



Agricultural Chemical Reduction Effort (ACRE) 2024-2025 Implementation Report

April 2025

Introduction

The Agricultural Chemical Reduction Effort (ACRE) Plan is an outcome of the 2020-2030 [Dakota County Groundwater Plan](#), which identified farm chemicals -- nitrate, crop herbicides, and chloride – as risks to drinking water in rural parts of the county. ACRE was developed in collaboration with the agricultural community and with local, regional, and state stakeholder feedback. The ACRE Plan was adopted by the Dakota County Board of Commissioners in October 2022.

The ACRE program focuses primarily on reduction of agricultural related nitrate contamination in groundwater, and addressing other agricultural contaminants where practical, through voluntary adoption of best management practices (BMPs) and alternate management tools (AMTs).

The implementation framework identifies prioritized, targeted, and measurable activities necessary to achieve the Plan goals through four main strategies (1) Collect information for decision making; (2) Increase communication and education; (3) Provide technical assistance; and (4) Provide financial incentives. ACRE Plan implementation is being conducted in partnership with the Dakota Soil and Water Conservation District (SWCD).

2024-2025 Project Highlights

Dakota County was successful in implementing strategies identified within the ACRE Plan in close collaboration with the SWCD, as well as other local, regional, and state community partners. Dakota County was awarded a Fiscal Year 2024 **\$50,000 Minnesota Department of Health (MDH), Groundwater Protection - Accelerated Implementation Grant** provided through the Clean Water Land and Legacy Amendment to support Dakota County and SWCD staff time for ACRE implementation activities. Below is a summary of progress toward ACRE objectives from April 2024 – April 2025.

Collect information for Decision Making (Strategy 1)

Dakota County collaborated with several organizations to monitor, model, and collect information to better understand agricultural practices and groundwater conditions in Dakota County. The following is a summary of activities conducted:

Conservation Practice Implementation Tracking (ACRE 1A).

Dakota County conducted the second annual cover crop transect survey to verify conservation practices adopted in the county. The purpose is to collect information on water quality conservation practices being implemented and maintained in rural parts of Dakota County - specifically cover crops.

Several methods were utilized to determine practice adoption, to include (1) Minnesota Office of Soil Health (MOSH) remote sensing data summarizing percent of fields planted with cover crops at the minor HUC-12 watershed; (2) Transect survey data from over 400 field observations collected throughout the county to document whether fields were planted as cover crops or left fallow; and (3) Georeferencing SWCD cover crop contracts to verify various fields that were planted as cover crops. An updated transect methodology was used, the number of stops along the route was increased from 200 stops in 2023 to 400 stops in 2024 for a bigger dataset.

Data was used to compare to 2023 data and determine whether adoption is increasing or decreasing in each township. Results indicate that some areas of the county have upwards of 30 percent of fields in cover crops (Figure 1a). It was estimated that seven townships decreased cover crop adoption rates, and 11 townships increased cover crops adoption rates in comparison to 2023 (Figure 1b).

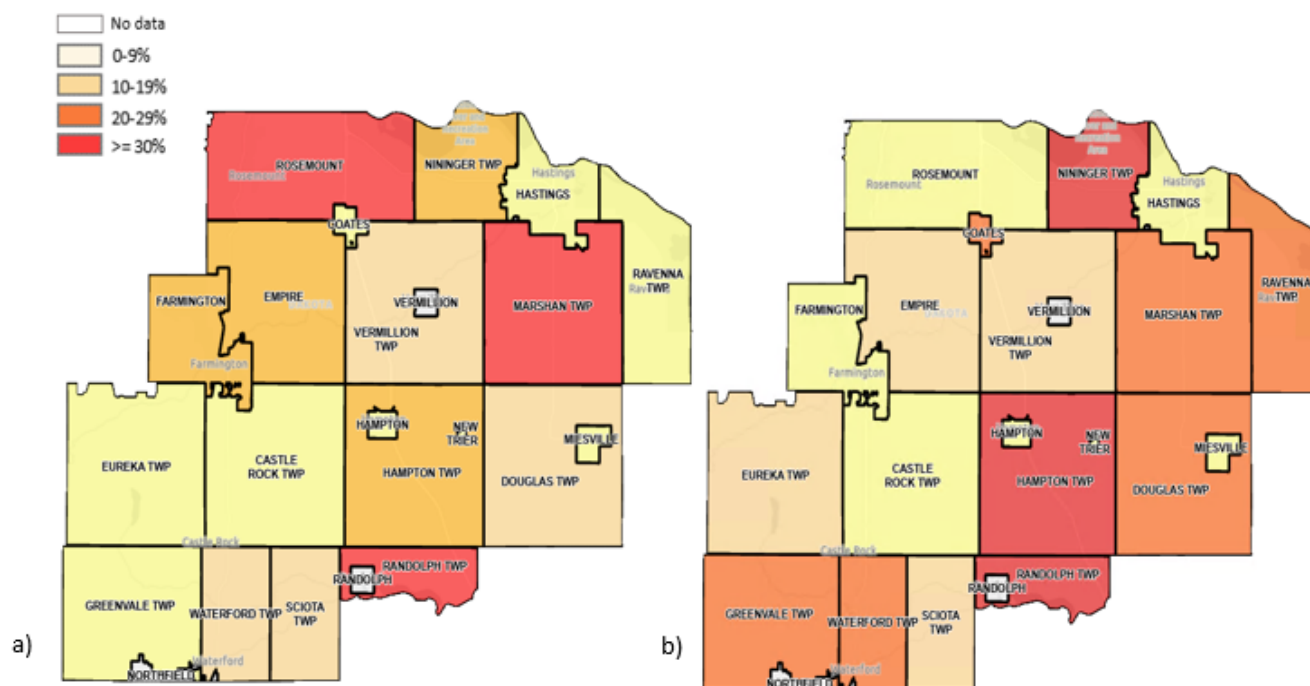


Figure 1. (a) Percent of fields planted as cover crops in 2023; and (b) percent of fields planted as cover crops in 2024.

This analysis provides a good estimate of how many fields are planted with cover crops, regardless of funding sources or program enrollment, and will facilitate where targeted outreach is needed to achieve adoption rate goals. The full results were summarized in the [2024 Baseline Practice Assessment](#).

Long-Term Monitoring Network Sampling (ACRE 1B). Dakota County installed 15 shallow groundwater monitoring wells in 2021-2022. The county monitoring well network is meant to complement the MDA monitoring network established within the Hastings' drinking water supply management area (DWSMA). All 15 wells were sampled three times in 2024 (spring, summer, and fall) for water levels, nitrate, chloride, and other general chemistry parameters. There is not sufficient data at this time to conduct statistical analysis to determine trends; however, the annual [ACRE Monitoring Well Network 2022-2024](#) and the [ACRE Well Results Dashboard](#) are updated on the website. Below is a quick summary of results:

- One well is showing an increasing nitrate concentration trend, seven wells are showing a decreasing nitrate concentration trend.
- Six wells are showing an increasing chloride concentration trend, three wells are showing a decreasing chloride concentration trend.

In addition, Dakota County purchased two continuous nitrate sensors. One sensor was installed downgradient from a field planted with conventional crop management, while the other was installed downgradient from a field enrolled in cover crop programming. The goal is to utilize the data to highlight differences over time in water quality changes based on agricultural practices.



Figure 2. (a) close-up of nitrate probe in well; (b) nitrate sensor set-up; (c) ACRE wells with nitrate probes.

Community Focused Sampling (ACRE 1C & 1F). Dakota County continued to provide no-cost water testing to private well owners for nitrate, manganese, arsenic, chloride, and lead through the Community Focused Sampling Program. In 2024, water sample kits were offered to 645 private well owners in Apple Valley, Burnsville, Farmington, and Lakeville, of which 119 households participated. A full summary of results by community is available on the [Community Sampling Results Website](#). Water quality data by population demographics is still being analyzed for statistical trends.

Collect and Evaluate Information on Ongoing Basis (ACRE 1H). Staff continued to map biosolid application data in order to better understand how prevalent biosolid land application is being utilized as a nutrient source in Dakota County. At least 445 fields have biosolids applied since 1991, of which 11 sites applied biosolids in 2024. Mapping biosolid applications in conjunction with groundwater monitoring will provide information of potential nutrient impacts to groundwater over time.

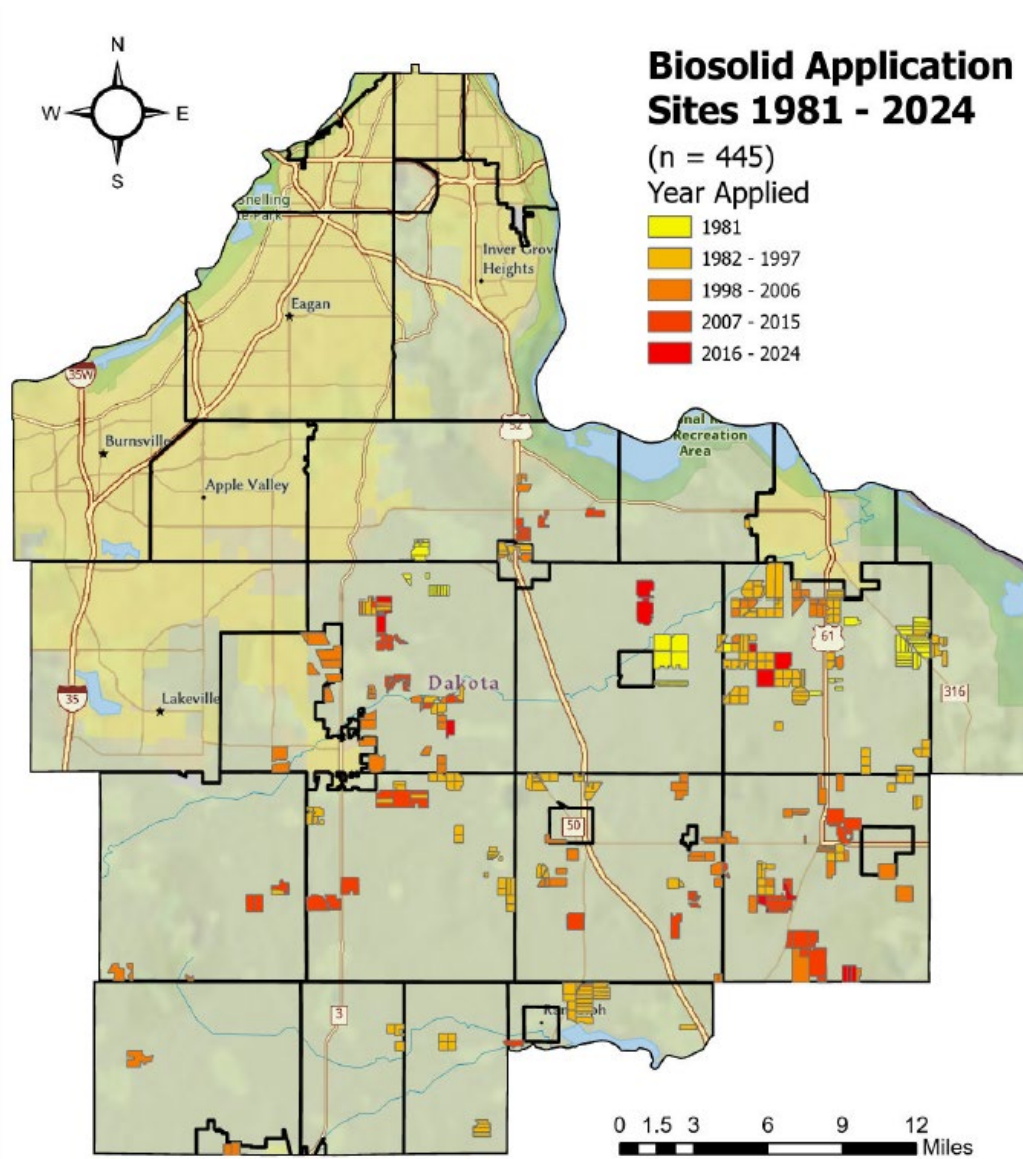


Figure 3. Biosolid application sites

Communicate and Educate (Strategy 2)

Environmental Resources staff continued to collaborate with the SWCD, Vermillion River Watershed Joint Powers Organization (VRWJPO), MDA, and the Dakota County Communications Department to promote practices to improve water quality and raise awareness of educational and cost-share opportunities. Activities included:

Annual ACRE Update (ACRE 2A): In collaboration with the SWCD, VRWJPO, and other Environmental Resources Department units, staff developed an Annual Healthy Living Rural Newsletter. The Newsletter provided information and tips on recycling, waste reduction and conservation practices to help build a healthier rural environment. ACRE related articles focused on promotion of agricultural conservation practices, the ACRE well monitoring network, and information for private well and septic system owners. The Newsletter was mailed to over 6,300 rural residents in December 2024. The Newsletter is available [Healthy Rural Living Newsletter](#).

Agricultural Chemical Reduction Effort (ACRE)

Monitoring Well Network Dashboard

Dakota County installed 15 groundwater monitoring wells in rural parts of the county in 2022. Wells are sampled three times a year (spring, summer and fall). The samples help evaluate changes in nitrate, chloride, water level and other measurements.

View the results of past sampling events with an interactive web-based dashboard. This online tool allows residents to choose specific monitoring wells and dates to view the results of each measurement at the time of sampling and observe changes in groundwater conditions over time.

To view the ACRE Monitoring Well Dashboard, go to www.dakotacounty.us, search *ACRE*.



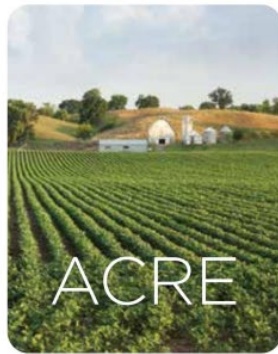
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Explore land management practices that protect groundwater

Explore the Land Management Practices for Improving Groundwater story map to learn water conservation measures throughout Dakota County.

The map guides landowners to resources for financial and technical assistance from local, state and federal programs. It also showcases the experiences of local farmers with each of six practices aimed at protecting groundwater.

To view the Land Management Practices for Improving Groundwater Story Map visit www.dakotacounty.us, search *ACRE*.



Virtual Conservation Project Tour

The Dakota County Soil and Water Conservation District offers technical and financial support for many projects across Dakota County. This includes, raingardens, water and sediment management basins, cover crops and more.

A virtual tour of projects is created yearly to highlight conservation efforts. View the virtual tour and learn more about conservation projects by visiting www.dakotaswcd.org, search *virtual tour*.



2025 tree sale



Dakota County residents can buy high-quality bare root seedlings at a low cost from the Dakota County Soil and Water Conservation District.

Residents use trees for urban and rural conservation purposes. Examples include windbreaks, living fences, reforestation, erosion control and food and cover for wildlife.

The tree species are native to Minnesota including conifers, deciduous trees and shrubs. Preview the 2025 tree species by visiting www.dakotaswcd.org, search *tree sale* or contact SWCD@co.dakota.mn.us or 651-480-7777.

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Figure 4. Healthy Rural Living Newsletter clip

Promote participation in conservation programs and distribute information through a variety of platforms (ACRE 2B & 2C): Dakota County worked with partners to promote programs through multiple different platforms. Staff worked with Dakota County Communications to develop an ACRE messaging campaign. The goal of the ACRE media campaign was to bring awareness to financial and technical assistance opportunities available for landowners to adopt water conservation BMPs on their land. Development of campaign materials was based on stakeholder input from the Agricultural Advisory Group consisting of local farmers and ag service providers.

The Leave a Legacy factsheet highlights five conservation practices for groundwater quality with information on financial and technical assistance opportunities ([Dakota County, Leave a legacy](#)). Factsheets were handed out at Township Board meetings, the MDA's Local Advisory Team Meeting, the Dakota County Fair and other farmer focused outreach events.

The campaign was shared through a variety of channels such as informative videos, [news releases](#), social media posts, radio interviews, and mailings.



Figure 5. ACRE messaging campaign design

Conduct annual Agricultural Advisory Group meeting (ACRE 2E): Hosted the annual Agricultural Advisory Group (AAG) meeting on December 12, 2024. The attendees included local farmers, an agronomist from River Country Co-op, a representative from Bailey’s Nursery, and a local business owner. The meeting included updates on 2024 ACRE activities and receiving feedback on the 2025 planned activities including outreach strategies, irrigation water testing, trainings, and demonstration projects. The AAG provided great feedback on conservation toolkit resources and ideas for 2025 projects, such as hosting a Passport to Ag Event similar to what Rice County conducted.

Provide in-person updates to townships and cities (ACRE 2F): In 2024, staff conducted in-person presentations to all 12 Dakota County Township Boards and the Empire City Council. Information presented included private well water quality data, the long-term monitoring network, and updates on ACRE implementation to include promotion of the ACRE Campaign.

Host field days and demonstrations (ACRE 2I): Dakota County partnered with the University of Minnesota Forever Green Initiative (FGI), Minnesota Department of Agriculture (MDA), and Dakota Soil and Water Conservation District (SWCD) to host an educational field day as a farm field in Hastings planted with low nitrogen input perennial crops including Kernza and alfalfa. This event was focused on decision makers in the agriculture space to educate them on the importance of perennials crops and how they can be utilized to reduce nitrate contamination of groundwater.



Figure 6. 2024 Hastings perennial plot field day

Hold free nitrate clinics (ACRE 2H): Conducted private well nitrate clinics in conjunction with the water irrigation testing (See ACRE 3A).

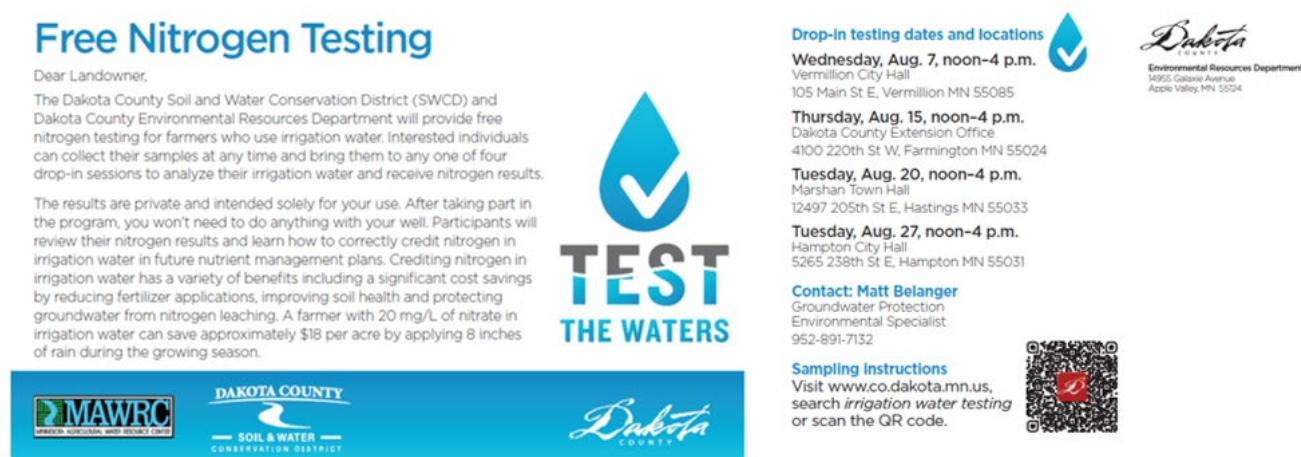
Technical Assistance (Strategy 3)

Implementation of Technical Assistance was led by the SWCD, SWCD provides hands-on assistance to farmers with implementing water quality practices. In addition, Dakota County and SWCD collaborated with the University of Minnesota (UMN) – Forever Green Initiative, UMN – Extension, UMN – Water Resources Center, Metropolitan Council, and other local organizations to increase participation in conservation programs. Below is a summary of activities:

Partner to provide nutrient management and irrigation management education (ACRE 3A):

Dakota County developed and coordinated [Irrigation Water Testing](#) events in collaboration with the Minnesota Agricultural Water Resources Center, Dakota SWCD, and MDA. Four nitrate screening drop-in events were offered throughout August. Local farmers with water irrigation systems could test their water for nitrates at no cost. Farmers then worked with the SWCD to learn how they can properly credit nitrogen in their irrigation water in their nutrient management plan. The drop-in events were also open to private well owners for free nitrate screening.

The event was promoted through direct mailings to approximately 266 landowners with known irrigation systems, social media, newspapers, Farm Service Agencies, and Irrigator Associations. A total of 41 private well owners had their drinking water well tested; and 3 irrigation wells were tested. Each irrigation well was above the 10 mg/L drinking water guideline. Irrigation well owners connected with SWCD staff to learn about irrigation management cost share opportunities and to set up an account on the Irrigation Management Assistant (IMA) tool.



The postcard is titled "Free Nitrogen Testing" in large blue letters. Below the title, it says "Dear Landowner," followed by a paragraph explaining the service: "The Dakota County Soil and Water Conservation District (SWCD) and Dakota County Environmental Resources Department will provide free nitrogen testing for farmers who use irrigation water. Interested individuals can collect their samples at any time and bring them to any one of four drop-in sessions to analyze their irrigation water and receive nitrogen results." Another paragraph states: "The results are private and intended solely for your use. After taking part in the program, you won't need to do anything with your well. Participants will review their nitrogen results and learn how to correctly credit nitrogen in irrigation water in future nutrient management plans. Crediting nitrogen in irrigation water has a variety of benefits including a significant cost savings by reducing fertilizer applications, improving soil health and protecting groundwater from nitrogen leaching. A farmer with 20 mg/L of nitrate in irrigation water can save approximately \$18 per acre by applying 8 inches of rain during the growing season." In the center is a large blue water drop icon with a white checkmark inside, and below it, the text "TEST THE WATERS" in bold blue letters. To the right, under the heading "Drop-in testing dates and locations", are four event listings: "Wednesday, Aug. 7, noon-4 p.m. Vermillion City Hall, 105 Main St E, Vermillion MN 55085", "Thursday, Aug. 15, noon-4 p.m. Dakota County Extension Office, 4100 220th St W, Farmington MN 55024", "Tuesday, Aug. 20, noon-4 p.m. Marston Town Hall, 12497 205th St E, Hastings MN 55033", and "Tuesday, Aug. 27, noon-4 p.m. Hampton City Hall, 5265 238th St E, Hampton MN 55031". Below these is the "Contact: Matt Belanger, Groundwater Protection Environmental Specialist, 952-891-7132". At the bottom left are logos for "MAWRC" and "DAKOTA COUNTY SOIL & WATER CONSERVATION DISTRICT". At the bottom right is the "Dakota COUNTY" logo and a QR code. A small box titled "Sampling Instructions" says: "Visit www.co.dakota.mn.us, search irrigation water testing or scan the QR code."

Figure 7. Irrigation nitrate testing postcards

Assist landlords and renters implement water quality practices on rented lands (ACRE 3D): Staff developed materials for a Conservation Toolkit to support transition to conservation agriculture practices on rented land. Materials include a Farmland Lease Agreements Informative Document to provide guidance on how to include conservation agriculture in lease agreements, a Conservation Practice Benefits Chart to help landowners/renters identify which practices will meet their conservation goals, and a How to Start a Dialogue document to guide landowners/renters on how to start talking about conservation agriculture. See the [Conservation Toolkit](#).

Host Nitrogen Smart and other training (ACRE 3E): SWCD hosted a Soil Health Finance Event on February 27, 2025. The event was focused on how to include soil health practices into operations while remaining profitable. Dakota County

staff attended to present water quality updates. UMN-Extension and SWCD hosted a Crops Day on March 12, 2025, to present information on conservation practices to local farmers. Dakota County staff attended to present water quality updates, and private well testing opportunities.

Financial Incentives (Strategy 4)

Dakota County partnered with SWCD to promote and fund voluntary BMP and AMT adoption. Implementation of Financial Incentives is led by the SWCD based upon annual Board of Supervisor approved policy programs, with funding assistance from Dakota County and state grants. SWCD secured funding for practices through a variety of grants, including Watershed Based Implementation Funding, Drinking Water Protection, and Competitive Clean Water Fund grants. SWCD also continues to pursue ways to increase staff capacity, such as the Board of Water and Soil Resources (BWSR) Soil Health Staffing grant.

Provide cost-share through SWCD for adoption of water quality practices (ACRE 4B): In 2024, Dakota County provided \$400,000 in cost-share funding to the SWCD to support technical assistance and installation of water quality best management practices. Cost-share grants supported 3,563 acres of cover crops on 41 fields, 7 acres of native prairie restoration, and 123 acres of harvestable cover (perennial crops) resulting in 22,657 pounds of nitrate reduction per year (Figure 8)



Figure 8. 2024 SWCD Water Quality Practice Implementation

2025-2026 Projected Projects

ACRE Plan implementation will focus on the following components in 2025-2026:

- 1) Continue to collect information for decision making purposes, especially in the early years of ACRE implementation to verify baseline conditions.
 - Continue to verify farming practices being implemented and maintained on existing acreage throughout the County (ACRE tactic 1A).
 - Conduct annual sampling of the long-term monitoring network (ACRE tactic 1B).
- 2) Increase communication and outreach efforts to the farming and rural communities.
 - Create and distribute an annual ACRE update through Health Rural Living Newsletter (ACRE tactic 2A).
 - Coordinate with SWCD to distribute information, training, and program incentive opportunities utilizing a variety of platforms (ACRE tactic 2C). **Dakota County received a \$50,000 Watershed Based Implementation Funding (WBIF) Grant to support development of the Leave a Legacy Marketing Campaign. The goal is to develop videos, radio ads, and other marketing materials to encourage farmers to adopt conservation agricultural practices that improve water quality.**
 - Host annual Agricultural Advisory Group meeting to provide guidance to Dakota County and SWCD staff (ACRE tactic 2E).
 - Provide in-person updates to cities and townships on ACRE progress (ACRE tactic 2F).
 - Host field day and demonstration projects, such as the Hastings Perennial Plot, Planting Green Field Day, Soil Health Bus Tour, and Passport to Ag to bring farmers and communities together (2I).
- 3) Increase Technical Assistance
 - Collaborate with MN Agricultural Water Resources Center and partners to offer irrigation water nitrate testing (ACRE 3A)
 - Collaborate with the SWCD on ways to expand the availability and awareness of one-on-one technical assistance to farmers for water quality improvement practices (ACRE tactic 3B).
- 4) Work with the County Board and/or the SWCD to identify resources and expand incentive programs as necessary to achieve ACRE Plan adoption rate goals (ACRE tactics 4A-J).

For questions on the Groundwater Plan or annual report please contact groundwater@co.dakota.mn.us, or 952-891-7000.

Thank you to the Dakota SWCD and other Dakota County partners for your assistance in implementing the ACRE and Groundwater Plan