TWO RIVERS WATERSHED DISTRICT

IN ROSEAU, KITTSON, & MARSHALL COUNTIES



2019 ANNUAL REPORT

410 South 5th Street, Suite 112, Kittson County Courthouse Hallock, MN 56728

www.tworiverswd.com

INTRODUCTION

The Board of Managers of the Two Rivers Watershed District would like to present this 2018 Annual Report. It contains information about the District's projects, programs, and initiatives through the year.

As a local unit of government, the Two Rivers Watershed District operates under Minnesota Statutes 103E – the drainage law – and 103D – the Watershed law. These statutes govern water management relative to lakes, rivers, streams, groundwater and other water related parameters. The District's water management focus is on flood control, drainage, water quantity, and water quality.

The District, organized in 1957, was the second watershed district in the State of Minnesota to be established, and is governed by a 7 member Board of Managers, two appointed by the Roseau County Commission and 5 appointed by the Kittson County Commission, each to serve a 3 year term. The District employs 2 full time staff to perform the duties of carrying out water management activities set forth in MN Statute 103D. It manages over 92 miles of legal ditch systems, operates and maintains 3 impoundments which store over 9,000 acre feet of flood water, and operates and maintains 6 other projects for drainage and flood control purposes. The District is also involved with water quality studies, flow monitoring, surveying, snow surveys, enforcement of the buffer law, and has adopted rules which require permits for construction of certain water related activities.

Several projects are in the planning stages, including the latest impoundment project, the "Klondike Clean Water Retention Project #11". This project will focus on flood control and providing an adequate drainage outlet for Lateral 1 of State Ditch #95. It will also provide a means to handle overflow flooding that comes from State Ditch 72 and the Roseau River. In addition, water quality benefits and natural resource enhancements will be accomplished. Plans are in the works which will give the project the ability to store approximately 40,000 acre feet of water.

For 2020 the District will continue with maintenance of existing projects and infrastructure, monitoring of stream flows and water quality, and planning for future projects. We strive to work with landowners to solve water related problems to ensure that drainage, flood control, and water quality concerns are addressed.

2019 LIST OF MANAGERS

Paul Olsonawski, **President** 3762 285th Ave Lancaster, MN 56735 (218) 762-1911 Member since 2011 Term Expires: October, 2019

Joel Muir, **Treasurer** 2339 250th Ave Hallock, MN 56728 (218) 843-2080 Member since 2020 Term Expires: October 2021

Rick Sikorski 30825 110th Ave Lancaster, MN 56735 (218) 782-2783 Member since 2018 Term Expires: October 2021

Scott Klein 1946 200th Street Hallock, MN 56728 (218) 843-2752 Term Expires: October, 2020 Daryl Klegstad, **Secretary** 4151 210th St, Halma, MN 56729 (218) 265-2073 Member since 2013 Term Expires: October 2019

Roger Anderson, **Vice President** 1561 110th Steet Drayton, ND 58225 (218) 455-6269 Term Expires: October 2021

Bruce Anderson 18960 170th Ave. Greenbush, MN 56726 (218) 782-3147 Member since 2017 Term Expires: October, 2020



Office Staff

Matt Thompson Head Technician <u>Matt.thompson@tworiverswd.com</u> Dan Money District Administrator dan.money@tworiverswd.com

Office Information:

Two Rivers Watershed District 410 South 5th Street, Suite 112 Hallock, MN 56728 Phone (218) 843-3333 Location: Lower Level, Kittson County Courthouse Winter Office Hours: 7:00 am – 5:00 pm, M-Th 8:00 am – 4:30 pm Summer Office Hours: 8:00 am – 4:30 pm M-F

World Wide Web: www.tworiverswd.com

Office Administration

OFFICE STAFF

The District employs 2 full time staff persons. Their titles and duties are listed below.

- *District Administrator:* The Administrator carries out all administrative and technical duties as determined by the Board of Managers. Specific duties include staff supervision / human resources, long range plans, coordinating meetings, financial management, project management, ditch inspections, data practices compliance, water quality monitoring, data analysis, and performing investigations relating to District projects.
- *Head Technician:* The Technician is responsible for field work relative to District programs, ditches, projects, and inventories. This includes ditch survey work, stream flow monitoring, culvert inventory, reporting, processing permit applications & permit review, geographic information systems, data analysis, and other technical duties.

CONSULTANTS

Engineering services for 2018 were performed on a project specific basis by

Widseth, Smith, & Nolting – Crookston, MN, and HDR Engineering, - Thief River Falls, MN. Consulting engineers are used on an as needed basis at the discretion of the Board of Managers.

Legal services are provided by the law firm of Brink, Sobolik, Severson, Malm, & Albrecht, P.A. of Hallock.

Payroll services are provided by the accounting firm of Dahl, Hatton, Muir, & Reese, Ltd. of Hallock.

Auditing services are provided by the firm of Brady Martz & Associates, P.C., of Crookston. **MEETINGS**

The Board of Managers meets the first Wednesday of each month in the District office in Hallock, MN beginning at 8:00 a.m. Special meetings are held from time to time at the discretion of the Board. Citizen's Advisory Committee meetings are held at least once per year as required by law and otherwise as determined by the Board. All meetings are properly posted as required by law.

GOVERNANCE

The TRWD was established in October of 1957 and is made up of 7 board 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 will be updating this plan in the next 1-2 years through the the new "One Watershed, One Plan" process dictated by the State of Minnesota. This will be a joint cooperative planning process between the Roseau SWCD, Kittson SWCD, Roseau County, Kittson County, and the TRWD. When completed, this plan will 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. Nine projects have been constructed and another is in the works to help with drainage and allevieate flooding. In addition, the District utilizes Minnesota Statute 103E (the Drainage Code) to maintain over 68 miles of legal drainage ditches.

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".

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.

ADVISORY COMMITTEE

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 Advisory Committee members for the year 201are listed below.

Name	Location	Representing	Name	Location	Representing
Kelly Bengtson	Hallock	Kittson Hwy Dept	Brian Kettring	Roseau	Roseau Hwy Dept
Jamie Osowski	Hallock	Kittson SWCD	Jonathon Eerkes	Karlstad	TNC
Laurie Fairchild		USFWS	Jim Schwab	Hallock	NRCS
Danielle Kvasager	Detroit Lakes	MN Pollution Control Agency	Matt Fischer	Bemidji	BWSR
Matthew Skoog	Baudette	DNR Fisheries	Kyle Arola	Middle River	DNR Wildlife
Stephanie Klamm	Thief River Falls	DNR Waters	Lane Nordin	Hallock	Kittson Co. Zoning
Janine Lovold	Roseau	Roseau SWCD	Danni Halvorson	Viking	International Water Institute
Scot Olson	Hallock	Kittson DEM	Nate Dalager	Thief River Falls	HDR Engineering
			Blake Carlson	Crookston	WSN Engineering

Citizen's Advisory Committee

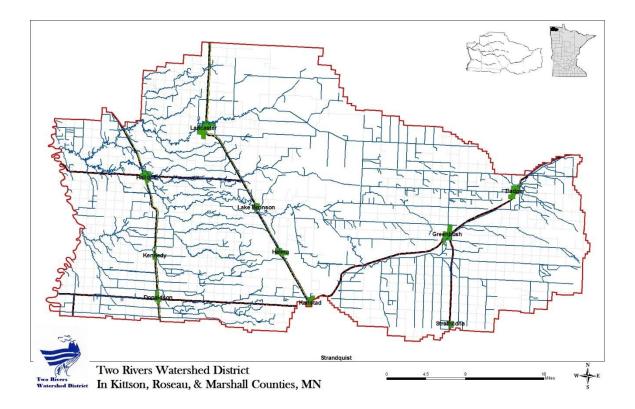
Technical Advisory Committee

Name	Location	Representing	Name	Location	Representing
Keith Cummins	Karlstad	Rural	Luke Novacek	Greenbush	Rural
Dale Nelson	Karlstad	City of Karlstad	Jim Pederson	Karlstad	Rural
Don Craigmile	Hallock	Rural	Bob Boychuck	Hallock	Rural
Virgil Gryskiewicz	Greenbush	Rural	Vern Langaas	Karlstad	Rural
Daryl Wicklund	Greenbush	Roseau Co	Leon Olson	Lancaster	Kittson County
Earl Mattson	Kennedy	City	Dave Treumer	Hallock	City
Heather Peterson	Hallock	Rural/SWCD	Terry Osowski	Hallock	Rural
Harold Moose	Donaldson	Township	Brach Svoboda	Greenbush	Rural
Ed Walsh	Badger	Rural	John Gaukerud	Badger	Rural
Shayne Isane	Greenbush	Rural	Murray Jacobson	Greenbush	Rural
Brenda Sather	Greenbush	City	Jim Rinde	Badger	City
Roger Green	Greenbush	Friends of LBSP			

BACKGROUND INFORMATION

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.

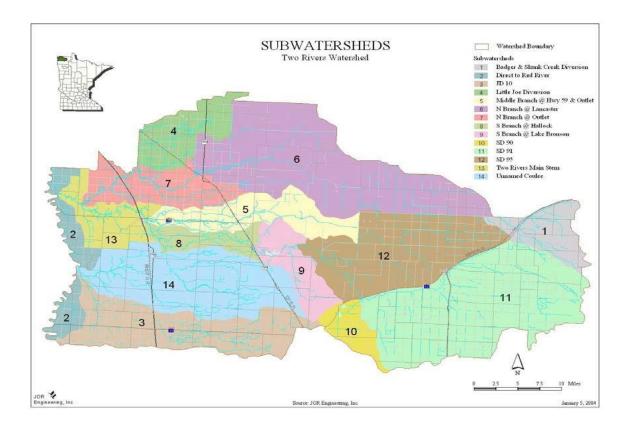
The land area of the District encompasses 1,454 square miles. The boundary does not follow political boundaries, rather it follows drainage boundaries. The District stretches 65 miles from the Red River on the western boundary to the eastern boundary located between the cities of Badger & Roseau. At 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 and travels through the central portion of Kittson County, outletting 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 where it outlets 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.

The economy of the District is largely driven by agriculture. Of the approximately 931,150 acres of land in the District, 67% is pasture and crop land, 14% forested, 13% grassland, 5% wetland, and 1% roads, ditches, and urban. The primary crops grown are small grains, soy beans, sugar beets, and other crops such as seed potatoes, corn, canola and sunflowers.

Cities within the District include Badger, Greenbush, Strathcona, Karlstad, Halma, Lake Bronson, Lancaster, Donaldson, Kennedy, and Hallock. In addition, the unincorporated villages of Fox, Haug, Leo, Orleans, Pelan, Northcote, and Robbin are within the area of the District. Industry in the area is limited. The mining of gravel is prevalent in the beach ridge areas of glacial Lake Agassiz. A few manufacturing and assembly companies exist in the area, including a wood stove company, metal works, canola processing plant, powder coating, and a vehicle track company. Also, a motor coach / bus assembly plant is located in Pembina, North Dakota, and a snowmobile / all terrain vehicle manufacturing company is located just east of the District boundary in Roseau, MN. Other major employers are healthcare centers in Greenbush, Karlstad & Hallock, several school districts, and a county courthouse. Area population trends show a steady decline over the past 3 decades.



PROJECT STATUS

EXISTING AND COMPLETED PROJECTS

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.

Project Name	Description	Location	Established	Status
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	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 PL566 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

<u>Polonia Clean Water Retention Project #12 (Quick)</u> The 'Quick' project was completed jointly with the Natural Resources Conservation Service. This is a wetland restoration and flood control project on over 1,500 acres located in Polonia Township, Roseau County that was planned, engineered, and constructed by the NRCS through their 'Wetland Reserve Program'. The purpose of the project is to restore wetlands, habitat, and provide flood control. Construction was completed in 2018, and the project restored a wetland – upland habitat complex on District owned land. In addition to habitat, the project will store approximately 1,100 acre feet of floodwaters in the state ditch #95 subwatershed.



North Branch drop structure – SD 84



North Branch Drop Structure – JD 31



Outlet Structure – Horseshoe Lake

North Branch Drop Structure



Soler 4 Ditch

Grade Stabilization – Springbrook #10



Wildlife Weier at Nereson Impoundment

Ross #7 Impoundment



Outlet Structure at Ross #7 Impoundment



Main Outlet Structure at Nereson Impoundment

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	Sections 3,5,6 Springbrook & Sect. 1 Davis Twp, Kittson Co	August, 2008	Maintenance responsibility of landowners
	dikes - flood control	_		

Meandering Channel w/ set back levy – County Road #61, Springbrook Twp, Kittson County



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.



PROJECTS NOT CONSTRUCTED

The following table shows several projects that were initiated but were dropped for various reasons.

Stokes #3	Offtake drainage ditch	Stokes Twp – 4 miles long	Dropped 1970's	Local opposition
Karlstad Project	Impoundment	Deerwood Twp sect. 8,9,16,17	Dropped 1988	Local opposition
Juneberry Ridge	Impoundment	Klondike & Polonia Townships	Dropped 1990	Permitting/MCBS/Mediation
Nereson #8	Impoundment	Nereson Twp, sect.2,3,11	Dropped 2007	Local opposition
Svea #9	Drainage Ditch	Svea Twp, sect. 1 - 12	Dropped 2006	High cost, inadequate outlet
Polonia – Barto	Drainage Ditch	12 miles sections 1-12 in 2	Dropped in favor of	Inadequate outlet
		townships	Ross Impoundment	

POTENTIAL PROJECTS / PROJECTS UNDER INVESTIGATION

Klondike Clean Water Retention Project #11:

During the wet years of the 1990's, a group of landowners came to the TRWD asking for help with severe and repeated flooding problems. The TRWD Board of Managers convened the 'Big Swamp Project Work Team' to study the problem and come up with solutions. From 2008 to 2012, the BSPWT met to identify the problem, discuss potential solutions, and come up with a range of alternatives.

From 2012-2015 the TRWD investigated the range of alternatives, and ultimately decided to move forward with a large scale impoundment. The impoundment was based upon the BSPWT recommendations and intended to accomplish significant flood damage reduction as well as achieving natural resource enhancements. The District purchased 12 square miles of land with the assistance of the Red River Watershed Management Board, and initiated the project.

Proceeding under MN Statute 103D, the TRWD appointed HDR Engineering to conduct the necessary survey work, soil borings, and other data collection needed to prepare an Engineer's Report. In addition, the TRWD was awarded cost share funding through the Natural Resources Conservation Service to prepare a Plan & Environmental Assessment for the proposed project.

The Engineer's Report was completed in accordance with MN Statute 103D, and a public hearing was held on November 1, 2017. The Board of Managers officially accepted the Engineer's Report and ordered the preparation of detailed plans and specifications. Work is proceeding with the NRCS Plan / EA. The District is proceeding with permitting, funding, and other project aspects.

The project is expected to be constructed over time in 5 phases, and when complete will be able to store up to 40,000 acre feet of floodwater, provide an adequate outlet for Lateral 1 of State Ditch 95, store a portion of the overflows that enter the TRWD from the Roseau River, address flooding on the Red River, will help to protect and enhance a prairie rich fen complex, and will have significant water quality benefits to all three branches of the Two Rivers.

DITCH SYSTEMS

In addition to the above projects, the District is the 'Ditch Authority' for several legal ditch systems (See map & table below). Minnesota Statute 103E, the Drainage Law, governs how the TRWD must inspect, operate, and maintain these ditches.

A number of other watercourse projects have been established under Minnesota Statute 103D, the Watershed Law, which also governs how the TRWD inspects, operates, and maintains each project.

Legal Ditches Statute 103E	Length (Miles)	Township(s); County	Fund Balance 12- 31-19	2020 Levy
State Ditch #49	5.25	Norway; Kittson Co	\$ 32,192	\$ 2,500
State Ditch #85				
Improvement	0.75	Poppleton; Kittson Co	\$ 31,072	\$ 0
Judicial Ditch #3	5.5	Teien; Kittson Co	\$ 44,204	\$ 6,600
Judicial Ditch #10	31	Davis, Svea, Teien,		
		Kittson Co	\$ 56,488	\$ 3,200
Kittson CD #7	6.5	Svea; Kittson Co	\$ 39,434	\$ 5,000

The table below lists both the ditch systems and the drainage projects that the District administers.

Kittson CD #10	7.0	Deerwood; Kittson Co	\$ 18,354	\$ 7,500
Roseau CD #4	7.5	Lind, Dewey; Roseau Co	\$ 28,316	\$ 7,500
Kittson CD #21		Hallock, Kittson Co	\$ 8,332	\$ 32,500
KCD Div 1 Impr.	2	Hallock, Kittson Co	\$ (108,877)	\$ 25,000
Watercourse				
Projects				
Statute 103D				
Middle Branch 1	9.6	Hazelton, Thompson; Kittson Co.	\$ 30,309	\$ 5,000
North Branch 2	11.1	Granville, Hampden; Kittson Co.	\$ 19,783	\$ 5,000
Nereson	Impoundment	Nereson; Roseau Co	N/A	N/A
Soler 4	5.0	Soler; Roseau Co	\$ 27,768	\$ 5,000
Dewey 5	1.8	Dewey; Roseau Co	\$ 27,281	\$ 10,000
Kennedy 6	1.5	Tegner, Skane; Kittson	\$ (48,190)	drainage lien
		Co.		+ \$ 5,000
Ross 7	impoundment	Ross; Roseau Co	\$ 60,749	N/A
Springbrook 10 /	9.0	Springbrook & Davis	\$ (168,652)	Drainage lien
PL566		Townships, Kittson Co		+ \$10,000

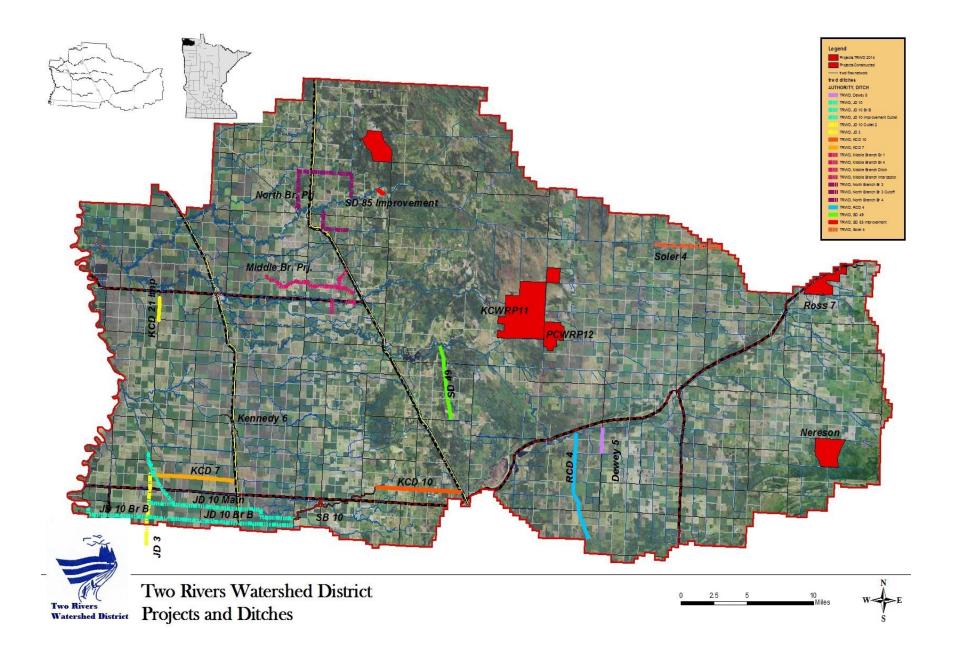
These systems are inspected annually and each system is surveyed a minimum of once every 5 years to assess any changes from erosion or sedimentation. In 2019 the systems surveyed were KCD 7 and JD 10 Br. B. For 2020 surveys are scheduled for JD 3, JD 10 main, and SB 10.

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.

In 2019 slough repairs were completed on JD 10 branch B and KCD 7. Extensive cattail and brush spraying was done on numerous systems. Kittson County Ditch #21 underwent a redetermination of benefits.

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.

A map showing the locations of each ditch system and each project of the Two Rivers Watershed District is shown on the following page.

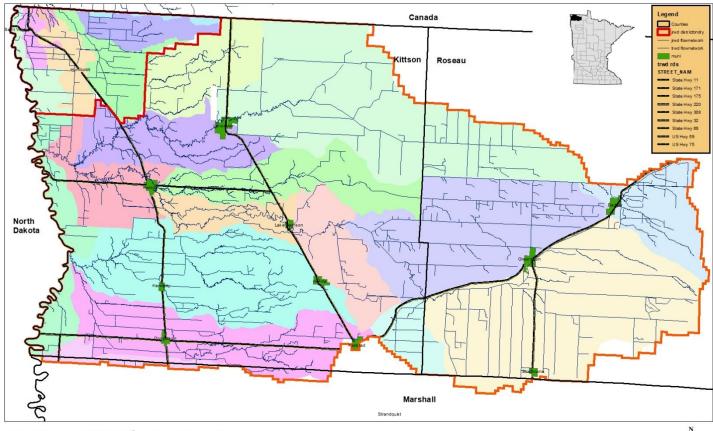


PROGRAM STATUS

ONE WATERSHED, ONE PLAN

Watershed Districts are required to complete and update an "Overall Plan" once every 10 years. Counties and Soil & Water Conservation Districts are also required to regularly write and update local plans. Recently the State of Minnesota enacted legislation allowing the transition from Overall Plans to a new plan known as "One Watershed, One Plan" (1W1P). This new version of planning combines watershed district plans, County Soil & Water Conservation District plans, and County Comprehensive Local Water Plans into one plan that is based on drainage boundaries rather than political boundaries.

In 2018 the Two Rivers Watershed District, Roseau Soil & Water Conservation District, Kittson Soil & Water Conservation District, Roseau County, and Kittson County entered into an agreement to complete a 1W1P known as the "Two Rivers Plus 1W1P". Meetings and plan writing began in 2019 and will carry on into 2020.



Two Rivers 1W1P Planning Boundary Kittson & Roseau Counties; Kittson & Roseau SWCD's; Two Rivers Watershed District

PERMITS

The Rules of the Two Rivers Watershed District were enacted in 1981, and under these Rules, a permit from the District is required for the following activities:

- Any sanitary sewer system which discharges to surface water, storm sewer, or other major utility project which affects surface water within the district.
- Any street, road, or highway construction project which by means of its construction has any effect on the quality or quantity of water runoff.
- Any construction or alteration of any drain tile or drainage ditch that drains an area in excess of 20 acres.
- Any works which include draining, filling, excavating, or dredging of any type 3, 4, 5, or 8 wetland as defined by the U.S. Fish & Wildlife Service Circular 39.
- Any construction or alteration of any bridge, dike, culvert, or drain across any drainageway, lake, wetland, or other water body.
- Any artificial or mechanical transfer of water from a water source including but not limited to gravel pits, ponds, rivers, wetlands, and other reservoirs consistent with the general purposes of the District.
- Any artificial drainageway cut across a subwatershed to thereby deliver water into another subwatershed.
- Any drainage of water by any artificial means into any legal drainage system from any land not assessed to that drainage system.
- Construction, alteration, or removal of any dike or reservoir.

Fourty-Five permit applications were processed during 2019.

2019 DISTRICT ACTIVITIES

BOARD MEETINGS

Twelve regular monthly board meetings were held during the course of 2019, each on the first Wednesday of each month. The Annual Meeting was held on January 2, 2019. One appeal hearing and one budget hearing of the Board were held during the year. Meeting minutes are available on the District's website at www.tworiverswd.com.

NON-DISTRICT MEETINGS

The District Managers and District staff attended several non-District meetings during the course of 2019 that were related to affiliations, information and ongoing education. Twelve meetings of the Red River Watershed Management Board were attended regularly, various committees of the RRWMB, the Minnesota Association of Watershed District's Summer Tour and their Annual Meeting, NRCS – MN State Technical Committee meetings, and other meetings as needed.

TRAINING

Managers and staff attended, as necessary, various training sessions and meetings that were pertinent to the operation of the District.

ADMINISTRATIVE ACTIONS

The District employed a full time District Administrator and a full time Technician during 2019.

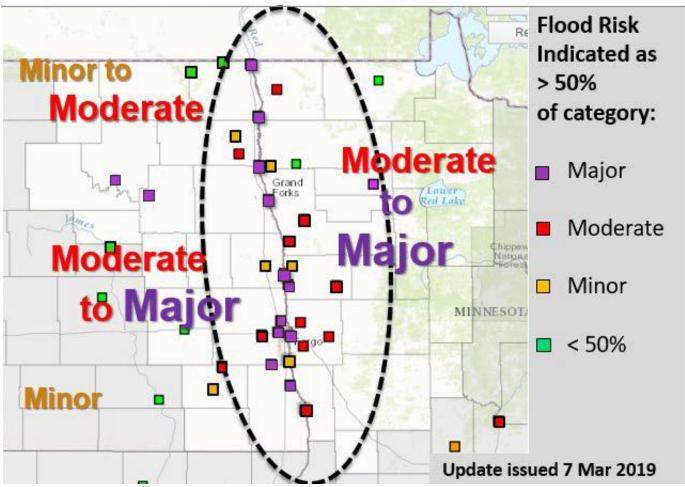


Spring Flood Outlook Released for Red River of the North and Two Rivers

On March 7, 2019 the National Weather Service released an updated spring flood outlook for the Red River of the North Basin. The report provides probabilities for spring flooding at numerous locations throughout the U.S. portion of the Basin. It takes into account soil moisture conditions from fall 2018, base streamflows in the rivers, frost depth, winter snowpack and snow water equivalents, precipitation that has occurred, and predicted short and long term weather and climate trends.

All of this data is analyzed, fed into computer models, and used to provide a range of potential flood levels. The report indicates that for the Red River downstream from Grand Forks, there is a 75% probability of major flooding. For Drayton, there is a 90% chance the river will reach a level of 41.4, and for Pembina there is a 90% chance the river will reach a level of 50.3. The record flood at Drayton was 45.55 in 1997 and the at Pembina it was 54.94 in 1997. On the Two Rivers, the report indicates moderate flooding is probable with a 50% chance of reaching 808.5 and a 90% chance of reaching 806.6. The record flood at Hallock was 810.7 in 1997.

Although it doesn't look like we will reach record flood levels, it does appear that a good size flood is possible. This can all change in a hurry for good or bad depending on future precipitation and the speed of the snowmelt. With that in mind, the Two Rivers Watershed District is preparing to monitor and provide up to date daily flood information, operate its flood control impoundments to reduce flood impacts, and help monitor and predict flood crests. The TRWD will work with and assist local emergency personnel, counties, and others as the flooding progresses.



From Late Jan, thru Early March: Much increased Snowfall and related Runoff Risk

In late March, look for the District's snow survey information to be put out. This information reports on snow depths and snow water equivalents at 11+ locations throughout the drainage basin of the Two Rivers. This data goes back to the mid 1990's and so this provides an excellent reference to judge the current flood potential. Before, during and after the runoff, the District will monitor and measure streamflows at over 15 locations in the watershed. This information is reported to the National Weather Service, U.S. Geological Survey, and other state and local agencies. It is used to help predict flood crests and is also used to compare against historical data.

Also during flooding, the TRWD will operate and maintain 3 flood control impoundments aimed at reducing the duration and severity of flooding. The Nereson Impoundment, located east Greenbush, MN can hold up to 3,500 acre feet of floodwater, and controls the runoff from roughly 15 square miles. The Ross Imopundment, located east of Badger, MN can hold up to 3,600 acre feet of floodwater, and controls the runoff from over 18 square miles. The Horseshoe Lake impoundment is located northeast of Lancaster, MN and hold up to 2,130 acre feet.



Ross #7 Impoundment During 2009 Spring Flood

Now is the time to start preparing for potential flooding. The TRWD reminds homeowners with farmstead ring dikes to check and monitor any culverts you may have through your dikes. Be sure to close the gate on the culvert prior to flooding, and make sure the gate is operable and accessible. Homeowners who are in the floodplain or near the floodplain should consider the national flood insurance program. If you live on a site that is affected by flooding, be sure to monitor conditions not only on site, but also roads that may flood and affect access to your location. Remember, "Turn Around, Don't Drown"!

Below are a few websites that have good information regarding flooding, flood preparedness, and other pertinent information: Federal: <u>https://www.floodsmart.gov/</u> <u>www.weather.gov/fgf</u> https://www.nws.noaa.gov/os/water/ahps/resources/Hydrologic_Web_Products_Manual.pdf <u>https://www.weather.gov/fgf/PFOS</u> <u>https://water.weather.gov/ahps2/index.php?wfo=FGF</u> <u>https://waterdata.usgs.gov/mn/nwis/rt</u>

State:

https://www.dnr.state.mn.us/climate/floods/index.html https://www.dnr.state.mn.us/waters/csg/index.html https://www.dnr.state.mn.us/waters/watermgmt_section/floodplain/index.html https://content.govdelivery.com/accounts/MNDNR/bulletins/208f419#link_1513957640488 https://dps.mn.gov/divisions/hsem/Pages/default.aspx

Local www.tworiverswd.com

TRWD Welcomes New Board Member & Elects Officers for 2019

With the new year, another new Board member joined the 7-member Board of Managers of the Two Rivers Watershed District. Scott Klein was appointed by the Kittson County Commission to serve the remainder of the seat vacated when former Board member Darrel Johnson was elected to the County Commission. Klein's farm is located in west central Kittson County, and he has farmed with his family over 30 years. He is also a past Board member of the Kittson County Soil & Water Conservation District. The TRWD welcomes Scott to the Board, and thanks Darrel for his years of service!

The Board held it's Annual Meeting on January 2, 2019. The elections of officers was held, and the new slate of officers is: President – Paul Olsonawski, Vice President – Roger Anderson, Secretary – Daryl Klegstad, Treasurer – Joel Muir. Other members of the Board include Bruce Anderson, Rick Sikorski, and Scott Klein.

The Two Rivers Watershed District is a local unit of government established in 1957, the second watershed district in the state. The TRWD is governed by MN Statute 103D, the "Watershed Law", and focuses on water related issues of flooding, drainage, water quality, and other duties as described in statute. District operations are funded by a local tax, federal, state, and local grants, and fee services. For more information, check out our website at <u>www.tworiverswd.com</u>

Weather Watch

It has been a long winter, and it seems everyone is ready for Spring! Here are a few weather tidbits from this past winter:

- From November 4, 2018 through March 11, 2019 there have been 7 days that have been above 32 degrees F.
- For the same time period, there has been 51.5" of snowfall at Hallock, with 2.43" snow water equivalent. There is currently approximately 20" of snow on the ground (depending where it is measured!)
- As of March 11, 2019, there have been 62 <u>consecutive</u> days below 32 degrees F.
- Also as of March 11, 2019, the National Weather Service has so far this winter issued 4 winter storm warnings, 6 blizzard warnings, and 5 wind chill warnings.

THINK SPRING!

Featured Project Ross #7 Impoundment

Since its inception in 1957, the Two Rivers Watershed District (TRWD) has worked diligently to provide drainage, flood control, and water management solutions for both water quantity and water quality. In 1976 with the establishment of the Red River Watershed Management Board (RRWMB), watershed districts on the Minnesota side of the Red River were able to come together and pool their resources to build projects to store water to collectively reduce the severity and duration of floods. These efforts provide great benefits for communities, farmsteads, roads and infrastructure, and agricultural lands.

The RRWMB has worked with its member districts and partners to come up with a strategy to reduce peak flows on the Red River by 20%. This strategy identifies how much floodwater needs to be stored within each tributary to reach the goal. Storage goals are measured in acre feet. One acre-foot covers one acre of land one foot deep, and equals 325,829 gallons, or 43,560 cubic feet. For the Two Rivers Watershed, it has been determined that approximately 45,000 acre-feet of storage is needed to achieve this target.



The District to date has constructed impoundments that store over 9,000 acrefeet. Efforts are currently underway to build capacity for another 30,000 acre-feet in order to come closer to reaching the storage goal.

One of the impoundments that have been constructed is known as the Ross #7

Ross

Ross Impoundment Facts

- Covers 2,200 acres
- Stores 3,600 acre feet of floodwater
- Controls runoff from 18.5 square miles
- 1,000 acre habitat block
- 1,200 acres farmland

poundment During 2009 Spring Flooding

Impoundment. With the recent extreme rainfall that fell September 20-21 across the region, the TRWD implemented the operating plan at its Ross Impoundment and closed the gates. The project can store up to 3,600 acre feet of water, and as of September 24th when this article was written, it was storing approximately 2,676 acre feet of floodwater.

The impoundment was constructed between 2005 and 2008 and was fully functional in the spring of 2009. The spring flood that

year was enough to fill the impoundment for the first time. The impoundment is operated to help with spring flooding but has also been operated many times – sometimes 2-3 times per year – to help alleviate summer flooding and reduce crop damage. In 2019 it has was operated in the spring and twice during the summer.

The impoundment is located on Roseau County Ditch #13 and Skunk Creek, upstream of Badger Creek. It is along the south side of MN Highway 11, about 2 miles east of the City of Badger, MN. The impoundment was meant to control some of the water that causes overland flooding along Lateral 1 of State Ditch 95 between Badger and the Roseau-Kittson County line.

Not only has the impoundment proven to provide great flood damage reduction benefits, it also can provide benefits for the environment. When it was constructed, a wetland-upland habitat block was established that is providing cover for waterfowl, game and non-game animals. The impoundment has a detailed operating plan that dictates when the impoundment is to be filled, and when it can be drained. In general, it is filled when downstream flooding begins and is emptied as soon after a flood as possible. At times the water released from the impoundment has provided base flow for the South Branch Two Rivers and for Lake Bronson. This is important because during very dry years fish in the river and the lake become stressed out as the water dries up. This base flow can extend the

time the river is flowing and provide habitat. It is also beneficial to the lake to provide flows that help to keep harmful algal blooms to a minimum.

Another unique fact is that interior cells not only provide habitat, but about one-half of the parcels are rented out for farming. Wheat, soybeans, hay, and other crops are grown in the upper reaches of the impoundment, benefitting the local economy by providing productive cropland acreage.

The TRWD and other Watershed Districts in the Red River Basin will continue to work on these multi-purpose impoundments to achieve flood damage reduction, the 20% flow reduction goal for the Red River, provide adequate outlets for drainage, protect cropland, provide water quality benefits, and provide fish & wildlife benefits.

Ditch Maintenance Report Cattail Spraying & Beavers

The Two Rivers Watershed District once again had a busy summer with maintenance on ditches and projects. The District serves as the Ditch Authority on 8 legal ditches and on 9 watershed district projects. This totals 107 miles of drainage ditch. The District adheres to a maintenance schedule, where all ditches are visually inspected annually to determine any blockages from cattails, brush, beavers, debris, or sediment. Also, each ditch is surveyed at least once every 5 years.

Maintenance: Spraying was done on these systems to control brush, cattail, and noxious weeds. Over 80 acres were sprayed for thistle and 7 acres were sprayed for brush. 9 miles of ditches were sprayed to control cattails. Surveys were completed on Kittson County Ditch #10, Branch B of Judicial Ditch #10, and the Springbrook #10 Project. These surveys will be analyzed to determine if any sediment is present and if any cleaning is needed.



Cattail Spraying

Beaver Maintenance

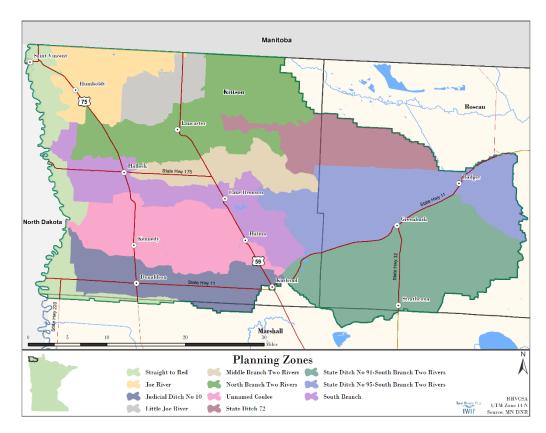
Beavers: The District has a beaver trapping policy on ditches that we maintain. A bounty is paid to authorized trappers of \$75 per beaver. Through the month of September, 18 beavers have been trapped from Watershed District ditches and numerous beaver dams have been removed. Additional beaver activity is expected through the end of the year.

Two Rivers Plus 'One Watershed One Plan' New Watershed Management Planning Process Water planning can be a complicated subject. There are many Federal, State, Regional, and Local entities – both government and non-government – that have a stake in managing water resources. Some of these water plans follow political, county boundaries and others follow drainage, or watershed, boundaries. The State of Minnesota requires local units of government to each have a water plan and these plans range from County 'Comprehensive Local Water Plans' to Watershed District 'Overall Plans' to Soil & Water Conservation District plans. Recently the State of MN has passed legislation allowing these local plans to be consolidated into one plan and aligned with watershed boundaries instead of political boundaries.

In 2019 Roseau County, Roseau Soil & Water Conservation District, Kittson County, Kittson Soil & Water Conservation District, and the Two Rivers Watershed District began a joint planning process, known as the **"Two Rivers Plus One Watershed One Plan"**. This plan will guide these local government agencies regarding broad categories of surface water, ground water, natural resources, and agricultural productivity. Resource concerns like water quality, water quantity, aquatic and terrestrial habitat, drainage management, soil health, land management and other topics will be included. A set of targeted goals and measurable priority actions will be developed and implemented over the next 10 years. The plan will focus efforts on the areas that lie within the Two Rivers and the Joe River Watershed Districts.

The planning group has convened several committees to aid in the process. A 'Steering Team' is made up of local staff from the local partners. This team is attending to the day to day business of coordinating efforts, researching and writing the plan. A '*Citizen's Advisory Committee*' and a '*Technical Advisory Committee*' have been convened to discuss, analyze, and bring forth ideas, information, analysis, and comments for each issue and resource concern. A '*Policy Committee*' consisting of board members / commissioners from each entity was formed. This committee has the authority to review and approve plan content, handle funding, and serves as the decision making body. Over the summer, a series of public meetings were held in Greenbush, Kennedy, and Lancaster to gather input on

various topics. The planning area was divided into 11 different subwatersheds, or planning zones. Comments received from the public and information from the Steering Team and the Advisory Committees will be tabulated and ranked within each zone. A list of issues will be formulated, and a computer model will be used to prioritize the issues, target specific areas to install projects or conservation practices, and measure the results. Funding for the planning process is being provided by a



Two Rivers Plus 1W1P Area

grant from the MN Board of Water of Soil Resources (BWSR). Once the planning is completed and approved by the State, significant implementation funding will become available using the State's clean water fund from the 3/8 cent

sales tax. This money will be used to implement projects conservation practices and build projects that will reduce soil erosion, reduce ditch erosion, protect and improve water quality, provide better drainage, and reduce flooding. The planning process is expected to take until the end of 2020 before a plan can be approved by the BWSR. If you have questions or would like more information regarding this plan or the planning process, please visit https://www.tworiversplus1w1p.org/

TRWD Sets 2020 Budget and Tax Levies

The Two Rivers Watershed District held its annual Budget Hearing on September 4, 2019. The annual budget was approved and is listed below. The operating levy for 2020 was approved by the Board of Managers at \$250,000. In addition to the operating levy, it was noted that the Red River Watershed Management Board's 2020 levy for the Two Rivers Watershed District will be \$548,688. These two levies will be assessed across all land within the District. The Board of Managers also discussed and approved various project and ditch maintenance levies totaling \$129,800 for 2020. Each ditch levy will be assessed to lands that are within the legal benefitted area of the ditch.

Administrative Budget	2020 Approved Budget
Administrative	97,213
Auto Expense	3,000
Capital Outlay	10,000
Conferences & Meetings	9,000
Dues & Subscriptions	4,000
Engineering	15,000
Information & Education	3,000
Insurance	4,700
Manager's Per Diem & Expense	18,000
Office Supplies & Miscellaneous	2,000
Payroll Expense	33,000
Postage & Delivery	750
Printing & Advertising	1,000
Professional & Legal	21,500
Rent	12,000
Stream Gage	3,000
Telephone	2,000
Water Quality	8,500
Totals	247,663

Current Events Lake Bronson & Hallock Dam Projects

Dams located within the Two Rivers Watershed District have been in the news lately. Specifically, two dams that were built in the 1930's are getting attention because of their age and function. These are both located on the South Branch of the Two Rivers, one at Lake Bronson, and one at Hallock. The MN DNR keeps data on all the dams in Minnesota. Of the 1,186 dams in Minnesota, 644 are owned by either the state or local governments, 135 are federal dams, 373 are private dams, and 34 are public utility dams. The 644 state/local dams have been classified as either high hazard (a

failure is likely to cause loss of life or serious economic loss), significant hazard (failure would cause limited economic loss, but no loss of life), or low hazard (failure would cause only minor losses). The Lake Bronson dam is listed as the DNR's number 1 priority high hazard dam in the State of Minnesota needing repairs.

Lake Bronson Dam: This dam was constructed for water supply for the City of Lake Bronson by the Civilian Conservation Corps in the 1930's under the federal 'Works Progress Administration'. It is 35 feet high and over 2,000 feet long. The concrete spillway is 60 feet wide. It is no longer needed for water supply, but it is the focal point for water recreation in the area, maintaining water levels on Lake Bronson within Lake Bronson State Park. The lake is a significant boating, fishing, and swimming. Over the years the dam has developed serious leakage problems. In the late 1990's the lake was drained and seepage relief wells were installed to address and monitor the problem. The DNR has indicated that the spillway is too small to safely pass a large flood, even though several large floods have occurred in recent years. Overtopping of unprotected embankments can lead to failure, and the structural condition is fair to poor.

A preliminary design was done to evaluate alternatives and come up with a preferred alternative to rehabilitate or replace the dam. Based on that work, a recommendation of complete reconstruction was selected with an estimated cost of \$18 million. State bonding money is being sought through the MN Legislature to fund the project, and the DNR



timeline if funded would be to complete the construction by the fall of 2022.

For more information, contact Jason Boyle with the DNR division of Ecological and Water Resources.

Hallock Dam: The dam on the South Branch of the Two Rivers at Hallock was also constructed in the 1930's with the purpose of water supply for the City of Hallock. It is no longer used for the City water but does provide significant recreation and the Two River

Golf Club uses it for irrigation. The walkway on the dam provides access to the golf course.

The MN DNR division of Fish & Wildlife has identified a need to remove the dam to enable fish passage, and they proposed a rock structure with a new bridge to enable fish to pass, maintain the current pool elevations, and provide adequate access to the golf course. Discussions were held with the City of Hallock, who owns the dam, and over \$2 million in funding was approved by the Lessard-Sams Outdoor Heritage Council. The project is pending and is awaiting permits from the DNR.

The latest timeline will be to finalize construction plans-environmental review-permitting-etc. by the end of 2019. By April 2020 advertisements for bids and bid opening would be done and a contractor hired. Construction of the channel and spillway would be started in summer 2020 and continued into 2021. The bridge work would be started after the 2020 golfing season (the bridge is needed for golf course access). The entire project is anticipated to be completed in

September of 2021.



Existing Hallock Dam

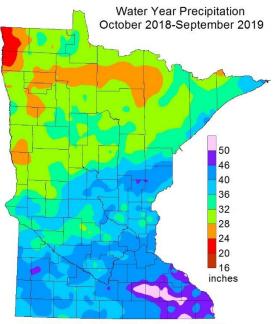


Conceptual Future With Dam Removed

2019 Water Year Summary

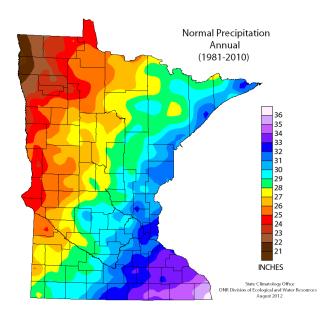
2019 PRECIPITATION

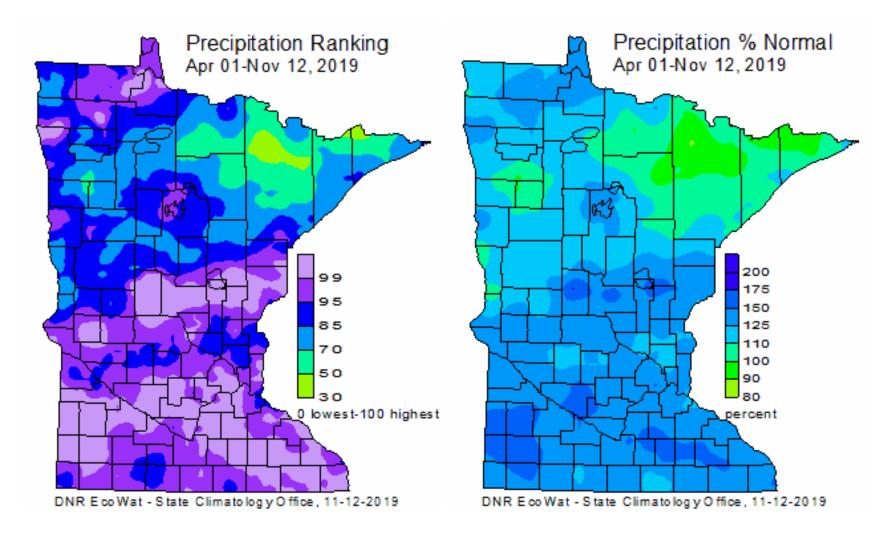
The first three fourths of the year was characterized as having average to below average moisture in the watershed district however the fall was extremely wet and resulted in large scale flooding. The following maps, tables, and associated graphics show the rainfall, stream flows, and departures from normal.



DNR State Climatology Office - January 13, 2020

Source - Minnesota Climatology Working Group: <u>http://climate.umn.edu/</u>

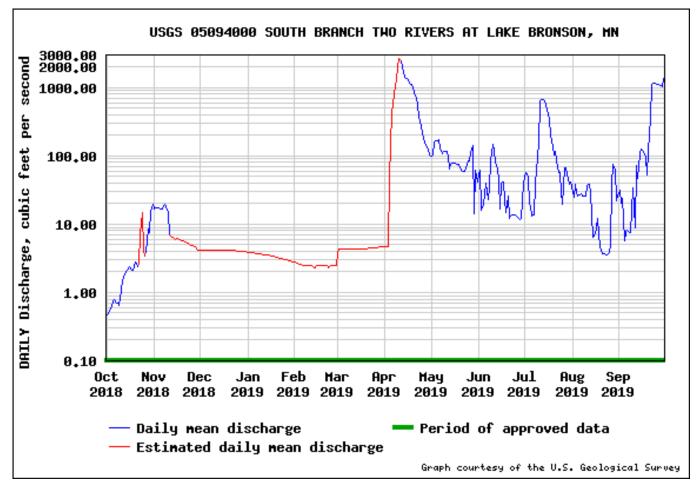




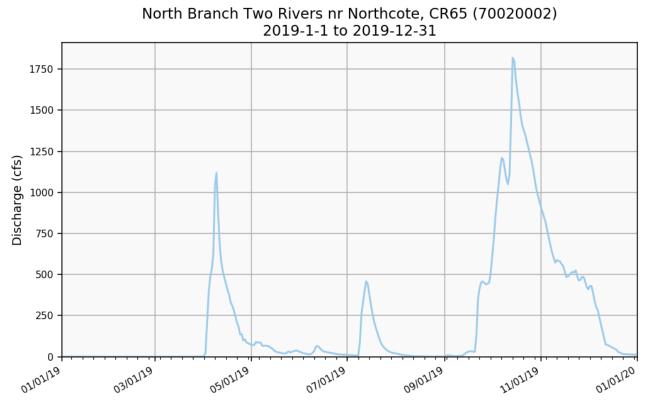
Source - Minnesota Climatology Working Group: <u>http://climate.umn.edu/</u>

2019 STREAM FLOW

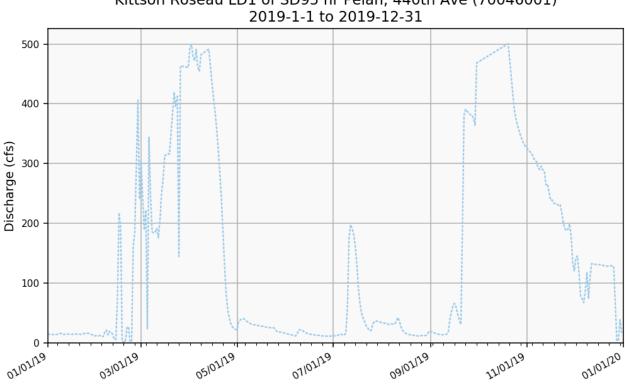
Stream flow and water levels throughout the year were varied by location. The following hydrographs depict streamflows within the Watershed District during 2019. Spring snowmelt and runoff resulted in relatively high flows, followed by low water levels during June-July-August. Large rains in September and October resulted in large scale flooding to round out the year.



2019 Stream Flows in Cubic Feet Per Second for South Branch Two Rivers at the City of Lake Bronson Source: US Geological Survey

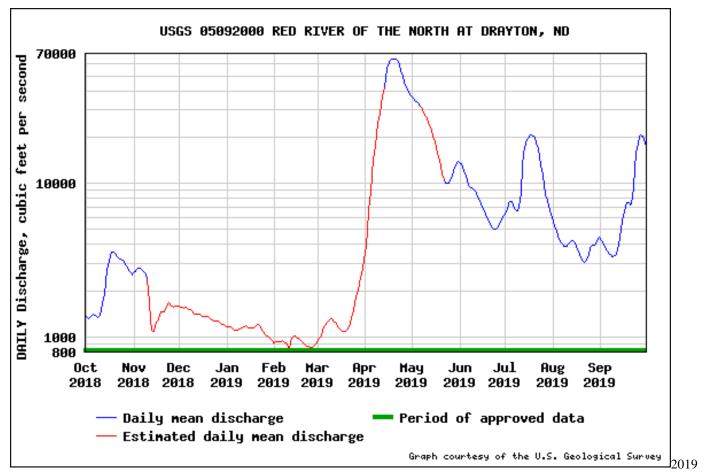


2019 Stream flow discharge for the North Branch Two Rivers at Kittson County Road #4, downstream of Northcote Source: MN DNR https://www.dnr.state.mn.us/waters/csg/index.html



Kittson Roseau LD1 of SD95 nr Pelan, 440th Ave (70046001)

2018 Stream flow discharge for the Lateral 1 State Ditch 95, Kittson County, MN Source: MN DNR https://www.dnr.state.mn.us/waters/csg/index.html



Stream flow discharge for the Red River at Drayton ND. Source: US Geological Survey

OBJECTIVES FOR 2019

PROJECT ACTIVITY

Inspection and maintenance will be done on all existing projects. Normal maintenance activities include mowing of right of way, removal of brush, spraying vegetation, beaver removal and other obstructions, and repair of any sloughing or erosion and damage to any structures.

<u>Kittson County Ditch #21 sediment removal -</u> Survey data indicates the downstream end and the outlet of KCD 21 has excessive sediment and therefore the flow of water in the ditch has been affected. The District will hire a contractor to restore the grade and cross section to this ditch for approximately 8,000 feet.

IMPOUNDMENTS

<u>Klondike Clean Water Retention Project #11</u> – The District in 2020 will continue working on this project by drawing detailed engineering plans, securing federal, state and local permits, obtaining right of way, and obtaining funding.

PROGRAM ACTIVITY

<u>Stream Flow Monitoring:</u> Stream flow and velocities will continue to be monitored and recorded for selected sites on the rivers, coulees, and ditches. The District will continue to recruit volunteers to read and record staff gage information for each site. Stream flows and velocities will be measured by District staff at each site during runoff events and data will be reported to interested agencies and persons, including the National Weather Service, DNR, and various other state and local agencies. The long range goal is to record data not only for the high flow events but for summer low flows as well.

Water Quality Monitoring:

The District will resume water quality monitoring at 10 selected locations in 2020. These sites have been monitored by the District off and on since 1991. The MPCA and others will not be monitoring because they are between 10 year cycles in their watershed assessments, and therefore the District will monitor to keep a yearly record of baseline information.

<u>Geographic Information Systems:</u> Data will continue to be collected and input into the District's Geographic Information System. Data sets will continue to be developed, including culvert inventory, LiDar, drainage areas, water quality, stream flow, and information regarding the ditch systems administered by the District. This is an ongoing project that will be continued from year to year.

<u>Permits:</u> The District will continue to review permit applications for projects that affect the water resources of the District and permits will be approved accordingly.

<u>Newsletters:</u> The District newsletter will continue to be published quarterly in cooperation with the Kittson Soil & Water Conservation District. This is an excellent way to communicate to the public the various programs, projects, and water management initiatives being contemplated by the District.

<u>Education</u>: The District will continue to support and participate in activities for students, specifically the Envirothon and River Watch. These are outdoor, hands on, real world water quality and environmental experiences for high school students.

ADMINISTRATIVE ACTIVITIES

The District will continue to employ a full time District Administrator, who will be responsible to keep the meeting minutes, financial reports, ditch inspection reports, and all other paperwork of the District. In addition, the administrator will be required to organize and file all information regarding any programs, projects, or activities of the District. The Administrator will also supervise employees, perform field investigations, data collection, and other technical & administrative duties as determined by the Board of Managers. The Administrator will represent the District at local, regional and state meetings with government agencies, legislators, and the public.

The District will also continue employing a permanent, full time Technician. The position performs surveying, monitoring and inventory, operation of impoundments, data management, reporting, permit review, and other duties as dictated by the Administrator and the Board of Managers.

DITCHES

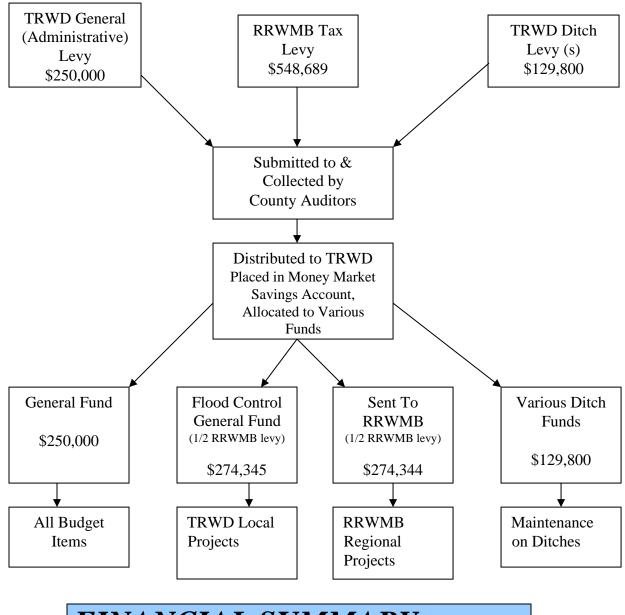
All District ditches will be inspected in 2020. JD 3, JD 10 main, and Springbrook #10 will be surveyed. A maintenance schedule will be followed for each ditch, which will include cattail and brush spraying, beaver and beaver dam eradication, sediment removal, repair of any damages, and other activities as necessary.

BUDGET

The District held a budget hearing in September 2019 to review, adopt, and approve an administrative budget for 2020. The approved budget is listed below. The TRWD levied taxes in the amount of \$235,000 for payable 2019, and levied \$250,000 for payable 2020. In addition, the TRWD is a member of the Red River Watershed Management Board. The RRWMB also sets an annual levy, and for 2020 their tax levy for the area within the Two Rivers Watershed District is \$548,689, of which ½ goes to the RRWMB for regional flood control projects, and ½ is kept by the TRWD for local flood control projects.

Administrative Budget	2020
	Adopted
Administrative	97,213
Auto Expense	3,000
Capital Outlay	10,000
Conferences & Meetings	9,000
Dues & Subscriptions	4,000
Engineering	15,000
Information & Education	3,000
Insurance	4,700
Manager's Per Diem & Expense	18,000
Office Supplies & Miscellaneous	2,000
Payroll Expense	33,000
Postage & Delivery	750
Printing & Advertising	1,000
Professional & Legal	21,500
Rent	12,000
Stream Gage	3,000
Telephone	2,000
Water Quality	8,500
Totals	247,663

The following diagram shows how the tax levies are collected for 2020 and where they are distributed.



FINANCIAL SUMMARY

The following pages contain selected information from the annual audit for the Two Rivers Watershed District as supplied in accordance to state law by the certified public accounting firm of Brady Martz & Associates, P.C. This audit covers the period of January 1, 2019 to December 31, 2019. A complete version of the audit is available upon request.