

Two Rivers Watershed District

In Roseau, Kittson, & Marshall Counties



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Fall Newsletter
October 2023

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 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



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

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

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



Navigating Minnesota's Drainage Law

Minnesota Statute 103E, otherwise known as the "Drainage Law" governs all ditches that have a name and a number. These include State Ditches, County Ditches, and Judicial Ditches. Many of these ditches were established and constructed over 100 years ago. Through drainage law, an engineered design is approved, a tax is levied upon benefitted areas to construct, repair and maintain the ditch, and either a county or a watershed district is designated as the 'drainage authority' who maintains the ditch and the ditch fund.

Over the past 100+ years, the landscape has changed as areas of land were broken up and began to be farmed. Drainage practices have also improved with satellite imagery and Lidar mapping. Climate studies that in the past 30 years storms are more intense with larger amounts of rainfall. As a result of many different factors, the ditches that were designed originally no longer have the capacity to adequately carry the water from the landscape that now runs off faster and with heavier rainfall greater volume.

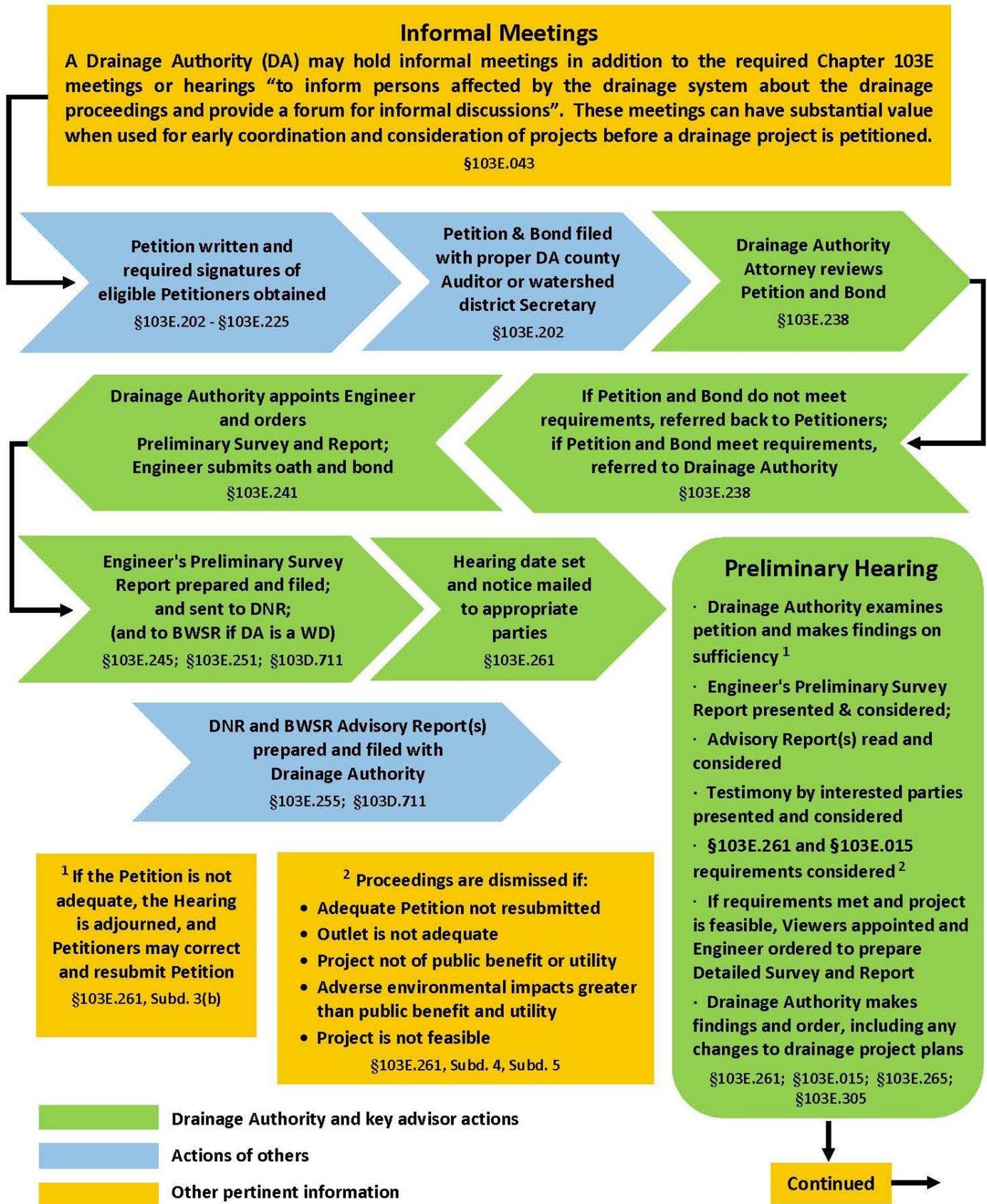
The Drainage Law contains several different types of ditch proceedings. These include construction of new ditches, repairs and improvements to existing ditches, adding a lateral or extending the outlets of existing ditches, and numerous sections describing the funding of ditches and other types of alterations.

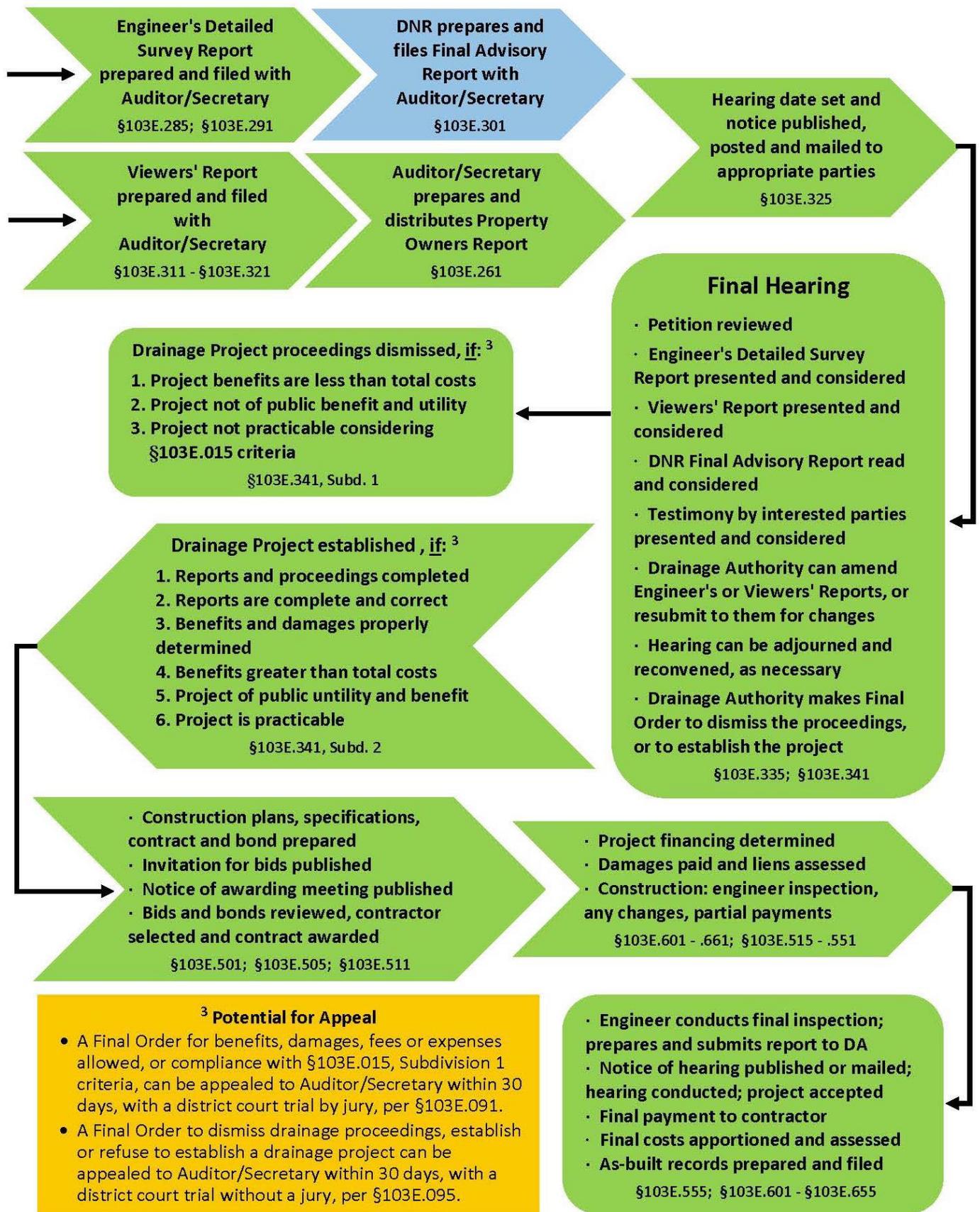
In recent years, because of reasons mentioned above, many landowners have petitioned the Two Rivers Watershed for various types of proceedings. Once a petition is received, it sets into motion a very detail oriented process, which in most cases results in a newer, improved drainage system. The ditch authority must first appoint an engineer to do the necessary surveys and come up with a preliminary design. Once that is done, a public hearing must be held so that all affected landowners can review the proposal and comment. If all looks good, the engineer then refines his report and it is forwarded to DNR for review and comment. The benefitted lands are viewed and a report is put together showing what lands will be taxed and at what rate and then a second public hearing is held. If the proposal is still favorable, the ditch authority can then make findings of fact and order the project to be constructed.

The flow chart depicted below is from the "Understanding MN Public Drainage Law" handbook, and shows this detailed process. The full document can be found at: <https://bwsr.state.mn.us/Minnesota-Public-Drainage-Manual>.

If you have a ditch question or would like more information on anything ditch related, please contact the office and we can help navigate this complex and sometimes confusing process!

Process Summary for “Drainage Projects” including State, County, & Judicial Ditches
 MN Drainage Law – Statute 103E





‘RIFFLES & RUNS’

- News Briefs from Around the Watershed District-

- ❖ The **Red River Watershed Management Board** is nearing completion and release to the public updated **LIDAR** (light detection and ranging) land elevation data. This recent flight and data collection updates the old data from 2008 and provides the latest technology to provide state of the art land elevation data. Through a license agreement, members of the public will be able to access this latest technology. More information will be forthcoming as LIDAR becomes available toward the end of this year.
- ❖ The **MN DNR** is progressing with plans and specifications to replace the aging **dam at Lake Bronson** State Park. Public comments on the project Environmental Assessment Worksheet were due by 10/19/23 and several other permits are pending. Construction is slated over 2 construction seasons to begin in 2024 with the draining of the lake.
- ❖ **Juneberry Project Work Team:**
 - The **TRWD, Roseau River Watershed District, Kittson County and Roseau County, and MN DNR** are meeting together to plan for flood control, wildlife habitat and drainage in area of the “Big Swamp”. Discussions for projects include the State Ditch #69 and State Ditch #72 systems, the overflow flooding from the Roseau River into the Two Rivers, and the flood issues along Roseau County Road #7.
- ❖ **Drainage Work Group:** This statewide group is made up of counties, watershed districts, state agencies, ag groups, and environmental groups. Its purpose is to discuss Minnesota’s Drainage Law and work on issues pertaining to legal drainage ditches in the state. This group is currently working on the definition of an “adequate outlet” and discussing a drainage portal that would provide notification regarding new ditches, ditch improvements, and other types of proceedings. Their work is reported to the Legislature.
- ❖ **Cost Share For Erosion Control:** The TRWD is partnering with Kittson SWCD to provide cost share for repair and prevention of severe erosion. This funding will provide up to 87.5% of the funds to fix washouts, gullies, head cutting, and other types of erosion along ditches, coulees and other watercourses.



Funding Now Available for Construction of Farmstead Ring Dikes

The State of Minnesota has appropriated funding to assist with the construction of farmstead ring dikes within the Red River Valley. The 2022 legislature approved cost share funding of \$360,000 for this program. This funding will pay for up to 50% of the cost to design and construct a ring dike. The Red River Watershed Management Board will provide 25% funding. Additional funding is potentially available through the Two Rivers Watershed District.

Applicants must meet the minimum State of Minnesota requirements listed below in order to be considered for this grant opportunity. Per direction from the Legislature, the funding source is Minnesota's Environment and Natural Resources Trust Fund (ENRTF). Use of funding from this source requires that funded projects produce natural resource benefits. In order for an application to be considered, applicants must demonstrate:

1. That the site planned for ring levee construction is within the drainage area of the Red River Basin in Minnesota, and is outside the boundaries of any incorporated city or town.
2. That the project site has been used for the purposes identified for protection for at least five consecutive years before the date of the award. And that the landowner intends to continue using the protected site for this purpose for the foreseeable future (or declares any planned changes in use of the protected site in the application submitted).
3. That the site is substantially at risk from flooding.
4. That protection of the identified area will reduce the risk of flood water coming into contact and mobilizing fuels, chemicals, fertilizers, other hazardous substances, animal manure or wastewater in septic systems; or that the ring dike will provide other benefits to the environment and natural resources consistent with the ENRTF funding source.
5. That the ring levee will not be constructed on a property owned by a federal or state government agency. Properties owned by local governments or tribal agencies may be eligible if they are operated for the benefit of local residents and otherwise meet the eligibility criteria.
6. That the applicant can meet the matching requirement using non-state funds/resources.

Ring dikes constructed using this funding will be designed by a registered engineer. The landowner will be responsible to provide a source of dirt for dike and provide a portion of the cost share funding. Dikes will be designed with a minimum width, side slope, interior drainage, and other criteria.

Applications for ring dikes are currently being taken for this program on a first come first serve basis until the funding is used up. If you are interested, please contact the Two Rivers Watershed District located in the Kittson County Courthouse in Hallock or call 218-843-3333.



