

# *Anoka Conservation District* *2024 Budget Request:* *Groundwater Specialist*

Chris Lord, District Manager  
Anoka Conservation District



***For the county, this presentation must be cut to 10-15 minutes.***

To help me make smart editing decisions, please note slide numbers for the following moments:

- Ah ha! - enlightening
- Huh? - confusing
- Meh~ - boring
- Uh oh! - landmine
- Hmm~ - missing

**REVENUES**

	2023		2024
	Budget	Actual	Request
Federal Aids	-	-	-
Other County Funds	60,200	78,704	80,000
State Aids	627,084	836,142	813,882
Local/Fees	210,606	234,059	197,280
Product Sales	882,800	700,568	866,232
Other - Rent, Interest	118,046	124,267	132,989
<b>Total Revenues</b>	<b>1,898,736</b>	<b>1,973,740</b>	<b>2,090,383</b>

**PASS THROUGH** (expenses = revenues, not shown elsewhere)

Project Installation	1,220,567	1,112,878	794,182
<b>Total Pass Through</b>	<b>1,220,567</b>	<b>1,112,878</b>	<b>794,182</b>

**EXPENDITURES**

Salaries	974,671	961,834	1,106,249
Benefits	288,943	277,860	330,752
Operating	107,365	120,682	133,202
Programs	207,814	290,734	457,321
Rain Guardian	576,245	483,408	333,539
Capital	1,500	11,663	1,500
County Vehicle Donation	-	-	-
Other	27,025	54,550	39,250
<b>Total Expenditures</b>	<b>2,183,563</b>	<b>2,200,732</b>	<b>2,401,812</b>

**OTHER COUNTY FUNDS - approved through separate process**

County Ag. Preserves - Programs	30,200	26,200	27,500
Vehicle Safety Assistance	-	-	-
Buffer Implementation	15,000	15,000	15,000
Rum River Project Contracts	15,000	37,504	37,500

**COUNTY GENERAL LEVY**

County General Services	284,826	226,992	226,992
Groundwater Specialist			84,438
Project Matching Fund			
<b>Total Levy for ACD</b>	<b>284,826</b>	<b>226,992</b>	<b>311,430</b>
Net to (from) fund balance	(1)	0	1

F.T.E.'s	2023		2024
	Budget	Actual	Request
Supervisory	1.0	1.0	1.0
Clerical	1.0	1.0	1.0
Engagement	1.0	-	-
Professional	2.0	2.0	2.0
Specialist	3.0	4.0	5.0
Technician	2.0	3.0	3.0
Permanent	10.0	11.0	12.0
Temporary	2.0	1.0	1.0
<b>Total</b>	<b>12.0</b>	<b>12.0</b>	<b>13.0</b>

**\$0.84 per capita request in 2024, equates to 9.7% of ACD's budget. ACD would remain the lowest funded SWCD in MN on a per capita basis.**

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**\$0.84 per capita request in 2024, equates to 9.7% of ACD's budget. ACD would remain the lowest funded SWCD in MN on a per capita basis.**

**\$84,438, \$0.23/per capita equates to 27% of ACD's request to Anoka County and 2.6% of ACD's total budget.**



# ***Why Anoka County should have a Groundwater Specialist***

Anoka County groundwater is:

- Critical
- Vulnerable
- Deteriorating
- Complicated

# CRITICAL

## *Groundwater is drinking water.*



- 94% of Anoka County residents rely on groundwater for all of their needs.
- Compared to treating surface water for commercial and domestic use, groundwater is clean-ish, cheap-ish and abundant-ish...for now.
- Clean drinking water save lives on par with modern medicine.

# CRITICAL

*Groundwater feeds our lakes and streams.*

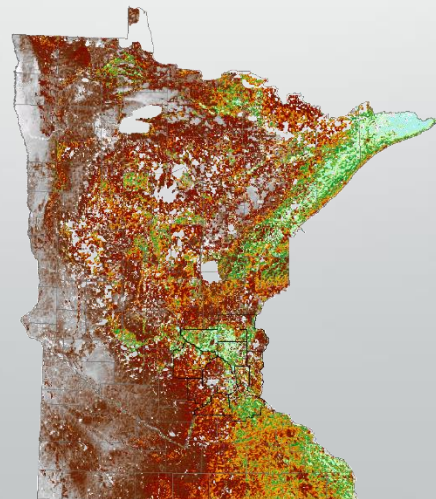
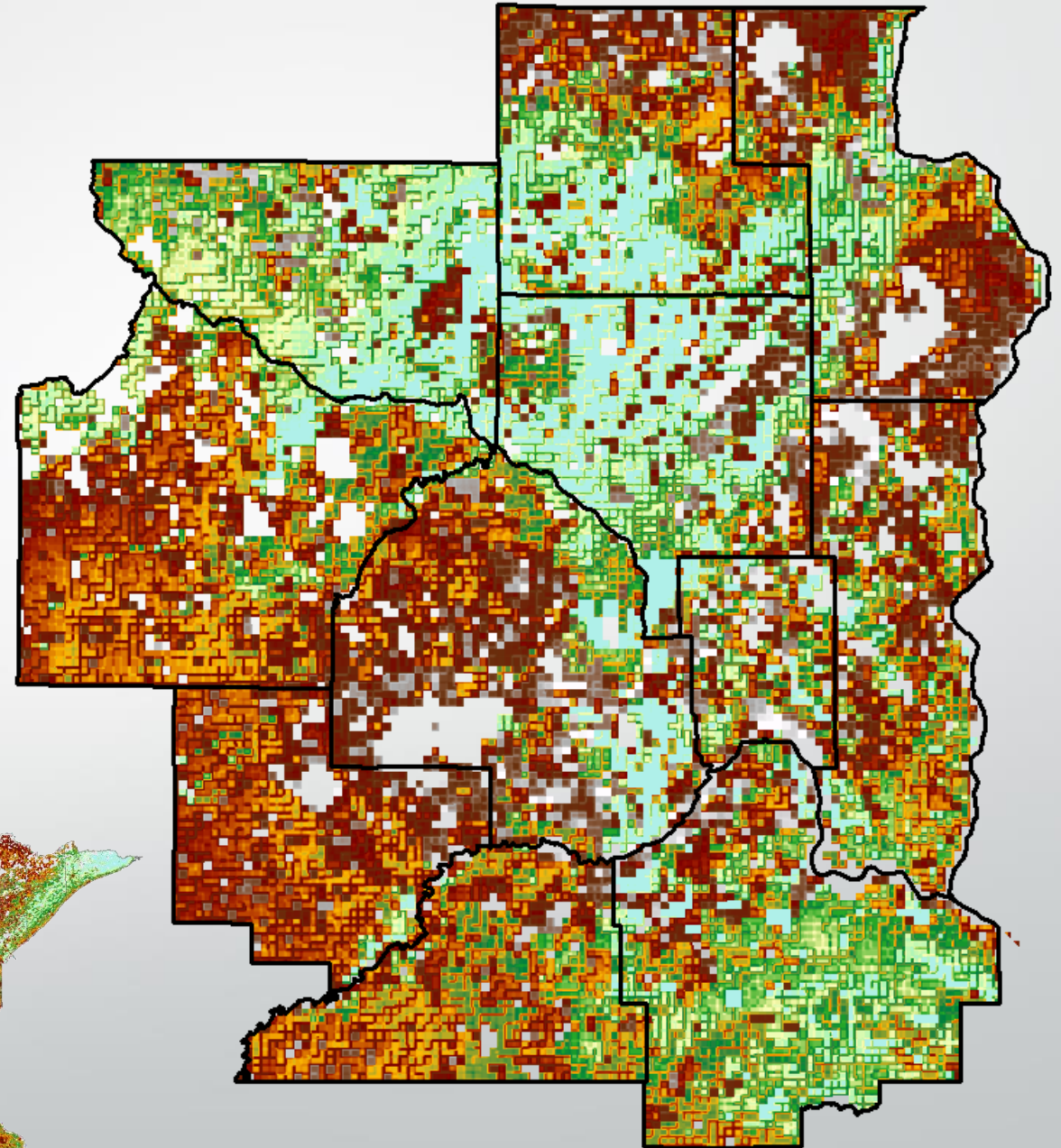


- Anoka County rivers flow, even during dry spells due to groundwater.
- Anoka County lakes exist where the groundwater table is above the ground surface.

# CRITICAL

*Anoka County is a major recharge area for metro aquifers.*

Green ... is good

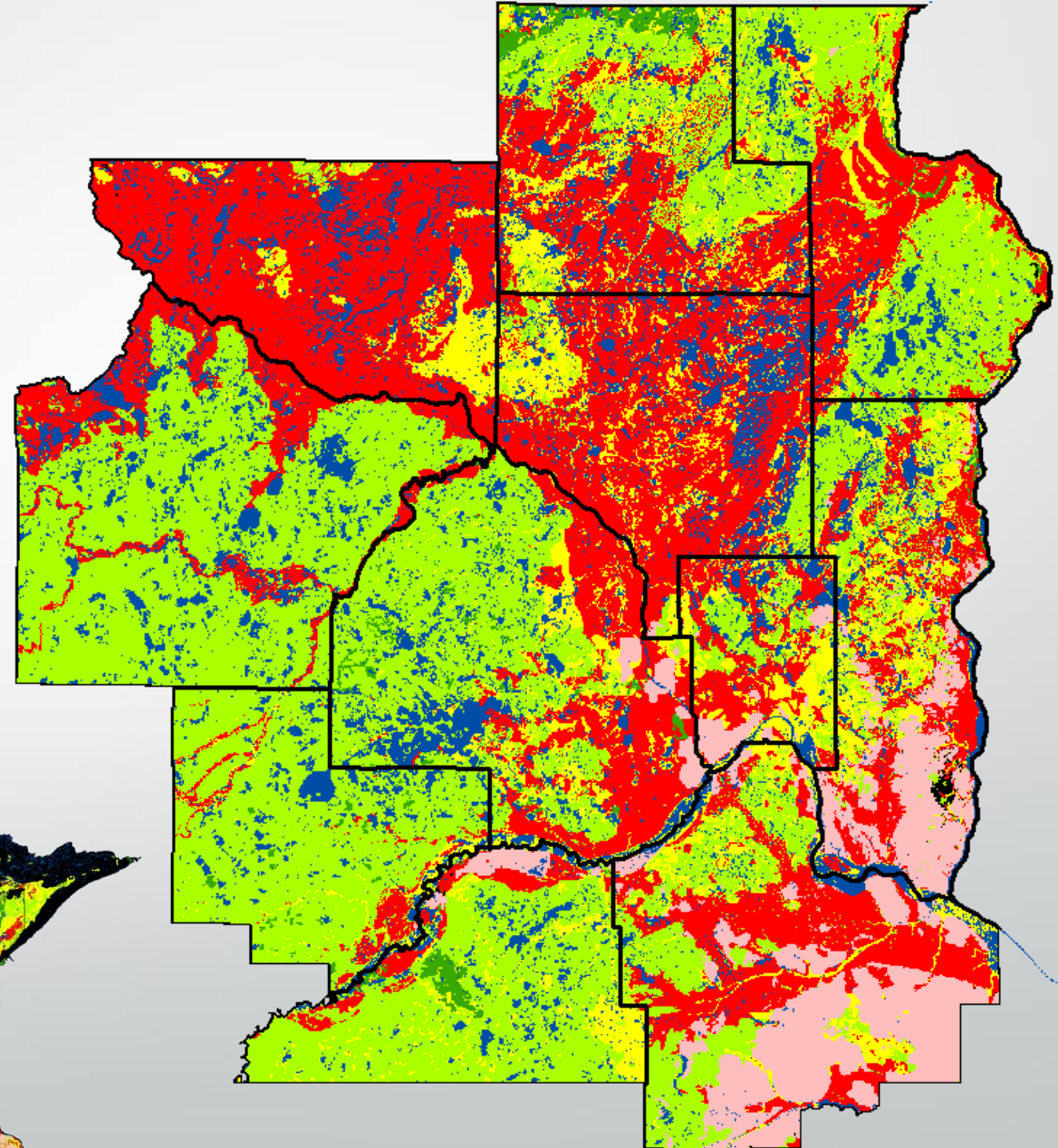
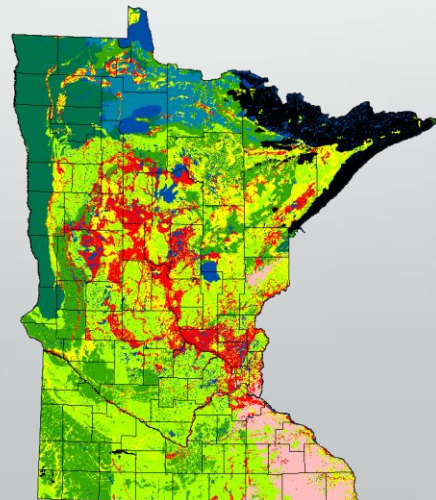




# VULNERABLE

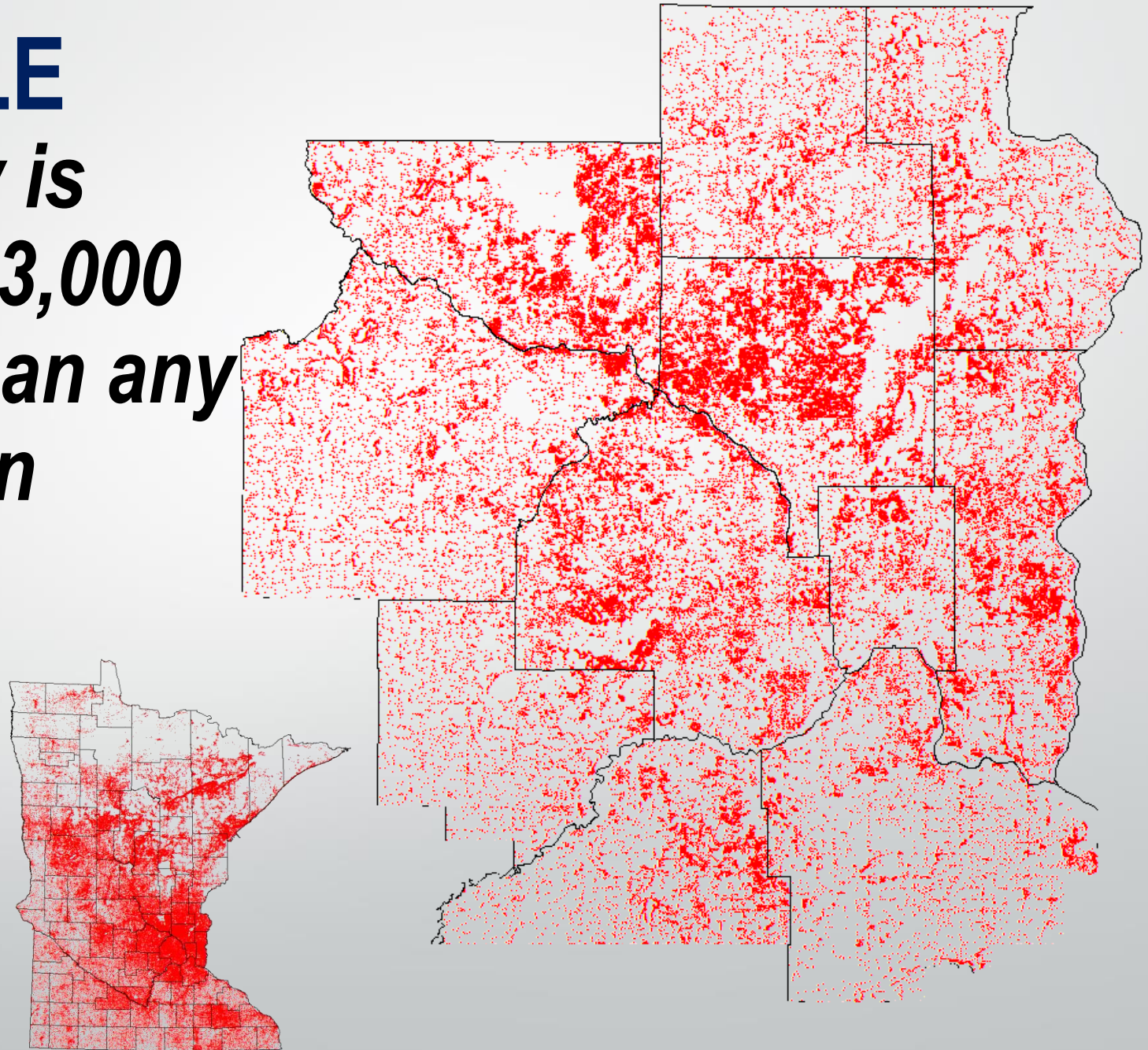
*Anoka County  
geology leaves  
groundwater highly  
vulnerable.*

Red... is bad



**VULNERABLE**  
*Anoka County is  
pierced with 53,000  
wells; more than any  
other county in  
Minnesota.*

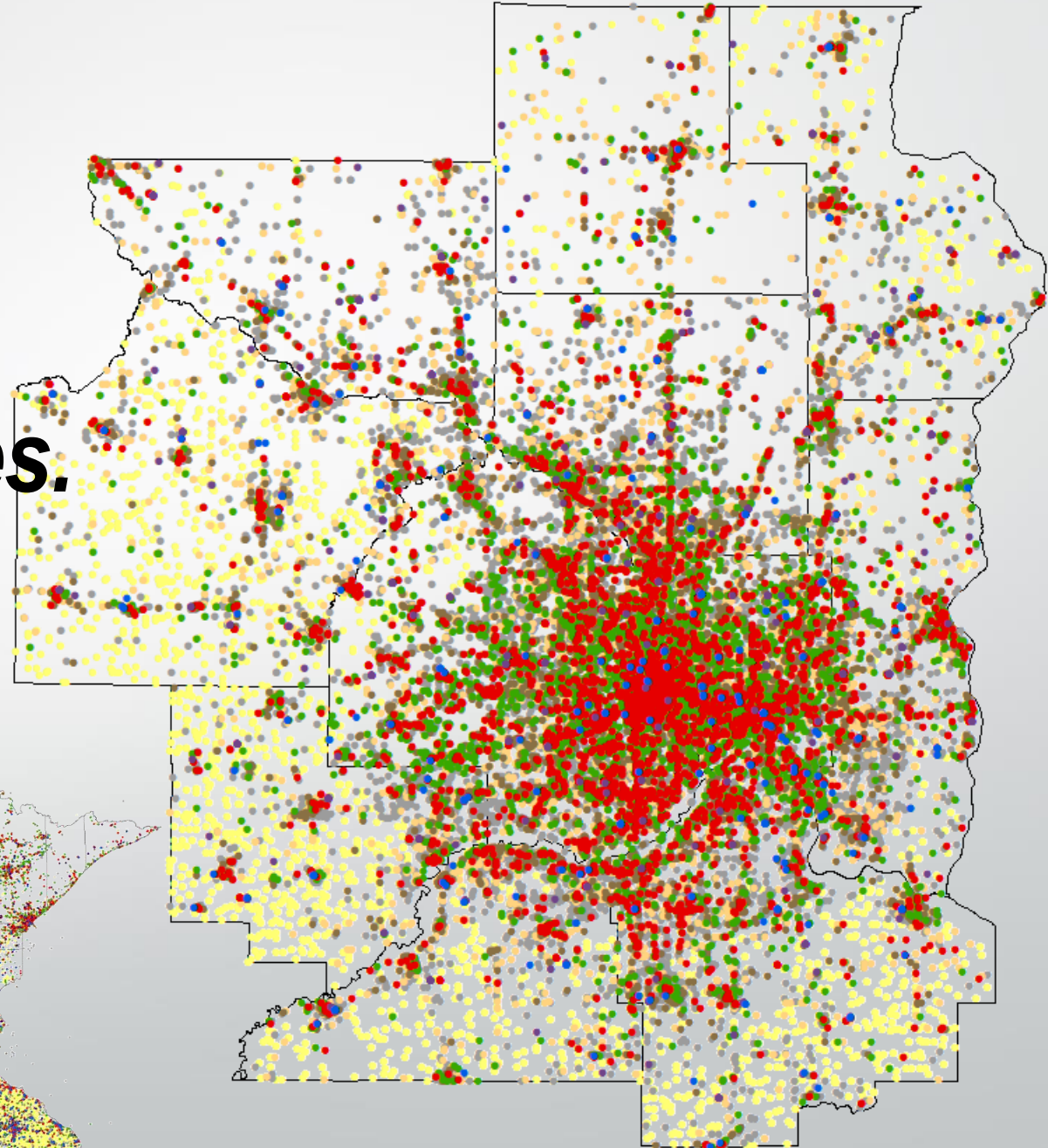
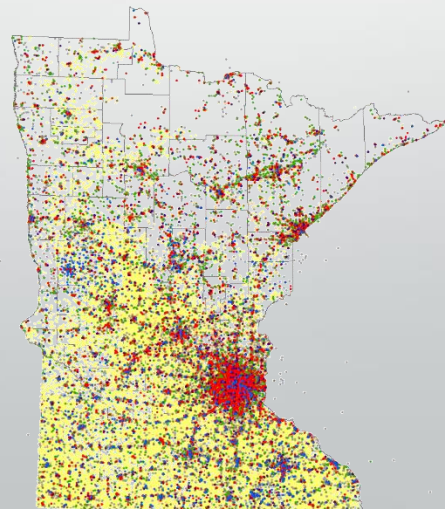
Each well can  
create a conduit  
for contaminants  
to reach deeper  
aquifers.



# VULNERABLE

## *Anoka County is littered with contaminant sources.*

- Solid Waste (small dumps)
- Failed Septic Systems
- Underground Tanks
- Investigations & Cleanup (leaks and spills)
- Multiple Sources
- Commercial Hazardous Waste
- Stormwater
- Feedlots

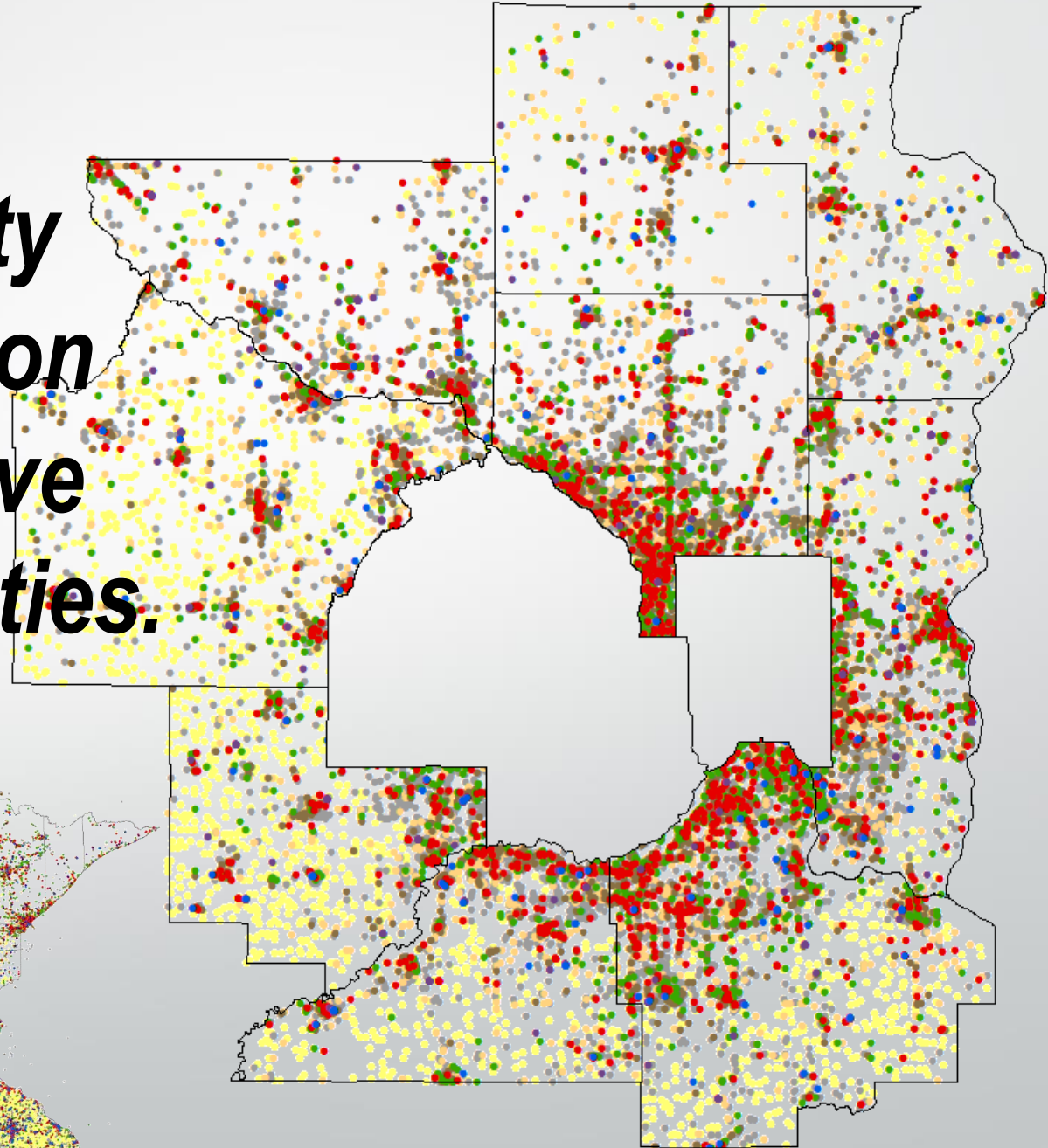
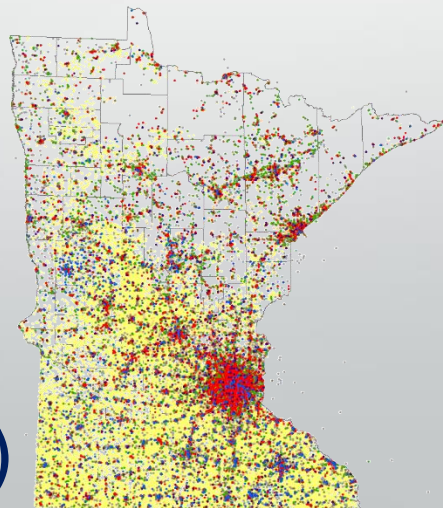


# VULNERABLE

***At 6,000, Anoka County has more contamination sources than all but five other Minnesota counties.***

Then add

- Household (129K) Hazardous Waste
- Non-Point Sources (e.g.: fertilizer, pesticide, road salt)



# VULNERABLE

*Contaminant types are multiplying faster than we can keep up.*

EPA struggles to keep its chemical inventory up to date

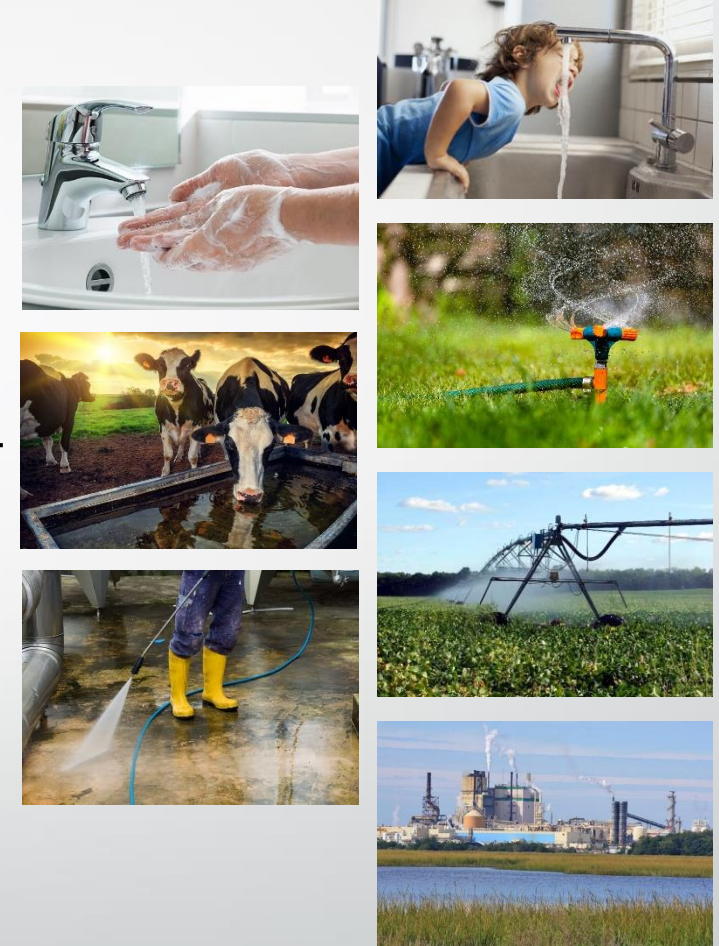
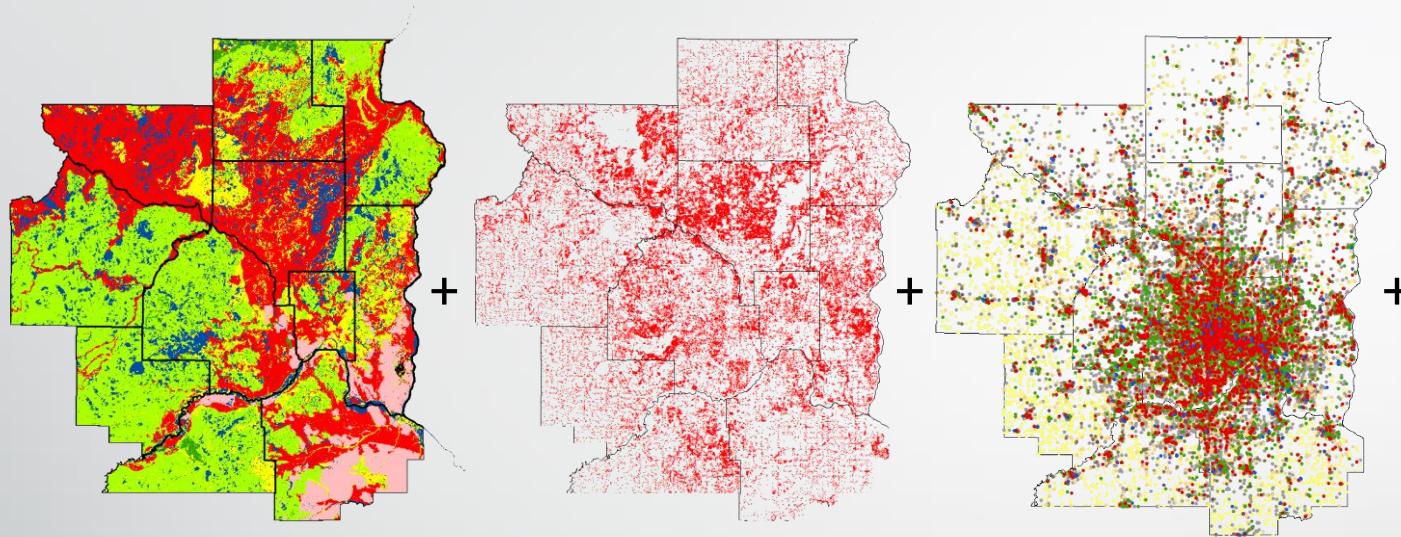
No one, **not even the Environmental Protection Agency, knows** how many chemicals are in use today. EPA has **more than 85,000** chemicals listed on its inventory of substances that fall under the **Toxic Substances Control Act (TSCA)**. But the agency is struggling to get a handle on which of those chemicals are in the marketplace today and how they are actually being used.

By [Britt E. Erickson](#)



- Nitrate
- Bacteria
- Salts
- Pesticides (herbicide, insecticide, rodenticide, fungicide)
- Toxins
- Heavy metals
- Manganese
- Arsenic

# VULNERABLE



## *Anoka County calculus...*

Natural geologic  
vulnerability

+

Pierced with  
53,000 wells

+

6,000 sources of  
contamination

+

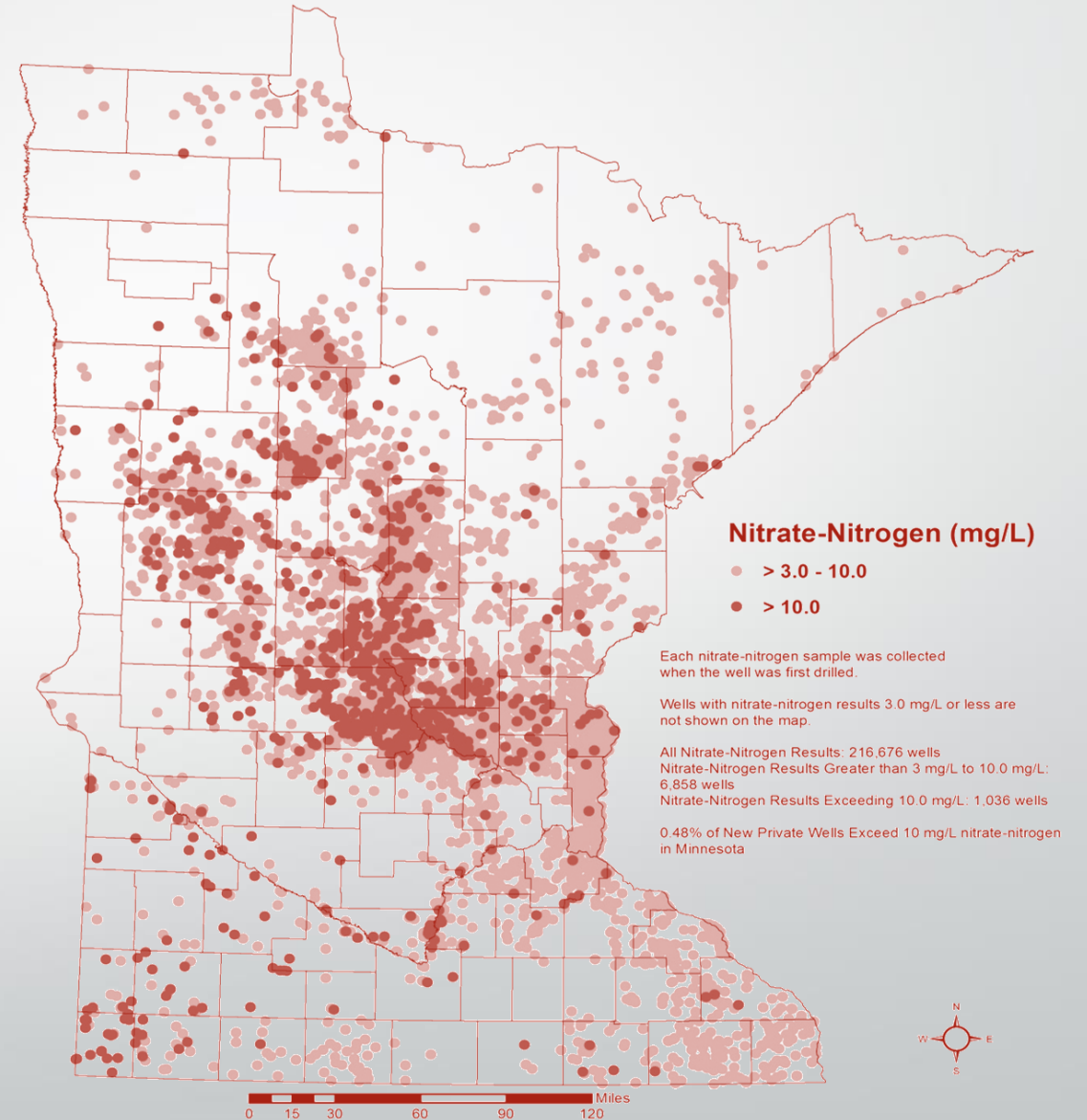
367,000 people and  
all of their needs

# DETERIORATING

*Private well nitrate contamination is on the rise.*

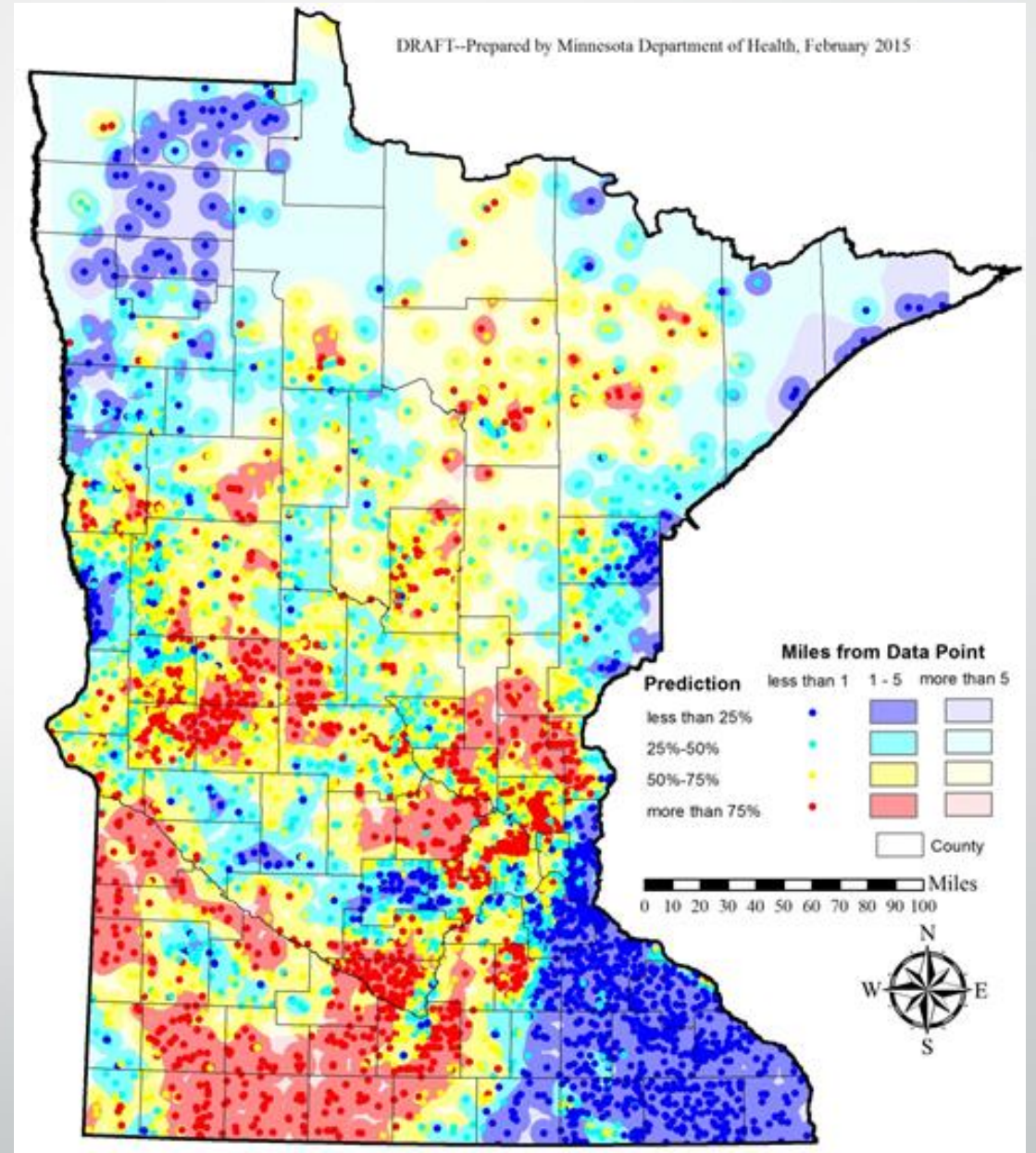
Red... is bad

Nitrate-Nitrogen in New Private Wells (February 1991 - March 2016)



# DETERIORATING *Likelihood of Manganese contamination.*

Red... is bad (>75%)

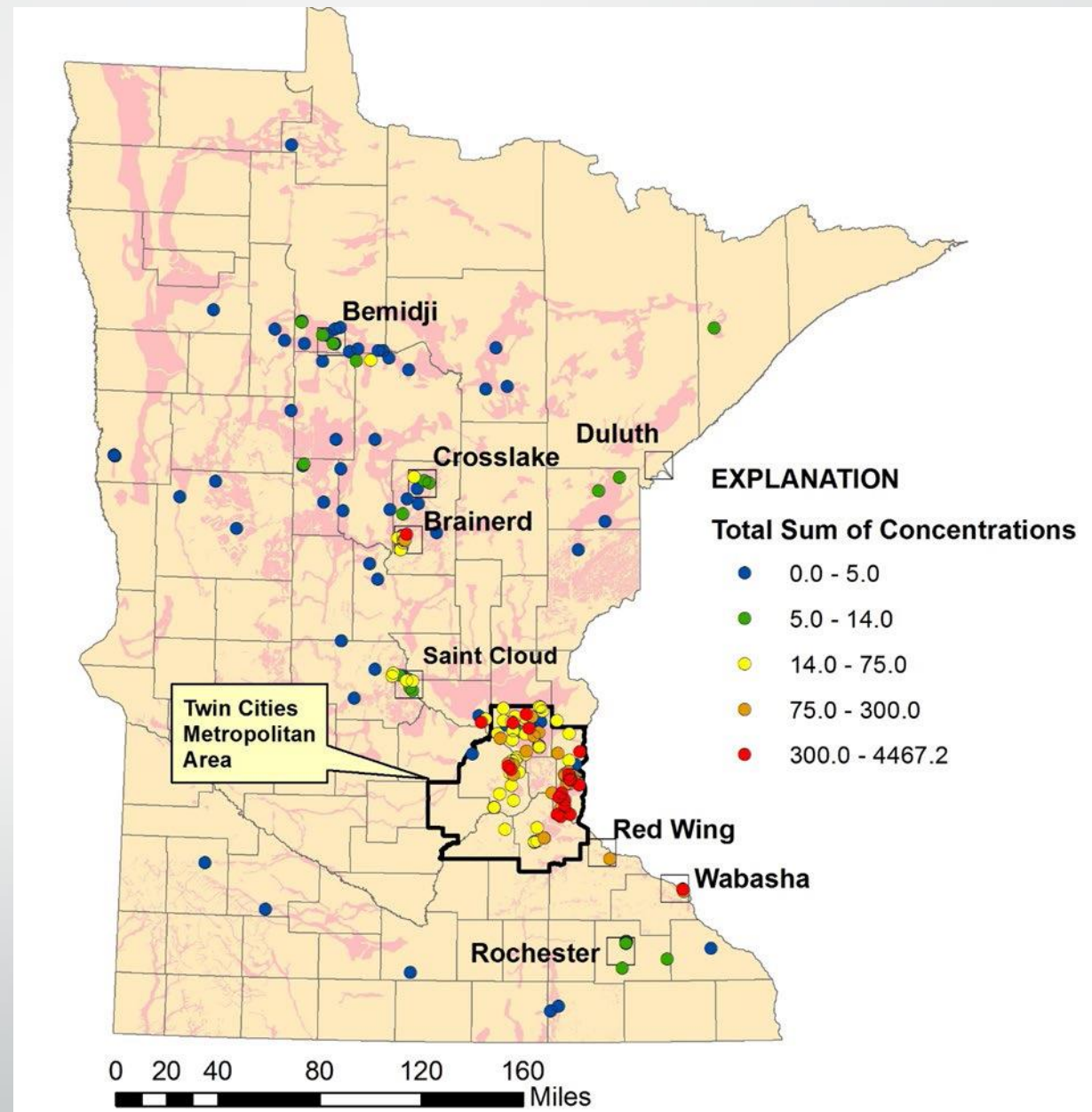




# DETERIORATING “Forever” chemicals are emerging.

Perfluoro-chemicals  
(PFAs) concentrations  
are on the rise.

Red... is bad

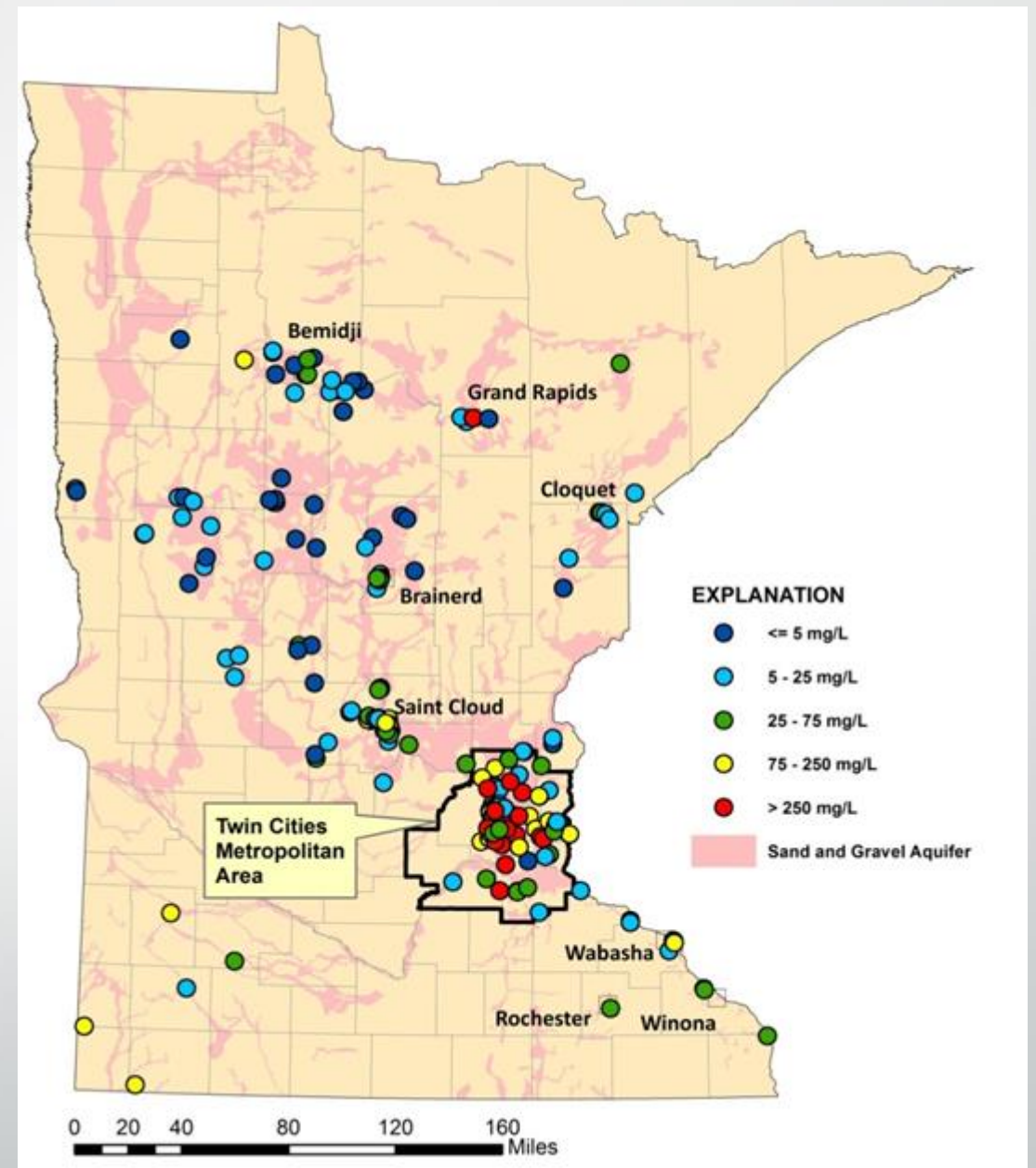


# DETERIORATING

Also “forever,”  
Chloride is  
*accumulating.*

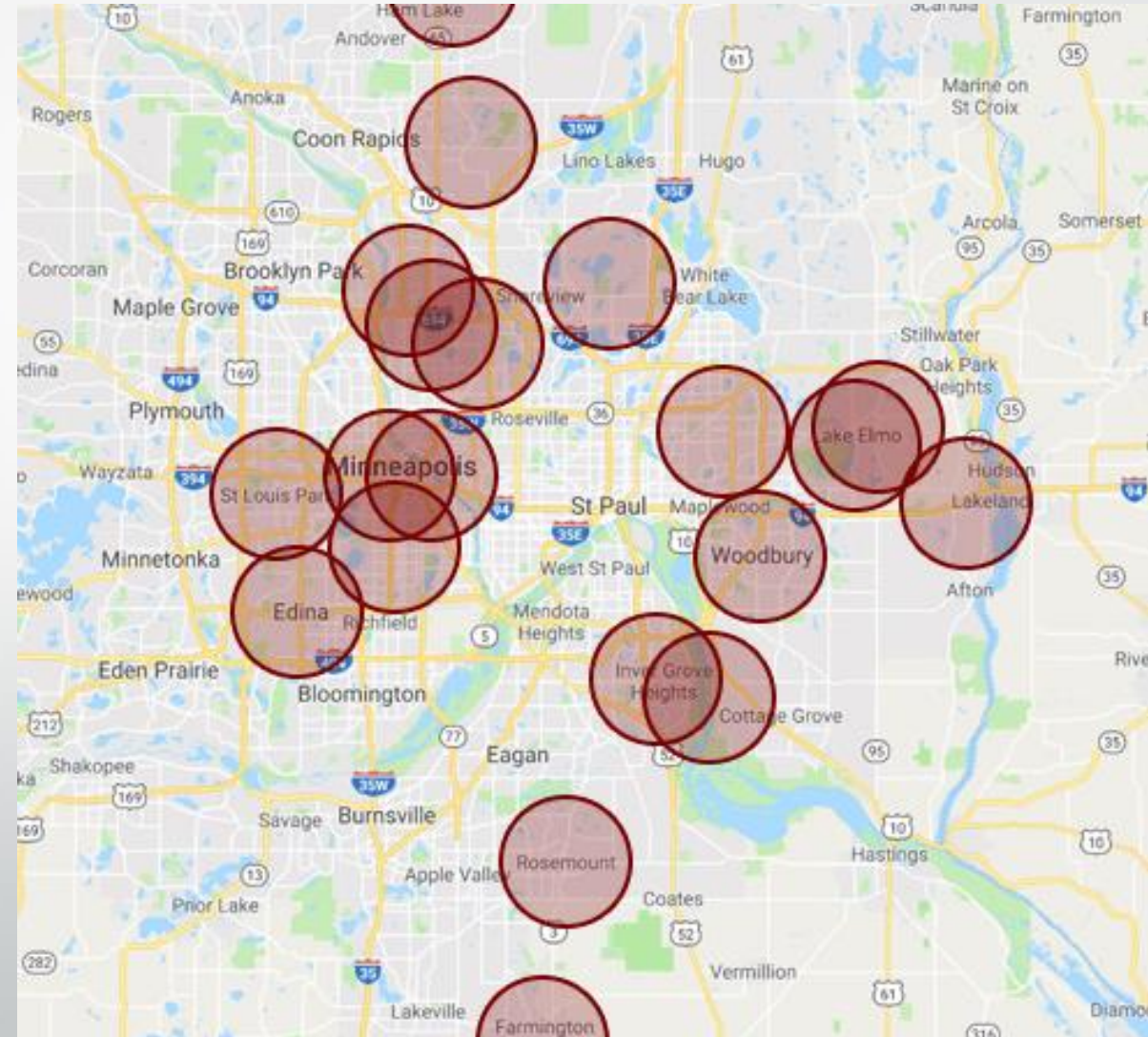
Chloride occurrences and concentrations are increasing.

Red... is bad



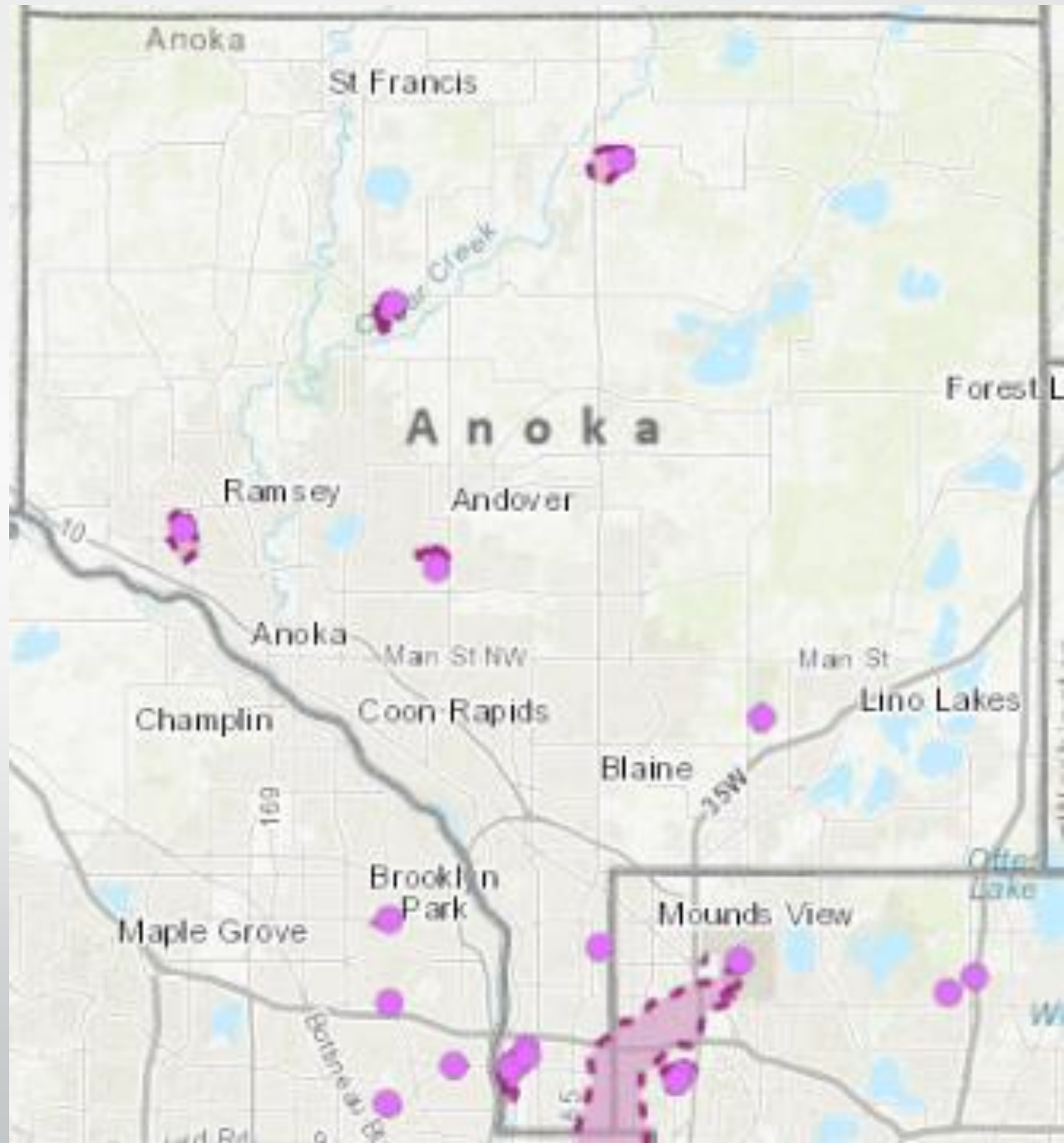
# DETERIORATING *Contamination plumes pock mark the metro area.*

- 1,2-Dichloroethane
- Arsenic
- Benzene
- Ethylbenzene
- Pentachlorophenol
- Perfluoro-chemicals
- Polycyclic aromatic hydrocarbons
- Polyvinyl chlorides
- Tetrachloroethene
- Toluene
- Trichloroethylene
- Volatile organic carbons
- Xylene



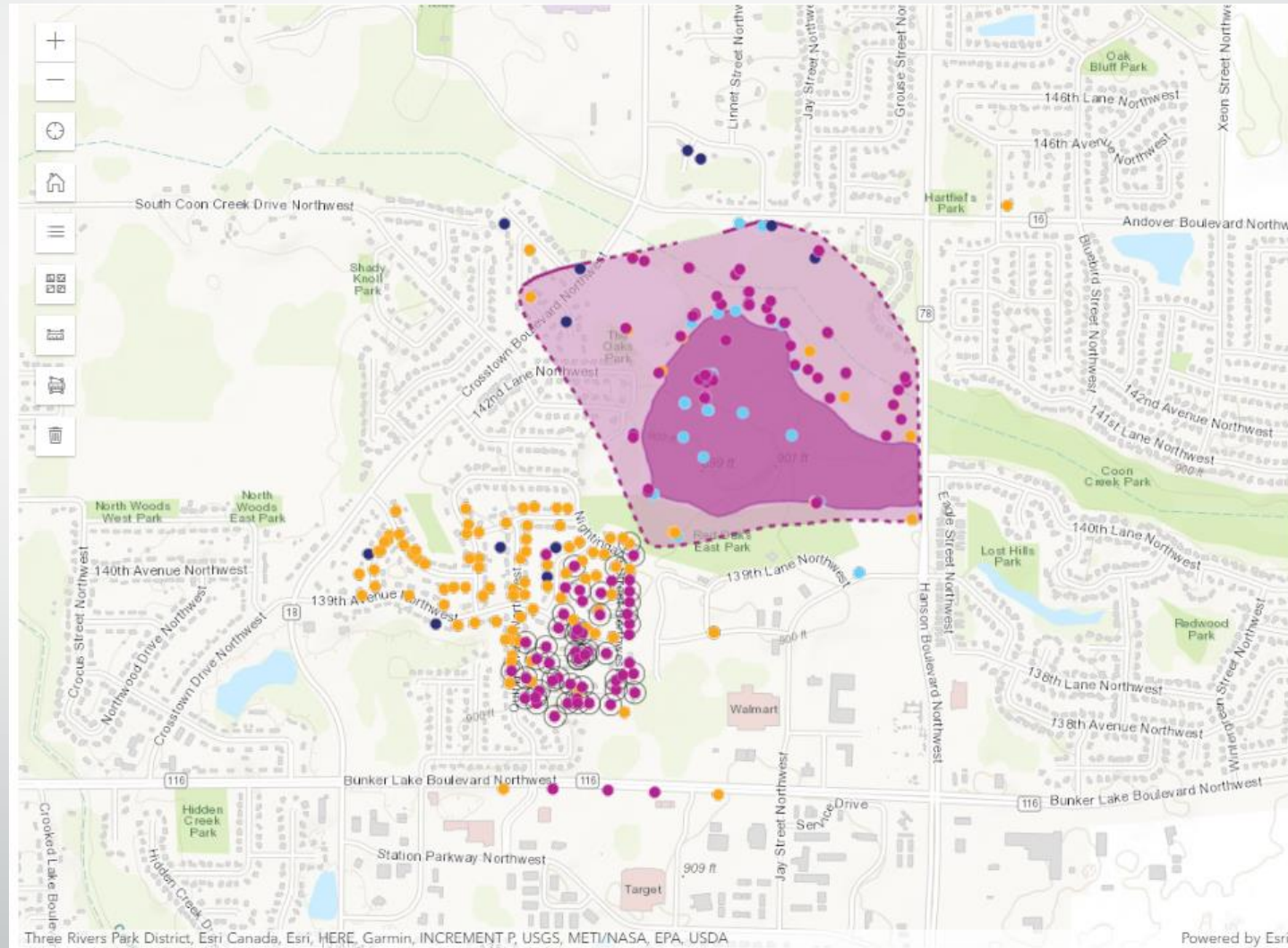
# DETERIORATING

*Every landfill and then some have contaminant plumes.*



# DETERIORATING

## *Landfill plume: Andover*



# DETERIORATING

## Areas Where Groundwater Pumping is Likely to Directly Impact Surface Water Features

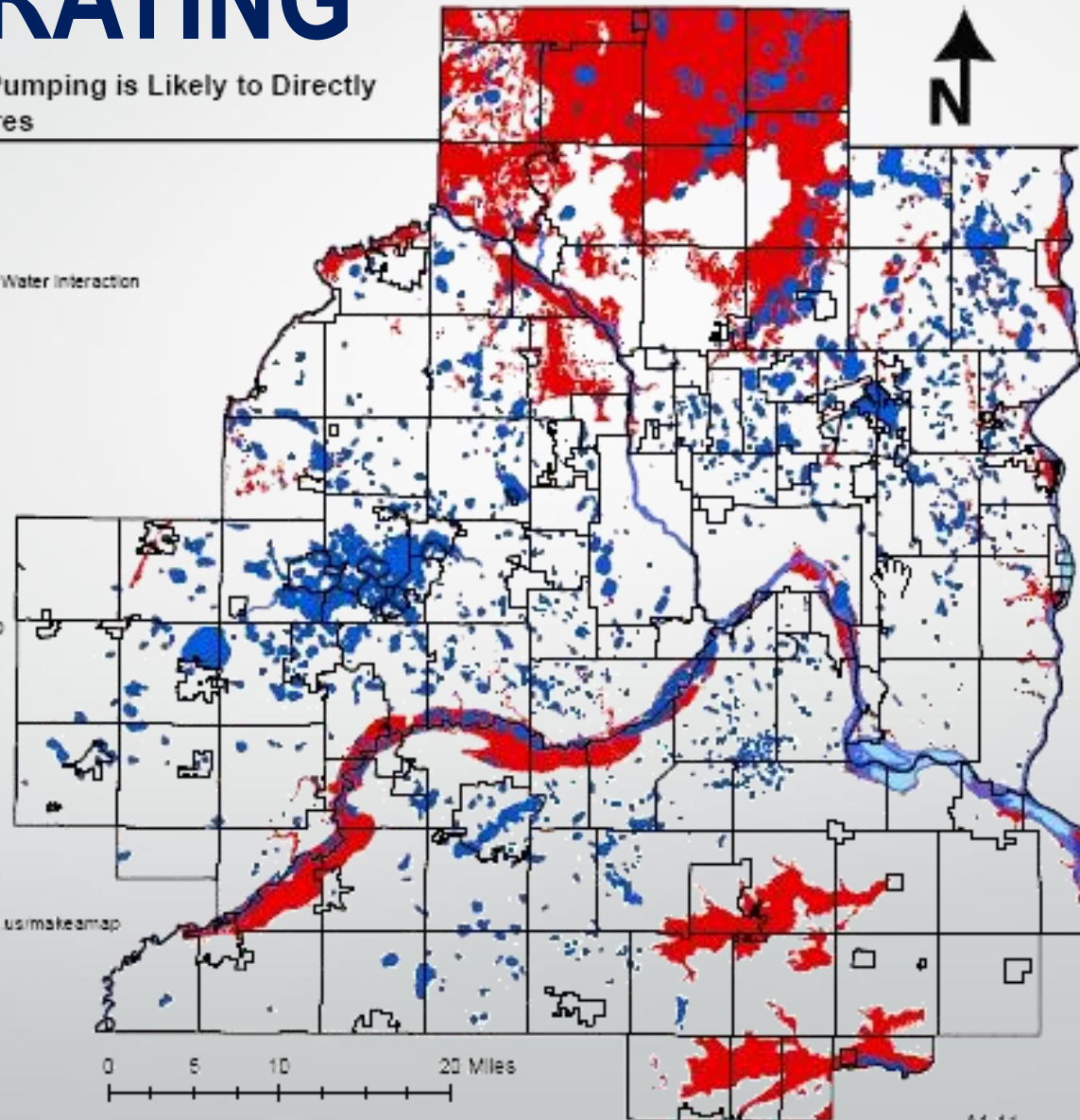
- City & Township Boundaries
- Rivers
- Lakes
- High Potential for Groundwater-Surface Water Interaction

Note: This map was created through a regional assessment of geologic and water table conditions. Additional areas of groundwater and surface water interaction may exist due to local conditions. This map highlights areas where bedrock aquifer pumping is most likely to impact surface water resources.

Red... is bad

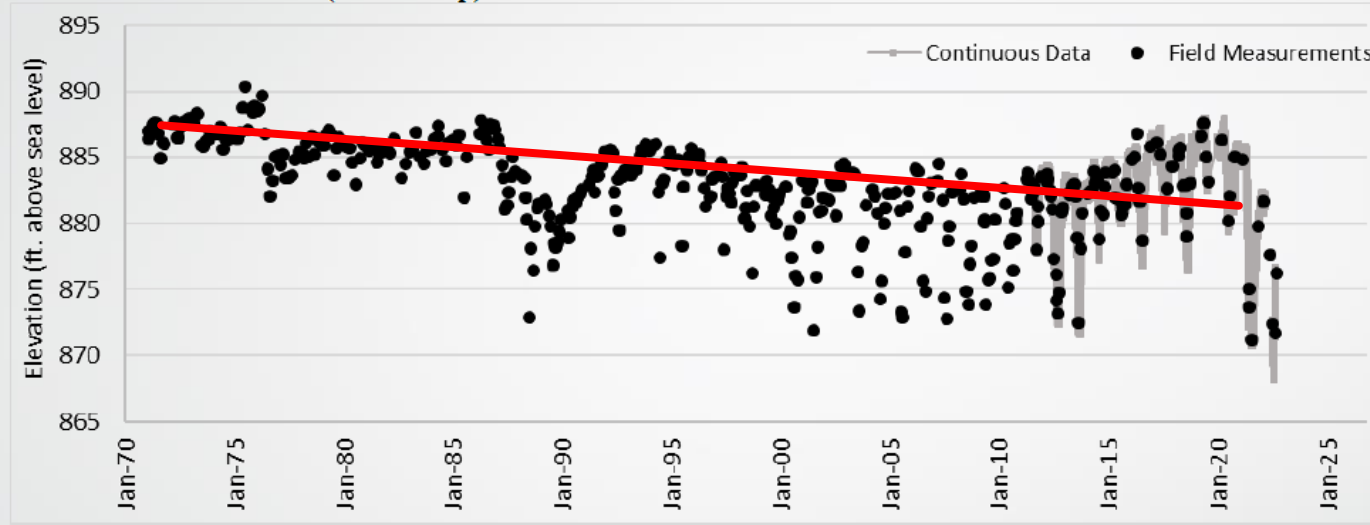
Metropolitan Council, 2/13/2009  
View datasets online at <http://gis.metro.state.mn.us/makeamap>

Source:  
Metropolitan Council

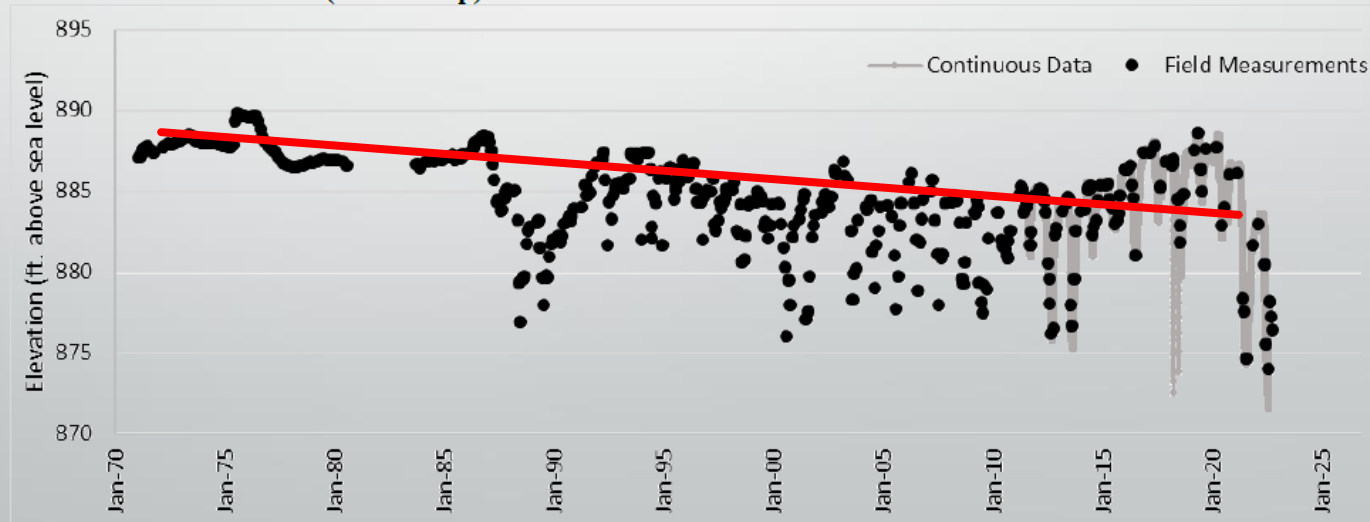


# DETERIORATING

Observation Well #2007 (270 ft deep)—Lino Lakes



Observation Well #2009 (125 ft deep)—Lino lakes



# DETERIORATING

2050 Model-projected Drawdown in Water Table Aquifers  
Where Groundwater Pumping is Likely to Directly Impact  
Surface Water Features

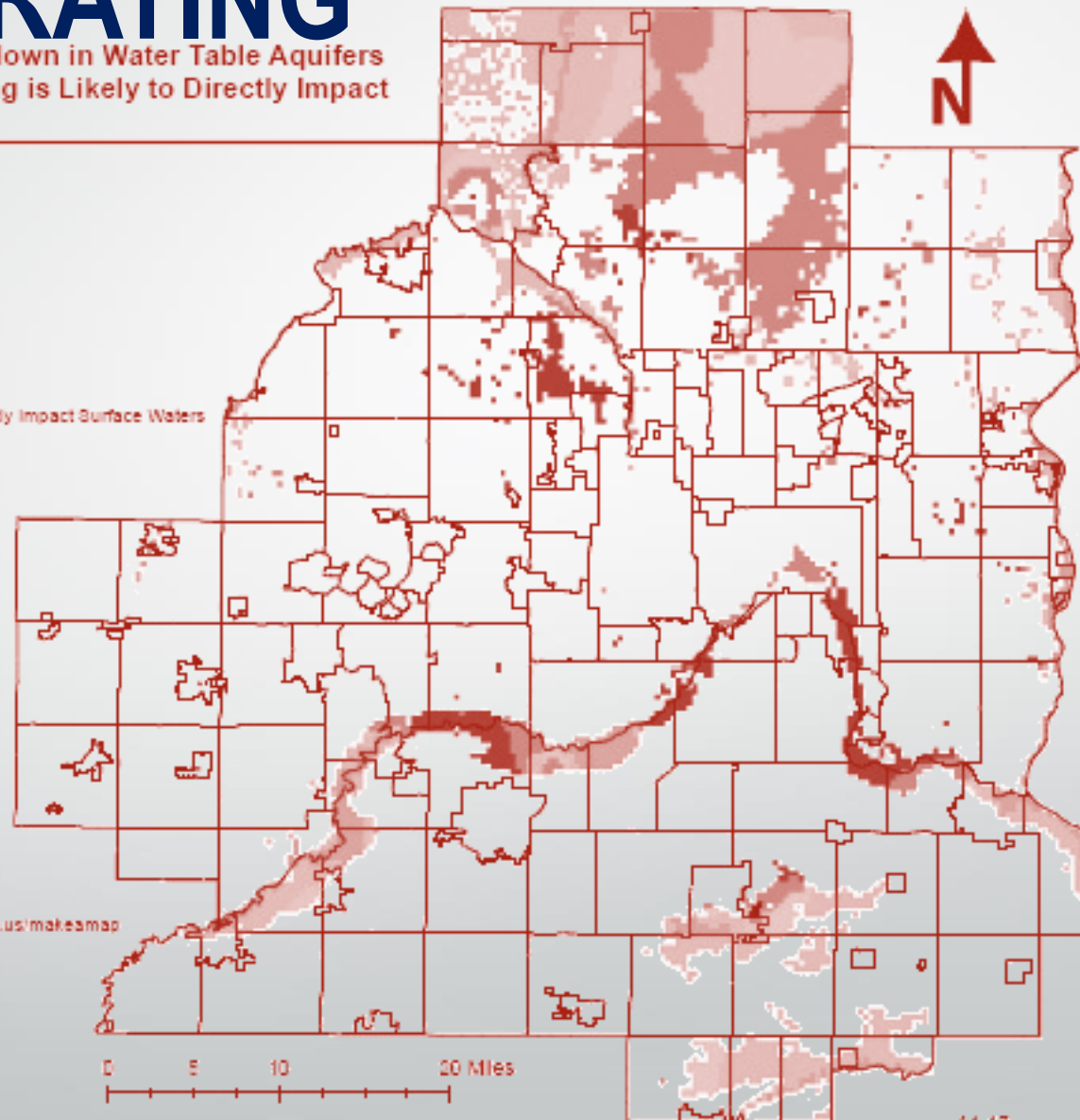


Note: These model results assume long-term average conditions and continued development of traditional water supplies. Summer conditions may exacerbate short-term drawdown.

Red... is bad

Metropolitan Council: 6/26/2009  
View datasets online at <http://gis.metc.state.mn.us/makeamap>

Source:  
Metropolitan Council



December 2009

A1-17



# COMPLICATED

## *Groundwater management is complicated.*

- Groundwater is hard to observe
- Groundwater data and analysis expertise is scarce
- Aquifer recharge areas span several counties
- Groundwater time scales are long
- Groundwater can't be treated in place

# COMPLICATED

*Groundwater flows; up, down, and sideways.  
How fast and along what paths?  
We're mostly guessing.*



# COMPLICATED

## *Groundwater flow is impacted by:*

- topography (hills, valleys, steepness)
- geologic properties and barriers (areas of rock or clay)
- natural hydrologic features (rivers and lakes),
- changes in recharge (pavement, ditching, infiltration basins)
- pumping from wells.

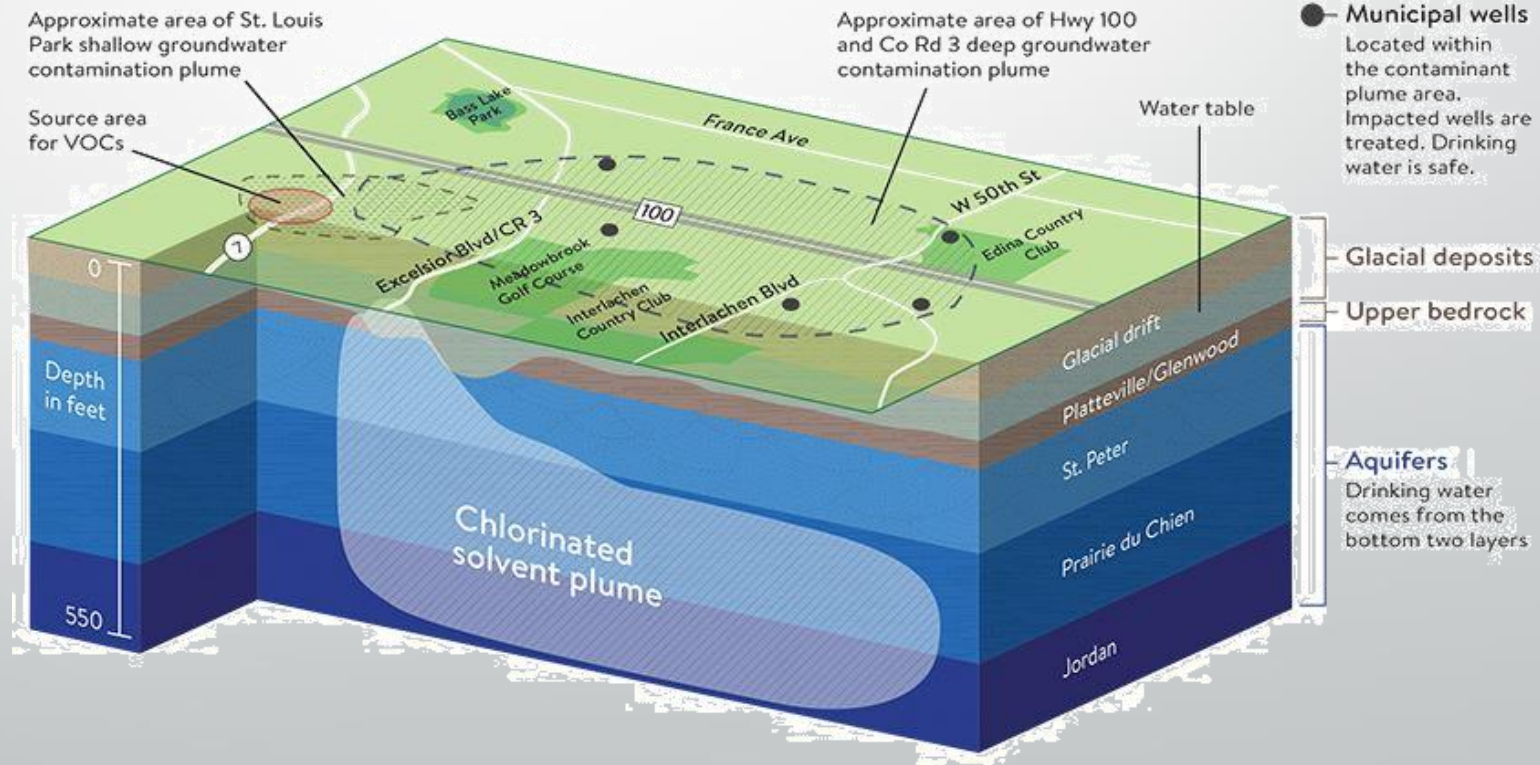


# COMPLICATED

## *Contamination plumes go with the flow*

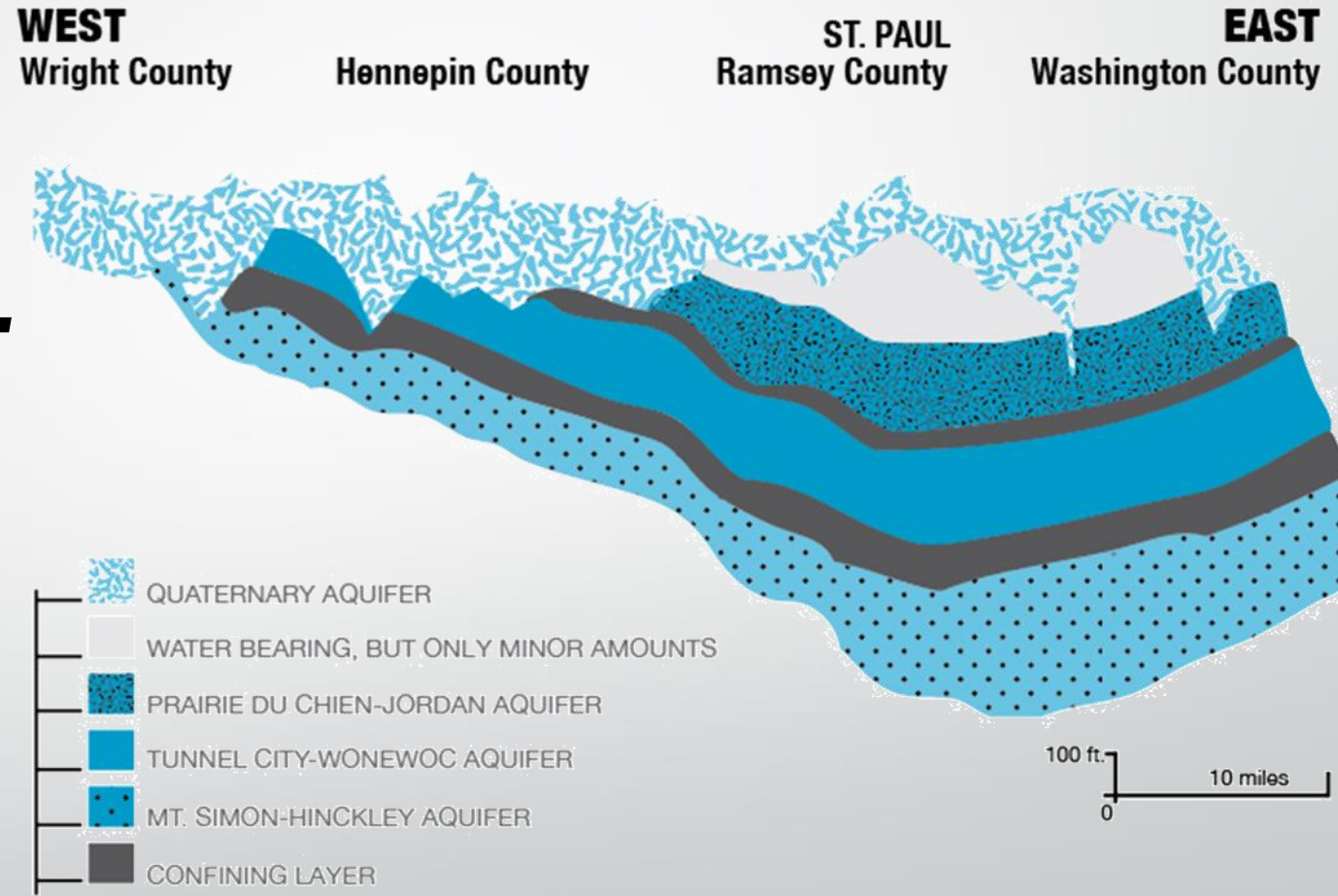
When groundwater contamination is found, it must be pumped and treated to prevent it from spreading.

Highway 100 and County Road 3 groundwater contaminant plume

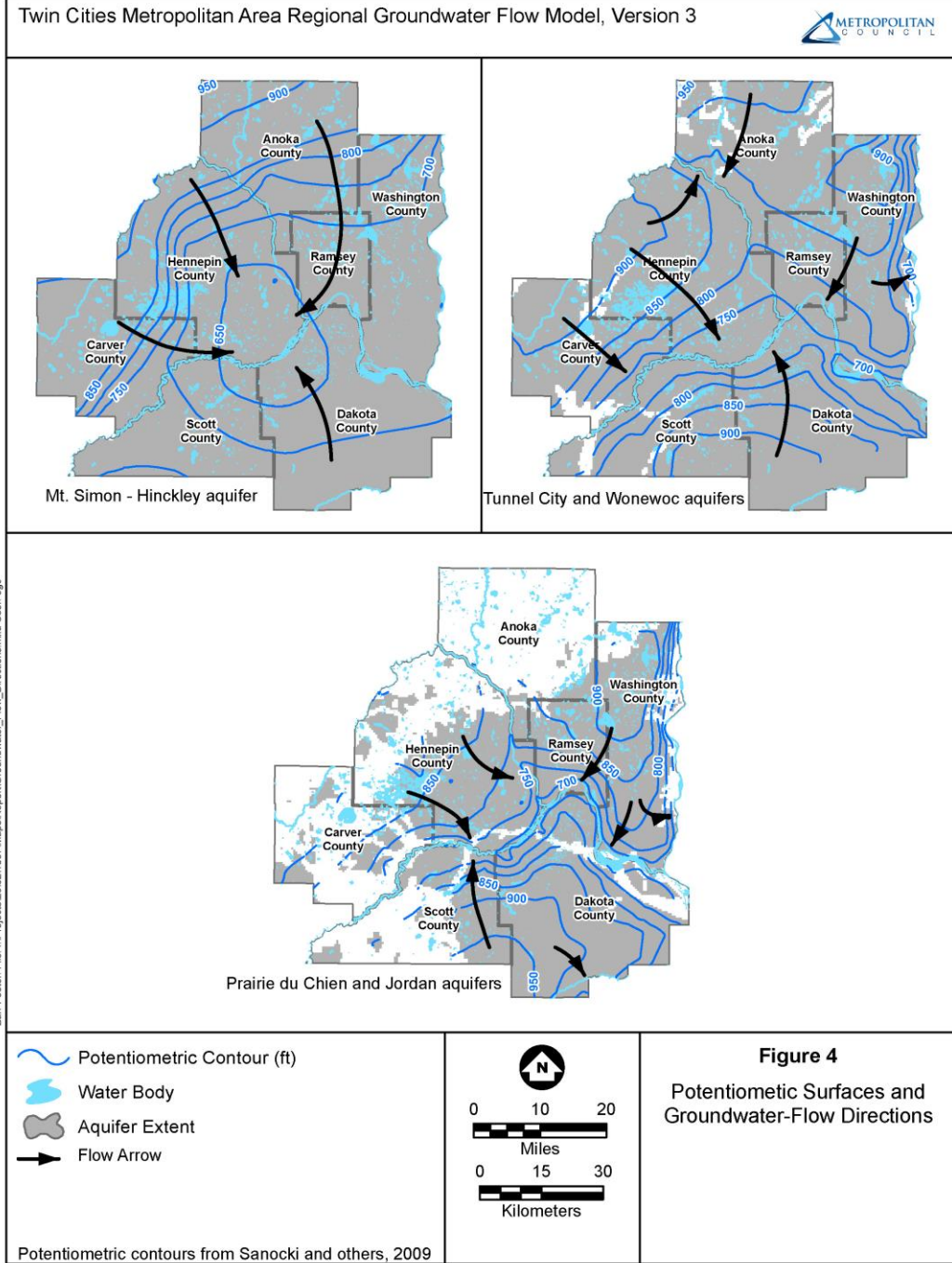


# COMPLICATED

*Groundwater aquifers are in contorted layers.*

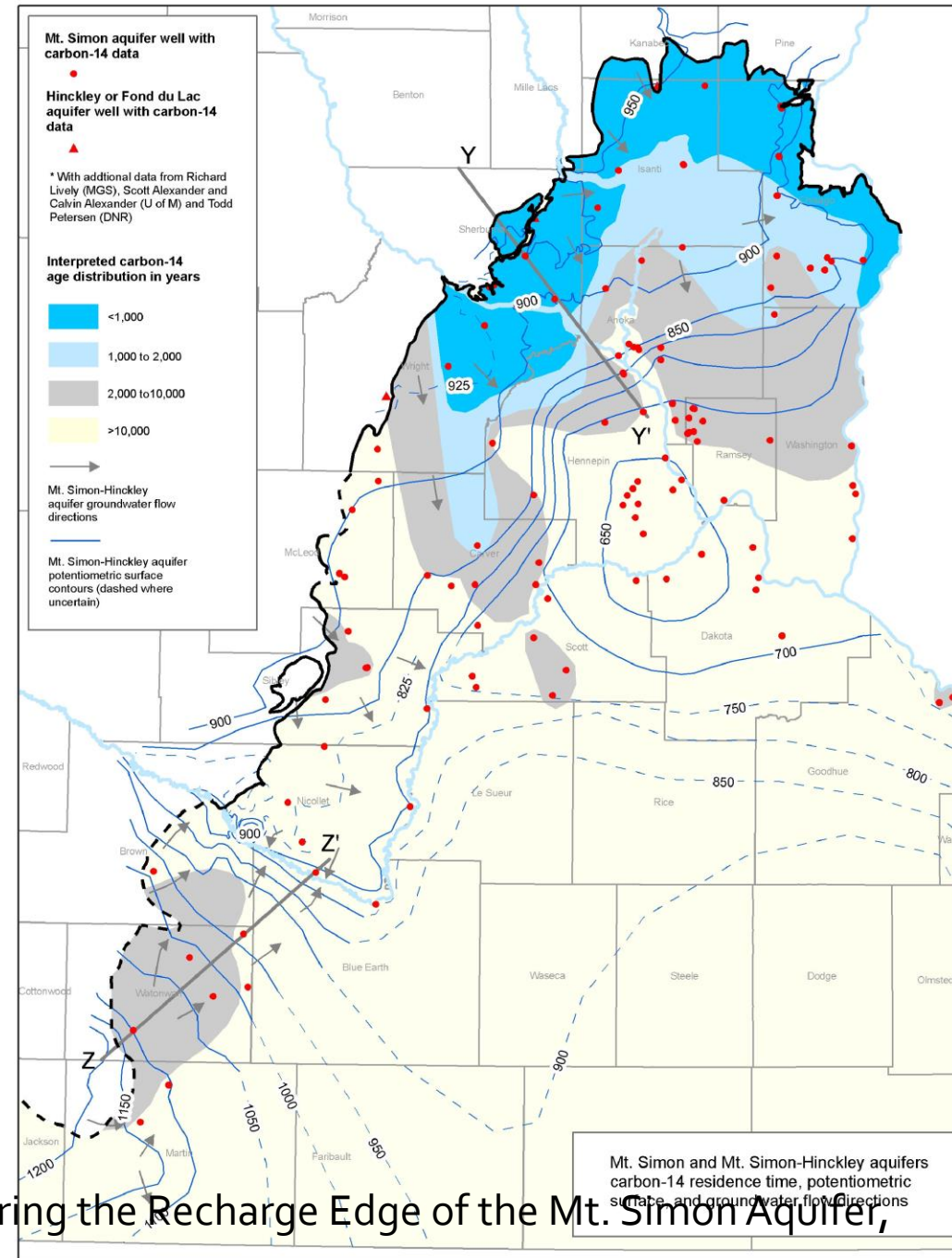


**COMPLICATED**  
*Flow patterns to each aquifer are unique, with shallow aquifers influenced by surface river systems.*



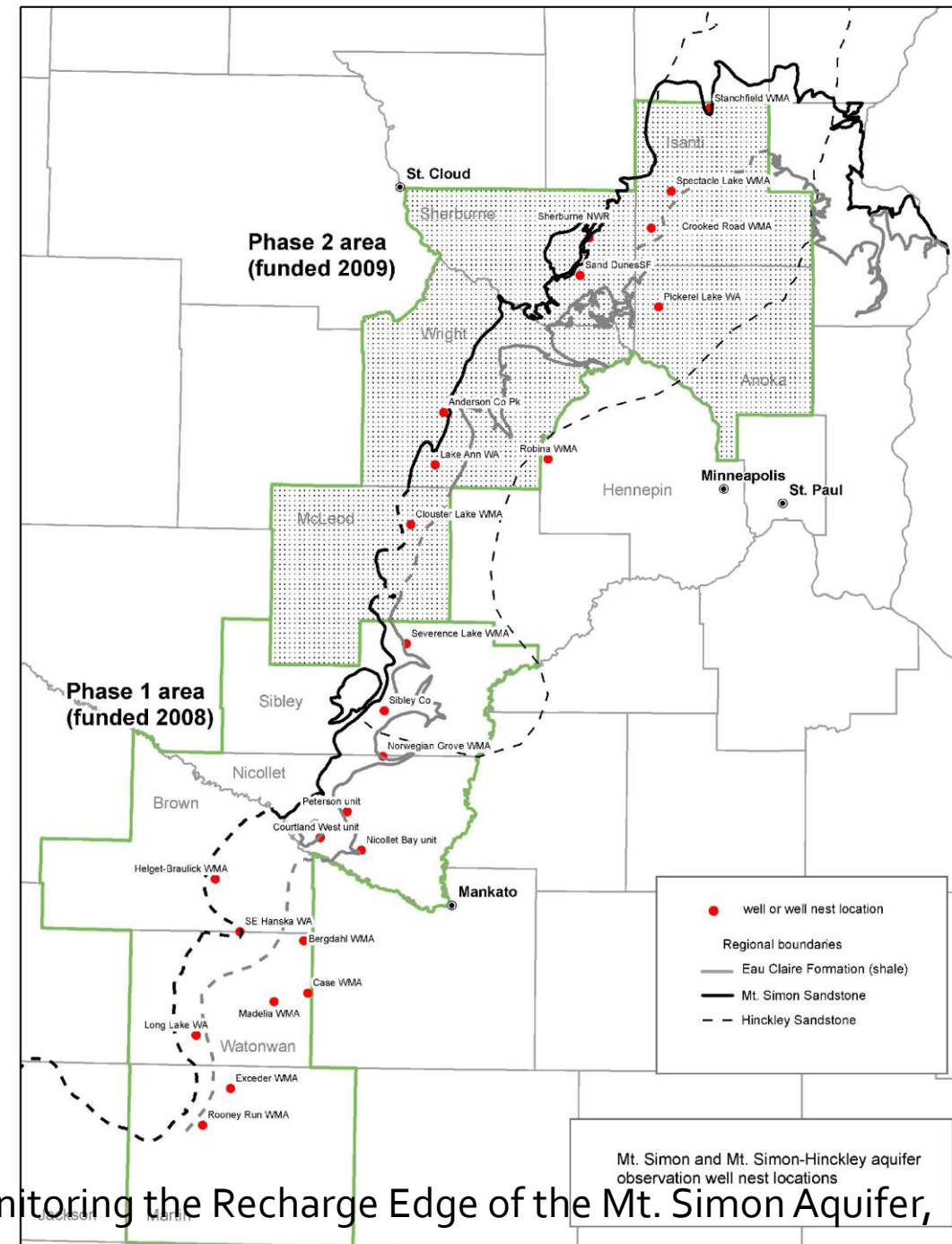
# COMPLICATED *Mount Simon- Hinckley Aquifer*

Mt. Simon water is 100s to 30,000+ years old. This irreplaceable pristine water supply should be used judiciously and prioritized for drinking water.



# COMPLICATED *Mount Simon- Hinckley Aquifer*

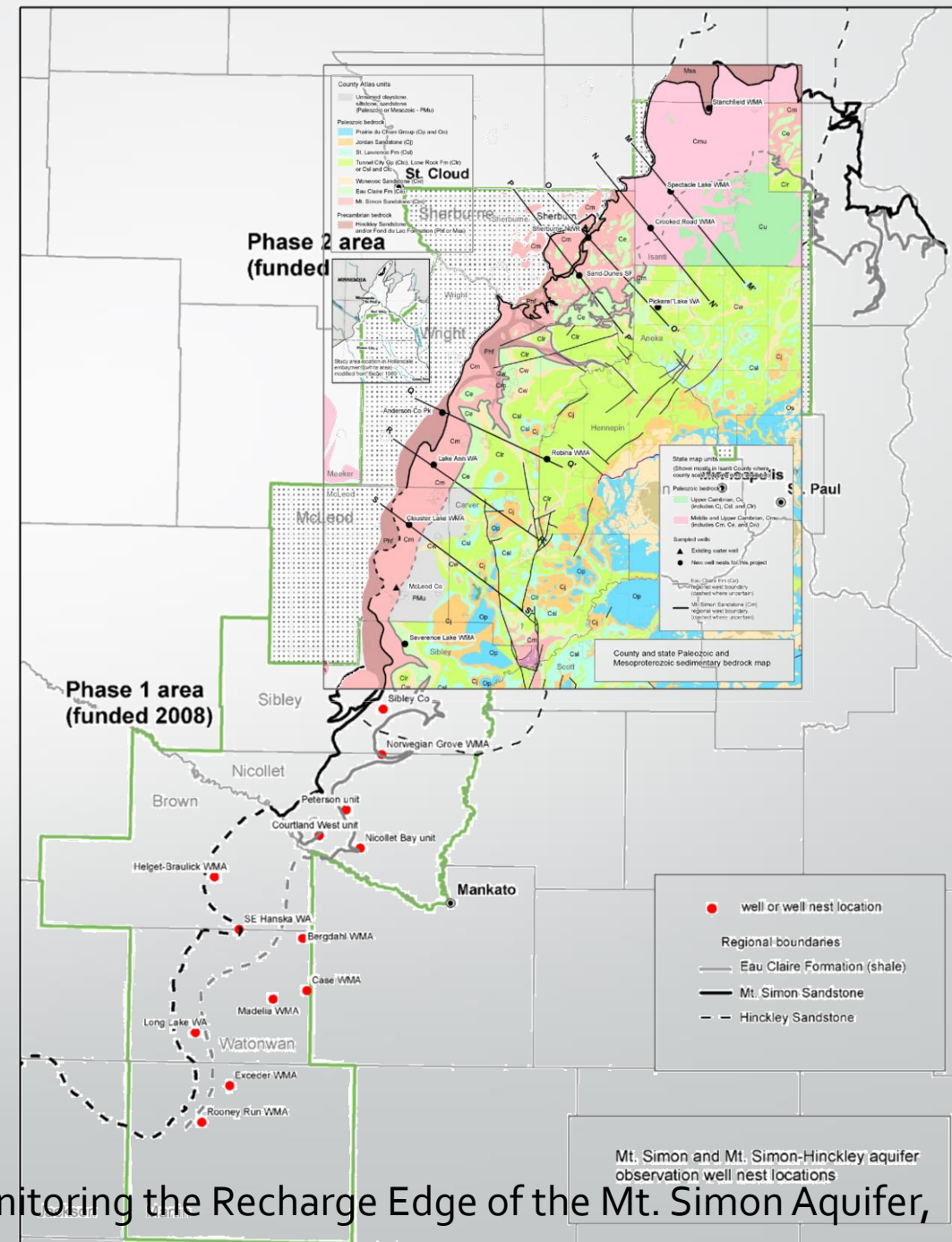
“The most critical recharge area for the MSH aquifer and Mpls-St. Paul metro area water supply includes portions of Wright, Sherburne, and Isanti counties. Protection of this region from water pollution should be a high priority for all levels of government.”





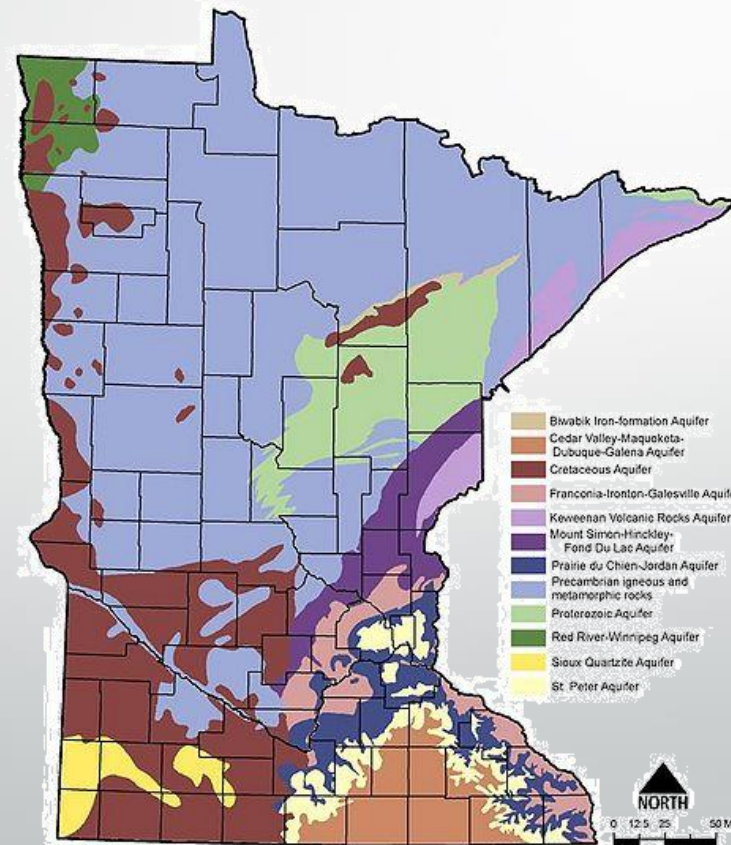
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# COMPLICATED

*Surface watersheds are nothing like ground-watersheds.*



October, 2005  
Sources: *MSS* (major aquifers from *Minnesota's Bedrock Hydrogeology* by Roman Kanivetsky, 1979. GIS data available at <http://www.lmrc.state.mn.us/chouse/metadata/hydrogeo.html>), *DNR* (GIS data available at <http://dot.dnr.state.mn.us/>)

Basins and Major Watersheds in Minnesota





# ACD GROUNDWATER SPECIALIST

## *What we could get done.*

### Leadership & Coordination:

- Liaison with state agencies
- Well-head and source water protection workgroup
- Data analysis and interpretation with targeted advisories
- Multi-county aquifer recharge area coordination
- Rapid response planning and coordination
- Private well testing program

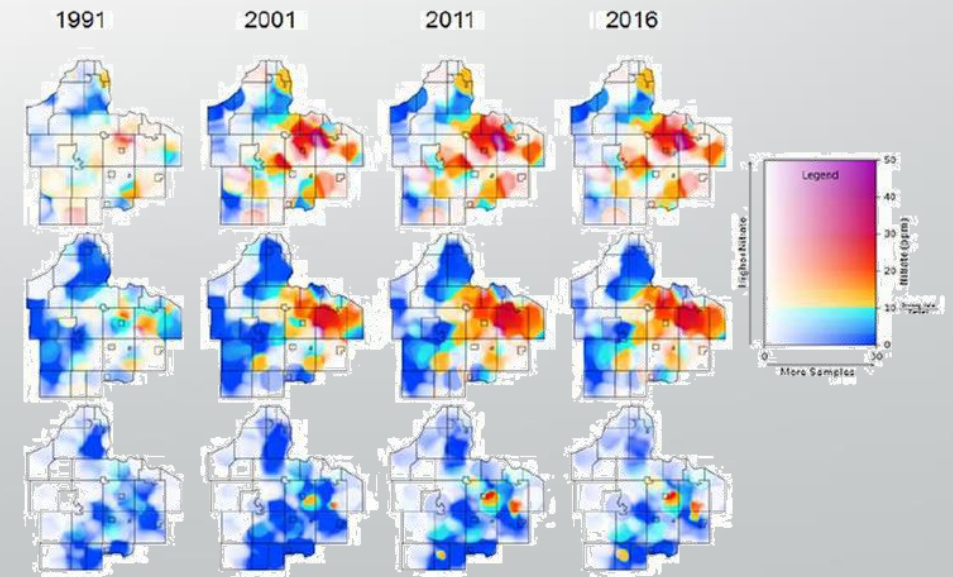
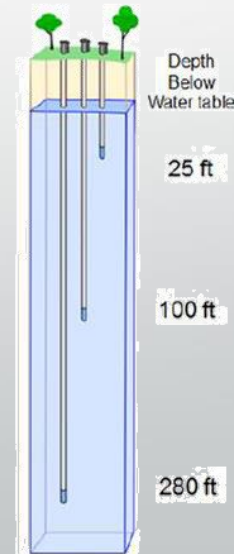
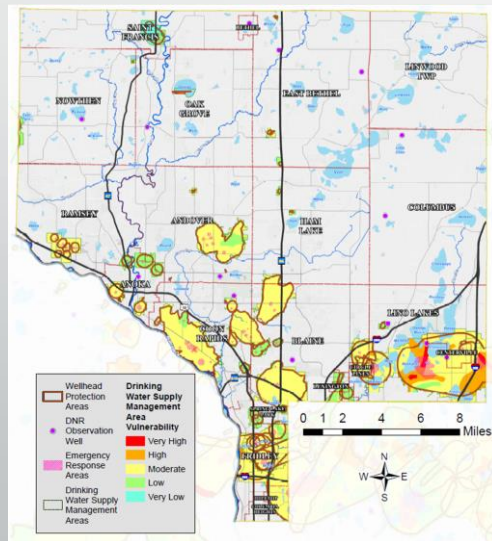
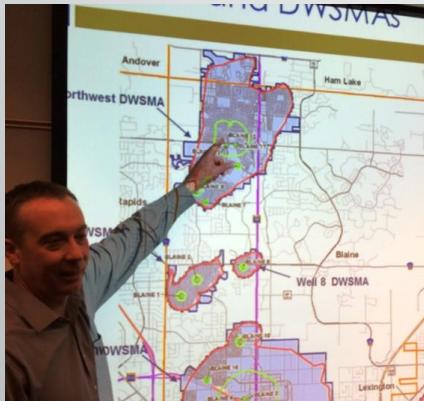


Figure 13 Nitrate concentrations over time and depth (yellow-red are nitrate levels > 10 mg/L)

A screenshot of the Anoka County Minnesota website. The header includes the Anoka County logo and the text 'Anoka County MINNESOTA Your Government Departments Services Business'. The main content area is titled 'Well Water Testing' and includes a sub-section 'Saving Our Groundwater'. The text describes the Anoka County Public Health and Environmental Services Department's role in helping residents protect their drinking water. A small image of a glass of water is shown on the right side of the page.

2020-2030 Dakota County Groundwater Plan

# ACD GROUNDWATER SPECIALIST

## *What we could get done.*

Leverage investment in this position into grants to Reduce Use:

- Campus groundwater conservation planning
- DNR water appropriation permit input
- Smart irrigation
- Alternative source analysis

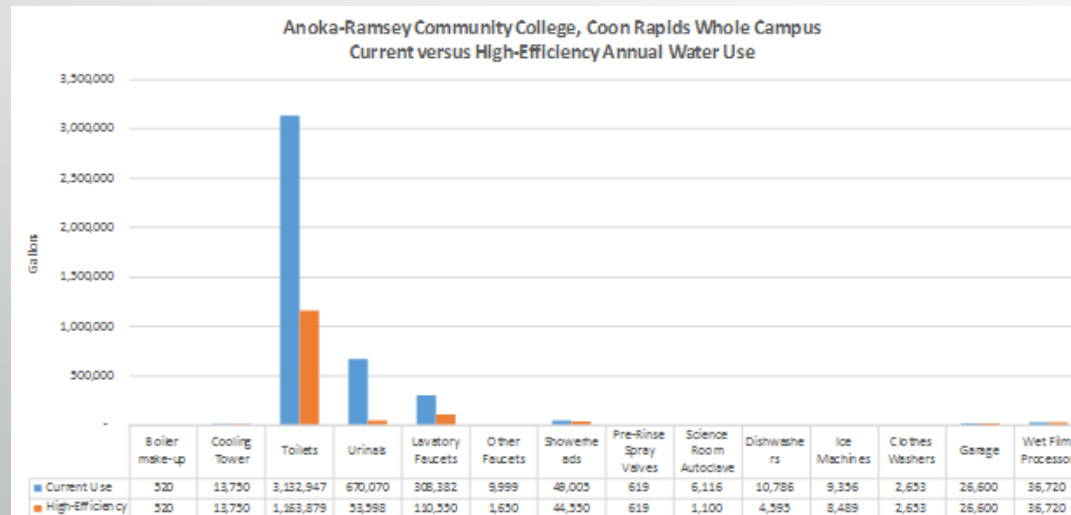
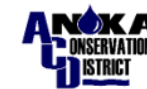


Figure 1: Current use and potential use with high-efficiency equipment and fixtures for the main categories of water-using equipment on the Anoka-Ramsey Community College, Coon Rapids campus.

CAMPUS GROUNDWATER  
CONSERVATION PLANNING  
REPORT FOR  
ANOKA-RAMSEY COMMUNITY COLLEGE,  
COON RAPIDS CAMPUS

PREPARED BY



FOR



FUNDING PROVIDED IN PART BY THE CLEAN WATER FUND  
FROM THE CLEAN WATER, LAND, AND LEGACY AMENDMENT

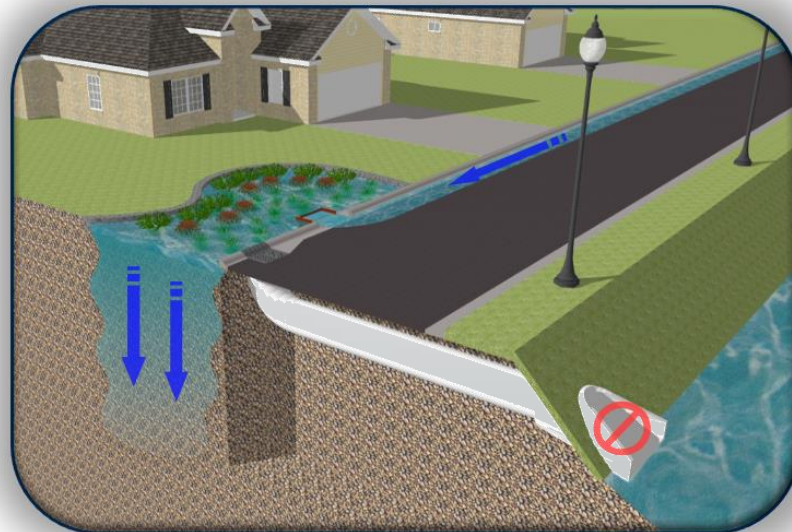


# ACD GROUNDWATER SPECIALIST

## *What we could get done.*

Leverage investment in this position into grants to Increase Recharge:

- Rain gardens and infiltration basins
- Soil compaction management on development sites
- Promote impervious surface reduction
- Wetland restoration



# ACD GROUNDWATER SPECIALIST

## *What we could get done.*

Leverage investment in this position into grants to Reduce Contamination:

- Well sealing cost share program admin
- Septic system repair cost share program admin
- Smart salting training/workshops
- Hazardous waste management and collection promotion
- Source water protection – zoning planning assistance



# ACD GROUNDWATER SPECIALIST

## *Why now.*

- Water level declines in groundwater connected lakes and streams due to drought.
- Well interference in Blaine drying up nearly 50 private wells.
- More frequent and severe private well contamination in Anoka County including Nitrates, Chloride, Manganese, and PFAs (“forever chemicals”), among others.
- A growing contamination plume near a landfill in Andover contaminated private wells throughout a neighborhood.
- Train derailments nationally bringing groundwater vulnerability into daily conversation.
- Companies looking to ship Minnesota groundwater out of state for sale by rail, truck, or pipeline raising concerns among Minnesotans.
- 2021-2030 Natural Resources Stewardship Plan with a groundwater chapter.
- 2022 self-assessment of our performance showed lackluster success for groundwater.
- Groundwater-centric program funding is coming online through the Clean Water Fund.

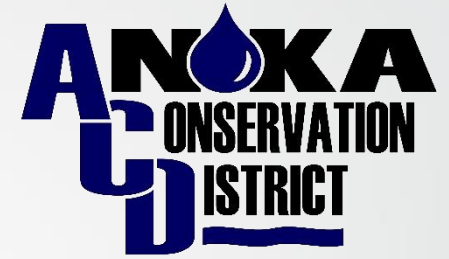


# ACD GROUNDWATER SPECIALIST

## *Why ACD is the right location.*

- ACD is a special purpose unit of government solely dedicated to tackling complex natural resource issues.
- ACD's Groundwater Specialist would be a member of an interdisciplinary high-caliber team of natural resource experts.
- ACD has a strong history of leveraging local funding with regional and state funds at 4:1 or more.
- ACD has a tradition of collaborating across political boundaries to manage natural resources at optimal scales.
- ACD has a culture of excellence, innovation, and productivity.
- ACD is able to expediently pursue opportunities to serve our constituents.
- While smaller geographically than ideal, we cover the largest area that local governments can.

# Thank you!



## *Questions and feedback*

Editing help. What moments did you note?

- Ah ha! - enlightening
- Huh? - confusing
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- Hmm~ - missing

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