



Minnesota Pollution Control Agency

Rochester Office | 18 Wood Lake Drive SE | Rochester, MN 55904 | 507-285-7343

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

August 11, 2016

Ms. Donna Rasmussen, Administrator
Fillmore Soil and Water Conservation District
900 Washington Street Northwest
Preston, MN 55965

RE: Draft Root River One Watershed One Plan

Dear Ms. Rasmussen:

This letter responds to a request that the Minnesota Pollution Control Agency (MPCA) provide comments on the Draft Root River One Watershed One Plan dated June 13, 2016. Thank you for the opportunity to review and comment. The willingness to be one of the pilot watersheds for this new approach is commendable. The partners involved in creating this plan continue to be integral partners for addressing water quality issues affecting southeast Minnesota.

To be acceptable, the MPCA recommends that a revision of the plan be written to include the following comments:

1. Page 1-4 states that the planning region for the Plan is consistent with the MPCA's Watershed Restoration and Protection Strategy (WRAPS) process. This statement is not accurate. While MPCA does develop total maximum daily loads (TMDLs)/WRAPs on an 8 Hydrologic Unit Code (HUC) watershed basis, the Plan includes three separate 8 HUC watersheds (Root River, Mississippi River-Reno and Upper Iowa River), two of which will have completed WRAPS in 2019. It should be noted there is a difference in program schedules/boundaries at this point.
2. The goals from the Nutrient Reduction Strategy (NRS) were used without any sort of focused discussion or explanation of how goals were considered (and presumably adopted). The NRS takes great care and forwards an unprecedented amount of technical information to confirm that in southeast Minnesota, the primary delivery of nitrogen (N) to surface waters is via "ag groundwater" i.e. vertical leaching loss to groundwater and then transport to streams via baseflow. The only text found in the Plan that acknowledges this is in 2.6.1.3 which notes the complications of karst, but concludes that "The recommended practices are defensible regardless of the ability to understand the details about the influence of karst on water movement." This directly contradicts NRS findings and the generally accepted understanding of how N moves in the karsted landscape; geographic areas for N reduction focus cannot be well-prioritized using tools that are based on runoff dynamics and ignore the vertical transport component.
 - a. Figure 2-4 suggests that the bottom of the South Fork Root River watershed is somehow a priority for N reduction. It reads "total nitrogen yield" however, this map seems to indicate to the general reader a prioritization for N load reduction.

- b. The previous figure (2-3) confirms that the shaded areas of Figure 2-4 are mostly forested acres; the valley walls, etc. The main sources of N (the cultivated acres in brown) are not highlighted in Figure 2-4.
 - c. Figure 2-4: It should be made clear within the narrative of section 2.4.1.2 that this figure depicts total nitrogen (TN) leaving the landscape via overland flow, and does not account for vertical leaching which has been documented (again via the NRS) to represent the means by which a high percentage of total nitrogen TN leaves agricultural landscapes in the southeast region.
3. Page 2-39 (and 4-16) states that the Plan “incorporates strategies from the WRAPS to reduce nonpoint source loads allocated by the TMDL to achieve water quality standards in the plan area. The plan adds detail to the strategies described by the WRAPs, by including information about the sources of pollutants at the field scale, establishing new and consistent programs for constructing best management practices (BMPs), identifying locations for prioritized implementation, and enumerating the anticipated load reduction benefits.”
- The Plan does list allocations for sediment and nitrate TMDLs. However, it fails to list the bacteria allocations. MPCA communicated in the fall of 2015 that bacteria data and TMDLs exist and should be incorporated into the Plan since bacteria is one of the main pollutants of concern in the watershed. The load duration curve files were provided. This is a large oversight and it is strongly recommended incorporating at minimum the most recent bacteria TMDL information into the Plan. Previous bacteria impairments addressed in the [Regional Total Maximum Daily Load Evaluation of Fecal Coliform Bacteria Impairments in the Lower Mississippi River Basin in Minnesota](#) (MPCA 2006) should also be included as well.
 - It is misleading to suggest the Plan identifies sources of pollutants at the field scale. It is strongly recommended that rewording happen to reflect the PTMApp is best used to approximate sources of overland TN, total phosphorus (TP) and sediment at a catchment scale. This would align with wording on 4-2 that “...some surface water boundaries at the local field scale may be inaccurate.”
 - It is unclear what the “new and consistent programs for constructing BMPs” are within the Plan. This should be explained and clearly labeled.
 - Prioritized implementation identification again relies on information from the PTMApp. The MPCA sees limitations with using the PTMApp for this type of identification while acknowledging the App was developed separately and has great potential; it should be acknowledged that limitations exist. The following limitations should be described:
 - a. Bacteria-there are many aquatic recreation impairments based on high bacteria in the watershed. It is a critical oversight to not include this in planning simply because the PTMApp “was not programmed to analyze bacterial issues impacting surface and groundwater resource categories” (page 4-2). While some BMPs used for sediment and nutrients may also impact bacteria reduction, inclusion of bacteria in analysis may direct BMP implementers to different areas on the landscape.

- b. Sediment- lack of accounting for channel sources of sediment is an oversight that may direct practitioners to select BMP placement locations that are not most beneficial to the resource. One finding from Belmont et al, 2016, is that “nearly half (43percent) of the sediment that reaches the mouth of the Root River is derived from channel sources, specifically, bank erosion.” (P. Belmont, Dogwiler, T. and Kumarasamy, K. 2016. An integrated sediment budget for the Root River watershed, southeastern Minnesota).
- c. Nitrate-the lack of nitrate-N information is a critical oversight since it is this form of nitrogen that is a concern in the watershed, especially in ground water. If the App can currently only show reductions in overland TN, a suggestion would be that it is not the right tool to use to track TN reduction potential in this circumstance since, as stated previously, a vast majority of TN leaves the landscape via vertical flow to groundwater (as shown in the watershed’s TMDL and WRAPS, as well as the State of Minnesota’s Nitrogen in Surface Waters report (MPCA 2013). Perhaps it should be removed as a tool used for TN while still relied upon for TP and portions of sediment where it seems to have the most strength.

4. Section 3.2:

- a. Protection and restoration classifications are established in this section, but not used elsewhere in the document. For example, the protection and restoration classifications were not used as a way to prioritize actions. Additionally they are not listed in any tables for planning and prioritization. It is recommended that these classifications be incorporated in a way that provides consistency, helping local planners identify and implement proper actions on the landscape.
 - b. Section 3.2.1, 4a: The third subcategory listed is named differently in the introductory paragraph than point iii; “Heightened” and “Threatened”.
 - c. Section 3.2.1, 4ai2: The wording here attempts to set a new assessment methodology when data does not exist that meets MPCA’s strict assessment methodology. Having five samples may or may not give a good picture of water quality depending on many factors like flow conditions at the time of sampling, , time of year, timeframe in which they were collected, etc. The MPCA recommends removing this method.
 - d. Figures 3-1 through 3-5 should give a data source.
5. Page 3-10 mentions “presumed background nitrate-nitrogen concentration of three milligrams per liter (mg/L).” However a number of streams in the watershed are <three mg/L baseflow N; more generally background concentrations of nitrate were 0.24 mg/L in watersheds dominated by non-urban and non-agricultural land uses (Dubrovsky, et al., 2010). Please correct.

6. Section 3.3.2: Surface Water Strategies:

- a. SW-1: This strategy includes “in-channel sources”. How will in-channel sources of sediment be measured to determine status of this strategy and associated actions if the PTMAApp does not account for in channel sediment?

- b. SW-3: Consider rewording this statement to: "Improve or protect aquatic biological communities by ensuring stream total suspended solids (TSS) concentrations meet or are less than the water quality standards for TSS".
 - c. SW-4: Consider rewording this statement to "Manage sources of human and animal waste to improve or protect stream bacteria concentrations to the *E. coli* water quality standard."
 - d. SW-5 is based on nitrate-N, which is the main portion of TN of concern in the watershed. However, when targeting, setting metrics and reductions, the Plan switches to TN. BMPs and actions vary when addressing one versus the other. Consider continued consistent use of nitrate-N throughout the document.
 - e. SW-6: It should be noted that there are currently no identified TP impairments in the watershed. This strategy should be reworded to 'protect' instead of reduce.
 - f. SW-7: It should be noted that there are currently no identified dissolved oxygen (DO) or temperature impairments in the watershed. Also, Action 7.4 addresses habitat, not DO/temperature, and should be removed from this strategy.
7. Table 4-5: under AUID 07040008-563, it does not indicate the bacteria impairment that exists. This AUID was included in the most recent Root River watershed TMDL report. Please include information on bacterial loading for this AUID in this table. The moderate flow load is set at 27.08 billion organism/day.
8. It is recommended that the number of BMPs implemented as the only metric for reporting a measurable goal be revised, especially when those are reported in fractions of BMPs (i.e. 10.4 BMPs/year in Crooked Creek per Table 4-7). It is suggested that a better metric might be the cumulative estimated reduction provided by those BMPs since various BMPs provide various estimated pollutant reductions. It would also allow a more quantifiable calculation. For example, if one landowner installs a 10,000 foot grassed waterway and another landowner install a restored wetland that would be two BMPs. A metric of two BMPs does not seem to capture the magnitude of these practices. Instead, the estimated reduction of each BMP could be calculated and reported giving a more accurate depiction. If the PTMAApp can estimate reductions, could it not be used to calculate these numbers?
9. Page 5-13: The MPCA is removing the three continuous nitrate monitoring stations at the Lanesboro Fish Hatchery. They will be used at other southeast locations to characterize groundwater nitrate in the region. Please change language to reflect this.
10. Appendix B, Section 4: Lotic Systems, 4.2.1, overview is given of Root River streams, but the other streams in the planning area are not discussed. These should be included in this discussion. Also, it is stated that the streams are Class 1B and 2A. While there are streams of these classes, other classes exist in the entire planning area (shown in table below) in accordance with Minn. Stat. § 115.44 and Minn. R. 7050.0140:(Source of table information: MPCA Geographic Information System layer "stream_AUIDs_current").

Use Class	Number of AUIDs	Miles of stream
1B, 2A, 3B	1156	713
1B, 2Bd, 3B	1	4
2B, 3C	222	768
2C, 3C	2	12
2C	12	32
7	4	17

It is suggested that the following changes be made:

1. Figure 2-2: It should be clarified that impairments shown on this map are on streams that have been assessed for various uses. While it is true that the light blue line indicates "Assessed Streams", impaired streams are also assessed. A more accurate label would be Full Support/Insufficient Findings.
2. Figure 2-13: It is unclear how the presence of a fish and/or aquatic macroinvertebrate Index of Biological Integrity (IBI) score itself helps with aquatic habitat analysis. It would be more informative if the IBIs were qualified by being "bad" or "good" based on information in the MPCA's Root River Watershed Biotic Stressor Identification report.
3. Clarify the linkage between Figures 2-1, 2-2, 2-3, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-12, 2-13, 2-14, 2-15, 2-16, 2-17, 2-18 and the actions and targeted implementation areas to address the resource concerns. As the Plan reads, these are background maps and are not used in the prioritization process. Is this conclusion correct?
4. Section 2.4.1: While it is agreed that the Level 'A' resource concern priorities are good, it seems that they encompass the entire watershed area and therefore are not identifying actual priorities. It is noted later in Section 2 that these 'A' level priorities will be implemented first. It is assumed this means strategies and actions associated will be implemented. It would be more useful if recommended associated actions were ranked identifying which would be implemented first.
5. There is only one mention of the "nonpoint priority funding plan" (page 3-2). It would seem that this plan and any 1W1P should be well connected; e.g. a citation saying waters that are close to meeting goals should be a priority. The Plan gets to this by showing maps of low and high effort needed to achieve goals, but the linkage to the funding plan should be underscored to confirm that these plans/documents/mandates do indeed coordinate and support broader efforts.
6. Figure 4-3: Consider defining what "50 percent sediment and 50 percent nutrients" means in the figure legend. Is it 50 percent delivery? The top 50 percent loading subwatersheds? Clarification would help the reader understand what the data is representing.
7. Table 4-1 indicates plans for a 45 percent reduction in TP which would exceed the contribution to the State level reductions needed (12 percent per NRS). Consideration could be made to reduce target levels for TP to 12 percent and put the remaining effort toward sediment and nitrogen loading reduction. On a similar note, the expected Nutrient Reduction Strategy based watershed reduction for TN in this 10 year plan is 20 percent. Since the Root River watershed

has TN concerns, we support going beyond that target toward the long term goal of 45 percent and meeting the TMDL and groundwater objectives within the watershed.

8. Table 4-6: "Maintain compliance with wastewater treatment plant point source permit requirements." This should also be listed as an action item under nitrate-nitrogen and sediment since some permits address these pollutants.
9. Section 5.1.1.4: The MPCA is in full support of the development of a Social Capacity Initiative as described in this section. A broader understanding of the social complexity in the watershed and how it affects adoption of BMPs that will improve water quality would in turn inform many programs working in the watershed.
10. The use of multiple tables within the Plan makes it hard to follow the relationship between action and outcome. A suggestion is to take a high priority outcome and demonstrate how the programs and actions the Plan supports will work its way through a strategic outreach to target BMPs and ultimately result in a specific water quality outcome. Perhaps following the South Fork Root subwatershed as an example since those were the maps provided in the Plan as examples.
11. The amount of information in the document is overwhelming. It lacks clear statements on main issues, goals for improving conditions, or main strategies for how to get things done and best places to work. It is recommended that these are laid out clearly in the Executive Summary.

We trust these recommendations will help with your local planning efforts. If we may be of further assistance, please contact Shaina Keseley in the Rochester office at 507-206-2622.

Sincerely,

Wayne Cords

This document has been electronically signed.

Wayne Cords
Manager, Southeast Region
Watershed Division

WC:SK/jw

cc: Ed Lenz, BWSR
Adam Beilke, BWSR
Rebecca Flood, MPCA
Katherine Logan, MPCA
Peter Fastner, MPCA