



# Groundwater Plan Implementation Report 2023-2024 Annual Update

## Introduction

The 2020-2030 Groundwater Plan (Plan) describes the strategic approach for new and ongoing programs for Dakota County residents, agricultural interests, businesses, industry, and government to protect and improve groundwater quality and quantity. The implementation framework identifies prioritized, targeted, and measurable activities necessary to achieve the Plan goals. As part of implementation, the intent is to provide an annual Groundwater Plan Implementation Report that will identify priorities for the given year, report on annual measures, and track changes of measures and outcomes over time.

In July of each year, Dakota County staff report annual measures for each goal, strategy, and tactic to the County Office of Performance Analysis as part of the Program and Service Inventory. For a complete list of 2023 Groundwater Plan annual measures please contact [groundwater@co.dakota.mn.us](mailto:groundwater@co.dakota.mn.us).

The below table provides a status update for tactics projected to start in 2020 to 2023 timeframe per the Groundwater Plan Implementation Tables.

**Table 1. Progress on Groundwater Plan Tactics projected to start in 2020-2023**

Tactic	Short Description	Status
1A1B	Conduct Rural Water Feasibility Study (opportunity-based)	<b>COMPLETE</b> (See 2023 highlights below)
1A3C	Facilitate installation of drinking water treatment systems for low-income households with a private well	Implemented pilot program in 2022; applied for grant to expand program in 2024
1A3E, 1A3F, 1A3H	Provide private well owners with the opportunity to have their water tested at no cost to them; collect demographic data	Continued to implement (see 2023 Project Highlights below)
1B1B, 1B1C	Develop, adopt, and implement a Dakota County Agricultural Chemical Reduction Effort (ACRE); provide cost-share funding for ag. water quality practices	ACRE Plan adopted in 2022 (see separate <a href="#">ACRE Implementation Report</a> )
1B1D	Install monitoring wells to collect long-term water quality and water level data in high nitrate groundwater areas	15 monitoring wells installed in 2021-2022 timeframe
1B1E	Partner with SWCD to facilitate, promote, and potentially provide cost-share funding for irrigation practices and technologies	Supported <a href="#">Irrigation Management Assistant Tool</a> to help producers with efficient water irrigation scheduling based on a weather network
1B4A, 1B4B	Work with County Departments, and cities and townships to minimize salt use	Hosted a Smart Salting Workshops and developed educational materials (see 2023 Project Highlights below)

Tactic	Short Description	Status
1C3E	Provide training for realtors regarding the property transfer requirements for wells and septic systems.	Reviewed MN Department of Health <a href="#">Well Savvy Real Estate Professional Course</a>
1C3F	Review and track proposed sites for land application of wastewater treatment plant biosolids	Continued to map sites with biosolid land application
1C4B	Review the County's model Mining Ordinance, update as appropriate, and distribute to cities and townships.	<b>COMPLETE</b> (see 2023 Project Highlights below)
2A1A	Work with DNR to ensure groundwater appropriation requests are sustainable	Reviewed and provided comment on DNR water appropriation permit requests, to include request from Elko New Market
2A1C	Reviews County Ordinance 114 to protect long-term water supplies	<b>COMPLETE</b> (ordinance revised in 2020)
2A2A	Develop and implement a County-wide water supply/conservation initiative	Developing water conservation messaging for Dakota County communities (see 2023 and 2024 Project Highlights)
2A3B	Provide cost-share funding for water reuse projects.	Pending, TBD based on grant funding availability
2B2A	Encourage communities to complete or update wetland protection and management plans	Pending, TBD based on staff availability
2C1A	Encourage adoption and coordination of advanced technologies, such as "Smart Wellfield" technologies	Presented at Dakota County Groundwater – Source Water Collaborative meeting
3A1C	Host We Are Water MN exhibit (opportunity-base)	<b>COMPLETE</b> (hosted in 2022)
3A1D	Inform the public about groundwater levels by putting DNR observation well data on the County website.	<b>COMPLETE</b> , see <a href="#">Water Watch</a>
3A1A, 3A1B, 3A1F, 3A1G, 3A1H, 3B1A, 3B1C, 3B1H	Expand groundwater conservation and pollution prevention education and outreach efforts <ul style="list-style-type: none"> <li>Assist annual Metro Area Children's Water Festival</li> <li>Leverage existing educational materials and programs</li> <li>Inform the public about DWSMAs</li> <li>Make non-private water quality data more readily available to homeowners and other stakeholders</li> <li>Develop and distribute educational information in multiple languages and accessible formats.</li> </ul>	Additional educational items were added to the <a href="#">Groundwater Website</a> . The <a href="#">Find My DWSMA</a> application was developed in 2022.
3B1F	Conduct stakeholder workshops for updated County Geologic Atlas, once updated	Geologic Atlas Workshop updates are planned for 2024
4A1B	Establish a County Groundwater/Source Water Collaborative	Started in 2021, Collaborative met twice in 2023 (see 2023 Project Highlights below)
4B1B	Review the County's Well Program Delegation Agreement with Minnesota Department of Health (MDH)	Meetings with MDH started in 2022; update is pending 2024 legislative session (see 2023 Project Highlights below)

## 2023 Project Highlights

Dakota County was successful in implementing many of the strategies and tactics identified within the Groundwater Plan in collaboration with state and local community partners, such as the Dakota Soil and Water Conservation District (SWCD). Staff continued to seek external funding and resources to assist with Plan implementation. In partnership with the SWCD, staff were successful in obtaining **\$190,000** in 2023 Board of Water and Soil Resources (BWSR), Minnesota Department of Health (MDH), and Community Development Block Grants (CDBG) focused on groundwater protection activities. Below is list of grants awarded by year from 2022-2024 timeframe. Dakota County is also in the process of applying for additional grants in 2024, further discussion is under 2024 Project Highlights

**Table 2. Grants Awarded in 2022-2024**

Grant Description	2022	2023	2024
Black Dog Watershed Based Implement Funding (WBIF), BWSR – Awarded to Dakota County to complete Well Inventories and Well Seal Grants within the Black Dog Watershed area	\$25,000		
Competitive Clean Water Fund Grant, BWSR – Awarded to Dakota County to complete Well Inventories and Well Seal Grants		\$110,000	\$90,000
Groundwater Accelerated Implementation Grant, MDH – Awarded to SWCD to update the County Model Mining Ordinance	\$50,000		
Groundwater Accelerated Implementation Grant, MDH – Awarded to Dakota County to support ACRE Implementation		\$50,000	
Community Development Block Grant – Awarded to Dakota County to complete Rural Water Feasibility Study	\$50,000		
Community Development Block Grant – Awarded to Dakota County to complete Well Seal Grants		\$30,000	
<b>TOTAL</b>	<b>\$125,000</b>	<b>\$190,000</b>	<b>\$90,000</b>

### Strategy 1A1: Assist Public Water Supplies in Protecting Water Supply

#### Completed Rural Water Feasibility Study (tactic 1A1B – Opportunity-based):

Staff were successful in receiving a FY2022 \$50,000 Community Development Block Grant to support completion of a Rural Water Feasibility Study. The County contracted with Bolton & Menk to complete the study. The report identifies feasibility, cost and recommendations for connecting private wells to municipal or rural water services. Staff will share factsheets summarizing the study for relevant municipalities and meet to discuss future opportunities to connect private wells. For additional information regarding the Rural Water Feasibility Study please contact [groundwater@co.dakota.mn.us](mailto:groundwater@co.dakota.mn.us).

## Strategy 1A2 & 1C2: Protected Groundwater by Regulating Well Construction and Sealing, & Seal Unused Wells

### Administered Delegated Well Program (tactic 1A2A):



*Figure 1. County Well Inspector examining cuttings from a non-community well to serve a population of over 25 at a new business.*

Dakota County is one of ten local boards of health that administers a Delegated Well Program under the direction of the MDH. There has been a Delegation Agreement between Dakota County and MDH since 1989; the most recent agreement has been in effect since July 1, 2020.

The Delegation Agreement is enforced through County Ordinance 114, Well and Water Supply Management, to ensure that new wells are constructed, and unused wells are sealed to meet health standards and protect Dakota County aquifers. In 2023, staff completed 81 well construction permits and 125 well seal permits.

The Groundwater Plan proposes to review the current Delegation Agreement and expand the County's well construction delegation authority based on what is allowed within Minnesota Statute § 103I. Delegated Well Agreement discussions with MDH started in 2022 but were halted to pursue Minnesota Statute § 103I updates during the 2024 legislative session to allow for delegation of borings in addition to wells.

## Strategy 1A3: Assisted Private Well Owners

### Continued Community Focused Sampling (tactics 1A3E, 1A3F, 1A3H):

The objective of the Community Focused Sampling program is to offer no-cost water testing to private well owners in Dakota County. No-cost water testing provides multiple benefits – it removes barriers for well owners to help them understand health concerns related to their drinking water and improves the County's understanding of community risks from groundwater contamination. The County provides each participant a copy of their individual results as well as a customized packet with risk communication, contaminant factsheets, water treatment options (if applicable), and resources to help ensure residents have safe drinking water.

In 2023, water sample kits were sent to private well owners in Inver Grove Heights and Eureka Township, of which 556 households participated. Cities and townships included in the sampling program to date are identified in the table below.

**Table 3. Community Focused Sampling Schedule & Participation**

Year	City/Township	No. of Private Wells	No. Samples Returned	Response Rate
2018	BURNSVILLE	247	66	26%
2019	LAKEVILLE	320	100	31%
2019	GREENVALE	278	89	32%
2020	APPLE VALLEY	74	22	30%
2020	COATES	50	16	32%
2020	DOUGLAS TWP	250	82	33%
2020	EAGAN	295	58	20%
2020	HAMPTON (CITY)	11	4	36%
2020	HASTINGS	159	16	10%
2020	MARSHAN TWP	387	147	38%
2020	MIESVILLE	52	26	50%
2020	NEW TRIER	33	6	18%
2020	NORTHFIELD (within Dakota County)	14	3	21%
2020	RANDOLPH (CITY)	61	6	10%
2020	ROSEMOUNT	554	231	42%
2020	VERMILLION (CITY)	11	2	18%
2021	EMPIRE TWP	259	55	21%
2021	HAMPTON TWP	335	84	25%
2021	LILYDALE	5	0	0%
2021	MENDOTA	65	0	0%
2021	MENDOTA HEIGHTS	135	8	6%
2021	NININGER TWP	321	78	24%
2021	SOUTH ST PAUL	14	1	7%
2021	SUNFISH LAKE	196	44	22%
2021	VERMILLION TWP	453	91	20%
2021	WATERFORD TWP	235	39	17%
2021	WEST ST PAUL	84	3	4%
2022	RAVENNA TWP	835	219	26%
2022	CASTLE ROCK TWP	568	111	20%
2022	SCIOTA TWP	182	31	17%
2022	RANDOLPH TWP	317	50	16%
2023	EUREKA TWP	528	112	21%
2023	INVER GROVE HEIGHTS	1598	444	27%
2024	FARMINGTON	101	-	-
	<b>TOTAL</b>	9,027	2,244	25%

Community Focused Sampling results summarized by city and township can be found on the [Community Sampling Results Website](#). The only remaining community that has not been offered no-cost sampling is the City of Farmington, which is planned for 2024.

### **Water Supply Testing Services (tactic 1A3A)**

In addition to providing free drinking water testing, the County also facilitated a fee-for-service Water Testing Service through a certified laboratory. In 2023, more than 110 residents participated in routine testing of arsenic, bacteria, fluoride, lead, manganese, and nitrate.

As a result of elevated radium levels in the Inver Grove Heights municipal drinking water, staff also developed educational materials and a process for private well owners to purchase radium testing. Additional information is available on the [Radium in Dakota County Water Website](#).

### **Strategy 1B1: Reduce Agricultural Chemical Contamination**

The 2020-2030 Dakota County Groundwater Plan identified farm chemicals, especially nitrate, crop herbicides, and chloride as significant risks to drinking water in rural parts of the county. Dakota County staff, in collaboration with the SWCD, developed the ACRE Plan with input from an Agricultural Advisory Group and other state, regional, and local stakeholders. The ACRE Plan was finalized and adopted by the County Board of Commissioners in October 2022.

A separate ACRE Plan annual progress report is available on the [ACRE](#) website.

### **Targeted Well Seal Grants (tactics 1C2A, 1C2B):**

Dakota County received \$25,000 from the Clean Water Land and Legacy Amendment, distributed by BWSR to conduct well inventory and seal unused wells within the Black Dog Watershed Area. Unused or abandoned wells are a potential threat to health, safety, and the environment since they provide a direct conduit to the groundwater aquifer. An Environmental Resources intern was hired to complete the well inventory, the intern identified over 1,000 potentially unsealed, unused wells within the Burnsville, Apple Valley, Lakeville areas of the watershed. Letters were sent to landowners in 2023 with potentially unsealed wells, with priority on properties located within city DWSMAs. A total of 12 wells were sealed in 2023 within the Black Dog Watershed Area.

In addition to focusing on well seal grants within the Black Dog Watershed, Clean Water Fund grant dollars were utilized to seal an additional 49 wells throughout the county. In total, \$92,134 of cost-share grants were awarded, and 61 unused wells were sealed in 2023.

### **Strategy 1C4: Prevent pollution by minimizing impacts of aggregate mining on groundwater quality**

#### **Update Model Mining Ordinance (tactic 1C4B)**

SWCD was successful in receiving a FY2022 \$50,000 MDH, Groundwater Accelerated Implementation Grant to support completion of an updated Model Mining Ordinance – with support from Dakota County staff. The Model Mining Ordinance was developed by hired consultant (WSB) with stakeholder engagement from local cities and townships. The model ordinance focuses on ensuring sufficient protective measure for groundwater and surface water sources. It is an example for optional use by Dakota County cities and townships and should be tailored based on local environmental conditions and local government preferences. The Final Model Mining Ordinance is available on the [County Resources](#) website.



## Strategy 3A & 3B: Expand Water Education

### Hosted Smart Salt Classes (3B1D):

In 2021, Dakota County received \$3,000 from the Clean Water Land and Legacy Amendment, distributed by BWSR to support annual Smart Salt Training Classes. The Mississippi East WBIF Grant supported a *Smart Salting for Roads* (level 1 certification) workshop in September 2023, conducted in collaboration with Washington County. In addition, the County hosted a *Smart Salting for Parking Lots/Roads* (level 1 certification) workshop in October 2023. A record high of 133 people were certified between the two classes.

In addition, staff collaborated with Facilities and Library Departments to implement a variety of strategies to educate the community about smart salting practices, to include:

- Smart Salting labels on salt buckets. To reduce chloride waste and prevent over application of salt on sidewalks, salt stations near county building entrances received graphics with guidelines on Smart Salting application practices. Graphics were also shared with interested cities.
- The salt dilemma display. The Minnesota Pollution Control Agency’s interactive display was placed in the atrium of the Northern Service Center from December 2023 – March 2024 to teach residents about chloride inputs, how to identify improper salt use, and ways to reduce chloride use in daily life.
- Smart Salting cups. Dakota County libraries distributed Smart Salting information and cups to visitors. Cups provided instructions, such as shovel first, how much salt to use, and proper sidewalk application techniques that prevent salt waste. Stations with cups and an informational poster were set up near library entrances.



Figure 2. Smart salting label (left), and Salt Dilemma Display at the Northern service Center (right)

## Strategy 4A: Collaborate with other Levels of Government

### Host the County Groundwater - Source Water Protection Collaborative (4A1B):

**Do your part, we're in a drought**

We use two to three times more water during the summer months compared to the winter due to outdoor water usage. Parts of Dakota County are officially in a drought, and we need your help.

Here are a few simple steps to help save water and your lawn:

- 1** Cut back watering your lawn, it only needs 1 inch of water/rain each week.
  - Watering too much encourages disease and keeps grass roots short.
  - Promote a drought tolerant lawn by watering infrequently. Water soil to a 6-8 inch depth and wait a week to water again.
  - Visit [maps.cocorahs.org](https://maps.cocorahs.org) to see if your lawn received enough rain and if you need to water.
- 2** Check your irrigation or automatic sprinkler system for leaks and broken heads.
  - Almost 25 percent of homes have five or more leaking sprinklers. Just one can waste more than 1,000 gallons of water per hour.
  - Get a smart controller that automatically adjusts watering schedules depending on weather, soil conditions, evaporation, plant water use and more.
- 3** Raise your mower height to 3 inches.
  - Grass roots will grow deeper to reach more water and will create a healthier, stronger and more disease-free lawn.

To learn more tips on how to reduce your water usage, visit [extension.umn.edu](https://extension.umn.edu) and search *lawn care*.  
For more water conservation tips, visit [www.dakotacounty.us](https://www.dakotacounty.us), search *water conservation*.

*Dakota*

Figure 3. Dakota County Water Conservation Message

The Environmental Resources Department hosted the two Dakota County Groundwater-Source Water Protection Collaborative Workshops in 2023. After two years of drought, cities expressed interest in developing a consistent conservation message that organizations could use across political boundaries. The spring workshop focused on water conservation efforts and included speakers from the University of Minnesota (UMN) Turfgrass Research Outreach Education Center, and the Minnesota Department of Natural Resources (DNR). Attendees included representatives from the SWCD, watersheds, and state, regional, and local government organizations.

Utilizing feedback provided during the workshop, Dakota County developed a conservation message focused on three key actions residents can take to reduce outdoor water usage during a drought while still saving their lawn: (1) Cut back watering lawn; (2) Check irrigation and sprinkler systems; and (3) Raise mower height.

Dakota County cities were able to use the flyer in direct mailings and social media platforms to encourage water conservation.



## 2024 Upcoming Highlights

A highlight of 2024 priority strategies are discussed below.

### **Assist Private Well Owners (strategy 1A3)**

Environmental Resources staff plan to continue to offer no-cost private well testing opportunities through the Community Focused Sampling program. In order to increase participation rates, staff will be partnering with the Public Health Department, SWCD, Veterans Affairs Services and other local community organizations to encourage private well testing through a variety of platforms.

In addition, Dakota County has submitted an application for the MDH [Safe Drinking Water for Private Well Users Grant](#). If awarded, some grant funding will be utilized for no-cost private well testing; however, the county proposes to utilize the majority of grant dollars to provide financial and technical assistance to low-income private well owners with water quality concerns for coliform bacteria, nitrate, manganese, arsenic, or lead. In 2022, Dakota County established a one-year Water Treatment System Pilot Grant program that utilized \$22,000 to offer treatment systems at no-cost to low-income households. The 2024 program would be an expansion upon the pilot program to include assistance for drinking water treatment, and repair/replacement of contaminated wells.

### **Reduce Agricultural Chemical Contamination (strategy 1B1):**

Dakota County will focus on the following ACRE Plan implementation actions in 2024:

- 1) Continue to collect information for decision making purposes, to include conducting annual sampling of the long-term monitoring network (ACRE strategy 1);
- 2) Increase communication and outreach efforts to the farming and rural communities through an ACRE Campaign effort (ACRE strategy 2); and
- 3) Explore ways to assist landlords and renters in implementing water quality practices (ACRE tactic 3D).

Additional information is provided in the 2023-2024 ACRE Implementation Report on the [ACRE Website](#).

### **Prevent Groundwater Contamination from Chloride (strategy 1B4)**

Developing and/or expanding upon chloride reduction efforts is identified as a 2024 Environmental Resources Department priority. To support efforts, staff are applying for a 2024-2025 [Minnesota GreenCorps](#) member to develop a Dakota County chloride reduction initiative in collaboration with local government units and water stakeholders. The member would develop and implement a program modeled off the [Low Salt, No Salt](#) initiative, and support conducting education and outreach to large de-icing salt users to encourage commitments to reduce salt use. Staff also plan to identify opportunities and potential programs to reduce chloride contamination from water softeners.

## Promote Water Conservation (strategy 2A2)

While groundwater in Dakota County is plentiful, it is not unlimited. Increasing population growth, continued development (resulting in increased impervious surfaces and less groundwater recharge), and unpredictable climate patterns are all contributing factors impacting our groundwater resources. After three years of drought (2021 -2023), water usage in Dakota County has reached an all-time high, resulting in significant summer-seasonal water usage increases. In 2022, over 30 billion gallons of groundwater in Dakota County were used – enough to fill the Empire State Building 108 times.



*Figure 4. Water Wise Challenge Graphic*

Several projects are planned for 2024 in support of promoting water conservation strategies, these include:

- 1) Develop and implement a Water Wise Challenge – the challenge will encourage residents to pledge measurable reductions in water usage through a friendly challenge across cities.
- 2) Install Smart Control Irrigation devices at county-owned facilities, where possible, to reduce water usage for lawn irrigation.
- 3) Collaboration with SWCD to develop and implement a pilot incentive program for installation of low-input turf grass (e.g., fescues) on residential lawns that are more drought tolerant.

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

For questions on the Groundwater Plan or annual report please contact [groundwater@co.dakota.mn.us](mailto:groundwater@co.dakota.mn.us), or 952-891-7000.

*Funding for the Groundwater Plan implementation has been provided through the Clean Water and Legacy Amendment, distributed by MDH and BWSR*

