SECTION 5. TARGETED IMPLEMENTATION

Introduction

A targeted implementation plan consists of implementation actions and an implementation schedule for each planning region, watershed-wide activities, education and outreach, data collection and monitoring, and capital improvement projects. The implementation plan includes individual actions designed to meet the established goals. Many actions have indirect benefits to plan goals which are most evident in the education and outreach section and the data gaps and research section. The priority for Watershed Based Implementation Funding (WBIF) is project and practice implementation actions and capital improvement actions that provide water quality benefits.

Implementation plans also include prioritized areas, anticipated timeline, lead entity, and estimate of the costs. The numbers, cost, and location of practices in the targeted implementation schedule represent a best-case scenario for planning.

A variety of factors will ultimately determine where implementation occurs, including but not limited to the following:

- Voluntary participation
- Site investigation of practice type and location
- Available funding
- New data on resource conditions
- Emerging practices
- Practices/projects ready to implement
- Effectiveness of education and outreach and research initiatives

Other implementation actions will be pursued if conservation and economic benefits are comparable to those identified in the targeted implementation schedule. Implemented practices need to meet standards, be properly designed, and signed off by the proper authority.

Restoration

Restoration actions are targeted at impaired streams, including both the Nearly Restored/Barely Impaired Category and Restoration Category (**Appendix B**). PTMApp is a Geographic Information Systems (GIS) tool that was used to provide prioritize locations for restoration actions on agricultural lands. PTMApp helps to target actions on the landscape that directly address the plan goals primarily sediment and nutrient reduction.

This plan leverages PTMApp data to identify where many new practices are feasible, and of these practices how much each will cost, the estimated water quality benefit, and how much progress implementation of that action can make toward plan goals. PTMApp estimates existing pollutant loads and water quality benefits for a wide range of practices. Practices for this plan that are identified by PTMApp align with voluntary local implementation trends, have the highest cost benefit ratios, and best sediment reduction as measured at the edge of the field. For more information about how PTMApp was used to inform implementation see **Appendix B.**

Protection

Protection actions are targeted at unimpaired streams and high-quality habitat areas. The Nearly Impaired waters are a high priority for protection projects that will improve water quality conditions so that the waters do not become impaired in the future. The same projects and practices used to restore water quality in impaired waters can also be used to improve water quality in unimpaired (nearly impaired or highest quality**)** identified in **Appendix B.** Protecting private forests and conservation easement programs such as CREP or Reinvest in Minnesota (RIM) will benefit adjacent waters, whether they are impaired, in need of restoration, or unimpaired and in need of protection.

Water Quality Statistics

Water quality statistics are one method used to prioritized implementation efforts. The RLWD water quality assessment from 2022 was utilized to prioritize the planning regions as High, Medium, Low, and Not Applicable in Section 3. This robust dataset of surface water monitoring data and assessments guides implementation efforts by identifying the water quality issue and location. The most recent water quality assessment was completed in 2014 by the MPCA.

In 2022, RLWD staff completed a statistical assessment of 2012-2021 water quality data that was available in the state's EQuIS database and had been collected in the years 2012-2021. Compared to the assessment completed during development of the WRAPS, the rate of TSS standard exceedances had decreased in some reaches. Figure 5.1 shows the results of the 2022 assessment for TSS. The assessment identified potential new impairments of reaches that either met standards or were not assessed in 2014 and now fail to meet a water quality standard (Nearly Impaired +). Three potential new TSS impairments were identified along Chief's Coulee, Black River, and Grand Marais Creek. The final assessment decision on those waters will depend on water quality sampling results from 2022 through 2024, any changes to river nutrient region assignments, stream classifications, Professional Judgement Group discussion, and public comments.

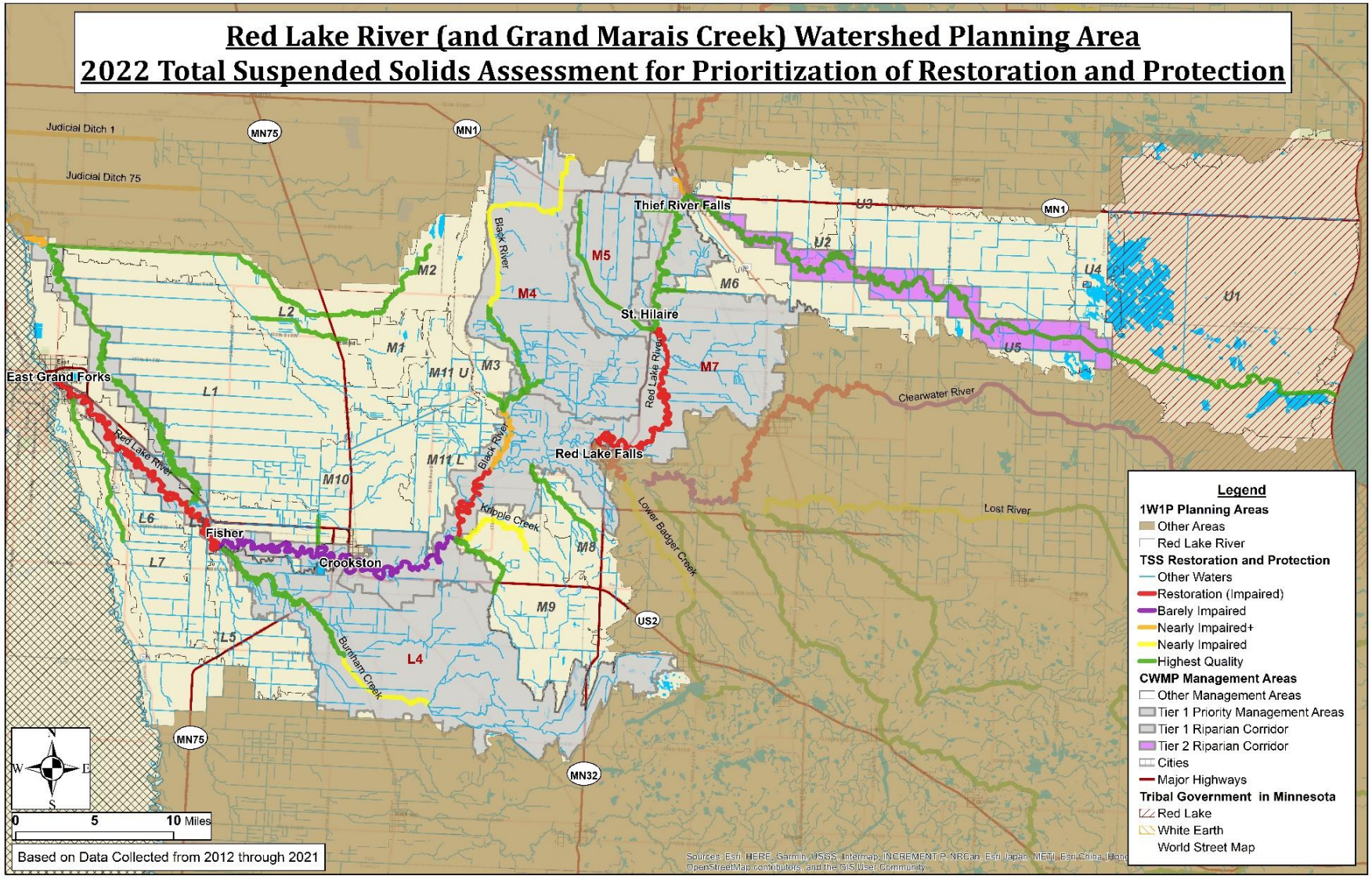

Figure 5.1 Total Suspended Solids Assessment results from 2022

Priority Planning Regions

As introduced in Section 3, the Partnership identified four planning regions for purposes of this plan: Upper, Middle, Lower, and Grand Marais Creek (Figure 5.1). The planning regions closely follow the Planning Zones from the pilot CWMP with the Grand Marais Creek now a separate planning region. Issue statements identified in Section 3 were prioritized at the planning region level. High priority issues statements are listed before each of the four planning region implementation tables later in this section. Table 3.2 in Section 3 identifies remaining priority issues and ranks the planning region for implementation as high, medium, low, or not applicable, respectively.

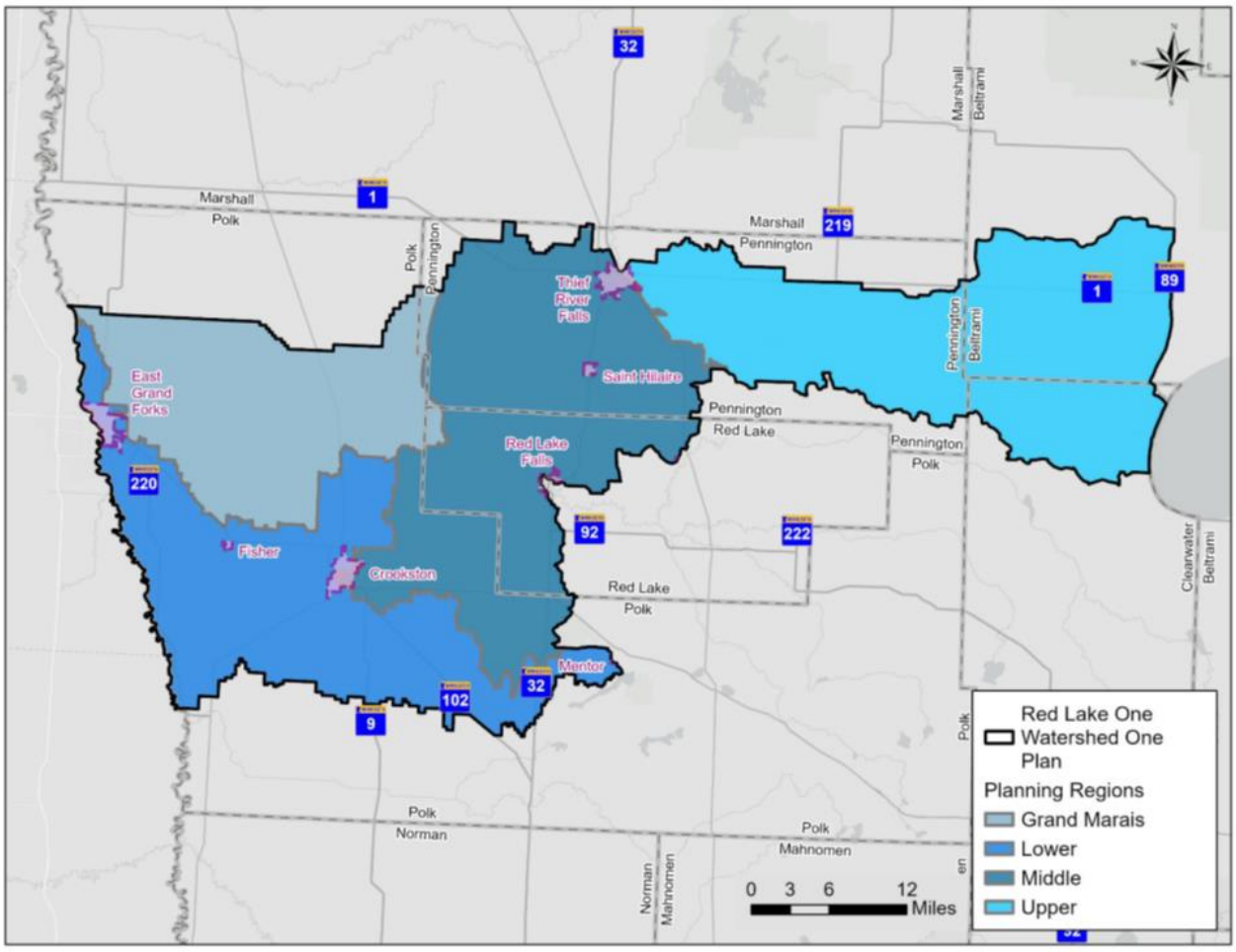

Figure 5.1 RLR Watershed Planning Regions

Priority Areas by Goals

To further prioritize implementation, Section 4 includes focus areas for each plan goal. For example, focus areas for the Groundwater Goal are Beach Ridge and DWSMAs, and Figure 4.5 which identifies Groundwater Sensitivity and Drinking Water Supply Area

Vulnerability map. The following information is used to prioritize implementation by plan goal:

- **Upland Erosion and Nutrients**: Subwatershed prioritization based on sediment loading in Figure 4.2 (source PTMApp), sediment impaired streams, source water assessment areas, and streams nearly or barely impaired for sediment (Appendix B).
- **Soil Health**: Subwatershed prioritization for soil health practices in Figure 4.3 (source PTMApp).
- **Flooding:** Red River Basin Flood Damage Reduction Framework Technical Paper No. 11 (Anderson, C., Kean, Al. 2004) Storage projects are prioritized for middle and early timing regions in Figure 4.4.
- **Groundwater**: Beach Ridge areas, DWSMAs, Groundwater Sensitivity and Drinking Water Supply Area Vulnerability with focus on high priority areas shown in Figure 4.5.
- **Bacteria**: Streams impaired for recreational use due to elevated levels of bacteria and high groundwater sensitivity areas shown in Figure 4.6.
- **Stormwater**: The Thief River Falls Water Quality Study prioritizes stormwater BMPs and will be utilized to prioritize project implementation. Stormwater Assessments is an action identified in Data Gaps and Research in Table 5.8 and projects in East Grand Forks, Fisher, Crookston, Red Lake Falls, and Saint Hilaire will be considered on a case-by-case basis.
- **Streambank Stabilization and Ditch Outlet Stabilization**: The Middle Planning Region is high priority. Specific projects are identified in the Implementation Schedules. Bank Erosion Hazard Index (BEHI) ratings will be utilized for the implementation of projects. The Partnership is currently working with HEI to compare LiDAR data sets to identify priority areas to assist with this goal. Appendix B includes additional information on the LiDAR comparison project.
- **Riparian Management**: The riparian corridor of the Red Lake River has been delineated and generally extends from the top of the bank to the nearest parallel road. The Planning Workgroup will utilize the riparian corridor map to prioritize implementation for Riparian Management.
- **Drainage Management**: Ditch outlets in the Middle and Lower Planning Regions will be further prioritized with the future LiDAR analysis. The Pennington SWCD partnered with Northland Community and Technical College to identify priority ditch outlets for stabilization projects. This project was completed in 2021, and the *Drainage System Outlet Analysis Report* will be used to assist with prioritization.
- **Land Protection**: Minnesota Prairie Conservation Plan, Restorable Wetlands, and Riparian Corridor area, Figure 4.11.

Projects and Practices: Upper Planning Region

Table 5.2. Projects and Practices Actions for the **Upper Planning Region.** The Upper Planning Region begins at Lower Red Lake and ends at the confluence of the Thief River in Thief River Falls. High Priority Issues in the Upper Planning Region include Source Water Protection and Shoreland and Riparian Management along the Riparian Corridor.

*● = goal is directly addressed, o = goal is indirectly addressed

Action			Measurable Goals Addressed*										Partners	Timeline					Total Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Structural Practices (e.g. grade stabilizations, water and sediment control bains, lined waterways, grassed waterway, side water inlets, filter strips,)	*Figure 4.2* (PTMApp)	150 tons sediment/yr 98 lbs phosphorus/yr 2,061 lbs nitrogen/yr	●	o	●				o		o	o	**SWCD, RLWD,** NRCS, BWSR	●	●	●	●	●	$631,536
Non-Structural Practices (e.g. prescribed grazing, pasture and hay planting, field borders, riparian buffers, windbreak/shelterbelt establishment, tree establishement, cover crops, reduced tillage, no-till, conservation crop rotation, perrennial crops, critical area planting, riparian forest buffer)	*Figure 4.2 and 4.3* (PTMApp)	102 tons/sediment/yr 105 lbs phosphorus/yr 845 lbs nitrogen/yr	●	●	o	o					o	o	**SWCD, NRCS,** RLWD, BWSR	●	●	●	●	●	$593,560
Bacteria Reduction Projects (e.g. livestock exclusion and watering facility, waste pit closures, wastewater and feedlot runoff control, manure management plans, manure storage and treatment)	Source Water Assessment Area	2 Projects	o	o		o	●			o			**NRCS, SWCD**, MPCA, BWSR		●		●		$150,000
Streambank and Shoreline Protection Projects (e.g. stream channel restoration, rock structures to stabilize channel bottoms, resloping, riprap, streambarbs, toe wood sod mat)	Riparian Corridor, BEHI Rating Map	300 ft.	●						●	●	o	o	**RLWD, SWCD**, DNR, BWSR, ACOE, MPCA	●	●	●	●	●	$105,000
Land Protection (e.g. CRP, RIM, CREP, SFIA)	*Figure 4.11,* Riparian Corridor, RAQ	4,500 Acres	●	●	●	●	o		●	●		●	**NRCS, Pheasants Forever, SWCDs,** RLWD, BWSR, DNR	●	●	●	●	●	$3,780,000
Forest Stewardship Plans	Riparian Corridor, RAQ Scoring	200 acres										●	**SWCDs**, **DNR**, BWSR, NRCS			●	●	●	$3,500

Projects and Practices: Middle Planning Region

Table 5.3. Projects and Practices Actions for the **Middle Planning Region.** The Middle Planning Region begins at the confluence of the Red Lake and Thief River and ends in Crookston. Tributaries include the Little Black River, Black River, Browns Creek, Gentilly Creek, Cyr Creek, and Kripple Creek.

High Priority Issues in the Middle Planning Region include Excess Bacteria, Upland Erosion and Soil Health, Unstable River and Stream Channels, Stormwater Runoff, Altered Hydrology, Drainage System Instability, Drainage System Inadequacy, Flood Damage Reduction and Resiliency, and Wetland and Upland Habitat

*● = *goal is directly addressed, o = goal is indirectly addressed*

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Structural Practices (e.g. grade stabilizations, water and sediment control bains, lined waterways, grassed waterway, side water inlets, filter strips)	*Figure 4.2* (PTMApp)	1,053 tons sediment/yr 640 lbs phosphorus/yr 13,142 lbs nitrogen/yr	●	o	●				o		o	o	**SWCD, RLWD,** NRCS, BWSR	●	●	●	●	●	$4,980,190
Non-Structural Practices (e.g. prescribed grazing, pasture and hay planting, field borders, riparian buffers, windbreak/shelterbelt establishment, tree establishement, cover crops, reduced tillage, no-till, conservation crop rotation, perrennial crops, critical area planting, riparian forest buffer)	*Figure 4.2 and 4.3* (PTMApp)	1,206 tons sediment/yr 1,064 lbs phosphorus/yr 8,528 lbs nitrogen/yr	●	●	o						o	o	**SWCD, NRCS,** RLWD, BWSR	●	●	●	●	●	$6,029,800
Bacteria Reduction Projects (e.g. livestock exclusion and watering facility, waste pit closures, wastewater and feedlot runoff control, manure management plans, manure storage and treatment)	*Figure 4.6* CD96, Black River, Cyr Creek, Kripple Creek, Riparian Corridor	2 Projects	o			o	●			o			**SWCD**, **NRCS**, MPCA, BWSR	●		●			$150,000
Streambank and Shoreline Protection Projects (e.g. stream channel restoration, rock structures to stabilize channel bottoms, resloping, riprap, streambarbs, toe wood sod mat)	Middle Planning Region, BEHI Rating Map?	5,000 ft	●						●	●	o	o	**RLWD, SWCD**, DNR, BWSR, ACOE, MPCA	●	●	●	●	●	$1,750,000
Land Protection (e.g. CRP, RIM, CREP, SFIA)	*Figure 4.11,* Riparian Corridor, RAQ	11,700 acres	●	●	●	●	o		●	●		●	**NRCS, Pheasants Forever, SWCDs**	●	●	●	●	●	$9,594,000
Forest Stewardship Plans	Riparian Corridor, RAQ Scoring	800 Acres										●	**SWCDs**, **DNR**, BWSR, NRCS	●	●	●	●	●	$14,000

Projects and Practices: Lower Planning Region

Table 5.4. Projects and Practices Actions for the **Lower Planning Region.** The Lower Planning Region begins in Crookston and outlets into the Red River of the North. The Lower Planning Zone includes the Heartsville Coulee and Burnham Creek.

High Priority Issues in the Lower Planning Region include Nutrient Loading, Upland Erosion and Soil Health, Drainage System Instability, Drainage System Inadequacy, Flood Damage Reduction and Resiliency, and Source Water Protection.

*● = goal is directly addressed, o = goal is indirectly addressed

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Structural Practices (e.g. grade stabilizations, water and sediment control basins, lined waterways, grassed waterway, side water inlets, filter strips)	*Figure 4.2* (PTMApp)	470 tons sediment/yr 237 lbs phosphorus/yr 4,959 lbs nitrogen/yr	●	o	●				o		o	o	**SWCD, RLWD,** NRCS, BWSR	●	●	●	●	●	$1,497,880
Non-Structural Practices (e.g. prescribed grazing, pasture and hay planting, field borders, riparian buffers, windbreak/shelterbelt establishment, tree establishement, cover crops, reduced tillage, no-till, conservation crop rotation, perrennial crops, critical area planting, riparian forest buffer)	*Figure 4.2 and 4.3* (PTMApp)	917 tons sediment/yr 660 lbs phosphorus/yr 5,287 lbs nitrogen/yr	●	●	o						o	o	**SWCD, NRCS,** RLWD, BWSR	●	●	●	●	●	$3,611,850
Streambank and Shoreline Protection Projects (e.g. stream channel restoration, rock structures to stabilize channel bottoms, resloping, riprap, streambarbs, toe wood sod mat)	Riparian Corridor, BEHI Rating Map	3,000 ft.	●						●	●	o	o	**RLWD, SWCD**, DNR, BWSR, ACOE, MPCA	●	●	●	●	●	$1,050,000
Land Protection (e.g. CRP, RIM, CREP)	*Figure 4.11,* Riparian Corridor, RAQ	5,300 acres	●	●	●	●	o		●	●		●	**NRCS, Pheasants Forever, SWCDs**	●	●	●	●	●	$6,996,000
Ring Dikes (protection from flooding)	Farmsteads impacted by updated Floodplain Maps	3 projects			●								**RLWD**	●	●	●	●	●	$300,000

Projects and Practices: Grand Marais Creek Planning Region

Table 5.5. Projects and Practices Actions for the **Grand Marais Creek Planning Region.** The Grand Marais Creek flows northwesterly and outlets into the Red River of the North. This Planning Region encompasses the portion of the Grand Marais Creek within the jurisdiction of the Red Lake Watershed District.

High Priority Issues in the Grand Marais Creek Planning Region include Nutrient Loading, Upland Erosion and Soil Health, Drainage System Inadequacy, and Flood Damage Reduction and Resiliency.

*● = goal is directly addressed, o = goal is indirectly addressed

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Structural Practices (e.g. grade stabilizations, water and sediment control bains, lined waterways, grassed waterway, side water inlets, filter strips)	*Figure 4.2* (PTMApp)	99 tons/sediment/yr 55 lbs phosphorus/yr 1,210 lbs nitrogen/yr	●	o	●				o		o	o	**SWCD, RLWD,** NRCS, BWSR	●	●	●	●	●	$420,380
Non-Structural Practices (e.g. prescribed grazing, pasture and hay planting, field borders, riparian buffers, windbreak/shelterbelt establishment, tree establishement, cover crops, reduced tillage, no-till, conservation crop rotation, perrennial crops, critical area planting, riparian forest buffer)	*Figure 4.2 and 4.3* (PTMApp)	203 tons sediment/yr 173 lbs phosphorus/yr 1,387 lbs nitrogen/yr	●	●	o	o					o	o	**SWCD, NRCS,** RLWD, BWSR	●	●	●	●	●	$929,550
Streambank and Shoreline Protection Projects (e.g. stream channel restoration, rock structures to stabilize channel bottoms, resloping, riprap, streambarbs, toe wood sod mat)	BEHI Rating Map and LiDAR Analysis	1,000 ft.	●						●	●	o	o	**RLWD, SWCD**, DNR, BWSR, ACOE, MPCA	●	●	●	●	●	$350,000
Land Protection (e.g. CRP, RIM, CREP)	*Figure 4.11,* Riparian Corridor, RAQ	8,700 acres	●	●	●	●	o		●	●		●	**NRCS, Pheasants Forever, SWCDs**	●	●	●	●	●	$11,484,000
Ring Dikes (protection from flooding)	Farmsteads impacted by updated Floodplain Maps	3 projects			●								**RLWD**	●	●	●	●	●	$300,000

Education and Outreach: Watershed-Wide

Education and Outreach actions promote voluntary conservation, educate area students, and engage the public to further support the implementation of the Red Lake River CWMP. Partners will implement ongoing programs, as well as seeking new opportunities, to educate students and engage the public to promote water quality, water quantity, soil health, and conservation practices.

*● = goal is directly addressed, o = goal is indirectly addressed

Table 5.6 Education and Outreach Actions

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Youth Education Events (participate in existing environmental education programs for youth such as Envirothon, Northwest Minnesota Water Fest, River Watch, sponsor conservation camps for kids, poster contests, science fair judging, science museum, and Arbor Day events)	Watershed Wide	12 annual events	o	o	o	o	o	o	o	o	o	o	**SWCD**, RLWD, NRCS, BWSR, MPCA, DNR	●	●	●	●	●	$60,000
Recognize Outstanding Conservationists and Rural Beautification winners	Watershed Wide	4 annually	o	o	o	o	o	o	o	o	o	o	**SWCD, NRCS**	●	●	●	●	●	$4,000
Outreach Events (field days, tours, open houses, stewardship week, demonstrations or workshops for the public, county fair booths, café chats, banquet, and the Home, Sport, and Family Show	Watershed Wide	12 annual events	o	o	o	o	o	o	o	o	o	o	**SWCD**, RLWD, NRCS, BWSR,	●	●	●	●	●	$55,000
Media Outreach (newsletters, articles, reports, websites, social media, news radio, and publications)	Watershed Wide	Annual Outreach	o	o	o	o	o	o	o	o	o	o	**SWCD, RLWD**, NRCS,	●	●	●	●	●	$10,000
Participate in the Climatology Program and seek additional rainfall volunteers	Watershed Wide	Annual program implementation			o	o							**SWCD**, DNR	●	●	●	●	●	$3,000
Provide well water testing kits	Watershed Wide	Annual program implementation				o							**SWCD**, RLWD, MDH	●	●	●	●	●	$1,500
Host well water testing clinics and nitrate testing services	Watershed Wide	5 clinics annually				o							**SWCD**, RLWD, MDH	●	●	●	●	●	$15,000
Civic Engagement for the WRAPS	Watershed Wide	Annual Outreach	o	o	o	o	o	o	o	o	o	o	**RLWD**, SWCD, MPCA	●	●	●	●	●	$1,500

Land Use and Regulatory: Watershed Wide

Watershed wide activities will occur throughout the entire Planning Area and are not prioritized by Planning Region Boundaries. Many actions are ongoing programs with dedicated funding such as Land Use and Regulatory Programs. Although these actions are watershed wide, priority areas may be identified based on water quality statistics and other data.

*● = goal is directly addressed, o = goal is indirectly addressed

Table 5.7 Watershed Wide Actions

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Administer and Enforce existing Land Use and Regulatory Programs (Shoreland, SSTS, Floodplain, Buffer, WCA, Solid Waste, Animal Feedlot and Manure Management, Tile and Surface Drainage Ditch Law, RLWD Rules, Zoning, Household Hazardous Waste, Wind, Solar, and Soil Loss)	Watershed Wide	Ongoing Programs	●	o	●	●	●	o	●	●	●	o	**Counties, SWCDs, RLWD,** DNR, MPCA,	●	●	●	●	●	$400,000
Replace failing septic systems	*Figure 4.6* CD96, Black River, Cyr Creek, Kripple Creek, Riparian Corridor	10 upgrades annually through grant or AgBMP program	●			●	●						**Counties**, **SWCD**, MPCA	●	●	●	●	●	$1,500,000
Seal abandoned wells	High Pollution Sensitivity Areas *Figure 4.5*	50 of sealed wells				●							**SWCDs**	●	●	●	●	●	$60,000
Increase certified producers through the MN Agricultural Water Quality Certification Program	Watershed Wide	5 additional certified producers	●	●					o	o			**SWCDs**, MDA	●	●	●	●	●	$5,000
Provide financial and technical assistance for noxious weed control	Watershed Wide	Ongoing Program										●	**SWCDs, Counties**	●	●	●	●	●	$100,000
Administer AgBMP low-interest loan program	Watershed Wide	Ongoing Program	●	●		●	●						**SWCDs, MDA**	●	●	●	●	●	$30,000
Source Water Protection (City of Thief River Falls and East Grand Forks SWAAs, Thief River Falls, Surface Water Intake Protection Plan, DWSMAs, and Well-Head protection areas)	SWAA, DWSMAs, Well-Head Protection Areas	Ongoing Program and new actions in existing plans	●	●		●					o	●	**Cities,** SWCDs, RLWD, DNR, NRCS, MDH, MPCA,	●	●	●	●	●	$70,000

Data Collection and Monitoring: Watershed-Wide

The Data Collection and Monitoring Action Table summarizes actions that close known data gaps, include general monitoring efforts, feasibility studies, assessments, inventories, or other data collection efforts to better support implementation. These actions will be implemented watershed-wide to promote consistency and sharing of services. Actions will be funded by the Data Collection and Monitoring Implementation Program, described in Section 6, Implementation Programs.

*● = goal is directly addressed, o = goal is indirectly addressed

Table 5.8 Data Gaps and Research

Action			Measurable Goals Addressed*										Partners	Timeline					Cost
Action	Prioritized Area	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	2026-2027	2028-2029	2030-2031	2032-2033	2034-2035	Total Cost
Surface Water Monitoring Program (see Section 6-Implementation Programs, Data Collection and Monitoring)	Watershed Wide	Ongoing Program	o	o	o		o	o	o	o	o	o	**RLWD, SWCD**, MPCA	●	●	●	●	●	$150,000
Maintain, or complete, culvert inventories to identify culverts that are barriers within the watersheds	Watershed Wide	Ongoing Program			o			o			o		**County, RLWD,** SWCD, DNR	●	●	●	●	●	$20,000
LiDAR and/or aerial data collection (drone technology) to measure channel stability and erosion rates to asssit with implementation actions and prioritization	Watershed Wide	Completed LiDAR Comparison Project	o						o	o	o		**RLWD**, SWCDs	●					$33,000
Assist the DNR with geomorphological assessments	Watershed Wide	Ongoing Program							o				**DNR, RLWD,** MPCA	●	●	●	●	●	NA
Conduct lab analysis of DNA of fecal organisms to determine which animal group is the source (Microbial Source Tracking [MST])	*Figure 4.6* CD96, Black River, Cyr Creek, and Kripple Creek	Ongoing Program					o						**RLWD**, SWCDs, MPCA	●	●	●	●	●	NA
Complete RAQ Scoring to prioritize Forest Stewardship Plan implementation	Upper and Middle Planning Regions	Complete RAQ scoring for watershed										o	**SWCDs, RLWD**, DNR		●				$5,000
Complete the MN Geologic Atlas project for all counties in the watershed	Watershed Wide	Complete Atlas Project				o							**MGS, DNR,** SWCDs, Counties	●	●	●			
Monitor DNR observation wells	Watershed Wide	Ongoing Program		o		o							**SWCDs**, DNR	●	●	●	●	●	$96,000
AIS Monitoring	Watershed Wide	Ongoing Program										o	**SWCD, RLWD, County,** DNR	●	●	●	●	●	$10,000
Complete stormwater assessments or similar water quality study for Cities	Watershed Wide	Completed Report						o					**Cities, SWCD,** RLWD		●	●			$56,000

Capital Improvement Projects: Watershed-Wide

The Capital Improvement Projects Action Table summarizes actions for the construction, repair, retrofit, or increased utility or function of physical facilities, infrastructure, or environmental features. Capital Improvement Projects are owned and maintained by LGUs and require external funding. These actions will be implemented watershed-wide, as project areas and benefits may span planning region boundaries. They will be implemented through the Capital Improvement Projects Implementation Program, described further in Section 6.

Table 5.9 Capital Improvement Projects

Action			Measurable Goals Addressed*										Partners	Timeline	Cost
Project	Priority Areas	Trackable Metric	Erosion & Nutrients	Soil Health	Flooding	Groundwater	Bacteria	Stormwater	Streambank Stabilization	Riparian Management	Drainage Management	Land Protection	Responsible Entities (Lead is in bold)	Estimated Timeline	Estimated Cost
Stream Restoration and Channel/Bank Stabilization (Huot and Hartz Park)	Middle Planning Region, BEHI Rating, LiDAR Comparison	1 mile	●		●				●	●			**RLWD**, SWCDs, DNR, NRCS	2026-2035	$1,848,000
Flood Damage Reduction (FDR) and Water Storage (Distributed Detention Plan)	Middle and Early Areas *Figure 4.4*	4,000 acre ft.			●								**RLWD**	2026-2035	$9,000,000
Stormwater (Homark stormwater runoff project in RLF, Highway 59 South rehab project (TRF), raingardens, hydrodynamic separators, grassed swales, stormwater ponds, stormwater wetlands, iron enhanced sand filter)	Priority projects identified by TRF Water Quality Study and other assessments	3 Projects	●				o	●					**Cities**, RLWD, SWCD	2026-2035	$900,000
Ditch System Enhancement Projects (channel stabilization, multi-stage ditch, drainage outlet repair, ditch system enhancement projects, JD60 outlet project, RLWD Project 119,)	Prioritized by LiDAR Comparison	12 miles									●		**RLWD, Ditch Authority,** SWCDs, BWSR	2026-2035	$9,000,000