



Protecting, Maintaining and Improving the Health of All Minnesotans

November 16, 2021

Tracy Halstensgard, Administrator
Roseau River Watershed District
714 6th Street Southwest
Roseau, MN 56751
rrwd@mncable.net

Dear Ms. Halstensgard:

Subject: Initial Comment Letter – Roseau River Watershed Planning Project

Thank you for the opportunity to submit comments regarding water management issues for consideration in the One Watershed One Plan (1W1P) planning process for the Roseau River Watershed Planning Area. Our agency looks forward to working closely with the local government units, stakeholders, and other agency partners on this watershed planning initiative.

The Minnesota Department of Health's (MDH) mission is to protect, maintain, and improve the health of all Minnesotans. An important aspect to protecting citizens health is the protection of drinking water sources. MDH is the agency responsible for implementing programs under the federal Safe Drinking Water Act (SDWA).

Source Water Protection (SWP) is the framework MDH uses to protect drinking water sources. The broad goal of SWP in Minnesota is to protect and prevent contamination of public and private sources of groundwater and surface water sources of drinking water using best management practices and local planning. Core MDH programs relevant to watershed planning are the State Well Code (MR 4725), Wellhead Protection (MR 4720) and surface water / intake protection planning resulting in a strong focus in groundwater management and protecting drinking water sources.

One of the three high level state priorities in Minnesota's Nonpoint Priority Funding Plan is to "Restore and protect water resources for public use and public health, including drinking water" which aligns with our agency's mission and recommendations to your planning process.

MDH Priority Concerns:

Prioritize Drinking Water Supply Management Areas (DWSMA) in the Roseau Watershed 1W1P.

DWSMA boundaries establish a protection area through an extensive evaluation that determines the contribution area of a public water supply well, aquifer vulnerability and provide an opportunity to prioritize specific geographic areas for drinking water protection purposes. DWSMA boundaries that extend beyond city jurisdictional limits or are established in Wellhead Protection (WHP) Action Plans for nonmunicipal public water supplies, like mobile home parks, can be a special focus for local partners prioritizing drinking water protection activities.

The moderate vulnerability of the DWSMAs in this watershed suggests a level of geologic protection that should safeguard public water supplies from rapid changes in water quality resulting from surface water recharge. Localized detections of tritium and elevated chloride/bromide suggest that human impacts to water quality are possible over time frames of years to decades and warrant planning efforts to safeguard water quality for the long term. The attached Public Water Supply Summary Spreadsheet highlights the primary drinking water protection activities for many DWSMAs in the watershed.

It is also important to prioritize the protection of the source of drinking water. The source of drinking water is entirely groundwater in the planning area and remains an important resource of concern. However, the protection of surface water is also an important resource of concern because it is relied on as the source of drinking water for downstream residents of Winnipeg. Land-use activities and resulting run-off, sediment, turbidity, and total suspended solids entering the Red River of the North have direct impacts upon the quality of the drinking water as a whole; by impacting both the raw and finished (treated) cost and quality of drinking water. Managing land-uses for surface water protection achieves multiple benefits such as improved water quality, enhanced wildlife and waterfowl habitat and diversity, and drinking water protection for surface water systems or DWSMAs with surface-groundwater interactions.

Prioritize Sealing Abandoned Wells

Unused, unsealed wells can provide a conduit for contaminants from the land surface to reach the sources of drinking water. This activity is particularly important for abandoned wells that penetrate a confining layer above a source aquifer.

Sealing wells is a central practice in protecting groundwater quality, however when resource dollars are limited it is important to evaluate private well density to identify the populations most at risk from a contaminated aquifer.

Prioritize Protection of Private Wells

Many residents of the Roseau Watershed rely on a private well for the water they drink. However, no public entity is responsible for water testing or management of a private well after drilling is completed. Local governments are best equipped to assist private landowners through land use management and ordinance development, which can have the greatest impact on protecting private wells. Other suggested activities to protect private wells include: hosting well testing or screening clinics, providing water testing kits, working with landowners to better manage nutrient loss, promoting household hazardous waste collection, managing storm water runoff, managing septic systems, and providing best practices information to private well owners.

The Roseau River Watershed is characterized by groundwater that is locally elevated in arsenic. Approximately 14 percent of the arsenic samples taken from wells in the planning area have levels of higher than the SDWA standard of 10 micrograms per liter ($\mu\text{g/L}$). Most wells inventoried were constructed prior to the 2008 arsenic testing requirement and have never been tested. Arsenic occurs naturally in rocks and soil across Minnesota and can dissolve into groundwater. Consuming water with low levels of arsenic over a long time (chronic exposure) is associated with diabetes and increased risk of cancers of the bladder, lungs, liver, and other organs. The EPA has set a goal of 0 $\mu\text{g/L}$ for arsenic in drinking water because there is no safe level of arsenic intake.

Creating private well user awareness of the health risks associated with arsenic and other contaminants, encouraging them to test their water, and providing them with options on treatment or wellhead modifications to keep their drinking water safe when contaminants are present should be a priority. This includes wells at times and in areas of the watershed prone to flooding.

Prioritize Protecting Noncommunity Public Water Supplies

There are currently 22 known noncommunity public water system wells in the planning area. Noncommunity public water supplies provide drinking water to people at their places of work or play such as schools, offices, and campgrounds. Land use and management activities should consider effects on these public water systems.

Source Water Assessments provide a concise description of the water source - such as a well, lake, or river - used by a public water system and discuss how susceptible that source may be to contamination. Find information regarding noncommunity public water supplies in the watershed in reports titled Source Water Assessments (SWA) at:

<https://www.health.state.mn.us/communities/environment/water/swp/swa.html>

Support the development of County Geologic Atlases in the watershed

Drinking water supplies in the planning area appear to rely on a restricted aquifer system. The refined information assembled and researched for geologic atlas development in the planning area such as additional inventory of private wells using local knowledge and research can provide additional assessment of the ease which water and contaminants can move from the land surface to groundwater. Compiling advance information on the extent of aquifers and aquitards will help decision making if water quantity becomes a specific concern.

Targeting Groundwater & Drinking Water Activities in the 1W1P Planning Process

Limitation of Existing Tools –

Watershed models used for prioritizing and targeting implementation scenarios in the 1W1P, whether PTMapp, HSPF-Scenario Application Manager (SAM) or others, leverage GIS information and/or digital terrain analysis to determine where concentrated flow reaches surface water features. While this is an effective approach for targeting surface water contaminants, it does not transfer to groundwater concerns because it only accounts for the movement of water on the land's surface. Unfortunately, targeting tools are not currently available to model the impact on groundwater resources. The Minnesota Department of Health suggests using methodologies applied by the agency to prioritize and target implementation activities in the Source Water Protection program.

Using the Groundwater Restoration and Protection Strategies (GRAPS) Report –

The MDH, along with its state agency partners, are developing a Groundwater Restoration and Protection Strategies (GRAPS) report for the Roseau River Watershed. GRAPS will provide information and strategies on groundwater and drinking water supplies to help inform the local decision-making process of the 1W1P. Information in a GRAPS Report can be used to identify risks to drinking water from different land uses. Knowing the risks to drinking water in a specific area allows targeting of specific activities.

- Prioritize Actions Identified in the Groundwater Restoration and Protection Strategies (GRAPS) report.

Using Wellhead Protection Plans –

- Identify Drinking Water Supply Management Areas (DWSMA) located in the watershed.
- Examine the vulnerability of the aquifer to contamination risk to determine the level of management required to protect groundwater quality. For example, a highly vulnerable setting requires many different types of land uses to be managed, whereas a low vulnerability setting focuses on a few land uses due to the long recharge time and protective geologic layer.
- Use the Management Strategies Table in a Wellhead Protection Plan to identify and prioritize action items for each DWSMA

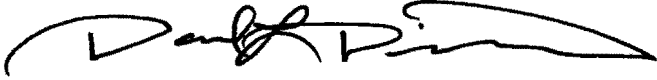
Using Guidance Documents to Manage Specific Potential Contaminant Sources –

The MDH has developed several guidance documents to manage impacts to drinking water from specific potential contaminant sources. Topics include mining, stormwater, septic systems, feedlots, nitrates, and chemical and fuel storage tanks. This information is available at

<https://www.health.state.mn.us/communities/environment/water/swp/resources.html>

Attached you will find a listing of MDH data and information to help you in the planning process. Thank you for the opportunity to be involved in your watershed planning process. If you have any questions, please feel free to contact me at (218) 332-5195 or dan.disrud@state.mn.us.

Sincerely,



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Attachments

Cc: Jenilynn Marchand, MDH Source Water Protection Supervisor
Trent Farnum, MDH Source Water Protection Hydrologist
Carrie Raber, MDH Source Water Protection Planner
Chris Elvrum, MDH Well Management Section Manager
Henry Van Offelen, BWSR Clean Water Specialist
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Julie Westerlund, BWSR One Watershed One Plan Coordinator
Stephanie Klamm, DNR Area Hydrologist
Nathan Kestner, DNR Northwest Regional Manager
Barbara Weisman, DNR Clean Water Operations Consultant
Cary Hernandez, MPCA Watershed Project Manager
Jeff Risberg, MPCA Watershed Unit Coordinator
Margaret Wagner, MDA Agriculture Supervisor
Erik Dahl, MN Environmental Quality Board

MDH Data and information:

- Drinking Water Statistics – Where do people get their drinking water in the Roseau River Watershed? 100 percent obtain their drinking water from groundwater. This information can help you understand where people are obtaining their drinking water and develop implementation strategies to protect the sources of drinking water in the watershed.
- A spreadsheet of the public water supply systems in the watershed, status in wellhead protection planning, and any drinking water protection concerns or issues that have been identified in protection areas. This information can help you understand the drinking water protection issues in the watershed, prioritize areas for implementation activities, and identify potential multiple benefits for implementation activities.
- Shape files of the Drinking Water Supply Management Areas (DWSMA) in the watershed are located at <https://www.health.state.mn.us/communities/environment/water/swp/maps/index.htm> This information can help you prioritize and target implementation activities that protect drinking water sources for public water supplies.

MDH Figures:

- A figure detailing the “Pollution Sensitivity of Near-Surface Materials” in the Roseau River Watershed. This information can help you understand the ease with which recharge and contaminants from the ground surface may be transmitted into the upper most aquifer on a watershed scale. Individual wellhead protection areas provide this same information on a localized scale. This in turn can be used to prioritize areas and implementation activities.
- A figure detailing “Pollution Sensitivity of Wells” in the Roseau River Watershed. This information can help you understand which wells in the watershed are most geologically sensitive based on the vulnerability of the aquifer in which the well is completed. This information allows for targeting of implementation activities to the sources of water people are drinking.
- A figure detailing “Pollution Sensitivity of Wells and Nitrate Results” in the Roseau River Watershed Underlain by Geologic Sensitivity Ratings from Wells. This information takes what we know about the sensitivity of wells to contamination and combines it with nitrate results to highlight areas of the watershed where there is known nitrate contamination of the water people are drinking. This figure can help prioritize implementation activities aimed at reducing nitrate levels in the sources of drinking water.
- A figure detailing “Arsenic Results” in the Roseau River Watershed Underlain by Geologic Sensitivity Ratings from Wells. This information can help you understand which wells in the watershed contain elevated arsenic levels.
- A figure detailing “DWSMA Vulnerability” in the Roseau River Watershed. This information can help you understand which DWSMA is most vulnerable to contamination from the ground surface. This figure allows for targeting of implementation activities for public water suppliers.

**Roseau River Sub-Basin Public Water Systems -
Drinking Water Protection Concerns for Quality & Quantity**

| Aquifer Risk | Name | County | Watershed | Subwatershed | WHP Plan | DWSMA Vulnerability | Drinking Water Protection Concerns |
|--------------|------|--------|-----------|--------------|----------|---------------------|------------------------------------|
|--------------|------|--------|-----------|--------------|----------|---------------------|------------------------------------|

High potential contaminant risk due to connection with surface water -

Focus on potential land uses and contaminant sources that may impact water quality

| | | | | | | | |
|------|--|--|--|--|--|--|--|
| none | | | | | | | |
|------|--|--|--|--|--|--|--|

Moderate potential contaminant risk -

Focus on chemical or fuel storage, transportation corridors and sealing unused wells

| | | | | | | | |
|-----------------------------|--------|--|-----------------------------------|---|----------------------------|----------|--|
| Roseau | Roseau | | Middle Roseau River | City of Roseau-Roseau River | WHP Plan completed 2019 | Moderate | One of three wells considered vulnerable. 16 storage tanks in DWSMA identified for management. Old municipal wells identified for locating. Gravel pits west of DWSMA. |
| Cedar Bend Park | Roseau | | Hay Creek and Middle Roseau River | Lost River-Roseau River and Lower Hay Creek | Action Plan completed 2021 | Moderate | One primary well and one emergency well in the city of Salol, both considered vulnerable. Arsenic detected in both wells. 4 additional wells in DWSMA. |
| Lakewood Park and Sales | Roseau | | Middle Roseau River | Lost River-Roseau River | Action Plan completed 2021 | Moderate | Three primary wells all considered vulnerable west of Warroad. Arsenic detected in each well. 7 additional unsealed wells identified in DWSMA. |
| Oak Manor Mobile Home Park | Roseau | | Hay Creek | Lower Hay Creek | Action Plan completed 2021 | Moderate | Two primary wells and one emergency well in the city of Roseau, all considered vulnerable. Arsenic detected in the raw water at over three times maximum allowable standard. 8 additional wells in DWSMA. Well depths as shallow as 35 feet. |
| Timberline Mobile Home Park | Roseau | | Hay Creek | Lower Hay Creek | Action Plan completed 2021 | Moderate | Two primary wells and one emergency well in the city of Salol, two considered vulnerable. Arsenic detected in one of the primary wells. 14 additional wells in DWSMA. |

Low potential contaminant risk -

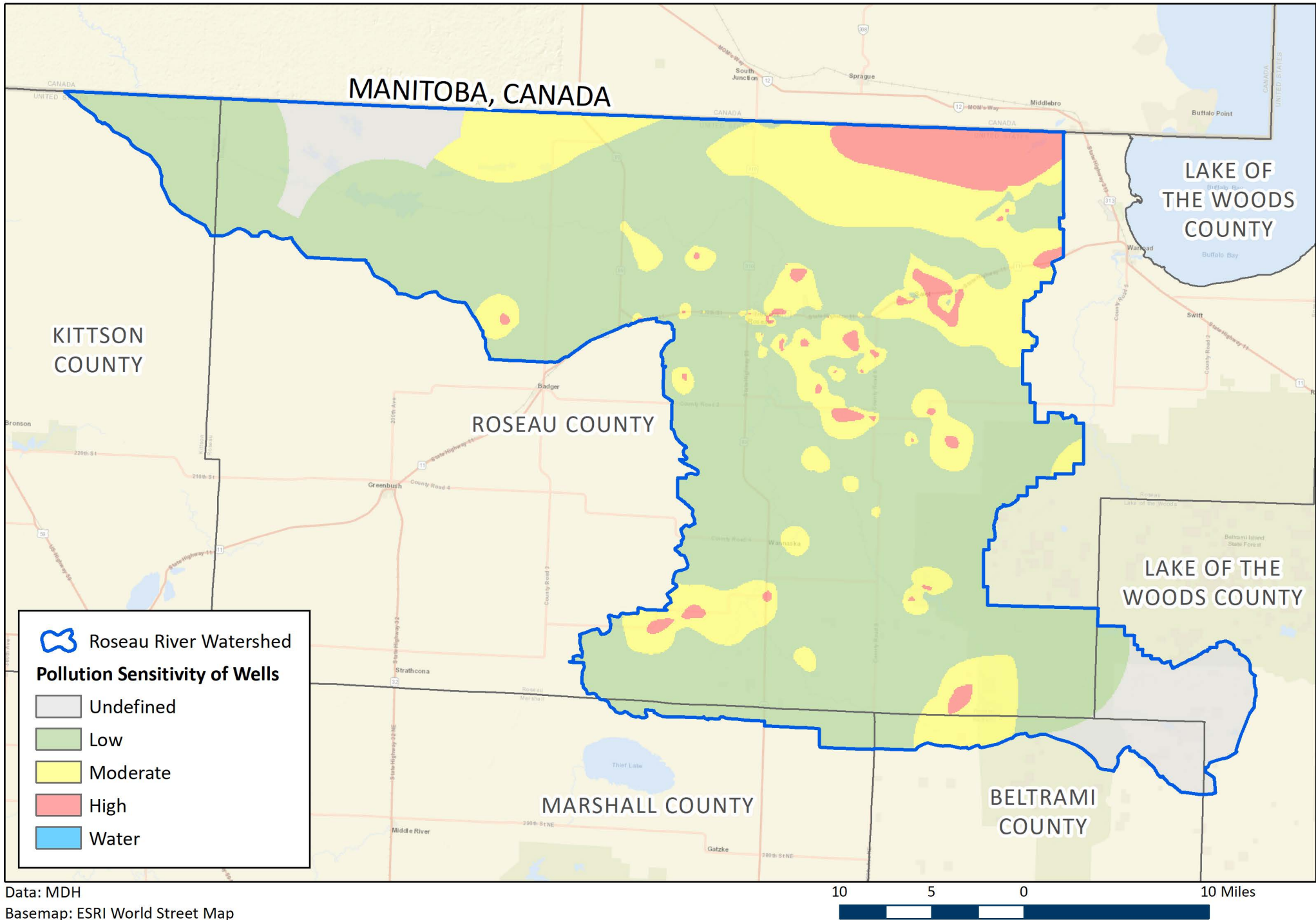
Focus on sealing of unused wells

| | | | | | | | |
|------|--|--|--|--|--|--|--|
| none | | | | | | | |
|------|--|--|--|--|--|--|--|

5 Community Public Water Systems (10 wells)
21 Transient Non-Community Public Supply Wells
1 Non-Transient Non-Community Supply Well
519 known private wells

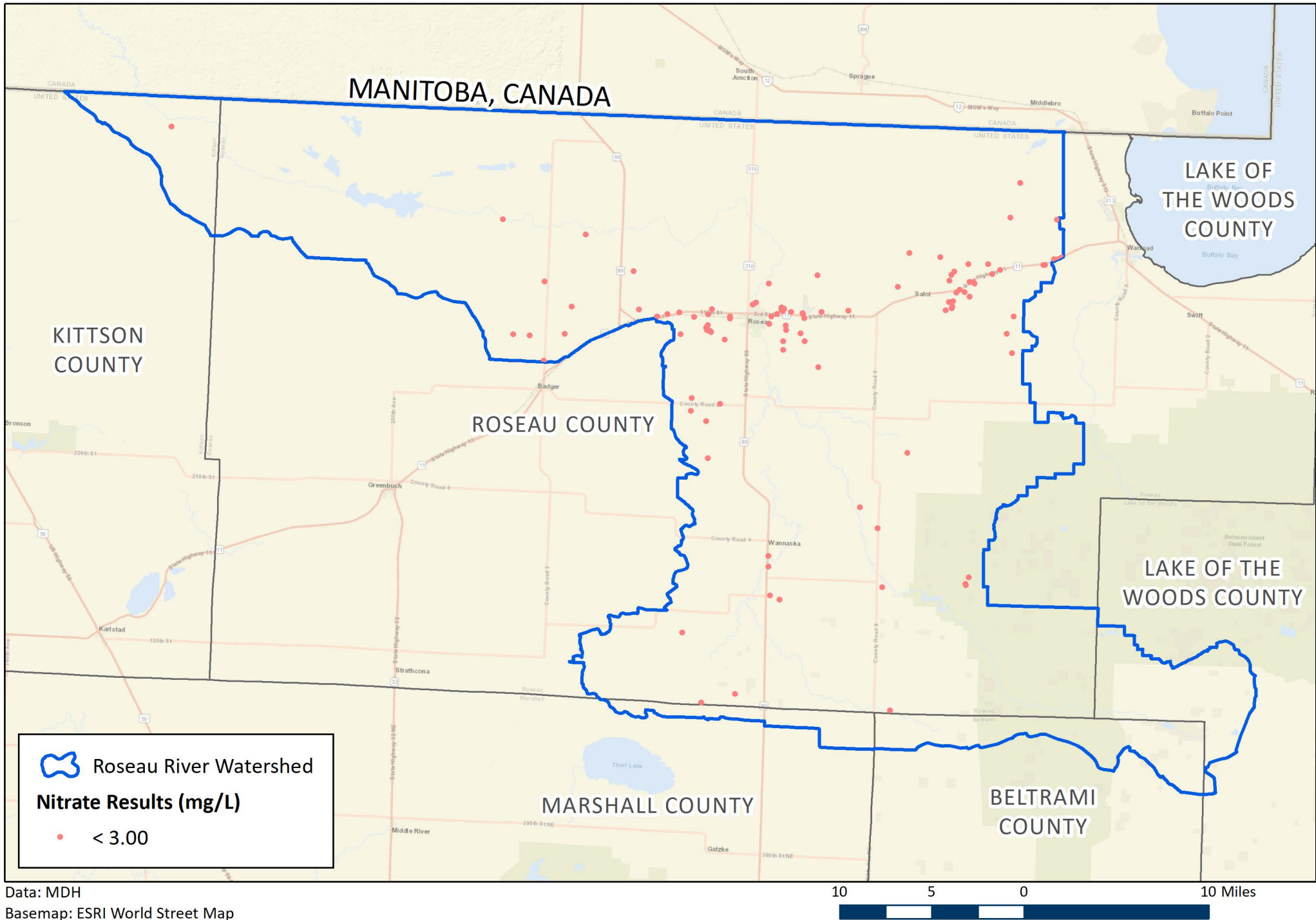
Acronyms:
DWSMA = Drinking Water Supply Management Area
WHP = Wellhead Protection

Roseau River Watershed - Pollution Sensitivity of Wells



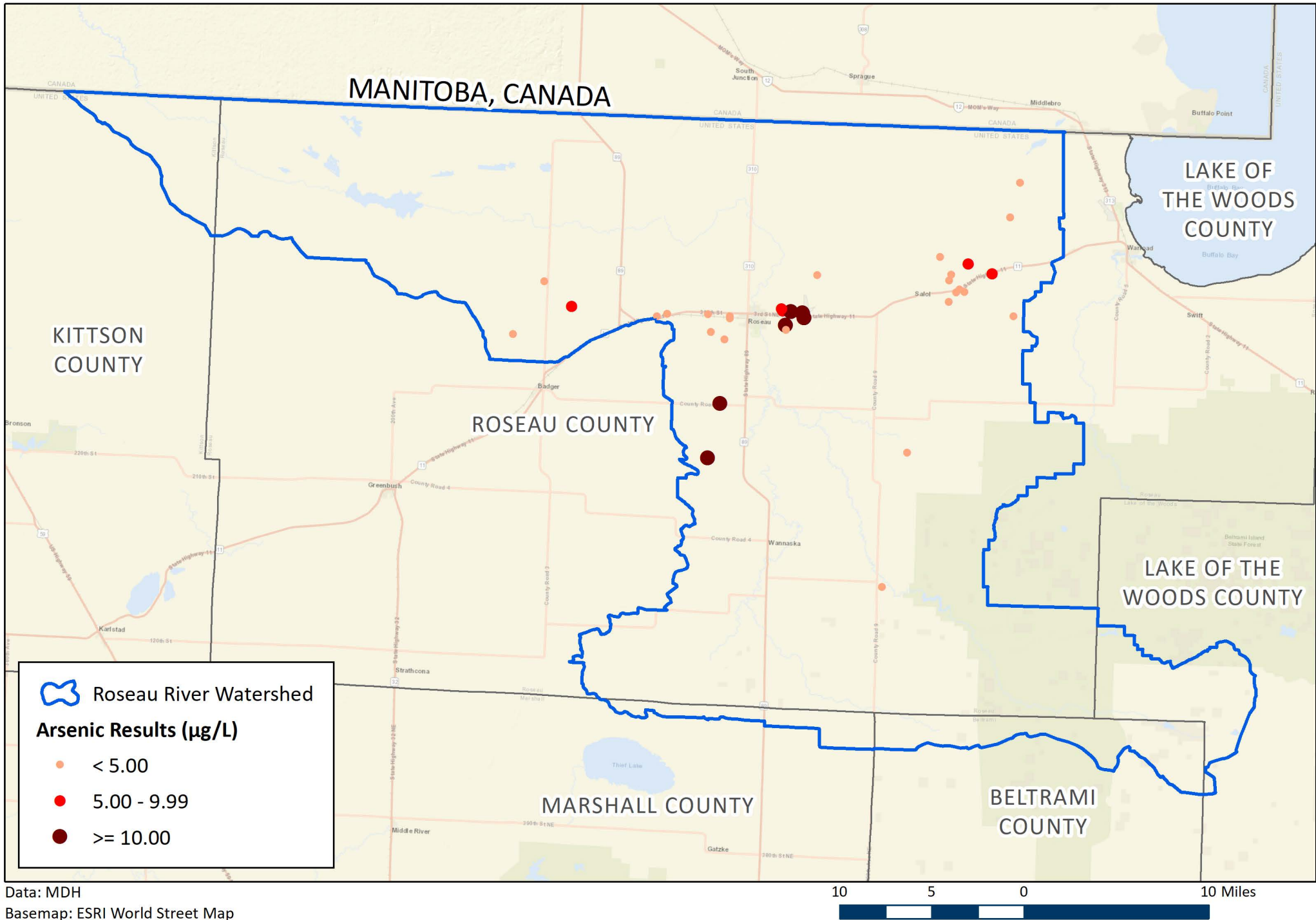
Data: MDH
Basemap: ESRI World Street Map

Roseau River Watershed - Nitrate Results



Data: MDH
Basemap: ESRI World Street Map

Roseau River Watershed - Arsenic Results



Roseau River Watershed - DWSMA Vulnerability

