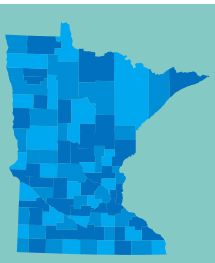
December 2021

Nonpoint source plan

Minnesota's Nonpoint Source Management Plan – 2019-2029

This plan will serve as the guidance for Minnesota's approach to addressing nonpoint source pollution, Section 319 staff funding, and pass-through grant eligibility and processes and to meet the requirements of the US Environmental Protection Agency and the State of Minnesota.

MINNESOTA POLLUTION CONTROL AGENCY



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This report is available in alternative formats upon request, and online at www.pca.state.mn.us.

Document number: wq-cwp8-26

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Acronyms

1W1P	One Watershed One Plan
ACPF	Agricultural Conservation Planning Framework
BMP	best management practice
BWSR	Board of Water and Soil Resources
CADDIS	Causal Analysis/Diagnosis Decision Information System
CCRP	Conservation Reserve Program Continuous Signup
CMP	chloride management plan
COE	U.S. Army Corps of Engineers
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CSP	Conservation Stewardship Program
CWA	Clean Water Act
CWC	Clean Water Council
CWF	Clean Water Fund
CWP	Clean Water Partnership
CWLA	Clean Water Legacy Act
CZARA	Coastal Zone Act Reauthorization Amendments
DNR	Minnesota Department of Natural Resources
DPS	Department of Public Safety
EPA	U.S. Environmental Protection Agency
EQB	Environmental Quality Board
EQIP	Environmental Quality Incentives Program
FEMA	Federal Emergency Management Agency
FSA	Farm Services Agency
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gases
GIS	geographic information systems
GRAPS	groundwater restoration and protection strategies
GSSHA	Gridded Surface Subsurface Hydrologic Analysis
HSPF	hydrological simulation program FORTRAN
HUC	hydrological unit code
ICT	Interagency Coordination Team
IWM	Intensive Watershed Monitoring
LAMP	Lake Superior Lakewide Action and Management Plan
LGU	local government unit
LID	lake improvement district
LiDAR	light detection and ranging
MDA	Minnesota Department of Agriculture

MDH	Minnesota Department of Health
MN-FOTG	Minnesota NRCS Field Office Technical Guide
MPCA	Minnesota Pollution Control Agency
MRBI	Mississippi River Basin Initiative
MS4	municipal separate storm sewer systems
NKE	EPA's nine-key elements
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPFP	Nonpoint Priority Funding Plan
NPS	nonpoint source
NPSMPP	Nonpoint Source Management Program Plan
NRCS	Natural Resource Conservation Service
NWQI	National Water Quality Initiative
PFA	Public Facilities Authorities
PTMApp	Prioritize, Target, and Measure Application
RRWMB	Red River Watershed Management Board
SAM	Scenario Application Manager
SDS	state disposal system
SPARROW	Spatially Referenced Regression on Watershed Attributes
SRF	State Revolving Fund
SSTS	subsurface sewage treatment system
STEPL	Spreadsheet Tool for Estimating Pollutant Loads
SWAT	soil and water assessment tool
SWCD	soil and water conservation district
TALU	tiered aquatic life uses
TCMA	Twin Cities Management Area
TMDL	total maximum daily load
UMN	University of Minnesota
USDA	U.S. Department of Agriculture
WD	watershed district
WHAF	Watershed Health Assessment Framework
WMAT	Winter Maintenance Assessment Tool
WMO	watershed management organization
WPLMN	Watershed Pollutant Load Monitoring Network
WRAPS	watershed restoration and protection strategy

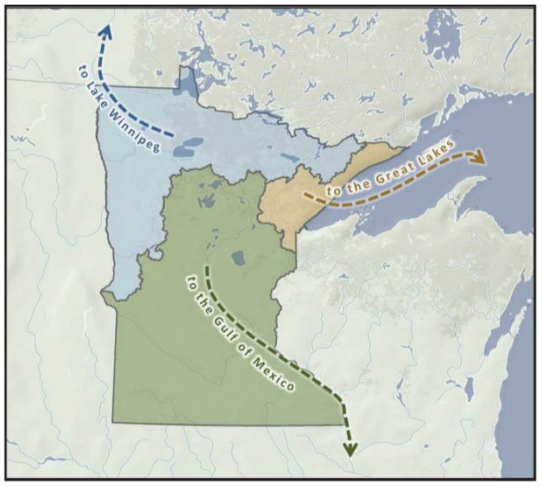
1. Introduction and purpose

Minnesota is a land rich in water resources that its citizens rely on for a variety of uses—recreation, drinking water, wildlife, irrigation, and industrial uses. These lakes, streams, and other waters are vital to our quality of life. Our state is also home to the headwaters for three of the largest drainage basins in North America. This means that the way we manage our water not only affects our own resources, but also affects many others downstream.

Section 319 of the Federal Clean Water Act (CWA) requires states to develop a management program "for controlling pollution added from nonpoint sources to the navigable waters within the State and improving the quality of such waters." (CWA Sec. 319 (b) (1)). The Minnesota Nonpoint Source Management Program Plan (NPSMPP) was developed to meet this requirement, as well as to satisfy the state requirement for developing a state nonpoint source pollution (NPS) control plan in Minn. Stat. § 103F.751. The NPSMPP focuses on addressing NPS pollution, including phosphorus, nitrogen, sediment, bacteria, and other contaminants. Minn. Stat. § 116.03, subd. 3, gives the Minnesota Pollution Control Agency (MPCA) and its commissioner the authority to receive and disperse federal funding. The U.S. Environmental Protection Agency (EPA) approved Minnesota's first NPS management program in 1988. Updates and revisions of the Plan were completed in 1994, 2001, 2008, and 2013.

This NPSMPP serves as the document describing Minnesota's NPS programs in its watershed management approach. In addition to the descriptions of the various programs and agencies involved, it incorporates the nine-key elements (NKE) the EPA has identified as necessary for a state NPS program. Use of the NKE ensures the Section 319 program and project funds are used in an effective and efficient manner in the support of Minnesota's NPS pollution control efforts through the Minnesota Watershed Approach.

The NPSMPP served as the framework for the development of the NPS program in Minnesota in the early 1990s. The NPS program has developed and grown through the years to include state and local programs and funding that extend beyond the activities contained in the present NPSMPP. Section 319 program and project funds continue to be important parts of Minnesota's efforts to restore and protect water quality through the Minnesota Watershed Approach. This NPSMPP describes the goals and activities provided through Section 319 funding in completing the NPS work encompassed in the state's watershed approach, as well as describing how other programs relate to the NPSMPP. A brief history of the varied programs and plans associated with NPS is included to provide context for the current and planned use of Section 319 funds.



Major drainage basins in Minnesota.

The MPCA generally views NPS pollution as being from sources that are not covered under a National Pollutant Discharge Elimination System (NPDES) permit, and are pollutants that are from diffuse sources; most of these sources are not regulated. Nonpoint sources include: agricultural field run-off, agricultural drain tile discharge, storm water from smaller cities and roads, bank, bluff, and ravine failures, atmospheric deposition, failing septic systems, animals, and other sources.

The predominant source of many pollutants occurring in Minnesota waters are nonpoint in nature.

The NPMPP is required by the Federal CWA, Section 319(b) to describe a management program for NPS pollution.

The purpose of the NPSMPP is two-fold:

- To ensure compliance with Section 319 requirements of the Federal CWA for providing a long-term programmatic direction of Minnesota's overall approach to addressing NPS pollution
- To provide a "one-stop" resource to understand the state's multiple efforts, overall goals and programs and connections among them for addressing this pollution source

Minnesota is required to comply with these federal requirements in order to remain eligible for federal funding to pass through to local implementers. Last updated in 2013, the 2021 NPSMPP has been abridged with brief topic summaries and reliance on web links for access to more detailed information.

This NPSMPP has been written to comply with EPA's *Nonpoint Source Program and Grants Guidelines for States and Territories (2013) (2014 Guidance)*. This guidance contains eight components for what should be in a NPSMPP. Some of these Section 319(b) components are similar to the eight components in the guidance. Table 1 summarizes the guidance and indicates where in this Plan the components are addressed.

Table 1. EPA NPS program plan guidance summary

Description of component	Component #(s)	Section in this plan where addressed
Short- and long-term goals, objectives and strategies to restore and protect water	1, 6(iv)	3, 4, 6, A
Partnerships/coordination/processes used among public agencies and others	2, 6(iii), 6(vi)	3, 5, B
Statewide watershed approach; integration/alignment among water programs	3, 6(ii)	3, 4, 5, B
Restoration and protection considerations	4	3.9, 3.9.1, 4.3.1, 4.4.5, 7
Identifies impaired and protection waters and has a process/criteria to prioritize addressing them	5	3, 4, 6, 7
Identifies NPS practices/actions	6(i)	3.10, 4, 5
Funding sources	6(v)	3.8.4, 4
Effectiveness monitoring/evaluation	6(vii)	3.1.2, 4, 7, 8
Existing baseline requirements established by other applicable federal or state laws (e.g., coastal zone management program)	6	3.9

Description of component	Component #(s)	Section in this plan where addressed
Effective/efficient program	7	6, 7, 8
Overall program monitoring/ongoing evaluation to assess success	8	6, 7

2. Nonpoint source pollution

NPS is the predominant source of many pollutants occurring in Minnesota waters. The EPA defines NPS pollution as follows:

> *"Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters.*" (EPA NPS Webpage).

3. Minnesota's Watershed approach

Several state agencies are involved in carrying out Minnesota's multiple programs addressing NPS pollution. Much of the effort has been integrated into a framework, which is referred to as the Minnesota Water Quality Framework and is explained further in this section. In addition, there is extensive ongoing coordination among the various public agencies and other entities. The Minnesota Water Quality Framework has been written into the Clean Water Legacy Act (CWLA) (Minn. Stat. § 114D).

The Minnesota Water Quality Framework provides the structure for state agencies who are responsible for water quality to work together without duplicating efforts. The information and final products from all the various stages and programs provide the foundational work for the NPS management of the state. The Framework directly supports the development and implementation of the Section 319 program and influences the method of prioritization of watershed work in Minnesota. MPCA staff and management are funded by both Section 319 funds and matching state funds.

3.1. Minnesota's Water Quality Framework

The Minnesota Water Quality Framework was developed by state agencies with various water quality management authorities to enhance interagency collaboration and clarify roles in the complex water governance structure present in Minnesota. The need for this framework was driven by the increased state funding and corresponding public expectations for improved water quality that came with the passage of the CWLA. The goal stated in the Minnesota Water Quality Framework is for "cleaner water via comprehensive watershed management; ensure that groundwater is protected and managed sustainably."

There are five main overlapping steps of the Minnesota Water Quality Framework (Figure 1). Key roles and responsibilities for state agencies in the Framework are outlined in Figure 2.

The MPCA is responsible for coordinating steps B through D of the Framework and performing most of the tasks involved. The goal is to complete these steps for a given major watershed within a four-year period, resulting in a Monitoring and Assessment report, Stressor Identification report, Hydrological Simulation Program-FORTRAN (HSPF) model, total maximum daily load (TMDL) study and a watershed restoration and protection strategy (WRAPS) report.

All of the state's 80 major watersheds (i.e., hydrologic unit code-8 or HUC-8) are included through the Minnesota Watershed Approach. More description of how the steps occur is provided in the sections below, including how this generally occurs within a 10-year cycle. Following completion of the first 10-year cycle of intensive watershed monitoring (IWM) a second cycle (Cycle 2) of IWM begins. It is expected that second generation work products will fall on a continuum ranging from simple updates to more intense focus on protection efforts or subwatershed scales. The MPCA is in the process of designing components for second-generation watershed efforts with a clear emphasis on providing value to the local water planning and implementation process.

Section 319 program dollars support staff and management that address NPS pollution issues within the various steps. This includes developing NPS source identification for TMDLs, providing strategies to address NPS pollution loading in WRAPS, and the stressor effects of NPS. These reports and findings contribute to the development of prioritization of watersheds and creation nine key element (NKE) plans for the 319 Small Watershed Focus Program. The TMDL and WRAPS reports include NPS pollution elements and recommended strategies to address NPS.

Figure 1. Minnesota Water Quality Framework

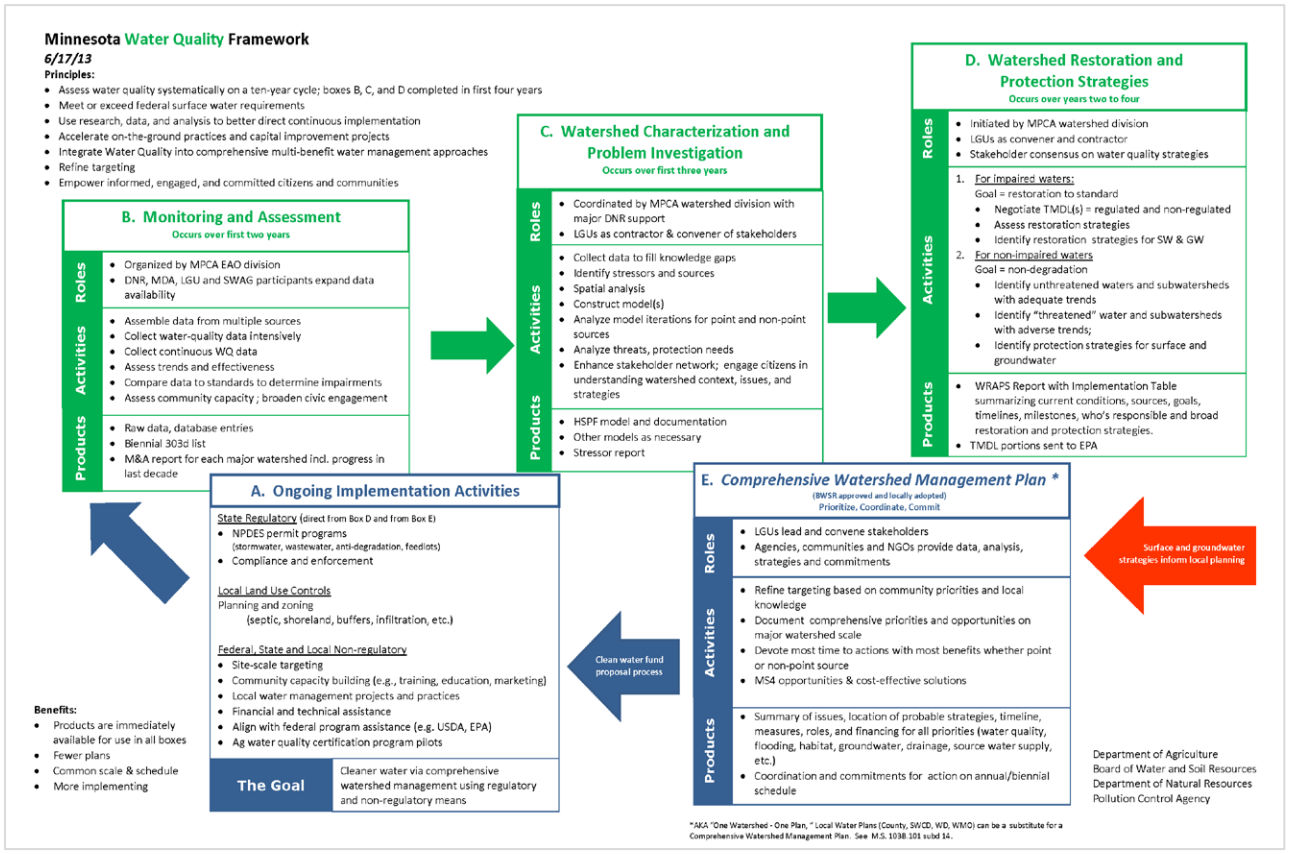


Figure 2. Agency roles in Minnesota Water Quality Framework

3.1.1. Ongoing implementation activities

The implementation of NPS pollution control practices occurs primarily at the local watershed level. Funding and technical assistance for this implementation occurs through various local units of government, state and federal agencies, nonprofit organizations, and producer/business organizations. A partial list of the programs and sources of funding are included in Table 2. Funding for this implementation comes from state and federal programs including the state Clean Water Fund (CWF) and U.S. Department of Agriculture (USDA) conservation programs. Local sources of funding come from various taxing/levy authorities of watershed districts (WDs), counties, cities, townships, and other special use districts. Nongovernmental organizations also play an important role in supporting implementation activities to control NPS pollution.

In Minnesota, implementation of conservation practices and other actions is ongoing and includes both restoration and protection projects.

Various sources of implementation funding exist and these are described in this report in Section 3.3.4. Among these funding sources are Section 319 grants, which have been a key funding source provided by the MPCA to local partners. Over the years, Section 319 grants have been responsible for a wide range of best management practices (BMPs) and other actions on Minnesota's rural and urban landscapes resulting in improved water quality.

Conservation tillage demonstration in southern Minnesota

3.1.2. Monitoring and assessment

Water quality standards

The overall monitoring and assessment step in the Minnesota Water Quality Framework is built on the foundation of establishing beneficial uses and water quality standards for lakes and streams, which are provided in Minn. R. ch. 7050. The CWA requires states to set goals for all waterbodies to attain healthy aquatic life and recreation uses. Minnesota's water quality rules provide a framework for setting these goals that also include additional beneficial uses: drinking water (domestic consumption), industry, agriculture, navigation, and aesthetic enjoyment. Waters not meeting the minimal aquatic life uses are called "limited resource value waters" and may have modified standards, but are still protected. Minnesota designates beneficial uses for all waters, and then develops water quality standards to protect each use. Water quality standards include the following:

- Beneficial uses — identification of how people, aquatic communities and wildlife use our waters.
- Numeric standards — allowable concentrations of specific pollutants in a waterbody, established to protect the beneficial uses.
- Narrative standards — statements of unacceptable conditions in and on the water.
- Antidegradation — maintain and protect existing uses, prevent unnecessary degradation of existing high water quality, and maintain and protect the quality of waters identified for their outstanding value.

Water quality standards were expanded in 2014 with adoption of river eutrophication standards to address nutrient enrichment of rivers, streams, Mississippi River pools, and Lake Pepin. In addition, the MPCA replaced the existing turbidity standard with regionally based standards for total suspended solids.

The most recent addition to Minnesota's water quality standards is the establishment of a tiered aquatic life uses (TALU) framework for rivers and streams. The TALU rule amendments affect Class 2 (Aquatic Life) standards.

The adopted TALU framework is a significant revision to the aquatic life use classification in the state's water quality standards. It built upon existing water quality standards to improve how water quality in streams and rivers are monitored and managed. Additionally, these changes advance the ability to identify stressors and develop effective mechanisms to improve and maintain the condition of waters in Minnesota. The TALU framework represents a significant revision to the water quality standards of the

state's aquatic life use classification. The framework builds upon existing water quality standards with a goal of improving how water resources are monitored and managed. Additionally, these changes advance the ability to identify "stressors" and develop effective mechanisms to improve and maintain the condition of waters in the state of Minnesota.

Monitoring and assessment approach

The MPCA and its partner agencies and organizations conduct surface and groundwater monitoring activities to provide information about the status of the state's water resources and to identify potential or actual threats to the quality of surface and groundwater. This information is also used in identifying strategies for protecting and restoring waters that are impaired. The goal of the MPCA and its partners is to provide information to assess – and ultimately to restore or protect – the integrity of Minnesota's waters.

The state's water quality monitoring strategy (https://www.pca.state.mn.us/water/water-quality-monitoring-strategy) describes the main components of MPCA monitoring and summarizes monitoring conducted by other agencies and organizations. The main components include condition monitoring, problem investigation monitoring, and effectiveness monitoring. For Minnesota's Watershed Approach, the MPCA monitors a subset of the streams and lakes in each of the 80 major HUC8 watersheds on a 10-year rotating basis in its Intensive Watershed Monitoring (IWM) program (https://www.pca.state.mn.us/water/watershed-sampling-design-intensive-watershed-monitoring). The monitoring provides data for determining the overall health of these water resources along with identifying impaired waters and waters in need of additional protection efforts to prevent impairments. The MPCA, in conjunction with the Minnesota Department of Natural Resources (DNR) and U.S. Geological Survey (USGS), also conducts long-term monitoring at over 200 sites across the state for its Watershed Pollutant Load Monitoring Network (WPLMN) (https://www.pca.state.mn.us/water/watershed-pollutant-load-monitoring). The MPCA also monitors groundwater and wetlands to assess their condition.

The first 10-year cycle of the IWM program began with pilots in 2006 and 2007, and was completed in 2018. The IWM was designed to provide baseline biological and water quality data for streams and water quality data for lakes in each of the major watersheds. Biological monitoring sites were selected using a pour-point design to capture a cross-section of the river and stream segments from the mouth of the watersheds to the headwaters tributaries. The number of sites varied with watershed size and stream network, but was typically in the 50- to 70-site range. A subset of these sites were also sampled ten times a year for water chemistry (10X monitoring). Lakes were selected for monitoring based on size, public access and use, and number of lakes in each watershed. Approximately 100 lakes were sampled each year among the given year's IWM watersheds. The data collected was then used to characterize the condition of the HUC8 watersheds and to assess the condition of individual stream segments and lakes.

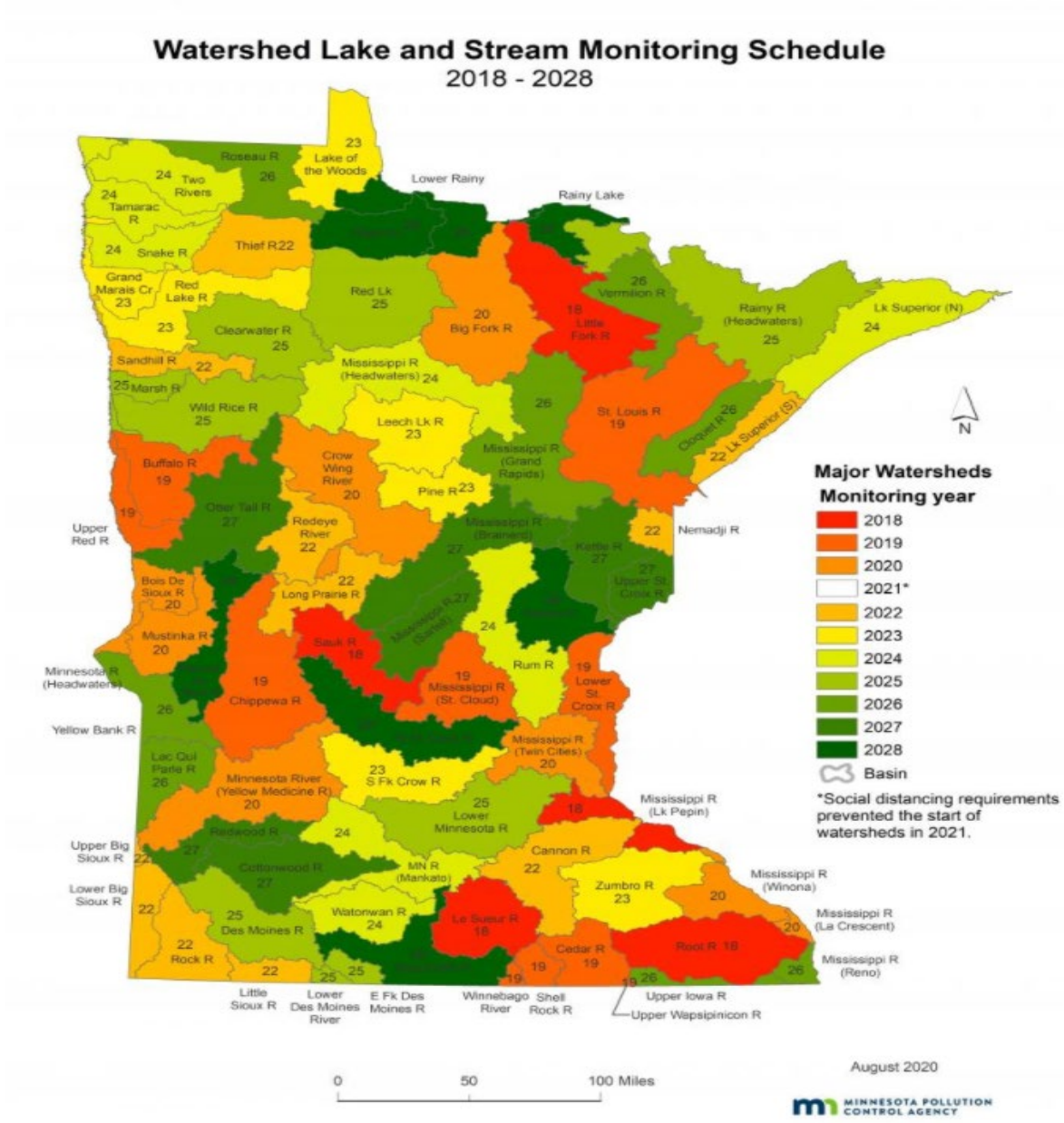
Planning for the second cycle began in 2016 and was piloted in 2017 with full-scale implementation in 2018. The vision for the second ten-year cycle is to conduct monitoring to evaluate progress in protecting and restoring lakes and streams, and to fill knowledge gaps in completing and revising restoration and protection strategies in the major watersheds. The starting year for each major watershed for the second cycle of IWM is shown in Figure 3. The design for the second cycle of IWM provides for:

- MPCA and its local partners to revisit select stream/river sites and lakes in each major watershed to measure biological and water quality change once every 10 years.
- Local partners to provide input in site selection to support their monitoring needs.

MPCA staff will sample approximately 2/3 of the first cycle biological and 10X stream sites. This approximation is based on statistical analysis for the number of sites needed to adequately characterize selected watersheds. Monitoring will be conducted by MPCA and local partners' staff. The streams, lakes, and monitoring sites for each are selected in a design process the year before IWM monitoring begins in each watershed.

The WPLMN monitoring will continue on an on-going basis. The WPLMN provides daily flow data, intensive runoff event monitoring, and subsequent pollutant load calculations. The data collected and results computed will be used to calibrate and validate updates to the major watersheds' HSPF models, characterize current pollutant loads for the major watersheds and subwatersheds, and provide for trend analysis to evaluate changes in water quality.

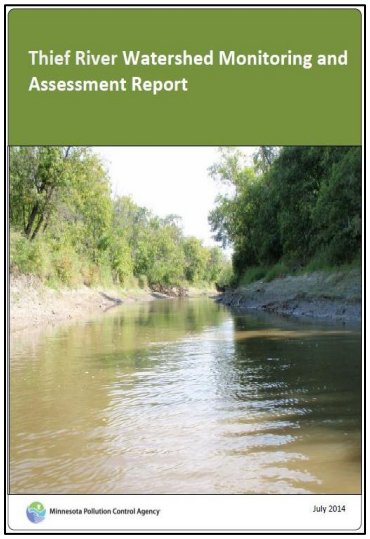
Figure 3. Intensive watershed monitoring schedule map



This WPLMN is designed to obtain spatial and temporal pollutant load information from Minnesota's rivers and streams and track water quality trends. This long-term program utilizes state and federal agencies, universities, local partners, and MPCA staff to collect water quality and flow data to calculate pollutant loads. Monitoring sites span three watershed scales:

- Basin – major river main stem sites along the Mississippi, Minnesota, Rainy, Red, and St. Croix rivers.
- Major watershed (HUC-8 scale) – tributaries draining to major rivers with an average drainage area of 1,350 square miles.
- Subwatershed – major branches or nodes within major watersheds with average drainage areas of approximately 300 to 500 square miles.

All appropriate data is used to assess the monitored lakes and stream for aquatic life and recreation uses. Those assessed as impaired are placed on Minnesota's impaired waters list and those identified as not impaired are designated for protection. In addition, a Watershed Monitoring and Assessment Report is completed for each major watershed. The MPCA Watershed Monitoring and Assessment reports are largely focused on surface waters, but do include information describing the general groundwater resources and available groundwater-quality information, primarily related to nitrate and arsenic.



This approach will address watershed-specific needs, beneficial uses and water quality standards, effectiveness of implementation actions, and water quality permitting. Cycle 2 IWM will be customized to each watershed to support state and local needs in the monitoring design. It will also continue to support the assessment process and track changes in the biological community.

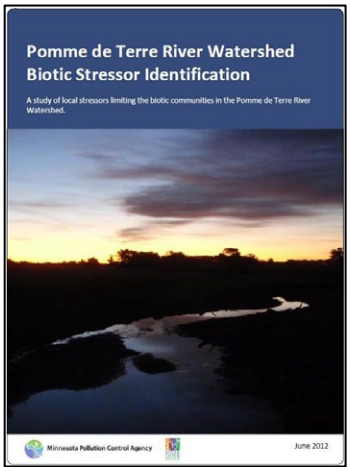
State agencies involved in groundwater monitoring include the MPCA, Minnesota Department of Agriculture (MDA), Minnesota Department of Health (MDH), and DNR. The MPCA and MDA conduct ambient groundwater monitoring for non-agricultural and agricultural chemicals, respectively. Vulnerable aquifers are primarily Quaternary water table aquifers located throughout the state, and the Prairie du Chien, Jordan, and Galena aquifers located in the Twins Cities Metro area and southeastern Minnesota. The MPCA selects individual domestic wells from a network of about 10,000 wells each year. The MPCA monitors a second network of shallow monitoring wells as an early warning system designed to detect contamination as it enters the ground water system. This allows for the identification of sources of contamination and possibly the design and implementation of BMPs to prevent contamination. The MDH conducts groundwater quality monitoring for contaminants in public water supplies to evaluate the risk to human health from contaminants. The DNR maintains a groundwater level-monitoring network across the state.

The MPCA, MDA, MDH, DNR, Metropolitan Council, and Board of Water and Soil Resources (BWSR), coordinate groundwater monitoring, modeling, and related activities through the CWF Interagency Coordination subteam for groundwater/drinking water. Details of the monitoring efforts can be found in the 2015 Groundwater Monitoring Status Report, an appendix to the 2015 Minnesota Environmental Quality Board (EQB) Water Policy Report at: https://www.eqb.state.mn.us/beyond-status-quo-2015-eqb-water-policy-report.

3.1.3. Watershed characterization and problem investigation

Watershed characteristics such as hydrology, geomorphology, land use and cover, pollutant sources, and biotic stressors are also characterized and investigated simultaneous with and immediately following on IWM. The MPCA coordinates with other agencies, including the DNR, to determine if additional data is needed to identify stressors and sources. Stressor identification, watershed model and other landscape/targeting tool development as well as civic engagement efforts to share watershed science and information, are all carried out during this phase. The process of watershed characterization is essential as it helps to assure that priority water quality problems are addressed cost-effectively by identifying critical areas requiring treatment and protection.

Stressor identification



Stressor identification is a formal and rigorous process that identifies stressors causing biological impairment of aquatic ecosystems, and provides a structure for organizing the scientific evidence supporting the conclusions using the EPA's Causal Analysis/Diagnosis Decision Information System (CADDIS). In simpler terms, it is the process of identifying the major factors causing harm to fish and other river and stream life. Stressor identification is a key component of WRAPS.

Once the sources of the pollution or other stressors are identified, it becomes much easier to target conservation practices to address those sources. Additional information is available at the MPCA's Biological Stressor webpage.

Watershed models and tools

Many models and tools are available for characterizing pollutant sources, pathways, and effects on water quality, and identifying and evaluating strategies to address pollution problems.

Hydrological Simulation Program-FORTRAN (HSPF)

The MPCA selected the HSPF model to support the development of WRAPS and TMDLs in each of the state's major watersheds. The HSPF model simulates the movement of water, sediment and nutrients from pervious and impervious land surfaces to receiving streams and lakes, and simulates their transformation as it routes them downstream. The technical capabilities of HSPF include physical channel representation, in-channel biochemical processes, temporal resolution, and surface runoff generation. The model capabilities combined with EPA support, flexibility, code control, and defensibility made HSPF the best choice for Minnesota. In addition to their use in completing WRAPS and TMDLs, HSPF models have been used to facilitate the permitting of regulated point source discharges, pollutant trading, and compliance testing for river nutrient criteria.

In addition, HSPF provides a powerful tool by modeling scenarios of landscape change/improvement, thereby informing restoration and protection strategy identification. The MPCA, using contractor support, has developed a user-friendly application of HSPF called the Scenario Application Manager (SAM). This allows people in each major watershed a means to assess the effect on water quality by the adoption of a user-selected range of actions within the watershed.

Watershed Health Assessment Framework

The Watershed Health Assessment Framework (WHAF) is a tool developed by the DNR that provides a comprehensive overview of the ecological health of Minnesota's watersheds. DNR major watersheds

and DNR catchments are used as boundaries for compiling and presenting information about the health of the landscape based on biology, connectivity, geomorphology, hydrology, and water quality. Calculations are then made to create comparable health scores that reveal health trends and relationships at various spatial scales.

A health score is a comparative index that synthesizes statewide ecological data into a single range of values. Health scores are calculated for all watersheds in Minnesota creating index values from 0 -100, red to green. A score of 100 indicates the best condition or least amount of risk for ecological degradation; a score of zero indicates an unhealthy condition or the highest risk. Comparing health scores can reveal parts of the ecological system that are functioning well and those that may be facing challenges.

The WHAF allows water managers and citizens an opportunity to consider the trade-offs that occur when any land or water management action is taken.

Zonation

Zonation is a decision support software tool for large-scale spatial conservation prioritization and planning. The tool incorporates values-based priorities to help identify areas important for protection and restoration. The software allows balancing of alternative land uses, landscape condition and retention, and feature-specific connectivity responses. The software was developed by the Conservation Biology Informatics Group at the University of Helsinki and can be accessed at https://www.helsinki.fi/en/researchgroups/digital-geography-lab/software-developed-in-cbig#section-52992.

Restorable Wetland Prioritization Tool

The Restorable Wetland Prioritization Tool is a web tool developed to aid in the identification and prioritization of areas with the potential to be restored as wetlands. The tool begins with a restorable wetland inventory developed using a compound topographic index method incorporating geographic information system (GIS) layers for soil moisture content, slope, and drainage area. It then incorporates three decision layers including anthropogenic stress on water quality, likelihood of the viability of restored wetlands, and an estimate of the water quality and habitat benefits provided by restored wetlands.

Prioritize, Target, and Measure Application (PTMApp)

The PTMApp (https://bwsr.state.mn.us/ptmapp) is a software application developed to support watershed planning and implementation. PTMApp consists of an Arc GIS Toolbar application (PTMApp-Desktop) and a web application portal to view PTMApp data products (PTMApp-Web). It provides GIS products for use in the development of One Watershed - One Plan, source assessment, developing implementation plans, and assessing the ability to achieve various load reductions for sediment, nitrogen and phosphorus. It is intended to provide the technical bridge between the general description of the types of strategies in a local water plan and the identification of implementable on-the-ground BMPs and conservation practices.

Agricultural Conservation Planning Framework (ACPF)

The ACPF Toolbox software includes tools to process light detection and ranging (LiDAR)-based digital elevation models for hydrologic analysis, which then allows a series of prioritization, riparian classification, and conservation-practice placement tools to be used. The toolsets identify agricultural fields most prone to deliver runoff directly to streams, map and classify riparian zones to inform whole-watershed riparian corridor management, and estimate the extent of tile drainage in the watershed. The software maps out suites of locations appropriate to install each of several types of conservation practices. These practice-placement opportunities are mapped for practices including controlled

drainage, grassed waterways, water and sediment control basins, and nutrient removal wetlands. Rather than making any recommendations, ACPF provides an inventory of watershed assessment data and conservation placement opportunities across a watershed, in order to inform local watershed planning.

Other models and tools

Several other watershed and receiving water models have been used for various purposes and are available for future use when appropriate, deemed necessary and resources are available. A partial list of model names includes:

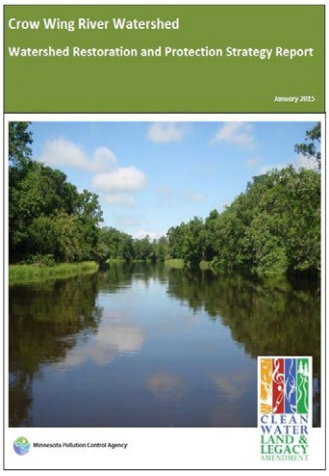
- Soil & Water Assessment Tool (SWAT) -- https://swat.tamu.edu/.
- Agricultural Non-Point Source Pollution Model (AnnAGNPS) -- https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/null/?cid=stelprdb1042468.
- Gridded Surface Subsurface Hydrologic Analysis (GSSHA).
- Spatially Referenced Regression On Watershed Attributes (SPARROW) – https://www.usgs.gov/mission-areas/water-resources/science/sparrow-modeling-estimating-nutrient-sediment-and-dissolved?qt-science_center_objects=0#qt-science_center_objects.
- BATHTUB – http://www.wwwalker.net/bathtub/help/bathtubWebMain.html.
- Smart Salting Assessment tool (SSAt) Smart Salting Assessment tool (SSAt) - Minnesota Stormwater Manual (state.mn.us).
- Watershed Phosphorus and Nitrogen Reduction Planning Tools – http://wlazarus.cfans.umn.edu/nbmp-xlsm-spreadsheet-downloads.
- Spreadsheet Tool for Estimating Pollutant Loads (STEPL) -- https://www.epa.gov/nps/spreadsheet-tool-estimating-pollutant-loads-stepl.

Descriptions of the models and tools and their application can be found at the model websites and in numerous publications, so descriptions are not provided here. The models and tools range in size from field-scale to basin-scale.

Public participation

Public participation is an important component in watershed characterization and prioritization. Local government staff, organizations, and citizens play an important role in identifying water quality goals and priorities within watersheds combining the results of data analyses, modeling, and prioritization tools into their interests, values, and priorities for water quality restoration and protection. Public participation activities include meetings, presentations, and discussions early in the Minnesota Watershed Approach and ongoing through each step of the process. A MPCA objective in the Minnesota Watershed Approach is to synthesize the volumes of data and analyses used for targeting, prioritizing, and measuring water quality into information understandable to local stakeholders so they can own and influence effective conservation practices. Civic engagement is fully integrated into all steps of the Minnesota Watershed Approach, from the earliest stages of a project through monitoring, assessment, strategic planning, implementation and adaptive management.

3.1.4. Watershed restoration and protection strategy reports



The collection of technical data and analysis is brought together in the WRAPS report for a given major watershed. The contents of a WRAPS report are outlined in the CWLA (see Minn. Stat. ch. 114D, Section 114D.26). The structure and overall contents are provided in the MPCA WRAPS template. The WRAPS report serves as a summary of the work products of the entire four-year process including the monitoring and assessment report, the stressor identification report and the TMDL report. However, the most important purpose of a WRAPS report is to prioritize and target critical areas for protection and restoration, and provide strategies for protecting and restoring the waters in the watershed. The strategies are outlined in a table, which includes:

- The name and other identifiers for the waterbody.
- The water quality parameter of concern (including non-pollutant stressors).
- Water quality current conditions based on 10-year averages.
- Water quality goals/targets and estimated percent reduction.
- A brief descriptor of each conservation practice strategy.
- Strategy types and estimated scale of adoption needed to meet final water quality target.
- Estimated years to achieve water quality target.

MPCA's Minnesota Watershed webpage provides a webpage link for every major watershed in the state. The watershed webpage has an overview of the watershed, links to individual projects and reports (e.g., monitoring and assessment, modeling, stressor identification, TMDL and WRAPS), contacts, maps, and other information. The Twin Cities Metropolitan Area is being addressed at varying scales because of the existence of watershed planning and management organizations that already exist at a scale much smaller than HUC-8. These include WDs and watershed management organizations (WMOs).

Minnesota's protection priorities

The MPCA collaborating with the DNR developed a WRAPS Protection Strategy Guidance (https://www.pca.state.mn.us/water/tmdl-policy-and-guidance), which further enhance Minnesota's approach for protection. This document will provide guidance to identify systematically protection opportunities in WRAPS projects following priorities outlined in Minnesota's Nonpoint Priority Funding Plan (NPFP). The CWLA and the Nonpoint Source Priority Funding Plan (NPFP) require WRAPS to contain clear watershed protection strategies and to identify and prioritize waters at risk of becoming impaired.

Given the high projected costs of restoring waters that have become impaired, it is prudent for state agencies to develop and deliver guidance on where to focus and how to be efficient with protection investments so that the number of impaired waters that need to be addressed does not continue to expand. Protection guidance is intended to provide state agencies and their partners with a consistent method and rationale for how to identify waterbodies at risk, set reasonable goals for protection, incorporate locally held water quality values and considerations, and provide recommendations for specific protection methods that will be pursued during implementation.

Protection is one of the elements of EPA's new collaborative framework for implementing the federal CWA Section 303(d) program with states — A Long-Term Vision for Assessment, Restoration and Protection (https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities). In addition to the traditional TMDL development priorities and schedules for waters in need of restoration, states are asked to identify protection planning priorities and approaches along with schedules to help prevent impairments in healthy waters.

The CWA implementation efforts to restore and protect the nation's aquatic resources, where the nation's waters are assessed, restoration and protection objectives are systematically prioritized, and Total Maximum Daily Loads and alternative approaches are adaptively implemented to achieve water quality goals with the collaboration of States, Federal agencies, tribes, stakeholders, and the public.

Minnesota's TMDL priorities

The MPCA has created a Minnesota's TMDL Priority Framework Report to prioritize TMDLs and other watershed restoration and protection activities, to maximize water quality improvements and to meet the needs of EPA's national measure as part of above-mentioned Long-Term Vision for Assessment, Restoration and Protection. MPCA identified water quality impaired segments, which will be addressed by TMDLs by 2022. The priority waterbodies are impaired by conventional pollutants and the TMDL priority schedule has been coordinated with the WRAPS cycle. The conventional pollutants are dissolved oxygen, pH, temperature, total suspended solids, bacteria, ammonia, nitrates, nutrients, and biological impairments.

Waterbodies listed for nonconventional pollutants (chloride and mercury, for example) will continue to be done according to the 303(d) list dates, but they will be done through a separate process rather than through the watershed approach. A small number of waterbodies listed for conventional pollutants have been deferred to later dates when Cycle 2 of the watershed approach is in progress.

A new TMDL prioritization plan will be developed in 2022. WRAPS report updates will be done following on the 10-year IWM cycle, and the TMDLs for conventional pollutants in those watersheds will be done as part of the WRAPS process.

3.1.5. Comprehensive Watershed Management planning

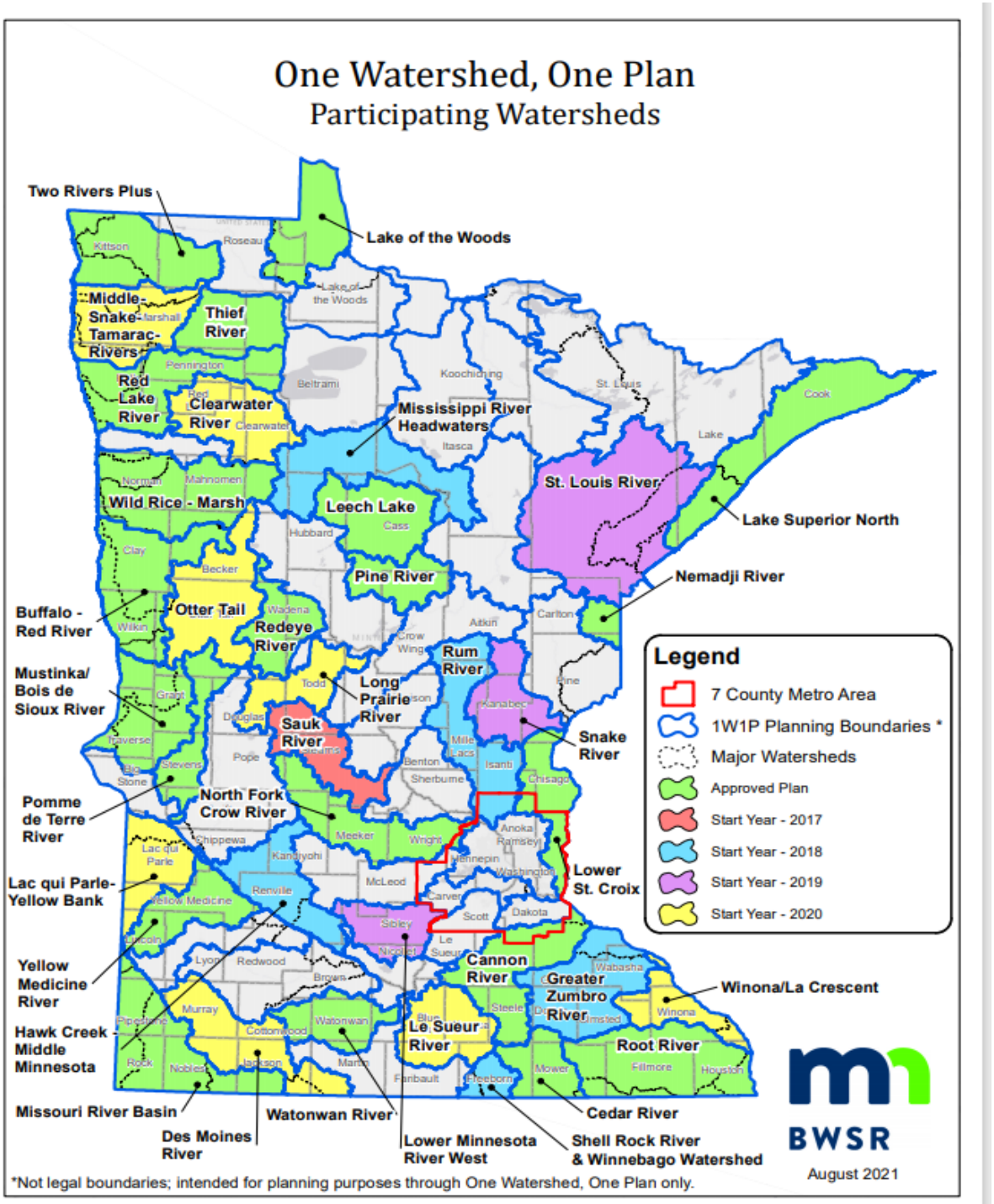
Local planning at the county or WD/WMO scale is overseen by the BWSR. Coordination of this local planning is a core function of BWSR. Water management planning procedures, resources and publications are available on BWSR's website.

In the context of the Minnesota Water Quality Framework, it is expected that local planners will incorporate the strategies outlined in WRAPS into their plans. This means prioritizing projects and raising or seeking funding to carry them out based on the science provided in WRAPS.

In 2013, the Minnesota Legislature passed legislation known as One Watershed, One Plan (1W1P) that provided authorization and funding to BWSR for assistance and grants to local governments to transition local water management plans from a largely county-based planning scale to a watershed-based approach. The 1W1P is rooted in this history and in work initiated by the Local Government Water Roundtable (Association of Minnesota Counties, Minnesota Association of WDs, and Minnesota Association of SWCDs) in 2011, which recommended that the local governments charged with water management responsibility should organize and develop focused implementation plans on watershed boundaries. This began as a pilot program and BWSR has transitioned it to a statewide program available to all suggested planning boundaries (outside the TCMA). Of the 63 planning areas, 22 have completed 1W1Ps and 27 that are in various stages of planning as of August 2021 (Figure 4).

In the TCMA, local planning is carried out by WDs and WMOs. They are also expected to incorporate the strategies outlined in WRAPS into their plans.

Figure 4. Watersheds participating in the One Watershed, One Plan program



3.2. Nonpoint Priority Funding Plan

The CWLA was amended in 2013 (Minn Stat. § 114D.50, subd. 3a) to require the development of a NPFP by BWSR "to prioritize potential nonpoint restoration and protection actions based on available WRAPSs, TMDLs, and local water plans." The amendment stated that "the plan must take into account the following factors: water quality outcomes, cost-effectiveness, landowner financial need, and leverage of nonstate funding sources. The plan shall include an estimated range of costs for the prioritized actions." (Minn. Stat. § 114D) The first NPFP was completed in 2014 and was updated in

2018. The NPFP is "a criteria-based process to prioritize CWF nonpoint implementation investments" providing "agencies with a coordinated, transparent, and adaptive method to ensure that CWF implementation allocations are targeted to cost-effective actions with measurable water quality results." This plan is meant to guide the spending of CWFs in the state. Because this is what the Minnesota Legislature and voters have decided are the methods of prioritization, these goals are used to prioritize the spending of Section 319 Small Watersheds Focus Grant Program funds. BWSR and other State agencies that use the CWF to implement NPS implementation actions are required to use the NPFP when making NPS investment decisions.

"The NPFP builds on the systematic watershed approach to water management that is now well under way across Minnesota. The watershed approach is reflected in the MPCA-led WRAPS process, BWSR's One Watershed One Plan initiative and the interagency Minnesota Water Management Framework." (NPFP, 2018, p. 4).

The three high-level state priorities for the use of CWF nonpoint implementation money include:

- Restore those impaired waters that are closest to meeting state water quality standards.
- Protect those high-quality unimpaired waters at greatest risk of becoming impaired.
- Restore and protect water resources for public use and public health, including drinking water.

These priorities of nearly impaired, barely impaired, and those that are a significant public use and public health, especially drinking water sources, are prioritized for funding, as described in the *Section 319 Small Watersheds Focus Programs Funding Priorities and Selection Criteria*.

Eight high-level keys are identified in the NPFP for the successful use of CWFs in achieving the state's clean water goals. These are:

- Accelerate Watershed-Scale Implementation.
- Prioritize and Target at the Watershed Scale.
- Measure Results at the Watershed Scale.
- Utilize Science-Based Information.
- Build Local Capacity.
- Maximize Existing Laws and Regulations.
- Support Innovative Nonregulatory Approaches.
- Integrate Hydrologic Management Systems into Watershed Plans.

The Section 319 Small Watersheds Focus program champions these eight high-level keys from the NPFP by supporting a long-term, focused implementation process. The Focus Grant NKE plans will incorporate the eight keys to develop a detailed NKE plan that will address water quality issues. The MPCA Section 319 funded program staff utilize these eight keys through the utilization of the Minnesota Water Quality Framework.

3.3. Clean Water Roadmap

The Clean Water Roadmap (Roadmap) (https://www.legacy.mn.gov/clean-water-fund) was developed in 2014 to provide a set of goals for protecting and restoring Minnesota's water resources during the 25-year life of the Clean Water, Land and Legacy Amendment. The Roadmap goals are intended to be ambitious, yet achievable. Progress in meeting the goals will require significant investment from the CWF along with other water resource funding sources, including Section 319 program and grant funds. The Roadmap provides a high-level, long-term perspective for planning and implementation activities in Minnesota for the protection and restoration of the state's water resources, particularly those

supported by the CWF. It focuses on the roles of the seven state agencies with specific CWF responsibilities in managing Minnesota's water resources.

The Clean Water Roadmap is intended to:

- Define aspirational, yet achievable goals for outcomes associated with 25 years of CWF expenditures,
- Establish interim benchmarks, to assess progress towards the 25-year goals,
- Adjust program or funding priorities based on progress made towards the benchmarks and the 25-year goals,
- Create realistic expectations among interested stakeholders and citizens about the potential for progress with the addition of CWFs.

The Roadmap is intended to set clear expectations and understanding of what can be accomplished. It is a milestone measurement for the CWF. Section 319 grant and program funds can be used to support and increase the pace of successful restoration and protection.

Many of the goals and indicators are reflective of the goals of the Section 319 program, including obtaining measurable water quality improvement. The indicator measures, goals, and future benchmarks in the Roadmap are intended to complement the many existing water planning tools, allowing periodic evaluations to determine if activities are on track to achieve meaningful results. The magnitude of the CWF efforts is unprecedented and has emphasized the development of an integrated system for water resource management in Minnesota, including:

- A holistic approach to managing surface water, groundwater, and drinking water,
- Comprehensive planning that supports local implementation,
- Transition to watersheds as the primary focus for organization, and
- Maximizing benefits through integration of local, regional, and state efforts.

The Roadmap is designed to work within this system, leveraging the full range of planning and implementation activities and tools, including:

- Interagency water management framework.
- Local water plans.
- Watershed restoration and protection strategies (WRAPS).
- Groundwater restoration and protection strategies (GRAPS).
- Statewide priorities (NPFP).
- CWF performance report.

The Section 319 Small Watersheds Focus Program incorporates the use of the water resource management planning and implementation tools. Focus Grant NKEs capitalize on the integrated system of management described above.

3.4. Clean Water Performance Report

The biennial Clean Water Fund Performance Report (Performance Report) is used to measure the progress being made in the state efforts to restore and protect water quality. The report provides a summary of CWF investments, actions taken, and outcomes achieved. The report is published every other year and is based on a suite of about 30 performance measures that will be tracked over the lifetime of the CWF. The focus of the Performance Report is on monitoring the progress and effectiveness of past investments and their associated protection and restoration activities at a statewide scale.

3.5. 2015 MN EQB Water Policy Report

The EQB is required by state law to produce a water policy report every five years. The Beyond the Status Quo: 2015 EQB Water Policy Report is the result of collaboration across state agencies to move beyond the status quo on water challenges. The water policy report is a compilation and synthesis of on-going discussions regarding water policy in the state. It includes voluntary and regulatory solutions as well as proposing system changes that harness market forces and look to change cultural expectations. The goals in the water policy report include:

- Promote sustainable water use.
- Manage runoff in the built environment.
- Increase living cover.
- Ensure resilience to extreme rainfall.

3.6. Climate change in Minnesota

State agencies in Minnesota are working together to mitigate the impacts of climate change, and to adapt to changes already occurring. Mitigation is all about limiting the magnitude and progression of climate change. To do this, we need to reduce emissions of greenhouse gases (GHGs) that warm the atmosphere and surface of the planet.

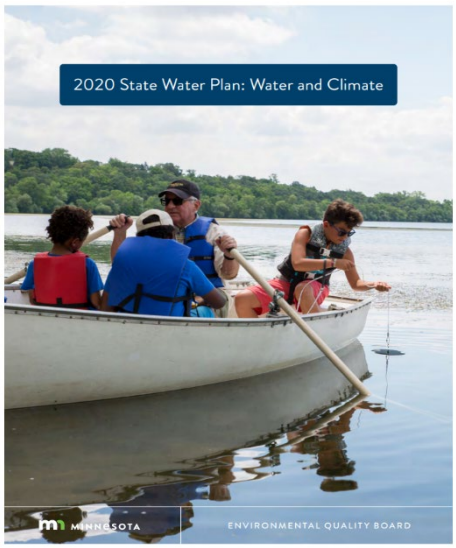
Climate protection co-benefit of strategies

Many agricultural BMPs, which reduce the load of nutrients and sediment to receiving waters, also act to decrease emissions of GHGs to the air. Agriculture is the third largest emitting sector of GHGs in Minnesota. Important sources of GHGs from crop production include the application of manure and nitrogen fertilizer to cropland, soil organic carbon oxidation resulting from cropland tillage, and carbon dioxide (CO_2) emissions from fossil fuel used to power agricultural machinery or in the production of agricultural chemicals. Reduction in the application of nitrogen to cropland through optimized fertilizer application rates, timing, and placement is a source reduction strategy; while conservation cover, riparian buffers, vegetative filter strips, field borders, and cover crops reduce GHG emissions as compared to cropland with conventional tillage.

The USDA Natural Resources Conservation Service (NRCS) has developed a ranking tool for cropland BMPs that can be used by local units of government to consider ancillary GHG effects when selecting BMPs for nutrient and sediment control. Practices with a high potential for GHG avoidance include: conservation cover, forage and biomass planting, no-till and strip-till tillage, multi-story cropping, nutrient management, silvopasture establishment, other tree and shrub establishment, and shelterbelt establishment. Practices with a medium-high potential to mitigate GHG emissions include: contour buffer strips, riparian forest buffers, vegetative buffers and shelterbelt renovation. A longer, more detailed assessment of cropland BMP effects on GHG emission can be found at NRCS, *et al*., "COMET-Planner: Carbon and Greenhouse Gas Evaluation for NRDC Conservation Practice Planning http://comet-planner.nrel.colostate.edu/COMET-Planner_Report_Final.pdf.

Minnesota State Water Plan: The Environmental Quality Board (EQB) is responsible for coordinating comprehensive long-range water resources planning in order to prepare the Minnesota State Water Plan every ten years. The 2020 Water Plan focus is on climate change and sustainable water management. Outcomes include:

- Deeper understanding of how climate change and variability affects water management.
- Prioritized actions for the coming decade.
- Shared priorities and vision across agencies.



3.7. Summary of components of Minnesota Water Quality Framework

Each component works with the other components to provide a comprehensive suite of tools for water resource planning and implementation. The Roadmap provides long-term, measurable goals at a statewide scale that inform state funding priorities described in the NPFP. The state-level priorities are then linked to watershed scale strategies in WRAPS and GRAPS. These strategies identify water quality issues in each major watershed and will be used to inform local water planning.

Local priorities and knowledge are then used to refine the broad-scale strategies identified in WRAPS, GRAPS, and other assessments into local water plans. The local plans provide the local commitment for prioritized, targeted, and measurable action.

Each of these tools will be informed and adjusted over time as progress is measured. The Performance Report is one key tool used to track performance at a statewide scale.

Finally, because goal setting and prioritization for water resources occurs at multiple scales, these plans and strategies represent the various different geographic scales (statewide to watershed) and different strategic scales (goals to actions). An example of how they work together is shown in Figure 5.

Figure 5. Connections between program components (CWR, 2018)

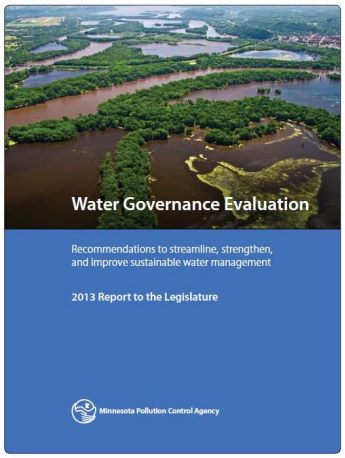
The Section 319 Small Watershed Focus Grant Program and the Section 319 program funding incorporate and support the development and measurement of these components. These reports and activities are the foundation of the Focus Grant NKEs. Although the measurements and assessments specifically measure CWF progress, these measures are also helpful to the Section 319 funding. These represent the intent of Minnesotans' priorities and progress assessment toward clean water.

3.8. Agency roles and responsibilities

Several state agencies have roles and responsibilities in Minnesota's Water Quality Framework. The roles and responsibilities vary among agencies with each agency having a distinct charge. The framework provides the basis for linking each agency through the common goals of the framework. Aligning efforts for watershed management ensures leveraged resources, more effective project outcomes and greater long-term sustainability. As previously described, Figure 2 portrays the agencies' roles and responsibilities with respect to Minnesota's Water Quality Framework.

The additional description of the roles and responsibilities of Minnesota's state agencies engaged in water management below are adapted from the 2013 Water Governance Evaluation report to the Minnesota Legislature and the 2014 update found at https://www.pca.state.mn.us/water/water-governance-evaluation-report.

3.8.1. State agencies



The **BWSR** functions as the state soil and water conservation agency and is authorized to direct private land soil and water conservation programs through the action of soil and water conservation districts (SWCDs), counties, cities, townships, WD, and WMOs. The 20-member Board includes citizens; county, SWCD, WD, township, and city representatives; and representatives of the MDH, MDH, DNR, MPCA, and UMN Extension. BWSR is the primary source of guidance, oversight, and on-the-ground project funding for local governments, private landowners, and other partners on local water plans, wetland protection efforts under the Wetland Conservation Act, and soil and water conservation programs.

The **EQB** is charged with coordinating comprehensive long-range water resources planning and policy through the preparation of a Minnesota Water Plan every 10 years. It also prepares a consolidated report on groundwater policy and water assessments every 5 years, consolidating reports by the MPCA, MDA, and DNR on assessment and analysis of: water quality and quantity; groundwater degradation trends; efforts to reduce, prevent, minimize and eliminate degradation of water; and surface and groundwater quantity. The EQB consists of nine state Agency commissioners and directors and five citizen members.

The **MDA** is statutorily responsible for the management of pesticides and fertilizer other than manure to protect water resources. The MDA implements a wide range of protection and regulatory activities to ensure that pesticides and fertilizer are stored, handled, applied, and disposed of in a manner that will protect human health, water resources and the environment. The MDA works with the UMN to develop pesticide and fertilizer BMPs to protect water resources, and with farmers, crop advisors, farm organizations, other agencies and many other groups to educate, promote, demonstrate and evaluate BMPs, to test and license applicators, and to enforce rules and statutes.

The MDA has broad regulatory authority for pesticides and has authority to regulate the use of fertilizer to protect groundwater.

The **MDH** is responsible for protecting drinking water quality under the federal Safe Drinking Water Act. The MDH regulates well drilling by examining and licensing well contractors and overseeing the installation, modification, repair, and sealing of wells. The MDH performs source water assessments for public water supply systems (facilities that serve more than 25 people on a regular basis) and administers the State's Wellhead Source Water Protection Program. The agency also establishes health risk limits for groundwater contaminants, working with MPCA and MDA. With the establishment of the CWF, the MDH provides grant funding to public water suppliers to implement actions identified in their source water protection plans.

The **DNR** has primary responsibility for inventorying and managing the state's public waters, including public water, wetlands, and for regulating any activities that obstruct or alter these waters, including dams, reservoirs and other structures. The DNR establishes permissible lake or stream levels (known as ordinary high water levels). The Agency is also responsible for water allocation and use, including groundwater appropriations. Water appropriations permits are considered on a case-by-case basis, based on a statutorily defined order of priorities that gives the highest priority to domestic water supplies, followed by uses such as irrigation, power production and industrial use. The DNR may

suspend withdrawals during periods of low water levels or other shortages. The DNR also oversees shoreland and floodplain management, wild and scenic rivers, and lake and stream hydrology.

The **Minnesota Public Facilities Authority (PFA**) is a multi-agency authority that provides municipal financing expertise and infrastructure financing programs. The PFA manages three revolving loan funds and several other financing programs to help local governments to upgrade and construct wastewater treatment and collection facilities, to upgrade and construct municipal stormwater infrastructure and drinking water treatment, distribution, and storage facilities, and to address transportation and other high-cost infrastructure needs.

The **Metropolitan Council (Council)** provides long-range planning and essential services for the TCMA. The Council's *Water Resources Policy Plan* (Water Plan) is intended to help ensure the "coordinated, orderly and economical development" of the seven-county TCMA (Minn. Stat. § 473.851). The Council's commitment to environmental stewardship is translated from the Water Policy Plan through surface water management implementation strategies. The Council conducts special studies that look at aspects of water quality management and has an active database (Environmental Monitoring Data, known as EIMS) available to provide reports, condition assessments and trending. The Council evaluates and assesses rivers, lakes and streams conditions using data collected in partnership with local, state and the public.

The **Minnesota Department of Public Safety (DPS)**, division of Homeland Security and Emergency Management (HSEM) has a vision for a resilient Minnesota-- as we help communities prepare for, respond to, and recover from emergencies and disasters. The HSEM Hazard Mitigation Team's mission to reduce the risk to people and property from natural and human-caused hazards by developing and implementing long term mitigation measures that will reduce or eliminate the severe effects of future disasters. Three pre/post disaster Federal Emergency Management Agency (FEMA) grant programs and hazard mitigation planning are conducted by this agency.

The **MPCA** has primary responsibility for water quality protection, as the agency responsible for implementing much of the federal CWA in Minnesota. As such, the MPCA is responsible for establishing state water quality standards for lakes, rivers, streams, and wetlands, monitoring and assessing the quality of all waters in the state, identifying waters that fail to meet state water quality standards, administering the Section 319 Program, and administering the federal NPDES permitting program (under a cooperative agreement with the EPA).

3.8.2. Federal agencies

Various federal agencies play important roles in water resources related to NPS pollution. The federal agencies with the most direct involvement in water management in the state include:

U.S. EPA. The EPA is the federal agency responsible for implementing the requirements of the CWA. Many of the requirements are designated to the MPCA as the state water quality agency. The EPA authorities related to NPS pollution include water quality standards, assessments of water quality, the impaired waters (303d) list, TMDLs, and the Section 319 program.

U.S. Army Corps of Engineers (COE). The COE is the principal federal regulator of wetlands and work in many types of water bodies, as authorized by Section 404 of the CWA and Section 10 of the Rivers and Harbors Act. Under Section 10, a COE permit is required to do any work in, over or under a Navigable Water of the U.S. or to do any work that affects the course, location or condition of the water body so as to impact its navigable capacity. Under Section 404, a COE permit is required for the discharge of dredged or fill material into waters of the U.S., including wetlands.

U.S. Fish and Wildlife Service (FWS). The FWS is the principal federal agency that provides information on the extent and status of the nation's wetlands, through development of the National Wetlands Inventory and the more recent Wetland Database and mapping standards, reporting on status and extent of wetlands. FWS also manages National Wildlife Refuges and federally owned Waterfowl Production Areas throughout Minnesota and provides wildlife, fish, and habitat management resources.

USDA. The USDA includes three divisions with important roles in NPS pollution control. The NRCS provides financial and technical assistance to landowners, communities, and local governments for many soil and water conservation activities. The Farm Services Agency (FSA) supports farms and farming communities with programs including disaster relief, conservation programs, commodity price guarantee programs, and loan programs. The FSA manages the following conservation programs: Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), Emergency Conservation Program, Emergency Forest Restoration Program, Farmable Wetlands Program, Grassland Reserve Program, and USDA Source Water Protection Program. The U.S. Forest Service manages the national forests in Minnesota and supports sustainable forest management.

FEMA. The mission of FEMA is to help people before, during, and after disasters. It is designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. Congress' intention was to encourage states and localities to develop comprehensive disaster preparedness plans, prepare for better intergovernmental coordination in the face of a disaster, encourage the use of insurance coverage, and provide federal assistance programs for losses due to a disaster.

3.8.3. Local government unit roles and responsibilities

Local government units play a vital role in water quality planning, technical assistance, monitoring, as well as implementing BMPs and actions at the local level. In general, these entities are the primary on-the-ground implementers of protection and restoration activities and thus greatly help the state's mission to reduce NPS pollution. Significant contributors to this effort within the state of Minnesota include SWCDs; WDs and WMOs; and, county, city, and various regional environmental staff.

Counties have a wide variety of water management duties, including planning and zoning, including shoreland and floodplain zoning and constructing and maintaining water and wastewater systems. Counties are authorized by Minn. Stat. § 103B.311 to develop water management plans to identify water problems and prioritize solutions.

SWCDs are established by Minn. Stat. § 103C.331 as political subdivisions of the state of Minnesota with certain powers and duties. SWCDs operate on a county basis throughout the state (several counties have more than one SWCD) and are administered by an elected board of supervisors. The districts do not have taxing authority and receive much of their money from their affiliated counties and the state. SWCDs focus their resources on encouraging private landowners to carry out BMPs, as well as development and implementation of water plans and related projects.

Cities roles in water management vary across the state. Many are defined as local government units (LGUs) under the Wetland Conservation Act, and most are involved in local water management planning. Cities, counties, and townships with shoreland must submit ordinances, rules, or regulations to DNR for review if they affect shoreland development and use. Similar provisions apply to floodplain management ordinances. Many cities form municipal separate storm sewer systems (MS4s) and are regulated by MPCA under the federal NPDES program. Community public water suppliers using groundwater are required to develop and implement wellhead protection plans.

Townships are typically the smallest local unit of government with water management authorities. Some townships are listed as LGUs with Wetland Conservation Act authority. Townships may have adopted their own shoreland or floodplain regulations. Their role in managing township roads may also affect water management.

WDs are special-purpose LGUs authorized to manage water resources within boundaries generally following those of a natural watershed. The Minnesota legislature authorized the creation of WDs through the Watershed Act in 1955. WDs have broad authorities, including the authority to adopt rules, regulate development, assess properties for benefits received, levy taxes to finance district administration, and acquire, construct and operate drainage systems and other water control structures

WMO are comprised of LGUs in the seven county Metropolitan area required to prepare and implement comprehensive surface water management plans. WMOs are organized as a joint powers agreement between cities and townships in the watershed, as a WD or as a function of county government.

Lake Improvement Districts (LIDs) districts are administered by DNR. LIDs may be established by resolution of local government or by petition to local government by a majority of affected property owners. Initially most LIDs were formed to manage water quality by improving sewage treatment around the lake, or to manage water levels through establishment and maintenance of some form of outlet control structure. Since 2004, LIDs have been formed primarily to manage invasive aquatic vegetation

3.8.4. Tribal nations

The MPCA recognizes the important role that tribal nations play in the protection of water resources in their nations. As sovereign nations, tribal nations are not regulated by the state of Minnesota and waterbodies inside their boundaries are considered shared waters. Some Minnesota tribal governments have their own NPS programs with Section 319 funding. Minnesota values and respects the work that is conducted by the tribal governments. It is desired to strengthen the working relationship between Minnesota and the tribal governments and to listen and incorporate the tribe's input in Minnesota's work around the tribal nation and to support the work within the tribal boundaries.

At the outset of a WRAPS project, the MPCA provides a letter to the appropriate tribal authority inviting participation in the WRAPS process. Tribal partners are eligible for nonpoint funding through state programs. Several tribal nations have developed their own Section 319 programs. Collaboration with tribes occurs on other aspects of water resource management as well.

3.9. Program coordination

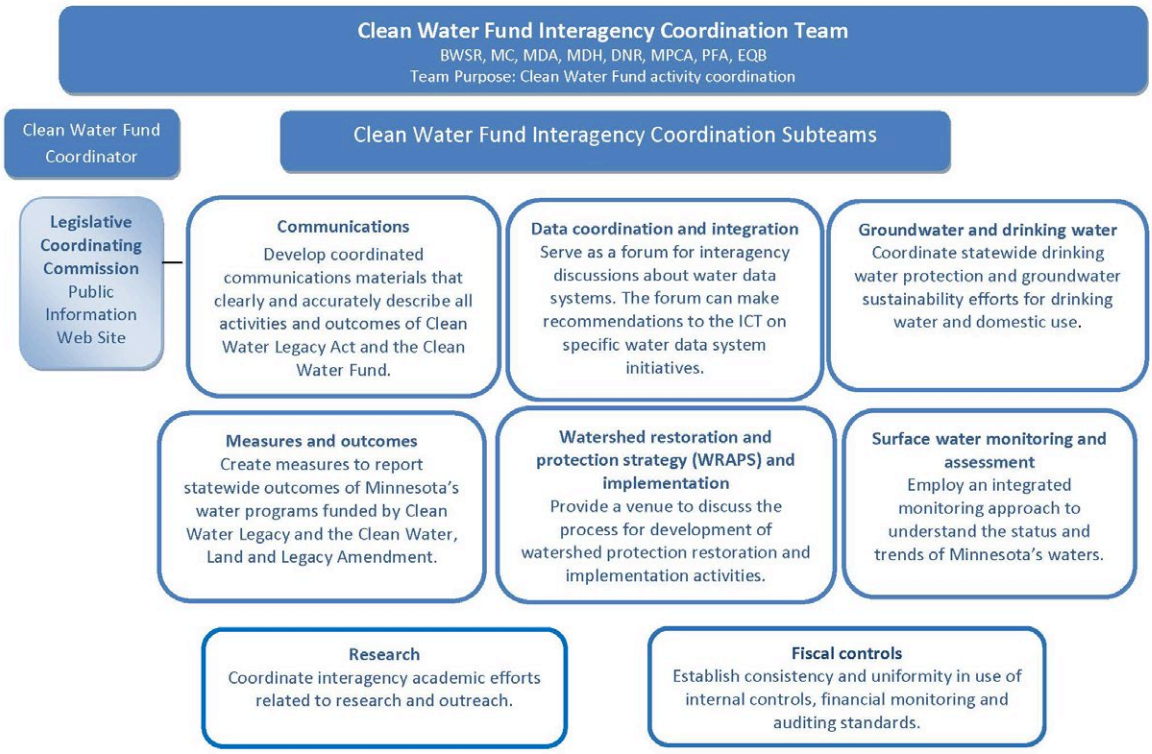
3.9.1. Interagency Coordination Team (ICT)

A CWF ICT was established in 2006 to provide agency coordination for the Water Quality Framework. The stated purposes of the team are:

- Coordinating state agency clean water activities.
- Coordinating and leveraging funding opportunities.
- Enhancing institutional knowledge for future water management activities.
- Providing consistent information for public use, reporting and administrative procedures.

The ICT oversees the interagency subteams shown in Figure 6 to achieve sustainable management and protection of the state's surface water and groundwater resources.

Figure 6. CWF Interagency Coordination Team



Other state water resource management efforts: The coordination team recognizes there are many other state water resource management efforts underway. The coordination team will monitor these efforts to identify opportunities for collaboration, including but not limited to: the Legislature, Clean Water Council, Lessard-Sams Outdoor Heritage Council, Environmental Quality Board, and Legislative Citizen Commission on Minnesota Resources, U of M Sustainability Framework and the Great Lakes Restoration Initiative. Revised January 2019

3.9.2. Clean Water Council

The CWC was created through the CWLA in 2006. The CWC's role is to advise on the administration and implementation of the CWLA and foster coordination and cooperation.

The CWC members are appointed by the governor and include people from statewide farm organizations, business organizations, environmental organizations, SWCDs, WDs, nonprofit organizations focused on improvement of Minnesota lakes or streams, county governments, city governments, township officers, tribal governments, statewide hunting organizations and statewide fishing organizations. Non-voting representatives to the CWC include representatives from DNR, MDA, MDH, MPCA, BWSR, UMN, Metropolitan Council, Minnesota House of Representatives and Minnesota Senate.

The CWC develops recommendations for the Legislature and Governor on how CWF dollars should be appropriated; policies to accelerate water quality improvements, resolutions important to the success of achieving clean water, and progress on CWF activities. It also develops progress reports on CWF activities. The CWC's recommendations reflected a heightened priority for on-the-ground programs where funding will likely achieve maximum outcomes in clean water. The Minnesota Constitution requires that at least 5% of the CWF must be spent to protect drinking water sources. The CWC's FY18-19 CWF recommendations include approximately $38 million (17%) for drinking water protection. The appropriated CWF for water resource activities during fiscal years 2018-2019 was $211.87 million. The

activities funded include a continuation of previous clean water activities and some new water management efforts.

3.9.3. Funding priorities

The Minnesota Legislature passed a law in 2013 requiring BWSR to prepare and post on its website a NPFP to prioritize potential NPS restoration and protection actions based on available WRAPS, TMDL implementation plans and local water plans. The NPFP is a criteria-based, systematic process to prioritize CWF NPS implementation investments.

The NPFP serves to track the implementation of the state's priorities. In 2018, the NPFP was updated to report on the progress of the CWF funding from state agencies. The funding priorities did not change. Integrating the criteria into decision-making ensures that the uses of CWFs are cost-effective and will result in measurable water quality improvements. Currently, drinking water management is integral to both groundwater and surface water restoration and protection efforts. Over the next biennium, criteria will be evaluated in relation to how they align with groundwater and drinking water projects. The nine criteria used to evaluate program or project activities that receive NPS implementation funds from the CWF was previously discussed in Section 3.2

Priorities identified in the NPFP were also used in the prioritization of the Focus Watersheds for the Section 319 Small Watershed Focus Program.

3.9.4. Funding sources

Table 2 provides a list of the primary state and federal funding sources available for nonpoint source work (implementation) in Minnesota. LGUs also provide funding for NPS implementation through city, county, and WD funding authorities.

Table 2. Partial list of NPS implementation funding sources

Source/Agency	Funding programs description
MPCA	Section 319 Grants: Federal grant funding from the EPA as part of the CWA, Section 319. Grants awarded by MPCA to LGUs and other groups are to address NPS pollution through implementation projects. Section 319 Small Watersheds Focus Program Grants: Section 319 grant funding to local units of government will be focused on small Focus watersheds for long-term project support to achieve the projects' waterbody goals. See Section 4.1.1. Clean Water Partnership Loans (CWP): Zero percent loans are provided to LGUs and organizations for work on projects that address NPS pollution. CWP loans are under the umbrella of the state revolving fund (SRF). Wastewater and stormwater financial assistance: The SRF provides loans to for both point source (wastewater and stormwater).
BWSR	Competitive Grants: These grants are to restore, protect, and enhance water quality. Eligible activities must be consistent with a comprehensive watershed management plan, county comprehensive local water management plan, soil and water conservation district comprehensive plan, metropolitan local water plan or metropolitan groundwater plan that has been State approved and locally adopted or an approved TMDL, WRAPS document, surface water intake plan, or well head protection plan. Watershed-based Funding: The Board of Water and Soil Resources (BWSR) is moving towards providing more systematic Clean Water Funding for local water management authorities on a watershed basis. This approach will depend on comprehensive watershed management plans developed under the One Watershed,

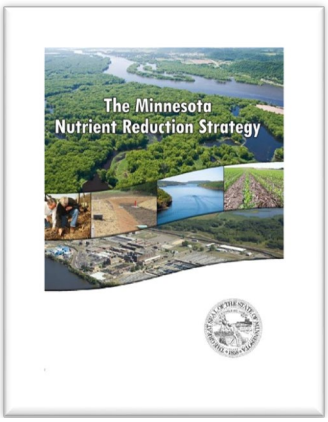
Source/Agency	Funding programs description
	One Plan Program or the Metropolitan Surface Water Management Act to provide assurance that actions are prioritized, targeted, and measurable Targeted Watershed Demonstration Program: This program awards grants to LGUs organized for the management of water in a watershed or subwatershed where multiyear plans that will result in a significant reduction in water pollution in a selected subwatershed are in place. The Erosion Control and Water Management Program, commonly known as the State Cost-Share Program: This program provides funds to SWCDs to share the cost of systems or practices for erosion control, sedimentation control, or water quality improvements that are designed to protect and improve soil and water resources. Through this program, land occupiers can request financial and technical assistance from their local District for the implementation of conservation practices. RIM Buffers - restore permanent conservation easements on riparian buffers to keep water on the land in order to decrease sediment, pollutant and nutrient transport, reduce hydrologic impacts to surface waters and increase infiltration for groundwater recharge. Additionally, through an appropriation from the Outdoor Heritage Fund, buffers may be extended for wildlife habitat purposes. RIM Wellhead Protection – For permanent easements to retire land in agricultural production in areas where the vulnerability of the drinking water supply management area is designated as High or Very High by the MDH. Other BWSR grant programs are available as well.
MDA	AgBMP Loan Program: This program encourages implementation of BMPs that prevent or reduce pollution problems, such as runoff from feedlots, erosion from farm fields and shoreline, and noncompliant septic systems and wells. The MDA provides a wide array of other information from their agency as well as other state and federal agencies on conservation programs addressing agriculture and other land uses. In addition, the MDA funds clean water research activities.
DNR	The Forest Legacy Program is a conservation program administered by the DNR to encourage the protection of privately owned forestlands through conservation easements or land purchases. The Forest Stewardship Program helps woodland owners manage their woods through advice and education, cost-share programs, and Woodland Stewardship Plans. Coastal Program Grants provide communities, agencies, and organizations solve issues that impact Lake Superior and its coast. Annual and Short Term Action Request grants are awarded with funding from the National Oceanic and Atmospheric Administration.
USDA-Natural Resource Conservation Service (NRCS)	Environmental Quality Incentives Program (EQIP): EQIP is a voluntary program in the 2018 U.S. Farm Bill that provides incentive funds to implement conservation practices, or activities, such as conservation planning that address natural resource concerns for agricultural producers. National Water Quality Initiative (NWQI): NWQI is a small watershed program that designates HUC12 watersheds to use dedicated EQIP funds for conservation practice implementation with the intent of demonstrating sufficient implementation to achieve the water quality goals of the watershed. Mississippi River Basin Initiative (MRBI): MRBI is a small watershed program that designates HUC12 watersheds to use dedicated EQIP funds for conservation practice implementation in the Mississippi River Basin watersheds. Conservation Stewardship Program (CSP): CSP is a voluntary program to improve resource conditions such as soil quality, water quality, water quantity, air quality, habitat

Source/Agency	Funding programs description
	quality, and energy in a comprehensive manner. NRCS provides financial and technical assistance to eligible producers to develop and implement a CSP plan on their land
USDA-FSA	Conservation Reserve Program (CRP): CRP is a land conservation program administered by the FSA. In exchange for a yearly rental payment, farmers enrolled in the program agree to remove environmentally sensitive land from agricultural production and plant species that will improve environmental health and quality for 10-15 years. The long-term goal of the program is to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce habitat loss.

3.10. State/regional/basin-scale strategy efforts

The Minnesota Watershed Approach encompasses state, regional, and basin-scale efforts across state agencies and programs. This section will provide a general overview of state, regional and basin-scale strategies. These strategies provide vision and general direction at the larger scales while also informing planning at smaller scales, especially Section 319 Small Watershed Focus Grant NKEs. These studies and the goals within also guide the prioritization process for the Small Watersheds Focus Program.

3.10.1. Statewide activities



Minnesota Nutrient Reduction Strategy

The Minnesota Nutrient Reduction Strategy was an effort led by the MPCA and included both nitrogen and phosphorus assessments to identify nutrient source contributions. The foundation of the strategy builds on historical and recent data, setting realistic and achievable short-and long-term goals, tracking progress, and providing for adaptive management from future research and monitoring. The key is setting short-term goals, or milestones, to track progress to the long-term goals. The report was focused on NPS pollution. A 5-year progress report was produced in 2020.

Minnesota Nitrogen Fertilizer Management Plan

The Nitrogen Fertilizer Management Plan (http://www.mda.state.mn.us/pesticide-fertilizer/minnesota-nitrogen-fertilizer-management-plan) was developed by the MDA and stakeholder advisory committee as the state's blueprint for preventing and minimizing the impacts of nitrogen fertilizer on groundwater. The plan includes components promoting prevention of nitrate contamination in groundwater and developing appropriate responses to the detection of nitrogen in groundwater. The strategies are based on voluntary BMPs, intended to engage local communities in protecting groundwater from nitrate contamination.

Groundwater Protection Recommendations Report

MPCA's Groundwater Protection Recommendations Report provides a contaminant-by-contaminant summary of the status and efforts to prevent and minimize contaminant impacts on groundwater quality, followed by recommendations to improve these efforts so that Minnesotans have safe and reliable sources of drinking water. The report focuses primarily on recommended activities to address human-caused contaminants, followed by continued efforts needed to avoid tapping groundwater that contains naturally occurring contaminants.

Statewide Mercury Reduction Plan

MPCA's Implementation Plan for Minnesota's Statewide Mercury TMDL primarily addresses point sources of mercury. By reducing airborne emissions, less atmospheric deposition occurs, which in turn means that less nonpoint runoff of mercury occurs.

Minnesota's Wetland Program Plan

Minnesota first adopted an interagency Wetland Program Plan in 2012 and was updated in January 2021. Minnesota's first program plan was submitted to U.S. EPA Region V for approval. It is available on Minnesota BWSR's website at: Minnesota's Wetland Program Plan.

Minnesota State Hazard Mitigation Plan: Including recommended actions of climate change adaption

The Minnesota DPS, Division of Homeland Security and Emergency Management is responsible for ensuring the state has a FEMA approved All-Hazard Mitigation Plan to address the many hazards that impact the state. The plan's guiding principles include fostering cooperative relationships, following the planning process, focusing on reducing risks and improving mitigation capabilities. State hazard mitigation planning aims to foster partnerships for natural hazard mitigation, promoting more resilient and sustainable states and communities and reducing the costs associated with disaster response and recovery.

3.10.2. Regional watershed activities

Specific regional concerns have called for additional, regionally targeted strategies and studies. These efforts are briefly introduced below. The MPCA staff and management funded by Section 319 program dollars use these studies as an overarching strategy for the development of TMDLs and WRAPS. These plans and strategies will help set goals to be used in the Section 319 Small Watersheds Focus Grant program NKE plans.

Lake Superior Basin initiatives

Lake Superior is the largest freshwater lake in the world by surface area and third largest by volume. Its exceptionally good water quality is surprisingly vulnerable to contamination. Minnesota is active in federal and state remediation and protection efforts for toxics contamination and conventional pollutants. The following programs are important in the water quality management of Lake Superior, its harbors and bays, and tributaries:

- Lake Superior Binational Program: This collaborative program has focused on the entire ecosystem of Lake Superior, its air, land, water and human and wildlife. As one of the partners in this program, the MPCA is striving for zero discharge and zero emission of nine toxic chemicals from sources in the Lake Superior basin.
- St. Louis River Area of Concern: The MPCA is one of many partners seeking to restore the quality of the water, sediment and habitat of the lower St. Louis River. Agencies and stakeholders are working together to clean up contaminated sediments and restore aquatic habitat to the estuary in the St. Louis River Area of Concern within the Great Lakes Basin.
- Great Lakes Restoration Initiative: The initiative is accelerating efforts to restore and protect the Great Lakes with federal agency collaboration and partnerships with state agencies, tribes, and others. The focus of the GLRI is cleaning up the Great Lakes Area of Concern, preventing and controlling invasive species, reducing nutrient runoff that contributes to excessive algal blooms, and restoring habitat to protect native species. Current and future efforts will focus on science-based adaptive management to advance the programs efforts.

- Lake Superior Lakewide Action and Management Plan (LAMP): The plan is a binational action plan for restoring and protecting the Lake Superior ecosystem. The LAMP is developed by the Lake Superior Partnership, which is led by the EPA and Environment and Climate Change Canada, and will be implemented binationally in cooperation with all Lake Superior stakeholders. The LAMP provides descriptions of current environmental conditions, threats to the ecosystem, lake wide objectives, priorities for future scientific investigations, and actions and projects to address threats and to achieve lake wide objectives.
- Minnesota's Lake Superior Coastal Program: The program is a federal-state partnership dedicated to the comprehensive management of our coastal resources. The Program provides technical and financial resources for the local community, by bringing federal dollars into Minnesota for the Lake Superior coastal area. The goal of the program is to preserve, protect, develop, and where possible, restore or enhance coastal resources along Minnesota's North Shore of Lake Superior. The program includes Minnesota's Lake Superior Coastal Nonpoint Pollution Control Program that identifies the programs and enforceable authorities that Minnesota uses to control NPS pollution in each of six NPS categories: agriculture, forestry, urban and rural areas, marinas, hydromodification and wetlands. Minnesota's coastal zone management program provides opportunities for securing federal funding and technical assistance in order to protect and enhance local natural resources and support community goals.

Lake St. Croix Implementation Plan

- Lake St. Croix Implementation Plan is a basin-scale plan to address the Lake St. Croix nutrient impairment. It was developed by the MPCA in cooperation with the Wisconsin Department of Natural Resources, as the basin is located in both states. The water quality standards for Lake St. Croix are 40 µg/l TP and 14 µg/l chlorophyll-*a* as summer averages. The Lake St. Croix Nutrient TMDL determined that the phosphorus loading could not exceed 360 metric tons of total phosphorus per year to meet the total phosphorus water quality criteria of 40 µg/L. A load reduction of about 123 metric tons per year would be needed to achieve this goal. The implementation plan provides strategies for point and NPS pollution control, water resource education, and targeting critical source areas.

Red River Basin initiatives

The prevalence of extreme flooding in addition to pollution concerns has resulted in several basin initiatives for the Red River of the North along with watershed-specific programs and activities. Some of the organizations and programs include:

- Red River Basin Commission (Commission): The Commission is a charitable, not-for-profit organization designed to help facilitate a cooperative approach to water management within the Basin and is a well-established forum for identifying, developing, and implementing solutions to cross boundary issues.
- International Red River Board (Board): The Board is mandated by the International Joint Commission to assist the Commission in preventing and resolving transboundary disputes regarding the waters and aquatic ecosystem of the Red River and its tributaries and aquifers. This is accomplished through the application of best available science and knowledge of the aquatic ecosystem of the basin and an awareness of the needs, expectations and capabilities of residents of the Red River basin.
- Red River Watershed Management Board (RRWWB): the RRWMB was created by an act of the Minnesota legislature in 1976 to provide an organization with a basin-wide perspective concerning flooding. Historically, the activities of the RRWMB have centered on flood control. Previous efforts in dealing with the flooding problem within the Red River Basin consisted of single projects within a localized area, planned with primary regard to local benefits. The

RRWMB actively promotes a basin-wide perspective for water management. It provides lobbying services, tracking of regulatory issues, coordinates legal services for issues affecting all its members, and cost-shares for stream gauging efforts. Seven WDs within the Red River Valley form the RRWMB including the Joe River, Two Rivers, Roseau River, Middle-Snake-Tamarac Rivers, Red Lake, Wild Rice, and Bois de Sioux WDs.

- WDs: Nine WDs are located in the Minnesota portion of the Red River Basin. The statutory purposes of WDs are to conserve the natural resources of the state by land use planning, flood control, and other conservation projects by using sound scientific principles for the protection of public health and welfare and the provident use of natural resources. The specific duties of WDs vary across the state with some focusing mainly on flood damage reduction, while others have a broad range of programs and services to protect and improve water quality.

Minnesota River Basin initiatives

- The Minnesota River: Evaluating its health: The MPCA's evaluation of the Minnesota River shows there is still much work to be done for the health of the Minnesota River. The monitoring and evaluation work encompasses most of the river, from Big Stone Lake to where it meets the Mississippi in St. Paul. The study led to these primary conclusions:
  - Overall, the Minnesota River is unhealthy. Sediment clouds the water, phosphorus causes algae, nitrogen poses risks to humans and fish, and bacteria make the water unsafe for swimming.
  - Too much water flowing into the river plays a big part in all these problems. There is more rain, more artificial drainage, and not enough places to store this water.

  Changes in water and land management are needed across the Minnesota River Basin to improve water quality in the state's namesake river, as well as streams and lakes throughout the 10 million acres of the basin, according to four studies released by the MPCA and local partners.
- Minnesota River and Greater Blue Earth River Basin TMDL for TSS: This study concerns the major portion of the Minnesota River, focuses on total suspended solids — sediment and other particles that cloud the water. The study calls for decreasing sediment in the river by 50%. The Minnesota River basin is a naturally vulnerable system with erodible soils, but some practices such as artificial drainage worsen the situation by bringing too much water at too fast a rate into the system. Increasing flows are a major factor in the Minnesota River basin, accelerating erosion of riverbanks, reducing water quality, and threatening infrastructure. In the past 80 years, flows have doubled in the Minnesota River.
- Lower Minnesota River Dissolved Oxygen TMDL Implementation Plan.
- The Lower Minnesota River Dissolved Oxygen TMDL Implementation Plan is a basin-scale plan that primarily focuses on phosphorus sources from point and NPS at low flow. Flow enhancement at low flow from upland areas is also a key part of this plan. As of 2019, a great deal of work is underway for the Minnesota River Basin including multiple TMDLs and WRAPS reports.
- Sediment Reduction Strategy for the Minnesota River Basin and South Metro Mississippi River was developed by the MPCA for two large-scale TMDL projects: the Minnesota River Turbidity TMDL and the South Metro Mississippi Total Suspended Solids TMDL. This report provides interim milestones, describes the sources of sediment and outlines reductions options and strategies, as well as other needed components to encourage action and evaluate progress.

Mississippi Basin initiatives

- Upper Mississippi River: What to protect, what to fix - This 2017 study takes a look at the river from Lake Itasca to downtown Minneapolis, evaluating pollution, fish and other aquatic life. The study finds the Mississippi to be a largely healthy river in its northern reaches, owing largely to

the forested and wetland landscapes it flows through. It then acquires significant problems south of St. Cloud, where tributaries from agricultural and more developed landscapes begin to flow into the Mississippi.

- **Our Upper Mississippi River**: Large River and Basin Restoration and Protection Strategies.
- Lower Mississippi River Basin Regional Fecal Coliform Project (which includes watersheds in the Cedar River basin) was among the MPCA's first completed TMDL reports and included an implementation plan that outlined a wide range of efforts to address NPS and point sources.
- Upper Mississippi River Bacteria Project focused on numerous E. coli listings in the Upper Mississippi River basin. In addition to an implementation plan, the project team drafted other work products that will serve others working to address bacterial impairments statewide. These work products include an evaluation of BMPs for bacteria removal, a literature review of bacteria and environmental associations and findings from a Microbial Source Tracking Pilot Study.
- Metropolitan Area Chloride Project is a partnership with local and state experts in the seven-county metro area and dedicating significant effort to evaluate and address chloride impairments. This project included extensive data analysis, a literature review, a telephone survey of local municipalities, and analysis of potential strategies for further research, public education, and potential regulation. This effort also included drafting a TCMA Chloride Management Plan (CMP). The CMP incorporates water quality assessment, source identification, implementation strategies, monitoring recommendations, and measurement and tracking of results into a performance-based adaptive approach for the TCMA. While this plan was developed to address chloride impacts specifically to waters in the TCMA, the restoration and protection goals, implementation strategies, and monitoring and tracking recommendations can be applied statewide.

Minnesota Department of Transportation applying road salt. Photo by David R. Gonzalez of MnDOT.

4. Minnesota's Federal Clean Water Act Section 319 funding

The MPCA allots the Section 319 funding it receives from EPA for program and project activities as provided for by the Section 319 *2014 Guidance* issued by EPA. Funds are split equally between watershed implementation project funding and program support as required by EPA program guidance. It is required that these funds are matched with state and local government dollars.

The Section 319 funds support the protection and restoration of waters that are affected by NPS pollution. As demonstrated by Minnesota's extensive effort, the Section 319 funds are only one part of the funding effort to improve the state's waters. According to the *2014 Guidance*, the effectiveness of the program is dependent on the effective use and leveraging of funds, resources, and people. Section 3 of this plan describes Minnesota's efforts of leveraging. The funds will achieve specific goals, objectives, and milestones that are established by the various partners that are part of Minnesota's efforts, and more specifically, those milestones, goals, and objectives of the Section 319 Small Watersheds Focus Program.

4.1. Section 319 program funding

Section 319 program funds are used by the MPCA to provide staff and management support for addressing NPS pollution in the MPCA's Watershed Approach. NPS pollution issues are a predominant part of the Minnesota Watershed Approach. Section 319 Program funds augment significant state investments in understanding and addressing NPS pollution.

Section 319 Program funds support the MPCA staff and management who provide direction for the program; work in watershed management and protection; program development and management; environmental analysis and monitoring; and support services. The MPCA matches these staff positions dollar-to-dollar and with similar functions to further leverage the Section 319 funds. These positions provide the science, support, and management needed to implement the NPSMP and the Section 319 Program. The stressor identification reports, the monitoring and assessment reports, TMDLs, WRAPS reports, and local water plans written provide the foundation for the detailed Section 319 Small Watersheds Focus Grant NKE plans. The staff also provide the technical assistance and support to implement on-the-ground work through the Section 319 Small Watersheds Focus grants.

Historically, the Section 319 program funds assisted in the development of Minnesota's watershed management program. The work accomplished with Section 319 program funds combined with other agencies efforts and citizen priorities have contributed to the sizable increases in programming and funding for water quality restoration and protection activities in Minnesota. The Minnesota Watershed Approach and Framework now entail large commitments of funds and resources by several state agencies and many local units of government.

4.1.1. Section 319 project funding (pass-through grants)

Section 319 project funds are provided to local units of government for implementation of actions and practices for the restoration of water quality problems due to NPS pollution, and protection of unimpaired waters from NPS pollution. These funds will support and provide the stability needed to implement the systematic and detailed approach of the NKE Plans. Section 319 grant funds can only be used for NPS pollution related activities, in areas with approved watershed-based plans that meets NKE, as described in Section 2.6 of the EPA document, *2008 Handbook for Developing Watershed Plans to*

Restore and Protect Our Waters. Most grant funds are used for the restoration of water quality in impaired waters. Historically, Section 319 funding has been focused on restoration of impaired waters. The *2014 Guidance* includes provisions for protection-focused work. The MPCA will consider projects that include water quality protection activities following the *2014 Guidance* and the protection criteria.

Minnesota's Section 319 Small Watersheds Focus Program (Focus Program) represents the approach for the use of Section 319 grant funds in Minnesota. This program shift occurred in 2018 to follow the guidance laid out by the EPA. Minnesota's history of NPS pollution work also guides this program. The plans, strategies, prioritizations, and other foundational work have influenced the development and direction of the program. This section will provide an overview of that history as well as the development process of the Focus Program. This approach was developed with extensive stakeholder input, including local government representation and agencies.

Grant recipients' projects must comply with Section 319 guidance and the Focus Grant NKE plan to receive funding.

The MPCA approach is to provide longer-term (multiple grant cycles) financial and project support to a limited number of small watersheds. This will limit the number of participants in the program. However, the likelihood of achieving measurable improvements in water quality increases by focusing work in a smaller, more manageable area with sustained funding. During the development of the Focus Program, Minnesota stakeholders overwhelmingly stated that a constant, reliable source of funding would help achieve their goals.

As a result, the Focus Program emerged and is being implemented. The program is described in detail in the next section.

4.2. Overview of the Section 319 Small Watersheds Focus Program

The Focus Program will prioritize selected small watersheds for long-term support in achieving their water quality goals. The selected watersheds will be based on NKE watershed-based plans. The Focus Grant NKEs will be based on the EPA *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* (2008). The development of a holistic roadmap for a small watershed, along with sustained funding, will accelerate and support measurable water quality improvements.

The small watershed framework is an important next step of Minnesota's Watershed Approach in allowing a cross-section of small watersheds in Minnesota to receive sustained focus and support for individual water quality restoration and protection needs. It also provides the opportunity to prioritize and target Section 319 funds, in order to meet the goals and objectives of the state NPS program. Detailed information is needed in the plans to enable deliberate targeting of critical areas and selection of management practices to achieve results. An equally important component of the detailed plans is sustained financial and technical support for the watershed partners to build and maintain partner and landowner relationships in refining and implementing the plan through adaptive management. This requires considerable work, collaboration, innovation, and flexibility, yet with a determined focus on individual waterbodies in the selected watersheds.

The program is intentionally focused on relatively small watersheds with specific waterbodies identified, to make it more manageable to get to the detail needed for goal setting, source identification, critical area identification, and implementation targeting. This focus and the support provided to the small watersheds addresses EPA's priority for making measurable improvement in achieving the water quality goals of waterbodies. The program complements statewide approaches, including developing statewide strategies, assessing the water quality of waterbodies, completing TMDLs on the impaired waterbodies,

completing WRAPS, and developing 1W1Ps at approximately the major watershed scale. The Focus Program is a next chapter in the planning process in Minnesota.

The Section 319 Small Watersheds Focus Program will follow the most recent EPA guidance available. This is currently the *2014 Guidance*. This management plan will be adapted to follow the most current guidance, should the need arise.

4.3. Focus watersheds

Ten small watersheds were selected as pilot Focus watersheds in 2018 (Group A) through a general solicitation process and subsequent interview process. For the next three years, 10 more watersheds will be prioritized for grant funding each year, for a total of 40 Focus Watersheds. The prioritized watersheds will receive priority scoring in the annual RFPs. Each of the Focus Watersheds will be prioritized in the RFP once every four years Table 3. This will create the opportunity for the Focus Watersheds to receive four, four-year grants over a period of 16 years.

Table 3. The first six years of rotation, which will continue through FFY 2035 (funds expiring in FFY 2039)

Federal Fiscal Year	2020	2021	2022	2023	2024	2025	2026	2027	2028
Award 1 Group A									
Award 1 Group B									
Award 1 Group C									
Award 1 Group D									
Award 2 Group A									
Award 2 Group B									

4.3.1. Prioritization

The Focus Watersheds will be prioritized based on geography, the priorities identified in the MPCA Strategic Plan, NPFP, Section 319 Focus Watershed Funding Principles and Selection Criteria, and local goals and interests.

It is the MPCA's priority to have a cross-section of Minnesota waterbodies and watersheds represented in the Section 319 Small Watersheds Focus Program to demonstrate the use of nine-element watershed plans, small watersheds, and long-term support in the restoration and protection of water quality. Cross-section considerations (important considerations) in the priorities include basins (10), major watersheds (80), lake types (deep to shallow, large to small, oligotrophic to eutrophic, north to south), stream types (cold to warm water, biota type, slope and substrate), ecoregion, land use (agriculture, urban, forest), and water quality parameters. The waterbodies and watersheds must be priorities for the LGU and watershed citizens in order to maintain continuing focus towards meeting the water quality goals.

Geography

The MPCA will achieve the geographical spread across the state over the course of the four-year selection process, but does not have targeted numbers per selection cycle. Geographical distribution of funds throughout the state is a priority specifically stated by the Minnesota Legislature in its creation of the CWLA. A goal of the CWLA is to ensure that the entire state benefits from the funds. The expanse of Minnesota's rich water resources results in priority water bodies being located in every portion of the state. The selection of 40 small watersheds across the state allows the use of the Section 319 grant funds to serve as a base for supporting a small watershed approach for implementation and measuring

water quality change over an extended period of time. All geographical areas will be represented over the four groups of prioritized watersheds; however, the distribution may vary by group based on interest. It is a goal of the Focus Program to actively encourage participation from all areas of the state.

The geographical areas are generally based on the major river basins in the state: the Red River Basin, Rainy River Basin, Lake Superior Basin, Upper Mississippi River Basin, St. Croix River Basin, Cedar River Basin, Minnesota River Basin, Des Moines River Basin, Missouri River Basin, and Lower Mississippi River Basin. Each of these basins have their own characteristics that make them unique and result in being priorities for water quality restoration and/or protection.

Water quality in the Red River Basin is a priority both as a nutrient and sediment contributor to Canada and especially Lake Winnipeg. It is also a priority within the state given a wide variety of waterbodies in the basin. Flooding is often a higher priority in the basin given the flatness of the Red River Valley and the north flowing river and the high costs of flood damage to people's homes and property; however, linkages are present that can reduce flood risk along with water quality restoration. Upper regions of the basin contain lakes and streams that are priorities for local and seasonal recreational uses.

The Rainy River Basin is a priority as an international water quality jewel for Minnesota and Canada. Water quality impairments often have a connection to historical land use changes that require unique approaches for water quality management. A good portion of the basin is wilderness and state and federal forest land, and as such is a national treasure. The condition of the basin has huge impacts on the water quality of the Lake of the Woods, which is famous for fishing. The lakes and streams in the basin tend to be high quality waters that sustain much of the recreation and seasonal homeowner economic base.

The Lake Superior Basin is another gem as the headwaters to Lake Superior. Many of the lakes and streams of the North Shore of Minnesota are highly sensitive to water quality degradation due to the basin's geology. The waters of the North Shore are critical to the recreational and tourism industry of northeastern Minnesota.

The addition of protection as an eligible activity in the *2014 Guidance* provides for greater application of Section 319 grant funds in the Upper Mississippi River, Rainy River, St. Croix River, and Lake Superior Basins to advance protection efforts.

The Missouri, Des Moines, and Cedar River Basins cover relatively small areas of Minnesota. Each has its own unique characteristics and influences. The Missouri River Basin is unique in Minnesota in its geology and comprises a small area into Minnesota. Its geology with bedrock near the surface in many areas leads to dominant land use of cattle grazing interspersed with corn and soybean crop land. Its resources are primarily streams. Streams in the watershed provide recreational opportunities to area residents, especially in the state parks and national monument. Streams also provide habitat to the federally endangered fish species, Topeka Shiner.

The Des Moines River Basin has several small lakes that are important recreational resources for the area. Its larger lakes provide recreational opportunities and are renowned waterfowl areas. Land usage is primarily corn/soybean row crop systems.

The Cedar River Basin in southeastern Minnesota is part of a larger river basin that covers 7,485 square miles, mostly in Iowa. The Minnesota portion consists of prime agricultural land with many streams and drainage ditches. The basin topography is flat with a few shallow lakes. People have installed extensive artificial drainage systems that facilitate farming and transportation but also alter the hydrology in negative ways.

The Minnesota River Basin covers a large portion of southern Minnesota with a wide variety of water resources arranging from shallow to deep lakes and small streams to a large river. The area is characterized with intense farming and is heavily drained. The Minnesota River is a primary contributor of sediment and nutrients to the Mississippi River and Lake Pepin.

The Mississippi River Basin is identified as the upper and lower basins for Minnesota's management purposes. Upstream of the St. Croix River, the Upper Mississippi Basin includes the headwaters of the Mississippi River through the Twin Cities. The Upper Mississippi River Basin is a priority both as the primary drinking water source for much of state's population and as the location for high quality lakes renowned for their recreational value.

The Lower Mississippi River Basin extends from the St. Croix River to the Iowa border. The Mississippi River is very important transportation, recreation, and continues to affect millions of people downstream to the Gulf of Mexico. Lake Pepin is a regional recreational attraction. The rivers and streams draining into the Mississippi River are also important with several being outstanding trout streams. Portions of the watershed also contain lakes that are widely used for recreation.

The St. Croix River is a National Scenic Riverway given its picturesque landscape and unique water quality. The St. Croix River Basin also includes the Snake and Kettle Rivers major watersheds along with smaller tributaries discharging directly to the river. Many of the rivers and streams are used for canoeing, kayaking, fishing, and camping. Northern portions of the basin are forested, interspersed with agriculture. The middle portion are more agricultural/rural land uses. The southern portion is mixed agriculture, rural land use, and suburban development. Lake St. Croix is a focal point for the region.

Waterbody type

The varied nature of waterbody types in Minnesota require a range of management approaches and practices used in successfully restoring and protecting the waterbodies. No one type is more important than another, even though some receive greater attention for various reasons. The Focus Program allows the selection of waterbodies of different types to enable the adaptation of the small watershed approach for them as needed, rather than to approach every waterbody in a one-size fits all approach. Much will be learned as work is completed for the different waterbodies.

Within the prioritized Focus Watersheds, local governments will identify the critical areas and address restoration and protection in a logical and methodical approach to maximize the effectiveness of the grant funding. This method of prioritization is a blending of state and local priorities and bridges to the priorities of the federal Section 319 Program. During the development of the 319 Focus Grant NKEs, participants will be encouraged to address other state priorities, including but not limited to, the Nutrient Reduction Strategies, WRAPS, 1W1P, local concerns, etc.

Table 4. Schedule for prioritization of watersheds

Schedule for prioritization	Selection year	319 Focus Grant NKE completion	Expected first year of funding	Revisions/adaptive management
Group A-ten prioritized watersheds	2018	2018-2019	FFY2020	2022
Group B-ten prioritized watersheds	2019	2019-2020	FFY2021	2023
Group C-ten prioritized watersheds	2020	2020-2021	FFY2022	2024
Group D-ten prioritized watersheds	2021	2021-2022	FFY2023	2025

4.3.2. Focus Watersheds prioritization process

LGU stakeholders identified the grant application process as an area of concern in the past Section 319 grant program. Many expressed frustration with the application, the difficulty of grant writing, and time required relative to the chance of receiving a grant. In response to that concern, the MPCA developed an interview process for the Focus Program. The interview process addresses the concerns that stakeholders expressed about guessing at the meaning of application questions for prioritization.

There are three steps to the watershed prioritization and selection process. Step one is requesting interest from watershed groups in the state. To declare interest, LGUs are asked to submit an email stating their interest and a two-page summary of how the watershed meets the selection criteria found in the Funding Principles and Selection Criteria document. The selection criteria are informed and based on the goals from state strategies and plans, the CWLA, NPFP, and the MPCA Strategic Plan. They include: LGU capacity and commitment, the availability and compilation of watershed data, strong local water planning, a waterbody that assessed for impairment or identified for protection, MPCA strategic plan, NPFP priorities, geographic representation, a public interest in the waterbody(ies), participation in the NWQI or MRBI programs, the ability to leverage other funds, and any identified environmental justice components. All applicants are invited to participate in step two.

Step two is a phone conversation with LGUs and MPCA staff to answer three questions to determine if the LGU has the capacity and has considered the type of holistic, detailed, and comprehensive planning that the 319 Focus Grant NKE plan requires. The telephone conversations are evaluated on the strengths of the existing partnerships, the willingness to continue to build partnerships, and the demonstration of considering the watershed as a whole system, instead of a project-to-project mindset. These attributes are important aspects to developing a Focus Grant NKE plan.

Step three is a three-hour in-person interview for the top ranked watersheds, based on the results of the telephone conversations and influenced by geography, are selected for the in-person visits by MPCA staff. The participants are asked a standard list of 13 questions. The answers to these questions are evaluated on the LGUs' interaction and outreach to citizens and other partners, the types of water quality concerns, the partners' approach for solving the water quality issues, utilization of existing data, likelihood of success (e.g., nearly/barely), and consideration of cost/benefit analysis in practice implementation. The watersheds are then scored on the selection criteria identified in the Funding Principles and Selection Criteria. MPCA project managers, BWSR clean water specialists, and board conservationists for the watersheds are invited to participate in the process as their time and interest allows.

A key part of the Small Watershed Focus Program is identifying specific waterbodies as local priorities and committing to work on those for the longer term to achieve measurable improvements in water quality.

Table 5 Prioritized watersheds for funding in FFY2020 (Group A)

Organization	Watershed/Basin	Waterbody
Martin SWCD	Minnesota River	City of Fairmont/Dutch Creek
Mower SWCD	Cedar River	Dobbins Creek
Redwood County SWCD	Minnesota River	Plum Creek Watershed
Hawk Creek Watershed Project	Minnesota River	Hawk Creek Headwaters/Wilmar Lakes
Scott County, Scott WMO, & SWCD	Minnesota River	Sand Creek
West Polk SWCD	Red River	Red Lake River
Carlton SWCD	Lake Superior	Skunk Creek

Organization	Watershed/Basin	Waterbody
Buffalo Red River WD	Red River	Whiskey Creek
Rum River Watershed	Upper Mississippi	Rum River
Pipestone County (et al.)	Missouri River	Split Rock, Mound and Pipestone Creeks

Table 6 Prioritized watersheds for funding in FFY 2021 (Group B)

Organization	Watershed/Basin	Waterbody
Vadnais Area Lakes WMO	Upper Mississippi River Basin	Vadnais Lake and Lambert Creek
Coon Creek WD	Upper Mississippi River Basin	Coon Creek
Capitol Region WD	Upper Mississippi River Basin	Como Lake
Browns Creek WD	St. Croix River Basin	Brown's Creek
Aitkin County SWCD	Upper Mississippi River Basin	Big Sandy Chain of Lakes
Wright County SWCD	Upper Mississippi River Basin	Twelve Mile Creek
Crow Wing County SWCD	Upper Mississippi River Basin	Whitefish Chain of Lakes
Wabasha SWCD	Lower Mississippi River Basin	West Indian Creek
Faribault SWCD	Minnesota River Basin	Rice Creek
*Heron Lake Watershed District	Des Moines River Basin	Heron Lake

4.3.3. Development of Focus Grant NKE plan

The Focus Watersheds participants, with the support of the MPCA, develop Section 319 Focus Grant NKE plans addressing all impairments and sources of pollution within the small watershed and the NKEs defined in EPA's *2014 Guidance.* It is expected that the Focus Watersheds will build from completed TMDL studies, WRAPS reports, and, if applicable, 1W1Ps.

In many cases, existing plans and information will provide much of the information needed at a larger scale, with additional details to be added to provide the detailed information required to meet the NKEs. Essentially, bridging the larger scale strategies and plans to the smaller watershed scale site-level detail necessary for a specific waterbody's watershed. To ensure that the plans meet the expectations of EPA, the plans for the Focus Watersheds will be submitted to EPA Region 5 NPS staff for review.

A significant portion of the 319 Focus Grant NKE plan will be to include evaluation of the water quality changes to document the effectiveness of the work. It is expected, due to the nature of the long-term approach, that these plans will practice the adaptive management approach. The landowners, LGU staff, agency staff, and other stakeholders will continue to accumulate knowledge and further develop connections and relationships that will provide for the common good of the watershed.

Completion of the detailed watershed plans and receipt of Section 319 grant funds represents only a portion of the effort needed to bring the projects to life through the development of relationships and communication among the watershed citizens and partners. Much of the effort in many of the watersheds will involve landowner engagement and participation following advanced participatory approaches. Successful completion of the watershed plans will require an iterative process with changes being made on an on-going basis and a multi-year effort requiring the dedication, focus, and collaboration.

4.4. Funding

The Section 319 Small Watersheds Focus Program will provide a sustainable, longer-term funding approach for priority watersheds to attain water quality goals. The program will provide an intensive and integrated focus on selected small watersheds across the state to restore impaired waters and prevent degradation of unimpaired waters.

Upon approval of Focus Grant NKE plans, the Focus Watersheds will be eligible to receive prioritized grant funds for up to sixteen years to implement the grant work plans, contingent on continuing Congressional appropriations and satisfactory project implementation progress. The prioritized watersheds will implement Section 319 eligible-projects designated in the NKE plans. As long as adequate progress in being made, subsequent Section 319 funding will be prioritized for each group of watersheds in the fifth, ninth, and thirteenth year following their initial award providing a 16-year project period for each watershed.

An approved Focus Grant NKE plan is required for the Focus Watershed partners to be eligible to receive Section 319 project implementation funds. In addition, the watersheds in Groups A, B, C, and D of the Focus Program will be prioritized for funding by their 'group year' as shown in Table 7.

Table 7 Focus watersheds funding priority years.

Federal fiscal year grant cycle	Group A	Group B	Group C	Group D
2020	X			
2021		X		
2022			X	
2023				X
2024	X			
2025		X		
2026			X	
2027				X
2028	X			
2029		X		
2030			X	
2031				X
2032	X			
2033		X		
2034			X	
2035				X

4.4.1. Request for Proposals

Approved Focus Watershed partners will not be required to submit annual Request for Proposals. The Focus Watersheds will alternate prioritization, with each group to be prioritized every four years. Group A will be prioritized in the FFY 2020. The 10 watersheds will receive priority ranking. An EPA-approved Focus Grant NKE plan will be an eligibility requirement. The groups will be given priority every fifth year, as illustrated inTable 7.

The Focus Watersheds will draw specific project work plans from the approved NKE plans for each grant award period.

4.4.2. Applicant eligibility

Watershed partners eligible for both prioritization and funding must be a local governmental unit: city, town, county, SWCD, WD, an organization formed for the joint exercise of powers, and any other special purpose district or authority exercising authority in water and related land resources at the local level.

Entities or individuals that are currently suspended or debarred by the state of Minnesota and/or the federal government are ineligible applicants.

4.4.3. Eligibility of activities

Proposed actions must result in pollution load reductions and/or serve to restore or protect a waterbody with a focus on critical areas, defined below, that show disproportionately contributing pollutant loads or excess flow to surface waters. For protection purposes such areas may include areas that if altered would have a high potential for adversely affecting water quality.

Eligible tasks include those that serve the purpose of addressing the NKEs, such as effectiveness monitoring, education and outreach, BMP design and installation, technical assistance, cost share, etc.

The MPCA watershed program prioritizes activities that restore impaired waters with Section 319 project funds. The MPCA also places a high priority on high-quality unimpaired waters that are at a great risk of becoming impaired. Such determinations consider such factors as water quality trend data, land use projections and other potential threats and local partner insights.

Specific activities and their funding mechanisms for MPCA's NPS funding opportunities are included in Table 8.

4.4.3.1. Critical areas

The EPA defines critical source areas as those areas within the watershed that contribute a disproportionately large amount of pollutants of concern to the identified water quality problems. The Critical Source Area Identification and BMP Selection guidance (https://www.epa.gov/nps/resources-watershed-planning) is intended to help watershed project teams define the most critical areas where the appropriate BMP placement can positively influence outcomes.

Critical source areas may be identified through multiple methodologies, i.e., geographic areas identified by a watershed model or similar tool and ultimately confirmed by field observation and/or vetted/confirmed by local partners/stakeholders.

4.4.3.2. Eligible activities

- Activities listed identified in the Section 319 NKE plans, WRAPS strategies, TMDL implementation plans, and 1W1Ps, unless ineligible per *2014 Guidelines* or section 4.2.3.3.
- Activities that emerge during the iterative process of the Focus Grant NKE plan using adaptive management practices.
- BMPs activities, including In-lake or in-stream pollutant treatments.
- Staffing to build and maintain landowner relationships working towards the implementation of practices that will control or reduce the pollutant contributions and/or stressors
- Actual wages and expenses of grant employees, if specified and documented. This includes reasonable indirect costs associated with the employee's upkeep for the project
- Water quality monitoring designed to evaluate the effectiveness of implementation activities and document a change in the water quality.
- Light refreshments and/or meals served at meetings, conferences, training workshops, and outreach events.

- Materials and supplies.
- Computers and equipment, including monitoring equipment, less than $5,000 per unit, required to specifically to perform work plan duties and pre-approved by the MPCA. Equipment will purchased with grant funds belongs to the MPCA or EPA.

4.4.3.3. Ineligible activities

- Ineligible activities as determined by the current EPA *2014 Guidance.*
- Indirect costs that are not be included as part of an hourly rate.
- Activities related to point or NPDES-permitted source, except those explicitly stated as eligible in Minn. R. 7076.0130, subp. 3 (C) 1 and 2, to allow for education and outreach activities for stormwater and animal waste management.
- Any activities addressing enforcement actions.
- Activities related to the operation and maintenance of a feedlot.
- Non-implementation activities (e.g., problem investigation monitoring, i.e., monitoring used to investigate specific water quality problems or protection concerns for use in the development of management approaches to improve or protect the resource).
- Replacement of subsurface sewage treatment systems (SSTS). The MPCA offers CWP loans for SSTS and these activities may be used for match funds in conjunction with a Section 319 Small Watersheds Focus Grant NKE plan.
- Projects that have the potential to degrade and existing waterbody.
- Water quality monitoring for diagnostic or investigative purposes.
- Implementation of the EPA's stormwater regulations (e.g., mapping stormwater systems, identifying illicit connections, characterizing stormwater discharges, or permit-required monitoring.

4.4.3.4. Urban stormwater

Stormwater is defined as any run off or drainage from precipitation, snow melt, and surface runoff and drainage. In many parts of the state, stormwater is not governed by permit; therefore, is considered nonpoint source and is eligible for funding using NPS program funding. Minnesota issues MS4 permits to regulate the stormwater discharges. The general permits require communities to obtain the "maximum extent practicable" achievements for stormwater management. As such, each permittee must determine the appropriate type and numbers of BMPs to satisfy the six minimum control measures required by the permit.

Minn. R. 7076.0100 provides for the administration of the NPS management and the Clean Water Partnership. The rule provides guidance and eligibility for the state' program. The two exceptions are outlined in Minn. R. 7076.0130, subp. 3(C)(1) and (2),

> "C. activities regulated by the national pollutant discharge elimination system permit program, parts 7001.1000 to 7001.1100, except that the following are eligible costs:
>
> (1) The costs of outreach, technical assistance, and education activities concerning animal waste management, and the costs of best management practices for animal feedlot operations are eligible if the implementation activities are part of an eligible watershed or groundwater project and if the best management practice installation is not related to a criminal enforcement action or a civil enforcement action involving financial penalties; and
>
> (2) The costs of outreach, technical assistance, implementation of source control and runoff control best management practices, and education activities related to storm water control;"

An MS4 is defined as a conveyance or system of conveyances (roads, with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, storm drains that are owned/operated by a public entity, designed for collecting/conveying stormwater, is not a combined sewer, and what is not part of a publicly owned treatment works. Any action that occurs within the conveyance system is not eligible for Section 319 or CWP loan funds. The Section 319 *2014 Guidance* allow for urban stormwater to be funded, if the actions do not directly occur within the conveyance system. For example, green infrastructure that mimics natural hydrology are eligible Section 319 activities. These include:

- Infiltration basins, landscaped swales, and wetland/riparian area restoration and protection.
- Monitoring to evaluate effectiveness of implementation strategies.
- BMPs for pollution prevention and runoff control outside the conveyance system.
- Outreach and education programs.
- Technology transfer and training.
- Stormwater projects occurring outside of the conveyance system.

If any stormwater-related projects are used for matching Section 319 funds, they must also occur outside the conveyance system.

Table 8 Activities funded by both Section 319 Grant funds and CWP loan funds

Activities	Fundable with Section 319 Program Grants	Fundable with Clean Water Partnership loans
In-lake treatment	Yes	Yes
Dredging	Yes	Yes
SSTS upgrades/replacements	No, but may be used to match Section 319 grant funds	Yes
Sewage Treatment System Upgrades	No	Yes
Feedlot BMPs, when not part of an enforcement action	Yes	Yes
Activities started before the grant or loan agreement signed	No	No
O & M of BMPs	Yes (limited)	No—except when otherwise noted, e.g., dredging of stormwater ponds
Commercial Operations (except farms)	No	No
Mining activities	Yes	No
Building and utility construction	No	No
Highway and road construction	No	No
Activities primarily for flood control	No	No
Monitoring, data & information collection (investigative/condition	No	Yes
Effectiveness monitoring	Yes	Yes
Fiscal and management activities	Yes	Yes
Development, review, selection, design, and/or installation of BMPs	Yes	Yes
Development and implementation of educational materials, including	Yes	Yes

Activities	Fundable with Section 319 Program Grants	Fundable with Clean Water Partnership loans
education and outreach under MS4 permits (No permit credit allowed)		
Identification of illicit sewer connections	No	Yes
Repair or replacement of privately owned sewer connections	No	Yes
Development & implementation of ordinances (official controls)	Yes	Yes
Acquisition of easements and property	No, but may be used to match Section 319 grant funds	Yes
Other activities determined to be necessary to carry out the project	Yes	Yes
Activities related to federal and state pollution control statutes such as CERCLA, RCRA, ECLA, and CLA.	No	No
Activities regulated by solid or hazardous waste permits or rules	No	No
Publically owned treatment works	No	No
Regulated practices to control spills	No	No
Regulated practices to manage toxic or hazardous materials	No	No
Activities that violate state, local, & federal rules, statutes, & regulations	No	No
Confined Animal Unit Operations (CAFO) outreach, technical assistance, and education activities concerning manure management	No	Yes
CAFOs costs of BMPs for operations, if the activities are part of another eligible watershed or groundwater project and NOT related to criminal or civil enforcement action	No	Yes
Technical assistance to state and local stormwater programs	Yes	No
BMPs for stormwater pollution prevention and runoff	Yes	Yes
Outreach and education programs outside of the general scope outlined within the NPDES permit	Yes	Yes
Stormwater source control and runoff control BMPs	Yes	Yes
Development and implementation of regulations, policies, and local ordinances to address stormwater runoff	No	Yes

Activities	Fundable with Section 319 Program Grants	Fundable with Clean Water Partnership loans
Identifying illicit connections for repairs to non-compliant connections	No	Yes
Activities required by permit or legal action	No	No

4.4.4. Cash or in-kind match

Section 319 Grant projects require a percentage of nonfederal match dollars that are identified in the current Section 319 guidance. The current *2014 Guidance* states that grantees are required to contribute at least 40% of the total project cost as a cash or in-kind match. Match must come from non-federal sources, including state, local, and private funds or in-kind services. MPCA staff time may not be used as in-kind match.

Project partners must document and report the match sources and expenditures to the MPCA during each semiannual reporting period. Match must be incurred during the project period and be contributed as needed according to the work plan schedules. Match dollars must be spent on activities identified in the Section 319 Small Watershed Focus Grant NKE plan. Although match dollars may be incurred by project partners, the grantee must track, keep records, and report on all match dollars spent in the project.

Many partners leverage dollars beyond the required 40%. By leveraging the state and local funds, often the level of work completed doubles the work funded by grant funds. As the 319 Focus Program develops, the concentration of efforts, the collaboration with other agencies, and the partnerships among LGUs solidifies, the opportunity to increase leveraged spending is significant. As demonstrated in the *Minnesota's Clean Water Roadmap*, the existence or use of a single source of funds alone will not be enough to achieve all of Minnesota's water quality goals. Public participation efforts are also leveraged in this process.

The CWP Loan and AgBMP Loan funds may be used as local match.

4.4.5. Protection

The protection of Minnesota waters is a value of many Minnesotans and is reflected in the Section 319 Small Watersheds Focus Program. With this understanding in mind, the MPCA collaborated with DNR, BWSR, MDH and MDA to develop guidance for incorporating protection strategies into WRAPS reports, local water plans, and One Watershed One Plan (1W1P) documents. These guidance documents are on MPCA's Prioritizing protection of good water quality web page. Protection has become more of a focus with the Section 319 program with the adoption of the *Guidance.* Protection activities are included in the WRAPS strategies and are eligible for Section 319 Focus funding. Protection priorities will be based on the geographical location of the waterbodies and on the NPFP's definition of high-value waterbodies trending toward impairment and exhibiting signs of sensitivity to impairment.

5. NPS practices and actions eligible for Section 319 funded projects

Many practices and actions are available to address nonpoint sources of pollution. These are listed and described in various publications. As such, this plan does not list all of the options, nor provide how-to information, but rather provides references to the compendiums of practices and actions that are available. Practices listed in the following guidance documents are eligible for Section 319 grant funding. Innovative practices and new technologies will be considered for eligibility on an ad hoc basis.

In general, NPS practices and actions can be grouped as 1) agricultural practices that limit or prevent pollutants from runoff or other forms of erosion from cropland, pastures or non-permitted feedlots, 2) wetland restoration, stream/river restoration, shoreland restoration and in-lake management, 3) forest land management practices, and 4) urban stormwater management practices (for non-permitted sources).

Buffer in Lac qui Parle River Watershed

Minnesota NRCS Field Office Technical Guide (MN-FOTG)

The MN-FOTG provides detailed information on the NRCS standard practices used by NRCS in providing technical assistance to clients through the conservation planning process. The planning process involves: (1) Determining client goals and resource concerns (conservation needs); (2) Developing treatment options; (3) Recording client decisions; (4) Implementing selected conservation treatment(s) through the application of conservation practices; and (5) Evaluating and adaptive management of the conservation treatment. The conservation practice standards contain information on why and where the practice is to be applied and specifies the minimum technical criteria that must be met during the application of that practice in order for it to achieve its intended purposes. Conservation practices are designed to address the treatment of natural resource concerns. NRCS conservation practice standards are based on sound science and include scientifically accepted and demonstrated technologies. Conservation practices that have not been adequately demonstrated may be eligible for conservation innovation grants or may be implemented as interim conservation practices to gain needed field scale demonstration and establish and document natural resource benefits.

Agricultural BMP Handbook for Minnesota

The purpose of the *Agricultural BMP Handbook for Minnesota* (Lenhart, et al., 2017) is to present the findings of a comprehensive inventory of agricultural BMPs that address water quality impairments in Minnesota. This handbook provides water quality practitioners with the information necessary to identify suitable agricultural BMPs (ag-BMPs) for agricultural watersheds in Minnesota. It includes the most up-to-date information regarding water quality BMPs in agricultural watersheds that can be used to mitigate pollutants of concern.

Agricultural BMP Handbook for Minnesota was first published in 2012 to provide a literature review of empirical research on the effectiveness of 30 agricultural conservation practices used in Minnesota. The second edition builds on the first edition by incorporating additional information on the variability in the effectiveness of the practices, potential barriers to BMP adoption, and the latest research on BMP effectiveness. The handbook includes a definition for each BMP; estimates of the effectiveness of each

practice based on existing literature; costs and other economic considerations for each BMP; and potential barriers to BMP adoption.

The Ag BMP Handbook is a living document that is updated to reference ongoing and current research (including research gaps) pertaining to the effectiveness of conservation practices in reducing sediment, pesticide, and nutrient losses. It is not intended to be a standard manual or replace the NRCS MN FOTG.

Minnesota Stormwater Manual

Stormwater BMPs associated with federally regulated stormwater program conveyance systems are not eligible to be funded with Section 319 funds. The federally regulated stormwater programs in Minnesota include the Construction Stormwater, Industrial Stormwater, and Municipal Stormwater permitting programs. Stormwater disposal is regulated nationally through the NPDES and Minnesota regulates the disposal of stormwater through the State Disposal System (SDS) MPCA issues combined NPDES/SDS permits. However, stormwater BMPs may be eligible practices for Section 319 funds if the stormwater pollution occurs outside a NPDES-regulated conveyance system. The Minnesota Stormwater Manual, therefore, provides the technical resources for identifying and implementing stormwater BMPs in NPS pollution areas.

The Minnesota Stormwater Manual provides a single source to guide stormwater managers through the maze of regulations, BMPs designs, models/techniques and terminology that constitute good stormwater management. The manual is designed to be user-friendly and flexible to guide users directly to the information they need, depending upon the question they need to answer or BMPs they need to design. The manual was developed as a wiki website to make it easy for the user to get to the subject of interest and to move between subjects.

Forest management practices

An important component in a forested landscape for water quality restoration and protection is to keep a forested area forested. Forest management assistance is available from the DNR, SWCDs, UMN Extension, and the Minnesota Forest Resources Council. Assistance activities include education, cost-share programs, forest management plans, and tree planting. Site-level management and harvest guidelines are present in the Sustaining Minnesota Forest Resources: Voluntary Site-Level Forest Management Guidelines for Landowners, Loggers, Resource Managers, and Minnesota's Forest Management Guidelines: Quick Reference Field Guide published by the Minnesota Forest Resources Council (MFRC 2013, 2014).

The DNR offers the Forest Stewardship Program to assist woodland owners in managing their woods through advice, education, cost-share and incentive programs, and Woodland Stewardship Plans. The Forest Stewardship Program is funded by the USDA Forest Service and administered by the DNR. As part of the program, the DNR produced a series of Woodland Handbooks to help landowners understand and manage the issues facing their woods.

6. Goals, objectives, and strategies

The goals, objectives, and strategies of the NPSMPP are specific to the Section 319-funded work and do not encompass all of the goals, objectives, and strategies of the whole of Minnesota's watershed framework and associated programs. Minnesota's Section 319 NPS NPSMPP is implicitly incorporated in the state's CWF programs and the Minnesota Water Quality Framework and are intertwined with several local, state, and federal programs. With the numerous individual program goals, objectives, and strategies, this document provides summaries of the individual programs and references the pertinent sources of detailed information. The detailed goals, objectives, and strategies for Section 319 funded program and project activities are provided in in appendix A and summarized in this section.

Minnesota CWF dollars provide a predominate portion of the funds managed by various state agencies for use in implementing the Minnesota CWLA first passed in 2006. The purpose of the CWLA is to provide encompassing state legislation "to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation, by providing authority, direction, and resources to achieve and maintain water quality standards for groundwater and surface waters, including the standards required by section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313(d), and other applicable state and federal regulations." (Minn. Stat. § 114D.10, subd. 1).

6.1. Clean Water Legacy Act

There are multiple statutes in Minnesota that outline specific tasks and goals to guide the improvement in water quality. As discussed in Section 3, the CWLA illustrates Minnesota's commitment to our water resources. The statute informs the NPS Program activities, as well as specifically how the Section 319 funds are used in Minnesota. The Minnesota Legislature and voters have agreed that the restoration and protection of water is a high value to the state. Although this suite of statutes directly controls state work, it also guides the implementation of the federal Section 319 funds. State environmental funds provide state matching funds for programmatic staff for Section 319 funds. Clean Water Legacy implementation dollars, primarily administered by BWSR, frequently provide LGUs with matching funds for Section 319 grants.

Appendix A shows the connections between various programs, program documents and products, and agencies, units of government, and organizations. It is intended to connect the various priorities and pieces of the program, as well as to explain their foundation. The CWLA provides the foundation for the establishment of goals for the Minnesota Watershed Approach that then influence the NPS goals for the administration of the Section 319 program described in this plan.

6.2. Overall goals

NPS goals in this plan are drawn from the various program documents as described previously. Under the CWA Section 319(h), grant recipients are required to submit reports to the EPA that document the progress of the program. This is accomplished through the Watershed Achievement reports and EnPPA reporting. The NPS Program shares and supports the MPCA's goal ***to fully implement the CWA in order to achieve the long-term goal of fishable and swimmable waters throughout the state of Minnesota.***

6.2.1. Intensive Watershed Monitoring schedule

The MPCA conducts the IWM on a ten-year cycle described in Table 6. This is the first step in the Minnesota Watershed Approach cycle. The IWM informs the watershed assessment and stressor identification reports that are the foundation for the development of WRAPS and TMDLs.

Table 9. IWM

Goal	Measure	Annual progress goal	
HUC8 watershed monitoring	# HUC8 watersheds completed	2019 – 9 2020 – 7 2021 – 11 2022 – 7 2023 – 7	2024 – 9 2025 – 8 2026 – 7 2027 – 6
Year	List of watersheds		
2019	St. Louis River, Buffalo River, Chippewa River, Mississippi River (St. Cloud), Lower St. Croix River, Cedar River, Winnebago River, Shell Rock River, Upper Wapsipinicon River		
2020	Big Fork River, Crow Wing River, Bois De Sioux River, Mustinka River, Minnesota River-Yellow Medicine River, Mississippi River (Twin Cities), Mississippi River (Winona and La Crescent)		
2021	Thief River, Sandhill River, Lake Superior (S), Nemadji River, Redeye River, Long Prairie River, Cannon River, Upper Big Sioux, Lower Big Sioux River, Little Sioux River, Rock River		
2022	Lake of the Woods, Grand Marais Cr, Red River, Leech Lake River, Pine River, South Fork Crow River, Zumbro River		
2023	Two Rivers, Tamarac River, Snake River, Mississippi River (Headwaters), Rum River, Minnesota River (Mankato), Watonwan River		
2024	Rainy Headwaters, Red Lake River, Clearwater River, Marsh River, Wild Rice River, Lower Minnesota River, Des Moines River, Lower Des Moines River, East Fork Des Moines River		
2025	Roseau River, Vermillion River, Cloquet River, Mississippi River (Grand Rapids), Minnesota River (Headwaters), Lac Qui Parle River, Mississippi River (Reno), Upper Iowa River		
2026	Otter Tail River, Mississippi River (Brainerd), Mississippi River (Sartell), Kettle River, Upper St. Croix River, Redwood River, Cottonwood River		
2027	Lower Rainy River, Rainy Lake, Rapid River, Pomme de Terre River, North Fork Crow River, Blue Earth River		

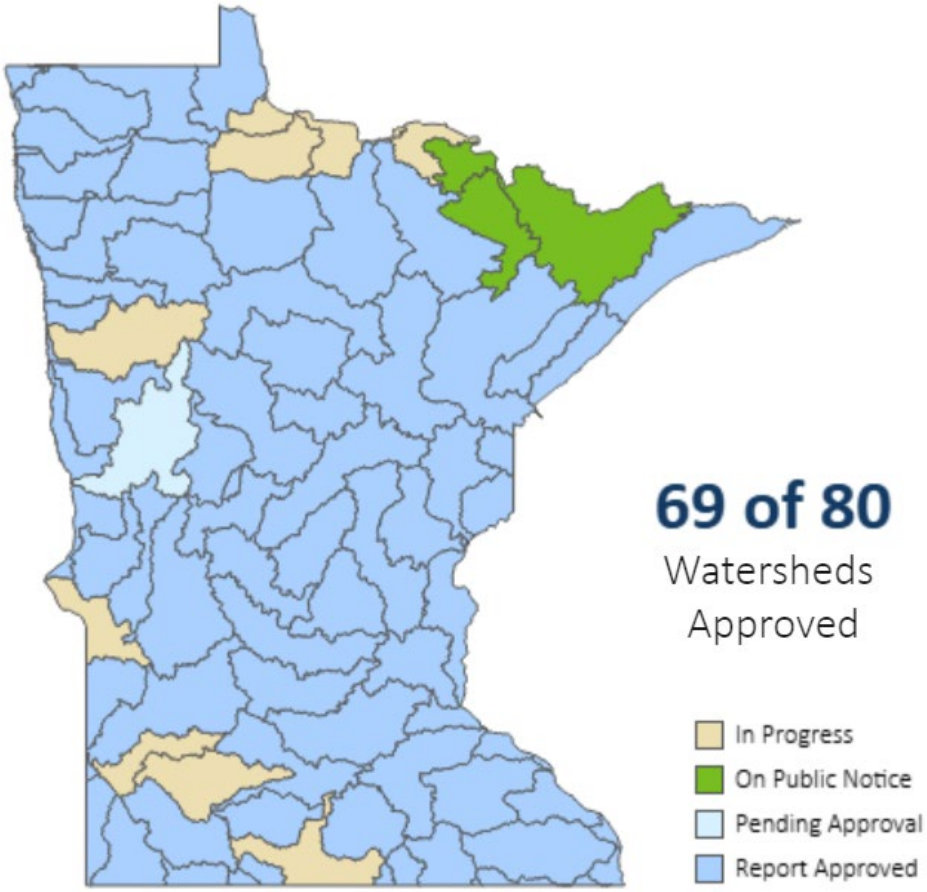
6.2.2. WRAPS and TMDLs

The goal for the program is to complete the WRAPS and TMDLs in Figure 7. In 2023, WRAPS updates following on IWM Cycle 2 will be adapted to meet the needs of the LGUs.

The Minnesota Watershed Approach information for each major watershed can be found by selecting individual watersheds in the map on the Watersheds Webpage of the MPCA internet site. As of September 2021, 70 of the 80 major watersheds in Minnesota have approved WRAPS (Figure 7). WRAPS for the remaining 10 watersheds will be completed by 2023. The TMDLs for impairments in each HUC 8 watershed are developed in conjunction with the WRAPS report. A list of approved TMDLs and WRAPS is located on MPCA's TMDL project web page. This process is governed by the CWLA and the prioritization contained within the statute. The development and updating of the WRAPS and TMDLs follow the

completion of IWM shown in Table 9. The staff and management supporting the development of the TMDLs and WRAPS are funded partially by Section 319 program funds. These program FTEs are reported in GRTS.

Figure 7. WRAPS completion status in Minnesota September 2020



6.2.3. Section 319 program-funding measures

The MPCA will report on the required measures as they pertain to the Environmental Performance Partnership Agreement (EnPPA)/Performance Partnership Grant (PPG) work plan reporting. The work plan identifies goals for the NPS program. The following measures assess the progress of the work plan.

This plan will address EPAs Section 319 national NPS measure with a commitment to submit the equivalent of one 319 success story per year for the life of the plan, with a focus on those waterbodies that are partially or fully restored.

This plan as implemented will also work towards EPAs TMDL measure of progress in putting priority total maximum daily loads (TMDLs), alternative restoration plans, and protection approaches in place, though the development of TMDLs and watershed-based plans by MPCA staff funded in part with 319 monies.

6.3. Section 319 Small Watershed Focus goals

Developing NKE plans is a goal of the Small Watersheds Focus Program. It is not the only goal. The primary goal of this program is to support local government units and their partners to focus at the small watershed scale to achieve measurable improvements in water quality applying a systems

approach for watershed processes and social dynamics. Each of these watershed groups will develop their specific goals for water quality improvements for the waterbodies.

Prioritization and selection

It is important to reflect the values and directives of Minnesotans by using the priorities set forth by the Minnesota Legislature, state agencies, and local partners. Watersheds will be representative of the breadth of these concerns, as reflected in these aspirational goals:

- Each of the major basins will be represented at least twice in the 40 prioritized Small Watersheds.
- Two out of every group of watersheds selected will have an environmental justice consideration.
- Four of the 40 prioritized Small Watersheds will be primarily protection oriented.
- Ten of the Small Watersheds will address a significant nutrient loading.
- Ten of the Small Watersheds will address significant TSS pollution.
- Four of the Small Watersheds will address a chloride impairment.

Watersheds will also include other pollutants and address other stressors.

Planning and project grant awards

During the next five years, the program will continue to support the development of NKE for Small Watersheds. The goals in Table 10 reflect the initial start to this program. Following the initial rollout of this program, the MPCA Section 319 program will continue to support the development of small watershed plans as a component of the Minnesota Watershed Approach.

Table 10. Section 319 Small Watershed Focus plans, prioritization, and projects

	Focus Watersheds			
Goal	**Group A**	**Group B**	**Group C**	**Group D**
Watersheds prioritized and selected	2018	2019	2020	2021
Focus Grant NKE plans completed and approved	2019	2020	2021	2022
Project proposals for FFY2020 grant cycle	2020	2021	2022	2023
Grant project work plans contracted and initiated for FFY2020 grant cycle	2021	2022	2023	2024
Assessment measure	10 watersheds	10 watersheds	10 watersheds	10 watersheds

Support and implementation of grant projects

LGUs, MPCA staff, and partners will continue to work together in implementing the grant tasks, evaluating progress, and adapting the plan based on lessons learned. This includes a biennial assessment of progress and instituting adaptive management to correct course as needed.

- NKE plans will be evaluated every two years to ensure progress is made toward goals.
- Water quality data from 20% of the Focus Watersheds will be showing a measurable improvement in 16 years.

7. Program evaluation

The NPSMPP will be updated at least every five years to report on milestone progress or to address any new information and responses to actions.

As the Section 319 grant recipient for the State of Minnesota, the MPCA is required to submit semi-annual and annual NPS progress reports to EPA, which address milestone progress, resulting decreases in pollutant loadings, and other water quality improvements contained in the grant workplan and also the state's NSPMPP.

Section 319 grant recipients are required to submit their semi-annual and annual reports in the Grants Reporting & Tracking System (GRTS). GRTS is the primary tool for management and oversight of the grants portion of EPA's Nonpoint Source Pollution Control Program. GRTS pulls grant information from EPA's centralized grants and financial databases and allows grant recipients to enter detailed information on the individual projects or activities funded under each grant. GRTS enables EPA and States to document the accomplishments achieved with the use of Section 319(h) grant funds. The data entered into GRTS is used by the EPA to respond to inquiries received from Congressional committees, the White House, and various constituent groups. The MPCA staff enter the appropriate data into GRTS semi-annually by March 15 and September 15, as per the joint priority agreement with EPA.

The MPCA will continue to meet the requirements of performance measures specific to Section 319 grants and the EnPPA.

The MPCA will use the required EPA reporting mechanisms to help assess our program's progress and successes. Other reports for state and local governments helps to measure achievements. Some of these are Clean Water Performance Reports and the Clean Water Accountability Reports/Healthier Watersheds. These reports show the progress of improving water quality. By evaluating the report cards, the MPCA and others can adjust their programs as needed.

7.1. Tracking goals of the NPSMPP

Minnesota's Watershed Approach will utilize the IWM program for evaluating stream and lake water quality through the 10-year cycle of biological and chemical monitoring conducted in each HUC8 watershed and the yearly WPLMN. The large magnitude of restoration measures needed will require many years of monitoring to check for trends in water quality. NPS implementation practices will be tracked using the BWSR eLINK database in conjunction with USDA reporting on federally funded implementation activities. Measures for Section 319 grant funded activities are discussed in Section 4.

The Clean Water Performance Report, described in Section 3.4, evaluates the state's progress in addressing NPS pollution. The report summarizes the actions taken in Minnesota's watersheds to meet water-quality goals and milestones as required by the accountability provisions of the CWLA (Minn. Stat. 114D.26, subd. 2). The report covers all of Minnesota's 80 major watersheds and includes data on WRAPS and TMDLs, point source loading, BMPs implemented, and spending for implementation projects. Updates to the Clean Water Accountability Report will occur by July of each year after the MPCA receives new data from state and federal agencies for the previous year. The CWLA requires submission of this report to the Minnesota Legislature in even numbered years.

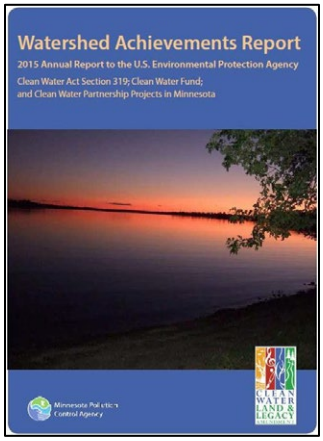
Monitoring for implementation activities in the watersheds in the Section 319 Small Watershed Focus Program will be completed through the evaluation monitoring programs contained in the watersheds' long-term NKE plans. Each watershed will include an individually designed monitoring plan including physical, chemical, and biological parameters for water quality, land management and land use

variables, and climate measurements. Small Watersheds are selected using the state's priorities and strategies, as described in Section 4.3.

8. Maintaining an effective and efficient program

A high-level, comprehensive assessment of Minnesota's water programs with recommendations was carried out in the previously cited 2013 report, Water Governance Evaluation. This report evaluated Minnesota's "water-related statutes, rules, and governing structures to streamline, strengthen, and improve sustainable water management." Some of the report's recommendations will require legislative action to implement, while other actions can be initiated by state agencies themselves. Some reforms, the report points out, are already underway.

Other efforts to assess ongoing success include the Watershed Achievements Report and the Clean Water Fund Performance Report. The Watershed Achievements Report is an annual report to the EPA on CWA Section 319 and Clean Water Partnership loan projects in Minnesota. In addition to funded implementation projects, it highlights other accomplishments like the statewide buffer initiative and development of the MPCA report Swimmable, fishable, fixable?, which described program results and progress. The biennial CWF Performance Report provides connections between CWFs invested, actions taken and outcomes achieved. It includes measures of how CWF dollars are being spent and what progress has been made. The measures are organized into four categories: investment, surface water quality, drinking water protection, and external drivers and social measures. Each measure has detailed status ranking and trend information.



The MPCA maintains an effective and efficient program and employs appropriate programmatic and financial systems that ensure that CWA Section 319 dollars are used efficiently and consistent with its legal obligations, and to manage all Section 319 funds to maximize water quality benefits. The MPCA ensures that Section 319 funds complement and leverage funds available for technical and financial assistance from other federal, state and local sources.

The MPCA commits to revising/updating this plan at least every five years. Minor changes will be adapted without going through a formal process.

9. References

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Minnesota Forest Resources Council (MFRC). 2014 *Minnesota's Forest Management Guidelines: Quick Reference Field Guide*. St. Paul, MN: Minnesota Forest Resources Council and Minnesota Department of Natural Resources. Retrieved from https://mn.gov/frc/assets/MFRC_Forest_Mangement_Field_Guides_2014-1_With-Bookmarks_tcm1162-502201.pdf

Appendix A. Goals, milestones and strategies

Minnesota has long tradition of addressing water quality issues within the state. Throughout this time many plans, initiatives and strategies were developed to address concerns throughout the state. In 2006 the Minnesota Legislature determined that: “there is a close link between protecting, enhancing, and restoring the quality of Minnesota's groundwater and surface waters and the ability to develop the state's economy, enhance its quality of life, and protect its human and natural resources; and achieving the state's water quality goals will require long-term commitment and cooperation by all state and local agencies, and other public and private organizations and individuals, with responsibility and authority for water management, planning, and protection.”

Based on this information the Minnesota Legislature passed the Clean Water Legacy Act legislatively mandating a common effort to address water quality concerns in Minnesota. From this directive several high level efforts, such as the Minnesota Water Quality Framework and the Clean Water Roadmap were completed to guide water quality improvement efforts in Minnesota. These documents along with other statewide planning and strategy documents (such as the state Nutrient Reduction Strategy and the state water plan led by the Environmental Quality Board) provide the overall goals, strategies and milestones for this plan and are outlined below.

Guiding principle

The guiding principles of this plan follow the Minnesota Water Quality Framework principles:

- Protect, maintain, and restore the biological, chemical, and physical health of the state’s water resources.
- Provide resiliency to our ecosystems, our communities, and our economies.
- Increase our understanding of our state water balance and the processes and stressors affecting it to provide for improved decision making.
- Improve our capacity for water management that can adapt to new knowledge, changing biogeochemical systems, and long-term challenges.
- Encourage sustainable, conservation-minded land use practices.
- Recognize and honor our many uses of water, including recreational, cultural, and spiritual values.
- Preserve our water-rich heritage and ensure our future legacy as national and international water stewards.
- Provide for a lasting foundation to achieve and maintain sustainable water management.

Short term, long term, and overall goals

The Minnesota Clean Water Council has worked with stakeholders to develop overall goals for water quality in Minnesota. The overall goals listed below are applicable to this plan:

1) Drinking water is safe for everyone, everywhere in Minnesota.
    - Protect public water supplies.
    - Ensure private well users have safe water.
2) Groundwater is clean and available.
    - Improve and protect groundwater quality.
    - Ensure sustainable long-term trends in aquifer levels.
    - Avoid adverse impacts to surface water features due to groundwater use.
3) Surface waters are swimmable and fishable.
    - Prevent and reduce pollution of surface waters.

- Maintain and improve the health of aquatic ecosystems.
- Protect and restore hydrologic systems.

4) Minnesotans value water and take actions to sustain and protect it
   - Build capacity of local communities to protect and sustain water resources.
   - Encourage systems and approaches that support, protect, and improve water.
   - Provide education and outreach to inform Minnesotans' water choices.
   - Encourage citizen and community engagement on water issues.

Minnesota's Clean Water Roadmap establishes several long-term goals that are applicable for this plan:

1) Increase the percentage of Minnesota lakes with good water quality, as measured by acceptable Trophic State Index, from 62% to 70%.
2) Increase the percentage of Minnesota's rivers and streams with healthy fish communities, as measured by the Index of Biotic Integrity, from 60% to 67%.
3) Reduce nitrate levels in groundwater by 20%, which will decrease the percentage of wells exceeding the drinking water standard by 50% (in two vulnerable areas of the state).

The 2014 Minnesota Nutrient Reduction Strategy set short and long-term goals to assist in tracking Minnesota's statewide nutrient reduction progress and are applicable to this plan. Each major basin has numeric reduction goal for phosphorus and nitrogen.

Major basin	Short term goal 2014 to 2025	Long term goal 2025 to 2040
1. Mississippi River (Also includes Cedar, Des Moines, and Missouri Rivers)	**12%** reduction in phosphorus (33% reduced prior to 2014)	Achieve **45%** total reduction from 1980-96 baseline and meet in-state lake and river water quality standards
	20% reduction in nitrogen	Achieve **45%** total reduction from 1980-96 baseline
2. Red River (Lake Winnipeg Basin)	**10%** reduction in phosphorus	Achieve final reductions identified through joint efforts with Manitoba (about 50% from 1998 to 2001) [a]
	13% reduction in nitrogen	
3. Lake Superior	Maintain protection goals, no net increase from 1970s	
Groundwater/Source Water	Meet the goals of the 1989 Groundwater Protection Act	

Overall priorities

Three high-level state priorities that are identified for the use of nonpoint implementation money include:

1) Restore those impaired waters that are closest to meeting state water quality standards.
   - Impaired waters that are within 10% of meeting water quality standards should be considered a priority for implementation.
2) Protect those high-quality unimpaired waters at greatest risk of becoming impaired.
   - High-quality unimpaired waters that are within 10% of becoming impaired and have a declining water quality trend should be considered a priority for implementation.
3) Restore and protect water resources for public use and public health, including drinking water.

These priorities of barely impaired, nearly impaired, and those that are a significant public use and public health, especially drinking water sources, are prioritized for funding, as described in the *Section 319 Small Watersheds Focus Programs Funding Priorities and Selection Criteria*.

Strategies

High-level strategies are identified in the Minnesota Non-Point Funding Plan (NPFP) for the successful use of available funds in achieving the state's clean water goals. These same strategies are adopted in this plan, as the Minnesota NPFP was developed to provide state agencies with a coordinated, transparent and adaptive method to ensure that Clean Water Funds and other implementation funds are targeted to cost-effective actions with measureable results. The Minnesota NPFP does not include a single scoring system with weighted criteria. Instead, it allows state agencies the flexibility to apply the NPFP priorities and criteria in ways that meet their strategic, legislative and funding source goals. Included with these strategies are this plan's milestone activities on how these strategies will be implemented for this plan.

1. **Accelerate Watershed-scale implementation**

Watershed Scale Implementation will be most effective when allocation of monies for the highest-priority actions follows local government adoption of watershed-based local water plans.

- Milestone 1a – each year, up to ten small watersheds will be selected to participate in the Section 319 Small Watershed Focus Program. Up to 40 watersheds will be selected to participate in the program.
  - Measure – # of watersheds selected to participate in the Small Watershed Focus Program.
- Milestone 1b – provide assistance to each of the selected Small Watershed Focus Program recipients in the development of an NKE watershed-based plan.
  - Measure – all selected watersheds have an EPA-approved NKE watershed-based plan.
- Milestone 1c – provide administrative oversight of the Minnesota Section 319 Small Watershed Focus Program.
  - Measure – satisfactory review of administrative oversight.
- Milestone 1d – develop or update a Watershed Management Plan (in the seven county metro area) or a Comprehensive Watershed Management Plans also known as One Watershed, One Plan (1W1P).
  - Measure – # of completed and approved plans, or subsequently developed updated plans.

2. **Prioritize and target at the Watershed scale**

Models and tools are useful for watershed prioritization and for identifying potential impacts to surface and groundwater. They are often capable of targeting which actions, locations, and management practices are most effective at addressing water quality goals and project objectives. Models and tools are used to project outcomes of specific actions, locations, and management practices to forecast measurable results. Using these models and tools together with the best available science can efficiently inform Minnesota's Water Quality Framework.

- Milestone 2a – Develop and maintain Hydrological Simulation Program – Fortran (HSPF) models or other more appropriate water quality simulation models for each of the 80 watersheds in Minnesota.
  - Measure – # of HUC8 watersheds that have a completed and QA/QCed water quality simulation model.
- Milestone 2b – extend time series and data of each watershed model once every five years ensuring latest water quality data is available.

- Measure – # of completed water quality simulation model updated once every five years.

3. Measure results at the Watershed scale

Similar to prioritizing and targeting, measuring results is best achieved at the watershed scale. Watershed-based local water plans capable of producing measurable results are essential to adaptive management and accountability to the public.

- Milestone 3a – support ongoing nutrient load monitoring through the Watershed Pollutant Load Monitoring Network (WPLMN) which occurs on every major river throughout the state.
  - Measure – # of WPLMN sites maintained.
- Milestone 3b – support Minnesota's Watershed Approach Intensive Watershed Monitoring (IWM) program which evaluates streams and lake water quality on a 10 year cycle of biological and chemical monitoring conducted in each of the 80 HUC8 watersheds in Minnesota.
  - Measure - # of HUC8 watersheds completing IWM each year.
- Milestone 3c – support the Minnesota Citizen Monitoring Program (CMP) to allow dedicated citizen scientist and the MPCA to track the long-term health of Minnesota lakes and streams, in a collaborative approach, via regular summer water clarity monitoring.
  - Measure - # of volunteers participating in the CMP.
- Milestone 3d – provide input and assist in the development of the biennial Clean Water Fund Performance Report. This report provide a snapshot of how Clean Water Fund and other leveraged dollars are being spend and what progress has been made in achieving water quality goals.
  - Measure – Clean Water Fund Performance Report published in even numbered years.
- Milestone 3e – maintain and update the Healthier Watershed webpage which provides interactive and updated information on WRAPS and TMDL status, wastewater treatment plant progress, BMP implementation by watershed, and information on state, local and federal spending for clean water projects.
  - Measure – webpage *Healthier watersheds: Tracking the actions taken | Minnesota Pollution Control Agency (state.mn.us)* updated annually by July 1st.

4. Utilize science-based information

A key to developing prioritized implementation schedules for projects with targeted actions, and measuring results of these actions, is to incorporate the wealth of science-based information, summarized in WRAPS, TMDLs and other technical reports, and practice effectiveness research into local water planning and project development processes.

- Milestone 4a – Utilize Watershed Assessment Teams (WAT) and Professional Judgement Groups (PJG) in the water quality Assessment Process to determine if state waters are attaining water quality standards.
  - Measure - # of Assessment Processes completed each year.
- Milestone 4b – perform Stressor Identification (SID) in each of the 80 HUC8 watersheds to identify stressors causing biological impairments of aquatic ecosystems through a weight of evidence approach, and provide a structure for organizing the scientific evidence supporting the conclusion. A Stressor Identification report will be developed for each of the 80 HUC8 watersheds.
  - Measure - # of SID reports/updates completed each year.
- Milestone 4c – perform Problem Investigation Monitoring to investigate specific problems or protection concerns to allow for the development of a management approach to protect or improve the resource.

- Measure - # of sites monitored each year.

- Milestone 4d – develop Watershed Restoration and Protection Strategy (WRAPS) reports which include major findings of the Monitoring and Assessment Report, Biological SID Report, HSPF modeling results, TMDL study information, and protection and implementation strategies for each HUC8 watershed.
  - Measure - # of WRAPS reports, or subsequently WRAPS Update reports, developed yearly.
- Milestone 4e – develop TMDL studies in accordance with Minnesota's TMDL Priority Framework document.
  - Measure - # of TMDLs approved by EPA each year.
- Milestone 4f – develop Minnesota Department of Health Groundwater Restoration and Protection Strategies (GRAPS) reports for each watershed, which contain maps and data describing groundwater conditions in the watershed. The reports identify local groundwater concerns and outline strategies and programs to address them.
  - Measure - # of GRAPS developed each year.
- Milestone 4g – develop Minnesota Department of Natural Resources Watershed Hydrology, Connectivity, and Geomorphology Assessment Reports for each watershed which analyzes the current and historical hydrology trends of the watershed, assesses the fluvial geomorphology and stability of rivers and streams within the system and investigates connectivity (i.e. longitudinal, lateral, and riparian).
  - Measure - # of Hydrology, Connectivity, and Geomorphology Assessment reports developed each year.
- Milestone 4h – update and revise Minnesota Nutrient Reduction Strategy (NRS). Report on progress on implementation activities and strategies, BMP adoption assessment, water quality outcomes and any recommended adjustments to the NRS implementation efforts.
  - Measure – NRS update completed in 2024.

5. Build local capacity

The work of nonpoint implementation rests on the shoulders of local governments. As WRAPS proliferate and local water planning begins shifting to a watershed-based framework, success is dependent on highly capable local government staff to develop, prioritize, target, and implement projects at the local level.

- Milestone 5a – maintain, support and provide training for HSPF-Scenario Application Manager (HSPF-SAM) to aid local partners in the decision on the prioritization and placement of best management practices (BMPs) needed to achieve water quality goals.
  - Measure - # of Processing Application Tool for HSPF (PATH) interfaces maintained.
  - Measure - # of trainings HSPF-SAM held.
- Milestone 5b – provide water quality technical knowledge assistance and information to local planning partners in the development or updates 1W1P. This assistance will include: providing water quality data, identification of stressors and pollutant sources, information on prioritizing and targeting critical areas for protection and restoration, and high-level strategies to achieve water quality goals.
  - Measure – # of completed and approved 1W1P or subsequently developed updated 1W1P.
- Milestone 5c – provide Smart Salting training to increase awareness of chloride pollution and prevention.
  - Measure – cumulative # of people certified in Smart Salting.

- Milestone 5d – Implement the Minnesota Clean Water Partnership loan program offering zero-interest loans to local units of government for implementing nonpoint-source best management practices and other activities that target the restoration and protection of water resources.
  - Measure – amount of money loaned to local units of government per year.
- Milestone 5e – Continue to direct funding resources for accelerated program management and local implementation of non-point pollution reduction activities.
  - Measure – amount of grant money awarded.
- Milestone 5f – maintain and update the Minnesota Stormwater Manual WIKI
  - Measure – continued update of manual. Updates can be tracked at Recent changes - Minnesota Stormwater Manual (state.mn.us).

6. Maximize existing laws and regulations

Customary approaches to nonpoint pollution implementation include regulation as well as financial incentives and education. A key to developing effective Watershed Restoration and Protection Strategies is maximizing the effectiveness of existing laws and regulations.

- Milestone 6a – support and implement the 2015 Buffer Law (amended in 2016). The law establishes perennial vegetation buffers along rivers, streams, and public drainage ditches.
  - Measure - Percentage compliance statewide of Buffer Law.
- Milestone 6b – support and implement the MDA Minnesota Nitrogen Fertilizer Management Plan and the Groundwater Protection Rule.
  - Measure – annual posting of Fall Nitrogen Restriction map.
  - Measure – annual posting of Drinking Water Supply Management Area Mitigation Level map.
- Milestone 6c – support and implement MPCA Feedlot rules on non-CAFO facilities
  - Measure - Number of high-risk feedlot inspections conducted annually.
- Milestone 6d – support and implement the MPCA Subsurface Sewage Treatment System rules
  - Measure - Percentage of estimated SSTS compliant systems.

7. Support innovative nonregulatory approaches

One of several keys to leveraging various implementation monies is to support the development of market-driven and reward-driven approaches**.**

- Milestone 7a – implement the Minnesota Agricultural Water Quality Certification Program (MAWQCP). The MAWQCP is a voluntary program that supports the implementation of conservation practices on a field-by field, whole-farm basis through its process of identifying and mitigating agricultural risks to water quality. Overall goal is the enrollment of one million acres.
  - Measure – cumulative # of acres enrolled.
- Milestone 7b. – support point/non-point water quality trading in a market-based approach for the protection and restoration of water resources that work in conjunction with existing voluntary, regulatory and financial assistance programs.
  - Measure – cumulative # of water quality trades completed.
- Milestone 7c. – support the MDA and University of Minnesota Forever Green Initiative which develops and promotes methods on incorporating perennial and winter annual crops into existing agricultural practices.
  - Measure - # of projects funded each biennium.

Additional strategies to achieve successful non-point pollution reductions

8. Build partnerships to enhance a collaborative watershed approach to nonpoint water pollution.

- Milestone 8a – Support collaborative water quality policy development through the Clean Water Council with members from: farm organizations, business organizations, environmental organizations, Soil Water Conservation Districts, Watershed Districts, nonprofit organizations focused on water quality improvements, state agencies, county governments, city governments, township officers, tribal governments, statewide hunting organizations and statewide fishing organizations.
  - Measure – continued monthly meetings of the CWC and its Policy Committee.
- Milestone 8b – strengthen and expand state agency collaboration through the Interagency Coordination Team with members from BWSR, Met Council, MDA, MDH, MPCA, PFA and EQB.
  - Measure – continued regular meetings of the ICT, and its subteams.

In addition to the above referenced strategies and milestones, Minnesota's NPS Program will also deploy a variety of Administrative measures to evaluate Minnesota's NPS Program administration and management including:

1) Timeliness and quality of report submittals to US EPA.
2) Timeliness of federal fund obligation with state program partners and sub-grantees.
3) Participation at all required meetings, conferences and other events outlined in the Programmatic Conditions section of Minnesota's grant agreement with US EPA.
4) Provide administrative oversight of the Minnesota Section 319 Small Watershed Focus Program.
5) Submittal of an annual Watershed Achievements Report highlighting the achievements of active and recently completed nonpoint source water quality projects.
6) Provide Section 319 grant program process into EPA's Grants Reporting and Tracking System (GRTS) on a semiannual basis.
7) Develop individual nonpoint source water quality Success Stories.
8) Review and update the Minnesota Nonpoint Source Management Program plan at least once every five years.

Appendix B. Minnesota Clean Water Legacy Act table

Because of the emphasis and influence of the Minnesota Clean Water Legacy Act, it is important to explain how this law impacts the NPS program. The table below offers a visual presentation of how the various components and agencies interact to address NPS pollution in Minnesota.

Some of the sections of the statute are primarily administrative and/or program focused. The table indicates when the statute language identifies or directs the use of CWFs. Statute language that crosses the whole table indicates that the subdivision applies to the overall program. Statute language that is relevant to one or more of the columns is tied to each relevant column.

Using the table

The column headings are described in this section. When a particular program product, program, agency, or organization is the lead in a particular column, it is listed in **bold font**. Under the Minnesota Water Management Framework, the state's water management agencies contribute significant work to aspects and products of Minnesota's water resources. In the table, lead agencies are identified when appropriate. 'All' indicates that all program products, programs, agencies, or organizations within each column play a role as described in the statute language.

Program products

The various state programs provide for the development of products intended to support subsequent and concurrent program activities in achieving water quality restoration and protection in Minnesota. The programs are described in more detail elsewhere in the plan. The primary products associated with the CWLA statute language include the following:

- IWM – Intensive watershed monitoring of HUC8 watersheds.
- 303(d) – Impaired waters list per Section 303(d) of the CWA.
- TMDLs – Total maximum daily loads for impaired waters.
- WRAPS – Watershed restoration and protection strategies, including stressor identification process, watershed modeling, coordination with (support to) water planning, and work with stakeholders.
- GRAPS – Groundwater restoration and protection strategies.
- 1W1P – water planning in HUC8 watersheds and related water planning.
- CWLA Accountability Report.

Agency and program documents

The next columns in the table represent documents intended to provide direction and priorities for various parts of the overall watershed approach. The documents sometimes seem to overlap, given overlapping responsibilities of the organizations and program, but taken together provide an integrated look at what is going on in Minnesota related to water quality restoration and protection. These include:

- Clean Water Roadmap.
- Nonpoint Priority Funding Plan.
- EQB Water Report.
- Minnesota Water Management Framework.
- CWC – was established by the CWLA to provide stakeholder recommendations.

Statewide, regional, local programs; parameter strategies

This column identifies the various statewide, regional, and local programs and entities that play a role in watershed management. It also identifies parameter-specific strategies that relate to the particular statute text.

A partial list of the statewide, regional, and local programs, entities, and strategies is included in Section 5.3.

This column also notes when local units of government are a lead for the work identified in the statute.

Section 319 small Watersheds focus program (Focus Watersheds)

This column identifies when the Focus Watersheds will provide a particular connection to the statute language and completion of the NPSMPP.

Admin/program column

This column identifies when statute language is primarily administrative or program-definition oriented and does not particularly represent language that provides a basis for NPS goals.

Spending focus

This column identifies when the statute language says something related to the use of CWFs money for programs and implementation.

Table 11 CWLA's influence in programmatic development

Chapter 114D. Clean Water Legacy Act	Products	Clean Water Roadmap	NPFP	EQB Water Report	Minnesota Water Management Framework	Section 319 Focus Program Watersheds (Focus)	CWC	Statewide, regional, local programs; parameter strategies	Admin/ Program	Spending focus
Minn. Stat. § 114D.10, subd. 1 Purpose										
The purpose of the Clean Water Legacy Act is to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation, by providing authority, direction, and resources to achieve and maintain water quality standards for groundwater and surface waters, including the standards required by section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313(d), and other applicable state and federal regulations.										
Subd. 2. Findings. The legislature finds that:										
(1) there is a close link between protecting, enhancing, and restoring the quality of Minnesota's groundwater and surface waters and the ability to develop the state's economy, enhance its quality of life, and protect its human and natural resources;										
(2) achieving the state's water quality goals will require long-term commitment and cooperation by all state and local agencies, and other public and private organizations and individuals, with responsibility and authority for water management, planning, and protection; and										
(3) all persons and organizations whose activities affect the quality of waters, including point and nonpoint sources of pollution, have a responsibility to participate in and support efforts to achieve the state's water quality goals.										
Minn. Stat. § 114D.15 Definitions (not included in table)										
Minn. Stat. § 114D.20 Implementation; Coordination; Goals; Polices; and Priorities										
Subd.1. Coordination and cooperation.										
In implementing this chapter, public agencies and private entities shall take into consideration the relevant provisions of local and other applicable water management, conservation, land use, land management, and development plans and programs. Public agencies with authority for local water management, conservation, land use, land management, and development plans shall take into consideration the manner in which their plans affect the implementation of this chapter. Public agencies shall identify opportunities to participate and assist in the successful implementation of this chapter, including the funding or technical assistance needs, if any, that may be necessary. In implementing this chapter, public agencies shall endeavor to engage the cooperation of organizations and individuals whose activities affect the quality of groundwater or surface waters, including point and nonpoint sources of pollution, and who have authority and responsibility for water management, planning, and protection. To the extent practicable, public agencies shall endeavor to enter into formal and informal agreements and arrangements with federal agencies and departments to jointly utilize staff and educational, technical, and financial resources to deliver programs or conduct activities to achieve the intent of this chapter, including efforts under the federal Clean Water Act and other federal farm and soil and water conservation programs. Nothing in this chapter affects the application of silvicultural exemptions under any federal, state, or local law or requires silvicultural practices more stringent than those recommended in the timber harvesting and forest management guidelines adopted by the Minnesota Forest Resources Council under section 89A.05.										

Subd. 2. Goals for implementation: The following goals must guide the implementation of this chapter:										
(1) to identify impaired waters in accordance with federal TMDL requirements and to ensure continuing evaluation of surface waters for impairments;	303(d)				MPCA					
(2) to submit TMDLs to the United States Environmental Protection Agency in a timely manner in accordance with federal TMDL requirements;	TMDL				MPCA					
(3) to inform and support strategies for implementing restoration and protection activities in a reasonable time period;	WRAPS 1W1P				MPCA BWSR	Focus Waterbodies				
(4) to systematically evaluate waters, to provide assistance and incentives to prevent waters from becoming impaired, and to improve the quality of waters that are listed as impaired;	1W1P					Focus Waterbodies				
(5) to promptly seek the delisting of waters from the impaired waters list when those waters are shown to achieve the designated uses applicable to the waters;	IWM 303(d)				MPCA					
(6) to achieve compliance with federal Clean Water Act requirements in Minnesota;	All				MPCA					
(7) to support effective measures to prevent the degradation of groundwater according to the groundwater degradation prevention goal under section 103H.001; and	WRAPS 1W1P GRAPS				MDH BWSR MPCA					
(8) to support effective measures to restore degraded groundwater.	WRAPS 1W1P GRAPS				MDH MDA MPCA BWSR					
Subd. 3. Implementation policies. The following policies must guide the implementation of this chapter:										
(1) develop regional, multiple pollutant, or watershed TMDLs or WRAPSs, where reasonable and feasible;	TMDL				MPCA					
(2) maximize use of available organizational, technical, and financial resources to perform sampling, monitoring, and other activities to identify degraded groundwater and impaired waters, including use of citizen monitoring and citizen monitoring data used by the Pollution Control Agency in assessing water quality that meets the requirements established by the commissioner of the Pollution Control Agency.	IWM 303(d)				MPCA MDH MDA					

(3) maximize opportunities for restoration of degraded groundwater and impaired waters, by prioritizing and targeting of available programmatic, financial, and technical resources and by providing additional state resources to complement and leverage available resources;	TMDL WRAPS 1W1P GRAPS	CWR	NPFP		All	Focus Waterbodies	CWC	All		
(4) use existing regulatory authorities to achieve restoration for point and nonpoint sources of pollution where applicable, and promote the development and use of effective nonregulatory measures to address pollution sources for which regulations are not applicable;	TMDL WRAPS 1W1P GRAPS	CWR	NPFP		All	Focus Waterbodies	CWC	All		
(5) use restoration methods that have a demonstrated effectiveness in reducing impairments and provide the greatest long-term positive impact on water quality protection and improvement and related conservation benefits while incorporating innovative approaches on a case-by-case basis;	TMDL WRAPS 1W1P GRAPS	CWR	NPFP		All	Focus Waterbodies	CWC	All		
(6) identify for the legislature any innovative approaches that may strengthen or complement existing programs;	TMDL WRAPS 1W1P GRAPS	CWR	NPFP		All	Focus Waterbodies	CWC	All		
(7) identify and encourage implementation of measures to prevent surface waters from becoming impaired and to improve the quality of waters that are listed as impaired but have no approved TMDL addressing the impairment using the best available data and technology, and establish and report outcome-based performance measures that monitor the progress and effectiveness of protection and restoration measures;	WRAPS GRAPS 1W1P		NPFP		All	Focus Waterbodies	CWC			
(8) monitor and enforce cost-sharing contracts and impose monetary damages in an amount up to 150 percent of the financial assistance received for failure to comply; and					BWSR	Focus Waterbodies				
(9) identify and encourage implementation of measures to prevent groundwater from becoming degraded and measures that restore groundwater resources.	WRAPS GRAPS 1W1P	CWR	NPFP		MDH MPCA BWSR MDA		CWC			
Subd. 4. Priorities for identifying impaired waters. The Pollution Control Agency, in accordance with federal TMDL requirements, shall set priorities for identifying impaired waters, giving consideration to:										
(1) waters where impairments would pose the greatest potential risk to human or aquatic health; and	303(d) IWM				MPCA					
(2) waters where data developed through public agency or citizen monitoring or other means, provides scientific evidence that an impaired condition exists.	303(d) IWM				MPCA					

Subd. 5. Priorities for scheduling and preparing WRAPSs and TMDLs. The commissioner of the Pollution Control Agency must seek recommendations from the Clean Water Council; the commissioners of natural resources, health, and agriculture; and the Board of Water and Soil Resources regarding priorities for scheduling and preparing WRAPSs and TMDLs. Recommendations must consider the causes of impairments, the designated uses of the waters, applicable federal TMDL requirements, surface water and groundwater interactions, protection of high-quality waters, waters and watersheds with declining water quality trends, and waters used as drinking water sources. Furthermore, consideration must be given to waters and watersheds:

(1) that have the greatest potential risk to human health;							CWC			
(2) that have the greatest potential risk to threatened or endangered species							CWC			
(3) that have the greatest potential risk to aquatic health;							CWC			
(4) where other public agencies and participating organizations and individuals, especially local, basin wide, watershed, or regional agencies or organizations, have demonstrated readiness to assist in carrying out the responsibilities, including availability and organization of human, technical, and financial resources necessary to undertake the work; and							CWC			
(5) where there is demonstrated coordination and cooperation among cities, counties, watershed districts, and soil and water conservation districts in planning and implementation of activities that will assist in carrying out the responsibilities.							CWC			

Subd. 6. Priorities for restoring impaired waters. In implementing restoration of impaired waters, in addition to the priority considerations in subdivision 5, the Clean Water Council shall give priority in its recommendations for restoration funding from the clean water fund to restoration projects that:

(1) coordinate with and utilize existing local authorities and infrastructure for implementation							CWC			
(2) can be implemented in whole or in part by providing support for existing or ongoing restoration efforts;							CWC			
(3) most effectively leverage other sources of restoration funding, including federal, state, local, and private sources of funds							CWC			
(4) show a high potential for early restoration and delisting based upon scientific data developed through public agency or citizen monitoring or other means; and							CWC			
(5) show a high potential for long-term water quality and related conservation benefits							CWC			

Subd. 7 Priorities for funding prevention actions.										
The Clean Water Council shall apply the priorities applicable under subdivision 6, as far as practicable, when recommending priorities for funding actions to prevent groundwater and surface waters from becoming degraded or impaired and to improve the quality of surface waters that are listed as impaired.							CWC			
Subd. 8 Alternatives; TMDL, TMDL implementation plan, or WRAPS.										
(a) If the commissioner of the Pollution Control Agency determines that a comprehensive watershed management plan or comprehensive local water management plan contains information that is sufficient and consistent with guidance from the United States Environmental Protection Agency under section 303(d) of the federal Clean Water Act, the commissioner may submit the plan to the Environmental Protection Agency according to federal TMDL requirements as an alternative to developing a TMDL after consultation with affected national pollutant discharge elimination system (NPDES) permit holders. (b) (b) A TMDL implementation plan or a WRAPS, or portions thereof, are not needed for waters or watersheds when the commissioner of the Pollution Control Agency determines that a comprehensive watershed management plan, a comprehensive local water management plan, or a statewide or regional strategy published by the Pollution Control Agency meets the definition in section 114D.15, subdivision 11 or 13. (c) (c) The commissioner of the Pollution Control Agency may request that the Board of Water and Soil Resources conduct an evaluation of the implementation efforts under a comprehensive watershed management plan or comprehensive local water management plan when the commissioner makes a determination under paragraph (b). The board must conduct the evaluation in accordance with section 103B.102. (d) (d) The commissioner of the Pollution Control Agency may amend or revoke a determination made under paragraph (a) or (b) after considering the evaluation conducted under paragraph (c).										
Subd. 9. Coordinating municipal and local water quality activities.										
A project, practice, or program for water quality improvement or protection that is conducted by a watershed management organization or a local government unit with a comprehensive watershed management plan or other water management plan approved according to chapter 103B, 103C, or 103D may be considered by the commissioner of the Pollution Control Agency as contributing to the										

requirements of a storm water pollution prevention program (SWPPP) for a municipal separate storm sewer systems (MS4) permit unless the project, practice, or program was previously documented as contributing to a different SWPPP for an MS4 permit. The commissioner of health may determine that a comprehensive watershed management plan or a comprehensive local water management plan, in whole or in part, is sufficient to fulfill the requirements of wellhead protection plans.										
Minn Stat. § 114D.25 Administration; Pollution Control Agency										
Subd. 1. General duties and authorities.										
(a) The Pollution Control Agency, in accordance with federal TMDL requirements, shall: (1) identify impaired waters and propose a list of the waters for review and approval by the United States Environmental Protection Agency; (2) develop and approve TMDLs for listed impaired waters and submit the approved TMDLs to the United States Environmental Protection Agency for final approval; and (3) propose to delist waters from the Environmental Protection Agency impaired waters list.	IWM 303(d)				MPCA					
(b) A TMDL must include a statement of the facts and scientific data supporting the TMDL and a list of potential implementation options, including (1) a range of estimates of the cost of implementation of the TMDL; and (2) for point sources, the individual wasteload data and the estimated cost of compliance addressed by the TMDL.	TMDL				MPCA					
(c) The implementation information need not be sent to the United States Environmental Protection Agency for review and approval.									X	
Subd. 2. Administrative procedures for TMDL approval										
The approval of a TMDL by the Pollution Control Agency is a final decision of the agency for purposes of section 115.05, and is subject to the contested case procedures of sections 14.57 to 14.62 in accordance with agency procedural rules. The agency shall not submit an approved TMDL to the United States Environmental Protection Agency until the time for commencing judicial review has run or the judicial review process has been completed. A TMDL is not subject to the rulemaking requirements of chapter 14, including section 14.386.	TMDL				MPCA				X	
Subd. 3. TMDL submittal; requirement.										
Before submitting a TMDL to the United States Environmental Protection Agency, the Pollution Control Agency shall comply with the notice and procedure	TMDL				MPCA				X	

requirements of this section. If a contested case proceeding is not required for a proposed TMDL, the agency may submit the TMDL to the United States Environmental Protection Agency no earlier than 30 days after the notice required in subdivision 4. If a contested case proceeding is required for a TMDL, the TMDL may be submitted to the United States Environmental Protection Agency after the contested case proceeding and appeal process is completed.										
Subd. 4. TMDL notice; contents.										
The Pollution Control Agency shall give notice of its intention to submit a TMDL to the United States Environmental Protection Agency. The notice must be given by publication in the *State Register* and by United States mail to persons who have registered their names with the agency. The notice must include either a copy of the proposed TMDL or an easily readable and understandable description of its nature and effect and an announcement of how free access to the proposed TMDL can be obtained. In addition, the agency shall make reasonable efforts to notify persons or classes of persons who may be significantly affected by the TMDL by giving notice of its intention in newsletters, newspapers, or other publications, or through other means of communication. The notice must include a statement informing the public:										
(1) that the public has 30 days in which to submit comment in support of or in opposition to the proposed TMDL and that comment is encouraged;	TMDL				MPCA				X	
(2) that each comment should identify the portion of the proposed TMDL addressed, the reason for the comment, and any change proposed;	TMDL				MPCA				X	
(3) of the manner in which persons must request a contested case proceeding on the proposed TMDL;	TMDL				MPCA				X	
(4) that the proposed TMDL may be modified if the modifications are supported by the data and facts; and	TMDL				MPCA				X	
(5) the date on which the 30-day comment period ends.	TMDL				MPCA				X	
Subd. 5. Third-party TMDL development.										
The Pollution Control Agency may enter into agreements with any qualified public agency setting forth the terms and conditions under which that agency is authorized to develop a third-party TMDL. In determining whether the public agency is qualified to develop a third-party TMDL, the Pollution Control Agency shall consider the technical and administrative qualifications of the public agency, cost, and shall avoid any potential organizational conflict of interest, as defined in section 16C.02, subdivision 10a, of the public agency with respect to the development of the third-party TMDL. A third-party TMDL is subject to modification and approval by the Pollution Control Agency, and must be approved by the Pollution Control Agency before it is submitted to the United States Environmental Protection Agency. The Pollution Control Agency shall only consider authorizing the development of third-party TMDLs consistent with the goals, policies, and priorities determined under section 114D.20.	TMDL				MPCA				X	

Subd. 6. Impaired waters list; public notice and process.										
The commissioner of the Pollution Control Agency must allow at least 60 days for public comment after publishing the draft impaired waters list required under the federal Clean Water Act. In making impairment designations, the Pollution Control Agency must use available water-quality data that takes into consideration recent relevant pollutant reductions resulting from controls on municipal point sources and nonpoint sources.	303(d)				MPCA					

Minn. Stat. § 114D.26 Watershed Restoration and Protection Strategies: The commissioner of the Pollution Control Agency shall develop watershed restoration and protection strategies for the purposes of:

(1) summarizing the physical, chemical, and biological assessment of the water quality of the watershed;	IWM 303(d)				MPCA					
(2) quantifying impairments and risks to water quality;	WRAPS				MPCA					
(3) describing the causes of impairments and pollution sources;	WRAPS TMDL				MPCA					
(4) consolidating TMDLs in a major watershed; and	TMDL				MPCA					
(5) informing comprehensive local water management plans and comprehensive watershed management plans.	TMDL WRAPS				MPCA					
(b) Each WRAPS must: (1) identify impaired waters and waters in need of protection; (2) identify biotic stressors causing impairments or threats to water quality; (3) summarize TMDLs, watershed modeling outputs, and resulting pollution load allocations and identify areas with high pollutant-loading rates; (4) in consultation with local governments and other state agencies, identify water quality monitoring needed to fill data gaps, determine changing conditions, or gauge implementation effectiveness; and (5) contain strategies that are capable of cumulatively achieving needed pollution load reductions for point and nonpoint sources, including identifying: (i) water quality parameters of concern; (ii) current water quality conditions; (iii) water quality goals, strategies, and targets by parameter of concern; and (iv) strategies and an example of the scale of adoptions with a timeline to meet the water quality restoration or protection goals of this chapter	WRAPS		NPFP	EQB	**MPCA** All	Focus Program		All		

Subd. 1a.Coordination.										
To ensure effectiveness, efficiency, and accountability in meeting the goals of this chapter, the commissioner of the Pollution Control Agency, in consultation with the Board of Water and Soil Resources and local government units, must coordinate the schedule, budget, scope, and use of a WRAPS and related documents and processes.										
Subd. 2. Reporting.										
Beginning July 1, 2016, and every other year thereafter, the commissioner of the Pollution Control Agency must report on the agency's website the progress toward implementation milestones and water quality goals.	Acct. Report				MPCA				X	
Subd. 3. Timelines; administration.										
(a) The commissioner of the Pollution Control Agency must complete watershed restoration and protection strategies for the state's major watersheds by June 30, 2023, unless the commissioner determines that a comprehensive watershed management plan or comprehensive local water management plan, in whole or in part, meets the definition in section 114D.15, subdivision 11 or 13. As needed, the commissioner must update the strategies, in whole or in part, after consulting with the Board of Water and Soil Resources and local government units. (b) Watershed restoration and protection strategies are governed by the procedures for approval and notice in section 114D.25, subdivisions 2 and 4, except that the strategies need not be submitted to the United States Environmental Protection Agency.	WRAPS				MPCA					
Minn. Stat. § 114D.30 Clean Water Council										
Subd. 1. Creation; duties.										
A Clean Water Council is created to advise on the administration and implementation of this chapter, and foster coordination and cooperation as described in section 114D.20, subdivision 1. The council may also advise on the development of appropriate processes for expert scientific review as described in section 114D.35, subdivision 2. The Pollution Control Agency shall provide administrative support for the council with the support of other member agencies. The members of the council shall elect a chair from the voting members of the council.					MPCA		CWC		X	

Subd. 2. Membership; appointment.										
(a) The commissioners of natural resources, agriculture, health, and the Pollution Control Agency, the executive director of the Board of Water and Soil Resources, the Board of Regents of the University of Minnesota, and the Metropolitan Council shall each appoint one person from their respective entity to serve as a nonvoting member of the council. Two members of the house of representatives, including one member from the majority party and one member from the minority party, appointed by the speaker and two senators, including one member from the majority party and one member from the minority party, appointed according to the rules of the senate shall serve at the pleasure of the appointing authority as nonvoting members of the council. Members appointed under this paragraph serve as nonvoting members of the council.					All		CWC		X	
(b) Seventeen voting members of the council shall be appointed by the governor as follows: (1) two members representing statewide farm organizations; (2) two members representing business organizations; (3) two members representing environmental organizations; (4) one member representing soil and water conservation districts; (5) one member representing watershed districts; (6) one member representing nonprofit organizations focused on improvement of Minnesota lakes or streams; (7) two members representing organizations of county governments, one member representing the interests of rural counties and one member representing the interests of counties in the seven-county metropolitan area; (8) two members representing organizations of city governments; (9) one member representing township officers; (10) one member representing the interests of tribal governments; (11) one member representing statewide hunting organizations; and (12) one member representing statewide fishing organizations. Members appointed under this paragraph must not be registered lobbyists or legislators. In making appointments, the governor must attempt to provide for geographic balance. The members of the council appointed by the governor are subject to the advice and consent of the senate.							CWC			

Subd. 3. Conflict of Interest.										
A Clean Water Council member may not participate in or vote on a decision of the council relating to an organization in which the member has either a direct or indirect personal financial interest. While serving on the Clean Water Council, a member shall avoid any potential conflict of interest.							CWC		X	
Subd. 4. Terms; compensation; removal.										
The terms of members representing the state agencies and the Metropolitan Council are four years and are coterminous with the governor. The terms of other nonlegislative members of the council shall be as provided in section 15.059, subdivision 2. Members may serve until their successors are appointed and qualify. Compensation and removal of nonlegislative council members is as provided in section 15.059, subdivisions 3 and 4. Compensation of legislative members is as determined by the appointing authority. The Pollution Control Agency may reimburse legislative members for expenses. A vacancy on the council may be filled by the appointing authority provided in subdivision 1 for the remainder of the unexpired term.							CWC		X	
Subd. 5. Implementation Plan										
The Clean Water Council shall recommend a plan for implementation of this chapter and the provisions of article XI, section 15, of the Minnesota Constitution relating to clean water. The recommended plan shall address general procedures and time frames for implementing this chapter, and shall include a more specific implementation work plan for the next fiscal biennium and a framework for setting priorities to address impaired waters consistent with section 114D.20, subdivisions 2 to 7. The council shall issue a revised plan by December 1 of each even-numbered year.							CWC			
Subd. 6. Recommended Appropriations.										
(a) The Clean Water Council shall recommend to the governor and the legislature the manner in which money from the clean water fund should be appropriated for the purposes stated in article XI, section 15, of the Minnesota Constitution and section 114D.50.							CWC			
(b) The council's recommendations must: (1) be to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation and ensure that at least five percent of the clean water fund is spent only to protect drinking water sources; (2) be consistent with the purposes, policies, goals, and priorities in this							CWC			$

chapter; and (3) allocate adequate support and resources to identify degraded groundwater and impaired waters, develop TMDLs, implement restoration of groundwater and impaired waters, and provide assistance and incentives to prevent groundwater and surface waters from becoming degraded or impaired and improve the quality of surface waters which are listed as impaired but have no approved TMDL.										
(c) The council must recommend methods of ensuring that awards of grants, loans, or other funds from the clean water fund specify the outcomes to be achieved as a result of the funding and specify standards to hold the recipient accountable for achieving the desired outcomes. Expenditures from the fund must be appropriated by law.							CWC			
Subd. 7. Biennial report to the legislature.										
By December 1 of each even-numbered year, the council shall submit a report to the legislature on the activities for which money has been or will be spent for the current biennium, the activities for which money is recommended to be spent in the next biennium, and the impact on economic development of the implementation of efforts to protect and restore groundwater and the impaired waters program. The report due on December 1, 2014, must include an evaluation of the progress made through June 30, 2014, in implementing this chapter and the provisions of article XI, section 15, of the Minnesota Constitution relating to clean water, the need for funding of future implementation, and recommendations for the sources of funding.							CWC		X	
Minn. Stat. § 114D.35 PUBLIC AND STAKEHOLDER PARTICIPATION; SCIENTIFIC REVIEW; EDUCATION.										
Subd. 1. Public and stakeholder participation.										
(a) Public agencies and private entities involved in implementing this chapter must encourage participation by the public and stakeholders, including local citizens, landowners, land managers, and public and private organizations. (b) In particular, the commissioner of the Pollution Control Agency must make reasonable efforts to provide timely information to the public and to stakeholders about impaired waters that have been identified by the agency and to inform and consult with the public and stakeholders in developing a WRAPS or TMDL. (c) Public agencies and private entities using public funds that are involved in implementing restoration and protection identified in a comprehensive watershed management plan or comprehensive local water management plan must make efforts to inform, consult, and involve the public and stakeholders.	IWM **TMDL** WRAPS 1W1P GRAPS	CWR	NPFP	EQB	All	Focus Waterbodies	CWC	All		

(d) The commissioner of the Pollution Control Agency and the Board of Water and Soil Resources must coordinate public and stakeholder participation in consultation with local government units. To the extent practicable, implementation of this chapter must be accomplished in cooperation with local, state, federal, and tribal governments and private-sector organizations.										
Subd. 2. Expert scientific advice.										
The Clean Water Council and public agencies and private entities shall make use of available public and private expertise from educational, research, and technical organizations, including the University of Minnesota and other higher education institutions, to provide appropriate independent expert advice on models, methods, and approaches used in identifying degraded groundwater and impaired waters, developing TMDLs, and implementing prevention and restoration.	IWM 303(d) TMDL WRAPS 1W1P GRAPS	CWR	NPFP	EQB	All	Focus Waterbodies	CWC	All		
Subd. 3. Education.										
The Clean Water Council must develop strategies for informing, educating, and encouraging the participation of citizens, stakeholders, and others regarding this chapter. Public agencies are responsible for implementing the strategies.	IWM 303(d) TMDL WRAPS 1W1P GRAPS				All		CWC			
Minn. Stat. § 114D.45 [Repealed]										
Minn. Stat. § 114D.47 Nonpoint Funding Alternative.										
Notwithstanding section 114D.50, subdivision 3a, the Board of Water and Soil Resources may, by board order, establish alternative timelines or content for the priority funding plan for nonpoint sources under section 114D.50, subdivision 3a, and may use information from comprehensive watershed management plans or comprehensive local water management plans to estimate or summarize costs.										
Minn. Stat. § 114D.50 Clean Water Fund.										
Subd. 1. Establishment.										
The clean water fund is established in the Minnesota Constitution, article XI, section 15. All money earned by the fund must be credited to the fund.									X	
Subd. 2. Sustainable drinking water account.										
The sustainable drinking water account is established as an account in the clean water fund.									X	

Subd. 3. Purpose.										
(a) The clean water fund may be spent only to protect, enhance, and restore water quality in lakes, rivers, and streams, to protect groundwater from degradation, and to protect drinking water sources by: (1) providing grants, loans, and technical assistance to public agencies and others testing waters, identifying impaired waters, developing total maximum daily loads, implementing restoration plans for impaired waters, and evaluating the effectiveness of restoration; (2) supporting measures to prevent surface waters from becoming impaired and to improve the quality of waters that are listed as impaired, but do not have an approved total maximum daily load addressing the impairment; (3) providing grants and loans for wastewater and storm water treatment projects through the Public Facilities Authority; (4) supporting measures to prevent the degradation of groundwater in accordance with the groundwater degradation prevention goal under section 103H.001; and (5) providing funds to state agencies to carry out their responsibilities, including enhanced compliance and enforcement.	All	CWR	NPFP	EQB	All	Focus Waterbodies	CWC	All	X	$
(b) Funds from the clean water fund must supplement traditional sources of funding for these purposes and may not be used as a substitute.					All		CWC			
Subd. 3a.Nonpoint priority funding plan.										
(a) Beginning July 1, 2014, and every other year thereafter, the Board of Water and Soil Resources shall prepare and post on its website a priority funding plan to prioritize potential nonpoint restoration and protection actions based on available WRAPSs, TMDLs, and local water plans. The plan must take into account the following factors: water quality outcomes, cost-effectiveness, landowner financial need, and leverage of nonstate funding sources. The plan shall include an estimated range of costs for the prioritized actions.			NPFP		BWSR					$
(b) Consistent with the priorities listed in section 114D.20, state agencies allocating money from the clean water fund for nonpoint restoration and protection strategies shall target the money according to the priorities identified on the nonpoint priority funding plan. The allocation of money from the clean water fund to projects eligible for financial assistance under section 116.182 is not governed by the nonpoint priority funding plan.	TMDL WRAPS 1W1P GRAPS	CWR	NPFP		All	Focus Waterbodies	CWC	All		$

Subd. 4. Expenditures; accountability.										
(a) A project receiving funding from the clean water fund must meet or exceed the constitutional requirements to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater and drinking water from degradation. Priority may be given to projects that meet more than one of these requirements. A project receiving funding from the clean water fund shall include measurable outcomes, as defined in section 3.303, subdivision 10, and a plan for measuring and evaluating the results. A project must be consistent with current science and incorporate state-of-the-art technology.	All	CWR	NPFP	EQB	All	Focus Waterbodies	CWC	All		$
(b) Money from the clean water fund shall be expended to balance the benefits across all regions and residents of the state.	All	CWR	NPFP	EQB	All	Focus Waterbodies	CWC	Some	X	
(c) A state agency or other recipient of a direct appropriation from the clean water fund must compile and submit all information for proposed and funded projects or programs, including the proposed measurable outcomes and all other items required under section 3.303, subdivision 10, to the Legislative Coordinating Commission as soon as practicable or by January 15 of the applicable fiscal year, whichever comes first. The Legislative Coordinating Commission must post submitted information on the website required under section 3.303, subdivision 10, as soon as it becomes available. Information classified as not public under section 13D.05, subdivision 3, paragraph (d), is not required to be placed on the website.	Acct. Report				All		CWC			$
(d) Grants funded by the clean water fund must be implemented according to section 16B.98 and must account for all expenditures. Proposals must specify a process for any regranting envisioned. Priority for grant proposals must be given to proposals involving grants that will be competitively awarded.			NPFP		BWSR DNR MDA PFA	Focus Program	CWC			$
(e) Money from the clean water fund may only be spent on projects that benefit Minnesota waters.			NPFP		BWSR DNR MDA PFA	Focus Program	CWC		X	

(f) When practicable, a direct recipient of an appropriation from the clean water fund shall prominently display on the recipient's website home page the legacy logo required under Laws 2009, chapter 172, article 5, section 10, as amended by Laws 2010, chapter 361, article 3, section 5, accompanied by the phrase "Click here for more information." When a person clicks on the legacy logo image, the website must direct the person to a web page that includes both the contact information that a person may use to obtain additional information, as well as a link to the Legislative Coordinating Commission website required under section 3.303, subdivision 10.									X	
(g) Future eligibility for money from the clean water fund is contingent upon a state agency or other recipient satisfying all applicable requirements in this section, as well as any additional requirements contained in applicable session law. If the Office of the Legislative Auditor, in the course of an audit or investigation, publicly reports that a recipient of money from the clean water fund has not complied with the laws, rules, or regulations in this section or other laws applicable to the recipient, the recipient must be listed in an annual report to the legislative committees with jurisdiction over the legacy funds. The list must be publicly available. The legislative auditor shall remove a recipient from the list upon determination that the recipient is in compliance. A recipient on the list is not eligible for future funding from the clean water fund until the recipient demonstrates compliance to the legislative auditor.										$
(h) Money from the clean water fund may be used to leverage federal funds through execution of formal project partnership agreements with federal agencies consistent with respective federal agency partnership agreement requirements.			NPFP		All	Focus watersheds				$
(i) Any state agency or organization requesting a direct appropriation from the clean water fund must inform the Clean Water Council and the house of representatives and senate committees having jurisdiction over the clean water fund, at the time the request for funding is made, whether the request is supplanting or is a substitution for any previous funding that was not from a legacy fund and was used for the same purpose.					All		CWC	Regional entities		

Subd. 4a.[Repealed]										
Subd. 5. Data availability.										
Data collected by the projects funded with money from the clean water fund that have value for planning and management of natural resources, emergency preparedness, and infrastructure investments must conform to the enterprise information architecture developed by the Office of MN.IT Services. Spatial data must conform to geographic information system guidelines and standards outlined in that architecture and adopted by the Minnesota Geographic Data Clearinghouse at the Minnesota Geospatial Information Office. A description of these data that adheres to the Office of MN.IT Services geographic metadata standards must be submitted to the Minnesota Geospatial Information Office to be made available online through the clearinghouse and the data must be accessible and free to the public unless made private under chapter 13. To the extent practicable, summary data and results of projects funded with money from the clean water fund should be readily accessible on the Internet and identified as a clean water fund project.									X	
Subd. 6. Restoration evaluations.										
The Board of Water and Soil Resources may convene a technical evaluation panel comprised of five members, including one technical representative from the Board of Water and Soil Resources, one technical representative from the Department of Natural Resources, one technical expert from the University of Minnesota or the Minnesota State Colleges and Universities, and two representatives with expertise related to the project being evaluated. The board may add a technical representative from a unit of federal or local government. The members of the technical evaluation panel may not be associated with the restoration, may vary depending upon the projects being reviewed, and shall avoid any potential conflicts of interest. Each year, the board may assign a coordinator to identify a sample of habitat restoration projects completed with clean water funding. The coordinator shall secure the restoration plans for the projects specified and direct the technical evaluation panel to evaluate the restorations relative to the law, current science, and the stated goals and standards in the restoration plan and, when applicable, to the Board of Water and Soil Resources' native vegetation establishment and enhancement guidelines. The coordinator shall summarize the findings of the panel, provide a report to the chairs of the respective house of representatives and senate policy, and finance committees with jurisdiction over natural resources and spending from the clean water fund. The report shall determine if the restorations are meeting planned					BWSR				X	

goals, any problems with the implementation of restorations, and, if necessary, recommendations on improving restorations. The report shall be focused on improving future restorations. Up to one-tenth of one percent of forecasted receipts from the clean water fund may be used for restoration evaluations under this section.										
Subd. 7. Reserve requirement.										
In any fiscal year, at least five percent of that year's projected tax receipts determined by the most recent forecast for the clean water fund must not be appropriated.					All		CWC		X	