FRIENDS OF THE MISSISSIPPI RIVER

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Minnesota Pollution Control Agency
Attn: Corrie Layfield
520 Lafayette Road N
St. Paul, MN 55155-4194

Greetings Ms. Layfield,

On behalf of Friends of the Mississippi River and our members, thank you for the opportunity to provide written comments on the 2025 update to the Minnesota Nutrient Reduction Strategy (NRS).

Friends of the Mississippi River (FMR) is a 501(c)3 non-profit organization dedicated to protecting and restoring the Mississippi River and its watershed in the Twin Cities. Through our Water Program, we work to promote strategies that address pollution to surface waters and groundwater throughout the Mississippi River basin in Minnesota.

We are thankful for the work of the MPCA in updating this Nutrient Reduction Strategy, and we strongly support the nitrogen and phosphorus reduction goals included in the NRS. Efforts to quantify and reduce nutrient loads are critical to the health of the Mississippi River and its watershed.

While the goals of the strategy are laudable, progress toward these goals has been frustratingly slow. After a decade of implementation work, Minnesota remains far from achieving the nutrient reduction milestones - particularly for nitrogen.

Agriculture continues to be the dominant source of nitrogen and phosphorus pollution to the Mississippi River, contributing an estimated 79% and 72% of annual nitrogen and phosphorus loads, respectively (2025 Draft NRS Table 2-17, p. 59). This is largely due to the 'leaky' nature of summer annual commodity row crops, which are planted in late spring and harvested in early fall. This approach leaves millions of acres of Minnesota's cropland without living roots in the

soil for months at a time each year.

Achieving our Nutrient Reduction Strategy goals will inevitably require the state to turn this "Big Brown Spot" green — primarily through the establishment of continuous living cover (CLC) cropping systems on nearly 8 million acres of Minnesota cropland.

The NRS is well-positioned to enable a paradigm shift in our collective efforts to protect our surface and groundwater, with a significant emphasis on market-based CLC agriculture that can help the state make significant progress toward water quality goals while enhancing overall farm prosperity.

In that light, our comments focus on the following topics: (1) support for harvestable, market-based CLC cropping system solutions; (2) support for a statewide CLC Campaign & Task Force; (3) support for numeric nitrate standards for Class 2 waters; (4) aligning state and federal funding and research with NRS priorities; and (5) avoiding an overemphasis on voluntary BMP cost share strategies.

1. **Support for market-based continuous living cover (CLC) agriculture**

   We are pleased to see the emphasis on the deployment of continuous living cover (CLC) strategies throughout the NRS. The science is clear: reaching our nutrient reduction goals is only possible through transformative changes in our cropping systems that keep soil covered for more months of the year; the state's recognition of this approach is a major step forward.

   The Draft 2025 NRS notes that achieving our water quality goals will require 7.8 million acres of CLC cropping systems in Minnesota. Given the staggering $1 billion per year cost estimate for implementing the recommendations of the NRS, we ask the MPCA to focus primarily on *market-based,* rather than traditional *cost-share-based*, CLC strategies, and to differentiate between the two categories throughout the NRS.

   In market-based CLC systems, CLC crops with marketable value are grown and sold by farmers, thereby shifting the cost burden from taxpayers to market actors. Conversely, an approach that hinges on cost-share payments (e.g., for non-harvested cover crops or land set-asides) is neither durable nor scalable with state resources.

A prime example is winter camelina vs. winter rye. Both are types of cover crops that can work in conventional crop rotations in Minnesota.

- Winter camelina has an enormous potential market as a feedstock for biofuels like Sustainable Aviation Fuel (SAF) and other industrial-scale end uses. As a result, market demand can, in time, drive farmer adoption with limited public support.
- Winter rye is typically terminated in the spring. With limited market value, farmer adoption often hinges on access to ongoing taxpayer support.

Specifically, we recommend enhancing the market-based CLC focus in the NRS through the following adjustments:

- Include both "Market-based Continuous Living Cover" and "Continuous Living Cover" in the glossary.
    - Continuous Living Cover (CLC) refers to the presence of living plants aboveground and/or living roots in the soil year-round. CLC can be achieved with perennial species or rotations of summer and winter annual species.
    - Market-based Continuous Living Cover refers specifically to harvestable CLC crops and cropping systems whose costs of production, processing, and marketing can, in mature markets, be borne by market actors rather than taxpayers.
- Distinguish between market-based and non-market-based CLC strategies in text and tables wherever appropriate.
- Distinguish between market-based and non-market-based CLC strategies when evaluating the cost of implementation, including scenarios where long-term adoption of market-based CLCs can be achieved through market forces rather than direct state assistance.
    - For example, Table 5-4 (p.177) lists Kernza as incurring a $63/acre lifecycle cost. While early-adopter Kernza growers in MN are currently eligible for risk mitigation and ecosystem services payments via the University of Minnesota's Forever Green EECO Implementation Program, perennial grains like Kernza are ultimately intended to be profitable on the open market, meaning they will not require such state funding.

2. Support for a Market-Based Continuous Living Cover Campaign & Task Force

We strongly support the creation of a statewide CLC Campaign and Task Force. Such an

initiative can help market-based CLC systems reach self-sustaining market parity with conventional systems through increased support for market and infrastructure development, crop research and farmer assistance.

To optimize progress toward NRS goals, we recommend the following:

- Revise the proposal to refer to a "Market-Based Continuous Living Cover Campaign and Task Force" to emphasize the unique and timely opportunity to prioritize market-based CLC cropping systems rather than traditional cover crop cost-share programs or land set-asides.
- Design the Campaign and Task Force in consultation with the University of Minnesota's Forever Green Partnership, a collaborative that unites members from private, public, and advocacy sectors around a common interest in increasing CLC in agriculture to capitalize on its many economic and environmental benefits.
- Revise the goal of the campaign to specify a two-phase CLC strategy:
    - Phase I (near term): 1 million acres of CLCs
    - Phase II (long term): 7.8 million acres of CLCs
- We support the development of an agricultural CLC index to track annual changes in landscape coverage over time, and support including that information in a future NRS dashboard. One potential model is found in our 2023 "Putting Down Roots" report (see Figure 6, page 54) that measures the proportion of the year that Minnesota's crop portfolio provides living vegetative cover on the landscape (excluding those months when the ground is frozen and accounting for a delay from planting date to establishment of living cover).
- Coordinate this work with the ongoing Pathways to 1 Million Acres Scaling Study underway through the Forever Green Partnership.
- Structure the Task Force in a manner that reflects the deep complexity of the market-based CLC commercialization, adoption, and scaling challenge we face.
    - The Task Force should include perspectives from farmers, agribusinesses, CPG businesses, research institutions, NGOs, lenders and financial institutions, rural development experts, policymakers, and other supply chain actors. As no single stakeholder group has clear lines of sight to all of the diverse needs of building emerging markets and industries, no single perspective should dominate the group.
    - Include the MN Departments of Commerce and Employment & Economic Development alongside traditional agricultural and environmental agencies in the CLC Task Force and broader campaign.

    - Consider Task Force subcommittees that may integrate perspectives from a larger variety of voices within a specific interest group.
- Include a summary of potential state and non-state funding sources that might be tapped to support the establishment and ongoing operations of the Task Force and CLC Campaign itself.

3. Commitment to developing numeric nitrate standards for Class 2 waters

FMR is pleased to see that the draft 2025 NRS acknowledges the importance of developing numeric aquatic life standards for nitrate in Class 2 surface waters and notes that the "nitrate standard development process is expected to resume after the completion of this 10-year NRS".

FMR strongly encourages the MPCA to honor its previous commitment to completing nitrate standards to protect aquatic life, which is now more than fifteen years overdue.

- In May 2010, lawmakers appropriated $600,000 from the Clean Water Fund to the state for rulemaking to establish water quality standards for total nitrogen and nitrate nitrogen.
- In November 2010, the MPCA included draft numeric aquatic life standards for nitrate in the agency's Aquatic Life Water Quality Standards Technical Support Document for Nitrate.
- In June 2013, the MPCA published "Nitrogen in Minnesota's Surface Waters," which stated it was developing "*water quality standards to protect aquatic life from the toxic effects of high nitrate concentrations….which is required under a 2010 Legislative directive.*"
- In July 2021, the MPCA published its "Water quality standards work plan for 2021-2023" which included the agency's "*commitment to completing all Water Quality Standards (WQS) projects in Group 1*," including nitrate for aquatic life.
- In October 2022, the MPCA published its Aquatic Life Water Quality Standards Draft Technical Support Document for Nitrate, which proposed nitrate criteria for the protection of aquatic life.
- In December 2022, the MPCA informed lawmakers of its decision not to proceed further, choosing instead to make the standard conditional, in part, on the completion of a 10-year revision of the Nutrient Reduction Strategy.
- In November 2024, the MPCA's draft water quality standards work plan for 2025-2027 again included the development of numeric aquatic life standards

for nitrate in Class 2 surface waters within the “current and active” section of the work plan.

The Draft 2025 NRS notes that the MPCA has draft chronic values of 8 mg/L nitrate-N for Class 2B waters and 5 mg/L nitrate-N for Class 2A waters (based on a 4-day duration exceedance), values that remain unchanged from the 2022 Aquatic Life Water Quality Standards Draft Technical Support Document for Nitrate.

Minnesotans have now waited fifteen years for this work to be completed. The MPCA is well-positioned and sufficiently resourced to complete this long-promised nitrate standard. We urge the MPCA to follow through on its commitment to resume the nitrate standard development process immediately following the completion of the 2025 NRS.

4. Align CLC research and implementation funding with NRS strategies

We urge the state to align its budgetary ambitions with the highest priority strategies in the NRS.

- We strongly endorse the NRS’s recommendations to invest in novel crop research, and recommend placing a major focus on market-based CLC cropping systems that deliver multiple benefits.
- We encourage the state to align future legislative appropriations requests with the proportional acreages shown in Fig. ES-12 (“Example scenario showing the magnitude of change needed to achieve nutrient reduction goals in the Mississippi River Basin”). This would elevate market-based CLC programming above other higher-cost, lower-acreage, and lower-impact interventions.
- Modify Table 5-1 to include updated information from the University of Minnesota on nitrate reduction efficiencies for winter hardy oilseeds and Kernza, which were listed as “TBD”.
- Modify Table 5-7 to include a third column that assigns the estimated total costs of each category of activity, along with potential cost savings associated with reduced nitrogen fertilizer application.
- The economic analysis referenced in Section 5.4.3 Funding of Chapter 5 Roadmap Actions includes an analysis of “the total costs to landowners, city residents, and government agencies” and “the best ways to pay for the practices”. We recommend that the economic analysis evaluate the potential for market-based CLCs and the costs that would be borne by the market. This market-based CLC analysis should align with the findings of the Market-Based

CLC Campaign Task Force as discussed in the section Financial Obstacles to CLC on page 200 of the 2025 Draft NRS.

- We urge agencies to exercise caution when designing "batch and build" programs for BMPs. The Iowa program on which this concept is based has been shown to prioritize service delivery over environmental outcomes,[1] and any Minnesota analog should be underpinned by rigorous cost-benefit analyses of the specific BMPs available.

5. Overemphasis on voluntary BMPS and on-farm certification.

The NRS relies too heavily on a significant increase in participation in voluntary BMPs and on-farm certification programs that may not deliver adequate pollution reduction results.

With regard to traditional voluntary cost-share BMPs, this approach would place significant financial stress on state resources, which are unlikely to be scaled up to the degree necessary to facilitate widespread adoption. We can't BMP our way to clean water.

In addition, we retain some concerns about the efficacy of the MN Agricultural Water Quality Certification Program (MAWQCP). We appreciate the dedication of program staff and participating farmers, and acknowledge that the program is effective in promoting and 'normalizing' some on-farm conservation strategies.

However, we remain concerned that the program certifies farms at a level of water quality performance below what is needed to achieve NRS reduction goals for the agricultural sector. For example, the 2015 "Minnesota Agricultural Certainty Program - Is It Working for Water Quality?" report examined public data from participating Discovery Farms Minnesota field sites.

- The report found annual average nitrate concentrations in drain tile effluent of 14.81 mg/l to 50.52 mg/l over a 3-year period.
- Despite these high pollution levels, several of the site/year combinations scored high enough on the assessment to earn MAWQCP certification without any additional conservation practices.

We recommend that the NRS specify the following:

[1] https://www.apmreports.org/story/2024/12/16/iowa-farm-field-nitrates-saturated-buffers

- A nitrogen endorsement should be included as a baseline performance requirement for all certified farms.
- The nitrogen endorsement threshold should be compatible with draft water quality standards for nitrate on acres draining to Class 2A and 2B waters.
- In addition, we note that the MN Office of the Legislative Auditor is undertaking a review of the MAWQCP for the 2026 legislative session. We advise that specific NRS recommendations regarding the program factor in the results of this audit.

On behalf of Friends of the Mississippi River and our members, thank you once more for the opportunity to provide written comments on the 2025 update to the Minnesota Nutrient Reduction Strategy (NRS).

We appreciate your time and consideration of these comments.

Sincerely,

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