





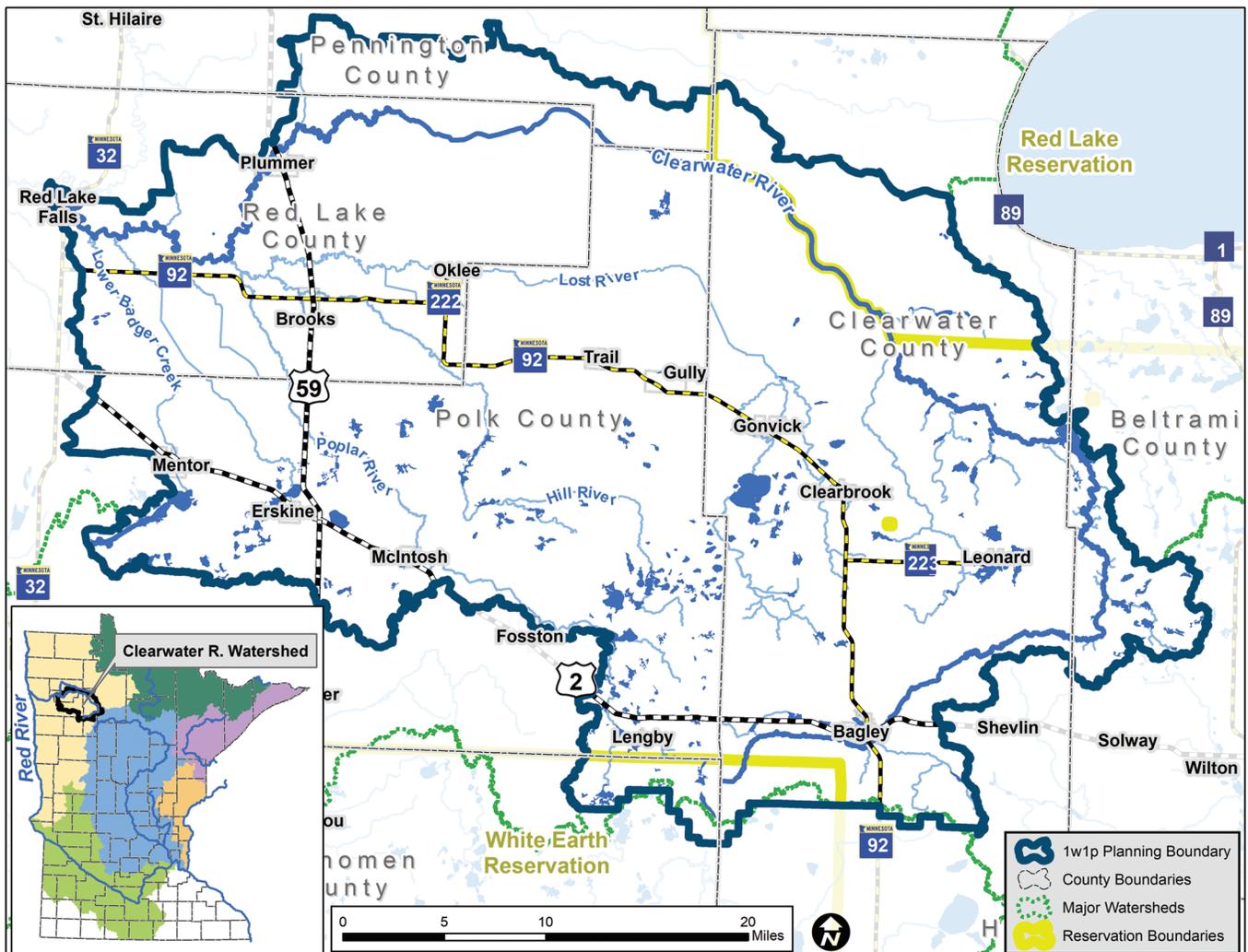
Clearwater River WATERSHED

Comprehensive Watershed Management Plan Summary



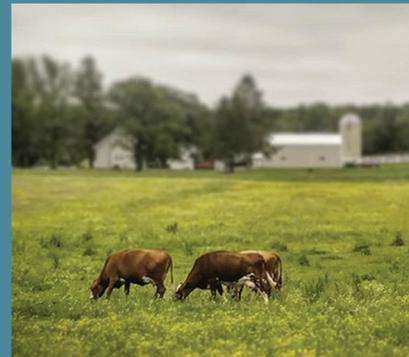
Clearwater River Watershed Highlights:

- Contains the Clearwater River and tributaries: Lost River, Hill River, Poplar River, and Lower Badger Creek.
- Joins the Red Lake River at Red Lake Falls and then eventually drains into the Red River of the North.
- Begins in the forests around Bagley, and transitions to pasture and then row crops as it moves west.
- Includes numerous biologically significant species: wild rice, cisco, trout, native prairie, and forest.
- Covers 1,385 square miles (886,400 acres) of land
- Part of numerous jurisdictions: Clearwater, Polk, Red Lake, Pennington, Mahnomen, and Beltrami counties, the Red Lake Watershed District and the Red Lake and White Earth Nations.
- There are 15 cities with a combined population of 7,553, including Bagley on the eastern end and Red Lake Falls on the western end.



Plan Highlights:

- Includes prioritization of protection and restoration projects
- Incorporates both PTMAApp for measuring sediment and phosphorus reduction practices and a parcel-level analysis for prioritizing land protection.



Focus Areas:

Examples of How:



Surface Water

Protecting and restoring lakes and streams by reducing sediment, phosphorus, bacteria and runoff, and stabilizing streams, lakeshore, and ditches.

- Water and sediment control basins
- Grade stabilizations
- Regional storage projects
- Wetland restoration
- Side water inlets
- Streambank stabilizations
- Lakeshore restoration
- Stormwater control
- Cattle exclusion and watering facility
- Manure management
- Septic system maintenance



Land Stewardship

Increasing soil health practices on cultivated land and pasture to improve agricultural productivity.

- Cover crops and no till
- Perennial crops
- Conservation crop rotation
- Pasture management



Drinking Water Protection

Protecting drinking water, minimizing nitrates, and increasing understanding of sustainable groundwater use.

- Well sealing
- Public water supply protection
- Drinking water screening
- Investigating well interference



Habitat Protection

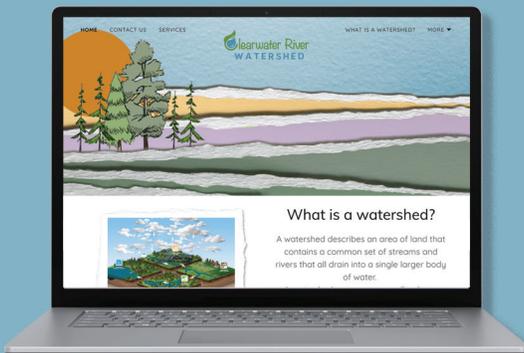
Protecting forests, prairies, aquatic habitat, and biologically significant species.

- Forest Mangement Plans
- Sustainable Forest Incentive Act (SFIA)
- Conservation easements
- Aquisitions

The Vision Statement

From the forests in the east to the farmlands in the west, the Clearwater River Watershed hosts a mosaic of recreational and economic opportunities. We aim to sustainably manage our lakes, rivers, forests, farms and groundwater for future prosperity and enjoyment.

Watershed Management Plan Partners:



Visit the website:
www.clearwatershed.org

Further questions or comments?

Contact your local SWCD or Watershed District:

Clearwater SWCD: 218-694-6845

Red Lake SWCD: 218-253-2593

Pennington SWCD: 218-683-7075

East Polk SWCD: 218-563-2777

Red Lake Watershed District: 218-681-5800

APPENDIX B. PUBLIC INPUT SUMMARY

On June 10, 2021, the Clearwater One Watershed One Plan (1W1P) partnership held two Public Open Houses: one at the Brooks Community Center and one at The Trap restaurant in Gonvick. The purpose of these open houses was to gather information to incorporate into the 1W1P, including:

- What are the top-rated issues and opportunities they would like included in the plan?
- What resources would they like prioritized for protection and restoration?

After a presentation about the 1W1P process and the Clearwater River Watershed, participants were given a survey asking the following questions. In addition, this survey was available online for anyone not able to attend the meetings. There were 37 survey responses in all.

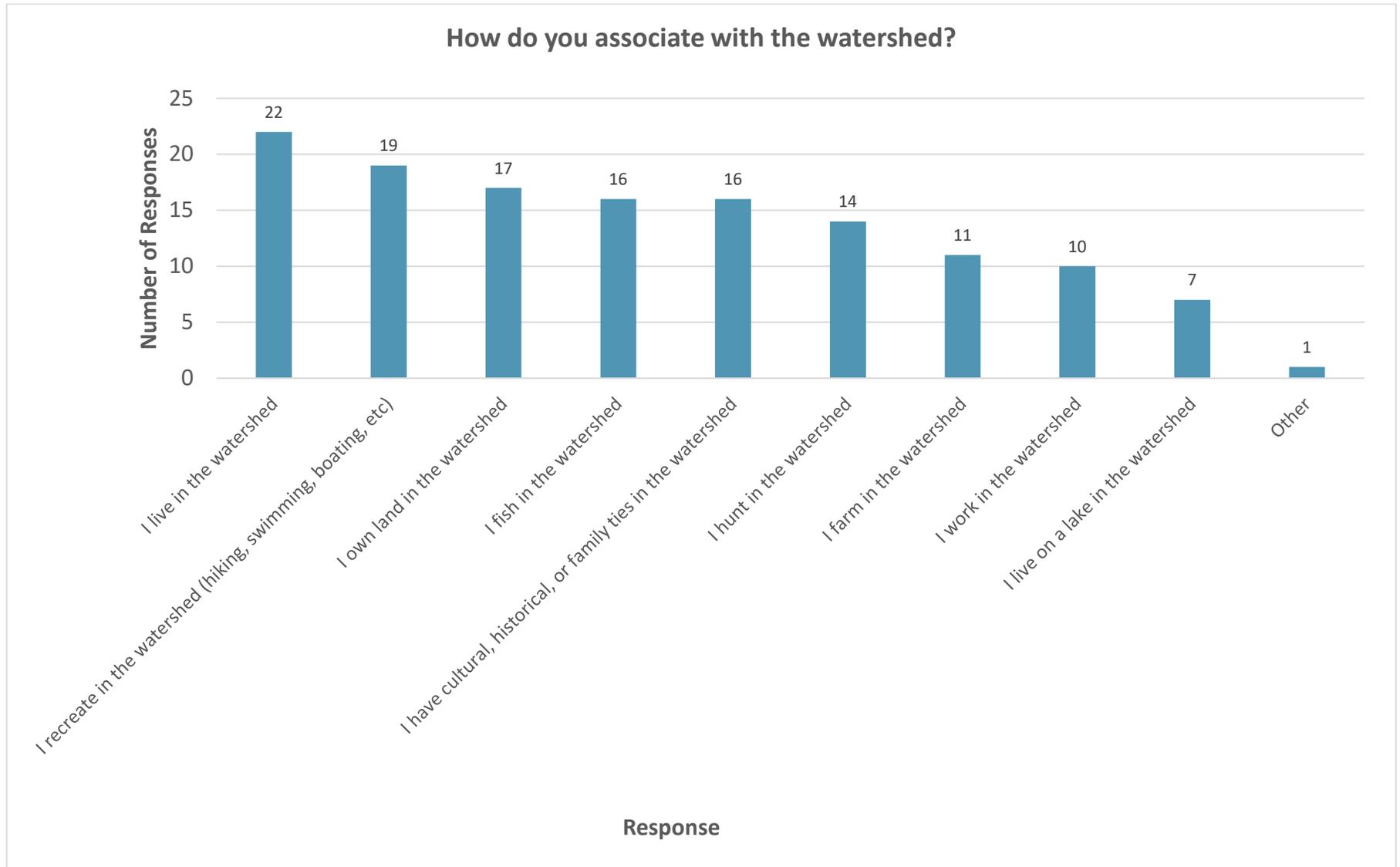


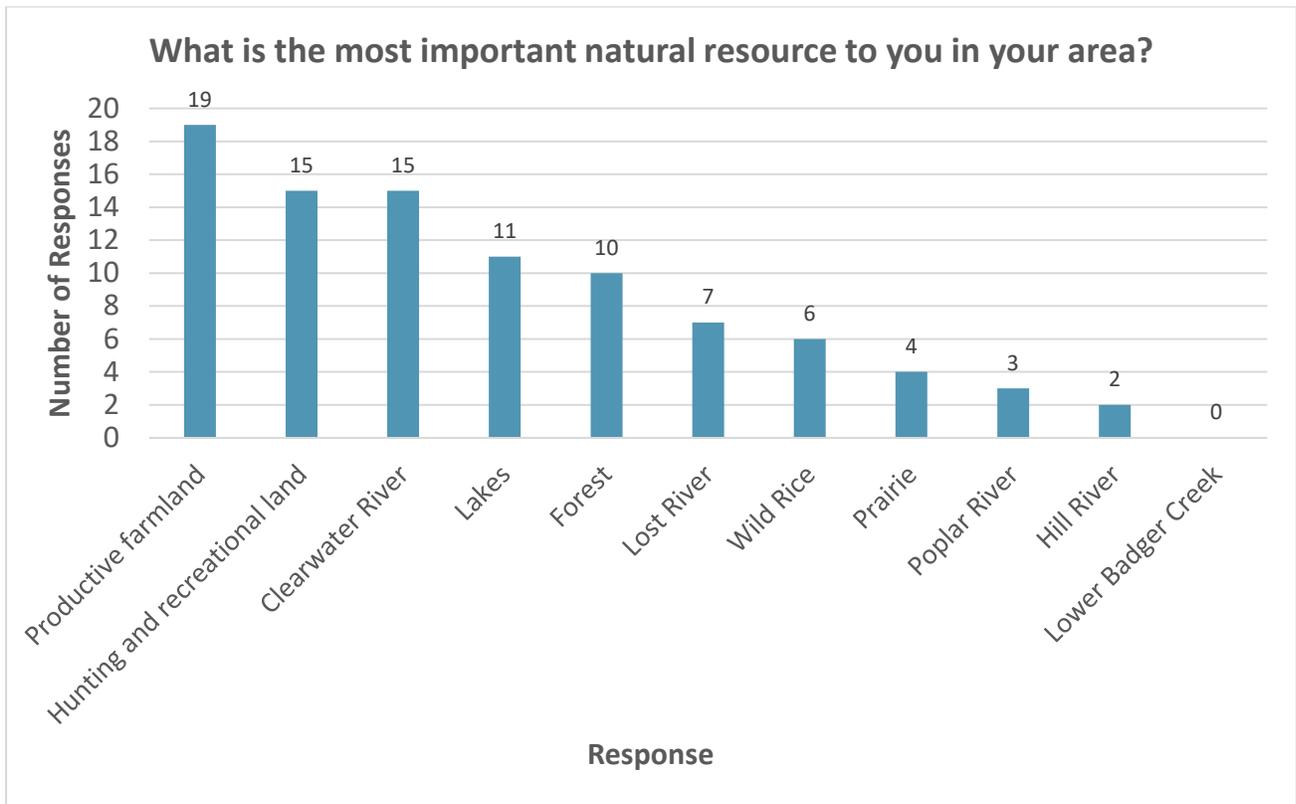
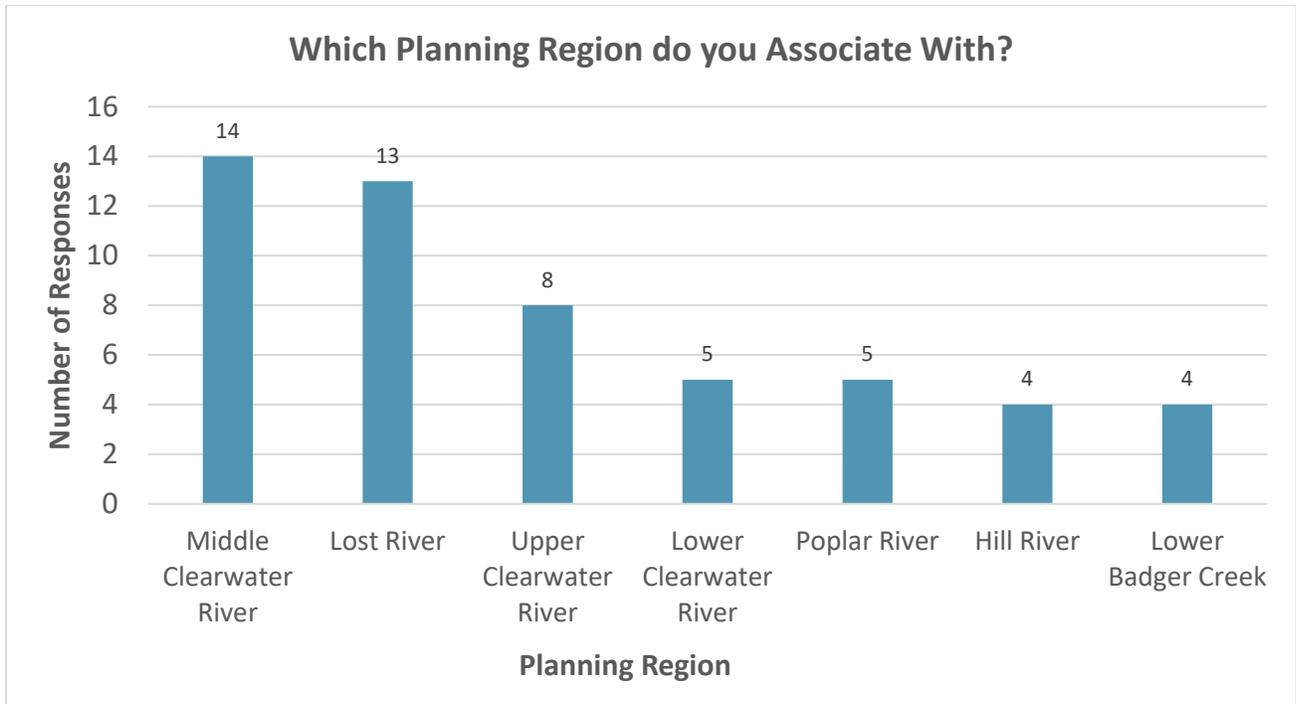
**Brooks
Community
Center**



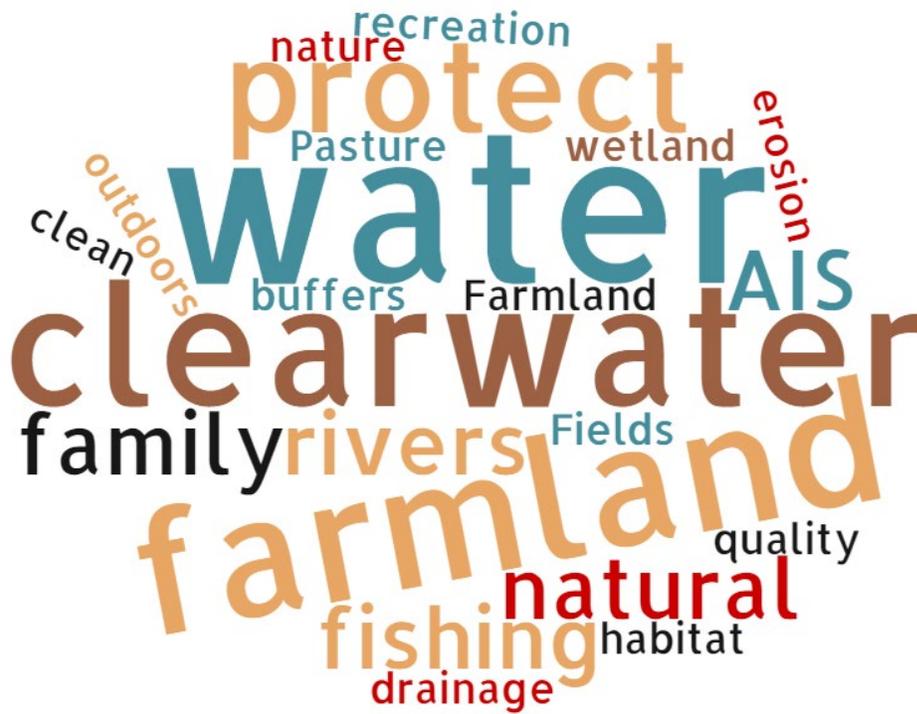
**The Trap
Restaurant,
Gonvick**

Public Survey Responses

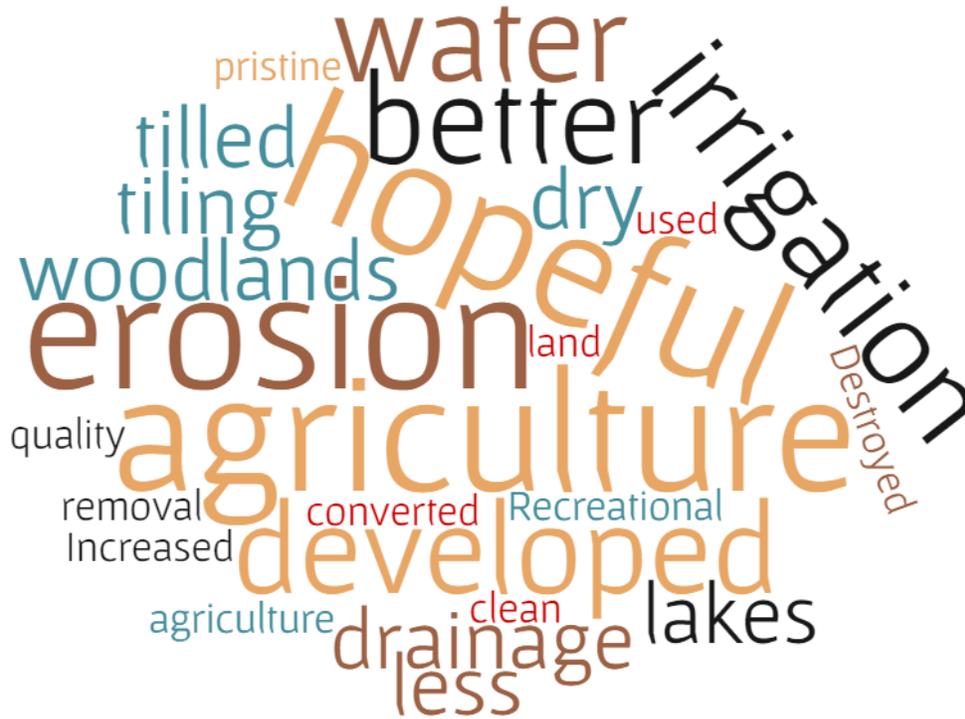




What are 4-to-5 words that come to mind when you think about the Clearwater River Watershed?

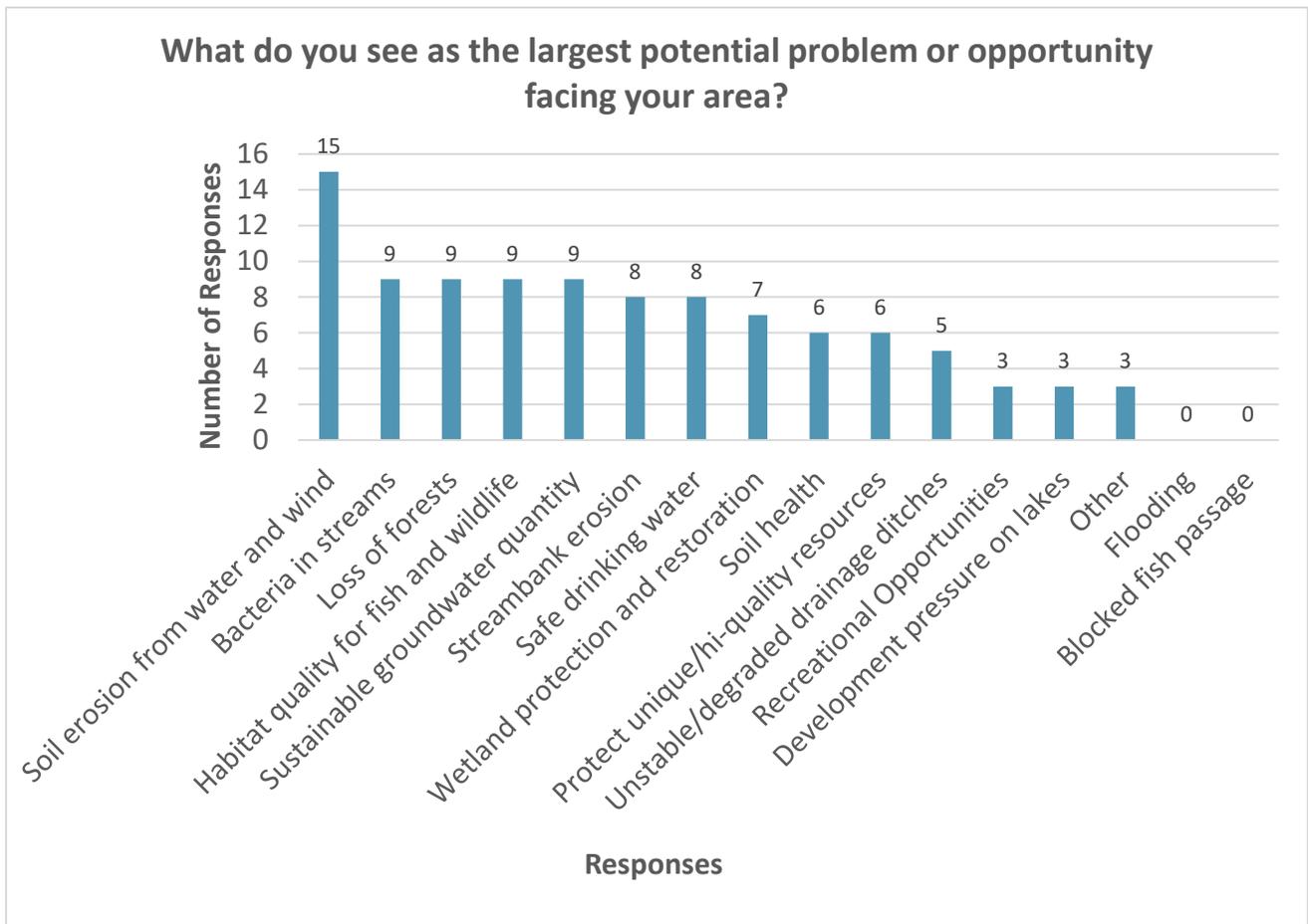


What do you think the Clearwater River Watershed will look like in 50 years?



What do you want the Clearwater River Watershed to look like in 50 years?





“Other” responses:

- water levels decreasing because of dry conditions
- lack of understanding by people living here
- government interference

Are there any topics, resources, problems, or opportunities that we didn’t cover during this survey?

- Large wakeboard boats on shallow lake disturbing the plant life in lake
- how tiling and irrigation affect ground water quantities
- There is a need to develop trust in in these types of districts. Local people should be always heavily involved.
- Prevention and/or control of aquatic invasive species in the lakes and rivers.
- public swimming beaches, canoe and kayak opportunities
- need to educate people
- who has control
- Would like more advertising for new programs

If you could magically improve one water resource in the watershed today, which problem would you fix?

Like responses were grouped

- Wind, rill, and gully erosion.
- Ag run off
- 50 foot buffer zones
- Buffer zones
- Soil Erosion
- Erosion entering rivers and lakes
- Soil erosion into Clearwater Lake

- Water quality,
- Water quality impairments in the Clearwater River
- Feedlot stream pollution

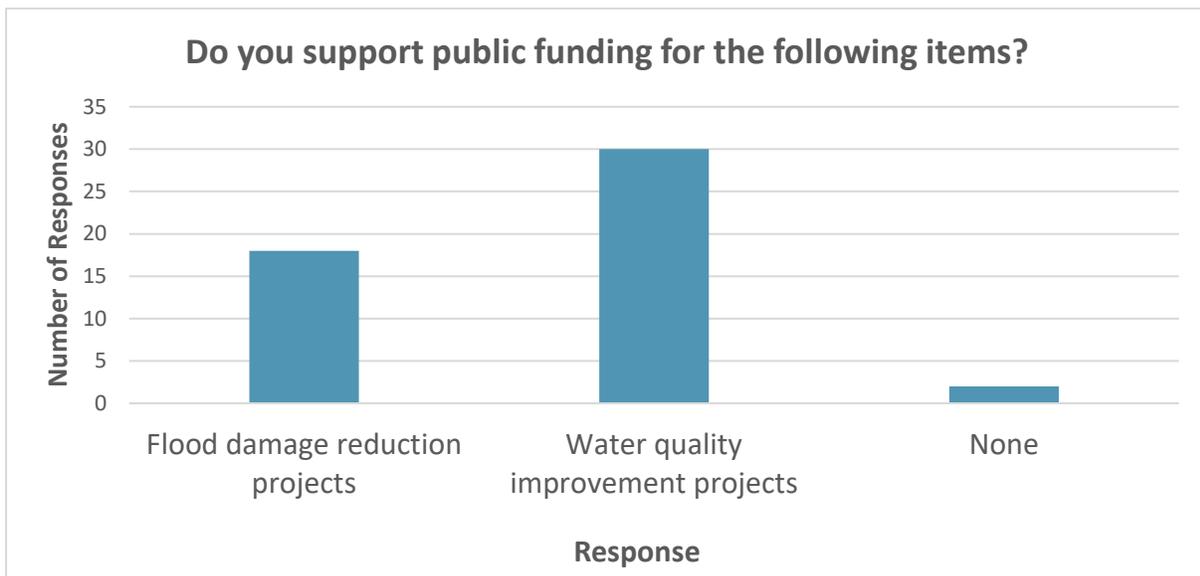
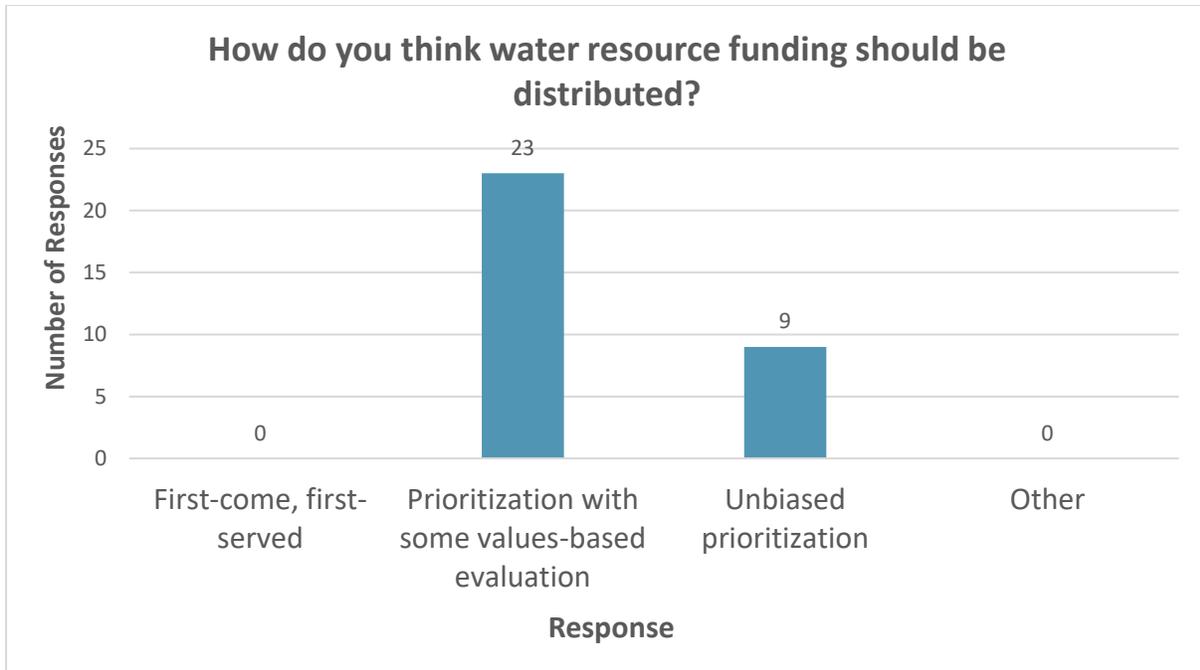
- Provide rain
- Drought
- Overdrainage, flooding

- habitat quality for fish and wildlife
- Habitat
- Forest
- More fish

- Safe drinking water
- Drinking water quality

- Lack of understanding by citizens

- streambank erosion and channel deepening from erosion



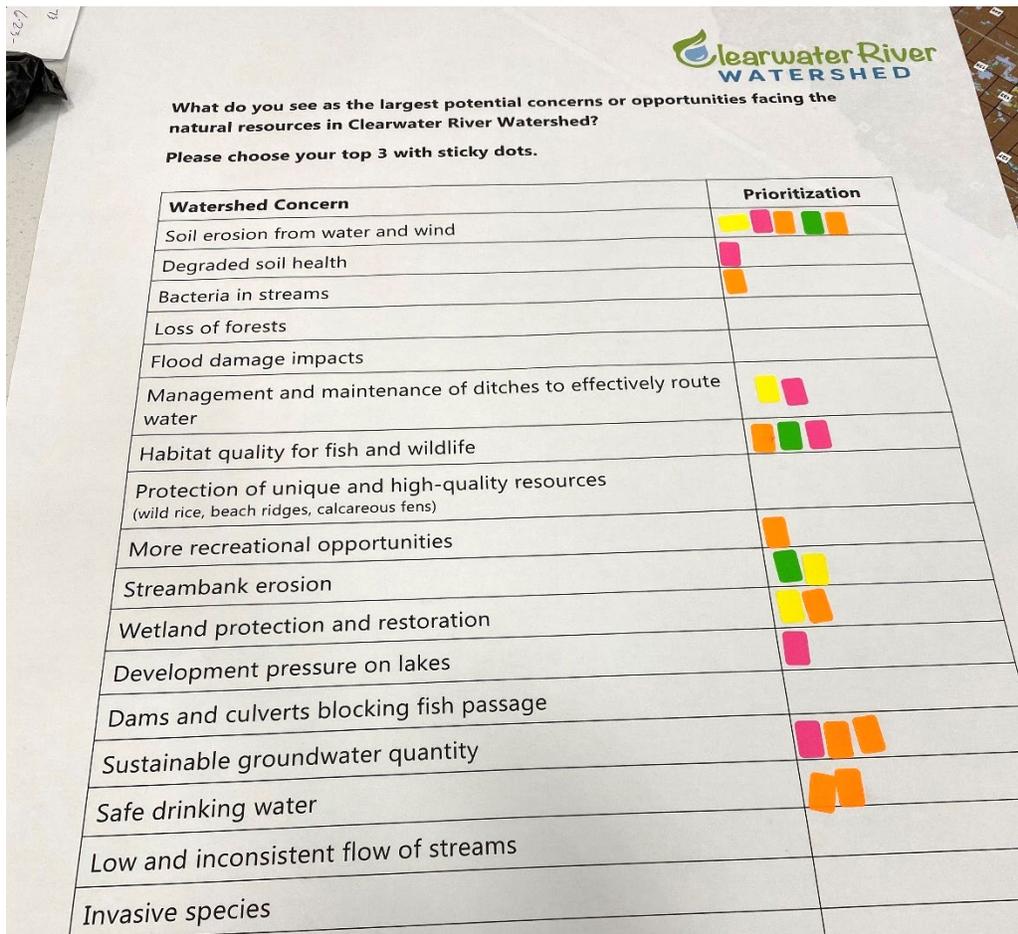
Are you representing an organization or the citizens/general public? If you are representing an organization, please provide the name of the organization.

- East Polk SWCD
- Maple Lake Improvement District
- Pennington County
- Clearwater County
- Clearwater Lake Area Association
- Township
- Poplar River Township
- General public
- Citizens

Issue Prioritization

Public Open House participants were also asked to place sticky dots on their top three concerns for the watershed.

Rankings for Brooks:



Clearwater River WATERSHED

What do you see as the largest potential concerns or opportunities facing the natural resources in Clearwater River Watershed?

Please choose your top 3 with sticky dots.

Watershed Concern	Prioritization
Soil erosion from water and wind	Yellow, Pink, Orange, Green, Orange
Degraded soil health	Pink, Orange
Bacteria in streams	Orange
Loss of forests	
Flood damage impacts	
Management and maintenance of ditches to effectively route water	Yellow, Pink
Habitat quality for fish and wildlife	Orange, Green, Pink
Protection of unique and high-quality resources (wild rice, beach ridges, calcareous fens)	
More recreational opportunities	Orange
Streambank erosion	Green, Yellow
Wetland protection and restoration	Yellow, Orange
Development pressure on lakes	Pink
Dams and culverts blocking fish passage	
Sustainable groundwater quantity	Pink, Orange, Orange
Safe drinking water	Orange, Orange
Low and inconsistent flow of streams	
Invasive species	

Rankings for Gonvick:

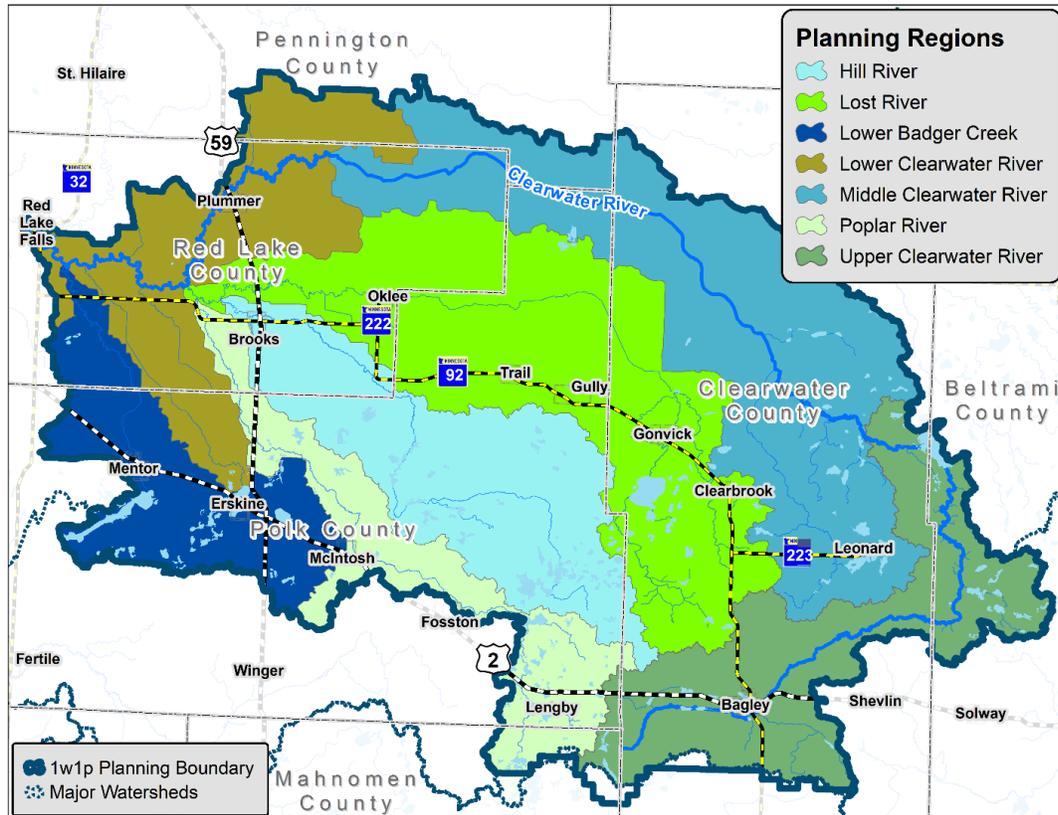
What do you see as the largest potential concerns or opportunities facing the natural resources in Clearwater River Watershed?
Please choose your top 3 with sticky dots.

Watershed Concern	Prioritization
Soil erosion from water and wind	
Degraded soil health	
Bacteria in streams	
Loss of forests	
Flood damage impacts	
Management and maintenance of ditches to effectively route water	
Habitat quality for fish and wildlife	
Protection of unique and high-quality resources (wild rice, beach ridges, calcareous fens)	
More recreational opportunities	
Streambank erosion	■
Wetland protection and restoration	
Development pressure on lakes	
Dams and culverts blocking fish passage	
Sustainable groundwater quantity	■ ■
Safe drinking water	■
Low and inconsistent flow of streams	■
Invasive species	■
Soil - CIVIL ENGINEERING -	

GONVICK PUBLIC MEETING • 6/10/2021

Input on Areas of Concern

At the Public Open Houses, large maps of each Planning Region were set up on tables. Participants were invited to add sticky notes to the maps with input on areas of concern. A summary of the input is provided below per Planning Region.



Hill River

- Concern about outlet on Cross Lake
- Fish passage concern on north end of Cross Lake

Lower Badger Creek

- Agricultural runoff on Maple Bay end of Maple Lake. Two locations possible for water retention structures.
- Plumes of sediment by Elmer Hanson Drive during runoff
- Will wake boats be banned on lakes less than 16ft deep
- Maple Lake once had an outlet on the SW end
- Is the public ditch layer correct? Ditch going into Oak Lake?

Upper Clearwater River

- Lack of public swimming area near dam on Clearwater Lake

APPENDIX C. ISSUE DEVELOPMENT

The Clearwater River Watershed Planning Group gathered issues from numerous sources including existing county water plans, the Watershed Restoration and Protection Strategy (WRAPS), 60 Day Letters from state agencies and organizations, an online public survey, two public kick-off events, a Planning Work Group Meeting and an Advisory Committee meeting (Figure 1).

The issues from the public are summarized in Appendix B of this plan. The issues brainstormed from the Planning Work Group meeting and Advisory Committee meeting are included at the end of this Appendix.

These issues were synthesized into the following issue statements on the next few pages. The sources are indicated for each issue based on the acronyms key below. Issues from public sources are highlighted in blue to distinguish them from the others.

Important questions to ask when developing issue statements include:

- Is it within the authority/purpose of the partnership to address?
- Do we understand the current issue (data exist)?
- Do clear strategies exist to address the issue?

These issue statements were approved by the Policy Committee on June 23, 2021. The next step in the planning process was to prioritize these issues based on what and where the planning partnership would like to focus the most effort and funding during implementation the next 10 years. The final priority issues can be found in Section 3 of this plan.

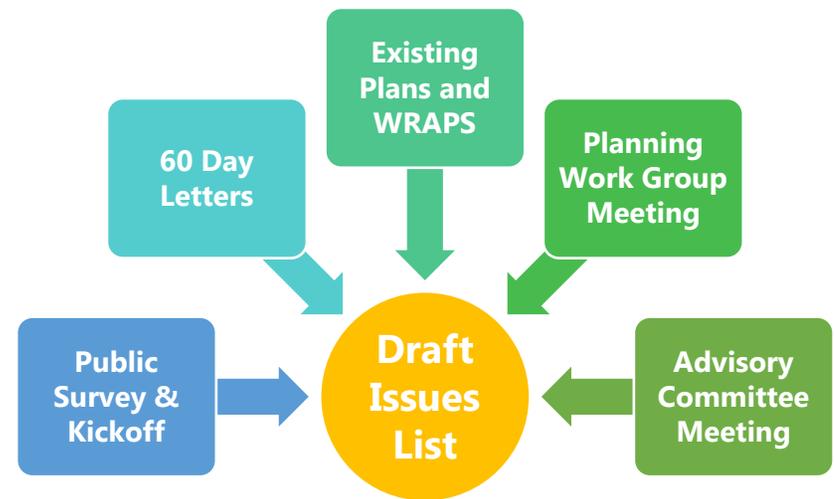


Figure 1. Process for gathering issue statements.

Sources Acronyms Key:

Public = Top 5 ranked issues in the public survey

PL = Public letters

CLAA = Clearwater Lake Area Association letter

BWSR = 60 Day letter

MPCA = 60 Day letter

DNR = 60 Day letter

MDA = 60 Day letter

MDH = 60 Day letter

PWG = Planning Work Group Brainstorm

AC = Advisory Committee Brainstorm

WRAPS = Watershed Restoration and Protection Strategy

Issues Table

Resource Category	Impacted Resource	Issue Statement	Sources (Acronyms key on first page)	Notes
Groundwater, Surface Water, Land Management, or Habitat	Resources impacted by this issue.	BWSR requires a "brief issue statement that describes the relevance of the issue for the planning area". Below are draft issue statements with their main themes in bold . These have been crafted using the sources listed in the column to the right.	This column lists each source that names this issue. When an agency or organization is listed (i.e. BWSR, DNR) that means it was noted in their 60 day letter.	This column lists notes about what is covered by this issue statement. In the goals and actions these specific items will get reviewed again to make sure they're covered in the plan.
	Streams	Bacteria loading impacts aquatic recreation and human health.	Public, CLAA, PL, BWSR, MPCA, PWG, AC, WRAPS	Includes <i>E.coli</i> impairments. Septic systems, feedlots, livestock waste management, waste pit closures, rotational grazing, includes Wild Rice impacts. High priority areas are where there are <i>E.coli</i> impairments.
	Streams	Unstable stream channels and loss of riparian vegetation increases sediment loading and reduces habitat quality.	PL, BWSR, MPCA, DNR, PWG, AC, WRAPS	Streambank erosion, geomorphology, downcutting. High priority areas are where streams were determined unstable by the DNR geomorphology assessment.
	Drainage Systems	Drainage system bank instability and inadequacy affects agricultural productivity and increases erosion and sedimentation.	PWG, AC	Ditch and ditch outlet maintenance, downcutting. High priority areas are where there are the most ditches and channelization.
	Streams, Drainage Systems	Altered hydrology associated with a change in the water quantity, timing, and variability of flow across the landscape affects water quality and quantity.	BWSR, MPCA, PWG, AC, WRAPS	Includes Low flows – DO impairments, Include flooding in downstream watersheds in plan text. Recognize downstream flooding in the storage goal. High priority areas have the most altered watercourses. Fish benefits.
	Lakes, Streams	Sediment loading from wind and water erosion of croplands, uplands, and lakeshore impacts water quality.	Public, CLAA, PL, BWSR, MPCA, DNR, PWG, AC, WRAPS	Agricultural runoff, Wild Rice paddies impacts, downstream drinking water (EGF, GF?) High priority areas are where there are turbidity/TSS impairments.

Resource Category	Impacted Resource	Issue Statement	Sources (Acronyms key on first page)	Notes
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	Lakes, Streams	Phosphorus loading contributes to elevated concentrations in lakes and streams, causing eutrophication.	CLAA, PL, BWSR, MPCA, DNR, PWG, AC, WRAPS	Includes Wild Rice impacts and lake loading. Wake boat impacts. High priority areas are where there is a nutrient impairment.
	Soil	Decreased soil health can reduce agricultural productivity and water holding capacity.	BWSR, MDA, PWG, AC	Actions: cover crops, reduced tillage, nutrient management, general ag BMPs, wind breaks, prescribed grazing. High priority areas are where erodibility is highest.
	Drinking Water	Groundwater is vulnerable to contamination from numerous sources.	CLAA, BWSR, MDH, MDA, PWG, AC, WRAPS	Includes nitrates, arsenic, PFAs, PFOs, hazardous waste, manure, chloride, pesticides, unsealed wells, DWSMA protection, downstream drinking water (EGF, GF), ag depressions connected to groundwater This medium throughout because wells can be sealed anywhere. Highlight multiple benefits.
	Wetlands	Wetlands are in continued need of protection and restoration which helps with precipitation storage and provides habitat.	BWSR, PWG	WCA, protecting wetland function, MN Prairie Plan, wetland restorations. This is medium throughout because WCA is administered throughout the watershed.
	Aquifer	Groundwater sustainability is vulnerable to overuse and loss of recharge.	Public, PL, BWSR, DNR, MDH, PWG, AC, WRAPS	Groundwater quantity, Well interference, groundwater appropriation, increasing irrigation, stream water levels where connected, DNR groundwater layer map. Priority areas are where there are the most reported well interferences and the most groundwater appropriation permits.
	Lakes, Streams	Stormwater runoff from developed areas and roads causes contamination of lakes and streams.	MPCA, WRAPS	Apply to towns, impervious surface, rain gardens, gutter projects, water quality study in Red Lake Falls, stormwater regulations? MIDS? Priority areas are where there are towns.

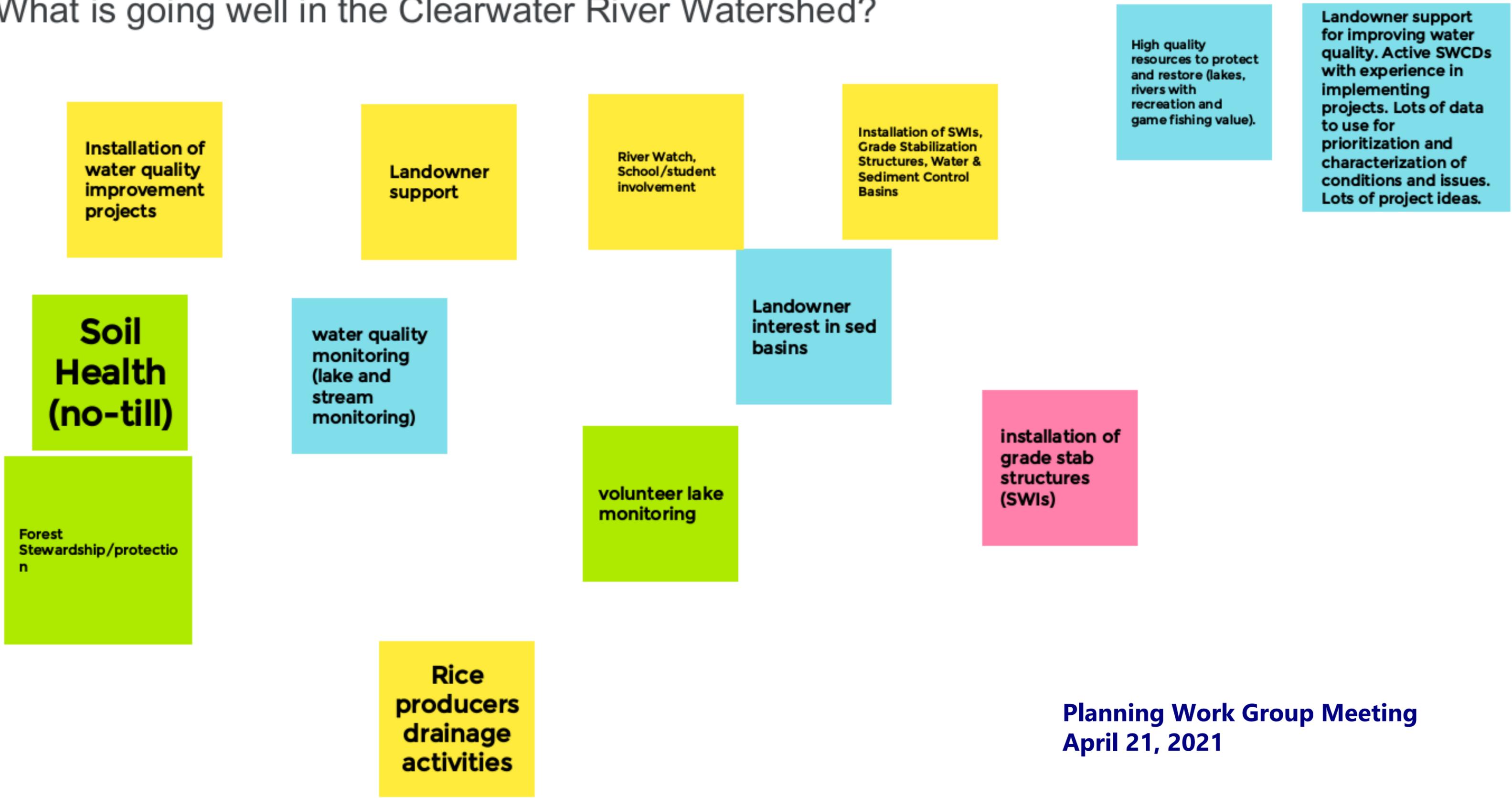
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	Lakes, Wild Rice, Fens, Trout Streams, Forests, Grasslands, Prairies	Changes in land use and resource protection impact high quality resources, land resilience, habitat, and surface and groundwater quality.	Public, CLAA, BWSR, DNR, PWG, AC, MDH	Goal would be to protect lands, SFIA, Conservation Easements, Forest Mangement Plans, protect resources from future disturbance Addresses quality and protection, mussels, calcareous fens, sulfate impairments?, sturgeon and all fish spawning habitat, high quality lakes and streams. Includes pollinators, terrestrial invasive species (Buckthorn, Emerald Ash Borer), private forest management, loss of CRP, MN Prairie Plan, design projects for increasing precipitation. DNR forest disturbance layer.

Priority 'C' Issues

Priority C Issues were not selected as 10-year priorities by Clearwater Watershed stakeholders and may already be addressed by other funding sources and plans.

- Increasing **chloride** concentrations from many sources (water softeners, industry, road salts) can impact water quality. *(Emerging issue)*
- Aquatic Invasive Species** impact the aquatic ecosystem, recreation, and economic development. *(Being covered by AIS plans and funding)*
- More **outdoor recreation access** is needed for the public to enjoy the natural resources of the watershed. *(Indirect link to water quality, was a low priority for citizens, and is addressed by separate local, state and federal plans and agencies.)*

What is going well in the Clearwater River Watershed?



**Planning Work Group Meeting
April 21, 2021**

What are you concerned about in the Clearwater River Watershed related to Surface Water?

water erosion on cropland

Sedimentation, Turbidity, Dissolved Oxygen, E.Coli - Water Quality Impairments

Cattle Exclusions

Elevated concentrations of TSS, nutrients and E. coli

Maintenance of ditch systems

Protection of existing habitat

Streambank erosion

Buffer strip compliance

Soil Loss from Cropland

Wind Erosion

Lake Shore Stabilization

Stream and ditch channel stability

Stream channel stability

biological impairments

Tree/CRP removal - wind erosion

E. coli impairments

Irrigation, Tile Drainage, Well Issues

water quality and quantity for wild rice production

Septic System Upgrades

gully erosion

Channel degradation at the transition between the natural and channelized portions of the Clearwater River

Flooding

Low Flow periods

Streambank & Shoreline Erosion

Drainage Ditch Outlets

**Planning Work Group Meeting
April 21, 2021**

What are you concerned about in the Clearwater River Watershed related to Groundwater?

Unused Well Sealings

Irrigation, Well Interference

Well interference from irrigators

minimal regulation on irrigation. minimal groundwater studies to fully understand the impacts of irrigation on groundwater.

Well interference from irrigation wells

Learn where important groundwater recharge areas are located - so those areas can be targeted for storage/wetland restoration projects

Abandoned Well Sealing - cost-share assistance provided by SWCD (Landowner Participation)

County Geological Atlas - Aquifer Issues/Quantity

Groundwater protection

Well head protection areas

Protect DWSMAs

Quality vs. Quantity

Wellhead Protection Plans

Groundwater Appropriation

Safe & Adequate drinking water

**Planning Work Group Meeting
April 21, 2021**

What are you concerned about in the Clearwater River Watershed related to Habitat?

**Reduction
of
Forested
Areas**

**wetland
impacts**

**Education -
Balance
between Ag
and Habitat**

**Recreational
Opportunities**

**Areas in which
aquatic habitat
quality is limited by
channelization or
fish passage**

**Trout stream
restoration**

**Grassland/prairie
protection**

**Invasive
species**

**Stream
corridor**

**Low
base
flows**

**Overprotection
(prevention of
projects beneficial
to water quality or
FDR) of designated
trout streams that
haven't actually
supported trout**

**Planning Work Group Meeting
April 21, 2021**

What are you concerned about in the Clearwater River Watershed related to Land?



Planning Work Group Meeting
April 21, 2021

Are there any questions you want answered through data or analyses in this plan that you don't currently know the answer to?

Stormwater

Aquifer
Supply
questions

Municipality
run off

Conditions
that trigger
blue-green
algae blooms

Groundwater
Quantity &
Quality

Groundwater
supply related
questions

What is going well in the Clearwater River Watershed?

TWIP in process

trout stream resource, relatively diverse landscape with many opportunities for protection and restoration

Drinking water protection plans are over 90% complete.

Low nitrate detection rate in drinking water.

A large amount of recreation opportunities! Fishing, hunting, kayaking etc.

Contrary to public opinion our waters are cleaner than people think

Wastewater Facility improvements at Fosston.

No-till growing in Clearwater County

Good Stewards of the land

Not as many water quality problems as other watersheds which lends itself to easier prioritization on where to work

Trout stream access and AMA for protection

Working landscape within a healthy natural system

relatively good water quality

Plenty of recreation waters in watershed

Public lands for hunting, fishing, birdwatching and nature exploration

Mussels still thrive

Partnership/Cooperation

Willing Landowner participation

Lots of water quality data and other information to inform our plans

Good cooperation among LGUs

Good fishing in the Clearwater River

APPENDIX D. RESOURCE PRIORITIZATION

Resources in the watershed, lakes and streams, were prioritized using the four categories from the WRAPS and then adding on some additional data. The additional data is explained in this section for lakes and for streams.

Four resource categories from the WRAPS:

1. Restoration: Impaired.
2. Nearly Restored: Impaired, but close to the standard or “barely impaired”.
3. Nearly Impaired: Close to the standard but not impaired.
4. Highest Quality: Well above the state standard.

Resource Prioritization – Lakes

The criteria below were developed by the DNR and are used state-wide in prioritizing resources.

Table 1. Definitions of DNR data used as criteria for prioritizing lakes.

Criteria	Description
Lakes Benefit : Cost Assessment	The Lakes Benefit: Cost Assessment was based on the Phosphorus Sensitivity Index, lake area, and catchment disturbance. These lakes represent those that will likely give the greatest return on investment for restoration, enhancement, and protection activities. The simple calculation used is based on and tracked a peer-reviewed cost:benefit analysis (Radomski & Carlson, 2018).
Lakes of Biological Significance	Lakes of biological significance were ranked as Outstanding, High, or Moderate, based on the presence of high-quality aquatic plants, fish, birds, or amphibians. Outstanding Lakes of Biological Significance had to have one of the following criteria: 1) high aquatic plant richness, high floristic quality, and a population of an endangered or threatened plant species; 2) important wild rice lakes; 3) exceptional fishery for selected game fish or an outstanding nongame fish community; 4) one or more of the following: endangered or threatened colonial waterbird nesting area, presence of several endangered, threatened, or special concern lake bird species, or six or more lake bird species of Greatest Conservation Need.
Wild Rice	These lakes were identified by DNR wildlife to help resource managers identify wild rice lakes and rivers for wildlife habitat restoration and enhancement, and for rice management.
Cisco	These lakes were identified by the University of Minnesota and Minnesota DNR Fisheries Research (Xing Fang, Liping Jiang, Peter C. Jacobson, Heinz G. Stefan, Shoeb R. Alam & Donald L. Pereira (2012): Identifying Cisco Refuge Lakes in Minnesota under Future Climate Scenarios, Transactions of the American Fisheries Society, 141:6, 1608-1621). They are deep and clear enough that they will still provide suitable coldwater fish habitat even after significant climate warming.

These are the lakes where we want to focus the most effort and funding during the 10-year plan to make measurable change. These lakes are considered Tier 1 lakes and all the other lakes in the watershed are considered Tier 2 lakes. Project development and outreach will be targeted to Tier 1 lakes. Projects can be implemented on Tier 2 lakes as opportunities arise.



Resource Prioritization – Streams

To complete PTMApp implementation scenarios for structural agricultural practices (WASCOB, grade stabilization, side water inlets, etc.), it was necessary to divide and input the estimated available funding among planning regions. Multiple planning region characteristics were considered to separate the planning regions into tiers of different funding levels. Ultimately the percentage of available funding for each subwatershed (planning region) in the simulated implementation scenarios was based on a scoring system that addressed the following questions:

1. Where are the water quality problems?
2. Where do we have opportunities to implement structural BMPs?
3. Where can projects have multiple benefits?

To prioritize the areas where excess erosion is causing water quality problems, the number of nearly impaired and barely impaired stream segments (by total suspended solids) was a very important piece of the funding distribution puzzle (1 point for each reach). Values ranged from 1 (0 stream segments) to 3 (2 stream segments). The number of severely impaired streams was also used, but “weighted” lower (1/2 point for each reach). The number of impaired waters is important but shouldn’t be the only factor in determining how to apportion the funding. The length of impaired reaches varies and not all impairments have sources that can be addressed with structural BMPs. Therefore, additional factors were considered.

The HSPF model estimated the amount of sediment loading from different sources within each subwatershed. The percentage of a planning region subwatershed’s total sediment load that came from cultivated agricultural land was used as an indicator of where LGUs have the most opportunities to implement structural BMPs. The percentages were divided into tiers and assigned numerical scores that ranged from 0 to 3 points (a range that was nearly equivalent to the nearly/barely impaired scoring category).

Projects that can provide multiple benefits should be prioritized. Stakeholders and planning committees identified priority issues for the 1W1P and determined a level of priority for each issue in each planning region (Section 3). A weighted scoring category for priority issues, ranging from 1 to 3 points, was based on the relative number of Priority A – High (weighted highest), Priority A – Medium (medium weighting), Priority B – Medium (weighted lowest) issues in each planning region.

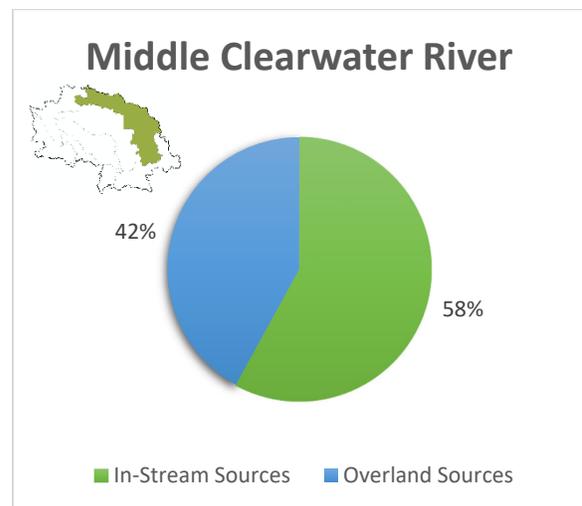
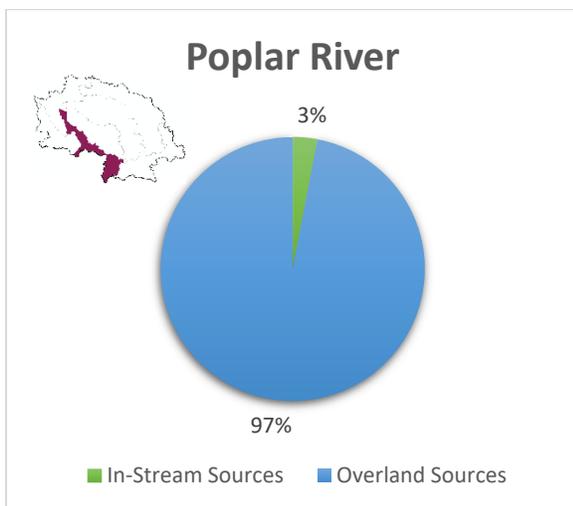
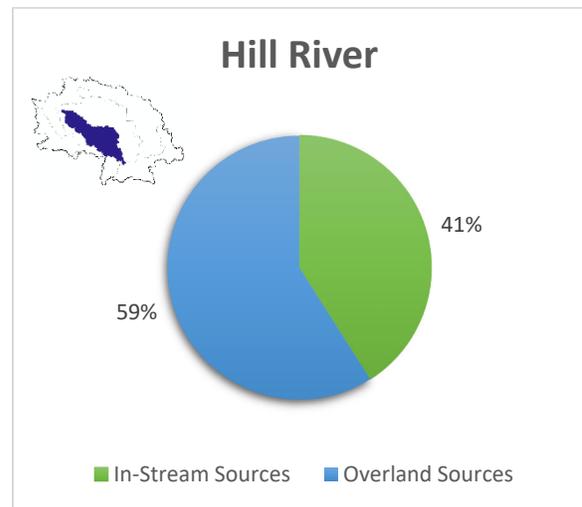
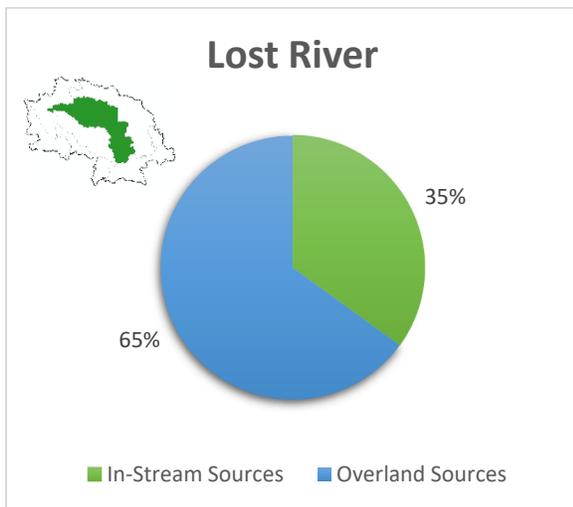
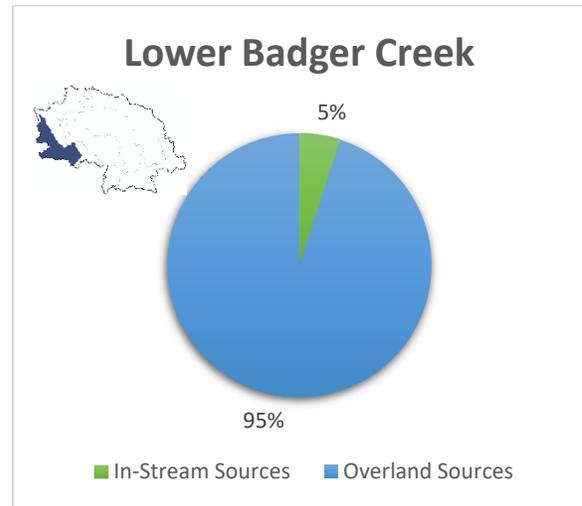
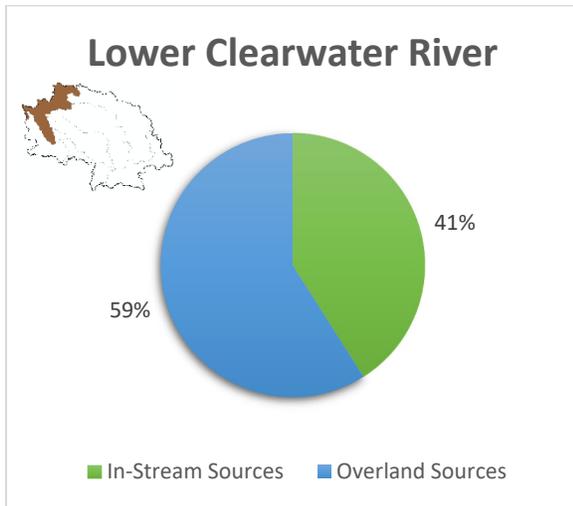
A planning region’s percent share of the combined scores from the 4 categories determine the percentage of funding that would be available for simulated practice implementation in that planning region.

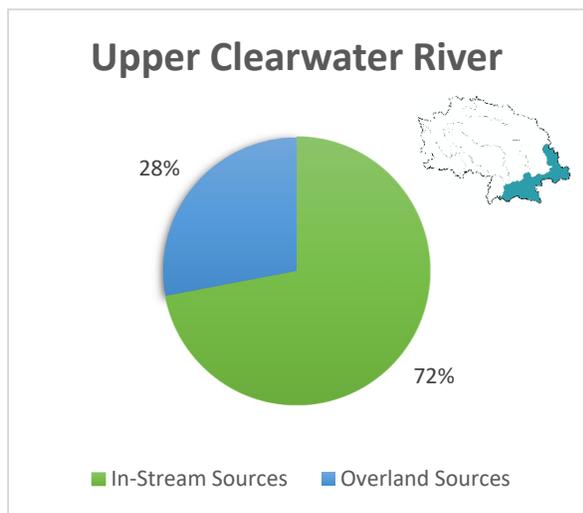
Table 2. Scoring of Planning Regions for distributing funding.

Planning Region	% of Total	Acres	Nearly/Barely Sediment	Severely Impairedby TP	Severely Impairedby TSS (0.5 points each)	Priority Issues Tiers (Inverse Scoring Based Weighted # A-High, A- Med, B med)	% Sed from Cultivated Ag
Upper Clearwater	5%	116,863	1	0	0	1	0
Middle Clearwater	16%	195,587	2	0.5	0	3	0.5
Lost Hill	19%	187,264	3	0	0	3	1
Poplar	11%	113,377	1	0	0	2	1
Lower Badger	12%	74,707	1	0	0	2	1.5
Lower Clearwater	18%	78,155	2	0	0	3	1.5
Lower Clearwater	19%	103,336	2	0	1	3	1
Totals	100%	869,288	12.00	0.50	1.00	17.00	6.50

	% of Funds	% Area
Tier 1	72%	65%
Tier 2	23%	22%
Tier 3	5%	13%
	100%	100%

Sediment Source by Planning Region from HSPF Model





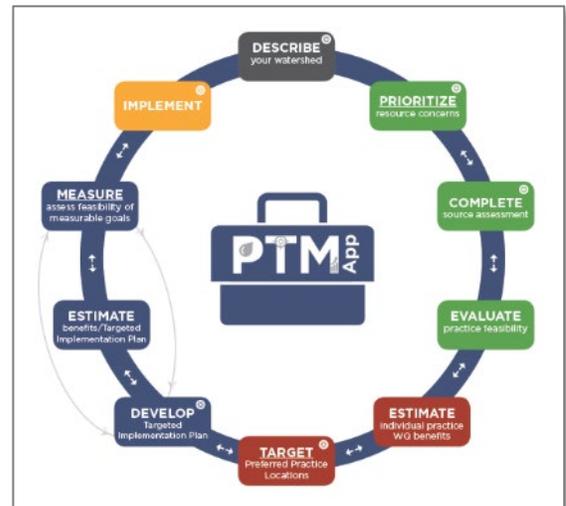
APPENDIX E. PTMAPP IMPLEMENTATION SCENARIOS

The Targeted Implementation Schedule in Section 5 of this plan is based on a PTMApp Implementation Scenario developed by the Planning Work Group during the planning process. For the purpose of planning, this implementation scenario is summarized more broadly in Section 5 to enable flexibility during implementation. This Appendix details the decisions made and shows the Best Management Practices targeting maps that resulted from the implementation scenario.

Introduction

The Prioritize, Target, and Measure Application (PTMApp) is a program that can be used by practitioners as a technical bridge from general descriptions of implementation strategies in a local water plan to the identification of implementable on-the-ground Best Management Practices (BMPs) and Conservation Practices (CPs).

PTMApp can be used by Soil and Water Conservation District (SWCD), watershed district, county local water planning, and agency staff and decision-makers to **PRIORITIZE** resources and the issues impacting them, **TARGET** specific fields to place CPs and BMPs, and **MEASURE** water quality improvement by tracking the expected nutrient and sediment load reductions delivered to priority resources.



The tool enables practitioners to build prioritized and targeted implementation scenarios, measure the cost-effectiveness of the scenario for improving water quality, and report the results to pursue funds for project implementation.

Clearwater Watershed Approach

PTMApp is a powerful tool, and the decisions made during the analysis shape the desired output. The Planning Work Group discussed the PTMApp decisions at meetings in November and December of 2021. The decisions are summarized in Table 1.

Table 1. PTMApp decisions made by the Planning Work Group.

#	Decision	Implications	Local Decision – Clearwater
1	Criteria used to further screen practices	Criteria are used to further screen practices considered technically feasible for implementation but are not practicable to implement.	See Table 2.
2	Preferred Practices	Which NRCS practices to include in the Implementation Scenario. The primary reason for eliminating one or more practice could be a low likelihood of use as a conservation practice.	See Table 3.
3	Costs	Costs can represent the “cost” share or total cost. For example, EQIP is the government cost share.	Double EQIP Costs to capture the full cost of the practice + 20% for technical assistance.
4	Planning Regions	Allocate funding and practices per planning region	Allocate based on Resource Prioritization in Appendix D.
5	Spatial Scale	The decision reflects the spatial scale for application of the load reduction goals. This decision also affects which BMPs are selected as best. The “best” practice locations tend to be near the location where the load reduction is desired. Using the edge of field will tend to spread practices more evenly across the landscape. Use of a planning region outlet will tend to concentrate the practices upstream of that location.	Group used priority resource points representing planning region outlets to set goals. The benefits of practices will be summarized both at the planning region outlet and the edge of the field. The “best” practices will be selected based on the highest sediment load reduction at the edge of the field and cost effectiveness (spreads out practices within the planning region).
6	Parameters and method used to rank the “best” conservation practices.	The “best” conservation practices will differ depending on which parameters are used, and whether they are weighted.	Sediment.
7	Process for identifying the number of practices which will be included in the Implementation Scenario.	Decision ultimately affects the “cost(s)” of the Implementation Scenario and ability to achieve the load reduction goals.	Number of practices that can be afforded under the Funding Level 2 (Baseline + Watershed-Based Implementation Funding).
8	Approach for incorporating volume reduction benefits into the implementation Scenario	Most water quality goals only consider sediment and nutrients. An incorporation of volume reduction benefits to address an altered hydrology goal could be included with other water quality benefits.	Use HEI proprietary tool to attribute each practice with acre-foot storage reduction benefits.

Feasible PTMApp BMP and CP treatment group outputs were screened based on screening criteria agreed upon by the Planning Work Group (Table 2). Using the screening criteria, BMPs and CPs with low potential for water quality benefits were removed from the analysis. See Table 2 for exact criteria.

Table 2: Screening Criteria Approved by Planning Work Group.

PTMApp Group Code	Treatment Group	Remove BMPs with little runoff volume delivery or constituent removal efficiency				Remove BMPs with low removal magnitudes at the edge-of-field					
		Delivery and Efficiency Selection Criteria (Value must be greater than)				Reduction Magnitude Selection Criteria (Value must be greater than)					
		Percent of 2-Year, 24-hour event treated	Sediment Reduction (%)	TP Reduction* (%)	TN Reduction* (%)	Sediment Reduction @ Catchment Outlet, (tons/year)	TP Reduction @ Catchment Outlet, (lbs./year)	TN Reduction @ Catchment Outlet, (lbs./year)	BMPs Not Meeting Criteria	BMPs Remaining After Criteria Applied	% of Original BMP Remaining
1	Storage**	50%	10%	10%	10%	0.25	0.25	0.5	75,756	5,467	7%
2	Filtration	50%	10%	10%	10%	0.25	0.25	0.5	25,270	21,917	46%
3	Biofiltration	Not included in plan									
4	Infiltration	Not included in plan									
5	Protection					0.25	0.25	0.5	11,245	27,428	71%
6	Source Reduction					0.25	0.25	1	924	30,691	97%

* Second quartile (Q2; 50th percentile) reduction efficiency was used for all treatment groups except filtration, where the third quartile (Q3; 75th percentile) reduction efficiency was used for TP and TN terms.

The Planning Work Group determined which practices they most commonly implement and narrowed the PTMApp Scenario to just those practices for simplification (Table 3). This scenario is just for planning purposes, and actual implementation could include other practices as well.

Table 3. Locally preferred practices.

NRCS Code	Practice Name	Treatment Group (Table 2)
390	Riparian Buffer	Filtration
410	Grade Stabilization	Protection
412	Grassed Waterway	Protection
638	Water and Sediment Control Basin	Storage
340	Cover Crops	Source Reduction
329	No Till	Source Reduction

Hill River Planning Region

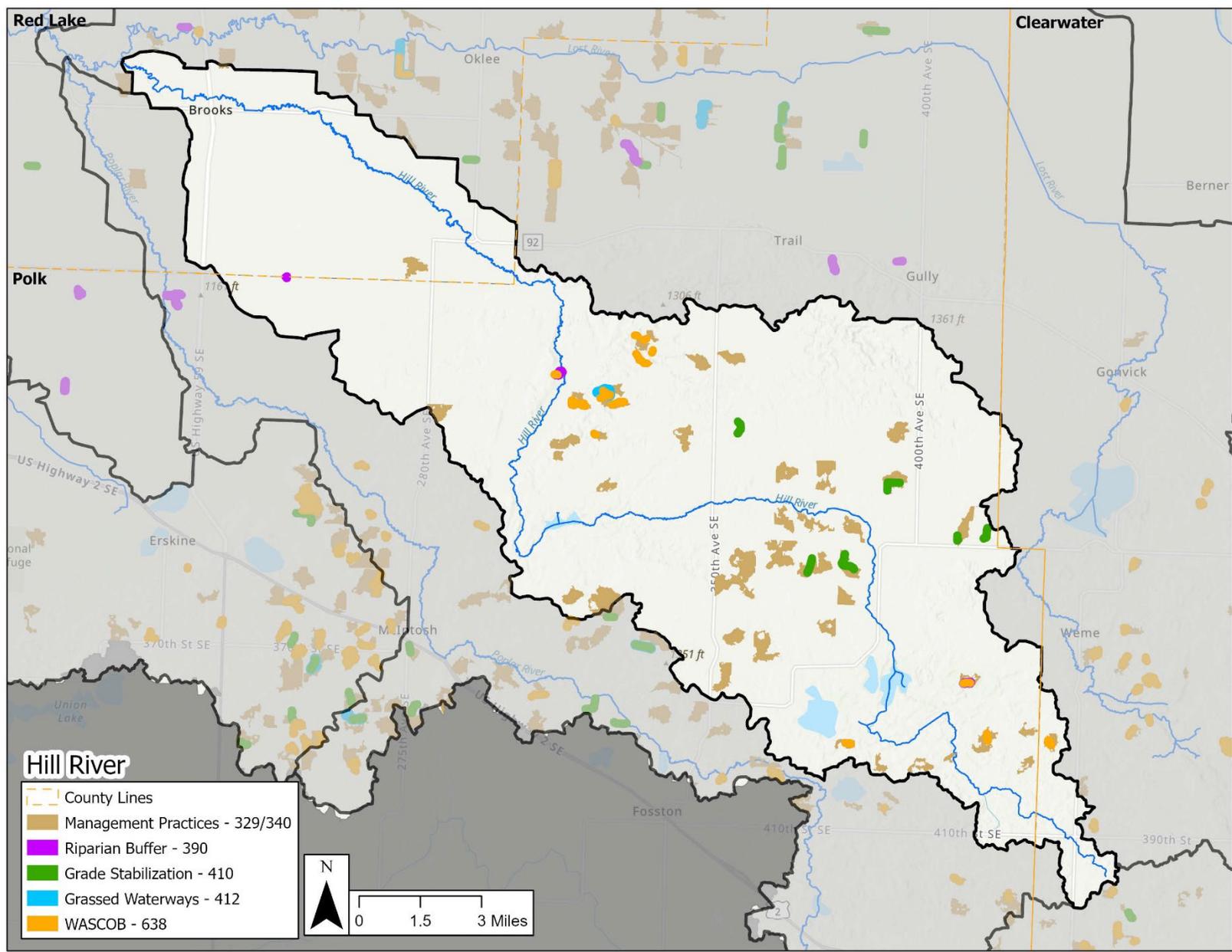
The Table below shows the 10-year PTMAApp implementation scenario results for the **Hill River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 3%
- Phosphorus = 3%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	20	\$180,000	967	155	2,266	39	57	842	86	5
390 - Riparian Buffer	4	\$33,656	178	43	885	18	24	498	0	16
410 - Grade Stabilization	9	\$180,000	212	11	225	19	5	103	0	33
412 - Grassed Waterway	2	\$36,638	67	6	118	2	2	43	0	17
329 - No till	33	\$60,841	3,247	698	13,189	78	220	4,217	0	2,756
Existing Load						6,064	11,318	233,065		
Total Load Reduction			4,671	913	16,682	157	308	5,703	86 ac-ft	
Percent Reduction (%)						3%	3%	2%		

*costs are 10-year totals



Lost River Planning Region

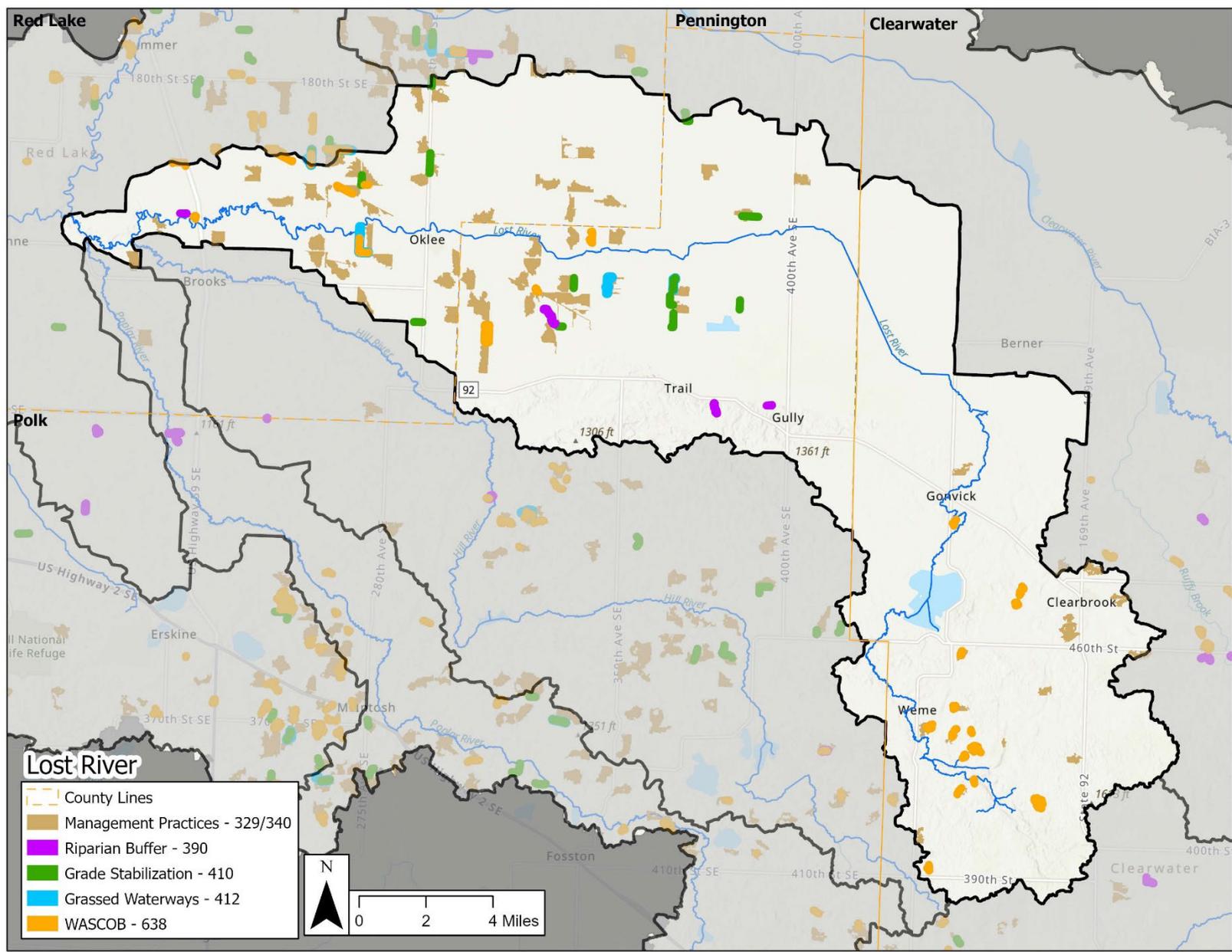
The Table below shows the 10-year PTMAApp implementation scenario results for the **Lost River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 4%
- Phosphorus = 2%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	35	\$315,000	1,422	271	3,877	82	86	1,263	101	11
390 - Riparian Buffer	4	\$52,880	173	52	1,069	29	26	566	0	25
410 - Grade Stabilization	15	\$300,000	318	14	270	22	7	132	0	40
412 - Grassed Waterway	5	\$78,235	151	13	249	15	7	136	0	37
329 - No till	50	\$100,517	3,656	1,152	21,757	413	578	10,975	0	4,547
Existing Load						13,177	33,309	702,597		
Total Load Reduction			5,718	1,501	27,222	563	704	13,073	101 ac-ft	
Percent Reduction (%)						4%	2%	2%		

*costs are 10-year totals



Poplar River Planning Region

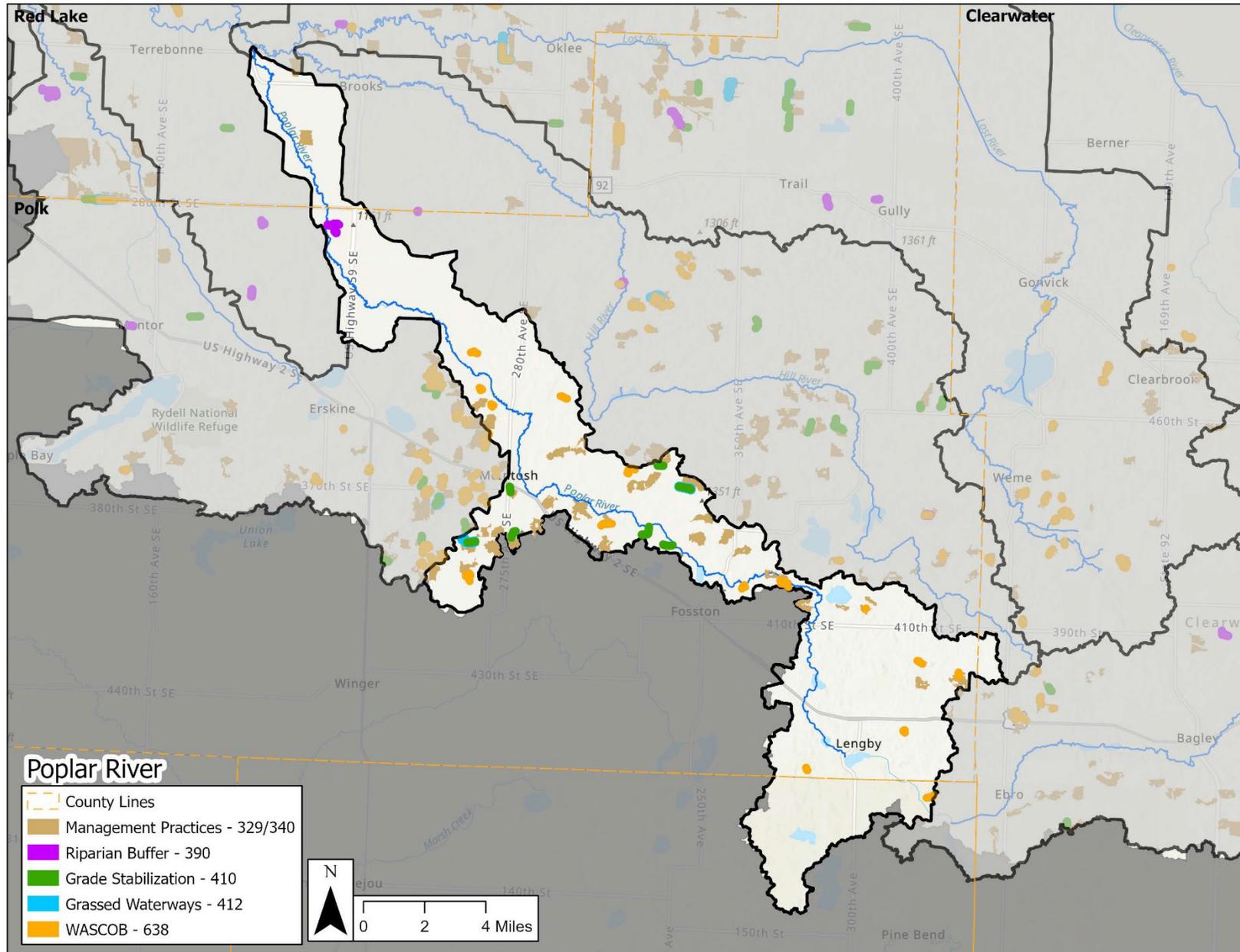
The Table below shows the 10-year PTMAApp implementation scenario results for the **Poplar River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 2%
- Phosphorus = 4%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	20	\$180,000	866	150	2,150	19	49	716	60	5
390 - Riparian Buffer	1	\$34,229	28	17	335	9	12	246	0	16
410 - Grade Stabilization	9	\$180,000	130	7	149	3	3	55	0	22
412 - Grassed Waterway	3	\$37,517	72	6	123	2	2	45	0	18
329 - No till	24	\$43,578	2,255	501	9,456	45	166	3,186	0	1,975
Existing Load						3,227	6,084	129,078		
Total Load Reduction			3,350	680	12,213	77	232	4,247	60 ac-ft	
Percent Reduction (%)						2%	4%	3%		

*costs are 10-year totals



Lower Badger Creek Planning Region

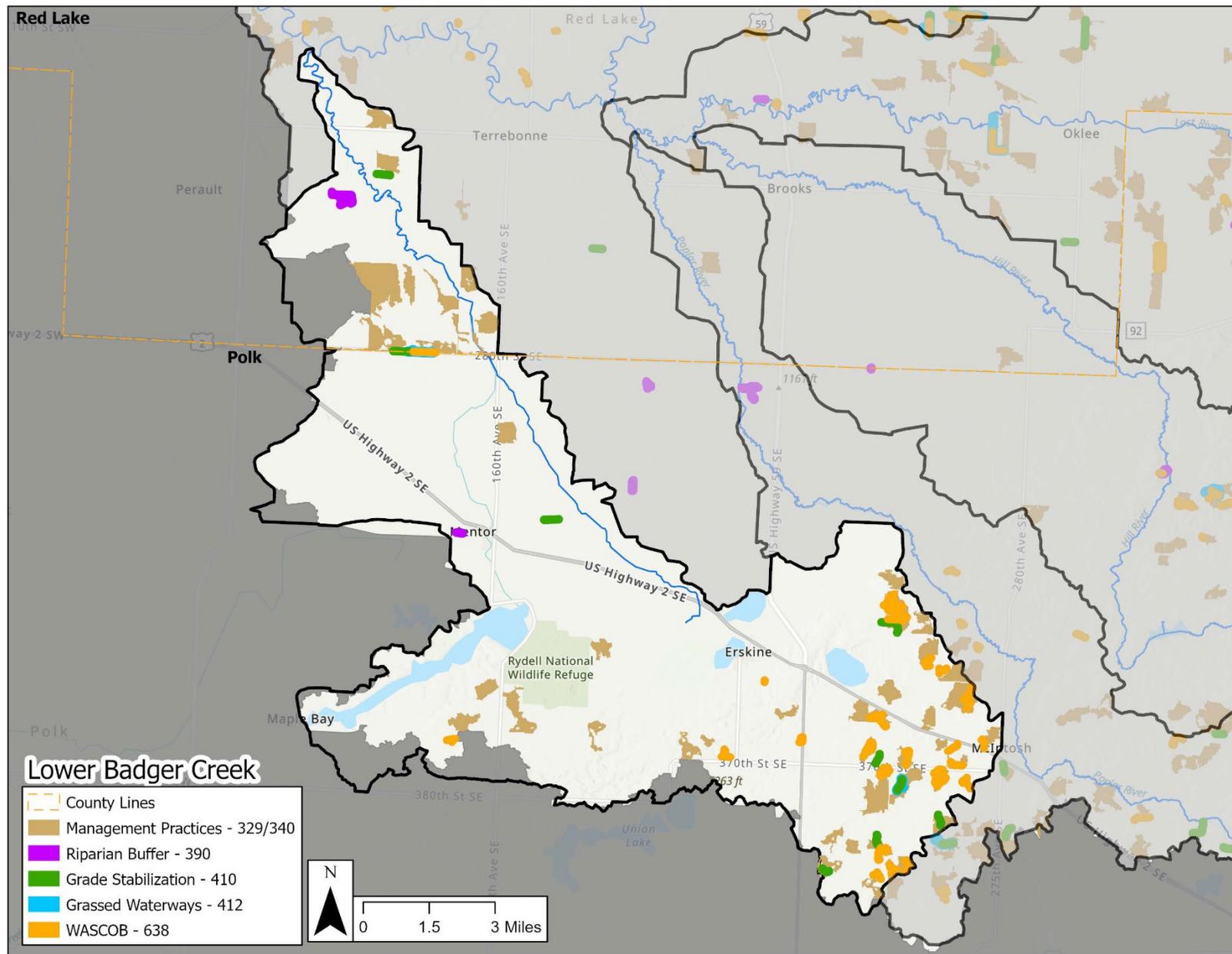
The Table below shows the 10-year PTMAApp implementation scenario results for the **Lower Badger Creek Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 8%
- Phosphorus = 5%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	31	\$279,000	956	274	3,838	19	32	710	56	11
390 - Riparian Buffer	3	\$70,303	121	63	1,263	42	44	896	0	33
410 - Grade Stabilization	14	\$280,000	193	14	262	26	4	92	0	38
412 - Grassed Waterway	4	\$70,298	74	12	222	8	3	62	0	33
329 - No till	38	\$76,084	2,736	874	16,508	246	241	5,391	0	3,449
Existing Load						4,235	6,966	161,070		
Total Load Reduction			4,080	1,237	22,093	341	326	7,151	56 ac-ft	
Percent Reduction (%)						8%	5%	4%		

*costs are 10-year totals



Lower Clearwater River Planning Region

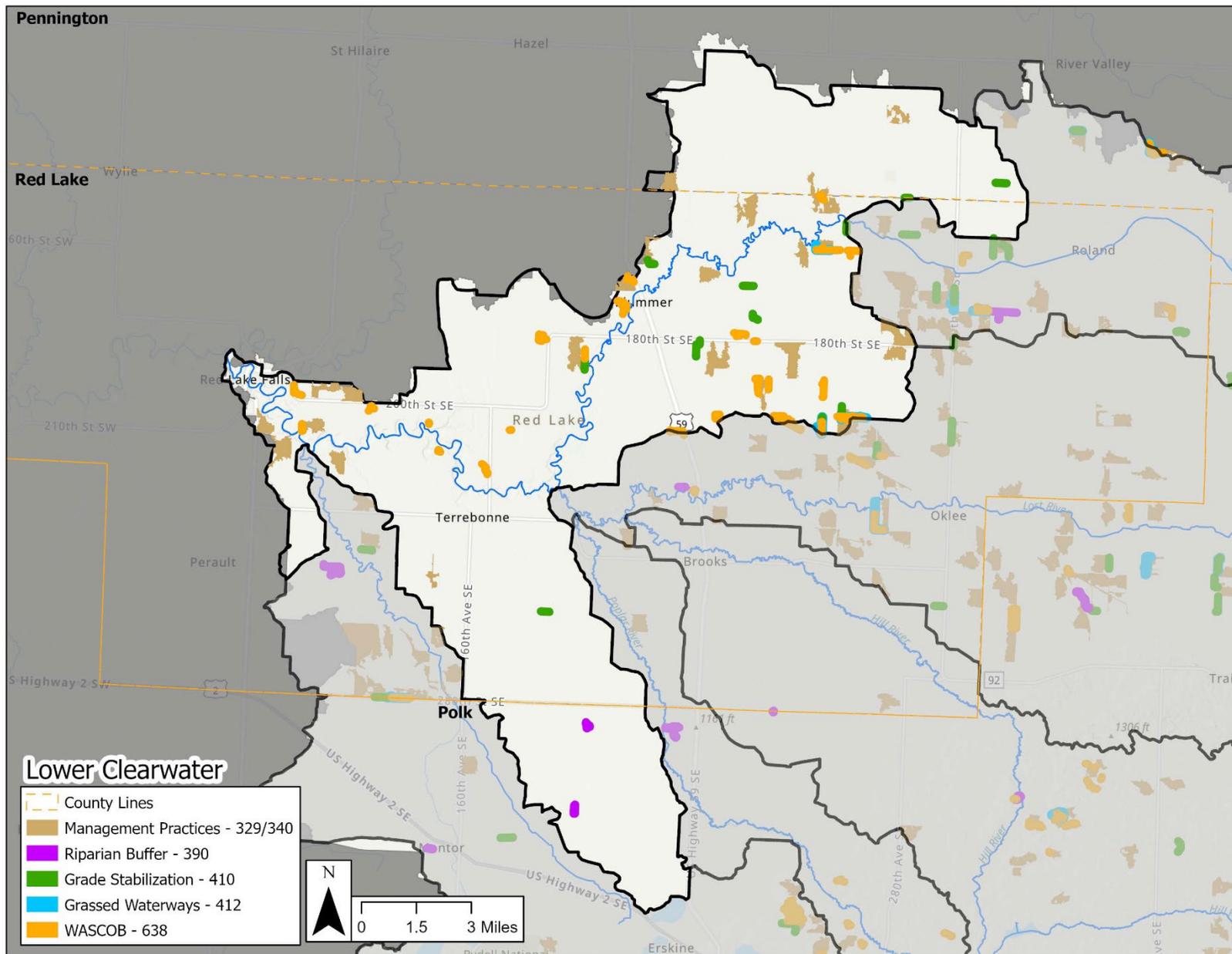
The Table below shows the 10-year PTMAApp implementation scenario results for the **Lower Clearwater River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 4%
- Phosphorus = 1%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	30	\$270,000	882	274	3,780	214	171	2,351	51	12
390 - Riparian Buffer	2	\$26,331	77	43	907	10	25	528	0	12
410 - Grade Stabilization	13	\$260,000	209	10	191	16	5	94	0	28
412 - Grassed Waterway	3	\$57,500	103	10	182	5	4	81	0	27
329 - No till	20	\$46,899	1,630	539	10,176	523	350	6,601	0	2,126
Existing Load						18,491	55,724	1,215,372		
Total Load Reduction			2,901	874	15,237	767	554	9,655	51 ac-ft	
Percent Reduction (%)						4%	1%	1%		

*costs are 10-year totals



Middle Clearwater River Planning Region

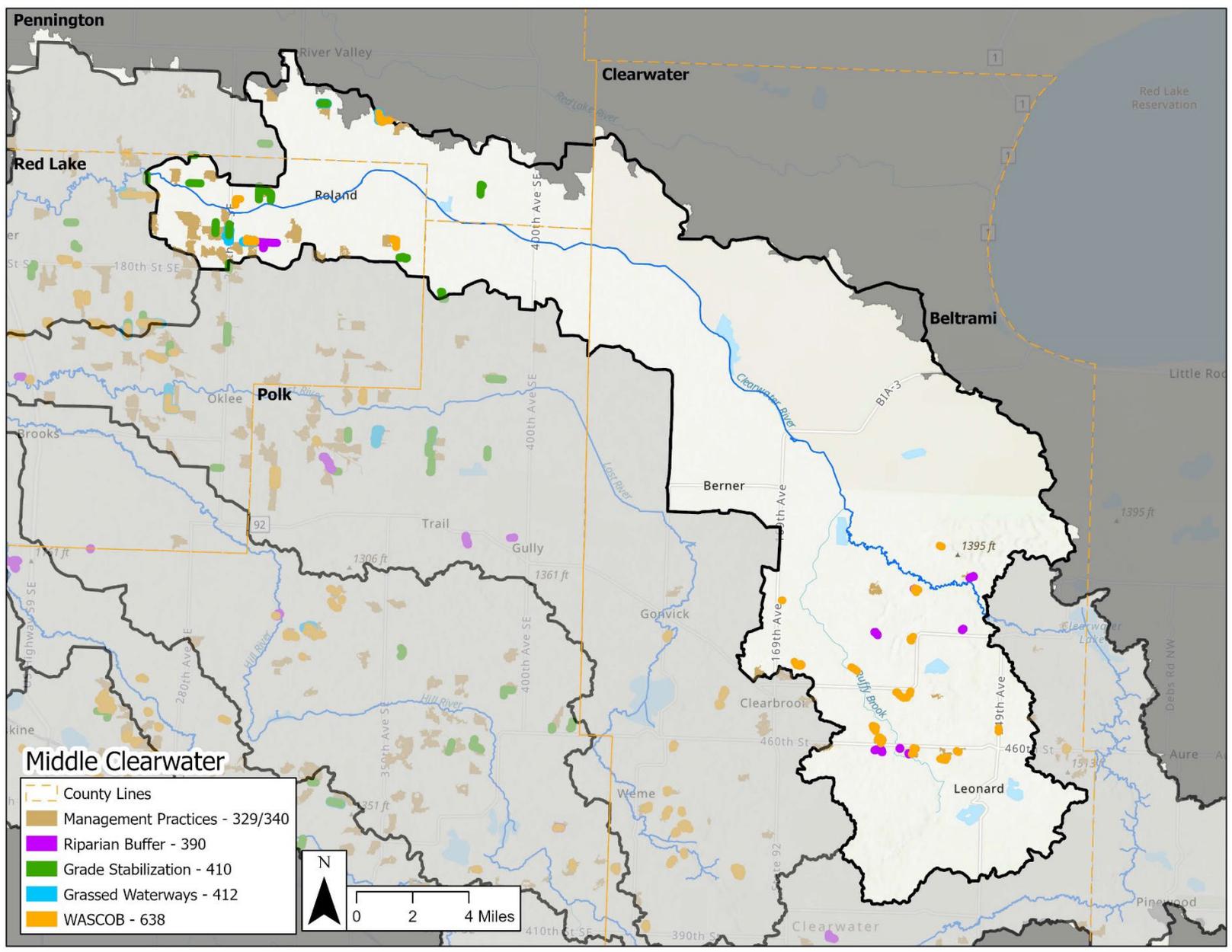
The Table below shows the 10-year PTMAApp implementation scenario results for the **Middle Clearwater River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 9%
- Phosphorus = 3%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	25	\$225,000	768	187	2,691	85	79	1,152	66	6
390 - Riparian Buffer	11	\$42,900	174	54	1,069	19	21	420	0	20
410 - Grade Stabilization	11	\$220,000	173	11	221	90	9	184	0	33
412 - Grassed Waterway	5	\$48,972	102	9	155	48	7	128	0	23
329 - No till	21	\$42,237	1,384	485	9,152	601	373	7,040	0	1,914
Existing Load						9,678	16,734	434,300		
Total Load Reduction			2,601	745	13,288	843	489	8,924	66 ac-ft	
Percent Reduction (%)						9%	3%	2%		

*costs are 10-year totals



Upper Clearwater River Planning Region

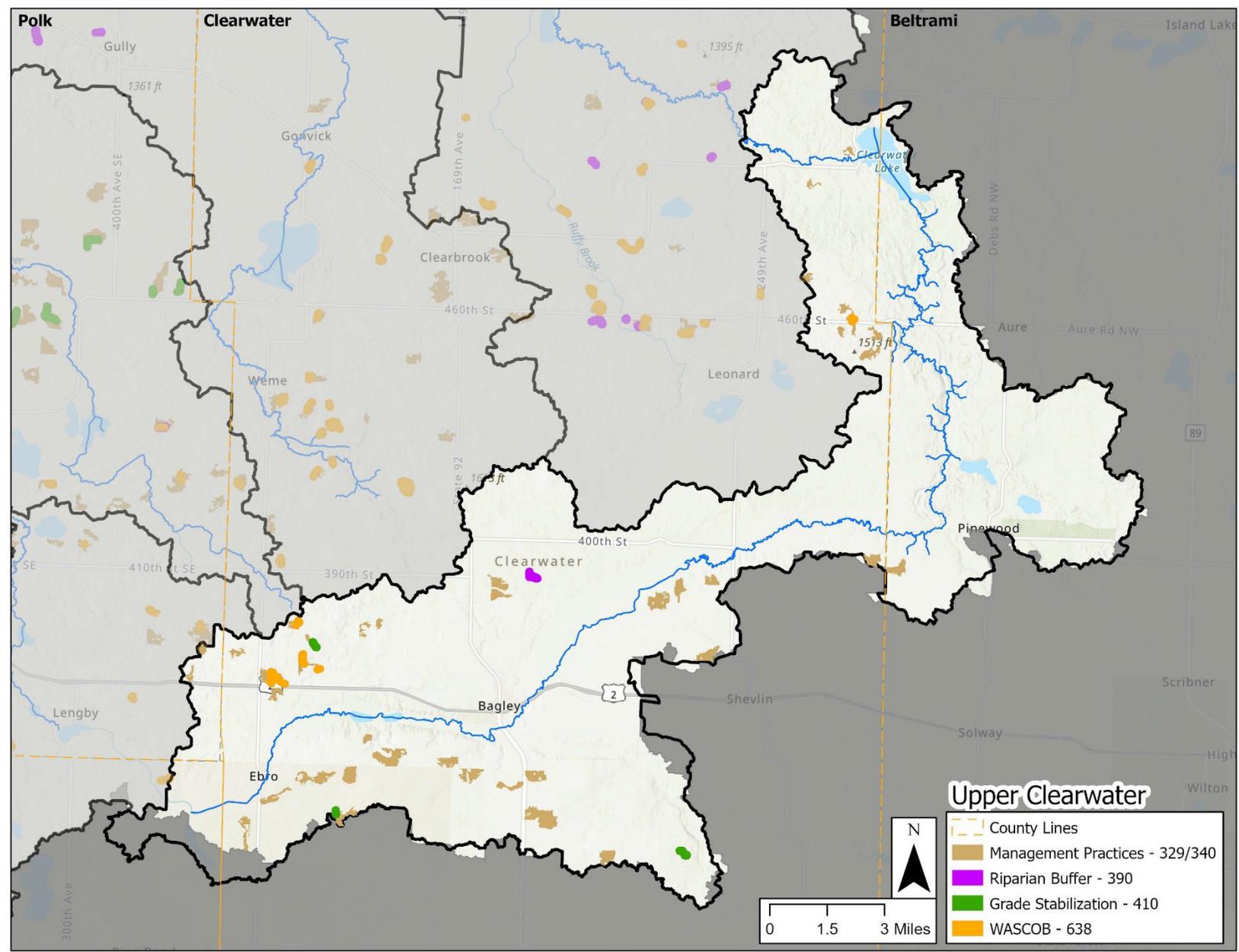
The Table below shows the 10-year PTMAApp implementation scenario results for the **Upper Clearwater River Planning Region**. The next page includes a map showing where practices are located.

Scenario Reductions at outlet:

- Sediment = 8%
- Phosphorus = 4%

BMP Treatment Group	Number of Practices	Total 10-Year Cost (\$)*	Values at Catchment Outlet			Values at Planning Region Outlet			Additional water storage (ac-ft)	Cumulative Surface area (acres)
			Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)	TP Reduction (lbs./yr.)	TN Reduction (lbs./yr.)		
638 - WASCOB	10	\$90,000	435	79	1,080	18	20	317	30	2
390 - Riparian Buffer	2	\$28,256	50	35	643	0	8	168	0	13
410 - Grade Stabilization	4	\$80,000	14	2	35	0	0	6	0	5
412 - Grassed Waterway	1	\$16,367	11	3	51	0	0	10	0	8
329 - No till	29	\$36,909	1,574	420	7,928	84	99	2,102	0	1,657
Existing Load						1,223	3,614	90,401		
Total Load Reduction			2,084	537	9,737	103	128	2,604	30 ac-ft	
Percent Reduction (%)						8%	4%	3%		

*costs are 10-year totals



***RED LAKE WATERSHED
DISTRICT***

RULES AND GUIDANCE DOCUMENT

Amended Rules



Adopted: August 27, 2015

RED LAKE WATERSHED DISTRICT

**DISTRICT RULES
AND GUIDANCE DOCUMENT**

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FOR QUESTIONS, COMMENTS, OR FURTHER INFORMATION:

**Red Lake Watershed District
Myron Jesme or Loren Sanderson
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**RED LAKE WATERSHED DISTRICT
DISTRICT RULES**

**PERMITTING PROCEDURES, FEES AND
FINANCIAL ASSURANCES RULE**

**Adopted August 27, 2015
Effective September 30, 2015**

1. **POLICY.** The District permit requirement is not intended to delay or inhibit development. Rather permits are needed so that the managers are kept informed of planned projects, can advise and in some cases provide assistance, and can ensure that land disturbing activity and development occurs in an orderly manner and in accordance with the overall plan for the District. All interpretations of these rules and permit decisions under these rules will incorporate and be consistent with District purposes set forth in Minnesota Statutes section 103D.201.

2. **PERMIT REQUIREMENT.** Any person or agency of the State of Minnesota or political subdivision undertaking an activity for which a permit is required by the District rules must first submit a permit application. The application must be submitted on the form provided by the District or the substantial equivalent, and must include all exhibits required by the applicable District rule(s). Application forms are available on the District web site at: www.redlakewatershed.org.
 - A. All permit applications must bear the original signature of the landowner.

 - B. No land-disturbing activity to which a District permit requirement applies may be commenced prior to receiving authority from the District, its administrator or staff.

 - C. Permit decisions will be made by the Board of Managers, except as specified in 3. PERMIT decisions may be delegated by the Board of Managers to staff or the District administrator for decision after consultation and review by the Board member representing that particular area of the District. If a permit is approved by staff or administrator, the permit will still be approved by the Board before being issued. The Board will review a staff or administrator permit decision at the applicant's request. Permit decisions may approve or deny an application and may impose reasonable conditions on approval. Conditions may include, consistent with the rules, requirements for financial assurances and maintenance agreements or declarations, and may require that these documents be properly executed or recorded before permit issuance.

 - D. A permit is valid for one year from the date the permit is approved, with or without conditions, unless specified otherwise or the permit is suspended or revoked.

 - E. To request an extension or transfer of a permit, the permittee must notify the District in writing prior to the permit expiration date and provide an explanation for the extension or transfer request. The District may impose different or additional conditions on an extension or deny the extension in the event of a material change in circumstances, except that on the first extension, a permit will not be subject to additional or different requirements solely because of a change in District rules. New or revised rule requirements will not be imposed on an extension of a permit where the permittee has made substantial progress toward completion of the permitted work. If the activities subject to the permit have not substantially commenced, no more than one extension may

be granted. An applicant wishing to continue to pursue a project for which permit approval has expired must reapply for a permit from the District and pay applicable fees.

- F. A permittee may transfer a permit to another party only upon approval of the District, which will be granted if:
 - 1) the proposed transferee agrees in writing to assume responsibility for compliance with all terms, conditions and obligations of the permit as issued;
 - 2) there are no pending violations of the permit or conditions of approval; and
 - 3) the proposed transferee has provided any required financial assurance necessary to secure performance of the permit.

The District may impose different or additional conditions on the transfer of a permit or deny the transfer if it finds that the proposed transferee has not demonstrated the ability to perform the work under the terms of the permit as issued. Permit transfer does not extend the permit term. The District may suspend or revoke a permit issued under these rules wherever the permit is issued on the basis of incorrect information supplied to the District by the applicant,

- G. A permit applicant consents to entry and inspection of the subject property by the District and its authorized agents at reasonable times as necessary to evaluate the permit application or determine compliance with the requirements of a District permit or rule(s).
- H. A District permit is permissive. Obtaining a permit from the District does not relieve the applicant from responsibility to comply with any procedures or approvals that may be required by Minnesota Statutes chapter 103E or any other rules, regulations, requirements or standards of any applicable federal, state, county, township, local government or subdivision thereof, or local agency.
- I. The District further requires as a condition of all permits that they be notified when said permitted work is completed.

3. DISTRICT WIDE PERMITS. The District may issue District-wide permits, approving certain routine activities or specific classes of projects where a standard design has been approved by the District, as long as the work is conducted in compliance with applicable District-wide rule requirements.

- A. Each District-wide permit activity or project classification will be subject to such specific requirements as the Board may establish.
- B. A hearing will be held before any District-wide permit activities or project classification are issued or established.

4. RECONSIDERATION.

- A. Before a permit decision is final for the purpose of appeal under Minnesota Statutes §103D.537, an applicant may request that the Board of Managers reconsider its decision. The applicant may submit a notice of reconsideration on a form provided by the District that includes concurrence in an extension of the time for District permit action under Minnesota Statutes §15.99. The notice must be submitted within 10 days of the permit

decision and at least one day before the date by which a permit decision must be rendered under §15.99. Within 10 days of submitting the notice, the applicant must in writing enumerate for the District the specific findings or conditions for which reconsideration is requested, along with any additional submittals or argument supporting applicant's request.

- B. The District will give the applicant due notice of when the Board of Managers will reconsider the permit decision. The Board of Managers will adopt findings on reconsideration. The District will not take longer than 120 days to issue a final decision including reconsideration, unless a further extension is approved by the applicant.
 - C. The permit decision is final if an applicant fails to timely file notice under paragraph 4.A, if the applicant otherwise waives the right of reconsideration, or if the Board of Managers is unable to reconsider the permit decision before the expiration of the District's time for review under §15.99. Otherwise, the Board of Managers' decision on reconsideration is the final decision.
 - D. District costs incurred for reconsideration are permit administration costs for which an applicant may be responsible under Section 5 of this rule.
5. "AFTER THE FACT" PERMIT. An "After The Fact" permit may be considered by the District and granted to an individual, if the "After The Fact" permit submission is the first submission provided to the District by said person or entity for the work that has been done. If a person or entity has had a prior written warning given to them in regard to their failure to follow the permitting rule requirements, a \$500.00 late filing fee shall be assessed against said person or entity for the "After The Fact" permit submission. Said late filing fee assessment is in addition to any other conditions or requirements that may be ordered by the District in regard to repair or restoration of non-permitted work by said persons or entity in regard to an approval or disapproval of an "After The Fact" permit application. In addition to the remedies provided in Minnesota Statute 103D.545 and other remedies provided for in these rules, in those instances where work has been performed before a permit has been approved, the District may require that the property be returned to its original condition before consideration of the "After The Fact" permit application. The District may also require the applicant to pay actual engineering and attorney's fees, allowed by law, incurred by the District in dealing with the un-permitted work.
6. FINANCIAL ASSURANCE. The managers, at their discretion, may require an applicant to file a bond, letter of credit or other escrow deposit in a form approved by the District as a condition of permit issuance. The amount of the financial assurance required will be set in accordance with a schedule established and maintained by the Board of Managers by resolution. When the permitted activities are certified as having been completed in compliance with the District permit and rules, the financial assurance will be released.
- A. If the District determines that the permitted activities have not been completed in compliance with the permit and District rules, the Board of Managers may determine that the assurance is forfeited and the District may use the funds to take such actions as the District deems necessary to bring the subject property into compliance with the permit and District rules, to prevent or mitigate harm to protected resources or other property, to abate or restore damages, or otherwise to ensure conditions in compliance with an applicable District permit and/or the District rules. If financial assurance funds prove insufficient to complete necessary work, the District may complete the work and assess the permit holder and/or property owner for any excess costs.

- B. No financial assurance will be required of any agency of the United States or of any governmental unit or political subdivision of the State of Minnesota. The District may require that the District be named as a beneficiary in the financial assurance of the agency's contractor.

PERMITTING PROCEDURES, FEES AND FINANCIAL ASSURANCES

Guidance to District Rule

The Permitting Procedures, Fees and Financial Assurances District Rule sets forth the basic process for property owners to apply for watershed district permits and for district processing of applications. These procedures are intended to assure that the District's process is fair, thorough, and effective.

A. Policy

The policy statement at section 1 of the rule states that the District's regulatory program is intended to balance two interests. First, the District has an interest, and indeed a statutory mandate - Minnesota Statutes §103D.341 - to reasonably regulate and monitor activities within its boundaries that may affect water resources. Second, it wishes to do so without unnecessary burdens on those who wish to make use of their property responsibly. A District and its staff will keep both of these interests in mind in carrying out its regulatory program.

B. Application Submittal

Key elements of the rule for application submittal, at section 2, are as follows:

- The rule states explicitly that activity subject to District rules may not occur until a permit has been applied for and issued or authority given by the District to proceed.
- The landowner must sign the application form. The applicant and permittee should always be the party who is indicated in the county land records as the owner of the property on which the activity is to occur. If another party (such as a contractor or intended property buyer) is the District's contact, it should be identified as the agent for the landowner and the District should document its authority to represent the landowner. This insures: (a) that any activity pursuant to a District permit occurs with the knowledge of the landowner and (b) that if compliance action is necessary, the District or the contractor will have access to the property.
- The application must be made on a form supplied by the District. State law (Minnesota Statute §15.99) stipulates that once an application is submitted, the District must approve or deny the application within a specified time frame (60 days) or else the permit is deemed granted. Therefore it is important that an application be clearly identified as an application, and not, for example, merely a pre-application inquiry. The time limit in Minnesota Statute §15.99 begins upon the District's receipt of a written request containing all information required by law or by a previously adopted rule, ordinance, or policy of the District, including the applicable application fee. If the District receives a written request that does not contain all required information, the 60-day limit starts over only if the District sends written notice within 15 business days of receipt of the request telling the requester what information is missing. Additional information associated with an incomplete application is available for review per Minn. Stat. §15.99.
- When a landowner submits an application, it operates as a grant of permission for the District to enter the property. Entry typically will be needed for the District to evaluate the permit application and, once a permit is issued, to monitor activity for permit compliance. The watershed law (Minnesota Statutes §103D.335, subdivision 14) already authorizes the District to enter lands "to make surveys and investigations to accomplish the purposes of the watershed district." This

appears to give the District adequate legal authority to enter private property, outside of constitutionally protected areas such as those in or adjacent to homesteads. The rule language is consistent with this authority.

- A permit may be approved subject to certain conditions that must be fulfilled before the permit is valid. (While other conditions may apply to the manner in which the work itself is conducted after a permit is issued). The District rule states that a permit extends for one year after permit approval and/or issuance. To state it another way, all activity on the land that is subject to the permit (not including subsequent ongoing maintenance) must be completed within a year. This means that it is the permittee's burden to, as soon as possible, meet any conditions that must be fulfilled before permit issuance. This prevents the situation wherein an approved permit is indefinitely open because the permittee has never fulfilled such pre-conditions and the permit has never actually issued.

C. Permit Extension and Transfer

However, because it may take time for pre-issuance conditions to be met, and because even without such conditions a project may take more than a year to complete, the District rules include a process for a permit to be extended. An applicant must request extension before the permit has expired. An extension presents a situation where there is a need for balancing of interests as described earlier. On the one hand, once a District has evaluated an application and determined that proposed work can be done in compliance with the District's rules, a landowner should be able to complete the work without unexpected new costs or barriers. On the other hand, the District does not want land in a disturbed state indefinitely and, as an administrative matter, does not want a permit open indefinitely. Further, because the District's rules may evolve over time to reflect new knowledge and policies, the District has an interest in limiting the extent to which future land disturbance is "grandfathered" under old rules and does not have to meet new standards.

The model permit extension terms balance these considerations as follows:

- A permit may be extended for an indefinite number of years, at the District's discretion, provided the work has been "substantially commenced." However, if the work has not been substantially commenced by the end of the second permit year (two years), it may not be extended and the landowner will need to make a new application.
- The District may deny or place new conditions on an extended permit for a "material change in circumstances." This allows the District to ensure that the permit continues to protect water resources if there is new knowledge or information relevant to the work since the permit was approved or last extended. The term "material" is intended to give some protection to the landowner, and means that the District will not change the "rules of the game" unless the change is both significant and relevant.
- Further, on the first extension, a change in the District's rules occurring since permit approval will not count as a "material" change. This insulates a permittee from a change in the rules for a two-year period of time after a permit is approved. If a permittee seeks a second extension and the District rules have changed in the interim, the District may apply new conditions as needed for the work to conform to the new rules.

- However, once the permittee has made “substantial progress” on the work, a request for permit extension will not be subject to a rule change occurring since permit approval or the prior extension.

Similarly, the District rule allows for a permittee to transfer the permit to a third party. It is advised that the permit always “runs with the land,” so the typical reason for a permit to be transferred is because the property is being conveyed. The general principle that the rule reflects is that permit transfer should not be burdened. However, the rule conditions this principle on the following:

- The transferee, in writing, must assume all permit obligations. This avoids the situation where a permittee is excused from permit obligations and ceases to have authority over the land, but the new landowner disclaims knowledge of the permit responsibilities.
- At the time of permit transfer, the work must comply with the permit. First, it is important to document that the site was in compliance when a permit transferee assumes compliance responsibility. This precludes the transferee’s later claim that the site was non-compliant on the earlier permittee’s watch, and that the transferee was unaware of or should not be responsible for it. Also, practically speaking, property transfer is an effective moment to require that site condition be corrected, as it will be made a condition of sale.
- If the District holds a financial assurance, it will need a substitute assurance from the permit transferee and will return the existing one to the transferor permittee.

Finally, the District rule allows the District to deny or impose conditions on a permit transfer if it has doubts about the proposed transferee that are relevant to whether the transferee can perform the work in compliance with the permit. This clause probably won’t apply very often, but gives the District the ability to exercise its judgment if certain work is sensitive or the proposed transferee has been shown to be irresponsible in the past. The District will have to decide what is sufficient evidence to support special conditions in this circumstance.

D. Standards Without Need for Permit Process

The District rule, at section 3, creates the authority for a District to issue what are termed “District-wide permits.” A District-wide permit can be an efficient mechanism for a District to impose standards on a certain type of activity without requiring everyone performing that activity to navigate the ordinary permit process. Typically this would apply to a class of activity that does not create a large risk of water resource impact and that, because it is simple or straightforward, does not generally require project-specific evaluation and project-specific conditions.

A District-wide permit may allow the District to do three things: (a) apply a set of standard conditions to the defined activity sufficient to provide basic necessary water resource protection (for example, if the activity involves minor land disturbance, the general permit may require basic erosion and sediment control); (b) make a record of where in the watershed the work is occurring, allowing for the work to be monitored as necessary and also giving the District information about cumulative effects; and (c) exercise jurisdiction over the work in the event a particular case does create a risk of water resource harm.

E. Reconsideration

At section 4, the District rule includes a process for an applicant to ask the board of managers to reconsider a District permit decision. This reconsideration is intended as a requirement before the applicant may appeal the decision to a court under Minnesota Statutes §103D.537.

If an applicant challenges a permit action, the District will always be in the strongest position to defend its decision if there are detailed findings to support a permit denial, or to support conditions included in a permit approval. The United States Supreme Court underscored this point in its decision in *Koontz v. St. Johns River Water Management District*, U.S. No. 11-1447; 570 U.S. (2013). The Court held that land-use agencies imposing conditions on the issuance of development permits must have a rational relationship and rough proportionality with the impacts of the proposed development.

Because most permit actions are not contested, it doesn't make sense for every such action to rest on extensive staff or consultant work and detailed findings. The reconsideration process is intended to allow for the District to devote the resources to such efforts only as to those aspects of a permit that are in fact contested. The District rule requires an applicant to give a District fair notice of its objection to the denial or conditions, and ensures that the applicant has a full opportunity to address the board of managers in that regard. The District rule also provides that a District may recover its additional permit review costs incurred in the reconsideration process.

This process must be carefully managed so that the District does not violate Minnesota Statutes §15.99, which as noted places a strict deadline on a District's final permit decision. The District rule states that if the reconsideration process cannot be completed within the section 15.99 (120 days) time frame, then the applicant is not required to complete the reconsideration step before exercising its appeal right. It is especially important for Districts to manage the permit process so that decisions are timely within these deadlines, and adequate time is anticipated for reconsideration of contentious permit conditions.

F. Permit Fee

Minnesota Statutes §103D.345, subdivision 2, states that a watershed district may require a permit fee that covers the actual cost for the District to process a permit application and then to monitor compliance with the issued permit. This includes staff and consultant costs (including attorney costs, as allowed by law) and related administrative costs. At section 5, the rule basically incorporates the statutory language. However if all rules are followed by the applicant while applying for a District permit, all fees will be waived and there will be no charge for the permit.

G. Financial Assurance

Section 6 of the district rule incorporates the Minnesota Statutes §103D.345, subdivision 4, authority given to watershed districts to require that a permittee give a bond to ensure its performance under the permit. The District rule uses the term "financial assurance" rather than "bond" to allow a permittee to use other means of assurance including letters of credit and cash escrows. As is recommended for the permit fee, the required amount of financial assurance for a particular type and scale of project would be set in a schedule that could be reviewed and adjusted by the board of managers as needed, without a formal rulemaking.

The rule further sets forth fairly straightforward terms for how the assurance will be used by the District, the enforcement costs that the assurance may be used to fund, and the release and return of unused funds once the work is completed in accordance with the permit terms. The rule explicitly states that if District costs exceed the amount of a financial assurance, the permittee will be responsible to reimburse for those excess costs. The District would have to pursue such a claim by an independent legal action, if necessary.

The rule provides that a financial assurance will not be required if the permittee is a federal, state or local unit of government. The watershed law does not specifically exempt governmental agencies from the District's authority to require a financial assurance. However, the practice of watershed districts

generally is not to impose such a requirement. It is reasoned that public permittees, in general, are more reliable in meeting permit requirements and that where a particular permittee is not, it remains accessible and is not going to disappear or go into bankruptcy. Further, the cost of a bond or letter of credit would just be an additional taxpayer cost. Notwithstanding, the rule states that if the public permittee requires a bond of its contractor, the District is to be named a beneficiary. The reasoning here is that this gives protection to the District without measurable added cost.

H. Permit Approval Authority

Finally, section 2 of the District rule states that the board of managers will decide permits, except as may be delegated to the administrator or staff. A district board of managers may be quite comfortable delegating the authority for permit decisions to its administrator or staff for simpler permits or those likely to be less controversial. Allowing the administrator or staff to approve certain permits reduces the time and cost for applicants and frees the board of managers agenda for other matters. The delegation would occur by a board resolution that defines the limits of the delegation.

With the reconsideration process at section 4, if a permittee objects to a permit decision of the administrator or staff, it will come before the board for review. A district can include other procedures in its rules, or in the delegation resolution, that would, for example, allow a board member or an interested member of the public other than the applicant to ask that the board consider an application in a given instance.

**RED LAKE WATERSHED DISTRICT
RULES AND REGULATIONS**

SURFACE DRAINAGE AND FLOOD MITIGATION

**Adopted August 27, 2015
Effective September 30, 2015**

DEFINITIONS

Board of Managers shall mean Board of Managers of the Red Lake Watershed District

District shall mean the Red Lake Watershed District

Dike shall mean a bank or mound of earth, berm or obstruction that is built or placed in a manner which will affect the flow of water and especially to protect an area from flooding.

Drainage Way shall mean a natural or artificial channel which provides a course for the flow of water, whether that flow be continuous or intermittent.

Flood Mitigation shall mean managing and control of flood water movement, such as redirecting flood run-off through the use of floodwalls and flood gates, rather than trying to prevent floods altogether.

Improve has the meaning set forth at Minnesota Statutes §103E.215, subdivision 2, which states that improvement means tiling, enlarging, extending, straightening, or deepening of an established and constructed drainage system.

Managers shall means the Red Lake Watershed District Board of Managers

Private Drainage Way shall mean a drainage way other than a public drainage way, which includes but is not limited to private tile drainage and surface drainage systems constructed along roadways.

Public or Legal Drainage Way shall mean a drainage way under the jurisdiction of the drainage authority pursuant to Minnesota Statutes chapter 103E.

Surface Drainage shall mean removal of surface water by development of the slope of the land utilizing systems of drains to carry away the surplus water.

Tile Drainage shall mean an agriculture practice that removes excess water from soil subsurface.

1. POLICY. It is the policy of the Board of Managers to promote the use of the waters and related resources within the District in a provident and orderly manner to improve the general welfare and public health for the benefit of the District's present and future residents. Further, it is the policy of the Board of Managers to regulate new construction, improvement, repair and maintenance of public and private drainage ways for the following purposes:

- A. To preserve the capacities of drainage systems to accommodate future needs.
- B. To improve water quality and minimize localized flooding.
- C. To minimize the loss of drainage capacity.
- D. To avoid drainage conditions that cause or aggravate erosion or sedimentation of downstream drainage ways or waterbodies.
- E. To ensure that parties responsible for accumulation of debris, soil and sediment in drainage ways maintain those drainage ways.

2. REGULATION

- A. A permit must be obtained from the District before undertaking any of the following:
 - i. Excavation of a new private drainage way located within any public right of way;
 - ii. Work below the top of bank of an existing public, legal or private drainage way located within any public right of way that disturbs soil or alters the dimensions or hydraulic profile of the channel;
 - iii. Constructing, installing or altering a road or utility crossing beneath or over a public or legal drainage way; or
 - iv. Constructing, altering or removing a dike which alters the flow of water.
- B. Section A notwithstanding, no permit from the District is required:
 - i. To construct, establish or perform maintenance on an existing private drainage way, as long as the private drainage way is located outside of any public right of way.
 - ii. To repair or replace tile drainage to the same size of tile as previously existed.
 - iii. To perform emergency work on any private drainage way located within a public right of way to avoid substantial property damage due to flooding, subsidence or other cause, in which case the District must be notified of the work and the reasons for the emergency action, as soon as possible. If at all possible, efforts to notify the District should be made before performing any emergency work. Any emergency work performed without the District's and governmental roadway authority's permission is performed at the owners own risk.
 - iv. To disturb surface soils in the course of ordinary cultivation or other agricultural activity. This may include general field ditching.
- C. The requirements of this rule are in addition to other applicable laws and procedures, including those of Minnesota Statutes chapter 103E. This rule is to provide for management of waters in the public interest and does not displace in whole or part any private legal rights a property owner or other person may have with respect to the use and drainage of waters.

- D. A contractor or equipment operator is responsible to ascertain whether a permit is required by this rule and, if so, that it has been obtained.
3. SURFACE DRAINAGE. The following criteria apply to applications under this rule other than those for the construction, alteration or removal of a dike:
- A. An applicant may not dispose of or alter the flow of surface water so as to unreasonably burden another landowner with surface flow.
 - B. Surface water will not be artificially directed from upper land to and across lower land without adequate provision on the lower land for its passage.
 - C. Surface water will not be artificially directed into a legal drainage system from land not assessed to that system unless express authority from the drainage authority is obtained as defined under Minnesota Statutes 103E.401.
 - D. Temporary storage and retention basins on the parcel or parcels proposed to be drained will be used to the extent feasible for upstream storage and to maintain peak flows, prevent erosion and avoid increased demand on public drainage systems.
 - E. An applicant shall control erosion and downstream siltation by the following means:
 - i. All work involving exposed or stockpiled soil or materials subject to erosion will conform to an erosion and sediment control plan approved by the District.
 - ii. Open drainage ways will be stabilized with vegetation above the low water mark or other best management practices to reduce channel erosion.
 - iii. To reduce sediment transport, where feasible drainage will be discharged through marsh lands, swamps, retention basins or other treatment facilities prior to release into the receiving public water. Where feasible, a retention basin will overflow to a wide, shallow grassed waterway.
 - iv. Drainage ways will be constructed with side slopes designed in accordance with proper engineering practice to minimize erosion, giving due consideration to the intended capacity of the drainage way; its depth, width and elevation; and the character of the soils to be drained.
 - v. Water inlets, culvert openings and bridge approaches must have adequate shoulder and bank protection to minimize land and soil erosion.
 - vi. Channels and outfalls must be designed to be stable.
 - vii. Consideration for establishment of a grass filter strip 16.5 feet in width where possible and maintained on each side of a new private drainage way and on each side of an existing private drainage way which is subject to work for which a permit is required by this rule.
 - F. The proposed activity may not adversely affect downstream water quality or quantity.
4. DIKES. The following criteria apply to the construction, alteration or removal of a dike:
- A. The dike may not unreasonably restrict flow onto down gradient property.
 - B. The dike may not be constructed or maintained within the 100-year floodplain unless plans and specifications, signed by a registered engineer, are submitted showing that:

- i. The work will not impede 100-year flood flows outside of the delineated retention area, or raise the 100-year flood level or increase flood peak downstream;
 - ii. Overflow sections are designed to handle overtopping during major floods without significant erosion or risk of failure and without sandbagging or other manual measures before or during a flood; and
 - iii. The capacity of pumping facilities to remove surface water stored behind a dike is consistent with Minnesota Hydrology Guide criteria.
 - C. Operational procedures must prohibit pumping when the agricultural dike is overtopped during a rain or snow-melt event until downstream flood peaks have occurred.
 - D. Outlet drainage must be sized to the applicable capacity in the Minnesota Hydrology Guide (Curve 1) for agricultural drainages, or other technical specifications established by the District.
 - E. A permit to construct or maintain an agricultural dike will be conditioned on the applicant's granting the District the right in perpetuity to:
 - i. Enter onto property to assure landowner has installed and is maintaining traps/gates to restrict or eliminate outflow from the diked area during and after overtopping flood events; and
 - ii. Enter on the subject property to inspect traps/gates during and after an overtopping flood event.
- 5. EXHIBITS. The following exhibits may be requested to accompany the permit application. Two copies, (standard paper size of 8.5 inches by 11 inches), which include:
 - A. Map showing location of project and tributary area.
 - B. Plans and specifications for the project.
 - C. Existing and proposed cross sections and profile of affected area.
 - D. Description of bridges or culverts required.
 - E. List of owners of properties benefitted or affected by the proposed work.
 - F. Such other submittals as the District reasonably may require to evaluate whether the proposed activity meets the standards of this rule.

SURFACE DRAINAGE AND FLOOD MITIGATION

Guidance to District Rule

The Surface Drainage and Flood Mitigation district rule identifies the changes to surface water flows that will require a permit from the watershed district, and sets forth the standards it will apply in order to determine whether those changes are permitted. A watershed district's consideration of this district rule in particular will benefit from the district engineer's advice to assure that critical water management concerns in the local watershed are addressed.

A. Policy

The policy statement at section 1 serves several purposes. First, it communicates to property owners why the watershed district is choosing to regulate surface drainage and assists those owners in designing their proposed surface drainage alterations in a way that will be consistent with district goals. Second, when the board of managers must exercise judgment during permitting decisions, it will refer to the policy statement in order to align its decisions with the stated policies. Third, in the event of a legal challenge to a permit decision, the underlying policies of the rule will guide the judge. If the permit decision aligns with those policies, the judge will give greater deference to the board's decision and the district's legal position will be stronger.

The proposed policies reflect the following goals for surface drainage management:

- To preserve capacity in public drainage systems into which lands assessed benefits for those systems discharge. Note that the drainage law (Minnesota Statutes chapter 103E) does not control the volume that may flow from assessed benefited lands into the system or the rate of that flow. However, a watershed district under its regulatory authority (Minnesota Statutes chapter 103D) may regulate both volume and peak flow off of lands benefited into a drainage system to provide drainage benefits equitably to all lands paying into the system.
- To limit the movement of soils into channels and preserve the integrity of channel banks, in order to limit maintenance costs for public ditch systems and limit the transport of sediment, nutrients and other pollutants to downstream receiving waters.
- To protect the structural integrity of public drainage systems from destabilizing hydraulic forces.
- To prevent unassessed benefited lands from draining into public or private drainageway systems, in order to preserve system capacity for those property owners bearing the cost of those systems, and in the interest of equity.

B. Regulation

The regulation section identifies proposed changes to the landscape that require a permit from the watershed district. The separation between those activities that require a permit from those that don't is made with reference to the four policies identified in the preceding section. What this section does is identify those activities that, if not done properly, can cause impacts to public drainage systems and downstream waters that, as the policies spell out, the watershed district is trying to prevent. The goal is to exercise watershed district oversight of those activities while, to the extent possible, avoiding imposing permitting burdens on other activities that don't pose a substantial risk of impact.

In addition, this section strives to define activities that require permits, and those that don't, as precisely as possible. Ambiguity in knowing what does and does not require a permit is a burden on property owners and can be a source of legal conflict. This doesn't mean that all ambiguity can be eliminated, but where possible it should be minimized.

The District rule first describes the activities that require a permit, and then carves out from those descriptions certain exemptions. The District rule sets forth specific descriptions of activities that require a permit. In summary, they include:

- diking.
- Any work in or over a public surface drainage system or within any right of way of a governmental roadway.

The following activities that otherwise would meet one of these criteria are exempted from the permit requirement:

- Ordinary maintenance of a private drainage way.
- Emergency work on a non-public drainageway or channel necessary to avoid significant property damage. The District rule requires advance notice to and approval from the watershed district for work in a private drainage way located within a public right of way. Notice to and approval from the proper governmental roadway entity is also necessary. However, it is recognized that certain situations may arise which require immediate action. In these cases, any emergency work performed without proper notice and approval is done at the owner's own risk.
- Ordinary cultivation or other ordinary agricultural activity.

The District rule contains an explicit reminder that it does not eliminate any other legal requirements or constraints applicable to the proposed work. As regards the drainage code, this means, for example, that a landowner performing work in a public channel may not obstruct flows; that a new outlet into a public system or the connection of unassessed lands is prohibited without drainage authority approval; and that the drainage authority retains all authority under the drainage law to do work within public systems and assess the costs.

The rule also explicitly affirms that it does not displace any private property rights in water flow, or any rights to be protected from such flows. The rule reflects the responsibility of the watershed district to manage surface drainage for the general public benefit. But the District does not act as an arbiter, for example, as between adjacent property owners. So if a property owner excavates a channel or alters their land in a way that affects the flow of water onto adjacent property, property owner may need a permit from the watershed district, but the property owner will be responsible to ensure that they are not infringing on the rights of the adjacent owner by increasing, relocating or diverting flows across the neighboring property.

Finally, this section of the District rule states that a contractor or equipment operator is equally responsible to ensure that there is compliance with the rule. If there is enforcement, this protects a watershed district against claims by a property owner that it wasn't aware of what a contractor was doing, or claims of a contractor that the property owner had assured it that all permits and approvals were in order. It allows a watershed district to look to the property owner, or the party actually doing the work on the land, or both, to restore and remediate the impacts of any unpermitted work. The property owner and the contractor then can sort out responsibility and cost between themselves.

C. Criteria for Surface Drainage Changes

This section applies to all activities subject to permits except for diking and subsurface tile drainage, and states the criteria against which a permit application will be evaluated.

The criteria in the District rule relate back to the policies enumerated in Section 1 of the rule. They are as follows:

- Flows - volume or peak - onto adjacent property may not unreasonably increase.
- Unassessed lands may not be drained into a public system without obtaining express permission from the drainage authority in accordance with 103E.401.
- To the extent reasonable, flows resulting from proposed changes must be retained on-site before discharge, or discharged to off-site retention - natural or artificial - in order to mitigate flow changes and limit downstream sediment transport.
- Erosion and sedimentation in drainage systems will be minimized through a number of means, as feasible:
 - An erosion and sediment control plan must be submitted and approved;
 - Channels must be vegetated above low-water mark;
 - Channel banks must be designed with proper slopes;
 - Hydraulic forces must be assessed and provided for in the design;
 - Grass filter strips establishment should be considered wherever channel work is conducted.
- Finally, there is a general requirement that downstream flows or water quality may not be adversely affected.

The last criterion, in particular, is general, which leaves discretion in the hands of the District. However, risk of impact or adverse effects can be very specific to each particular situation, and this criterion rests on the need for a watershed district to be able to protect surface drainage systems as necessary in the context of each specific set of circumstances.

Note that the procedural rules include a step by which an applicant may ask the board of managers to reconsider a permit decision before it is appealed. Where the board denies a permit, or includes certain conditions in the permit, this reconsideration step is the opportunity for the District, through its engineer, to re-examine the facts of their decision and to closely review their findings about potential impacts.

D. Criteria for Dikes

This section states the criteria against which a permit application for a dike will be evaluated. These criteria, as well, related back to Section 1 and are as follows:

- Flows onto adjacent property may not be diverted to an unreasonable extent.
- Retention may not contribute to an increase in down gradient flood peak, and there must be downstream capacity for any change in the hydrograph of flow.
- The dike structure must be designed so that, without additional stabilizing measures, it will withstand flood conditions without erosion or risk of failure.
- The structure outlet, and basin drawdown pumping capacity, must be sized and designed in accordance with the criteria contained in the Minnesota Hydrology Guide.
- The applicant must submit and follow operational procedures that prohibit drawdown pumping during a flood event until downstream flood peaks have receded.

The District rule also provides that as a condition of a permit, the property owner must grant the watershed district a perpetual right to install, maintain and operate traps or gates to prevent outflows from the diked area during and after flood events that cause the dike to be overtopped.

It is noted that here, too, there will be a need to assess the specific circumstances and to apply some judgment in applying these criteria in each case. Again, the reconsideration step in the procedural rule allows for the level of analysis that is necessary if the District and an applicant do not reach concurrence on a given proposal.

E. Exhibits

This section lists application submittal requirements. The basic submittal requirements that may be requested are: (a) maps and information to locate the project; (b) topographic, elevation, dimensional and flow data necessary to evaluate the hydrologic, hydraulic and flood impact of a proposed change in the landscape; and (c) a listing of potentially affected owners.

A watershed district may require any other submittals that it reasonably needs to evaluate a proposed activity for compliance with the rule criteria. This allows the district to keep its mandatory submittals reasonably limited, and to tailor the submittal burden on an applicant to what is needed in order to evaluate the applicant's specific proposal. This presumes that district staff will work with an applicant to identify necessary submittals. If an applicant fails or refuses to supply what the district requests, the district may be unable to properly evaluate an application, and this may be a legal basis to deny the permit.

Minnesota Statutes §15.99 requires a permitting agency, including a watershed district, to act on a permit application within the time specified in the statute. This time starts to run when the district receives the application, unless within 15 business days of receipt, the district advises the applicant that the application is incomplete. In light of this statute, it always is important that a district promptly review an application and determine whether it is complete. This becomes even more important if the district relies on a "catch-all" provision, since an application that otherwise contains required submittals is complete unless and until the district identifies other information that is necessary.

F. Definitions

This section defines certain terms used in the rule. Specifically, it defines "drainage way" as pertaining only to surface drainage systems, which may include tile portions, and establishes the terminology to distinguish between public and private systems. It also: (a) defines drainage system "improvement" as having the same meaning as under Minnesota Statutes chapter 103E.

**RED LAKE WATERSHED DISTRICT
DISTRICT RULE**

SUBSURFACE TILE DRAINAGE

**Adopted August 27, 2015
Effective September 30, 2015**

1. **POLICY.** It is the policy of the Board of Managers to promote the sound construction and management of subsurface tile drainage systems in order to minimize downstream flooding and maximize soil storage and agricultural productivity.

2. **REGULATION**
 - A. No person shall install or construct any non-incidental subsurface tile drainage system, **after the effective date** of adoption of these rules, without obtaining a required permit from the Watershed District.

3. **CRITERIA.** An application for a permit must meet the following requirements:
 - A. All subsurface tile drainage systems must protect from erosion and include RLWD approved erosion control measures.
 - B. All subsurface tile outlets including lift station pumps, must be located out of a legal drainage system and governmental roadway right of way unless approved by District and must be visibly marked.
 - C. It is recommended that after harvest, tile outlet controls, including lift station pumps, be opened or turned on to remove water from the system unless downstream culverts are freezing.
 - D. Obtaining a permit from the RLWD Managers does not relieve the applicant from the responsibility of obtaining any other additional authorization or permits required by law. (Ex: NRCS, SWCD, Township, County, State, etc.)
 - E. Upon completion of the project, “As Built” plans must be provided to the District.
 - F. Consideration must be made for turning off pumps for short period of times during the summer so maintenance can be performed on public, legal and private drainageways, such as road ditches or private natural field drains.

4. **EXHIBITS.** The following exhibits may be requested to accompany the permit application. Two copies, (standard paper size of 8.5 inches by 11 inches), which include:
 - A. Legal description and site map and/or GPS coordinates to accurate scale showing location of all tiles, surface water inlets, outlet(s), lift stations, pumps, and flow control devices;
 - B. Land area to be tiled (acres);

**RED LAKE WATERSHED DISTRICT
DISTRICT RULE**

Pursuant to authority granted by Minnesota Statutes section 103D.341

**RULE XX
ENFORCEMENT RULE**

**Adopted August 27, 2015
Effective September 30, 2015**

1. **MANNER OF ENFORCEMENT.** In the event of a violation or threatened violation of a District rule, permit, order or stipulation, or a provision of Minnesota Statutes chapter 103D, the District may take action to prevent, correct or remedy the violation or any harm to water resources resulting from it. Enforcement action includes but is not limited to injunction; action to compel performance, abatement or restoration; and prosecution as a criminal misdemeanor in accordance with Minnesota Statutes sections 103D.545 and 103D.551.

2. **INVESTIGATION OF NONCOMPLIANCE.** The District's authorized representatives may enter and inspect a property in the watershed to determine the existence of a violation or threatened violation as described in section 1, above.

3. **ADMINISTRATIVE COMPLIANCE ORDER.** The District may issue a preliminary compliance order without notice or hearing when it finds a violation or threatened violation as described in section 1, above, and that the violation or threatened violation presents a serious threat of adverse effect on water resources. A preliminary compliance order may require that the property owner or responsible contractor cease the land-disturbing activity; apply for an after-the-fact permit; and take corrective or restorative action. A preliminary compliance order is not effective for more than ten days. The Board of Managers by resolution may delegate to District staff the authority to issue preliminary compliance orders.

A. **BOARD HEARING.** After due notice and a hearing at which evidence may be presented, the Board of Managers shall make findings. If the Board finds a violation as described in section 1, above, it may issue a compliance order of indefinite duration that may require the property owner or responsible contractor to cease land-disturbing activity; apply for an after-the-fact permit; take corrective or restorative action; reimburse the District for costs under Minnesota Statutes section 103D.345, subdivision 2; and/or be subject to any other remedy within the District's authority. A compliance order may supersede a preliminary order or may be issued without a prior preliminary order.

4. **LIABILITY FOR ENFORCEMENT COSTS.** To the extent provided for by Minnesota Statutes section 103D.345, subdivision 2, a property owner or responsible contractor is liable for investigation and response costs incurred by the District under this rule, including but not limited to the costs to inspect and monitor compliance, engineering and other technical analysis costs, legal fees and costs, and administrative expenses.

5. **CONTRACTOR LIABILITY.** Any individual, firm, corporation, partnership, association or other legal entity contracting to perform work subject to one or more District rules will be responsible to ascertain that the necessary permit has been obtained and that the work complies with the permit, rules and statutes and any applicable District orders or stipulations. A contractor that, itself or through a subcontractor, engages in an activity constituting a violation or threatened violation under section 1, above, is a

responsible contractor for purposes of this rule.

ENFORCEMENT

Guidance to District Rule

The Enforcement district rule advises property owners and contractors of the steps the watershed district may take to address a violation or threatened violation of a district rule, permit or other binding district requirement.

1. Manner of Enforcement

This paragraph states the scope of watershed district authority to take enforcement action, and the forms that action may take. Largely, it restates §§103D.545 and 103D.551 of the Minnesota Statutes, the two provisions of the watershed law that provide the foundation for district enforcement. In short, watershed districts may bring action to stop or prevent a violation, to require compliance and action to fix the consequences of a violation, to recover enforcement expenditures, and to charge a violation as a criminal misdemeanor. Notably, apart from a small fine that may be imposed for a misdemeanor, watershed districts do not have the authority to impose or recover a financial penalty.

Note that the paragraph refers not only to a violation of a district rule, permit, or other regulatory requirement, but also to a threatened violation. If a threatened violation does not lead to an actual violation, the district would not be entitled to an order requiring the responsible party to take action. However, if the facts are supportive, the District may issue an order, or obtain a court injunction, to stop the action that threatens violation. The proposed text allows for a district, in consultation with its legal counsel, to determine in any given case the available and preferred remedies.

2. Investigation of Noncompliance

This paragraph advises that the district's duly authorized and delegated representatives, without prior notice to or permission of the property owner, may enter land within the watershed to inspect for compliance with district rules, permits and other regulatory requirements. This re-states Minnesota Statutes §103D.335, subdivision 14, which states:

The managers may enter lands inside or outside the watershed district to make surveys and investigations to accomplish the purposes of the watershed district. The watershed district is liable for actual damages resulting from entry.

The district need not know or even suspect that a violation is occurring, nor is its authority limited to lands on which activity taking place is subject to a district permit. The statute permits entry onto any lands as the district finds appropriate in order to effectively carry out its regulatory function.

Note that the statute gives this authority to “[t]he managers.” We believe it is reasonable to read the term “managers” as meaning, more broadly, the district's representatives - managers, staff, contract personnel -

both because the term “managers” is used elsewhere in the watershed law simply to refer to the district as a whole and because, as a matter of common sense and necessity, it is not only the district managers themselves who are in the field performing regulatory inspections and oversight on behalf of the district.

The statutory authority under subdivision 14 to enter private property cannot override the U.S. and Minnesota Constitutions, and therefore is limited by the constraints those documents place on entry. Specifically, except under certain limited circumstances, district representatives cannot enter enclosed structures or outside areas that directly surround a residence and its associated structures (garage, shed, etc.). Also, while the statute authorizes entry without notice to or agreement of the landowner, a district may adopt procedures under which it limits the practice of unannounced entry for reasons such as inspector safety and landowner relations. In implementing its inspection authority, a district should coordinate closely with its legal counsel to establish its inspection procedures and practices.

3. Administrative Compliance Order

Under the watershed law, a district board of managers is given the power to issue orders relating to permits and permit compliance. This authority is implemented in paragraph 4, described further below.

However, a condition that is causing or threatening harm to water resources may need attention immediately, or at least before the board of managers practically can be convened to hear a matter and issue an order. For that reason, it is desirable for district staff to be able to exercise the authority to issue an order at the time a violation is observed.

There are two concerns about staff’s issuance of legally binding orders in the field. One is a “due process” concern: that the authority of a public agency to issue a legally binding order without giving the recipient notice and a chance to be heard is legally limited. The second is that the authority to issue orders lies in the board of managers and must be specifically delegated to district staff. Historically, court cases have limited the ability of a public decision-making body to delegate its authority to staff. The law is concerned when, by doing so, the body is transferring its broad judgment and discretion to staff.

The model language attempts to address both of these concerns:

- With respect to the due process concern, the district rule requires the district to find that there is a violation or imminent violation that poses a serious water resource threat. In other words, order authority is to be exercised only when it is necessary to avert an important impact that otherwise would occur if no action could be taken until the managers were able to meet.

Also, the rule states that a staff order has effect only for ten days. The intent is that a staff order allows for harm to be prevented and the status quo to be maintained, only until the board of managers has a reasonable opportunity to convene and hear the facts with notice to, and participation of, the affected property owner. The “ten days” in the district rule is not a specific legal requirement; a board of managers may choose a different duration based on the frequency of its regular meetings and its ability to convene for a special meeting. However, the longer this period is, the more legally vulnerable the delegation to staff may be. Optimal practice is for the district administrator to coordinate with the board president so that the time and place of the board hearing can be included in the staff order itself.

- Regarding the delegation concern, the rule requires that delegation be accomplished by written resolution of the board. In this resolution, the board should consider spelling out constraints on

staff's authority so that the level of discretion given to staff is only so much as is absolutely necessary to achieve the purpose of the delegation, that is, to protect the resource until the board is able to give notice and hold a hearing. This may include, for example, requiring that an order contain specific findings as to what the violation is, what the actual or threatened impact is, and why that impact is serious. The resolution also may direct that permittee action demanded by the order be only what is necessary to prevent the resource impact until the board has the opportunity to hear the matter.

If a board of managers is not comfortable delegating order authority to its staff, there are options. For example, the district may simply institute a structured procedure for staff to issue a formal document in the nature of a "notice of probable violation" in place of a legally binding order. The notice would identify the apparent violation and impact, and would advise of recommended compliance actions, but would not purport to order that those actions be taken. Instead, it would advise of a compliance hearing by the board of managers and notify that the hearing will occur unless the suggested actions are timely taken. If the responsible party did not agree with staff's determination that there was a violation, it could choose not to take the recommended action, and wait to present its case to the board.

While a watershed district order is legally binding, a district can enforce that order only by going to a state district court judge. To have the strongest legal position in front of the judge, a district is always advised to have an order issued not just by its staff, but by its board of managers. This means that even if staff has issued a field order, the board will want to hold a hearing and issue a superseding order before going to court. Therefore there is not always a great difference between a staff order and a staff notice.

A. Board Hearing

This paragraph provides for a board hearing before a district compliance order (other than a preliminary order) may be issued. Because a district order may impose substantial cost on a property owner or contractor - by delaying work, requiring restoration action or imposing district costs - the law requires that the potential recipient of an order be given notice and an opportunity to appear and present evidence to the board before the board makes findings. The law does not specify how many days' notice must be given, how notice must be given, or the specific procedures that must be afforded at the hearing beyond an "opportunity to be heard." District legal counsel should be consulted on these details, and whether they should be included in the rule language or simply followed as district practice.

The paragraph also makes clear that on the basis of a finding of violation, a board of managers may order any remedy "within the District's authority." These remedies include: (a) a directive to cease and desist until an after-the-fact permit is applied for and issued; (b) a requirement that the responsible party bring the activity into compliance and/or take steps to remediate impacts from a violation; and (c) reimbursement of the district for its costs incurred in compliance monitoring and enforcement. As noted previously, a watershed district cannot impose a monetary penalty. Also, of course, the district cannot itself conduct criminal proceedings; a misdemeanor action would need to be brought in state district court by the proper law enforcement agency.

Finally, the paragraph makes clear that the board has the authority to consider and issue an order, whether or not there is a preliminary, staff-issued field order. If there is not actual or threatened harm to justify a staff order, then the district may simply notice and hold a board compliance hearing. Typically, this will follow staff efforts to work with a violator to secure compliance, but it can occur whenever the board of managers deems appropriate and need not follow informal or formal staff action.

4. Liability for Enforcement Costs

Paragraph 5 of the district rule states that a property owner or responsible contractor will be responsible for district costs to investigate and respond to a violation of a district rule, permit or other regulatory requirement to the extent that Minnesota Statutes §103D.345, subdivision 2, allows. This statute says that a watershed district may charge an “inspection fee.” It then states how the fee may be calculated:

The inspection fee must be used to cover actual costs related to a field inspection. Inspection costs include investigation of the area affected by the proposed activity, analysis of the proposed activity, services of a consultant, and any required subsequent monitoring of the proposed activity. Costs of monitoring an activity authorized by permit may be charged and collected as necessary after issuance of the permit.

Accordingly, if there has been an inspection, then the cost of the inspection, any analysis related to it, and any subsequent monitoring related to it may be recovered from the property owner or other responsible party. It further says that consultant costs related to the inspection, and to subsequent analysis and monitoring, are recoverable costs as well. This would include engineering and other technical consultants, but also may be read to include fees paid to district legal counsel for assistance in evaluating compliance and carrying out enforcement procedures. To recover these costs, it is important for a district to keep careful records of them.

Enforcement may result in a variety of costs to a district - staff hours, administrative and consultant costs, sampling and analysis costs, manager per diems for special meetings, contract costs for restoration work undertaken by the district, and potentially costs for court proceedings. The proposed rule language does not take a position on the precise extent to which each of these falls within the scope of the statute. Each district should determine its position with the advice of district legal counsel (for example, attorney fees for court proceedings may be excluded from the scope of §103D.345, subdivision 2, by virtue of separate treatment in §103D.545, subdivision 3). Note also that in the absence of the authority to impose a fine, a watershed district’s ability to require that a responsible party reimburse its costs may be a measurable financial incentive for early compliance.

5. Contractor Liability

The watershed law requires that watershed districts adopt and apply rules governing activities that may injure water resources, but it does not anywhere state who is subject to enforcement in the event a rule, or a permit issued under the rules, is not followed. It is good practice to require the property owner of record to be the named permit applicant, so that the authority to perform the proposed work is established and the district always has an official location where the permittee can be located. Further, in the event of noncompliance, it will be necessary for the property owner to be accountable for the violation to ensure that there is legal access to the property for any compliance work that is needed. In this case, it is reasoned that if a contractor has actually performed the work that does not comply, the property owner has a contract relationship with the contractor that will allow the property owner to demand that the contractor address the violation and hold the property owner harmless for costs.

However, there is nothing in the watershed law that prevents a district from also holding directly accountable the contractor that, itself or through its subcontractor, is responsible for the violation. A district may decide that it will have more leverage to gain compliance if both the property owner and the

contractor are directly subject to district orders and enforcement proceedings. If the district encounters a situation where the property owner appears to be innocent of the violation, holding the contractor responsible as well allows the district to take enforcement action directly against the contractor with minimum imposition on the property owner.

Paragraph 6 establishes that a contractor also is responsible for a violation if it, or its subcontractor, performed the activity constituting the violation. This section defines the term “responsible contractor” as it is used throughout the rule to denote a contractor that may be subject to enforcement.

APPENDIX G. LOCAL RULES, ORDINANCES, AND STATUTES

Many of the issues affecting priority issues can be addressed in part through administration of statutory responsibilities and ordinances. This document is intended to be used to summarize the existing local rules, ordinances and statutes that are currently being administered by planning entity, to understand areas of duplication, gaps, and opportunities.

Table 1. Regulatory responsibilities in the Clearwater Watershed.

	Rule, Ordinance or Statute Name	Beltrami	Clearwater	Mahnomen	Pennington	Polk	Red Lake	RLWD
Statutory Responsibilities	Shoreland Management <i>MN Rules 6120.3300</i>	County Shoreland Management Ordinance (#6)	County Ordinance	County Shoreland Management Ordinance	Shoreland Ordinance (SWCD)	County Zoning Ordinance Section 18	Shoreland Ordinance (SWCD)	N/A
	Floodplain Management <i>MN Statutes 103F, 104, 394</i>	N/A	N/A	County Floodplain Management Ordinance Chapter 152	Floodplain Ordinance (SWCD)	County Zoning Ordinance Section 17	Floodplain Ordinance (SWCD)	Surface Drainage and Flood Mitigation District Rule
	Subsurface Sewage Treatment System (SSTS) <i>MN Rules 7080-7083</i>	County SSTS Ordinance (#32)	County Zoning Ordinance	County Sewage and Wastewater Treatment Ordinance Chapter 51	Sewage and Wastewater Treatment Systems Ordinance (SWCD)	County Zoning Ordinance Section 21	County Septic Ordinance	N/A
	Solid Waste Management <i>MN Statute 115A, 400</i>	County Solid Waste Management Ordinance (#13)	County Solid Waste Management Ordinance	County Solid Waste Ordinance	County Solid Waste Management Plan	County Zoning Ordinance Section 21	County Solid Waste Ordinance	N/A

	Rule, Ordinance or Statute Name	Beltrami	Clearwater	Mahnomen	Pennington	Polk	Red Lake	RLWD
	Hazard Management <i>Minnesota Statute, Chapter 12</i>	N/A	Emergency Management, County Sheriff's Office	County Emergency Operations Plan Chapter 32	County Hazard Mitigation Plan	County Emergency Management	County	N/A
	Feedlots <i>MN Rules 7020</i>	N/A	MPCA Administers the CFO Program	MPCA Administers the CFO Program	Feedlot Ordinance (SWCD)	County Zoning Ordinance Section 19	Feedlot Ordinance (SWCD)	N/A
	Buffers <i>MN Statute 103F.48</i>	N/A	County Ordinance	County Buffer Ordinance 2/13/18	Buffer Ordinance (Penn Co. Hwy Dept.)	County Zoning Ordinance Section 25	Buffer Ordinance (SWCD)	Rule
	Aggregate Management	N/A	N/A	N/A	N/A	County Zoning Ordinance Section 13	N/A	N/A
	Construction Erosion Control	N/A	County Shoreline Ordinance	N/A	N/A	N/A	N/A	N/A
	Bluffland Protection	N/A	County Shoreland Ordinance	N/A	N/A	County Shoreland Ordinance	N/A	N/A
	Tile Drainage	N/A	N/A	N/A	N/A	N/A	N/A	Subsurface Tile Drainage District Rule
	Land Use	County Zoning Ordinance	County Zoning Ordinance	County Zoning Ordinance Title XV	North Township	County Zoning Ordinance	County Zoning Ordinance	N/A

	Rule, Ordinance or Statute Name	Beltrami	Clearwater	Mahnomen	Pennington	Polk	Red Lake	RLWD
Local Regulations, Rules, and Ordinances	Public Drainage Systems <i>MN Statute 103E</i>	County is Drainage Authority	RLWD is Drainage Authority	County is Drainage Authority	County is Drainage Authority	County is Drainage Authority	RLWD is Drainage Authority	Surface Drainage and Flood Mitigation District Rule; RLWD is Drainage Authority
	Stormwater Runoff	N/A	County Shoreland Ordinance	N/A	N/A	County Comp. Local Water Plan	N/A	N/A
	Wetland Conservation Act <i>MN Rule 8420</i>	County Environmental Services	County Environmental Services	Delegated to SWCD 1993	N/A	Delegated to SWCD	SWCD	N/A
	County Agriculture Inspector	N/A	County	County	N/A	County	N/A	N/A
	Aquatic Invasive Species	County Prevention and Management Plan	SWCD	SWCD does AIS Outreach for the County	N/A	County	SWCD	N/A
	Agricultural Soil Erosion	N/A	N/A	N/A	N/A	Critical Area Soil Erosion Control Policy (1992)	N/A	N/A

Local Funding Authorities

Purpose: This table provides an overview of Minnesota statutes and laws that provide authorities to local governments to fund water management projects, to be used by local governments while exploring funding options for locally funded water projects. Does not include fees, fines, or wetland banking, grants, etc. This is not a legal document and should not be considered comprehensive, complete, or authoritative.

note: “metro” refers to Anoka, Carver, Dakota, Hennepin, Ramsey, and Washington counties or watershed organizations in the 7-county metro area.

Citation	Applies to	Summary (please see details in the full text of each provision)
§40A.152	Counties (metro)	Money from the county conservation account (see chapter 287) must be spent by the county to reimburse the county and taxing jurisdictions within the county for revenue lost under the conservation tax credit under §273.119 or the valuation of agricultural preserves under §473H.10 . Money remaining in the account after reimbursement may be spent on: 1) agricultural land preservation and conservation planning and implementation of official controls under this chapter or chapter 473H ; 2) soil conservation activities and enforcement of soil loss ordinances; 3) incentives for landowners who create exclusive agricultural use zones; 4) payments to municipalities within the county for the purposes of clauses 1-3.
§103B.241	Watershed districts & watershed management organizations (metro)	May levy a tax to pay for plan preparation costs & projects in the adopted plan necessary to implement the Metropolitan Water Management Program.
§103B.245	Watershed districts & watershed management organizations (metro)	May establish a watershed management tax district within the watershed to pay the costs of: planning required under §§ 103B.231 and 103B.235 , the capital costs of water management facilities described in the capital improvement program of the plans, and normal & routine maintenance of the facilities.
§103B.251	Watershed districts & watershed management organizations (metro), counties	May certify for payment by the county all or any part of the cost of a capital improvement contained in the capital improvement program of plans developed in accordance with §103B.231 . Counties may issue general obligation bonds to pay all or part of the cost of project. The county may pay the principal and interest on the bonds by levying a tax on all property located in the watershed or subwatershed in which the bonds are issued. Loans from counties to watershed districts for the purposes of implementing this section are not subject to the loan limit set forth in §103D.335 .

Citation	Applies to	Summary <i>(please see details in the full text of each provision)</i>
§103B.331 Subdivisions 3 & 4	Counties	(3) May charge users for services provided by the county necessary to implement the local water management plan.
		(4) May establish one or more special taxing districts within the county and issue bonds to finance capital improvements under the Comprehensive Local Water Management Act. After adoption of the resolution, a county may annually levy a tax on all taxable property in the district.
§103B.335	Counties, municipalities, or townships	May levy a tax to implement the Comprehensive Local Water Management Act or a comprehensive watershed management plan (§103B.3363). A county may levy amounts needed to pay the reasonable costs to SWCDs and WDs of administering and implementing priority programs identified in an approved & adopted plan or comprehensive watershed management plan.
§103B.555 Subdivisions 1 & 3	Counties	(1) May establish a Lake Improvement District and impose service charges on the users of lake improvement district services within the district. May levy an ad valorem tax solely on property within the lake improvement district for projects of special benefit to the district; may impose or issue any combination of service charges, special assessments, obligations, and taxes.
		(3) A tax under Subd. 1 may be in addition to amounts levied on all taxable property in the county for the same/similar purposes.
§103C.331 Subdivision 16	County boards on behalf of soil and water conservation districts	May levy an annual tax on all taxable real property in the district for the amount that the board determines is necessary to meet the requirements of the district.
§103D.335	Watershed districts	A watershed district has the power to incur debts, liabilities, and obligations and to provide for assessments and to issue certificates, warrants, and bonds.
§103D.601	Watershed districts	May set up special taxing districts via petition to conduct larger, Capital Improvement Projects (CIP). The costs to the affected parties cannot exceed \$750,000.
§103D.615	Watershed districts	May declare an emergency and order that work be done without a contract. The cost of work undertaken without a contract may be assessed against benefitted properties or raised by an ad valorem tax levy if the cost is not more than 25% of the most recent administrative ad valorem levy and the work is found to be of common benefit to the watershed district.

Citation	Applies to	Summary <i>(please see details in the full text of each provision)</i>
§103D.729	Watershed districts	May establish a water management district or districts in the territory within the watershed to collect revenues and pay the costs of projects initiated under §§ 103B.231 , 103D.601 , 103D.605 , 103D.611 , or 103D.730 . (Guidelines for creating water management districts)
§103D.901	Watershed districts	County auditors assess the amount specified in an assessment statement filed by managers. The county may issue bonds (§103E.635). An assessment may not be levied against a benefited property in excess of the amount of benefits received.
§103D.905 Subdivisions 2,3, 7-9	Watershed districts	Established funds for watershed districts (not a complete list – see full statute language): Organizational expense fund - consisting of an ad valorem tax levy, shall be used for organizational expenses and preparation of the watershed management plan for projects. General fund - consisting of an ad valorem tax levy, shall be used for general administrative expenses and for the construction or implementation and maintenance of projects of common benefit to the watershed district. May levy a tax not to exceed 0.00798 percent of estimated market value to pay the cost attributable to projects initiated by petition. Repair and maintenance funds - established under §103D.631 , Subd. 2. Survey and data acquisition fund - consists of the proceeds of a property tax that can be levied only once every 5 years and may not exceed 0.02418 percent of estimated market value. Project tax levy - a WD may levy a tax: 1. To pay the costs of projects undertaken by the WD which are to be funded, in whole or in part, with the proceeds of grants or construction or implementation loans under the Clean Water Partnership Law; 2. To pay the principal of, or premium or administrative surcharge (if any), and interest on, the bonds and notes issued by the WD pursuant to §103F.725 ; 3. To repay the construction or implementation loans under the Clean Water Partnership Law.
§103E.011 Subdivision 5	Drainage authorities	A drainage authority can accept and use external sources of funds together with assessments from benefited landowners in the watershed of the drainage system for the purposes of flood control, wetland restoration, or water quality improvements.
§103E.015 Subdivision 1a	Drainage authorities	When planning a “drainage project” or petitioned repair, the drainage authority must investigate the potential use of external sources of funding, including early coordination for funding and technical assistance with other applicable local government units.
§103E.601 §103E.635 §103E.641	Drainage authorities	Funding of all costs for constructed “ drainage projects ” are apportioned to benefited properties within the drainage system pro rata on the basis of the benefits determined (§103E.601). After the contract for the construction of a drainage project is awarded, the board of an affected county may issue bonds of the county

Citation	Applies to	Summary <i>(please see details in the full text of each provision)</i>
		in an amount necessary to pay the cost of establishing and constructing the drainage project. (§103E.635). Drainage authorities may issue drainage funding bonds (§103E.641).
§103E.728 §103E.731 §103E.735	Drainage authorities	Costs for drainage system repairs are apportioned pro rata on all benefited properties of record. The drainage authority may charge an additional assessment on property that is in violation of §103E.021 (ditch buffers) or a county soil loss ordinance (§103E.728). If there is not enough money in the drainage system account to make a repair, the board shall assess the costs of the repairs on all property and entities that have been assessed benefits for the drainage system (§103E.731). To create a repair fund for a drainage system to be used only for repairs, the drainage authority may apportion and assess an amount against all property and entities benefited by the drainage system, including property not originally assessed and subsequently found to be benefited according to law. (§103E.735).
Chapter 287	Counties	Counties participating in the agricultural land preservation program impose a fee of \$5 per transaction on the recording or registration of a mortgage or deed that is subject to tax under §§ 287.05 and 287.21 .
Chapter 365A	Towns	Townships may create subordinate service districts with special taxing authority. Requires a petition signed by at least 50 percent of the property owners in the part of the town proposed for the subordinate service district.
§373.475	Counties	A county board must deposit the money received from the sale of land under Laws 1998, chapter 389, article 16, section 31, subd. 3, into an environmental trust fund. The county board may spend interest earned on the principal only for purposes related to the improvement of natural resources.
Chapter 429	Municipalities	May levy special assessments against properties benefitting from special services (including curbs, gutters and storm sewer, sanitary sewers, holding ponds, and treatment plants).
§444.075	Municipalities	May collect stormwater utility fees to build, repair, operate & maintain stormwater management systems.
§462.358 Subdivision 2b(c)	Municipalities	May accept a cash fee for lots created in a subdivision or redevelopment that will be served by municipal sanitary sewer and water service or community septic and private wells. May charge dedication fees for the acquisition and development or improvement of wetlands and open space based on an approved parks and open space plan.
M. L. 1998, Chapter 389 Article 3, Section 29	Red River Watershed Management Board	Watershed Districts that are members of the Red River Watershed Management Board may levy an ad valorem tax not to exceed 0.04836 percent of the taxable market value of all property within their district. This levy is in excess of levies authorized by §103D.905.

Appendix I. Memorandum of Agreement

MEMORANDUM OF AGREEMENT

This agreement (Agreement) is made and entered into by and between:

The Counties of Clearwater, Pennington, Polk, and Red Lake by and through their respective County Board of Commissioners,

The Clearwater, East Polk, Pennington, and Red Lake County Soil and Water Conservation Districts, by and through their respective Soil and Water Conservation District Board of Supervisors, and the Red Lake Watershed District, by and through their respective Board of Managers;

Collectively referred to as the “parties.”

WHEREAS, the Counties of this Agreement are political subdivisions of the State of Minnesota, with authority to carry out environmental programs and land use controls, pursuant to Minnesota Statutes Chapter 375 and as otherwise provided by law; and

WHEREAS, the Soil and Water Conservation Districts (SWCDs) of this Agreement are political subdivisions of the State of Minnesota, with statutory authority to carry out erosion control and other soil and water conservation programs, pursuant to Minnesota Statutes Chapter 103C and as otherwise provided by law; and

WHEREAS, the Watershed Districts of this Agreement are political subdivisions of the State of Minnesota, with statutory authority to carry out conservation of the natural resources of the state by land use controls, flood control, and other conservation projects for the protection of the public health and welfare and the provident use of the natural resources, pursuant to Minnesota Statutes Chapters 103B, 103D, 103E, and as otherwise provided by law; and

WHEREAS, the parties to this Agreement have a common interest and statutory authority to prepare, adopt, and assure implementation of a comprehensive watershed management plan *in the Clearwater River Watershed* to conserve soil and water resources through the implementation of practices, programs, and regulatory controls that effectively control or prevent erosion, sedimentation, siltation and related pollution in order to preserve natural resources, ensure continued soil productivity, protect water quality, reduce damages caused by floods, preserve wildlife, protect the tax base, and protect public lands and waters; and

WHEREAS, with matters that relate to coordination of water management authorities pursuant to Minnesota Statutes Chapters 103B, 103C, and 103D with public drainage systems pursuant to Minnesota Statutes Chapter 103E, this Agreement does not change the rights or obligations of the public drainage system authorities.

WHEREAS, pursuant to Minnesota Statutes Section 103B.101 Subd. 14, the Board of Water and Soil Resources (BWSR) “may adopt resolutions, policies, or orders that allow a comprehensive plan, local water management plan, or watershed management plan, developed or amended, approved and adopted, according to chapter 103B, 103C, or 103D to serve as substitutes for one another or be replaced with a comprehensive watershed management plan,” also known as the “One Watershed, One Plan”; and

WHEREAS, the Parties have formed this Agreement for the specific goal of developing a plan pursuant to Minnesota Statutes § 103B.801, Comprehensive Watershed Management Planning, also known as *One Watershed, One Plan*.

Approved _____, 2020

NOW, THEREFORE, the Parties hereto agree as follows:

1. **Purpose:** The Parties to this Agreement recognize the importance of partnerships to plan and implement protection and restoration efforts for the Clearwater River Watershed (Attachment A). The purpose of this Agreement is to collectively develop and adopt, as local government units, a coordinated watershed management plan for implementation per the provisions of the Plan. Parties signing this agreement will be collectively referred to as Clearwater River Planning Partnership

This Agreement does not establish a joint powers entity but set outs the terms and provisions by which the parties "may jointly or cooperatively exercise any power common to the contracting parties or any similar powers, including those which are the same except for the territorial limits within which they may be exercised." Minnesota Statutes Section 471.59. As is permitted under the joint exercise of powers statute, Minnesota Statutes Section 471.59, the parties agree that under this Agreement, and as agreed upon and directed by the Policy Committee, one or more of the parties may exercise any power common to them on behalf of the other participating units, such as they have done under the Memorandum of Agreement where **Clearwater SWCD** is the fiscal agent and provides the day-to-day administrative duties of the Clearwater River Planning Partnership.

2. **Term:** This Agreement is effective upon signature of all Parties in consideration of the Board of Water and Soil Resources (BWSR) Operating Procedures for One Watershed, One Plan; and will remain in effect until adoption of the plan by all parties, unless canceled according to the provisions of this Agreement or earlier terminated by law.
3. **Adding Additional Parties:** A qualifying party within the Clearwater River Watershed that is responsible for water planning and resource management according to Minnesota State Statutes desiring to become a member of this Agreement shall indicate its intent by adoption of a board resolution by the time of the first Policy Committee meeting that includes a request to the Policy Committee to join the Clearwater River Planning Partnership, a representative appointed to the Policy Committee, and a statement that the party agrees to abide by the terms and conditions of the Agreement; including but not limited to the bylaws, policies and procedures adopted by the Policy Committee.
4. **Withdrawal of Parties:** A party desiring to leave the membership of this Agreement shall indicate its intent in writing to the Policy Committee in the form of an official board resolution. Notice must be made at least 180 days in advance of leaving the Agreement. A party that leaves the membership of the Agreement remains obligated to complying with the terms of any grants the Clearwater River Planning Partnership has at the time of the party's notice to leave membership and is obligated until the grant has ended.

5. **General Provisions:**

- a. **Compliance with Laws/Standards:** The Parties agree to abide by all federal, state, and local laws; statutes, ordinances, rules and regulations now in effect or hereafter adopted pertaining to this Agreement or to the facilities, programs, and staff for which the Agreement is responsible.
- b. **Indemnification:** Each party to this Agreement shall be liable for the acts of its officers, employees or agents and the results thereof to the extent authorized or limited by law and shall not be responsible for the acts of any other party, its officers, employees or agents. The provisions of the Municipal Tort Claims Act, Minnesota Statute Chapter 466 and other applicable laws govern liability of the Parties. To the full extent permitted by law, actions by the Parties, their respective officers, employees, and agents pursuant to this Agreement are intended to be and shall be construed as a “cooperative activity.” It is the intent of the Parties that they shall be deemed a “single governmental unit” for the purpose of liability, as set forth in Minnesota Statutes § 471.59, subd. 1a(a). For purposes of Minnesota Statutes § 471.59, subd. 1a(a) it is the intent of each party that this Agreement does not create any liability or exposure of one party for the acts or omissions of any other party.
- c. **Employee Status:** The parties agree that the respective employees or agents of each party shall remain the employees or agents of each individual respective party.
- d. **Records Retention and Data Practices:** The Parties agree that records created pursuant to the terms of this Agreement will be retained in a manner that meets their respective entity’s records retention schedules that have been reviewed and approved by the State in accordance with Minnesota Statutes § 138.17. The Parties further agree that records prepared or maintained in furtherance of the agreement shall be subject to the Minnesota Government Data Practices Act (Minnesota Statutes Chapter 13) and the Official Records Act (Minnesota Statutes Section 15.17). At the time this agreement expires, all records will be turned over to the *participating LGU’s* for continued retention.
- e. **Timeliness:** The Parties agree to perform obligations under this Agreement in a timely manner and keep each other informed about any delays that may occur.
- f. **Extension:** The Parties may extend the termination date of this Agreement upon agreement by all Parties.
- g. **Termination:** The Parties anticipate that this Agreement will remain in full force and effect through the term of the grant agreement with BWSR and until cancelled by all parties. The parties acknowledge their respective and applicable obligations, if any, under Minnesota Statutes Section 471.59, Subd. 5 after the purpose of the Agreement has been completed.

6. Administration:

- h. **Establishment of Committees for Development of the Plan.** The Parties agree to designate one representative, who must be an elected or appointed member of the governing board, to a Policy Committee for development of the watershed-based plan and may appoint one or more technical representatives to an Advisory Committee for development of the plan in consideration of the BWSR Operating Procedures for One Watershed, One Plan.
- i. The parties agree that the Policy Committee established under the Memorandum of Agreement for the purpose of developing the Clearwater River Watershed Comprehensive Water Management Plan shall continue to operate cooperatively, but not as a single entity, for the purpose of implementation of the Clearwater River Watershed Comprehensive Water Management Plan. The Policy Committee will meet quarterly or as needed to decide on the content of the plan. Each Policy Committee member will serve as a liaison to their respective governing boards, act on behalf of their respective boards, and have the responsibility to inform their governing board on actions taken by the Policy Committee. Each representative shall have one vote and shall have the authority to act on behalf of the party they represent in the following matters: grant applications for grants the Policy Committee has voted to apply for/request on behalf of the Clearwater River Planning Group; report review and approval, payments under Clearwater River Planning Group grant(s).
 - ii. Each governing board may choose an alternate to serve on the Policy Committee as needed in the absence of the designated member.
 - iii. The Policy Committee will establish bylaws within 90 days of the execution of this document to describe the functions and operations of the committee(s).
 - iv. The Advisory Committee will meet quarterly or as needed to assist and provide technical support and make recommendations to the Policy Committee on the development and content of the plan. Members of the Advisory Committee may not be a current board member of any of the Parties without unanimous approval by Policy Committee.
 - v. **The Planning Workgroup.** The parties agree that the Planning Workgroup shall continue and shall consist of the One Watershed One Plan Coordinator, local water planners, and the WD Administrator for the purposes of logistical and day-to-day decision-making. The Planning Workgroup will meet quarterly or as needed.
- i. **Submittal of the Plan.** The Policy Committee will recommend the plan to the Parties of this agreement. The Policy Committee will be responsible for initiating a formal review process for the watershed-based plan conforming to Minnesota Statutes Chapters 103B and 103D, including public hearings. Upon completion of local review and comment, and approval of the plan for

submittal by each party, the Policy Committee will submit the watershed-based plan jointly to BWSR for review and approval.

- j. **Adoption of the Plan.** The Parties agree to adopt and begin implementation of the plan within 120 days of receiving notice of state approval, and provide notice of plan adoption pursuant to Minnesota Statutes Chapters 103B and 103D.

6. **Fiscal Agent:** The Policy Committee shall appoint annually one of the parties to the Agreement to be the Fiscal Agent for the Clearwater River One Watershed One Plan. The Fiscal Agent agrees to:

- a. Accept all responsibilities associated with the implementation of the BWSR grant agreement for developing a watershed-based plan.
- b. Perform financial transactions as part of grant agreement and contract implementation.
- c. Pursuant to Minnesota Statutes Section 471.59, Subd. 3, provide for strict accountability of all funds and report of all receipts and disbursements and annually provide a full and complete audit report. Provide the Policy Committee with the records necessary to describe the financial condition of the BWSR grant agreement.
- d. Retain fiscal records consistent with the agent's records retention schedule until termination of the agreement (at that time, records will be turned over to the One Watershed One Plan Coordinator).

7. **Grant Administration:** The Policy Committee shall appoint annually a "Grant Administrator" to handle the administrative work of the Clearwater River One Watershed One Plan. "In the circumstance that the Grant Administrator position is vacated, the Policy Committee shall appoint one of the parties to the Agreement to fill this role until the position is re-filled." The party that is the Grant Administrator handling the administration agrees to provide the following to the Clearwater River Planning Group for the purposes of this Agreement:

- a. Accept all day-to-day responsibilities associated with the implementation of the BWSR grant agreement for developing a watershed-based plan, including being the primary BWSR contact for the *One Watershed, One Plan* Grant Agreement and being responsible for BWSR reporting requirements associated with the grant agreement.
- b. Provide the Policy Committee with the records necessary to describe the planning condition of the BWSR grant agreement.
- c. Assist the Policy Committee and the Planning Workgroup with the administrative details to oversee implementation of the watershed-based plan.
- d. Maintain the Clearwater River One Watershed One Plan webpage
- e. Perform other duties to keep the Policy Committee, the Advisory Committee, and the Planning Workgroup informed about the implementation of the watershed-based plan.

8.

Authorized Representatives: The following persons will be the primary contacts for all matters concerning this Agreement:

Clearwater County

Mark Larson

213 Main Ave N.

Bagley, MN 56621

Telephone: 218 684-6520

Clearwater SWCD

Chester Powell

312 Main Ave N. Suite 3

Bagley, MN 56621

Telephone: 218 694-6845 ext 4

Pennington County

Neil Peterson

101 Main Ave. N.

Thief River Falls, MN 56701

Telephone: 218 683-7000

Pennington SWCD

Peter Nelson

201 Sherwood Ave. S.

Thief River Falls, MN, 56701

Telephone: 218 683-7075

Polk County

Chuck Whiting

County Administrator

612 N Broadway Room 211

Crookston, MN 56716

Telephone: 218 281-5408

East Polk SWCD

Rachel Klein

District Manager

240 Cleveland Ave, P.O. box 57

McIntosh, MN 56556

Telephone: 218 563-2778

Red Lake County

Robert Schmitz

County Auditor

124 Langevin Ave. P.O. Box 367

Red Lake Falls, MN 56750

Telephone: 218 253-2598

Red Lake County SWCD

Tanya Waldo

District Manager

2606 Wheat Dr. Suite 103

Red Lake Falls, MN 56750

Telephone: 218 253-2593

Red Lake Watershed District

Tom Anderson

1000 Pennington Avenue S

Thief River Falls, MN 56701

Telephone: 218 681-5800

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.
(Repeat this page for each participant)

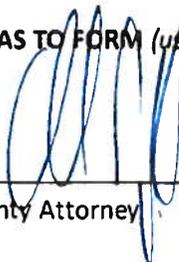
PARTNER: Clearwater County

APPROVED:

BY:  5/19/2020
Board Chair Date

BY:  6/14/2020
District Manager/Administrator Date

APPROVED AS TO FORM *(use if necessary)*

BY:  6-29-20
County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.

PARTNER: Clearwater SWCD

APPROVED:

BY: Farlan Strandlin
Board Chair Date

BY: Lon Buell 8/18/2020
District Manager/Administrator Date

APPROVED AS TO FORM *(use if necessary)*

BY: _____
County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.
(Repeat this page for each participant)

PARTNER: Pennington County

APPROVED:

BY:  4/14/2020
Board Chair Date

BY:  4/14/2020
County Auditor Date

APPROVED AS TO FORM *(use if necessary)*

BY:  4/14/20
County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.
(Repeat this page for each participant)

PARTNER: Pennington SWCD

APPROVED:

BY: Brenda S. Dymal 4/20/20
Board Chair Date

BY: Bryan E. Malone 4/21/20
District Manager Date

APPROVED AS TO FORM *(use if necessary)*

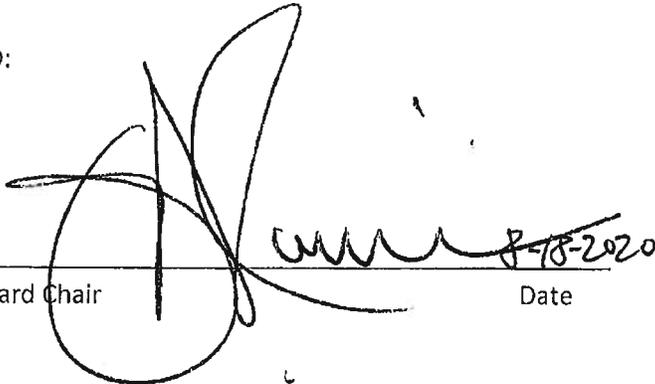
BY: [Signature] 5/4/20
County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.

PARTNER: Polk County

APPROVED:

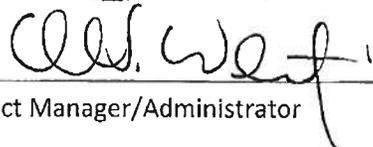
BY:



Board Chair

Date

BY:



District Manager/Administrator

Date

APPROVED AS TO FORM *(use if necessary)*

BY:

County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.

PARTNER: Red Lake County

APPROVED:

BY: [Signature] 4-14-20
Board Chair Date

BY: Tanya Waldo 4-14-20
District Manager/Administrator Date

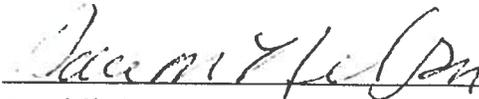
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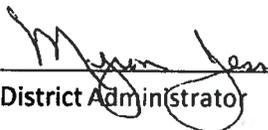
BY: Michael J. Courville 5/28/2020
County Attorney Date

IN TESTIMONY WHEREOF the Parties have duly executed this agreement by their duly authorized officers.

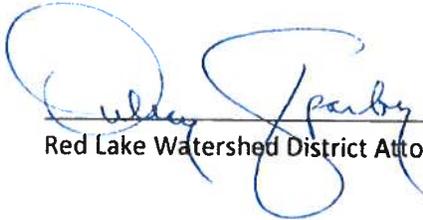
PARTNER: Red Lake Watershed District

APPROVED:

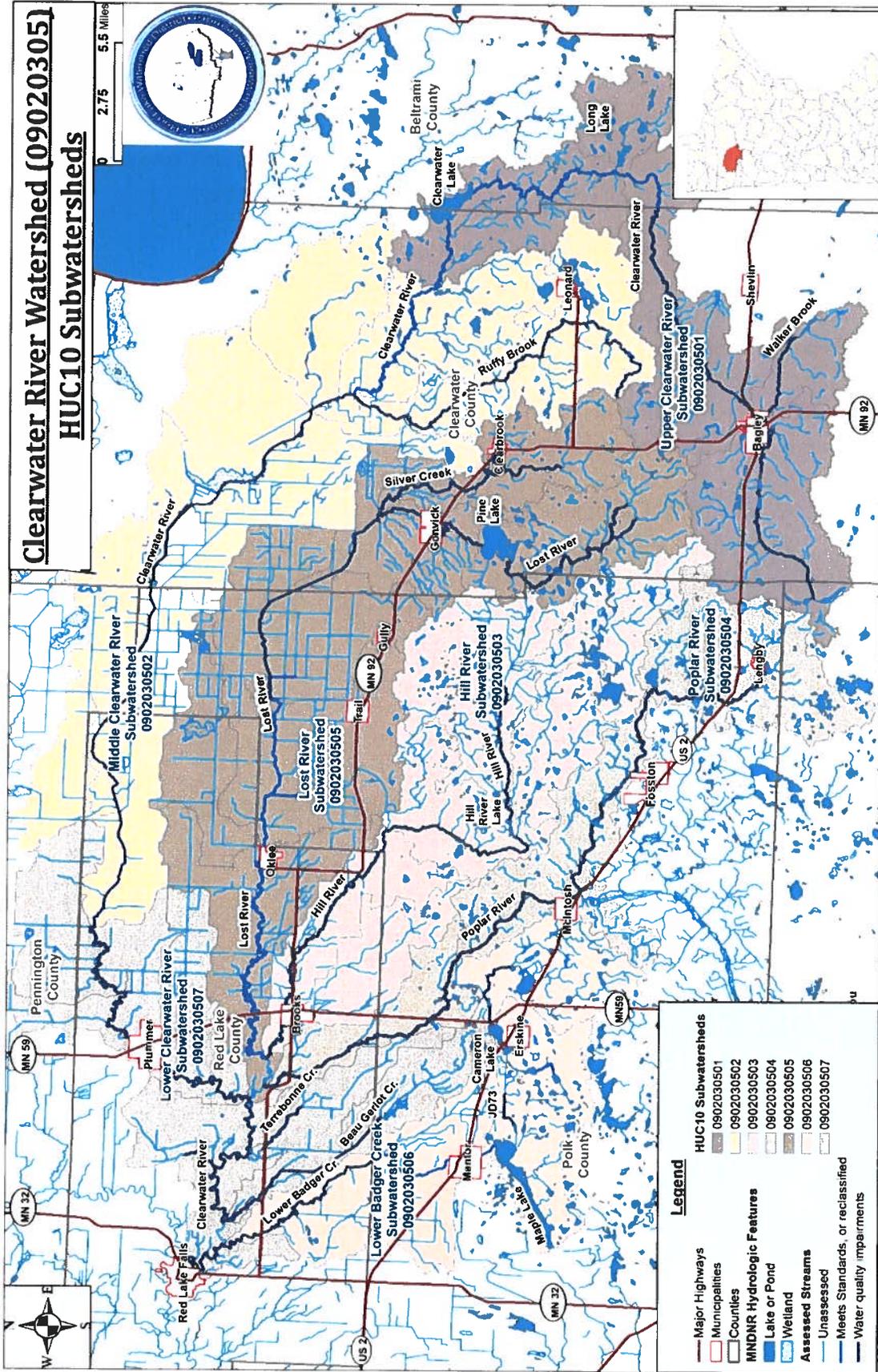
BY:  6-5-20
Board Chair Date

BY:  5-28-20
District Administrator Date

APPROVED AS TO FORM *(use if necessary)*

BY:  6-5-20
Red Lake Watershed District Attorney Date

Attachment A



Attachment B

Scope of Services Provided by the

Fiscal Agent

The Clearwater SWCD will have the following duties (*the following are examples and should be modified to meet local need, including additional attachments if services are split between multiple parties*):

1. Coordination of Policy Committee meetings, including:
 - a. Provide advance notice of meetings;
 - b. Prepare and distribute the Agenda and related materials;
 - c. Prepare and distribute Policy Committee Minutes;
 - d. Maintain all records and documentation of the Policy Committee;
 - e. Provide public notices to the counties and watershed district for publication; and
 - f. Gather public comments from public hearing and prepare for submittal.

2. Coordination of Advisory Committee meetings, including the technical and citizen subcommittees, including:
 - a. Provide advance notice of meetings;
 - b. Prepare and Distribute the Agenda and related materials;
 - c. Prepare and Distribute Minutes; and
 - d. Maintain all records and documentation of the committees.

3. Administration of the grant with BWSR for the purposes of developing a watershed-based plan, including:
 - a. Submit this Agreement, work plan, and other documents as required;
 - b. Execute the grant agreement;
 - c. Account for grant funds and prompt payment of bills incurred;
 - d. Complete annual eLINK reporting;
 - e. Present an annual audit of grant funds and their usage; and
 - f. Maintain all financial records and accounting.

4. Contracting for services with the chosen consultant for plan preparation and writing of the watershed-based plan, including:
 - a. Execute the Contract for Services agreement;
 - b. Oversee expenditures incurred by the consultant;
 - c. Provide prompt payment for services rendered; and
 - d. Serve as primary contact person with the consultant.

APPENDIX J. GLOSSARY OF TERMS

Impairment: Waterbodies are listed as impaired if they do not meet the state water quality standard for designated uses including aquatic life, aquatic recreation, and aquatic consumption.

Index of Biological Integrity (IBI): A way of measuring the biological community (fish and aquatic macroinvertebrates) in the water body. The index is a scale of 0 to 100 with 0 being the lowest quality and 100 being the highest quality.

Judicial Ditch: A ditch that crosses county lines.

Highest Quality: A stream or lake that is well above the impairment standard.

Implementation Scenario: An estimated way to implement the plan that shows both placement of best management practices and costs. It can be used to determine how to achieve plan goals.

Nearly Impaired: A stream that is very close to the impairment threshold.

Nearly Restored: A stream that is impaired but relatively close to the impairment threshold or "barely impaired".

Phosphorus Sensitivity: The lake's sensitivity to phosphorus as determined by the DNR. Sensitivity means that added phosphorus would affect the clarity in these lakes the most (Radomski 2018).

PTMApp: The Prioritize, Target, Measure Application is a tool that enables practitioners to build prioritized and targeted implementation scenarios, measure the cost-effectiveness of the scenario for improving water quality, and report the results to pursue funds for project implementation.

Protect: Used to describe the management strategy of a water body that is above average water quality or nearly impaired.

Restore: Used to describe the management strategy of a water body that is impaired.

TMDL (Total Maximum Daily Load): The amount of a particular pollutant that a body of water can handle without violating state water quality standards.

Watershed: A land area that channels rainfall and snowmelt to creeks, streams, and rivers, and eventually to outflow points such as reservoirs, bays, and the ocean.

WRAPS: (Watershed Restoration and Protection Strategy): A watershed approach to restoring and protecting Minnesota's rivers, lakes, and wetlands implemented by the Minnesota Pollution Control Agency on a 10-year cycle (<https://www.pca.state.mn.us/water/watershed-approach-restoring-and-protecting-water-quality>).

APPENDIX K. REFERENCES

- American Rivers. (2017). *Hydrologic Alteration and the Clean Water Act*. Retrieved from <https://s3.amazonaws.com/american-rivers-website/wp-content/uploads/2017/08/18152547/HA-Fact-Sheet-08-18-17.pdf>
- Bjorhus, J. (2021, April 29). Federal regulator steps in to protect Minnesota's wild rice stands. *Star Tribune*.
- BWSR. (2019). *Climate Change Trends and Action Plan*. St. Paul, MN: Minnesota Board of Water and Soil Resources.
- Clearwater County. (2010). 2010-2020 Clearwater County Comprehensive Local Water Management Plan.
- EPA. (2020). *Contaminants of Emerging Concern including Pharmaceuticals and Personal Care Products*. Retrieved from <https://www.epa.gov/wqc/contaminants-emerging-concern-including-pharmaceuticals-and-personal-care-products>
- Groshens, T. P. (2005). *Red River Basin Stream Survey Report: Red Lake River Watershed 2004*. MN DNR.
- Magner, J. A. (2010). *Minnesota Agricultural Ditch Reach Assessment for Stability (MADRAS)*. Retrieved from Minnesota River Basin Data Center: https://mrbdc.mnsu.edu/sites/mrbdc.mnsu.edu/files/public/event/warsss_121108/14_MADRAS.pdf
- MDH. (2019). Drinking Water Supply Management Areas. Retrieved from <https://gisdata.mn.gov/dataset/water-drinking-water-supply>
- Minnesota Department of Administration. (n.d.). *Prehistoric Period: an Overview of Prehistoric Archaeology in Minnesota (12,500 BC - AD 1650)*. Retrieved from MN Archaeology: <https://mn.gov/admin/archaeologist/educators/mn-archaeology/prehistoric-period/>
- Minnesota Geospatial Commons. (2020). *Lakes of Biological Significance*. Retrieved from Natural Resources Department: <https://gisdata.mn.gov/dataset/env-lakes-of-biological-signific>
- Minnesota Historical Society. (2001). *Wild Ricing*. Retrieved from TimePieces: https://web.archive.org/web/20041228200045fw_/http://events.mnhs.org/Timepieces/EventDetail.cfm?EventID=534
- MN DNR. (2015). *Lakes of Biological Significance*. Retrieved from https://www.lcc.mn.gov/lwc/Meetings/150622/Lakes_of_Biological_Significance.pdf
- MN DNR. (2017). *Watershed Context Report; Clearwater River*. Watershed Health Assessment Framework.

- MN DNR. (2018). *Calcareous Fens: Amazing, Rare, Irreplaceable*. Retrieved from https://files.dnr.state.mn.us/natural_resources/water/wetlands/calcareous_fen_fact_sheet.pdf
- MN DNR. (2018). *Minnesota Prairie Conservation Plan*. Retrieved from: https://files.dnr.state.mn.us/eco/mcbs/mn_prairie_conservation_plan.pdf
- MN DNR. (2019a). *Climate Summary for Watersheds: Clearwater River*. Watershed Health Assessment Framework.
- MN DNR. (2019b). *Minnesota's Climate is Already Changing*. Retrieved from https://files.dnr.state.mn.us/natural_resources/climate/change/climatechange-factsheet.pdf
- MN DNR. (2021a). *Minnesota Climate Trends Tool*. Retrieved from <https://arcgis.dnr.state.mn.us/ewr/climatetrends/#>
- MN DNR. (2021b). *Shoreland Management Lake, River, and Stream Classifications*. Retrieved from Ecological and Water Resources: https://www.dnr.state.mn.us/waters/watermgmt_section/shoreland/lake_shoreland_classifications.html
- MN DNR. (n.d.). *About Geomorphology*. Retrieved from MN DNR: <https://www.dnr.state.mn.us/whaf/about/5-component/geomorphology-about.html>
- MN DNR. (n.d.). Watershed Health Assessment Framework. Retrieved from <https://www.dnr.state.mn.us/whaf/index.html>
- MN DNR. (n.d.). *Why are native plant communities important?* Retrieved from Native Plant Communities: https://www.dnr.state.mn.us/npc/whyimportant.html?utm_medium=email&utm_source=govdelivery
- MNDOT. (2019). Historical Vegetation Model. Retrieved from <http://www.dot.state.mn.us/mnmodel/phase4/vegmod-metadata.pdf>
- MPCA. (2020). *Summary of the Statewide Chloride Management Plan*. Retrieved from <https://www.pca.state.mn.us/sites/default/files/wq-s1-94a.pdf>
- MPCA. (2021a). *Clearwater River Watershed Restoration and Protection Strategy Report*. Red Lake Watershed District.
- MPCA. (2021b). *PFAS 101*. Retrieved from <https://www.pca.state.mn.us/waste/pfas-101>
- MPCA. (2021c). *Protecting communities and families from PFAS contamination*. Retrieved from <https://www.pca.state.mn.us/about-mpca/protecting-communities-and-families-pfas-contamination>

- MPCA. (n.d.). *Clearwater River Gets Cleaner*. Retrieved from <https://www.pca.state.mn.us/water/clearwater-river-gets-cleaner>
- Red Lake County Historical Society. (1976). *A History of Red Lake County, Minnesota: Logging on the Clearwater and Red Lake Rivers*. Retrieved from <http://www.redlakecountyhistory.org/logging.htm>
- Red Lake County Historical Society. (n.d.). *History Tour of Red Lake County Minnesota*. Retrieved from History of Red Lake County, Minnesota: <http://www.redlakecountyhistory.org/tour/tour.htm>
- Red Lake Nation*. (2019). Retrieved from Tribal History & Historical Photos: <https://www.redlakenation.org/tribal-history-historical-photos/>
- Ritter, J. (2018). *Soil Erosion - Causes and Effects*. Retrieved from Ontario Ministry of Agriculture, Food and Rural Affairs: <http://www.omafra.gov.on.ca/english/engineer/facts/12-053.htm>
- RLWD. (2006). *10-Year Comprehensive Plan*. HDR, Inc. Engineering.
- Roundy, D. (2020). *Granite Seed and Erosion Control*. Retrieved from How to Stop a Ditch From Eroding: <https://graniteseed.com/blog/how-to-stop-a-ditch-from-eroding/>
- Russell, M., 2020. Forest Carbon Fact Sheet for Minnesota. Analysis for Forest Resources Association. https://forestresources.org/pdf/Data_and_methods_for_forest_carbon_fact_sheets.pdf Accessed August 2021.
- Senay, G. B. and Kagone, S., 2019, Daily SSEBop Evapotranspiration: U. S. Geological Survey Data Release, <https://doi.org/10.5066/P9L2YMV>
- USDA-NRCS. (2021). *Soil Health*. Retrieved from <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>
- USFWS. (2021). *Information for Planning and Consultation*. Retrieved from <https://ecos.fws.gov/ipac/location/DIDOC4EPXJE4PEWR5K4KLAZEYU/resources>
- USGS. (2016). National Land Cover Database.
- Wisconsin DNR. (n.d.). *Calcareous Fen*. Retrieved from <https://dnr.wi.gov/topic/endangeredresources/communities.asp?mode=detail&Code=CPHER064WI>
- World Landforms. (2015). *Beach Ridge Landforms*. Retrieved from <http://worldlandforms.com/landforms/beach-ridge/>