



Minnesota's Total Maximum Daily Load Studies Prioritization Framework 2022–2032

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1. Introduction

The U.S. Environmental Protection Agency (EPA) requires states, territories, and authorized tribes to submit a Total Maximum Daily Load (TMDL) prioritization framework. The framework is a planning document that describes long-term priorities, a rationale for selecting those priorities, and a general strategy for implementing the goals of the EPA’s 2022–2032 Vision.

This document is Minnesota’s TMDL Prioritization Framework for 2022–2032 (Framework), and it provides supporting documentation to Minnesota’s [impaired waters lists](#)¹ over the Framework time period. The draft Framework was made available for public review during the public notice period for the 2024 impaired waters list and is posted on the Minnesota Pollution Control Agency’s (MPCA) [TMDL and WRAPS guidance](#)² web page.

The EPA also requires two-year commitments for completing TMDLs starting with federal fiscal year (FY) 2025–2026. The Framework must be shared with EPA by April 1, 2024, and the first set of two-year commitments must be submitted to EPA through its ATTAINS (Assessment, TMDL, Tracking, and Implementation System) database by September 30, 2024.

The Framework describes Minnesota’s process for selecting water bodies on Minnesota’s impaired waters list for TMDL development and describes how the MPCA sets priorities and commitments for TMDLs under the EPA’s Vision process.

2. EPA’s Vision Process and Minnesota’s TMDL Commitments

The EPA developed a Vision for the [Clean Water Act Section 303\(d\) program](#)³ beginning in 2013. Section 303(d) requires states, territories, and authorized tribes to list impaired waters and develop TMDLs for water bodies in need of a TMDL. A TMDL establishes the maximum amount of a pollutant allowed in a water body and serves as the starting point or scientific planning tool for restoring water quality.

The EPA’s 2013 Vision was a long-term planning and prioritization process, and states and territories were asked to put together a TMDL priority framework report and TMDL priorities and commitments for 2016–2022.

*Minnesota’s TMDL Priority Framework Report*⁴ (2015, with 2022 updates) included a list of priority impairments for 2016–2022. This long-term framework reflected Minnesota’s priorities for development of TMDLs and included impairments for which MPCA committed to develop TMDLs—1,225 impairments on Minnesota’s 2014 impaired waters list. Of these, 280 impairments were removed during EPA’s “open season” for priority list modification. At the end of the 2013 Vision period in 2022, the MPCA had completed 98% of the final priority list of TMDL commitments.

¹ <https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list>

² <https://www.pca.state.mn.us/business-with-us/tmdl-and-wraps-guidance>

³ [https://www.epa.gov/tmdl#:~:text=Section%20303\(d\)%20of%20the%20Clean%20Water%20Act%20authorizes%20EPA,\(TMDLs\)%20for%20these%20waterbodies.](https://www.epa.gov/tmdl#:~:text=Section%20303(d)%20of%20the%20Clean%20Water%20Act%20authorizes%20EPA,(TMDLs)%20for%20these%20waterbodies.)

⁴ MPCA 2015, with February 2022 update. Minnesota’s TMDL Priority Framework Report. Document #wq-iw1-54.

The bridge metric TMDL commitments—*Minnesota’s TMDL Priorities for FY23–24*⁵—were developed for federal FY23–24 as a bridge between the original 2013 Vision and the 2022 Vision. Minnesota committed to complete and have EPA-approved TMDL reports for 70 impairments in FY23–24. The EPA expects states and tribes to achieve at least 85% of these TMDL commitments, using the EPA’s watershed area-based tracking metric.

The **EPA’s 2022 Vision** covers 2022–2032 and builds on the experience gained from implementing the 2013 Vision. The [2022–2032 Vision for the Clean Water Act Section 303\(d\) Program](#)⁶ “is intended to encourage flexible and innovative approaches for states, territories, and authorized tribes ... to implement CWA Section 303(d), as well as to identify ways to use limited resources to lead to restoration and protection, to leverage partnerships, and to encourage development of solutions to emerging and difficult water quality issues.”

2.1 Minnesota’s 2022–2032 TMDL Commitments

Every two years, the MPCA will commit to developing TMDLs for specific impairments, using this Framework as a guide. The TMDL commitments for each two-year period reflect the components of Minnesota’s Watershed Approach and other statewide strategies and initiatives (described in Section 3).

The TMDL commitment list may also take into account degree of impairment, local water plans, development pressure, aquatic recreation significance, needs of other state programs such as wastewater and stormwater, and data availability. The MPCA consults with other state agencies, local partners, tribal nations, and other interested stakeholders to decide for which impairments TMDLs will be developed.

This biennial TMDL commitment list includes TMDLs that MPCA commits to being EPA-approved and TMDLs that MPCA commits to being in progress during the two-year period. This list of TMDL commitments is posted on MPCA’s [TMDL and WRAPS guidance](#)⁷ web page.

The two-year periods for which MPCA will develop TMDL commitment lists are federal FY 2025–2026, 2027–2028, 2029–2030, and 2031–2032, and the lists will be finalized by September 30 of every even year. The federal fiscal years are from October 1 of the first year through September 30 of the following year. For example, the first TMDL commitment list after the bridge metric period will cover 10/1/2024–9/30/2026 and will be finalized by 9/30/2024.

Minnesota expects to complete additional TMDLs for impairments on the impaired waters list as part of our ongoing Watershed Approach. The MPCA will report on progress on the federal FY 2025–26 TMDL commitments and additional TMDLs completed through ATTAINS and as part of our Environmental Performance Partnership Agreement (EnPPA) and Performance Partnership Grant (PPG) workplan.

2.2 Integration of TMDL Commitments with the Biennial Impaired Waters List and Integrated Report

Federal regulations require states and tribes to include a priority ranking for impaired waters that require TMDLs (40 CFR § 130.7 (b)(4)). The *TMDL Commitment Grouping* in Minnesota’s 2024 impaired

⁵ MPCA 2022. Minnesota’s TMDL Priorities for FY23-24. Document #wq-iw1-8.

⁶ https://www.epa.gov/system/files/documents/2022-09/CWA%20Section%20303d%20Vision_September%202022.pdf

⁷ <https://www.pca.state.mn.us/business-with-us/tmdl-and-wraps-guidance>

waters list indicates MPCA’s priority ranking and reflects the Watershed Approach and other statewide strategies and initiatives as described in this Framework (Section 3). The *TMDL Commitment Grouping* identifies waters targeted for TMDL development in the two-year period following the release of the impaired waters list and consists of two groups:

- TMDL Commitment Grouping 1—All impairments on the MPCA’s TMDL commitment list, which includes impairments for which TMDLs will be EPA-approved (“completed”) during the two-year period and TMDLs that will be in progress during the two-year period. As noted above, the list of TMDL Commitments in Grouping 1 can be found in the *TMDL Commitment Grouping* field in the latest [impaired waters list](#).⁸
- TMDL Commitment Grouping 2—All remaining impairments that need a TMDL (i.e., category 5 in the *EPA category* field of the impaired waters list)

This Framework does not preclude development of TMDLs for impairments in TMDL Commitment Grouping 2.

3. Minnesota’s Prioritization Framework to meet the 2022 Vision

3.1 Foundation for the Prioritization Framework

The 2022–2032 Prioritization Framework reflects Minnesota’s values and strategies to protect its abundant water resources.

Minnesota’s Governor Walz proclaimed October 2022 the Month of Clean Water on the [50th anniversary of the Clean Water Act](#).⁹ The [State of Minnesota’s proclamation](#)¹⁰ states the importance of clean water to the state of Minnesota:

- Minnesota’s abundant lakes, rivers, and streams provide its residents with clean drinking water and year-round recreational opportunities that greatly enhance their quality of life and support healthy stands of wild rice, aquatic species, and wildlife.
- Clean water plays a vital role in the economic prosperity of Minnesota by supporting a robust tourism industry, providing a sustainable fishing industry, and sustaining our industrial and agricultural sectors.
- Minnesota voters passed a historic amendment to the state constitution in 2008, the Clean Water and Land and Legacy Amendment, which provided the financial support for state programs to protect, enhance, and restore water quality in lakes, rivers, and streams, protect groundwater from degradation, and protect drinking water sources.
- This work relies on continued collaboration between federal, state, tribal, and local governments, to protect and improve our waterways.

⁸ <https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list>

⁹ <https://www.pca.state.mn.us/business-with-us/clean-water-act-50th-anniversary>

¹⁰ https://mn.gov/governor/assets/10.01.22%20Month%20of%20Clean%20Water_tcm1055-544257.pdf

- In the last 50 years, the health of our lakes, rivers, streams, and wetlands have dramatically improved for many pollutants.

Clean Water, Land and Legacy Amendment

As noted in the Governor’s proclamation, the resources supporting the Framework largely come from the Clean Water, Land, and Legacy Amendment, approved by the voters in 2008, which supports the “[Clean Water Fund](#).”¹¹ The Fund has been the most important factor in accelerating the breadth and pace of Minnesota’s clean water work by creating a stable funding source for a watershed-based approach to protect and restore our water resources.



The Legacy Amendment increases the state sales tax by three-eighths of one percent continuing until 2034, and 33% of the sales tax revenue from the Legacy Amendment is allocated to the Clean Water Fund. Those funds may only be spent to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation.

The Clean Water Fund amounts to over \$300 million biennially. The [Clean Water Fund Performance Report](#)¹² summarizes the funds invested, action taken, and outcomes achieved. Past and current investments include monitoring, assessment and characterization, nonpoint source implementation, groundwater/drinking water implementation, and research, evaluation and tool development activities.

Because of the significant resources provided by the Clean Water Fund, the MPCA’s prioritization of TMDLs is not so much about applying scarce resources to a limited number of projects, but rather applying those resources to TMDLs across the entire state in a systematic fashion.

3.2 MPCA’s Watershed Approach

Protecting Minnesota’s waters is a joint effort among seven partner agencies who collaborate and partner on Minnesota’s water resource management activities under the Clean Water Fund.

Minnesota adopted [The Minnesota Water Management Framework](#),¹³ which is a watershed-based management approach that promotes increased collaboration and a common vision for planning and implementation activities. Partnerships among state agencies, tribes, local governments, and stakeholders play a key role in successful resource management as they prioritize, target, and measure Clean Water Fund activities.

As part of the framework, MPCA follows a “[Watershed Approach](#)”¹⁴ in which the MPCA and its partners systematically evaluate waters in each major watershed in Minnesota every 10 years, following the [Watershed Lake and Stream Monitoring Schedule](#) (2018–2028).¹⁵ This process begins with lake and

¹¹ <https://www.legacy.mn.gov/clean-water-fund>

¹² <https://www.pca.state.mn.us/sites/default/files/lrp-f-1sy22.pdf>

¹³ <https://bwsr.state.mn.us/sites/default/files/The%20Minnesota%20Water%20Management%20Framework%202023.pdf>

¹⁴ <https://www.pca.state.mn.us/air-water-land-climate/watershed-approach-to-water-quality>

¹⁵ <https://www.pca.state.mn.us/sites/default/files/wq-swm1-12.pdf>

stream water quality and biological monitoring. Once completed, the MPCA and its partners assess the monitoring data to determine if the water bodies meet state water quality standards.

Waters not meeting water quality standards are considered “impaired” and are added to Minnesota’s impaired waters list for potential TMDL development. The MPCA develops its list of two-year TMDL Commitments from the impaired waters list to meet the requirements of EPA’s Vision process.

The Watershed Approach rotates every year through the state’s watersheds, completing the evaluation of waters through the whole state in a 10-year cycle, evaluating 6 to 8 major watersheds each year. While intensive watershed monitoring closely follows the 10-year schedule to maintain the data record, TMDL and Watershed Restoration and Protection Strategy (WRAPS) development timing is more flexible based largely on local partner timing needs. The following is an overview of the first two cycles.

- First cycle of the Watershed Approach: Working with local and regional partners, and funded by the Clean Water, Land, and Legacy Amendment, the MPCA completed the first cycle of the Watershed Approach in June 2023 (see “The power of partnerships” at [Water quality resources](#)¹⁶), when the last of the WRAPS reports were completed for all 80 major watersheds in the state. Intensive watershed monitoring was completed for all 80 watersheds in 2019.

The first round of watershed monitoring and assessment provided a baseline for determining where waters need protection and restoration, and for informing selection of management strategies. Each WRAPS report uses monitoring and modeling data, along with information from stressor identification and TMDL studies in the watershed, and develops ideas for local strategies needed on the ground to protect and restore waters. This informs local water planning called [One Watershed, One Plan](#)¹⁷ (1W1P) to develop comprehensive local water plans that target local implementation activities to see improvement in water quality.

- Second cycle of the Watershed Approach: The MPCA began its second cycle of the Watershed Approach in 2019. The second round of watershed-based lake and stream monitoring continues to include biological, fish contaminant, water quality, and pollutant load sampling. This monitoring is essential to measure progress in restoring and protecting lakes and streams. Additionally, the monitoring will fill gaps to guide local planning and implementation efforts and track long-term changes in water quality and biological communities over time. This second cycle will start to show the effects of restoration and protection efforts that were implemented based on first-cycle WRAPS reports. “WRAPS Updates” (see more below in Section 3.2.1) are underway in many watersheds, and several are scheduled for completion each year during the Vision period.
- Future cycles: Going forward, the MPCA will update WRAPS reports, coordinate with local partners to understand local conditions, and revise targets for successive phases of restoration and protection efforts.

¹⁶ <https://www.pca.state.mn.us/business-with-us/water-quality-resources>

¹⁷ <https://bwsr.state.mn.us/one-watershed-one-plan>

Throughout the 2022 Vision period, the MPCA will continue to use the Watershed Approach as the basis for the Framework, and to select impairments for 2022–2032 TMDL commitments. The following sections describe these key components of the MPCA’s Watershed Approach in more detail: WRAPS, TMDLs, protection studies, and public participation.

3.2.1 Watershed Restoration and Protection Strategies

The MPCA develops WRAPS reports, which are required by the state Clean Water Legacy Act. WRAPS use TMDL reports, monitoring results, stressor identification, modeling, and other information to develop strategies for restoring polluted waters and protecting healthy ones. Local partners use this information to develop and set priorities for Comprehensive Watershed Management Plans and implementation projects. As of June 2023, WRAPS have been approved for all 80 watersheds.

“WRAPS Updates” tell the story of what has changed in each watershed since the original WRAPS was completed and focus on new issues and watershed information and action needs. As part of WRAPS Updates, watersheds will have monitoring and assessment and stressor identification report updates, new TMDLs, and many will have additional studies or source assessments depending on the priorities of local partners. Watershed Updates will vary in scale as appropriate. The focus will be on what has changed, trends, what work has been done, new strategies needed, and what additional work is most needed to advance water quality goals in that watershed. The WRAPS Update is a vehicle to synthesize the work that has been done and document ongoing or future work needs. WRAPS Updates add value to the Watershed Approach and include work that is deemed useful to restoration and protection efforts.

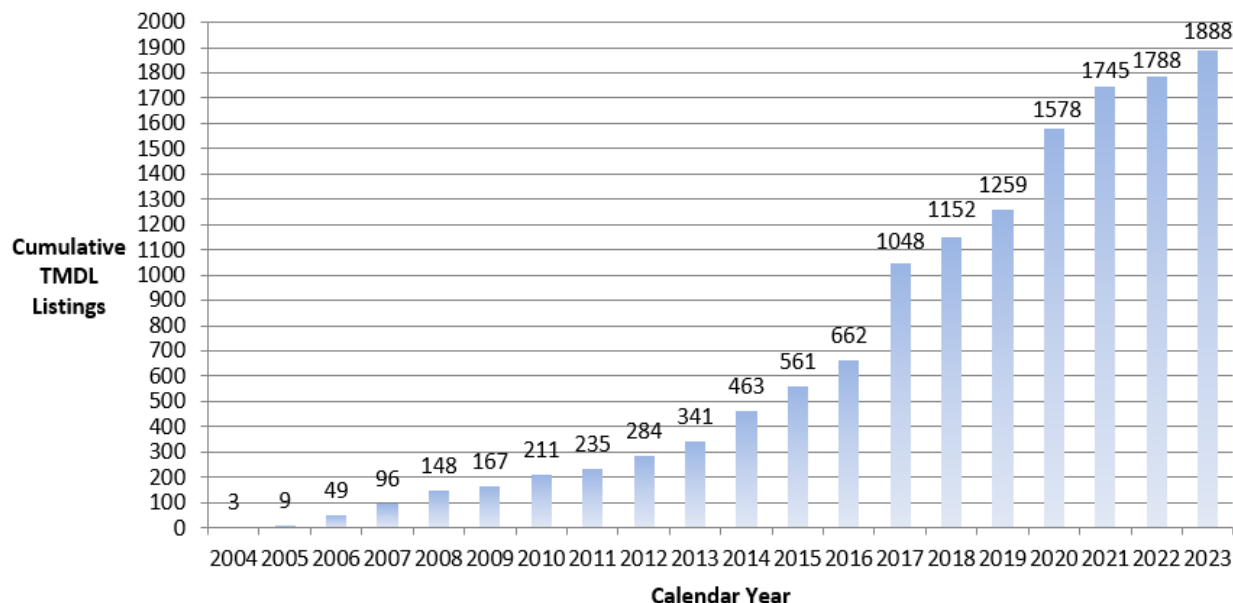
3.2.2 Total Maximum Daily Loads

As noted above, TMDLs support the restoration components of WRAPS projects, and are the measure for MPCA’s two-year TMDL Commitments to EPA for the 2022 Vision. As explained in Section 2.1, impaired waters are identified as commitments based on the expectation that a TMDL will be completed or in-progress for that impaired listing.

Following the Watershed Approach, watershed TMDLs are organized based on a rotating 10-year schedule, and provide source assessments and pollutant load allocations for permitted and nonpermitted pollutant sources. There have been significant gains in efficiency over the past decade (see figure below) as the agency has evolved the approach to TMDL development to a watershed scale.

Approved TMDLs in Minnesota

Through 8/2023



To view the status of WRAPS and TMDLs, including that of select 2022–2032 TMDL Commitments, see MPCA’s [Healthier Watersheds](#) webpage.¹⁸

3.2.3 Protection Studies

The MPCA has created a process for developing “protection studies” using the Watershed Approach. A protection study establishes water quality targets and goals for a water body that already meets water quality standards:

- Targets for water body condition. The target may be a numeric target that is equal to or more restrictive than a state water quality standard (e.g., lake phosphorus concentration, stream TSS concentration), or may be for a parameter for which a numeric state water quality standard does not exist (e.g., frequency of nuisance algae blooms, stream temperature).
- Goals to meet the condition targets (e.g., load reduction goal, vegetation enhancement goals).

The approach is similar to a TMDL study; the difference is that in a TMDL study the numeric target is typically a state water quality standard, whereas in a protection study the numeric target may be lower than the water quality standard and is developed with input from local partners. To provide meaningful load reduction goals in a protection study, it is important to already have data on the water body condition and pollutant sources.

The following general steps make up a protection study:

- Characterize water body and watershed
- Establish target for water body condition

¹⁸ <https://www.pca.state.mn.us/business-with-us/healthier-watersheds-tracking-the-actions-taken>

- Source assessment
- Establish goals to meet the condition targets
- Strategy development (optional)

3.2.4 *Public Participation and Partner Engagement*

Public participation and engagement refer to education, outreach, marketing, training, technical assistance, and other methods of working with local and state partners to achieve water resource management goals. The MPCA also works with tribal nations to seek their involvement in projects of mutual interest.

During the first cycle of the Watershed Approach, the MPCA made an important early commitment to support this work at the local level. The goals of MPCA’s investment were to support partner participation in WRAPS development and to encourage more active participation by individual stakeholders and groups in dialogue and actions that lead to cleaner water. Funds provided by a partner agency, the Board of Water and Soil Resources (BWSR), are now used to support public participation in planning and implementation projects.

WRAPS and TMDL reports are available on MPCA’s [Watershed Information](#) web page¹⁹ and typically have a 30-day public notice period to gather comments and suggestions before the reports are finalized. Public meetings may also be held to share information on projects, or to get input on draft reports during the public notice period. MPCA’s project managers work closely with local partners throughout the development of WRAPS and TMDLs, and local priorities are a key element in determining TMDL Commitments for the 2022 Vision.

3.3 Other Statewide Strategies and Initiatives Informing Minnesota’s Priority Framework

In addition to the specific components of the Watershed Approach mentioned above, the MPCA is also working on other key strategies and initiatives that inform Minnesota’s Priority Framework and TMDL commitments. Here are some notable examples of the work that will have an ongoing influence on how the agency prioritizes its work.

3.3.1 *Nutrient Reduction Strategy*

The [Minnesota Nutrient Reduction Strategy](#) (NRS)²⁰ outlines how Minnesota will reduce nutrient pollution in its lakes and streams and limit impacts downstream. Excessive nutrients, particularly phosphorus and nitrogen, pose a significant problem for Minnesota’s lakes and rivers, as well as downstream waters including the Great Lakes, Lake Winnipeg, and the Gulf of Mexico. Nutrients are important for human and aquatic life. However, when levels exceed normal conditions, they can cause excessive algae growth, low levels of oxygen, toxicity to aquatic life, and unhealthy drinking water.

The NRS was first published in September 2014, and called for nutrient level reductions in major rivers by 10% to 20%, with 45% to 50% reductions by 2040, compared to baselines in the 1990s. The MPCA has developed estimates of how much the nutrient load must be reduced in each watershed to lower Minnesota’s nutrient contribution to waters outside of the state, and many WRAPS and WRAPS Updates

¹⁹ <https://www.pca.state.mn.us/business-with-us/watershed-information>

²⁰ <https://www.pca.state.mn.us/air-water-land-climate/reducing-nutrients-in-waters>

contain strategies to meet these reduction goals. The information will help determine which and how many management practices are needed to achieve nutrient load reductions and will require ongoing work with partners to select and implement effective best management practices.

The MPCA, working with 10 other organizations, has begun a process to update and improve the NRS by 2025. The revised strategy will include the most up-to-date science on practices to reduce nutrients, remaining river nutrient load reductions, and priority areas. It will also include improved approaches to accelerate adoption of best management practices, track and show progress, and work in partnership with local watersheds.

3.3.2 *Environmental Justice*

All Minnesotans deserve to live in conditions that support a healthy and fulfilling life. One important part of this is living in an environment with clean air, clean water, and unpolluted land. Working to achieve these conditions is at the heart of the MPCA’s mission to protect and improve our environment and human health. As with other work in the WRAPS process, the nature of environmental justice work will vary as widely as the context and conditions vary from watershed to watershed.

The MPCA will continue to work on ways to better incorporate environmental justice considerations into the WRAPS Update process. For example, the agency actively seeks to partner with tribal nations on monitoring, assessments, WRAPS Updates, or other watershed activities. The agency invites tribal staff to help identify priority areas within a watershed to inform monitoring site selection and assessment and can provide funding for tribes to conduct monitoring. Tribes are also invited to participate in local working groups, and to provide data, information, Indigenous Knowledge, and/or Traditional Ecological Knowledge about a watershed to include in a monitoring and assessment report, a TMDL report, and/or a WRAPS Update report.

3.3.3 *Climate Change*

The MPCA is a leading state agency working to address the impacts of climate change on water resources in Minnesota. As a member of the Governor’s subcabinet on Climate Change, the MPCA helped create the “[Climate Action Framework](#)”²¹ and is leading initiatives to meet its goals for the reduction of greenhouse gas emissions and increased resiliency in communities, businesses, agriculture, waterways, contaminated sites, and infrastructure.

The MPCA also participated with state water management agencies to develop the “[2020 State Water Plan: Climate and Water](#),”²² coordinated by the Minnesota Environmental Quality Board. The MPCA is leading the implementation of the state water plan’s action steps, including climate resiliency planning and local water infrastructure grants for local governments and tribal nations, water-quality trading permits, tools for tracking greenhouse gas and nutrient reductions from agricultural practices, and new requirements to reduce runoff from feedlots.

Incorporating climate change into WRAPS Update work is a complex challenge. Work will continue to implement these and other strategies using the best scientific tools available to understand and mitigate climate change impacts in Minnesota’s lakes and streams. As an example, in the [Duluth Urban Area](#)

²¹ <https://climate.state.mn.us/minnesotas-climate-action-framework>

²² <https://www.eqb.state.mn.us/state-water-plan>

[WRAPS](#),²³ MPCA considered in-stream temperature sensitivity to prioritize streams in the Lake Superior Watershed that are most vulnerable to climate change, and to implement protection practices.

3.3.4 Mercury

Mercury emitted into the atmosphere deposits in lakes and streams and accumulates in fish, and eating fish with high levels of mercury can be toxic. The MPCA developed a [plan to reduce mercury releases](#)²⁴ by 2025 based on [Minnesota's statewide mercury TMDL](#),²⁵ which was approved by the EPA in 2007. The plan includes input and recommendations from a broad range of stakeholders. Every two years, the MPCA updates the statewide mercury TMDL to include new impairments that are covered by the statewide TMDL.

The statewide TMDL does not cover mercury impairments in fish where exceptionally high mercury concentrations preclude those waters from meeting the water quality standard even with the mercury source reductions called for in the statewide TMDL. The MPCA has begun development of individual mercury TMDLs for these waters.

3.3.5 PFAS

Per- and polyfluoroalkyl substances, commonly known as PFAS, are a family of nearly 5,000 chemicals now pervasive in the environment. Called “forever chemicals,” they do not break down and can bioaccumulate in both humans and other living organisms. Some PFAS are toxic.

Minnesota state agencies developed a strategic, coordinated approach to protecting families and communities from these ubiquitous substances. [Minnesota's PFAS Blueprint](#)²⁶ takes a three-pronged approach:

- Prevent PFAS pollution wherever possible.
- Manage PFAS pollution when prevention is not feasible or pollution has already occurred.
- Clean up PFAS pollution at contaminated sites.

Minnesota's PFAS Blueprint identifies short- and long-term opportunities, as well as legislative actions, to manage PFAS in our environment and protect families and communities. Over the coming months and years, state agencies will further develop these strategies and engage Minnesotans on how best to implement them.

Future needs and opportunities are complex and resource intensive. State agencies and community partners will need to work together to undertake projects that most strategically advance the collective goal to protect human health and the environment from the impacts of PFAS.

3.3.6 Sulfate

Wild rice is an important part of the ecosystem in many Minnesota lakes and streams. Wild rice is also a cultural and spiritual resource to many, particularly members of Minnesota's Dakota and Ojibwe tribal communities, and is an important economic resource to those who harvest and market it.

²³ <https://www.pca.state.mn.us/sites/default/files/wq-ws4-42a.pdf>

²⁴ <https://www.pca.state.mn.us/air-water-land-climate/reducing-mercury-releases>

²⁵ <https://www.pca.state.mn.us/business-with-us/statewide-mercury-tmdl>

²⁶ <https://www.pca.state.mn.us/air-water-land-climate/minnesotas-pfas-blueprint>

In 1973, Minnesota adopted a sulfate standard to [protect wild rice](#)²⁷ based on studies showing that wild rice was found primarily in low sulfate waters. The MPCA has preliminarily determined a list of approximately 2,400 waters that can reasonably be considered waters that could potentially be used for production of wild rice.

As of the 2022 impaired waters list, 35 water bodies are listed with wild rice production impairments due to high sulfate. Sulfate impairments are predominantly point source driven, and the MPCA is primarily addressing these impairments through discharge permits. The MPCA is continuing to work with the public and state, local, federal, and tribal nations to develop ways to protect this important Minnesota resource through implementation of the long-standing sulfate standard in monitoring, assessment, and permitting.

3.3.7 Chloride

Minnesota has a growing salty water problem that threatens its freshwater fish and other aquatic life. The [Statewide Chloride Management Plan](#) (CMP)²⁸ outlines a comprehensive strategy to reduce salt (chloride) use from a variety of sources to protect our lakes, rivers, and other water resources. The CMP incorporates water quality conditions, sources of chloride, salt reduction strategies, protection strategies, and monitoring recommendations as well as measurement and tracking of results.

The plan was developed by the MPCA in partnership with municipalities, counties, watershed districts, and other state experts. As outlined in the CMP, the MPCA and partners will collaborate on a number of salt reduction and prevention efforts:

- Develop chloride TMDLs to address the 54 waters (as of the 2022 impaired waters list) with aquatic life impairments due to chloride.
- Monitor, evaluate, and better understand the level of chloride in lakes, streams, wetlands, and groundwater.
- Develop statewide tools and materials for partners and stakeholders interested in minimizing the impact of chloride on Minnesota lakes, rivers, and groundwater.
- Conduct [MPCA's Smart Salting training](#)²⁹ to help organizations that apply road salt improve operator effectiveness and reduce chloride pollution, while keeping roads, parking lots, and sidewalks safe.
- Offer chloride reduction grants from the MPCA in selected communities to work with residents, local businesses, institutions, and industries to identify chloride sources and decrease or eliminate their use.

3.4 Process moving forward and contact information

The Framework is intended to describe the broad, long-term direction for the agency's TMDL program that will fulfill its TMDL Commitments throughout the 2022–2032 Vision period.

²⁷ <https://www.pca.state.mn.us/air-water-land-climate/protecting-wild-rice-waters>

²⁸ <https://www.pca.state.mn.us/business-with-us/statewide-chloride-resources>

²⁹ <https://www.pca.state.mn.us/business-with-us/smart-salting-training>

This document will remain on the agency's [TMDL and WRAPS guidance](#)³⁰ web page. Any significant updates will be made available for review with the appropriate edition of the impaired waters list. The most recent two-year commitments for TMDLs that will be completed, or are in development, can also be found on the web page.

For questions or comments on the Framework, please see contact information on the MPCA's [TMDL and WRAPS guidance](#) web page.

³⁰ <https://www.pca.state.mn.us/business-with-us/tmdl-and-wraps-guidance>