



The Nature Conservancy in
Minnesota, North Dakota, South
Dakota
1101 West River Parkway, Suite
200
Minneapolis, MN 55415-1291

tel (612)331.0700
fax (612)331.0770
nature.org

Minnesota Pollution Control Agency
Attn. Corrie Layfield
520 Lafayette Rd.
St. Paul, MN 55155

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Nutrient Reduction Strategy Comments

Dear Nutrient Reduction Strategy Team,

As a headwaters state, nearly all water leaving Minnesota's borders originates within the state. The 2025 Nutrient Reduction Strategy (NRS) provides a wealth of information on the state of waters and serves as a report card on Minnesota's collective effort to reduce nutrients within and leaving the state. The 2025 NRS is a humbling reminder of the difficulty improving waters impacted by excess nutrients.

The Nature Conservancy (TNC), guided by science, works in Minnesota and throughout the Mississippi River Basin and Great Lakes to tackle climate change, address biodiversity loss and address some of freshwater's most critical threats including habitat loss and incompatible land use. We value opportunities to collaborate with the Administration, local communities and other private and non-governmental organization partners to implement actions and carry forward goals that are identified in the Nutrient Reduction Strategy and offer the following considerations to further enhance the NRS.

Evaluate strategies for efficacy

The NRS update includes a wealth of water quality data supporting a thorough analysis of nutrient loading throughout the state. While some progress has been made, particularly as a result of water quality standards for phosphorus, with less than 5% reduction in total nitrogen in 10 years, it's difficult to see a path to another 40% reduction in 15 years using primarily the same tools. A key component of achieving nutrient reduction goals will be a review of historic, current and potential strategies. This NRS and future updates should also include economic and social science data and analysis necessary to inform, evaluate and prioritize strategies. At an estimated cost of over \$1B per year, the next 10 years of nutrient reduction will require prioritization, innovation and barrier removal. Current and proposed programs should be evaluated for effectiveness. Ineffective programs should be adapted or discontinued in favor of those with greater impact and financial sustainability.

Include private sector to develop markets for crop diversification

TNC supports the development of a Continuous Living Cover Campaign to expand markets and support increased adoption. Expansion of novel crops and the infrastructure to support their production and markets could take decades. This effort must include private sector actors and the

role of traditional small grains like oats in addition to novel crops. Winter oil seeds as a relay crop are mentioned, but it is not clear how nitrogen (N) reductions from winter oil seed crops are quantified and factored into reduction scenarios.

Explore durable drainage water management

The report notes an increase in tile drainage and the role of agricultural drainage on nitrogen loads. The report notes 43% of total nitrogen (TN) in the Mississippi River basin coming from tile drainage, and Table 5-1 indicates that controlled drainage can reduce TN by 45%, yet one scenario only expects tile drainage to provide 18% of the TN reduction. Limited attention is given to drainage water management practices or the enabling conditions for expanded use. This should be an emphasis in future updates to explore durable drainage water management infrastructure that reduces nutrients and regulates hydrology. As noted elsewhere in our comments, cost should be a factor when evaluating Best Management Practices (BMPs) as well as the durability of the BMPs.

Clarify costs and duration of BMPs

The report lacks clarity on costs associated with meeting nutrient reduction goals for in-state waters or downstream. The report makes several references to BMPs adopted since 2014 as depicted in figure 2-25. It is not clear the duration of previously adopted BMPs or the cumulative acres of BMPs. This section would benefit from a clear explanation on annual BMPs along with an explanation of the known or unknown duration of BMPs from previous years. An additional figure similar to 2-25 showing the annual and cumulative cost of the BMPs by category similar to figure 7-8 in the progress tracking section. Another figure should be added that shows the source of funds to date by landowner/operator, state, federal, local and private. Knowing the historic sources of funds is important to understand trends over time, particularly as federal funding becomes less certain and Clean Water Funds enter the last decade.

Integrate and coordinate with existing programs and private sector

Previous reports point to the cost effectiveness of nutrient use efficiency. Improved nutrient management and increased role of farmers and their private sector suppliers and advisors is essential to achieve nutrient reduction goals while reducing public investment in BMPs. The NRS would benefit from stronger integration with the Minnesota 4R Certification Program, which provides a science-based, auditable framework for nutrient service providers. These standards—*Right Source, Rate, Time, and Place*—are referenced in Chapter 5, Table 5-3 as part of the BMP efficiency matrix, but could be more explicitly incorporated into implementation strategies. Recommendations:

- Reference the 4R Certification Program in Section 6.4.2 (Policy and Program Recommendations) as a model for scaling nutrient stewardship through retail channels.
- Use 4R audit data to support tracking and evaluation in Chapter 8 (Tracking Progress and Adaptive Management), especially where metrics for BMP adoption and nutrient reductions are discussed.

The increased investment in soil health programs is noted throughout the report, yet adoption of cover crops and crop diversification remain relatively low. State and federal programs are an important delivery mechanism for soil health technical and financial assistance but fall short of large-scale impact without private sector involvement.

Retailers and crop advisors are key influencers in farmer decision-making and implementation of soil health practices. The Soil Health Action Framework emphasizes the need to shift agronomist incentives from product sales to service and/or outcomes-based advising—a concept that aligns

well with the goals of Section 5.3.3 (Private Sector Engagement) and Section 6.4.1 (Program Design and Delivery). Recommendations:

- Include agricultural retailers as strategic partners in Section 6.4.2, especially in the context of expanding conservation agronomist roles and peer-to-peer learning networks.

Expand prioritization to account for key waterways and watersheds

Section 3 and tables 3-5, 3-6 and 3-7 are an excellent addition to the NRS update. As noted later in the report the cost of achieving the total reduction goal and the associated cost is very ambitious if not unlikely at current pace. Prioritizing waters Minnesotans value using benefit-to-cost analysis is an excellent framework for the entire Nutrient Reduction Strategy. This approach should be applied to rivers and streams as well. The recommendations for continuation of existing programs, new programs and the state's watershed approach should use this prioritization approach. Achieving an additional 40% reduction is highly uncertain, however, by focusing on these priority watersheds throughout the state and across basins measurable improvement can at least be realized on 100 lakes in Minnesota, while still contributing to downstream reductions.

Figure 3-4 shows many lakes with worsening lake phosphorus concentrations. Section 6 of the report goes on to describe the watershed framework, however, it is unclear how the priorities for in-state waters are included in Comprehensive Watershed Management Plans. Are Nutrient Reduction Strategy priorities for the protection and restoration of in-state waters based on benefit to cost analysis consistent with priorities included in watershed implementation plans that direct the use of state funds? The Nutrient Reduction Strategy was developed in partnership with each state water agency, yet --beyond descriptions of programs administered by each agency-- it is unclear what commitments have been made by agencies to prioritize based on the NRS.

Prioritize and track multiple benefits

Discussion in Section 6 building on the idea of more holistic and comprehensive watershed goal-setting might help envision feasible cost/investment scenarios for achieving the goals laid out in the strategy (i.e. the ~\$1B annually discussed earlier in these comments). For example, if upstream investments in climate/flood risk reduction or water storage would "pencil out" in some cases and at the same time pay for BMPs associated with the NRS; or if habitat/conservation/biodiversity/comprehensive land use planning investments through other funding sources would simultaneously contribute to achieving certain NRS goals, it could lower the overall cost estimate for achieving the NRS goals using water quality BMPs alone. This approach would also contribute to several actions included in the recently released Climate Action Framework working lands and resilience sections.

Establish a consistent monitoring and evaluation system across programs

Progress tracking and intermediate results or key performance indicators (KPIs) continue to be incomplete and disjointed. TNC recommends MN water agencies, the U of M and private sector partners develop a system to track BMP adoption and landscape change that is not limited to cost-share practices. Basing BMP adoption rates on public incentive programs is an incomplete description of activities and does not allow for the evaluation of the programs themselves. Minnesota needs a system that correlates remote sensing with government programs, water quality data and modeling to evaluate practice adoption and effectiveness at the watershed scale. The recent Southeast MN nitrogen working group report identified the need for fertilizer application reporting. This should be considered in the NRS as another data point to calibrate nutrient management effectiveness. Public funding alone cannot reach the estimated \$1B annual

cost, therefore a monitoring and evaluation system needs to be established to improve efficacy of current and proposed efforts and elevate the private sector to achieve nutrient reduction goals.

Summary

The Minnesota Nutrient Reduction Strategy continues to be a comprehensive analysis of a robust dataset. While significant progress has been made in phosphorus reduction, particularly from point sources, nitrogen reduction continues to lag. It is difficult to expect the strategies and tactics that produced a 5% reduction in 10 years will result in a 40% reduction in the next 15. We encourage the participating agencies to further evaluate current and potential programs and strategies for cost-effectiveness and impact to water quality. More is needed to focus on a system change within the agricultural landscape that includes improved soil health, nutrient efficiency and crop diversification this will require more engagement of the private sector and market development. We support the initiation of a Continuous Living Cover Campaign. Similarly, we encourage the state to consider a comprehensive approach to increase edge of field BMP implementation for the state. The edge of field effort should be more than the watershed approach and traditional incentive-based model but include alternative approaches and efficiencies that result in nutrient reduction while providing additional ecosystem services.

Sincerely,

A handwritten signature in blue ink, appearing to read 'R. L. Biske', is positioned above the printed name.

Richard L. Biske
Director of Water and Land Protection
The Nature Conservancy MN-ND-SD