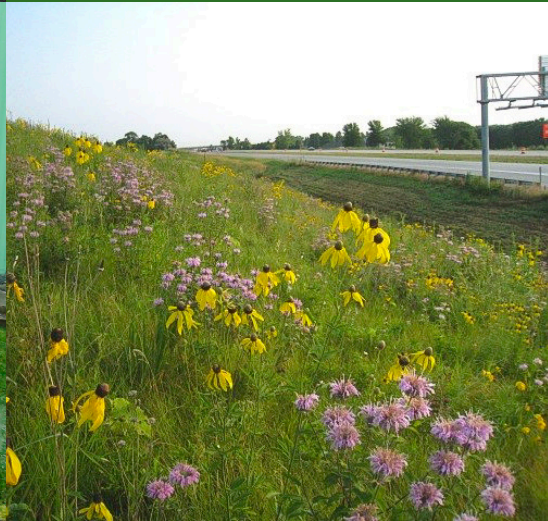




REPORT TO THE  
LEGISLATURE

FEBRUARY 2025



# State nitrogen fertilizer purchase report and reduction goal

Tracking fertilizer use for State of Minnesota properties and operations, with strategies for reducing nitrogen pollution.

# Legislative charge

## **[116.2022] STATE NITROGEN FERTILIZER PURCHASE REPORT AND REDUCTION GOAL.**

Subdivision 1.

### **Fertilizer purchase report.**

It is the goal of the state that no later than January 1, 2030, state agencies will reduce the purchase of nitrogen fertilizer by 25 percent from the level first reported under subdivision 1.

### **Subd. 2.**

#### **Reduction goal.**

It is the goal of the state that no later than January 1, 2030, state agencies will reduce the purchase of nitrogen fertilizer by 25 percent from the level first reported under subdivision 2.

### **Subd. 3.**

#### **Sunset.**

This section expires January 1, 2030.

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**Estimated cost** of preparing  
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\$83.81/hr x 36 hours worked +  
24% fringe = \$3,741.28

**Total:** \$3,741.28



## Relevance of state nitrogen fertilizer purchases

Fertilizer is one tool used to start and maintain healthy plant growth in landscapes. While fertilizers containing nitrogen (N), phosphorus (P), and potassium/potash (K) are essential for plant nutrition, there are economic and environmental benefits in using best management practices (BMPs) to guide selection and application of fertilizers.

Excessive nutrients, particularly phosphorus and nitrogen, pose a significant problem for Minnesota's lakes, rivers, and groundwater as well as downstream waters including the Great Lakes, Lake Winnipeg, and the Gulf of Mexico. When nutrient levels exceed natural conditions, they can cause excessive algae growth, low levels of oxygen, toxicity to aquatic life, and unhealthy drinking water.

Nitrate-nitrogen (referred to here as nitrate) is a compound made up of nitrogen and oxygen. It can occur naturally in groundwater up to 3 parts per million (ppm). Above 3 ppm is considered elevated, and above 10 ppm is considered unsafe.

Nitrate can interfere with blood's ability to carry oxygen. The risk is highest for bottle-fed infants and adults with certain health problems. To protect vulnerable groups, the health limit for drinking water is 10 ppm.

Minnesota Department of Agriculture's Township Testing Program found that over 10 percent of the private wells sampled in some townships in southwestern, southeastern, central, and northcentral Minnesota have nitrate levels above 10 ppm.

Over the past 20 years, some public water systems in Minnesota have detected nitrate levels above 10 ppm in treated water; they have worked to address the issue.



## Where does the pollution come from?

Nitrate is in many fertilizers used on yards, gardens, golf courses, and crops. Other sources of nitrate include discharge from sewage systems and animal wastes. Land use and hydrogeology affect the levels of nitrate in water.

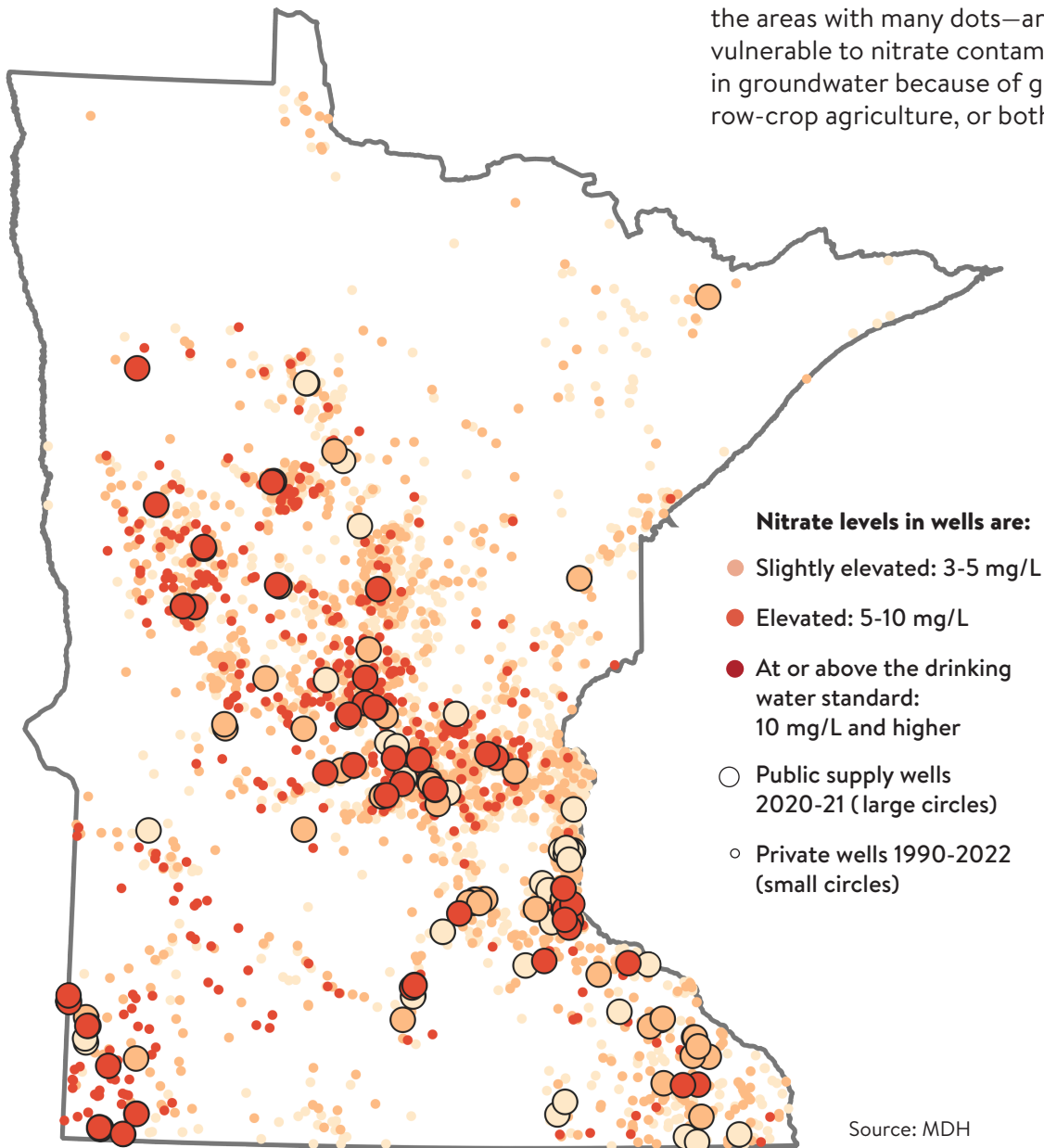
## Where is nitrate pollution in groundwater most common?

Elevated nitrate levels are a concern across the state, and some areas—the areas with many dots—are more vulnerable to nitrate contamination in groundwater because of geology, row-crop agriculture, or both.

Learn more: [Nitrate in Drinking Water - MN Dept. of Health](#)

### Map: Nitrate detected in newly constructed wells

Elevated nitrate levels are a concern across the state, and some areas—the areas with many dots—are more vulnerable to nitrate contamination in groundwater because of geology, row-crop agriculture, or both.



# FY24 State fertilizer purchases

Fertilizer purchased during fiscal year 2023 and 2024 by agency

Agency	2023		2024	
	Fertilizer (lbs.)	Cost	Fertilizer (lbs.)	Cost
Amateur Sports Commission	—	—	—	—
Department of Administration	3,000	\$9,106	3,241	\$8,635
Department of Agriculture	—	—	—	—
Department of Commerce	0	\$0	0	\$0
Department of Corrections	4,802	\$5,996	13,052	\$8,376
Dept. of Employment & Economic Development	0	\$0	0	\$0
Department of Human Services	0	\$0	240	\$347
Department of Natural Resources	—	—	—	—
Department of Public Safety	—	—	—	—
Department of Transportation	244,553	\$252,023	—	—
Historical Society	—	—	—	—
Indian Affairs Council	—	—	—	—
Iron Range Resources	—	—	—	—
Military Affairs	2,000	\$745	—	—
Minnesota State Academies	—	—	—	—
Minnesota Veterans Affairs	62,040	\$29,471	50,510	\$18,758
Minnesota Zoological Garden	550	\$1,542	250	\$650
MN State Colleges & Universities	—	—	—	—
MN State Fair/State Agricultural Society	—	—	—	—
MN State Retirement Systems	—	—	—	—
Perpich Center	—	—	—	—
Pollution Control Agency	0	\$0	0	\$0
University of Minnesota	—	—	—	—
<b>Totals</b>	<b>316,945 lbs</b>	<b>\$298,884</b>	<b>67,293 lbs</b>	<b>\$36,766</b>

(—) No data received

## Notes

The 2023 land inventory report was used to identify agencies that own property in Minnesota. MPCA staff asked these agencies to report the amount of fertilizer they purchased along with costs. Where no number is listed, the agency did not report.

Some of these agencies occupy both leased and owned properties. For leased properties, the property owner is responsible for fertilizer purchasing and application. These purchases have not been included in the data.

## Fertilizer reduction goal

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As established by the legislation, state agencies must reduce their purchase of nitrogen fertilizer by 25% no later than Jan. 1, 2030.

The trend in state fertilizer purchasing volume will depend on participation by agencies in the recommended (but not required) strategies.

**GOAL**  
**25%**  
reduction in  
fertilizer purchases

## Strategies to meet the fertilizer reduction goal established in subdivision 3

### Turf grass maintenance training

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State employees can learn BMPs on how to determine fertilizer purchases and use through the MPCA Turf Grass Maintenance certification and training. This training is about 6 hours long, including a test.

Topics covered in the training include:

- How does turf management affect local lakes and rivers
- Equipment calibration
- Selection and application of fertilizers
- Mowing techniques
- Pesticide application tips
- Best practices for turf management
- Legal issues and additional resources

This turf grass training opportunity will be shared with all state agencies through the Office of Enterprise Sustainability (OES) starting in 2025. The OES communicates regularly with over 30 state agencies regarding operations and best practices.



### Examples of state agencies working to reduce fertilizer use

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#### Minnesota Department of Transportation

Minnesota Department of Transportation (MnDOT) is already deploying several strategies to reduce fertilizer purchases while maintaining the areas and assets of the state it oversees. One example is its approach to revegetating and fertilizing roadsides during construction, a necessary practice that helps stabilize the area to reduce runoff and soil loss.

For many years, MnDOT used standard rates for fertilizer application on construction projects. Under a new process being developed, it will test topsoil a few years prior to construction and specify project-specific fertilizer rates in construction plans. This will result in less fertilizer use than the standard rates on some projects and more fertilizer use on other projects. In all cases, MnDOT will apply the correct amount of fertilizer for the on-site soil conditions. The end goal is healthier roadside vegetation, which will reduce erosion and the nutrient impacts of erosion on our water resources.

## **Minnesota Department of Veterans Affairs**

The Minnesota Department of Veterans Affairs is made up of eight veterans homes and four veterans cemeteries. Three homes just opened last year and were designed using sustainable practices (B3 Guidelines). These guidelines require native plant species to promote pollinator health, which also reduces turf areas and thus demand for fertilizer.

Veteran cemeteries have a large amount of turf and are required to meet very high standards of aesthetics. The groundskeepers are professionals that take their work seriously and have backgrounds in golf course management and native prairie restoration. They take regular soil samples to ensure nutrient needs are met and nutrient uptake is optimized by timing fertilizer applications to reduce runoff and leaching. Additionally, lands that are not currently needed for burial areas are managed in their native vegetation.

Going forward, the Department of Veterans Affairs will continue to promote native plantings and fertilizer reduction strategies at bimonthly sustainability workgroup meetings.

## **Department of Natural Resources**

The Minnesota Department of Natural Resources (DNR) uses a variety of fertilizer reduction strategies. At the regional and field offices where the DNR is the custodial owner, it generally does not irrigate or fertilize turf grass except when it establishes turf grass after site disturbance such as construction projects. The DNR's Design and Construction program will no longer use fertilizer when planting native vegetation except in extremely low nutrient soils. The DNR's Division of Fish and Wildlife is also reviewing how it can reduce the already limited amount of nitrogen fertilizer it applies to food plots in wildlife management areas.

Meanwhile, the DNR's Division of Forestry, which operates the Minnesota State Forest Nursery, has increased tissue sampling of the seedlings to give nursery staff an indication of how much fertilizer to use – no more, no less than what is needed. It has also shifted away from broadcast spreaders to applying fertilizer by drop spreaders; drop spreaders provide greater control and precision in fertilizer application and as a result reduce overapplication.

## **Looking forward**

The State of Minnesota endeavors to use sound, research-based information when buying and using fertilizer in an effort to minimize nitrate pollution in our waters. All agencies have been tasked to learn and implement best management practices. From increasing soil testing to expanding native plantings, a number of agencies are already leading the way toward our goal of a 25% reduction by 2030.