

Minnesota's strategy to reduce nutrients in water

Achieving in-state and downstream water quality goals



Minnesota released its first Nutrient Reduction Strategy (NRS) in 2014 to address excess nitrogen and phosphorus in water and updated it in 2025. Minnesota and 11 other Mississippi River states developed nutrient reduction strategies to address low oxygen areas in the Gulf that harm fish and wildlife. Minnesota's plan also addresses in-state water quality needs and the Red River of the North and Lake Superior basins.

The 2025 Minnesota NRS evaluates 10 years of progress toward water quality goals, compiling the latest science, data, and strategies to reduce nitrogen and phosphorus. Developed with input from over 100 state, federal, and local partners and the University of Minnesota, it reflects updates in technology, land use, programs, monitoring, best practices, and weather extremes.



Progress we've made

Programs

Over the past decade, most 2014 NRS recommendations were implemented. About 35 government programs were launched or strengthened, and nutrient management research, monitoring, and online tracking and planning tools advanced. Minnesota's Water Management Framework has produced plans to address excess nutrients statewide. Excess nutrients can trigger algae growth, lower oxygen levels, harm aquatic life, and threaten drinking water.

Practices

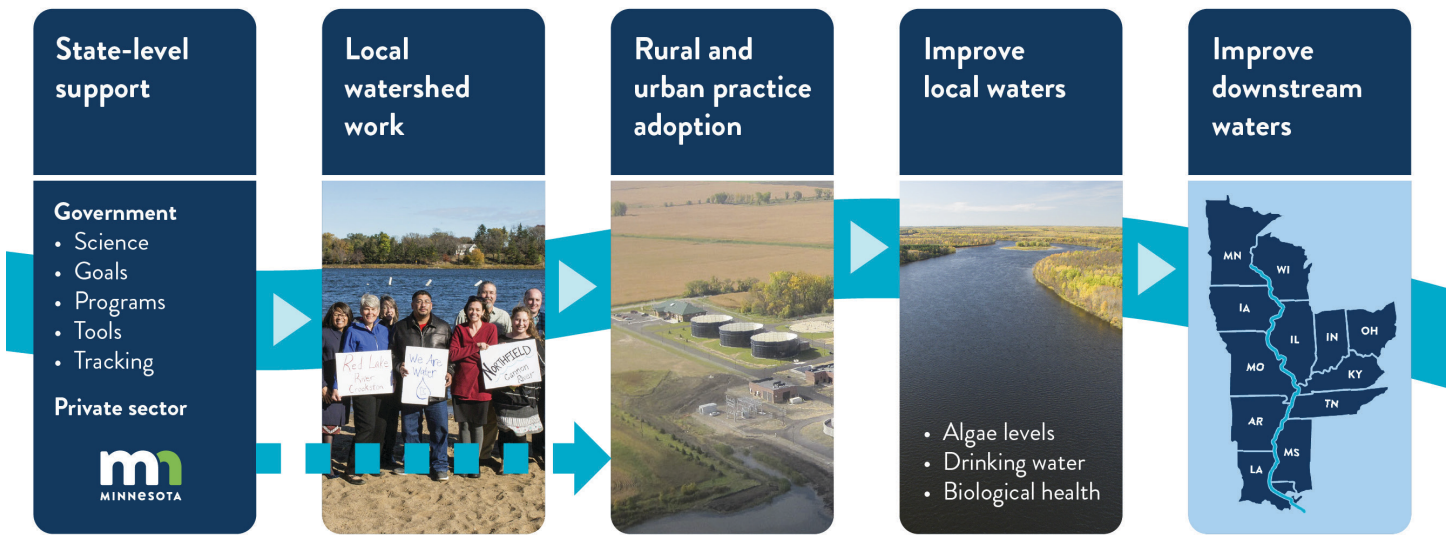
Minnesotans have added nutrient-reducing practices to 4 million cropland acres. Wastewater phosphorus loads are down 76%. Urban stormwater, feedlot, and septic practices have improved.

In our waters

Water monitoring has greatly expanded, supported by the Clean Water Fund. Where trends were detected, results show:

- **Statewide nutrients** – Phosphorus concentrations are mostly improving in lakes and rivers while total nitrogen/nitrates results are mixed, where trends are detected.
- **Statewide nitrate** – Nitrate concentration trends in groundwater and rivers across Minnesota show mixed results.
- **Mississippi River** – Phosphorus loads are down 32% since baseline; nitrate loads are down 6%.
- **Red River** – Phosphorus loads are up slightly; nitrogen loads are down slightly.





Goals still to meet

Mississippi River Basin – In areas with high nitrate concentration, reductions of over 30% are needed to meet drinking water standards and protect aquatic life. A 42% reduction in phosphorus concentration is needed in impaired lakes and rivers to meet in-state water quality goals and address downstream goals. Meeting the in-state goals positions Minnesota to achieve downstream reduction goals by 2040.

Red River Basin – A 57% total phosphorus and 42% total nitrogen load reduction are needed to reach downstream goals, shared with North Dakota and South Dakota.

Lake Superior Basin – The goal is no net increase in phosphorus or nitrogen. Monitoring of the St. Louis River Estuary shows encouraging nutrient decreases from 2011 to 2023.

Scaling up for success

Since 2014, Minnesota has built a strong foundation of programs and practices that are reducing excess nutrients. To reach 2040 water quality goals, we must scale up these efforts together.



Living cover for lasting impact

Expanding continuous living cover offers great potential for nutrient reductions. A new working group will lead efforts to expand perennial crops, cover crops, alternative crops, grazing lands, and promote long-term adoption across millions of acres.



Treating nutrients before they reach water

Reducing nitrate and nitrogen relies on upgrading wastewater treatment systems, and treating urban and rural runoff by expanding use of buffers, bioreactors, wetlands, and drainage recycling.



Expanding local watershed successes

Strong local foundations are in place. Expanding programs like soil health initiatives, increasing best management practices, and continued watershed-based funding will accelerate progress.



Tracking our progress

A statewide dashboard and tools like the BEET tracker and BEET planner will strengthen data-driven watershed planning and accountability.

Scan code to read the full Nutrient Reduction Strategy and see tools to track our progress.



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