Minnesota Department of Health

PROTECTING, MAINTAINING AND IMPROVING THE HEALTH OF ALL MINNESOTANS

August 12, 2016

Root River One Watershed, One Plan Policy Committee
C/o Donna Rasmussen, Fillmore Soil & Water Conservation District

RE: Comments regarding the draft Root River One Watershed One Plan

Thank you for the opportunity to comment on the Root River 1W1P. It is admirable that the local partners have taken on this watershed planning task and will continue to work together to address water quality issues.

The following are concerns and recommendations for plan sections related to public and private drinking water supplies. It is noted that "drinking water supplies" were given an "A" level priority.

Drinking Water Supplies Resource Concern - Issue – Elevated levels of nitrate-nitrogen

Concern – Strategy GW-1 uses the phrase *to achieve the Safe Drinking Water Act nitrate- nitrogen standard*. The wording of this strategy seems to imply that the nitrate standard is a positive standard. However, the nitrate-nitrogen standard under the Safe Drinking Water Act is a maximum contaminant level (MCL). Once the MCL is exceeded, a public water supplier would need to address the violation. Starting source water protection efforts after the nitrate MCL is exceeded, will not stop the outlay of financial resources to make a technical fix to address the violation. The public water suppliers that were mentioned in the MDH March 9, 2015 letter are those community public water suppliers: Utica, Chatfield, and Spring Grove, that have elevated nitrate of concern. These systems do not exceed the standard. The way Strategy GW-1 is presently written suggests that water supplies, where their wells test under 10 mg/l nitrate-nitrogen, would not be priorities. Drinking water supplies that have nitrate – nitrogen concentrations above 3 mg/l have elevated nitrate. It is considered prudent to evaluate the trends of nitrate concentrations above that level and start working on nitrogen management (BMPs) so that the nitrate concentrations do not increase.

Recommendation:

GW- 1 Reword this strategy to: Manage groundwater quality to prevent or reduce nitrate-nitrogen contamination of drinking water supply sources.

Reword GW-1.1 Implement BMPs in vulnerable Drinking Water Supply Management Areas and other areas of high vulnerability to nitrate contamination.

Add these action items

GW-1.X Support private well owners in testing their wells on an annual or biannual basis for nitrate-nitrogen.

GW-1.X Assist public water suppliers in implementing their wellhead protection plans.

Concern - It is not apparent <u>when</u> or <u>where</u> actions under GW-1 would be undertaken during the ten year plan.

It is stated in 2.4.1.1 that "identifying the locations of the resource concerns on the landscape within the plan area allows for the development of a targeted implementation schedule focused on specific locations. Figure 2-1 shows specific locations of DWSMAs and also results of some private well testing for nitrate. **However, it is not clear how this map is used to develop the targeted implementation schedule.**

Total Nitrogen maps were also created that show "the probable sources of total nitrogen leaving the landscape and reaching the planning area outlet" (2.4.1.2). In this section it also says that "These maps (Figure 2-4 and in Appendix I) show the locations of the probable sources and relative magnitudes of the issues for drinking water supply and streams and rivers "A" level priority resource concerns; i.e., sediment and nutrients." **Looking at the maps for total nitrogen yield, it is unclear how these yield maps show a relation to elevated nitrate in groundwater.** It is presumed that these maps were created using the PTMapp which was developed for surface water. For public water supplies, management areas have already been delineated through groundwater modeling. These are the Drinking Water Supply Management Areas.

Recommendation:

For public water supplies that have vulnerable DWSMAs and elevated nitrate concentrations, clarify when nitrogen BMPs would be undertaken in these DWSMAs. The local planning staff can work with the public water suppliers, MDA and MDH staff, and Minnesota Rural Water Association staff in crafting projects that would address reducing nitrate concentrations in public drinking water supplies.

For private wells, the 1W1P plan could outline a sequence of work in regard to well testing and working with agricultural landowners on nitrogen BMPS, that reflects the MDA Township Testing Program schedule.

Concern - Measureable Goals and Metrics for Drinking Water Supplies in Table 4-4. The 45 % reduction goal from the Nutrient Reduction Strategy was developed for the Mississippi River Basin. The metric used as a measurable goal is Annual Load (mass/yr.). These do not seem appropriate for groundwater.

Recommendation-
An alternative reduction goal more suited to groundwater is the goal stated in the Clean Water Roadmap for groundwater quality which is to reduce nitrate levels in groundwater by 20% (see Clean Water Roadmap page 20).

The annually load (mass/yr.) of total nitrogen would not be as direct a quantitative measurement as actual nitrate-nitrogen water data from public and private water supply wells. Nitrate data is available for public water supply wells from MDH. Considerable data has been collected from private wells and more data will be collected in the near future through the MDA Nitrate Township Testing program. For this reason, tracking changes in nitrate concentration of drinking water supplies would be a better metric.

Drinking Water Supplies Resource Concern - Issue – Elevated levels of bacteria

Concern – Strategy GW-2 *Manage groundwater quality to achieve the total coliform drinking standard* is an inappropriate use of this standard. Coliform are a group of related bacteria that are (with few exceptions) not harmful to humans. US Environmental Protection Agency considers total coliforms a useful **i**ndicator. For public water suppliers, total coliform sampling along with E. coli is used to determine the adequacy of water treatment and the integrity of the distribution system. The approach is a "find and fix" approach that is used to determine sanitary defects in the system and subsequently to take action to correct them. In most cases the source of the problem is not in the drinking water groundwater source. In regard to private wells and total coliform testing, if a positive result for total coliform testing is found, the well is typically disinfected and that hopefully will resolve the problem. However, if a well is improperly constructed and does not meet sanitary standards, then it should be replaced. There are also additional ways that a private well owner can keep their drinking water safe. For these reasons, the following recommendations are made.

Recommendation –

GW- 2 Reword this strategy to: Properly manage sources of human and animal waste and protect water supply wells to minimize the introduction of microbial contamination to drinking water supplies.

Add the following Action Items under this strategy

GW-2. X Work with well owners to insure minimum setbacks or "isolation" distances from possible sources of contamination and implement other steps to make their well safe. (This could be done in part by distributing and reviewing with well owners *MDH Owner's Guide to Wells* brochure)

GW-2. X Work with well owners to replace water supply wells that do not meet sanitary standards. (Financial incentives for this action would include programs such as MDA Agricultural Best Management Practice Loan Program)

GW-2.X Support private well owners testing their wells on an annual basis.

Concern - Total coliform counts for the reason stated above is not an appropriate Quantitative Measureable Goal and sample concentration (mg/l) is not an appropriate metric.

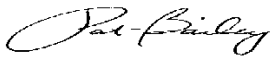
Recommendations
Measureable Goal: No water supply wells test positive for E. coli and for a Metric Change in number of wells having drinking water samples that have positive test for E. coli.

Other Comments

- Page 1 Plan Abbreviations DWSMA stands for Drinking Water Supply Management Area
- 5.5.1.7 Well Management should state the Minnesota Department of Health Well Management Program administers the Minnesota Well Code MN Rules Chapter 4725 and that Olmsted and Winona counties within the 1W1P area have delegated Water, Monitoring and Dewatering Well Programs.
- Table 5-2: field practice management category under Groundwater Initiative includes Rain Gardens. Stormwater infiltration is not always beneficial to drinking water. Check Stormwater infiltration and constraints on infiltration in the MPCA Minnesota Stormwater Manual.

Thank you for consideration of these concerns and recommendations. Hopefully these comments will be of use in finalizing the Root River One Watershed, One Plan and in moving forward with implementation.

Sincerely,



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