

Overview of Dakota County Groundwater and Protection Programs

Georg T. Fischer
Environmental Resources Department
Physical Development Division

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Overview



Efficient, Effective, Responsive

- Groundwater in Dakota County
 - Use
 - Vulnerability
 - Quality
 - Quantity
- Current County Groundwater Protection Programs
- Proposed Groundwater Protection Efforts

Groundwater in Dakota County



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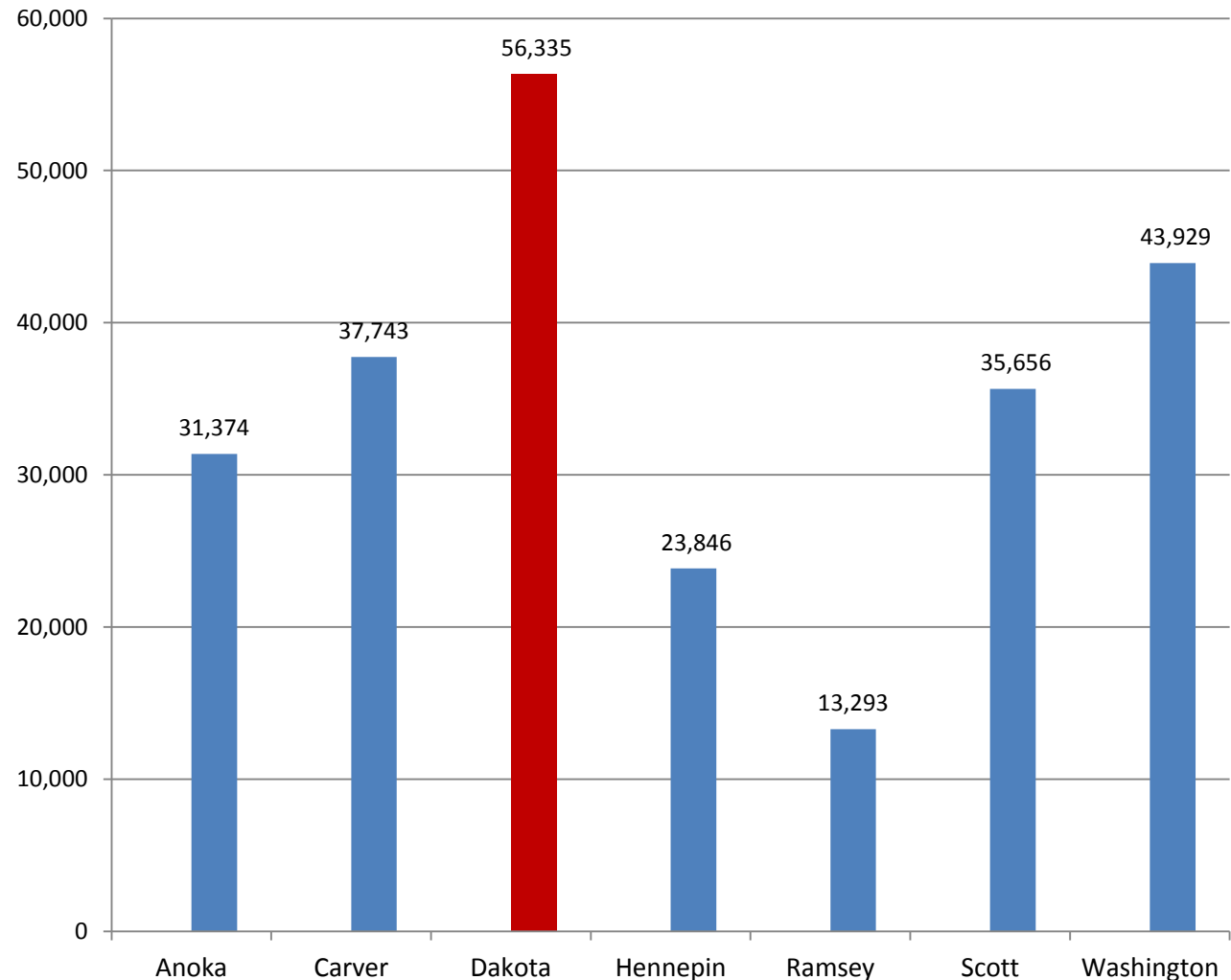
Protecting rural drinking water supplies was rated as important by **91% of respondents** to the Dakota County 2040 Comprehensive Plan Residential Survey

Groundwater Use in the Metro Area



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Total 2016 Groundwater Use (Gal/Capita/yr)



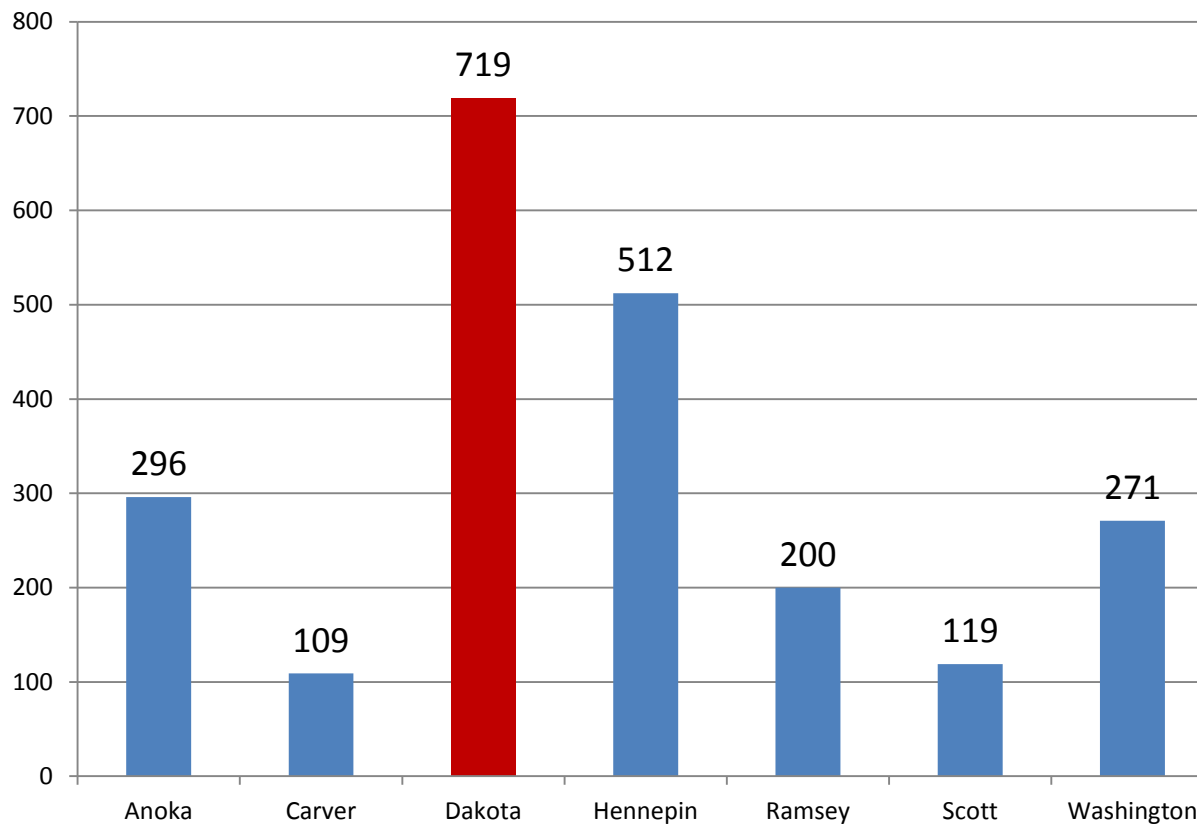
Dakota
County Uses
More
Groundwater
Per Capita
than all the
other Metro
Counties

Groundwater Use in the Metro Area



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2016 Active Groundwater Appropriations Permits



Dakota County

Groundwater

Appropriations:

64% Agricultural Irrigation

19% Water Supply

7% Non-crop Irrigation

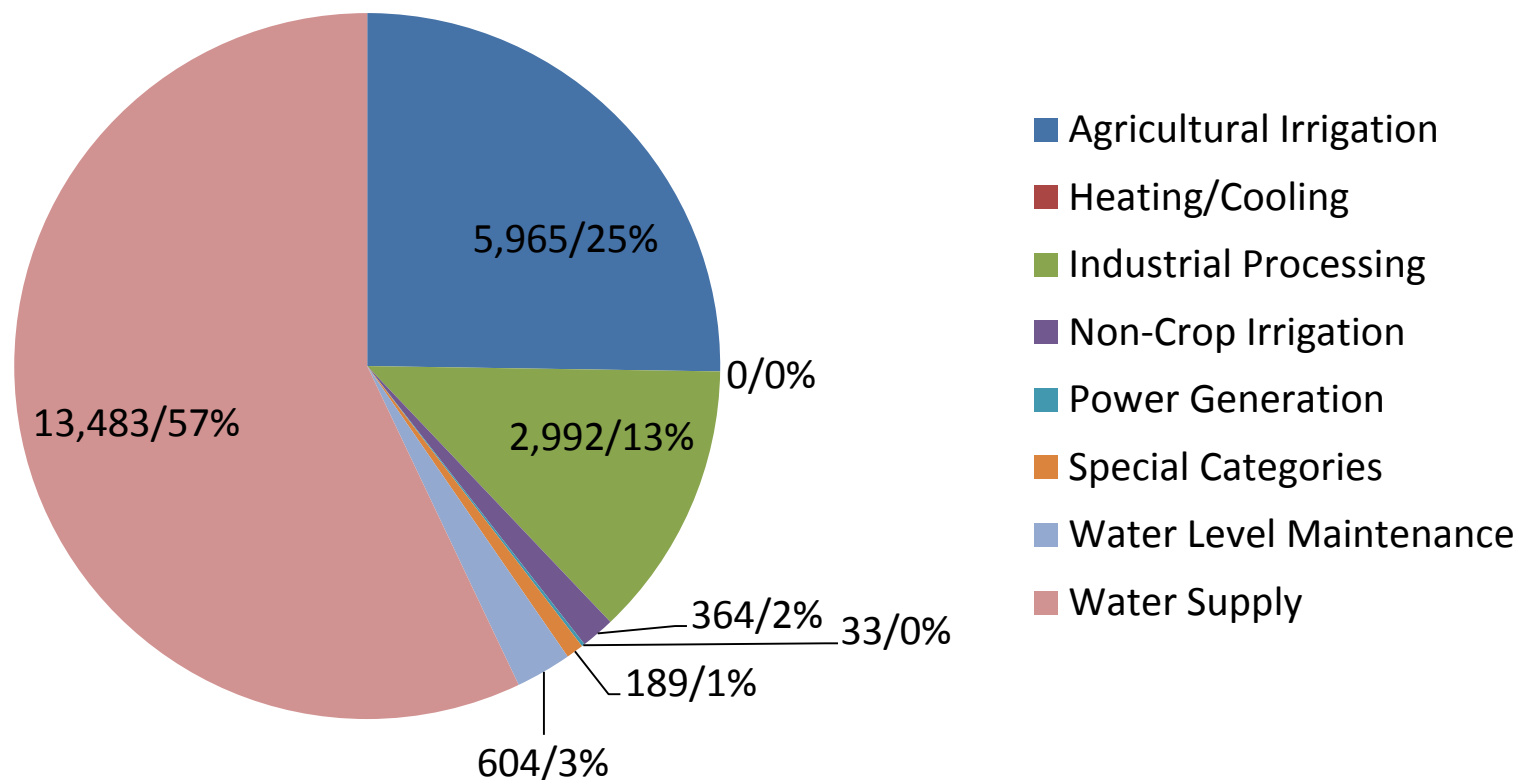
5% Industrial Processing

Groundwater Use in Dakota County



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2016 Groundwater Use (MG/%)



-23,630 MG/yr-does not include private wells

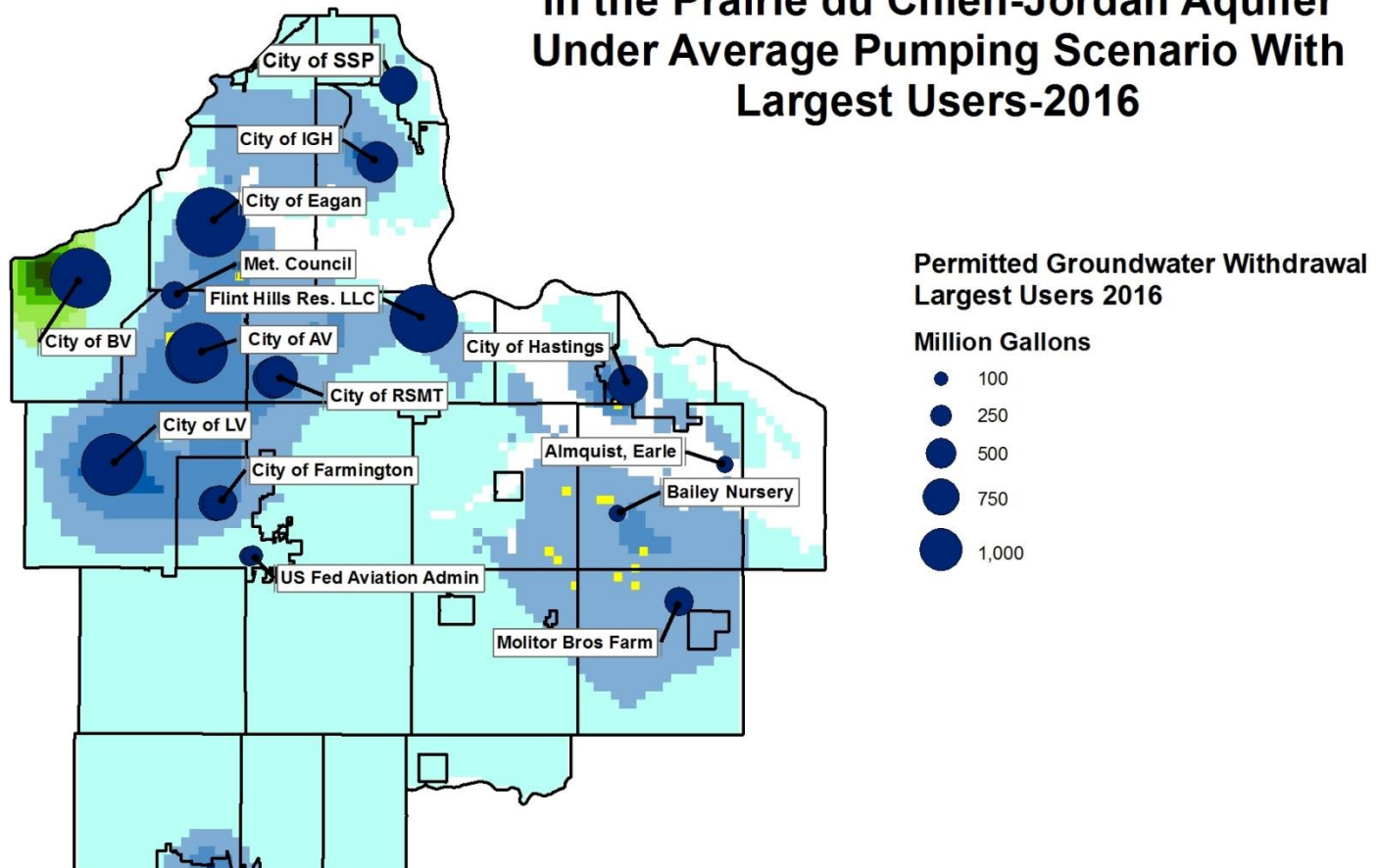
-Private Wells estimated at 745 MG/yr

Groundwater Use in Dakota County



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2040 Projected Drawdown in the Prairie du Chien-Jordan Aquifer Under Average Pumping Scenario With Largest Users-2016



Source:
Metropolitan Council

Groundwater Vulnerability

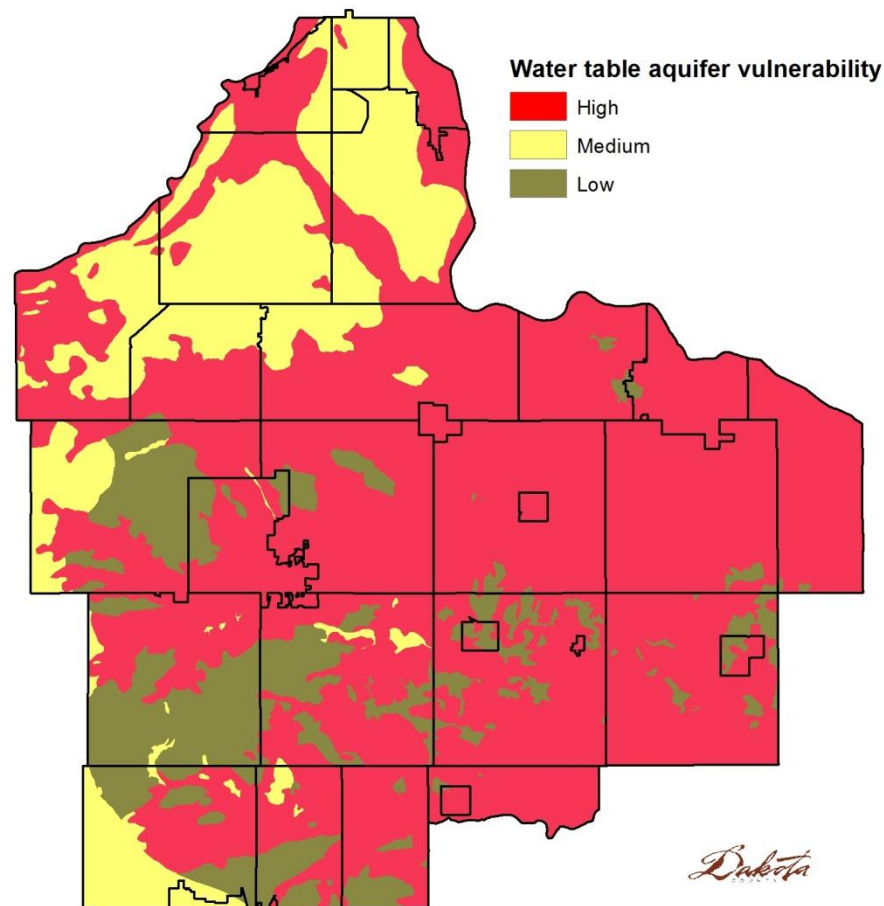


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Uniquely vulnerable due to:

- Highly permeable coarse soils
- Karst topography

Vulnerability of the Water Table Aquifer to Surface Pollution



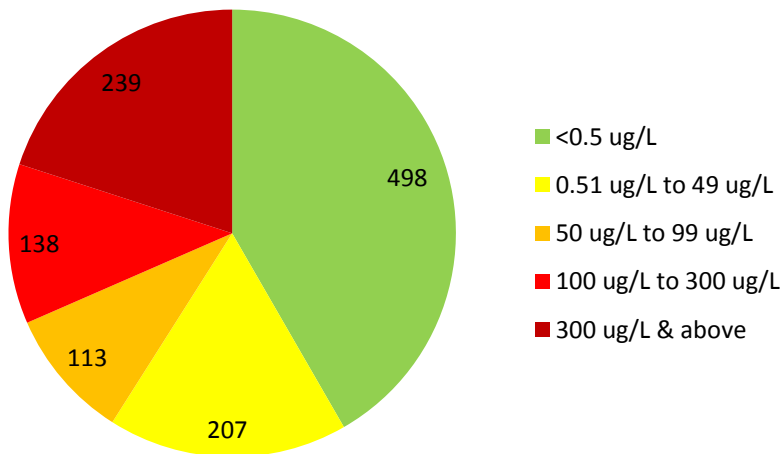
Groundwater Quality in Dakota County: Naturally Occurring Pollutants



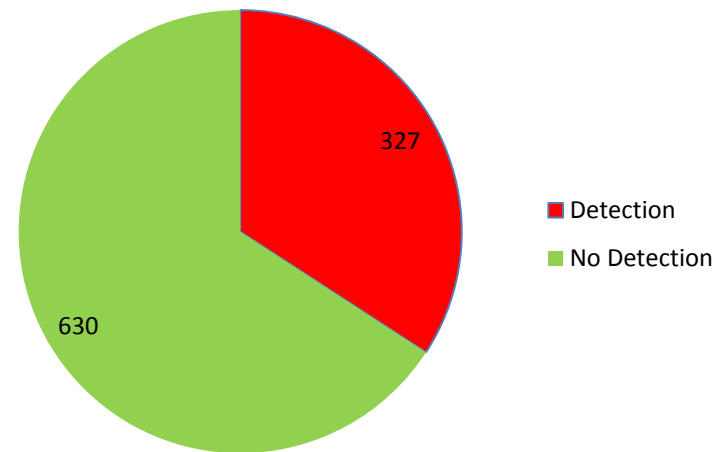
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- Manganese: Exceeded the health standard (100 ug/L) in 31% of tests
- Arsenic: Detected in 34% of tests

Manganese (ug/L)



Arsenic

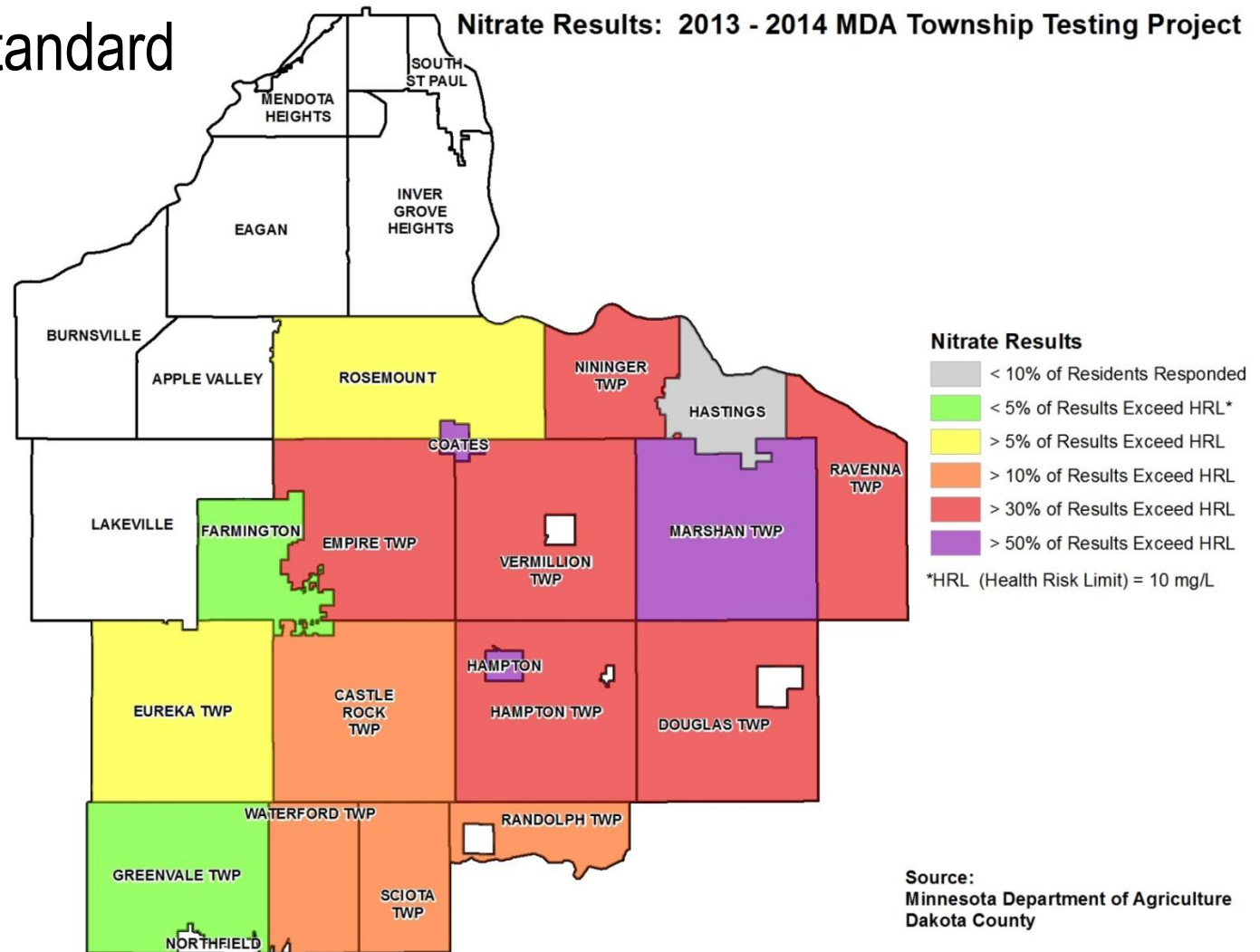


Groundwater Quality in Dakota County: Nitrate



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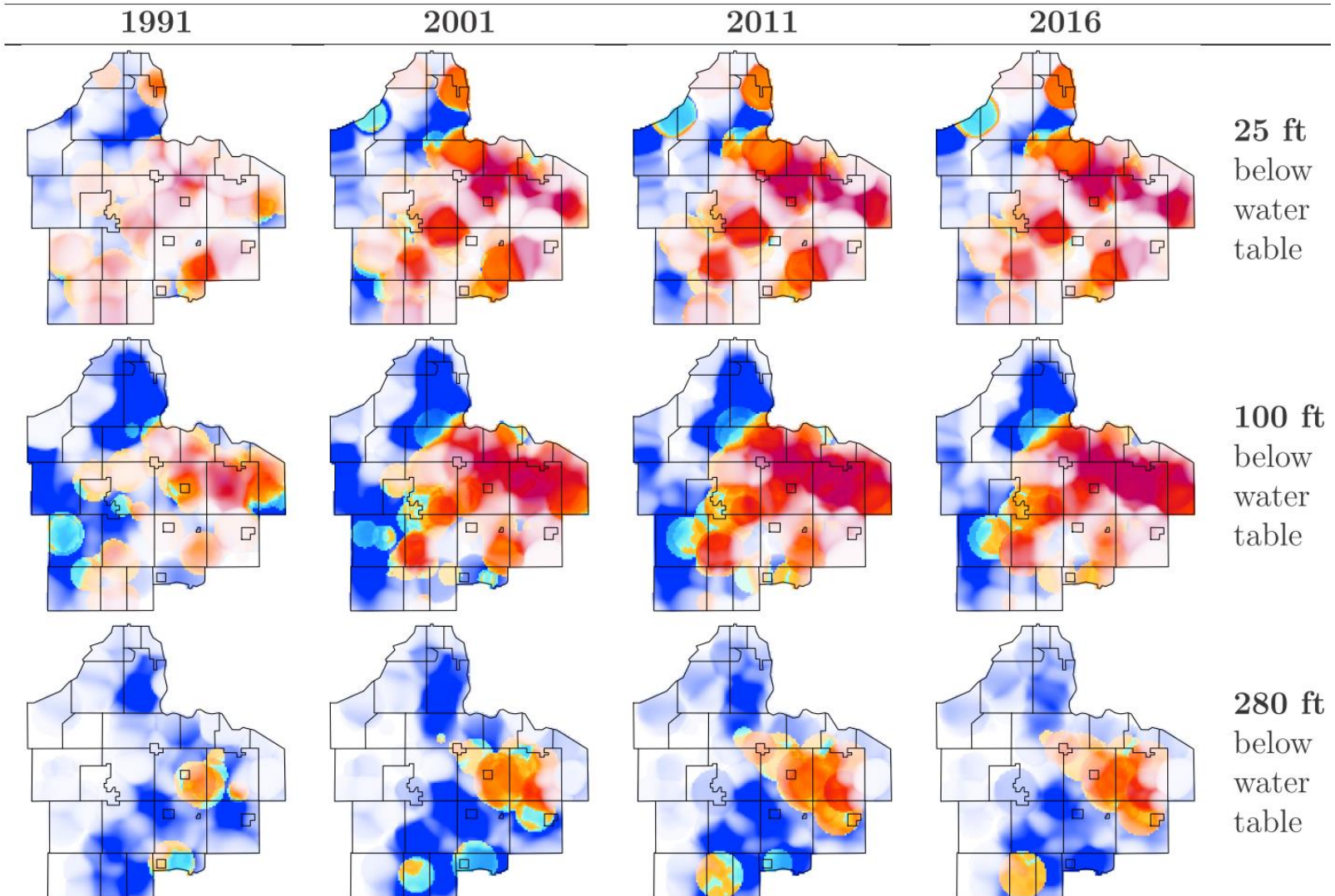
- 27% of wells exceed the nitrate standard



Groundwater Quality in Dakota County: Nitrate with Depth and Time



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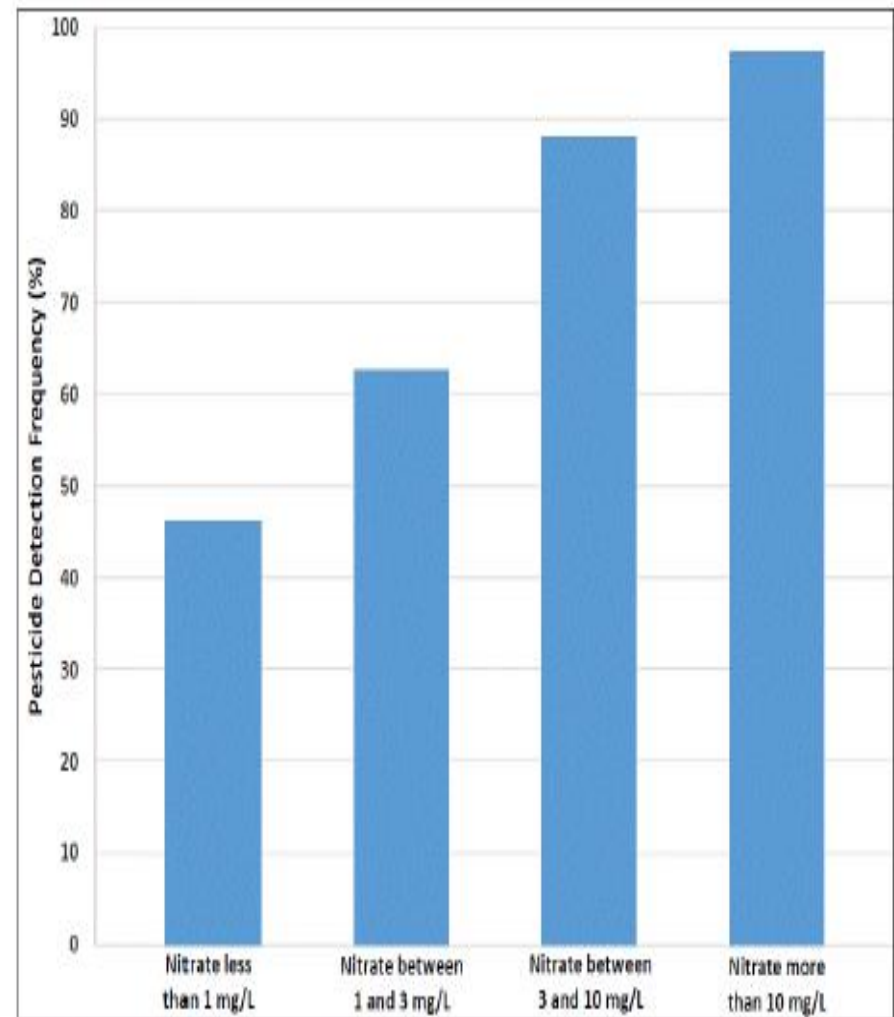


Groundwater Quality in Dakota County: Pesticides



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- Detected in 88% of Ambient Groundwater Quality Study (AGQS) wells
- 14 wells (19%) exceeded the health standard for Cyanazine
- 85% of detections were for corn or soybean herbicides
- Median of 4 or more pesticides detected per sample
- Pesticide detections are more likely with higher concentrations of nitrate

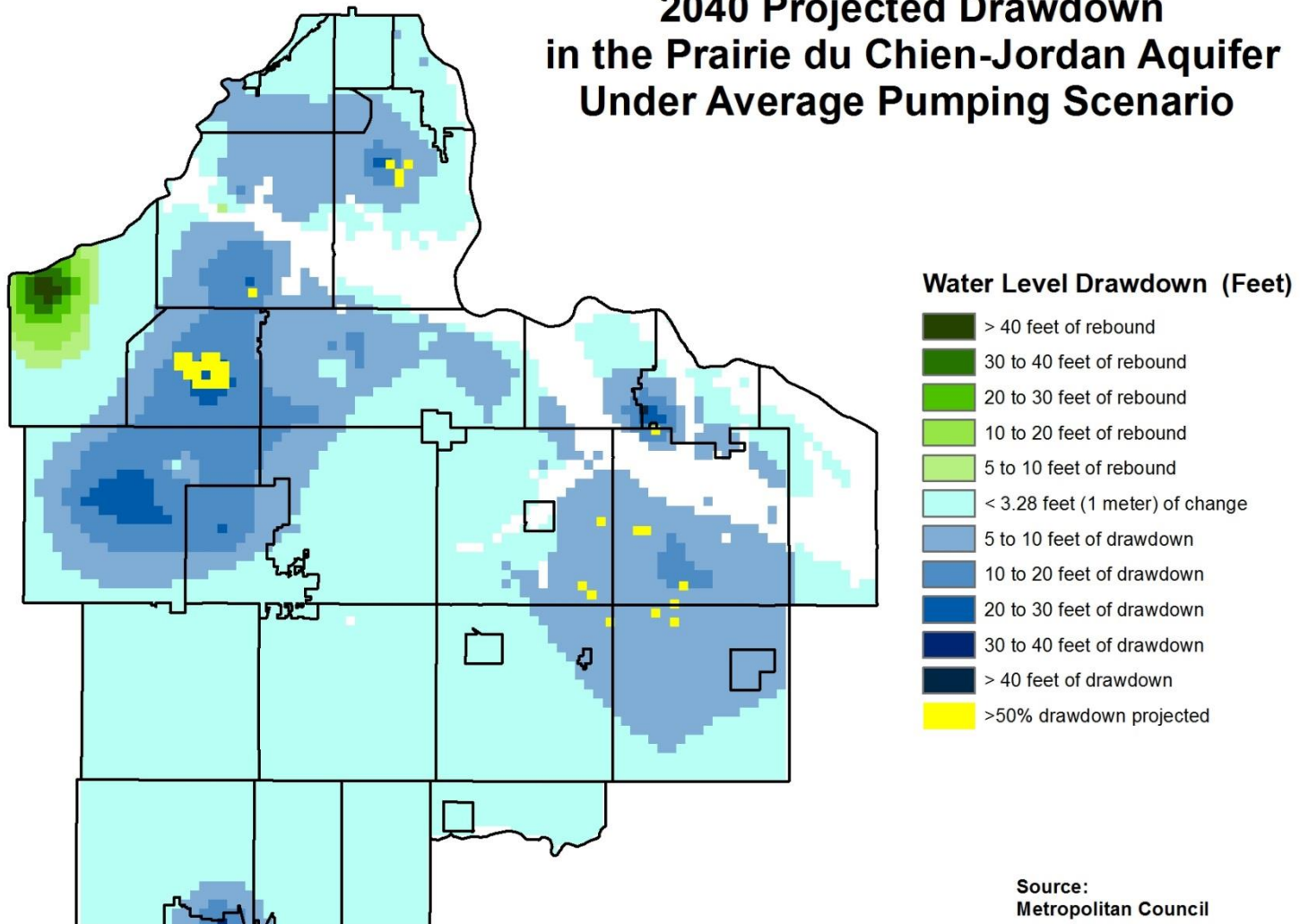


Groundwater Quantity in Dakota County



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2040 Projected Drawdown in the Prairie du Chien-Jordan Aquifer Under Average Pumping Scenario



Source:
Metropolitan Council

Current County Groundwater Protection Efforts



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- Manage the Delegated Well Program
- Promote Well Sealing
- Conduct Groundwater Quality Research and Outreach
- Provide Drinking Water Testing, Education, and Outreach
- Assist with Wellhead Protection and Water Supply Planning
- Coordinate with Other Entities
- Regulate Hazardous and Solid Waste
- Regulate Septic Systems (in specific jurisdictions)
- Provide Environmental Assessment and Remediation Assistance

Proposed County Groundwater Protection Efforts



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- Establish eligibility for potential future funding

Required Elements of a Groundwater Plan(MN Stat 103B.255)	Current Compliance
Cover entire area within the county	Yes
Describe existing and expected changes to physical environment, land use and development in the County	Yes
Summarize available info about groundwater in the county	Partial
State goals, objectives, scope and priorities	Partial
Contain standards, criteria and guidelines	No
Describe relationships to other plans	Partial
Set standards, guidelines and official controls	No
Include procedures for amending the plan	No

Proposed County Groundwater Protection Efforts



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Explore strategic direction options for County Board consideration

- Use the Dakota County Comprehensive Plan DC2040 Water Supply Vision, Goals, Objectives, and Policies as a baseline
- Use the Planning Commission as the required “Advisory Committee” for Groundwater Plan development
- Conduct Stakeholder Engagement
- Develop required elements for a compliant Groundwater Plan
- Develop potential groundwater protection strategies
- Provide updates to the Physical Development Committee

Questions?