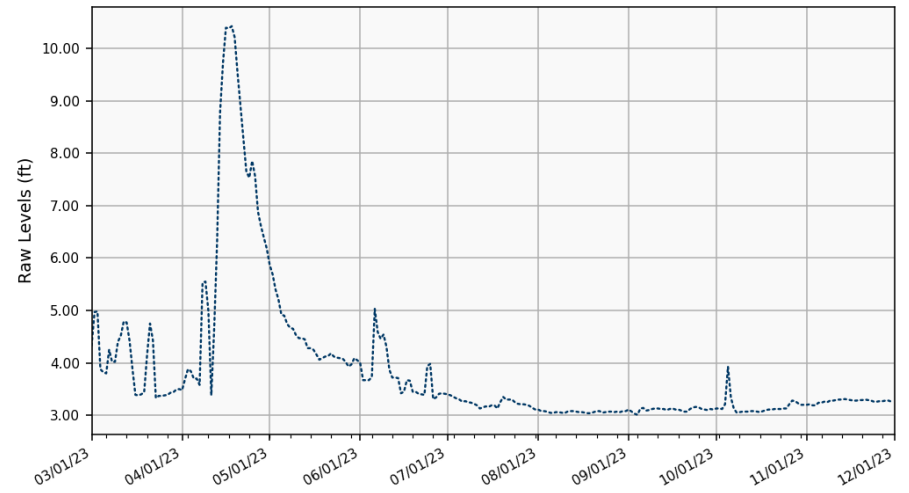
The following hydrographs show two locations on the South Branch Two Rivers, one on the North Branch Two Rivers, and one on Lateral 1 of State Ditch #95 for the period of March through November 2023.

As indicated by these graphs, spring runoff led to moderate flooding in the area. A Presidential Disaster declaration was made for damages sustained by this flooding. The remainder of the year proved to become normal to dry. The US Drought monitor for May 2, 2023 showed no drought conditions for most of the Two Rivers watershed. However by contrast the October 31, 2023 report showed all of the Two Rivers watershed in the “D2” severe drought category. This is also quantified by the graphs.

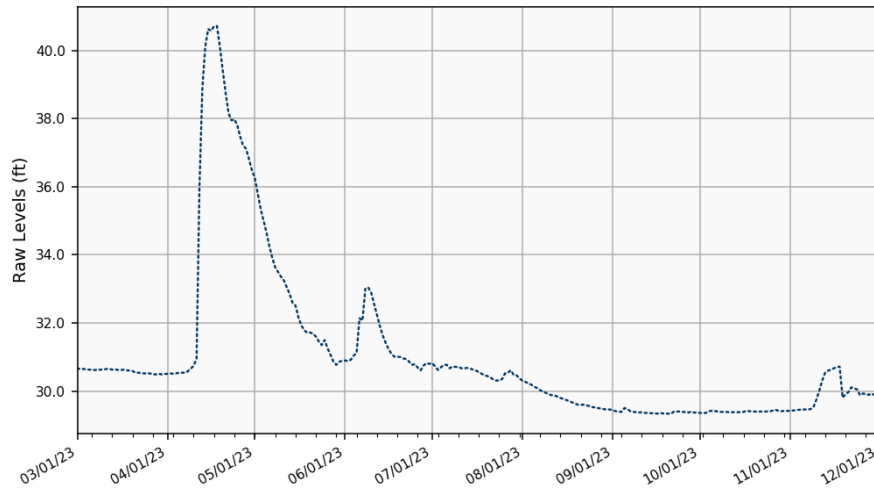
South Branch Two Rivers at Hallock, MN175 (70018001)
2023-3-1 to 2023-11-30



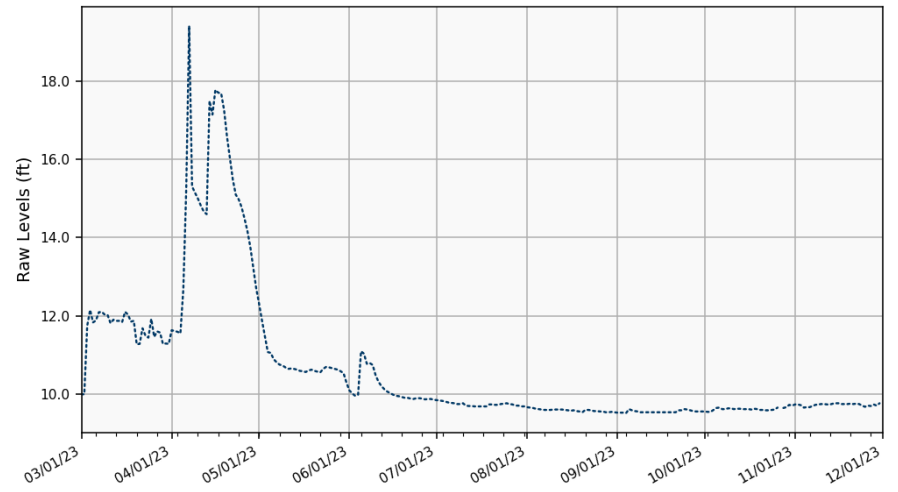
South Branch Two Rivers at Lake Bronson, MN (70033001)
2023-3-1 to 2023-11-30

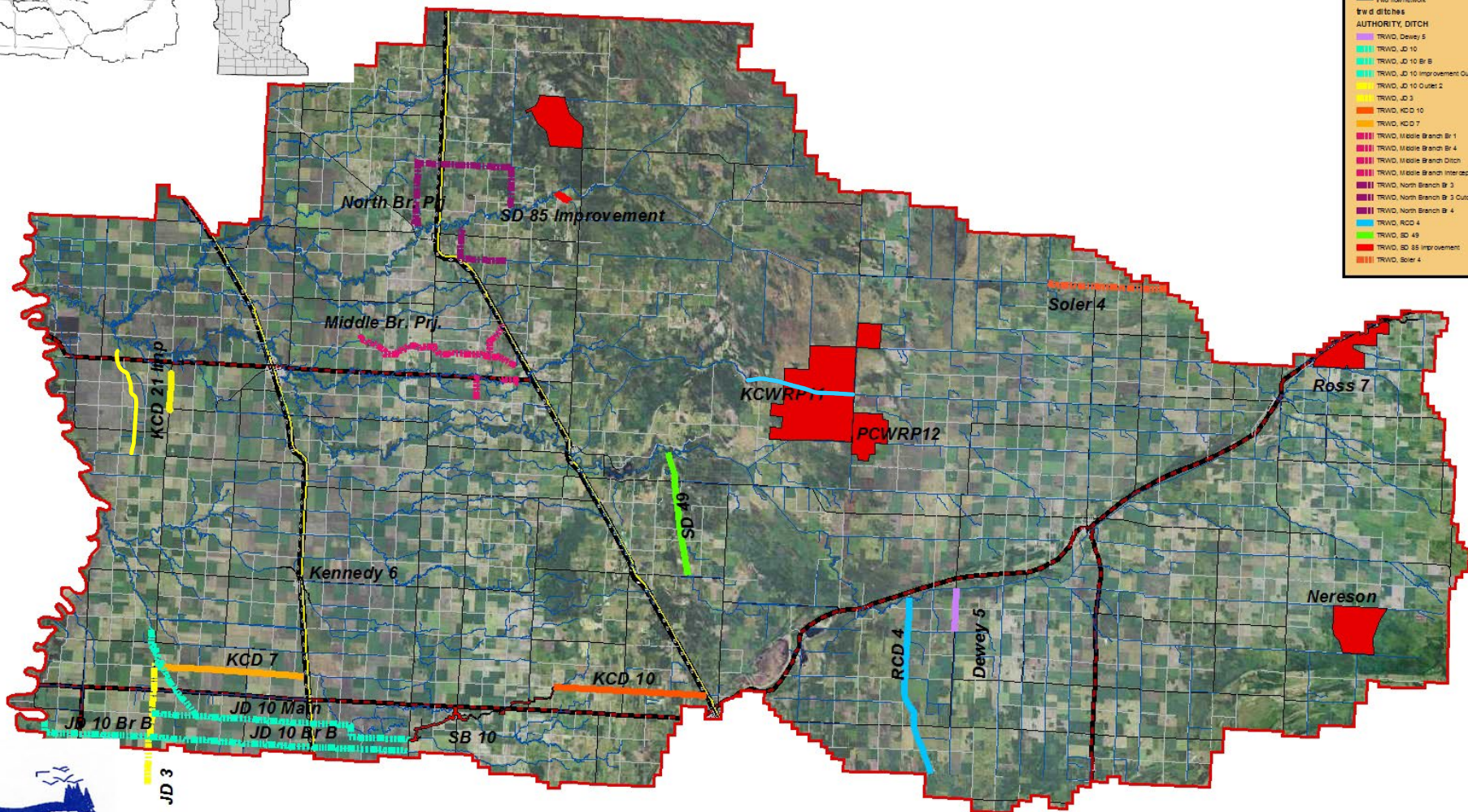
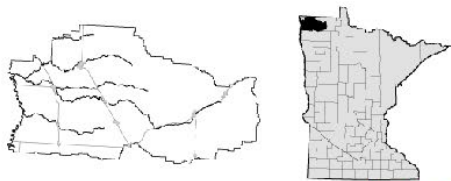


North Branch Two Rivers nr Northcote, CSAH1 (70021002)
2023-3-1 to 2023-11-30



Kittson Roseau Lateral Ditch 1 of State Ditch 95 nr Pelan, 440th Ave (70046001)
2023-3-1 to 2023-11-30





- Legend**
- Projects TRWD 2014
 - Projects Constructed
 - Trd flow network
 - trwd ditches
 - AUTHORITY, DITCH**
 - TRWD, Dewey 5
 - TRWD, JD 10
 - TRWD, JD 10 Br B
 - TRWD, JD 10 Improvement Outlet
 - TRWD, JD 10 Outlet 2
 - TRWD, JD 3
 - TRWD, KCD 10
 - TRWD, KCD 7
 - TRWD, Middle Branch Br 1
 - TRWD, Middle Branch Br 4
 - TRWD, Middle Branch Ditch
 - TRWD, Middle Branch Interceptor
 - TRWD, North Branch Br 3
 - TRWD, North Branch Br 4
 - TRWD, RCD 4
 - TRWD, SD 49
 - TRWD, SD 85 Improvement
 - TRWD, Soler 4



Two Rivers Watershed District Projects and Ditches



2023 Budget

Two Rivers Watershed District

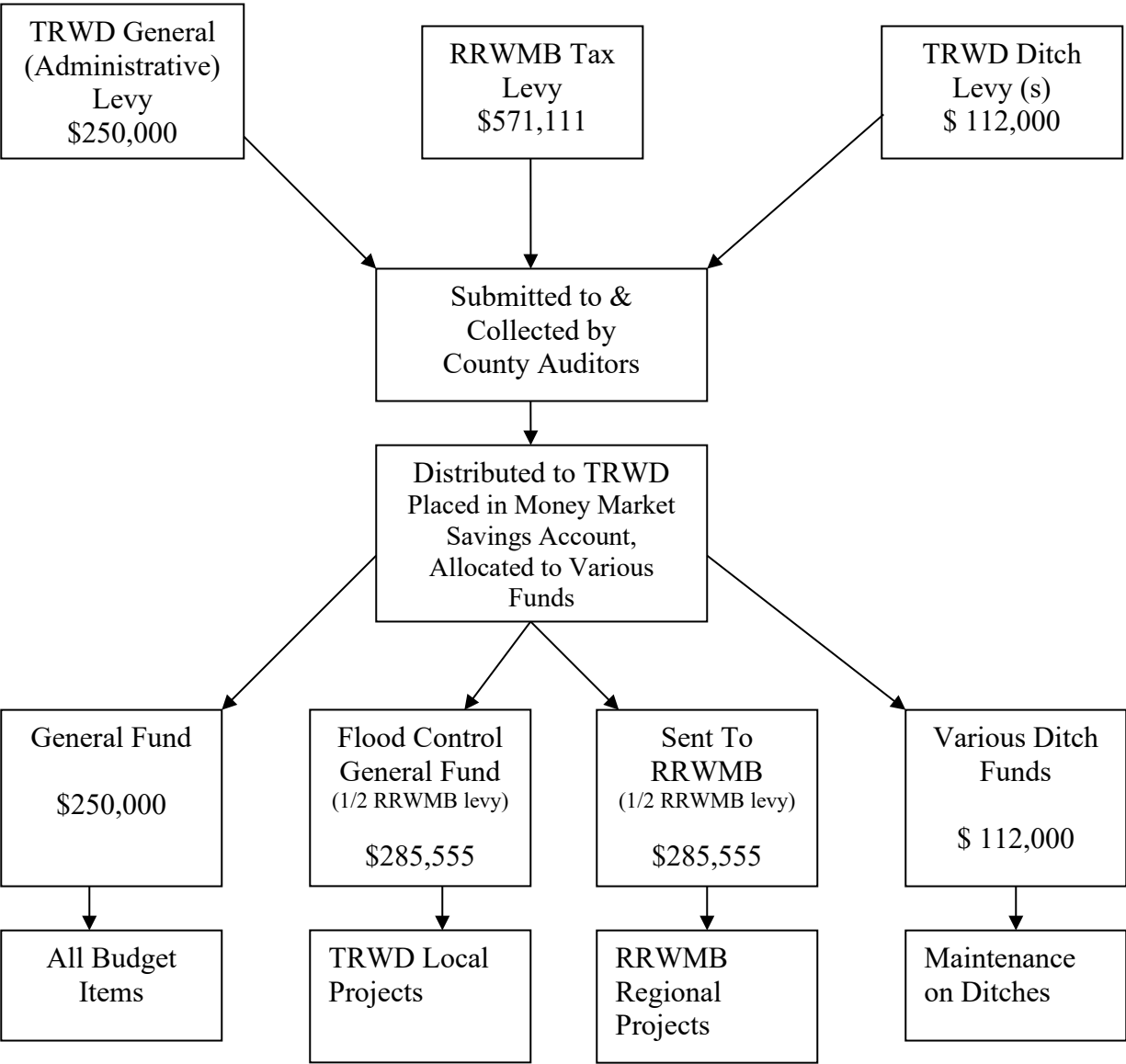
The following is the budget for 2023. This was approved following a budget hearing in September 2022 held by the Board of Managers as required by statute.

Administrative Budget	2023 Budget
Administrative	100,500
Auto Expense	3,500
Capital Outlay	12,000
Conferences & Meetings	7,000
Dues & Subscriptions	4,500
Engineering	15,000
Information & Education	5,500
Insurance	5,500
Manager's Per Diem & Expense	14,000
Office Supplies & Miscellaneous	3,000
Payroll Expense	40,000
Postage & Delivery	1,000
Printing & Advertising	1,500
Professional & Legal	18,000
Rent	12,000
Stream Gage	3,000
Telephone	3,000
Water Quality	5,000
Totals	254,000

Following the hearing, the Board of Managers considered and approved the 2023 general fund ad valorem tax levy of \$250,000, to be levied over the taxable market value within the boundaries of the District.

An additional ad valorem tax set under law by the Red River Watershed Management Board was ratified. For 2023 the Red River Watershed Management Board has certified their levy at 75% of the maximum amount which equals \$571,111 within the Two Rivers Watershed District. 2023 Ditch levies for all legal ditches under the jurisdiction of the District were also considered and approved at the hearing.

The following diagram shows how the tax levies were collected for 2023 and where they were distributed.



TRWD NEWS

TRWD Raises Bounty for Problem Beavers

The Two Rivers Watershed District recently raised its Beaver Bounty from \$75 to \$100 per beaver trapped on ditches under its jurisdiction. These include over 110 miles on 15 different drainage ditches and watershed district projects.



Beaver dams on drainage systems can cause water to back up onto adjacent cropland, and the TRWD periodically inspects its ditches so they can be maintained for proper drainage.

Once a beaver problem has been identified, trappers will be hired to remove the problem beavers. District staff have to be informed of the problem prior to any beaver removal. Bounties will not be paid if staff are not notified prior. After beavers are removed from a ditch, the District will typically hire a backhoe to remove the dam and any debris that is in the vicinity. Please let us know if you are interested in being placed on our list of beaver trappers!

Numerous beavers and beaver dams have been removed from ditch systems and watershed district projects.

Red River Flood Damage Reduction Work Group Works to Help Plan and Design and Projects

There are several organizations within the Red River Valley that are working on the huge problem of flooding. Among these are the RRWMB, RRRRA, RRBC NDJWRB, and others.

One little known organization is quietly helping to identify problem areas, formulate a range of solutions, come up with a preferred alternative, navigate the plethora of federal, state, and local permits, and provide start up funding to get projects off the ground.

This organization is known as the Red River **flood damage reduction work group, or FDRWG.**

History: The FDRWG was formed in 1998 when the Red River Watershed Management Board clashed with the MN DNR and the US Army Corps of Engineers. The federal and state agencies were concerned with environmental impacts to the Red River of flood control impoundments that they said were detrimental. A lawsuit ensued and the judge ultimately decided the two sides must enter into mediation. Over the course of several years, the two sides finally came together and signed the historic 1998 Mediation Agreement. The Agreement stated future projects must consider both Flood Damage Reduction and Natural Resources Enhancements. The FDRWG was thus born, and it is comprised of representation from local citizens, watershed districts, soil & water conservation districts, counties, environmental groups, MN Dept. of Natural Resources, MN Pollution Control Agency, MN Board of Water & Soil Resources, MN Dept. of Transportation, Natural Resources Conservation Service, US Army Corps of Engineers, and the Red River Watershed Management Board.

Purpose: The FDRWG provides guidance and funding to local Project Work Teams, which are formed to identify and solve local water resources problems consistent with the Mediation Agreement. It promotes inclusion of natural resources enhancements in combination with flood damage reduction. It reviews and recommends projects to receive construction funding from regional, state, and federal agencies.

Watershed Districts in the Red River Basin form collaborative project teams that use early consultation and cooperative approaches to plan projects. By combining the knowledge of district staff, local landowners, and state and federal agencies, projects can produce outcomes that are beyond any one organization's capabilities. The Mediation Agreement calls out specific flood damage reduction goals. These include providing flood protection for not only urban areas and farmstead residences, but also providing protection to public infrastructure and to reduce flooding on agricultural lands.

The Agreement that guides the work of the FDRWG also recognizes that planning and developing flood projects can provide opportunities to enhance water quality, wetlands, lakes, stream corridors, and upland habitats. The agreement lists 9 distinct goals for natural resources enhancement that can be advanced through creative project planning.

Funding: Since 1998, the FDRWG has received annual funding from appropriations from the Minnesota Legislature. This funding has been utilized for research regarding various aspects of flood control. To date, 15 technical and scientific papers have been written to aid project work teams in developing projects. Funding is also available to the local planning teams to do research and engineering that is necessary to plan and develop projects and also to apply for the myriad permits that are necessary for most projects.

Numerous projects have been constructed using this process in the Red River Valley, including in the Roseau River, Two Rivers, Red Lake River, Tamarac-Middle-Snake Rivers, and points south. There are currently 8 projects that are in the process, and 4 new start up projects. One of these projects is the "Juneberry Resiliency" project, which is sponsored by the Two Rivers WD, Roseau River WD, and Roseau and Kittson County's. This project is looking at flooding issues and alternatives regarding overflows that enter the Two Rivers from the Roseau River.

Flood Damage Reduction Strategies

- *Reduce peak flood flows on the Red River by 20%*
- *Construct flood impoundments to store a total of 45,000 acre feet of floodwater within TRWD*
- *Provide protection for agricultural lands for up to a "10 year" flood event*
- *Provide protection for cities for a "100 year" event*
- *Prevent loss of life*
- *Reduce damages to public infrastructure (roads, bridges)*

Natural Resources Enhancement Strategies

- *When constructing projects, provide natural resources enhancements when practical and feasible*
- *Protect, Improve, & Enhance Water Quality*
- *Protect, Improve & Enhance Habitat*

For more information on the Flood Damage Reduction Work Group, please visit the following website:

<https://www.rrwmb.us/fdrwg>

Horseshoe Lake Dam Scheduled For Replacement

The Horseshoe Lake Dam, located about 6 miles northeast of the City of Lancaster, MN was constructed between June 1968 and September 1969 under a joint effort between the Natural Resources Conservation Service, MN DNR, Two Rivers Watershed District, Kittson SWCD and other local partners. Its original purpose was for water supply, flood control, and habitat for migratory waterfowl. Construction was funded by the TRWD locally and NRCS federally through the federal PL-566 program. It was one component of a larger project known as the TRWD's "North Branch" project, which included channel work and installation of two grade stabilization structures along portions of State Ditch 84 and Judicial Ditch #31.



The outlet structure at Horseshoe Lake, constructed in 1968 and modified in 2007.

The work at Horseshoe Lake consisted of constructing two earthen dikes, an 8' x 16' concrete box inlet with a 68" x 58" pipe outlet through the dike. The structure underwent repairs in 1985 because the pipe had begun to sag and bow. Repairs were again completed in 1997. In 2007 through a joint effort between the MN DNR, the TRWD, and Kittson County, the structure was modified and a 4' x 6' stop log bay was cut into the concrete box inlet. This allowed water levels to be manipulated better for management purposes and provided a control to better allow for flood storage.

An operation and maintenance agreement was signed by the DNR, TRWD, and Kittson County. The operating plan generally states that the impoundment is closed during times of downstream flooding and opened up after flooding has subsided to be drained dry. The impoundment can store up to 800 acre feet of gated storage and 1,330 acre feet of temporary storage for a total of 2,130 acre feet. It will also be filled during the spring migration to provide a resting area for migratory waterfowl and in the fall to provide hunting opportunities.



Horseshoe Lake Impoundment in 2009, looking west. State Ditch #84 is seen flowing through the area.

The dike and the structure are beyond its expected 50 year life expectancy, and the annual inspections have been done. During last year's inspection it was discovered that the pipe is damaged and water has been piping along and outside of the pipe instead of flowing through it.

This has allowed the dike to erode and a hole is forming in the dike. An engineering inspection and recommendation has been made that the entire structure should be replaced in order to repair the damage and ensure the integrity of the dike. The cost estimate to replace the structure is \$212,489. Potential funding sources for the project include the TRWD, DNR, FEMA, and the Red River Watershed Management Board.

Detailed construction plans and specifications are currently being prepared. The next steps will be to put the

project out for bids, hire a contractor, and perform the work. It is anticipated that the structure replacement can be completed in 2024. This joint local, state and federal effort will ensure that this area will continue to provide both flood control, habitat, and recreational opportunities well into the future.

2023 Construction Projects

The 2023 construction season is about to wrap up, and as usual several projects were undertaken this past summer:

- Judicial Ditch #10 Branch B: Disaster declarations were made each of the last 2 years and erosion has been a problem. Using FEMA funding, 3 ditch bank sloughs were repaired



- TRWD North Branch Project (JD 31): Severe downcutting and side sloughing along a section of the ditch has occurred as a result of the last 2 disaster years. To address this problem, four rock drop structures are being installed to stabilize the slope and prevent future erosion. FEMA funding is being utilized for this project as well.



- Brush that was starting to overgrow the 'Kennedy #6' flood control project in the City of Kennedy was removed. It will be sprayed in 2024 as a secondary measure to keep the channel open and flowing.