



October - December 2025 Update

ADDRESSING NITRATE IN SOUTHEAST MINNESOTA

This document provides updates from the Minnesota Department of Health (MDH), Minnesota Pollution Control Agency (MPCA), and Minnesota Department of Agriculture (MDA) on their efforts to address nitrate in groundwater in southeast Minnesota from October through December 2025. The updates are categorized by how work is listed in the [Work Plan: Addressing Nitrate in Southeast Minnesota \(PDF\)](#).

Text in the shaded blue boxes is an explanation of the goal as defined in the [Work Plan \(PDF\)](#).

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Phase II: Public Health Intervention

Phase II work began in July 2024 and will continue throughout the duration of the effort.

Note: Phase I work was completed in October 2024. Many of the efforts that began during Phase I continue or have been expanded to a broader audience in Phase II.

Goal 1: Identify impacted residences (MDH)

Identify each residence that obtains drinking water from a private well. The identification process will combine existing information with a project to add missing information.

Well Inventory Workplans and Contracts

MDH continues to work with each of the eight counties to develop well inventory programs. MDH is working with partners from each county to develop strategies to address well inventory minimum requirements, increase knowledge about where private wells are located, funding availability, and capacity to do well inventory work. These partners include local public health departments, delegated well programs, environmental services, and soil and water conservation districts (SWCDs) who work with private wells and local government leadership.

MDH is working with each county individually to develop strategies and contracts to complete a well inventory that meets each county’s unique needs. This work is being done strategically in a phased approach to address differing funding and capacity at each county. All eight counties expressed interest in a grant to increase the number of wells in the well inventory.

The Dodge, Fillmore, Goodhue, Houston, and Wabasha County contracts have been executed, and work has begun. (Figure 1).

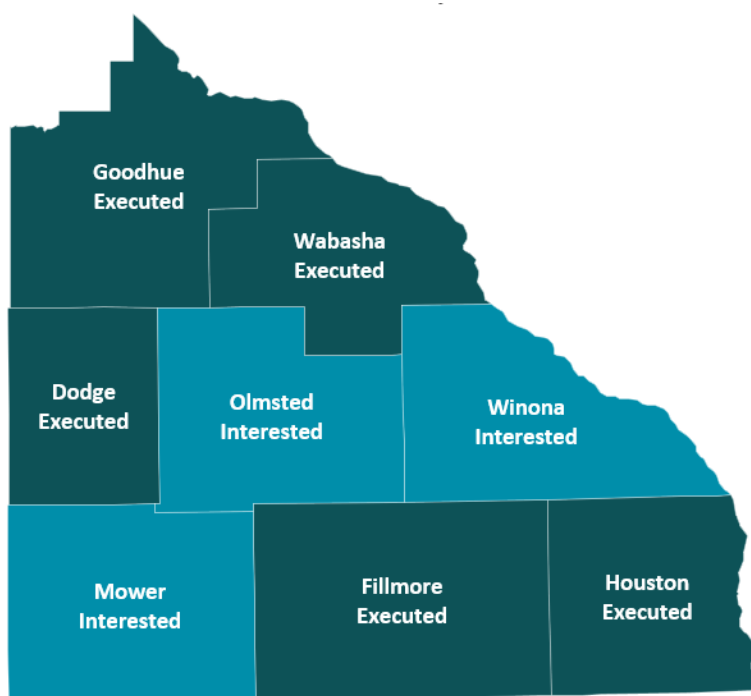


Figure 1: Well Inventory Interest and contract status by county.

Well Inventory Progress

Minnesota Geologic Survey

The Minnesota Geologic Survey (MGS) is the agency responsible for the County Well Index. MGS has trained each agency on best practices for the well inventory. This includes how to gather information, cross-check against wells already in the inventory, and implement data quality control and quality assurance. MGS will also serve as a resource for the grantees when they have questions.

Dodge County

Dodge County has identified 95 wells this quarter for a total of 349 private wells not previously included in the County Well Index. Dodge County has also identified and updated a total of 41 wells that needed updated location information.

Fillmore County

Fillmore County hired temporary staff and they have begun work on the well inventory project and process. During this quarter, well inventory work had to pause to address an issue with how the contract was set up. We are on track to resume work next quarter.

Over the life of the project, staff have modified or put new B-series numbers on 174 wells across 4 townships. They have reviewed 800 total wells and verified their location and well numbers using existing data.

Houston County (Root River SWCD)

Root River SWCD has begun planning and training staff for their well inventory. They are developing a list of wells that are unverified or not listed in the well index.

Goodhue County

Staff began work on well inventory in the second half of 2025. They have completed review on 4.5 Townships, located 161 wells that were in the database, but unlocated, and given 350 wells new unique IDs. There are 279 of 929 parcels reviewed and considered complete, 650 of those need additional well information from the landowner. There are roughly 5,000 more parcels to review in the inventory.

Wabasha County

Wabasha County has been planning and training staff for their well inventory. They have identified 60 wells this quarter for a total of 82 private wells not previously included in the County Well Index. Wabasha County has also identified and updated a total of 60 wells that needed updated location information.

Water Testing & Well Inventory Outreach Collaboration

SEM WAL and the well inventory grantees have partnered to send out free water testing flyers along with well inventory mailers inviting well users to send in information about their wells. SEM WAL developed and distributed the fliers and the well contracts mailed the flyers.

Goal 2: Conduct education and outreach (MDH)

Provide notice to newly and previously impacted residents and continue to provide notice as long as contamination persists at or above the Maximum Contaminant Level (MCL) for nitrate.

Partners Promoted Free Private Well Testing

Between October and December, partners actively promoted private well testing through a variety of channels, including television, social media, and postcards. Tap-In continued their partnership with advertising agency Townsquare Media to distribute promotional video content.

Another notable effort was partnering with Root River Soil and Water Conservation District to send 3,087 postcards directly to potential well users advertising the test kit opportunity. Over 422 requesters identified the postcards as the way they heard about the test kit opportunity, and it has now become the number one way people have heard about requesting a test kit. We plan to continue to use this strategy with other counties, sending out batches of postcards at a rate where the increase demand will not exceed lab capacity.

Though newspaper and social media remain in the top three ways people cited hearing about the testing opportunity, the television campaign and communication from local governments including soil and water conservation districts are also highly ranked. This shows that well owners requesting tests use a variety of methods to gather trusted information. We will continue to use a variety of communication methods. In future quarters, we plan to explore additional communication methods including billboards and Google Ads.

Most requesters cited postcards as how they heard about the test kits

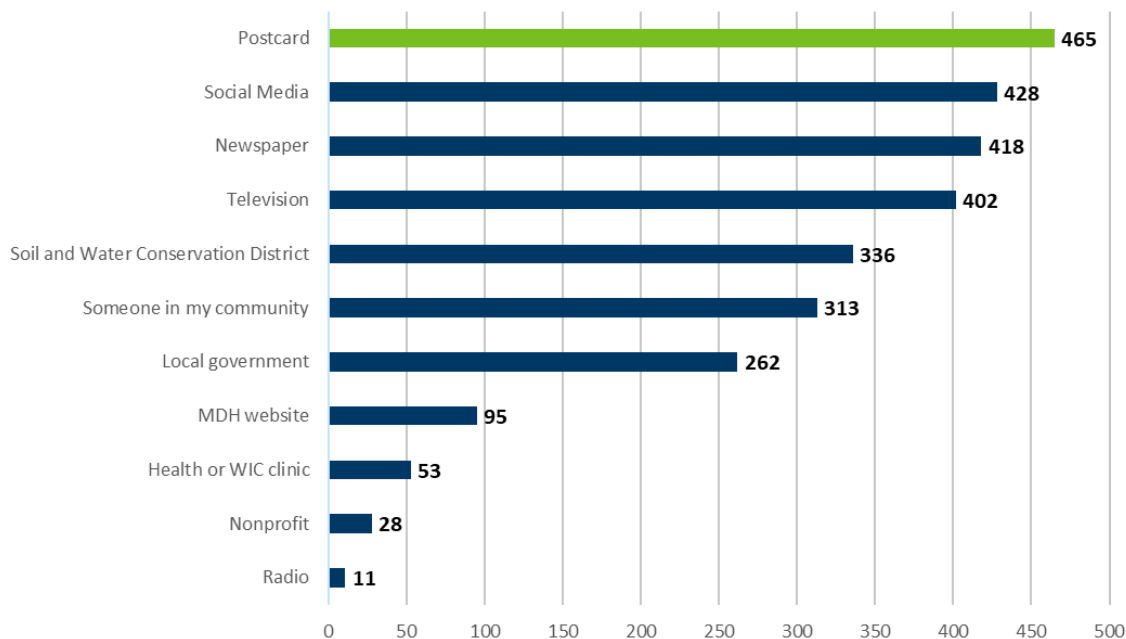


Figure 2: Most requester cited postcards as how they heard about test kits. A direct mailing to potential well users drove this increase in awareness and ultimately demand for test kits.

Marketing Research

MDH established a contract with [MP+G](#), a marketing firm in Minnesota, that will provide outreach plans and designs to help educate the public on private well testing and health impacts of nitrate. A logo for the outreach campaign has been developed and approved. Five videos were in production with focus audiences of a general private well user, renter with a private well, agricultural producer, and expectant and new families. These videos will be completed in January 2026. Work has begun to launch Google ads and graphic design has started for social media postings and mass mailings.



Goal 3: Test private well drinking water (MDH & SEMWAL)

Offer nitrate analysis of drinking water samples from any private well users in the Karst Region that request testing. The aim is to test at least 10 percent of the private wells during this first year.

During Phase I (2024), free private well tests were available to households with vulnerable populations (households with babies under one year old or pregnant people). At the end of 2024, the response transitioned to Phase II and free testing became available to all private well users in the eight-county area. MDH has a Joint Powers Agreement (JPA) with Olmsted County to conduct the free water testing through the Southeast Minnesota Water Analysis Laboratory

(SEMWAL). Test kits for five contaminants (bacteria, nitrate, arsenic, lead, and manganese) are available to private well users in each of the eight counties. Private well users can apply for a free water test kit through an online request form that is maintained by MDH. Each week MDH provides a list of eligible requests to the lab. The lab mails test kits directly to the requestor’s designated mailing address. The kit includes a return UPS label to return the test kit by mail for free.

Quarter 4 Data

From October 1 – December 31, 2025:

- 922 eligible households requested a private well water test kit.
- 405 households who received test kits returned them and received water test results.
- 24 households or approximately **6 percent** of wells tested this quarter had a nitrate concentration of 10 milligrams per liter (mg/L) or more (Table 1).

Table 1: Private Well water quality test results from October 1 through December 31, 2025.

County	Number of Kits	Bacteria Present	Nitrate (> 10 mg/L)	Arsenic (> 0.5 µg/L)	Lead (> 0.5 µg/L)	Manganese (> 100 µg/L)
Percent		17%	6%	13%	40%	33%
Total	405	67	24	51	161	33
Dodge	31	4	0	12	13	3
Fillmore	15	6	1	1	5	0
Goodhue	75	14	3	5	33	5
Houston	159	30	8	12	62	13
Mower	27	3	4	11	10	8
Olmsted	60	5	3	7	18	3
Wabasha	18	4	2	2	10	1
Winona	20	1	3	1	10	0

All Time Data

Since the beginning of the response through December 31, 2025:

- 3237 eligible households requested a test kit.
- 11% of households requesting a test report that they have a pregnant person or baby under 1 year old in the household that drinks well water.
- 1786 households who received test kits returned them and received water test results.
- 55% of test kits have been returned to the lab for testing.
- Approximately **seven percent** of wells tested had a nitrate concentration of 10 mg/L or more.
- Houston, Mower, and Winona Counties have exceeded the 1st year target of having 10% of households request a water test. In Winona and Mower Counties, this is likely due to public awareness campaigns by local partners using traditional media and social media.
- Up until this quarter, Houston had one of the lowest test request rates. A postcard campaign during this quarter focused on Houston County boosted private well requests there. The request rate went from 3% to 17% of all private well households having requested a test.
- Fillmore and Goodhue Counties are the furthest away from meeting the 1st year target. Postcard campaigns for both counties are being planned for the first quarter of 2026 to help boost the request numbers.

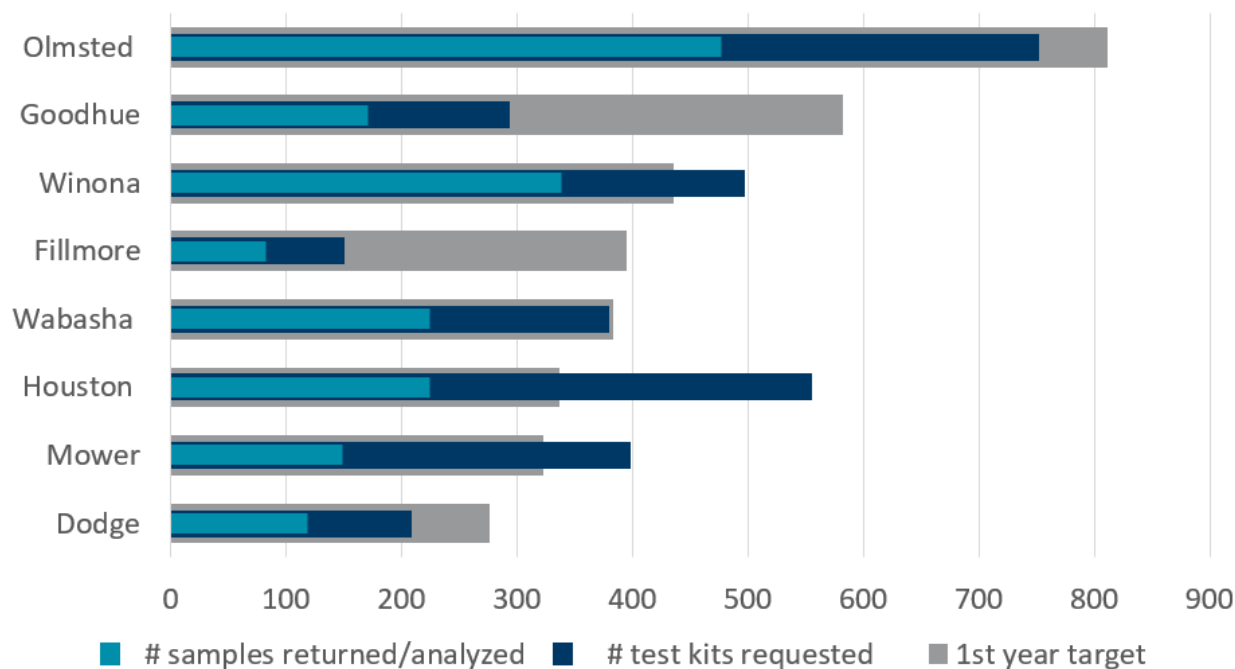


Figure 3: MDH set a goal of 10% of anticipated private well households requesting and testing a sample in the first year. Year 1 ended December 31, 2025. Note: The scale on this graphic is slightly different than the last quarter.

Table 2: Private Well water quality test results - all time

County	Number of Kits	Bacteria Present	Nitrate (> 10 mg/L)	Arsenic (> 0.5 µg/L)	Lead (> 0.5 µg/L)	Manganese (> 100 µg/L)
Percent	100	13%	7%	17%	40%	8%
Total	1786	241	123	312	716	141
Dodge	118	12	3	50	49	12
Fillmore	83	23	15	4	35	2
Goodhue	171	26	7	21	68	11
Houston	224	46	20	17	93	16
Mower	149	16	9	90	51	42
Olmsted	477	48	18	53	146	31
Wabasha	225	34	21	36	114	15
Winona	339	36	33	41	160	12

Mitigation Navigator

SEM WAL has a Mitigation Navigator on staff funded by the JPA with MDH. The mitigation navigator is responsible for reaching out to private well users with unsafe levels of nitrate and other contaminants shown in the water tests. They discuss treatment options with well users and answer any questions well users may have.

Test Kit Follow-up

In order to improve the return rate for the test kits, SEM WAL developed a postcard reminder for well users who had not yet sent back their test kit. The postcard was sent to 126 households this quarter who have not yet sent their test kits in to be tested.

Goal 4: Provide alternate water (MDA & Olmsted SWCD)

Drinking water will be offered as soon as practical to each residence where water tests show an exceedance of the MCL for nitrate in the private well. When funding is identified, most of the funding will be passed through to the TAP-IN Collaborative.

MDA, in collaboration with Olmsted County, is continuing to provide water filtration systems for eligible well owners in southeast Minnesota. In October 2024, the first reverse osmosis systems were installed, at no cost, for households that have elevated nitrate or cyanazine in their drinking water well. **As of December 31, 2025, a total of 244 reverse osmosis (RO) systems have been installed throughout the eight-county area.** The majority of RO systems were installed for nitrate mitigation. There were 21 ROs installed at sites with cyanazine exceedances; however, 14 of those also had a nitrate exceedance. Winona County (58) has the most RO installations to date, followed by Fillmore (43), and Goodhue (40) Counties (Table 3). More water filtration systems will be installed in the coming months as this effort continues.

Table 3. Reverse Osmosis Installations, by County

County	Dodge	Fillmore	Goodhue	Houston	Mower	Olmsted	Wabasha	Winona	Total
ROs Installed	10	43	40	34	12	13	34	58	244

Vulnerable Population and Low-income Households

The mitigation program prioritizes households with a vulnerable population (pregnant people or infants), and low-income households (below 300% of the federal poverty level). Approximately nine percent of the households that received the RO mitigation systems were in a vulnerable population, 32% were low-income households, and five percent met both criteria (Figure 4).

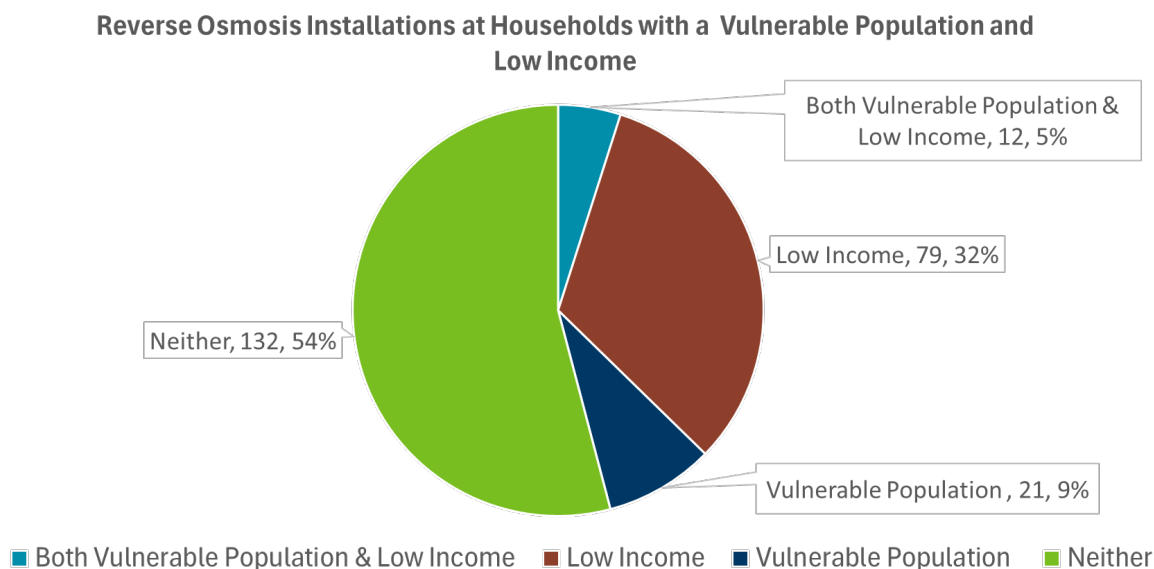


Figure 4: Reverse Osmosis Installations at Households with a Vulnerable Population or Low Income.

Follow-up Water Sampling

After RO installations are completed, water test kits are sent to the homeowners to test the effectiveness of the system for nitrate removal. As of December 31, 2025, **all post-treatment nitrate samples have been below 10 mg/L.**

RO Maintenance Visits

RO maintenance visits are provided for interested homeowners who had an RO installation over one year ago. The maintenance visits began October 2025 and include pre-treatment and post-treatment water samples. As of December 31, 2025, a total of 54 visits have been conducted, and all the post-treatment nitrate samples have been below 10 mg/L.

Quarter 4 Data

From October 1 – December 31, 2025:

- 18 RO systems were installed throughout the eight-county area.
- 54 RO maintenance visits were provided for interested homeowners who had an RO installation over one year ago.

Expanding Mitigation Options

During the previous quarter, MDA and MDH worked together to develop an interagency agreement that passes mitigation funds from MDA to MDH. The funding allows MDH to stand up their own mitigation program that allows additional options for nitrate mitigation. During this quarter, MDH and Olmsted County worked to set up the framework for this project including: development of a policy that guides installers to use the most effective and appropriate treatment option, expanding mitigation options to include well reconstruction, other treatment methods, and new well construction, and developing policies to ensure the well users 300% below the federal poverty level can receive additional financial assistance

when dealing with nitrate in their private well. MDH developed an online income verification tool to support this effort.

Goal 5: Provide public record of work (MDH)

This goal has three main components and separate strategies. The components and strategies are below:

- Maintain and regularly publish records
- Measure Minnesota's progress
- Effective way to communicate updates to the public

The Water Policy Center (WPC) at MDH is ready to hire an information strategy position. This position will assist with well and water quality information storage, analysis, and display. Current WPC staff are taking data visualization training to increase clarity and effectiveness of data visualizations that are shared with partners and the public.

MDH continues to work with the Environmental Public Health Tracking team to develop maps of nitrate in private wells for southeast Minnesota and a dashboard on the [MN Public Health Data Access Portal](#). Maps with aggregated nitrate testing data have been added to the [Private Wells in Southeast Minnesota page](#) that show the percent of private wells with nitrate levels at or above 10 mg/L by county and by census tract. At this time, the maps are limited to using data from Southeast Minnesota Water Analysis Laboratory (SEM WAL) 2016 - 2024. MDH will continue to add data points to the visualizations as it is available. Note that SEM WAL is only one of the laboratories private well users may use; therefore, the data visualization is not inclusive of all private well testing for nitrate completed in southeast Minnesota.

A dashboard with data measuring the progress of the response is in development and will be added to the MDH website as soon as it is ready and will be updated quarterly as information is available to MDH.

Additional data visualizations are planned and will be added to the site as capacity to develop and display data visualizations increases including displaying data by township as recommended by local partners and residents.

Goal 6: Engage stakeholders and develop and maintain partnerships (MDH)

We will continue engaging stakeholders and partners by elevating the work of the TAP-IN Collaborative and providing regular updates and opportunities to dialogue about public health approaches and nitrate in groundwater.

This phase may also include forming an advisory council consisting of petitioners, local government leaders, and other local partners to help guide the public health intervention work.

TAP-IN

MDH meets with TAP-IN leadership when needed and regularly consults with TAP-IN to ensure we are meeting their needs. MDH has developed a SharePoint Site to have a central location for updates and documents.

MDH shares quarterly email updates and hosts quarterly meetings for local leadership to learn and ask questions about progress.

Olmsted County & Southeast Minnesota Water Analysis Lab

MDH continues to meet weekly with SEMWAL to discuss challenges, successes, and other updates.

Prairie Island Indian Community

Members from the Prairie Island Indian Community (PIIC) live and use private wells within the petition area. MDH and SEMWAL lab staff continue to work with PIIC staff to increase accessibility to private well water tests and information about private wells for PIIC members.

Petitioners/NGOs

MDH met with the Minnesota Well Owners Organization and the Minnesota Ground Water Association to discuss private wells, including efforts in southeast Minnesota. When developments in the work plan or the legislature have arisen, MDH connected with Minnesota Center for Environmental Advocacy to discuss the updates. MDH also provides regular updates on progress to the Well and Boring Advisory Council at its quarterly meetings.

Clean Water Council

The Clean Water Council recommended to the Governor and to the Legislature that the Clean Water Fund support the work being done in Phase II, except for mitigation. MDH provides regular updates to the Council about the progress of the work.

Work completed beyond the scope of the workplan (MDH, MDA, & MPCA)

Water Policy Center staff have been sharing information about the work we are doing in southeast Minnesota by presenting at conferences. We have presented to a variety of

audiences including groundwater and public health professionals. Presentation topics have included communication strategies, community engagement, developing and maintaining partnerships, private well program strategies, and general updates about the work. During this quarter, WPC staff presented about the work at these conferences:

- Minnesota Water Resources Conference, St. Paul, MN, October 14, 2025
- Minnesota Tribal Environmental Committee, Virtual, October 28, 2025

Cost Benefit Analysis

MDH contracted with one of the State Master Contractors for Remediation to conduct an initial cost benefit analysis for private well mitigation approaches (including home water treatment, connection to public or rural water supplies, new well construction, and repairs) and to develop a decision tree tool to help local partners and households identify the best mitigation approach for their private well drinking water based on the contaminant(s), condition, and location of their private well. This effort is part of a larger statewide analysis of the social and actual costs and benefits of providing free well testing and mitigation. This project is funded through a separate appropriation but will be a tool that MDH and partners can use in southeast Minnesota when implementing the MDA Alternate Nitrate Mitigation Program. The tool is on track to be ready by early 2026.

Phase III: Long-Term Nitrate Goals and Strategies

MPCA and MDA completed the following Phase III work from July through September 2025.

Work Group to Address Nitrate in southeast Minnesota (MPCA & MDA)

MPCA and MDA developed and jointly lead a work group to address nitrate in southeast Minnesota. MDH and the Board of Water and Soil Resources will partner on this effort.

The goals of this work group include providing a forum for discussing concerns and answering questions; developing a shared understanding of nitrate in surface water and groundwater in southeast Minnesota; developing recommendations for reducing nitrate in southeast Minnesota; and providing input on ongoing nitrate work within MDA and MPCA.

This goal is complete. The work group wrapped up its work and submitted their final report in July 2025.

The final report can be found at: [Addressing nitrate in southeastern Minnesota](#).

Updating Minnesota's Nutrient Reduction Strategy (MPCA)

As noted in the December 1, 2023, letter to EPA, the State is in the process of updating the Nutrient Reduction Strategy (NRS), a critical guiding document that lays out water quality goals for nutrients in surface water and provides a road map to Minnesota's nutrient reduction work for both point source and nonpoint source areas.

From October to December of 2025, the NRS was edited and updated to address concerns raised in public comments from the public review period (July 14-September 10, 2025). Several support documents were also finalized during this period.

Sixty-two public comment letters were submitted over the public review period, and a response document was developed during October and November. Over 450 individual comments were identified, and multiple NRS partners helped develop responses. A formal response to comments document will be published to the MPCA webpage when the final version of the NRS is shared. Comments generally expressed support for the NRS recommendation of more living cover across Minnesota, called for more support for farmers and watershed organizations, and over half recommended more or stronger regulation of nutrient sources across the state.

Extensive outreach was conducted from October to December, including the keynote presentation to an audience of over 600 at the Minnesota Water Resources Conference. Other events included several internal presentations at the MPCA, the interagency Drainage Management Team, two EPA Region 5 Monitoring webinars, and a special presentation to Winona State University earth science students. Training for the BMP Effects Estimator Tool (BEET) was included at the annual BWSR Academy, and over 3,200 visits have been made to both the BEET Planner and Tracker tools since their July 2025 launch.

Feedlot Permits (MPCA)

The General National Pollutant Discharge Elimination System (NPDES) and State Disposal System (SDS) permits that the MPCA administers to confined animal feedlots expire in 2025 (SDS) and 2026 (NPDES). Work to reissue these permits has begun. The MPCA is planning to concurrently public notice and issue the permits and intends to have consistent nutrient requirements in both permits, to the extent possible.

The MPCA continues to process permit applications for renewed coverage under the updated general SDS and NPDES permits. Both permits include new requirements to further minimize the risk of surface and groundwater contamination from livestock production areas and manure land application sites, with the most protective requirements applicable to regions of Minnesota where nitrate can move more easily through the soil and into groundwater. Most SDS permits have been applied for and processed by the end of this quarter. The NPDES application process began in earnest in this quarter and will continue into 2026.

Feedlot Rules (MPCA)

Starting in 2024, MPCA plans to conduct a multi-year process to review state feedlot rules (Minnesota Rules, Chapter 7020).

MPCA web-published [Summary of Comments Received in Response to Request for Comments \(wq-rule4-29f\)](#) in September 2025. In late January 2026, the MPCA intends to announce the scope of the rulemaking and plans for stakeholder involvement that were developed during this quarter. Information regarding the scope will be available on the rulemaking webpage. Thereafter, the MPCA will move into the rule development stage of rulemaking, providing key stakeholders opportunities to engage in the rulemaking process over the next several years. More information is available on the rulemaking webpage.

Nitrogen Fertilizer Management Plan implementation (MDA)

Work continues in the high-risk nitrate townships of Caledonia, Mayville, Black Hammer, Spring Grove, and Wilmington in Houston County. A focus on working with feedlot operators has shown a need by producers to improve nitrogen crediting of manure and legumes in their cropping systems. Some producers utilizing manure in their cropping systems were having a difficult time with proper crediting due to lack of manure storage infrastructure on individual farms. It was found that those who lacked proper crediting of manure were less likely to have adequate manure storage. In particular, a few dairies were on a daily or weekly haul system. In addition, some producers didn't have a good handle on the amount of nutrients being applied in their livestock manure when using the daily or weekly haul system. Those producers were offered technical and financial assistance to sample their manure and have it analyzed by a lab in addition to getting their manure spreaders calibrated. Several producers are now able to better credit their manure by working with MDA to analyze samples and calibrate spreaders.

MDA staff has met with around 30 producers in the high-risk nitrate townships with around 15 livestock producers showing interest in financial assistance to build or improve the manure storage infrastructure on their farms.

A new focus area moving into 2026 will be Black Hammer Township, another high-risk nitrate township in Houston County. An approach similar to the one taken in Spring Grove Township will take place where producers will be offered a farm walkover by MDA staff. The walkover process includes input from the producer and investigation of areas on the farm that may have resource concerns. If a resource concern is found during the walkover, MDA staff will work with the producer to address that concern via technical and/or financial assistance through the Root River SWCD. In addition, MDA staff will have conversations with the producers regarding crop rotations used on the farms and nitrogen use on the cropland acres. There will be discussions about UMN recommended rates of nitrogen use on cropland and crediting of all sources of nitrate including legumes and manure.

The Fillmore County SWCD is also working with MDA and has hired a private company (Kanati) to develop similar (one-on-one, on-farm) work in Preble Township. All outreach and technical assistance efforts will be handled by the company with a focus on nitrogen management for corn production along with upland conservation practices that are noted during farm walkovers. This work started in June of 2025 and will be continue into 2026.

Resources

[Work Plan: Addressing Nitrate in Southeast Minnesota \(PDF\)](https://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/epaworkplan.pdf)
(<https://www.health.state.mn.us/communities/environment/water/docs/wells/waterquality/epaworkplan.pdf>)

[MP+G \(https://www.mpgmarketingsolutions.com\)](https://www.mpgmarketingsolutions.com)

[MN Public Health Data Access Home - MN Data](https://data.web.health.state.mn.us/web/mndata/home)
(<https://data.web.health.state.mn.us/web/mndata/home>)

[Private Wells in Southeast Minnesota \(https://data.web.health.state.mn.us/private-wells-in-southeast-mn\)](https://data.web.health.state.mn.us/private-wells-in-southeast-mn)

[Addressing nitrate in southeastern Minnesota \(https://www.pca.state.mn.us/air-water-land-climate/addressing-nitrate-in-southeastern-minnesota\)](https://www.pca.state.mn.us/air-water-land-climate/addressing-nitrate-in-southeastern-minnesota)

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