

By Corey Hanson, Red Lake Watershed District Water Quality Coordinator. 10/25/2021

**Red Lake River Watershed One Watershed One Plan (1W1P)**

District staff completed additional surveying at the Demarais-Hanson erosion control project location. The initial surveying effort and concept report focused on the eroded portion up to the tree line. Additional work will be completed to prevent erosion between the large gully and the oxbow wetland that receives the drainage.

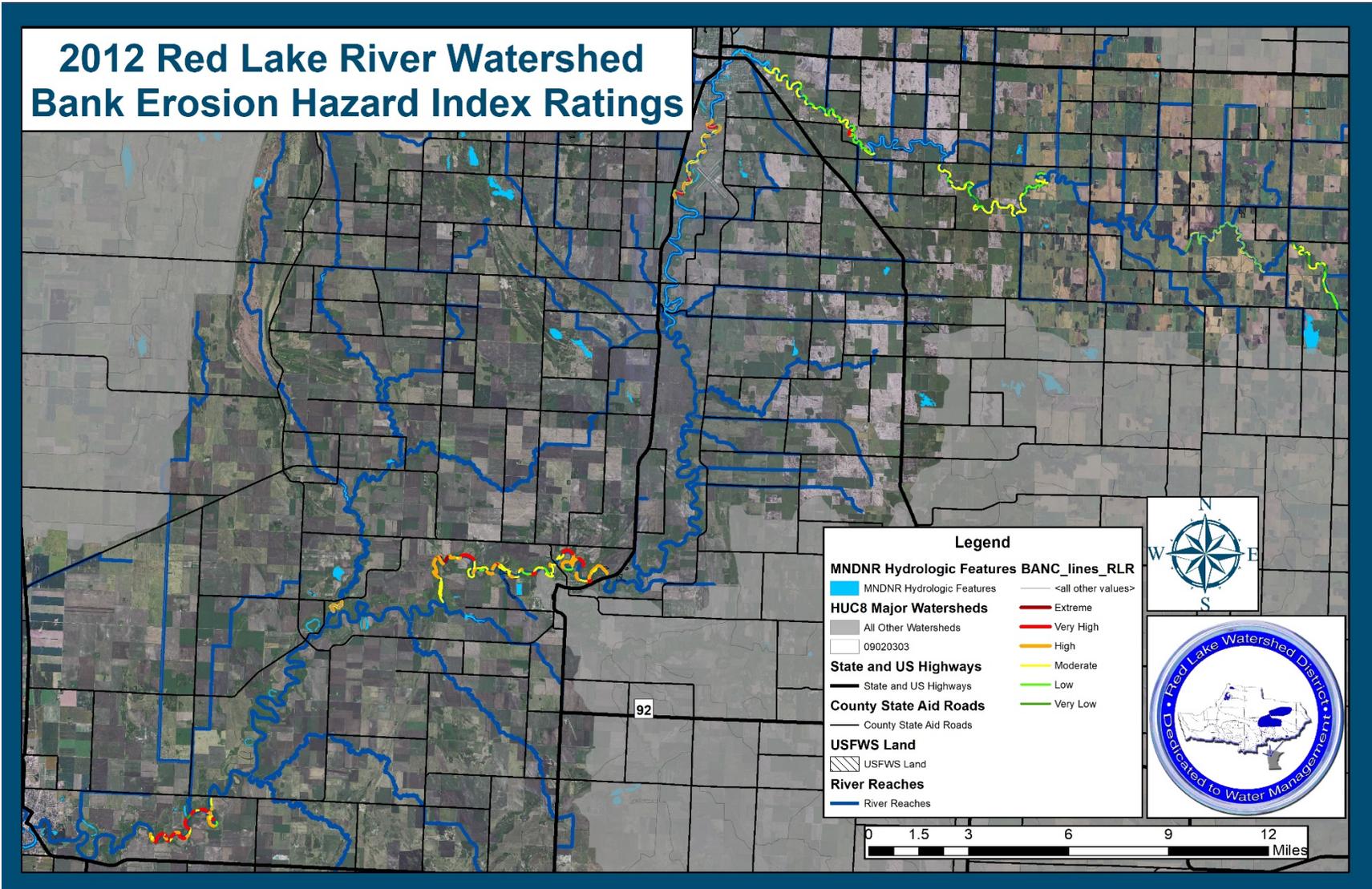
District staff wrote a summary about a potential erosion control project along the Voyageur's View campground in Red Lake Falls. The Red Lake SWCD submitted a project funding request for the streambank stabilization project along the Red Lake River, along the west side of the Voyageurs View campground. The West Polk SWCD presented a project funding request for a streambank stabilization project (shown below) along the Red Lake River east of Crookston (Crookston Township, Section 34).



Concerns have been expressed by landowners near the eroding outlet of the CD 99 drainage system, east of Crookston, perhaps prompted by upstream culvert installation proposals. This project has been specifically identified as a "Project for Consideration" in the 2020 Red Lake River 1W1P work plan. It would be a priority for a competitive grant application or the next round of watershed-based funding.

A GIS layer of Bank Erosion Hazard Index (BEHI) ratings from the geomorphology study of the Red Lake River was received from DNR staff. The map will assist with the prioritization of eroding riverbanks for stabilization projects. The layer was shared with the 1W1P Planning Work Group. For future projects, a feasibility study may be warranted for the high, eroding banks within the city of Red Lake Falls. Those bluffs have overlapping prioritization characteristics of their high BEHI ratings and potential to damage infrastructure and homes.

## 2012 Red Lake River Watershed Bank Erosion Hazard Index Ratings



### **Water Quality Monitoring**

Lake water quality sampling (2-meter integrated sampler) and monitoring (Secchi disk) equipment was ordered so that it could be used to collect water quality data at Bartlett Lake (by a volunteer) during the summer.

Clearwater 1W1P partners were made aware of a recent development in which the U.S. Environmental Protection Agency and the Minnesota Pollution Control Agency are deciding how to address high sulfate concentrations along the channelized portion of the Clearwater River (from which water is pumped to grow wild rice). A longitudinal assessment of the limited sulfate data from the watershed shows that sulfate levels meet standards in the headwaters reaches but exceed the sulfate standard in Ruffy Brook and the channelized portion of the Clearwater River. Sulfates will be added to the list of parameters that are analyzed for samples collected along the headwaters of the Clearwater River through the channelized reach, including Ruffy Brook (an apparent source of elevated sulfate concentrations in the channelized portion of the Clearwater River).

### **Flow Monitoring**

Water level loggers were deployed at stage/flow monitoring sites within the Thief River Watershed and Clearwater River Watershed. District staff researched options for remote, real-time water level monitoring equipment.

### **River Watch**

The Natural Resources Technician led Win-E-Mac River Watch students in a round of water quality measurements in streams near their school. The Natural Resource Technician and International Water Institute held a River of Dreams educational event for Thief River Falls elementary students in April.

### **Thief River Watershed One Watershed One Plan (1W1P)**

Houston Engineering, Inc. completed a set of plans for the Thief River streambank stabilization projects.

### **Clearwater River One Watershed One Plan (1W1P)**

District staff conducted groundtruthing of Clearwater River Watershed PTMApp burn lines (representing culverts and bridges) and edited PTMApp input files using the findings. A section-by-section examination of flow accumulation lines and non-contributing areas (areas where water digitally “pools” instead of flowing downstream) to find locations that should be field-checked for the presence/absence of a culvert. This work was the primary focus of the Water Quality Coordinator during the month of April.

The process of checking on the presence/absence of culverts throughout the watershed led the Water Quality Coordinator to areas of the watershed that are seldom visited by District staff.

Significant erosion problems were noted. A small, intermittent waterway that flows into the Clearwater River, near Red Lake Falls, has a steep slope and notable channel/bank erosion problems. The following photo was taken from the 200<sup>th</sup> Street East crossing.



Recent, unvegetated ditch maintenance activity and insufficient buffer left some ditch channels susceptible to erosion and sedimentation.



Excessive wind erosion and substantial deposition of wind-blown sediment within ditches was a common occurrence throughout the western portion of the Clearwater River Watershed in the spring of 2021.



Stormwater drainage was mapped for the PTMApp development effort, where possible and practical, within Clearwater River Watershed cities and towns (Oklee stormwater outlet shown below).



For the pre-planning process, District staff uploaded Clearwater River watershed photos, maps, reports, spreadsheets, and other documents to a Google Drive folder so they could be shared with Houston Engineering staff that will be writing sections of the plan. District staff also completed some GIS analysis to generate statistics that were requested by the consultant.

District staff contacted potential Clearwater River 1W1P Advisory Committee members in order to find volunteers that could be nominated by the District (and other project partners). District staff also compiled a presentation to summarize the work of the Red Lake Watershed District for an upcoming Clearwater River 1W1P Policy Committee meeting. Planning Work Group staff reviewed letters that were received during the 60-day comment period that kicked-off the planning process.

Local staff were informed that the U.S. Environmental Protection Agency only partially approved the MPCA's 2020 impaired waters list and declare a portion of the Clearwater River (channelized portion – 09020305-647) as an impaired wild rice water. The reach was apparently listed because of high sulfate concentrations that were recorded during the MPCA's Intensive Watershed Monitoring effort in 2014-15. There was some sulfate data collected prior to the MPCA's 2016 water quality assessment, but sulfates were not assessed then. The newest version (2018) of the Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List does not mention sulfates. It looks like the EPA takes issue with the lack of an assessment procedure. Though a 10 mg/L numerical threshold has been established by the state, the state does not specify a statistical test (annual average or frequency of exceedance) to which that impairment threshold would be applied. District staff assessed sulfate data from throughout the watershed to understand the extent

of the impairment. Sulfate concentrations in the Clearwater River were low, relative to water quality standards, in the headwaters portion where wild rice grows within the river channel. Water from the channelized portion is used for growing wild rice in off-channel paddies. The channelized portion did have high concentrations of sulfates. Ruffy Brook also had high sulfate concentrations. Sulfate sample analysis will be added to long-term monitoring sites along the Clearwater River and Ruffy Brook to better understand the extent of the problem (spatial and temporal).

### **Other**

- Local newspapers published [articles](#) about the Upper/Lower Red Lakes Watershed Restoration and Protection Strategy and Total Maximum Daily Load public notice period.
- District staff reviewed information and submitted comments regarding the Minnesota Pollution Control Agency Triennial Standards Review public comment period.
  - Support for the establishment of a standard for shallow lakes in the Northern Lakes and Forests ecoregion.
  - Need to review individual total suspended solids standards on some tributary streams like the Black River.
- District staff reviewed the [Upper/Lower Red Lakes Total Maximum Daily Load](#) report and provided comments to the MPCA. The announcement of the public notice period was shared with the Bartlett Lake Management Plan group.
- District staff organized an online meeting of the Bartlett Lake Management Plan group.
- The eroding outlet of Polk County Ditch 99, east of Crookston, has gained more attention due to construction and culvert replacements upstream, along CSAH 11. Though it does not yet have funding, it is specifically identified as an action in the 2021 Red Lake River 1W1P Annual Plan. That will make it a priority for future rounds of water quality funding (1W1P or RRWMB).

Water quality related notes and minutes from the April 8, 2021 Red Lake Watershed District Board of Managers meeting.

- Staff member Nick Olson requested the purchase of an automated water level logger to be installed in Pine Lake, which would allow for District staff to monitor lake levels without having to drive to Pine Lake to get a manual reading, at an estimated cost of \$3,000. Motion by Dwight, seconded by Anderson, to approve the purchase of a water level logger for the Pine Lake FDR and Fish Habitat Project, RLWD Project No. 26B, at a cost not to exceed \$3,000.00. Motion carried.
- Motion by Ose, seconded by Anderson, to approve the Memorandum of Agreement between the City of Thief River Falls and the District for the Thief River Falls Oxbow Project, RLWD Project No. 46Q. Motion carried.
- Jesme, Hanson and Novak attended the March 26, 2021 Thief River 1W1P Policy Committee meeting. Jesme and Hanson participated in a conference call with various agencies regarding reduction of the sediment loads within the Agassiz NWR as it outlets into the Thief River.
- Jesme, Hanson and Novak attended the Red Lake River 1W1P Planning Work Group meeting on April 1st. A Policy Committee meeting will be held on April 14th.
- Jesme, Manager Dwight, and Hanson will participate in a Zoom meeting for the Bartlett Lake Planning Work Group.

Water quality related notes and minutes from the April 22, 2021 Red Lake Watershed District Board of Managers meeting.

- Discussion was held on the appointment of members to the Clearwater River 1W1P Advisory Committee, representing the District. Motion by Anderson, seconded by Dwight, to appoint landowners, Les Torgerson, Gary Mathis and Larry Peterson, to represent the District on the Clearwater River 1W1P Advisory Committee, RLWD Project No. 149B. Motion carried.
- The Board reviewed a proposal for financial support for analysis of lake samples on Bartlett Lake, near Northome, MN, at an approximate cost of \$320 per year. Samples will be gathered by a local volunteer. Motion by Dwight, seconded by Sorenson, to approve financial support, not to exceed \$500 per year for analysis of lake samples on Bartlett Lake, RLWD Project No. 46. Motion carried.
- Administrator Jesme stated that two individuals were interviewed for the Ditch Inspector/Technician II position and four individuals were interviewed for the Engineer Senior/Hydro II position. The Budget and Salary Committee recommended hiring Anthony Olson for the Ditch Inspector/Technician II position, at a Step 3 level at an hourly rate of \$20.83, plus benefits: and Nathan Koland for the Engineer Senior/Hydro II position, at a Step 4 level at an hourly rate of \$29.62, 5 years of service for vacation leave, plus benefits. Motion by Dwight, seconded by Page, to approve the hiring of Anthony Olson and Nathan Koland at the hourly rates as stated, with benefits. Motion carried. Jesme indicated that Olson will start on April 26th, with Koland beginning employment on May 10th.
- Staff member Hanson participated in the Pennington County WRAC meeting held on April 12th.
- Jesme and Staff members Slowinski and Olson participated in the RLWD Ditch 10, Project No. 161, pre-construction meeting held on April 13th.
- The Red Lake River 1W1P Policy Committee met on April 14th to review present and new projects.
- The Clearwater River 1W1P Planning Work Group meet on April 21st.
- Jesme, Manager Dwight and Staff member Hanson participated in the Bartlett Lake Planning Work Group meeting held on April 15th.

#### **April 2021 Meetings and Events**

- **April 1, 2021** – Red Lake River 1W1P Planning Work Group meeting
  - Project Updates:
    - The Pennington SWCD is making progress on side water inlet installation.
    - The West Polk SWCD is making progress on the Andover 9 and Roome 2 grade stabilization structures.
    - The West Polk SWCD is starting outreach in the Burnham Creek subwatershed for the installation of best management practices.
    - The Ditch 10 outlet stabilization project has been bid-out, a pre-construction meeting will be held soon, and construction is planned for this summer.
    - The Pennington County Ditch 96 outlet stabilization project has been completed.
    - The Black River Impoundment diversion ditches will be constructed this summer, as will the side water inlets and rock-check grade stabilization structures that will be funded by the 1W1P, 319 Grant and the RRWMB Water Quality Base Funding.

- The group reviewed the 2018 work plan and budget and discussed how to get that money spent before the end of the year.
- The group discussed the Demarais-Hanson stabilization project and decided that it would be best to complete additional surveying/design to make sure that the project has a stable outlet
- The group discussed the use of PTMAApp to identify critical areas. This could be used to identify and prioritize projects that don't necessarily lie within one of the priority areas identified in the 1W1P.
- The West Polk SWCD is submitting a project request form for a streambank stabilization project along the Red Lake River, east of Crookston.
- **April 1, 2021** – Red Lake River 1W1P NRCS Water Quality Initiative discussion
  - A percentage of EQIP funding in MN is dedicated to the National Water Quality Initiative. Currently, the only project using this “pot” of funding has been Whiskey Creek, so they had the \$600,000 available to them. They were able to spend about \$350,000. Watersheds will compete against each other for the funding.
  - The 319 Small Watershed program makes the Red Lake River a priority for this program.
  - Work would be focused on specific HUC 12 subwatersheds.
  - Field-scale critical areas would be identified (PTMAApp).
- **April 5, 2021** – Mud River Restoration Project meeting
- **April 7, 2021** – Red Lake River 1W1P financial meeting
  - Since the completion of the Red Lake River One Watershed One Plan (1W1P), there have been abundant opportunities for local government units (LGUs) to receive funding to complete projects within the watershed. Funding has been awarded by multiple sources, including 2018 1W1P watershed-based clean water funding (WBF), 2020 WBF, competitive Clean Water Fund grants, a 319 Grant, Regional Conservation Partnership Program, Red River Watershed Management Board, in-kind cost share from local partners, and other conservation programs. In some cases, a specific implementation project is funded by multiple sources. In some cases, other funding sources have paid for the implementation of projects that were part of a 1W1P budget, making 1W1P WBF dollars available for other projects. With multiple funding sources and budget and multiple adjustments to budgets, tracking 1W1P budgets and expenditures has become complex and local staff met to brainstorm means to more clearly understanding and tracking the funding of Red Lake River 1W1P projects.
  - In addition to tracking budgeted numbers, the multiple classifications of expenditures perhaps add a layer of complexity to tracking and understanding project funding. In the annual work plan, funding is divided among priority projects. Each project is described and provided a budgeted amount of funding within the Annual Work Plan document. When a work plan is submitted to BWSR's eLINK reporting system, the work is consolidated into general categories like Ag Practices, Streambank and Shoreline Protection, Administration, Project Development, and Technical & Engineering. In financial reports to the Red Lake River 1W1P policy committee, portions of the budget are allocated to each LGU partner, in addition to being categorized by eLINK category.
  - We need a simplified way to keep track of budget changes, expenditures, budget transfers, invoices, project timelines, budget balances, etc.
  - The level of importance/need for individual agency budgets was discussed. Initially, it may have been done to make sure that each partner got a “piece of the pie” and could

estimate their workloads for this project. Because there has not been a shortage of funding, it might be okay to eliminate this layer of categorization. We could focus the project-specific budgets and fairly distribute project-lead responsibilities/opportunities during annual work plan development.

- Project/work plan specific discussions:
  - Prioritize work in the 2018 1W1P WBF budget because that money needs to be spent by the end of the year.
  - The project development, surveying, and engineering work for the Demarais-Hanson project (a large gully at the outlet of a drainage system, downstream of CSAH 11, west of Red Lake Falls) was funded with the 2018 Project Development and Technical and Engineering budget, so the \$100,000 of Streambank and Shoreline Protection funding in the 2020 Red Lake River 1W1P work plan is still available for construction. There might be unused funding from other projects that could be shifted to the Demarais-Hanson project to fund construction.
- **April 12, 2021** – Pennington County Water Resources Advisory Committee
  - Surveying and design work will be completed this year for the Pennington SWCD’s streambank stabilization projects along the Red Lake River in Thief River Falls. Construction will likely start in the spring of 2022.
  - The Pennington County Cooperative Weed Management Area Grant will target buckthorn, Canada thistle, and common tansy. A gravel pit reclamation certification program will be developed.
  - The Pennington SWCD has received complaints about the protestors at the “Red Lake Treaty Camp” near the Line 3 pipeline crossing of Highway 32 and the Red Lake River. SWCD staff noted that the camp has been violating county ordinances.
  - Bryanna Grefthen has been promoted to Water Resource Specialist and the SWCD will be hiring a new natural resource specialist.
  - Governor Walz is prioritizing climate and carbon sequestration, so funding may be made available to incentivize tree programs, storage, and soil health.
  - United States Fish and Wildlife Service staff are concerned about cattail colonization of exposed mud flats within Agassiz National Wildlife Refuge.
- **April 14, 2021** – Red Lake River 1W1P Policy Committee meeting
  - Tony Nordby, Houston Engineering, attended the meeting to discuss the Demarais-Hanson project.
    - The PC approved a 300’ extension of the stabilization work.
- **April 15, 2021** – Bartlett Lake Management Planning meeting
- **April 21, 2021** - Clearwater River Watershed 1W1P Planning Work Group meeting
  - The PWG reviewed the draft Land and Water Resources Narrative document (a summary of background information about the Clearwater River Watershed. The PWG also discussed planning regions (HUC 10 subwatersheds), resource categories, issues, and planning of a public kick-off event.
- **April 28, 2021** – Clearwater River 1W1P Policy Committee meeting
  - The consultant asked the Planning Committee questions to get input on priority resources and issues (What resources do you value? What are some specific resource concerns?).

- The draft Land and Water Resources Narrative for the Clearwater River Watershed will be reviewed throughout the month of May 2021 and approved at the next Policy Committee meeting.
- The Policy Committee unanimously approved the list of Advisory Committee member that had been compiled by the Planning Work Group
- Alternate Policy Committee members can remain engaged in the process by participating on the Advisory Committee.
- The committee discussed location and formats for future meetings.

Red Lake Watershed District Monthly Water Quality Reports are available online:

<http://www.redlakewatershed.org/monthwq.html>.

Learn more about the Red Lake Watershed District at [www.redlakewatershed.org](http://www.redlakewatershed.org).

Learn more about the watershed in which you live (Red Lake River, Thief River, Clearwater River, Grand Marais Creek, or Upper/Lower Red Lakes) at [www.rlwdwatersheds.org](http://www.rlwdwatersheds.org).

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