

ANNUAL REPORT

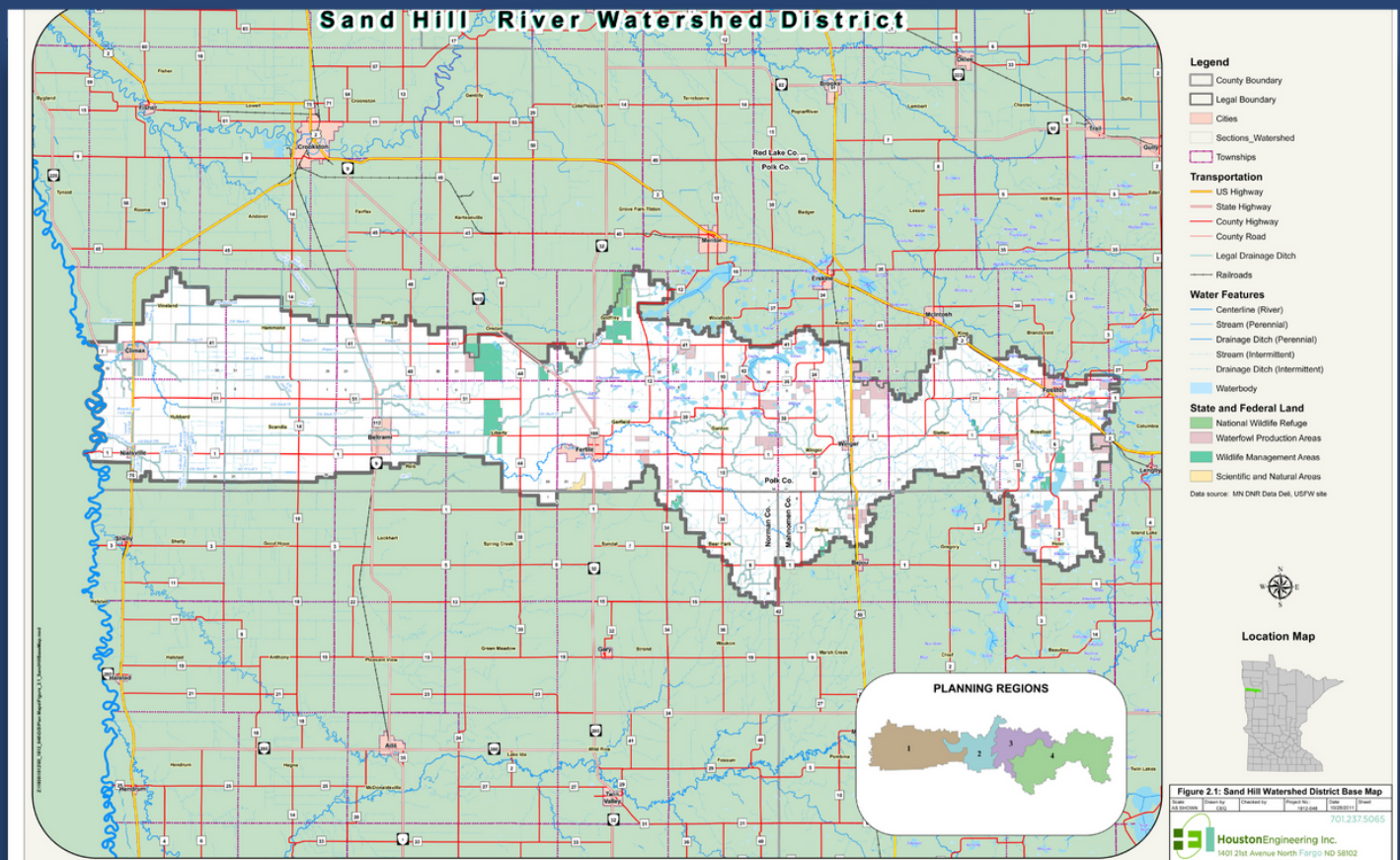
2021



218-945-3204

PO Box 584
219 North Mill Street
Fertile, MN 56540

ABOUT THE SAND HILL RIVER WATERSHED DISTRICT



Location

Located in the center of the Red River Watershed in Northwest Minnesota, the Sand Hill River Watershed is one of the 10 major watersheds in the Red River Basin.

Mission

To serve the residents of the District by wisely and judiciously managing water resources in a manner which sustains and enhances the social, economic and natural resources of the District.

SAND HILL RIVER IMPROVEMENTS STATUS UPDATE

Project Overview

The highly successful collaboration between the District, BWSR, the West Polk SWCD, and the MN DNR is showing habitat success for fish passage and grade stabilization for the channelized portions of the Sand Hill River.



Exciting News in 2021!

There are three distinct size/year classes of Smallmouth Bass upstream of the project. From the sampling, it appears there is natural reproduction occurring.



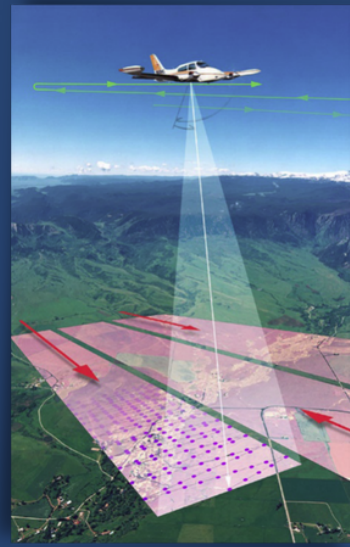
Measuring Success

It was reported in 2021 the Sand Hill River contained some nice size Channel Catfish (all ~20"), along with Yellow Perch, at multiple locations. Also found were Golden Redhorse which are highly migratory, and their presence above the structures again confirms function as designed.



2021 LIDAR COLLECTION

Article from The Fertile Journal



On August 3, 2021, the Sand Hill River Watershed District approved a contract with the Red River Watershed Management Board to acquire Light Detecting and Ranging (LiDAR) data and develop LiDAR derived products for the Sand Hill River Watershed District. The Red River Watershed Management board will facilitate collection with the LiDAR vendor and the International Water Institute of the entire 480.30 square miles within the Sand Hill River Watershed District's jurisdiction.

According to the United States Geological Survey, LiDAR is a technology used to create high-resolution models of the earth's surface using quality level 1 (QL1) LiDAR data that results in a vertical accuracy of roughly 4 inches. The LiDAR system, which includes a laser scanner, a Global Positioning System, and an Inertial Navigation System, is typically mounted on a small aircraft. The laser scanner transmits brief pulses of light to the ground surface. Light pulses reflect or are scattered back and their travel time is used to calculate the distance between the airborne laser scanner and the ground.

The contract includes a total payment of \$64,840.50 corresponding to a price of \$135.00 per square mile. The pricing includes data hosting and dissemination (using the selected vendor's web platform) for a period of three (3) years. The Sand Hill River Watershed District will have a perpetual, nonexclusive license to hold, use and distribute the LiDAR data and derived products. The Red River Watershed Management board asserts no ownership in any such derivative works. This opportunity to acquire LiDAR data is at a considerable cost savings when compared to state or federal procurement processes. A recent Minnesota State Agency- led effort to similar (QL1) LiDAR data in Northeast Minnesota cost about \$400 per square mile (https://www.mngeo.state.mn.us/committee/3dgeo/acquisition/Northeast_LidarAcquisition_Update_Handout.pdf)

The LiDAR vendor will provide raw DEM's (1,000 x 1,000- meter tiles). The International Water Institute will mosaic the DEM tiles together to create a continuous surface for the Sand Hill River Watershed. The expected delivery date of the LiDAR data is the fall of 2022 with the additional derived products (e.g. 1 – foot elevation contours) by the spring of 2023.

April Swenby, Administrator of the Sand Hill River Watershed District is excited about this effort: "The watershed regularly uses LiDAR data to address resource management issues in the district. The current LiDAR data was collected in 2009 and needs updating. The District uses this data extensively to deliver services to our landowners. For example, we can quickly and accurately determine the area draining to culverts which helps us understand the volume of water potentially delivered during a given rain event."

The current LiDAR data products for the Sand Hill River Watershed District can be found here <https://gisapps.iwinst.org/map-portal/> and is accessible to the public. The IWI will update these products once the project is completed.

2021 Project of the Year

In December of 2021, the MN Association of Watershed Districts (MAWD) named the Sand Hill River Watershed District Project of the Year Award for the Sand Hill River Ecosystem Enhancements.

The Sand Hill River has been plagued by increasingly turbid waters and fragmented riparian habitat, leading to degraded water quality and limited recreation opportunities. The Sand Hill River Watershed District (SHRWD) spent the last 14 years committed to improving turbidity and fish passage issues for area residents. Multiple projects were completed, including two river crossing replacements, removal of an old mill dam, removal of four concrete dams and retrofit with rock arch rapids, installation of nearly forty rock riffles, retrofit of the Sand Hill Lake Dam with rock arch rapids, and removal of an old bridge to provide enhanced riparian function.

The SHRWD, West Polk Soil and Water Conservation District (SWCD), East Polk SWCD, Board of Water and Soil Resources, Department of Natural Resources, Minnesota Pollution Control Agency, US Army Corps of Engineers, and area landowners all partnered to ensure the success of the Sand Hill River Ecosystem Enhancements. The project was developed with a collaborative approach to ensure as many resource issues as possible were address through the project.

- Sand Hill Ditch Low Water Crossing (2007): While the crossing limited riparian connectivity for fish and other aquatic life, it did still serve as a critical crossing for our area agricultural producers. The solution was to install a low water crossing, with box culverts for low flows that would allow for fish.
- West Mill Removal (2007): An old mill dam was removed and replaced with a box culvert and several rock riffles to provide connectivity for fish and other aquatic life.
- Sand Hill Ditch Drop Structure Rock Arch Rapids Retrofit (2016): The SHRWD worked with the USACE to retrofit four concrete drop structures in the Sand Hill Ditch with rock arch rapids at a grade and boulder placement suitable for fish passage.
- Sand Hill Ditch Grade Stabilization – Phase I (2016) & Phase II (2020): Installation of 34 rock riffles through degrading portions of the Sand Hill Ditch. Each riffle was sized to minimize future channel incision, provide fish passage, and enhance floodplain accessibility.
- Kittleson Creek Outlet (2019): The SHRWD installed a box culvert at a lower elevation and riffles at the outlet of Kittleson Creek to provide connectivity for fish and other aquatic life.
- Sand Hill Lake Dam Rock Arch Rapids Retrofit (2019): The existing vertical sheetpile structure was retrofit with a rock arch rapids. This project featured a meandering low flow channel within the rapids due to site constraints that wouldn't allow for an ideal slope.
- Poissant Bridge Removal and Riparian Enhancement (2021): The historic bridge for MN Highway 32 had remained in-place and became the property of a private landowner. As this structure continued to degrade, there were substantial public safety concerns with the bridge. The bridge also limited riparian function for the Sand Hill River in this area. The SHRWD worked with the landowner to remove the bridge and approach embankments and install a rock arch rapids at the prior bridge location. The end result provides enhanced riparian function in this region of the Sand Hill River.



Bids were opened in January 2021 for the Sand Hill River Poissant Bridge Removal and Rock Arch Fishway Project and the project was awarded to Spruce Valley Corporation. The project includes removal of a steel bridge and installation of rock riprap. This project is located in the SW ¼ NW ¼ Section 28, T147N, R44W (Garfield Township), Polk County.



Background

- The bridge is in private ownership and crosses over a public water (Sand Hill River).
- The bridge is an old steel trestle bridge that has recently provided a scenic location for the landowner, as well as area residents for photography, etc.



Problems

- Recent erosion along the historic bridge abutments has created a safety issue for the community.
- Failure could result in potential for contamination of the Sand Hill River with construction materials.
- The bridge resulted in higher velocities and erosion within the Sand Hill River that limited floodplain access for aquatic species such as fish.



Solutions

- Removal of the steel trestle bridge with a crane and relocating it to another location on the landowner's property to still allow area residents to take advantage of the historic beauty of the structure.
- A rock riffle was installed in the place of the bridge that allows for more frequent floodplain access along the channel.

The historic bridge for MN Highway 32 had remained in-place and became the property of a private landowner. As this structure continued to degrade, there were substantial public safety concerns with the bridge. The bridge also limited riparian function for the Sand Hill River in this area. The district worked with the landowner to remove the bridge and approach embankments and install a rock arch rapids at the prior bridge location. The SHRWD was able to leverage funding through the Lessard Sams Outdoor Heritage Council to bring state dollars to address the Problems. The end result provided enhanced riparian function in this region of the Sand Hill River.



RETROSPECT: A LOOK BACK AT 2021

Highlights of 2021 Activities

- Forty-three permits were brought before the board.
- The district was selected as a recipient for a grant from the Minnesota Historical & Cultural Heritage Grant through the Minnesota Historical Society to perform a historical assessment of the district building.
- The district was accepted as a recipient for the Sand Hill River Watershed One Watershed One Plan. Planning partners include Polk County, Norman County, and Mahnomen County, along with East Polk, West Polk, Norman and Mahnomen County SWCD's. Planning efforts will begin in 2022.
- The district hired additional part-time staff and the board welcomes Donna Bjerck to the team. Bjerck maintains clerical records and performs duties pertaining to meeting preparations and meeting wrap-ups.
- Maintenance was performed on various projects: Project # 27-Union Lake Pumping, Project # 20, PC Ditch 9, and Project # 17.
- This district is coordinating with the Red Lake Watershed District to investigate the watershed boundaries on the Northern end along MN 102.
- The district partnered with the East Polk SWCD for lake monitoring on Sand Hill Lake and Kittleson Lake.
- Two project teams were started: Liberty/Reis Erosion and Kittleson Storage.
- The district was awarded a Multi-purpose Drainage Management grant for the outlet near Project # 17.
- The board began the process for incremental implementation of vegetated ditch buffer strips on district ditches known as Polk County Nos. 9 and 119.
- The board approved moving forward with a mini strategic planning session, to help aid staff in direction of goals and missions.
- The managers took a bus tour around the district to educate all board managers on watershed related issues.



Board of Managers

- Stuart Christian - Chairman
- Don Andringa - Vice Chairman
- JJ Hamre - Secretary
- Clayton Bartz - Treasurer
- Craig Engelstad

Approved 2022 Operating Budget

Income

REIMBURSED EXPENSE	400.00
HOMESTEAD/AG CREDIT	3,000.00
INTEREST INCOME	24,000.00
TAX LEVY INCOME	250,000.00
Total Income	277,400.00

Expense

MISC	200.00
WEB-SITE	600.00
PUBLICITY	1,000.00
MEETING EXPENSE	2,100.00
DUES-MEMBERSHIP	3,000.00
TRAVEL EXPENSES	4,000.00
EDUCATION	4,000.00
PAYROLL TAXES	7,000.00
BUILDING MAINTENANCE	13,000.00
COMPUTER EXPENSE	14,000.00
FURNITURE-EQUIP	15,000.00
MANAGER EXPENSE	17,000.00
OFFICE OPERATIONS	18,000.00
PROF SERVICES	20,000.00
CAPITAL IMPROVEMENTS	59,600.00
PAYROLL EXPENSES	98,900.00
Total Expense	277,400.00