April – June 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 April through June 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).

Contents

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 the well inventory that meet 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 and Fillmore County contracts have been executed, and work has begun. Goodhue, Wabasha, and Houston (Root River SWCD) County contracts are pending (Figure 1).

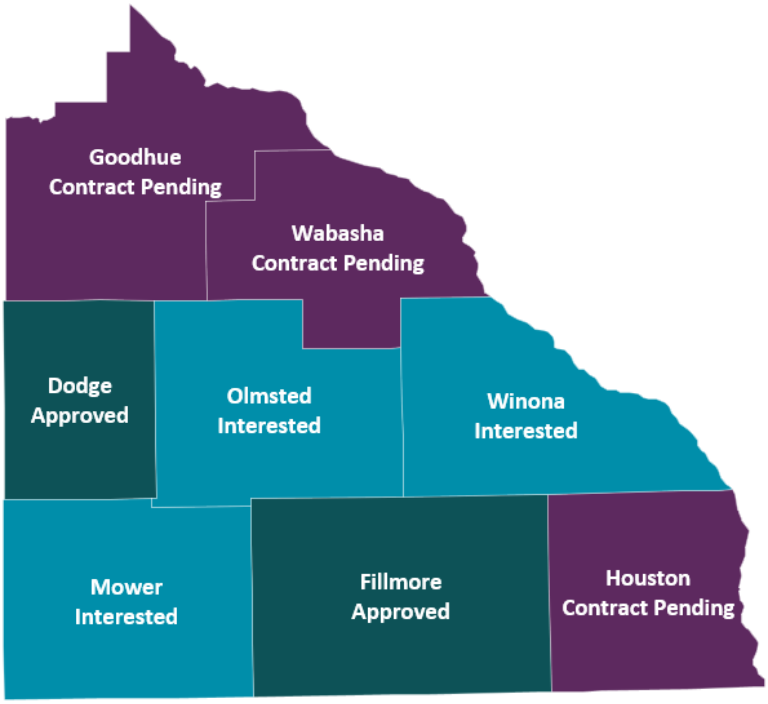

Figure 1: Well Inventory Interest and Contract Status by County.

Well Inventory Progress

Minnesota Geologic Survey

The Minnesota Geologic Survey (MGS) is the agency responsible for the County Well Index. MGS is working with each grantee individually to train them on best practices for the well inventory. This includes how to gather information and implement data quality control and quality assurance. They also will be a resource for the grantees when they have questions.

Dodge

Dodge County had completed some well inventory work in the past and current staff had experience inventorying private wells. Because of this experience, they were able to start identifying private wells not in the County Well Index relatively quickly.

Dodge County has identified 167 private wells not previously included in the County Well Index.

Fillmore

Fillmore County has begun planning and training staff for their well inventory. It is anticipated that Fillmore County will begin identifying private wells during the next quarter.

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 April and June, partners actively promoted private well testing through a variety of channels, including television, social media, and newsletters. A notable example of these outreach efforts was a campaign led by Tap-In, which partnered with the advertising agency Townsquare Media to produce and distribute promotional content. This campaign included advertisements on YouTube and Facebook, as well as television commercials. The impact of these efforts is reflected in participant responses to the question, “How did you hear about this opportunity?” As illustrated in Figure 2, there was an increase in participants citing television, SWCD, and community members as their sources of information during Quarter 2, indicating greater outreach effectiveness compared to previous quarters.

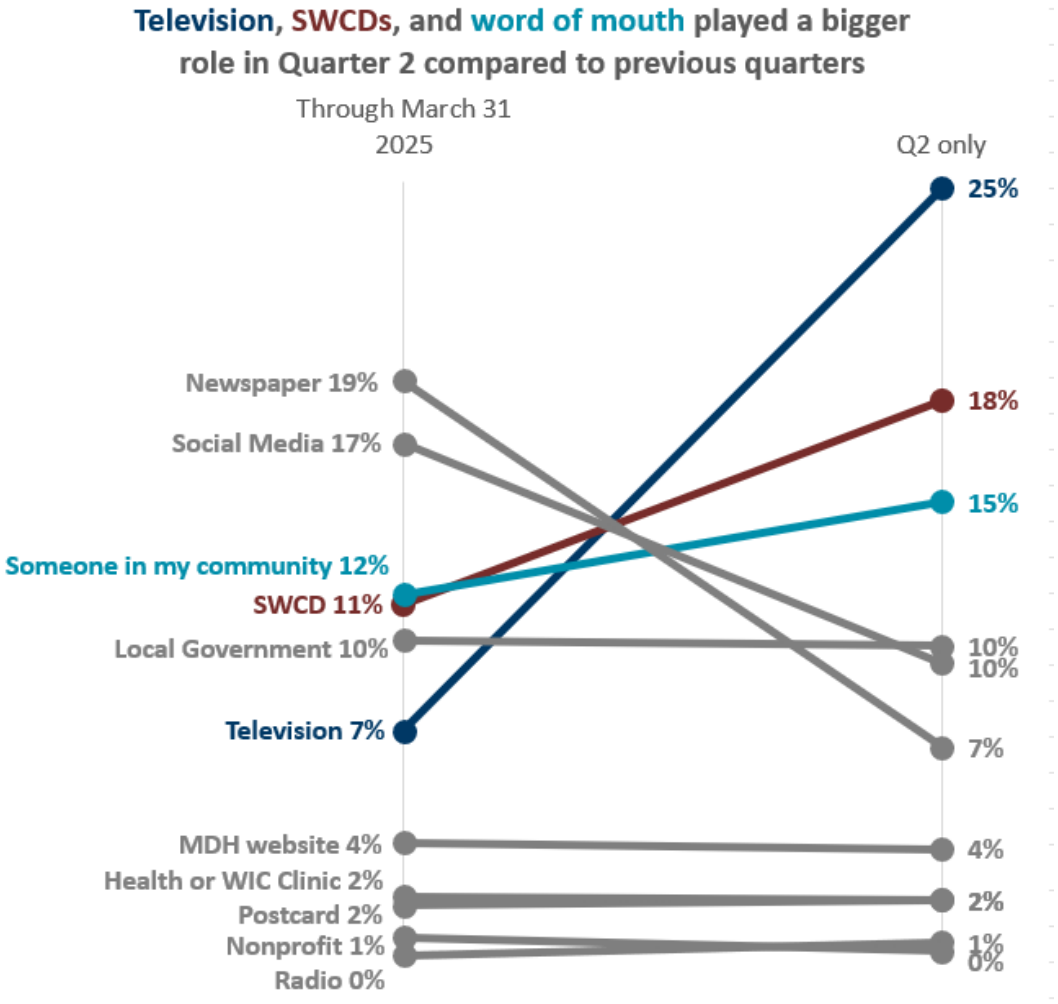

Figure 2: Percent responses when participants were asked, "how did you hear about this opportunity?"

Educational Materials Requests

MDH has several brochures available for order for free online, including the Owner's Guide to Wells, Well Water and Your Baby, and Buying and Selling a Home with a Private Well.

During this quarter in the eight-county area there were:

- 2 requests for brochures
- 450 brochures mailed to partners

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. The firm completed interviews with local partners and a focus group of private well owners in the eight-county area in April. A report of findings will be shared with MDH in July 2025. Many of the deliverables, including billboards, radio spots, and social media, will not be complete until fall of 2025.

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 effected 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 2 Data

From April 1 – June 30, 2025:

- 350 eligible households requested a well test kit.
- 480 households who received test kits returned them and received water test results. *(This number is greater than the number of test kits ordered in Quarter 2 since it may take up to five weeks for a test kit to be shipped and another two weeks for analysis.)*
- Approximately **9 percent** of wells tested had a nitrate concentration of 10 milligrams per liter (mg/L) or more (Table 1).

Table 1: Private Well water quality test results from April 1 through June 30, 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		10%	6%	18%	41%	7%
Total	480	46	31	85	198	33
Dodge	36	1	0	15	15	6
Fillmore	34	9	7	1	16	1
Goodhue	43	2	2	6	17	2
Houston	28	7	5	3	10	1
Mower	40	2	0	24	14	8
Olmsted	154	11	4	16	49	7
Wabasha	78	6	3	11	40	6
Winona	64	8	10	9	37	2

All Time Data

Since the beginning of the response – June 30, 2025:

- 1,733 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.
- 1003 households who received test kits returned them and received water test results.

- 57% of test kits have been returned to the lab for testing.
- Approximately **nine percent** of wells tested had a nitrate concentration of 10 mg/L or more.
- **Winona County has the highest number of test kits analyzed at 275** followed by Olmsted, Wabasha, Mower, Goodhue, Fillmore, Dodge, and Houston Counties. Houston County had the lowest number of kits analyzed as of June 30th with 51 kits (Table 2).

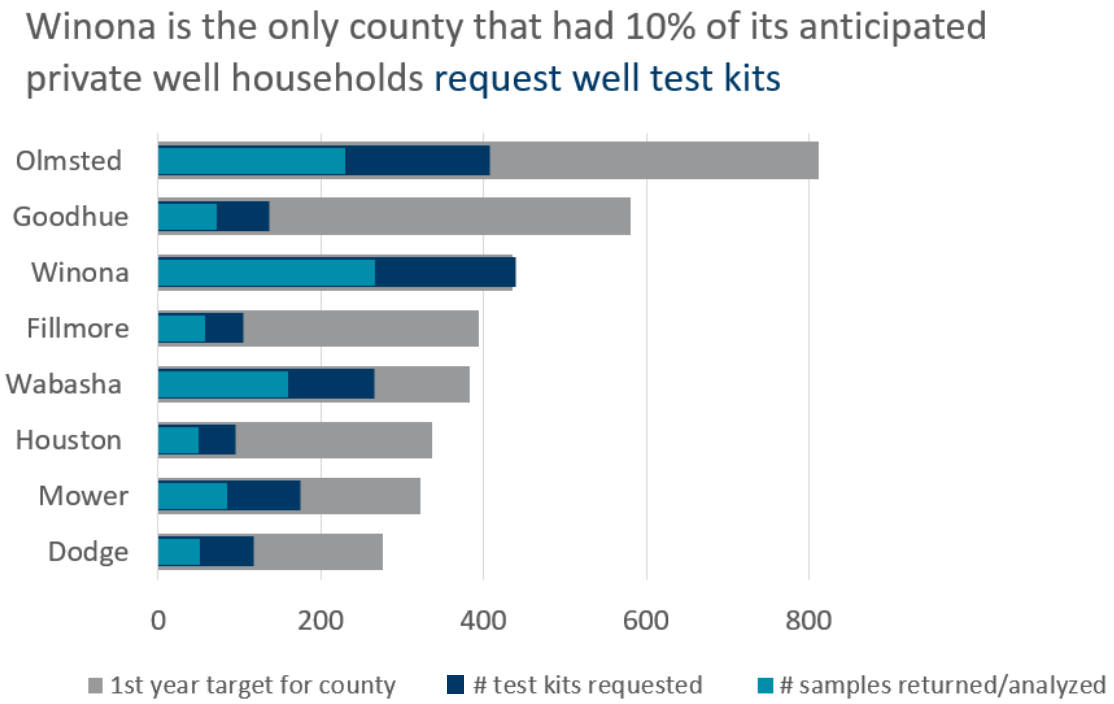

Figure 3: MDH set a goal of 10% of anticipated private well households requesting and testing a sample in the first year. Winona County is the only county that has reached the requested tests goal so far.

Table 2: Sample kits analyzed by county (all time).

County	Dodge	Fillmore	Goodhue	Houston	Mower	Olmsted	Wabasha	Winona	Grand Total
Kits Tested	53	57	74	51	86	239	165	275	1003

Mitigation Navigator

SEMWAL 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, Olmsted County developed a postcard reminder for well users who had not yet sent back their test kit. The postcard will be sent

during the next quarter to over 500 households 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 June 30th, 2025, a total of 200 reverse osmosis (RO) systems have been installed throughout the eight-county area.*** The majority of RO systems were installed for nitrate mitigation. There were 19 ROs installed at sites with cyanazine exceedances, however, 14 of those also had a nitrate exceedance. Winona County (52) has the most RO installations to date, followed by Goodhue (32), and Fillmore (30) County (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	30	32	27	10	12	27	52	**200**

The mitigation program prioritizes households with a vulnerable population (pregnant persons or infants), and low-income households (below 300 percent of the federal poverty level). Approximately nine percent of the households that received the RO mitigation systems were in a vulnerable population, 31 percent were low-income households, and four percent met both criteria (Figure 4).

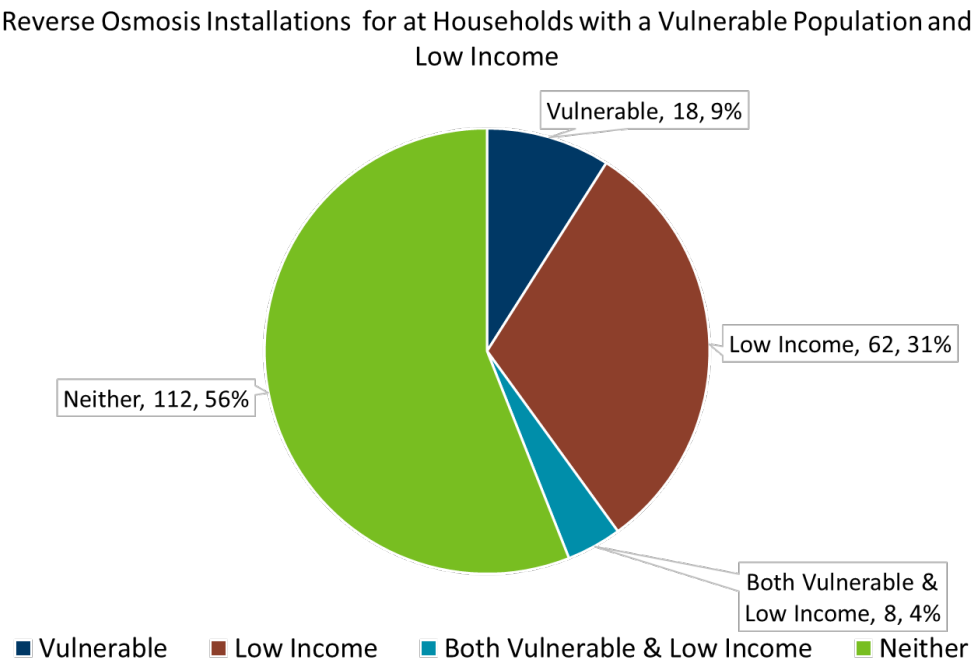

Figure 4: Reverse Osmosis Installations at Households with a Vulnerable Population or Low Income.

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 June 30th, 2025, all post-treatment nitrate samples have been below 10 mg/L.

Expanding Mitigation Options

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 would allow additional options for nitrate mitigation.

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. However, an agency-wide hiring freeze has halted efforts to move forward with hiring for the position.

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 (SEMWAL) 2016 - 2024. MDH will continue to add data points to the visualizations as it is available. Note that SEMWAL 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.

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. MDH, MDA, MPCA, and SEMWAL provide updates and information at these meetings.

Olmsted County & Southeast Minnesota Water Analysis Lab

MDH continues to meet weekly with SEMWAL to discuss contracting and arrangements for water quality testing. MDH and SEMWAL meet weekly to discuss challenges, successes, and other updates.

A JPA has been executed with Olmsted County to help with staffing needs to support the additional private well water analysis, mitigation guidance, and other resources to do the work outlined in the workplan at the local level. The positions include:

- Environmental Laboratory Data Support
- Drinking Water Quality Mitigation Navigator
- Regional Safe Drinking Water Program Coordinator
- Safe Drinking Water Intern

Prairie Island Indian Community

Members from the Prairie Island Indian Community (PIIC) live and use private wells within the petition area. During this quarter, MDH connected with staff at PIIC to discuss promoting water testing for private well users in the community. MDH and SEMWAL lab staff are working 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. WPC staff presented about the work at these conferences:

- Minnesota Environmental Health Association Spring Education Conference, Duluth, MN
- Minnesota Public Health Association 2025 Annual Conference, Duluth, MN
- The 2025 Private Well Conference, Normal, IL
- UCOWR/NIWR 2025 Annual Conference, Minneapolis, MN

Phase III: Long-Term Nitrate Goals and Strategies

MPCA and MDA completed the following Phase III work from January through March 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.

The work group met once each in April, May, and June with the focus of completing their recommendation report by June. They met this deadline and finished edits at their June meeting. There is an open house event planned where the work group members will speak about their experience and hopes for next steps. The Report of recommendations: Southeast Minnesota Nitrate Strategies Collaborative Work Group has been posted on the MPCA website.

The Addressing nitrate in southeastern Minnesota web page is regularly updated with the work group's progress.

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.

- MPCA received $1.5 million of Hypoxia Task Force funding for the work plan they submitted in November 2024. These funds will be used for implementation of the 2025 NRS, which includes designing and building the NRS Dashboard, new tools, best management practices (BMP) science outreach, and other nutrient-related outreach and research activities.
- All content for the 2025 NRS updates was completed and shared with external contractors for editing and formatting at the end of June. The final document consists of eight chapters and an executive summary documenting the progress in nutrient reduction across Minnesota since 2014, evaluation of where more work is needed to meet nutrient reduction goals, and a prioritization of the best methods to implement to achieve water quality goals. The NRS is supported by an additional 20 reports. The entire strategy and supporting documents will be shared for public review beginning July 14.
- Outreach from April to June included an invited session at the Universities Council on Water Resources (UCOWR) National Conference in Minneapolis and a presentation to the Board of Soil and Water Resources board meeting.

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 SDS general permit went into effect June 1, 2025. Over 200 applications for coverage under this permit have been submitted thus far. The MPCA is in the process of reviewing these applications and issuing permit coverage. The NPDES permit goes into effect February 1, 2026. Feedlot owners with coverage under the NPDES general permit must apply to renew their permit coverage starting in September 2025. Both permits have been updated with 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.

Feedlot Rules (MPCA)

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

The Request for Comment (RFC) period for the MPCA's legal notice of its intent to begin feedlot rulemaking is open through July 22, 2025. During the month of June, the MPCA hosted 13 outreach meetings across Minnesota to notify and engage interested persons in the rulemaking process, explaining why the MPCA is considering revisions to the rules. After the RFC closes, the MPCA will consider all the comments received during the RFC period and then begin the process of defining the rulemaking scope and forming rule writing workgroups and technical advisory teams. The main purpose of this rulemaking is to amend existing feedlot rules to improve land application of manure practices to address nitrate, bacteria, and fish kills, establish additional technical standards to protect water quality and avoid fish kills, and updates to address changes in livestock and poultry operation/business practices, account for new agency data services, and modernize outdated rule language. The MPCA will provide additional opportunities to engage in the rulemaking process over the next two years. More information is available on the rulemaking webpage.

Nitrogen Fertilizer Management Plan implementation (MDA)

The initial outreach and field work in Spring Grove township began in April and has been completed. Those efforts resulted in the development of over 20 conservation projects from grassed waterways to buffer strips, terraces, etc. Most of the projects are in the process of applying for federal EQIP dollars to assist with implementation. MDA has a JPA with Root River SWCD to provide technical assistance to producers who are interested in developing conservation practices on their farm. Root River SWCD technicians will be working on survey and design of the practices and will assist the land operators throughout construction and

follow up phases. MDA staff worked with over 30 producers who operate and control over 70 percent of the cropland in the township to evaluate their nitrogen use. Those producers were given advice on how to adjust their fertilizer programs and fine tune their nitrogen use to match the University of Minnesota's nitrogen recommendations for corn in SE MN. It was found during the conversations that most producers were close to the university's recommendations. Those that were above recommended rates were inadequately crediting other sources of nitrogen including manure, legumes, and other sources of nitrogen fertilizer including the nitrogen found in diammonium phosphate and ammonium sulfate. Simple nitrogen-based management plans were developed for those who are using manure as a nitrogen source. Others were also given advice on how to effectively credit all sources of nitrogen.

MDA staff is commencing in four other Houston County Townships where 10% or more of the tested wells were above the health risk limit of 10 mg/L of nitrate. A similar approach is taking place with an initial focus on registered feedlots where manure is part of the fertilizer system. Additional partnerships are also being developed. One such partnership includes dairy nutrition staff from a local co-op who will be mentioning our work and opportunities as they converse with local dairy producers. A list of conservation practices is being developed including practices that take into account nutrient management (manure storage, roof runoff structures, and prescribed grazing practices). Education and outreach will continue in these four townships throughout 2025 and into 2026.

The Fillmore County SWCD is also working with MDA and has hired a private company (Kanati) to develop similar 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 walk overs. This work started in June and will be continuing throughout the rest of 2025.

Resources

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

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

MN Public Health Data Access Home - MN Data (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)

Report of recommendations: Southeast Minnesota Nitrate Strategies Collaborative Work Group (https://www.pca.state.mn.us/sites/default/files/wq-gen1-19.pdf)

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

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