BOARD OF WATER AND SOIL RESOURCES

February 22, 2019

Missouri River Watershed Planning Work Group
c/o Dan Livdahl, District Administrator, Okabena-Ocheda Watershed District
960 Diagonal Road; P.O. Box 114
Worthington, MN 56187

RE: Missouri River One Watershed, One Plan Comprehensive Plan: 60-day Comments

Dear Missouri River Planning Work Group:

BWSR Staff have completed the 60-day review of the Missouri River One Watershed, One Plan (Plan) draft. This review and comment is based upon the submittal received December 26, 2018. We would like to thank the Planning Partnership for their participation in the One Watershed, One Plan initiative and willingness to participate in a multi-jurisdictional comprehensive planning exercise. The Planning Partnership should be commended for an inclusive planning process and coordination of a large number of participants. We would like to note that this plan addresses a unique combination of priority concerns through implementation actions and considerations including conservation practices, official controls, collaboration opportunities, and other tools to achieve the goals of the plan. BWSR has the following comments upon review of the submitted plan:

General comments

- A clearer description of the conservation delivery system should be included. This should include a general discussion of the partners' roles and authorities in implementing the Plan.
- We appreciate that the group has identified a tiered implementation based on funding levels. Identifying efficiencies using known funds when compared to the total amount needed is valuable information in determining necessary funding allocations.
- Maps – General - Some maps show location of data points where analysis is performed or observed but don't list results or aren't really referenced in the plan, remove items that have no direct bearing on plan actions or prioritization otherwise explain better why the map subject exist – may have a better place in the resource inventory.
- The baseline implementation level assumes statutory obligation and ordinance implementation levels will go unchanged. Will the local government units (LGU) self-report an audit to the partnership to ensure that this is taking place?
- The progress toward goal breakdown charts by planning region will be useful in building implementation plans, the planning group is to be commended for building implementation schedules specific to planning regions.
- While the process to prioritize issue statements yields ranked issue statements and action items for this planning effort, the concern is the ambiguity 'issue' connection to spatially prioritized areas for implementation of these actions – with this plan we have the what first, perhaps, but not necessarily the "where first" in the overall planning area. After taking into account waters that are of greatest local

concern along with prioritized issues, there should be a section in the plan outlining a couple of areas on the planning area map where it would make the most sense to concentrate efforts in order to best address those issues. In doing so, this provides an area for any implementation funds to point to for focusing efforts as well as a starting point for future plan assessment and evaluation. A robust discussion and description on this subject would lend itself to other comments in this letter.

Executive Summary

- Page ES-2 identifies as "14 lakes in the eastern half of the watershed; land and water resources inventory (appendix A) only lists eight in total.
- Page ES-2, ES-3 – perhaps expand on the definitions of the "tiered priorities" ("A" being highest and "E" being lowest priority) how will the lower priorities relate to implementation or future prioritization.
- Table ES-2 - Good summary of targeted implementation results; will be a useful starting point for pace of progress and measuring progress toward the plan in reporting.

Section 2 Analysis and Prioritization of Potential Concerns and Issues

- 2.2 – last paragraph – relating back to executive summary – show relation of these issues to future planning evaluation.
- 2.3.1 – Table 2-4 Priority Concerns and Issues addressing fecal coliform. Developing goals for bacteria? (Issue 1.1.2, 2.1.2) Specific Implementation?
- 2.4.2 Policy and Funding Emerging Issues. Title is confusing. Consider "Noted Impediments to Effective Water Plan Management".
- 2.4.2.1 – Second paragraph – an example of the use of the term "block" funding – request the word "block" be removed as the term has different connotations as currently used in state funding. This issue pops up in multiple areas through the report - suggest search and review for the word 'block'.
- 2.4.2.5 – Are wind and solar activities covered by zoning authorities? This section might be rolled into land use due to ethanol/bio diesel in the previous section.
- Figure 2-1 – since arsenic values are listed as 10 ug/L for public health risk, Arsenic symbols should break at 9.9 micrograms/L instead of 19.9.
- Figure 2-3 – Streams listed as assessed are symbolled in green – a few of these aren't listed as assessed for lack of info; check to be certain they are assessed (same would go for Figure 2-11).
- Figure 2-4 - Is this a map of areas where invasive species of carp have been documented or is this a potential threat as stated in the explanation – key should be clearer.
- Figure 2-5 – Meaning of 'Agricultural' Drainage System isn't clear – dashed lines don't come across well in the map at this scale. Recommend using 103E Public Drainage Systems.
- Figure 2-8 – Dam location map may be dated - ground truth; calcareous fens – if they exist, not seeing them on the map (clipped?); MPCA Biological Sampling Sites shown – are the results listed somewhere or play a part in the prioritization.

Section 3 Establishment of Measurable Goals

- Measurable Goal Sheets – Really like this idea – Assuming the idea is to treat these as goal documents independent of the plan, the reference callouts to issues and implementation within these sheets are very confusing for a reader unfamiliar with the plan. Not evident how specific goals and (multiple) implementation actions are related to issues. These pages should be easy to follow and succinct.
- Measurable Goal Sheets – Should format consistently (Issue explanation on one side, goals on the other) tend to flip back in forth in positioning; might be best to order the explanation before the actual goals on these sheets.

- Section 3.2, page 3-3, strike “BWSRs” when referencing the Nonpoint Priority Funding Plan (multiple instances). – (Minnesota’s Nonpoint Priority Funding Plan for Clean Water Fund Implementation).
- 3.2.3 Groundwater Quality and Quantity – are “low risk nitrogen infiltration areas” related to quantity somehow? I would assume that heavy clay would be low risk but really doesn’t do much for quantity. Are we saying “target retention areas on low risk of infiltration areas”? – Not quite clear. Make it clear why targeting a lowest risk area is a priority.
- 3.2.4, 3.2.5, 3.2.6, 3.2.7 - “Length of stream impaired” are not measurable goals in these instances as stream length doesn’t enter into it – because the WRAPS goals are based on the pollutant reduction needs per reach, its either all or nothing for the impairment on a “reach-specific” scale. Unless there will be multiple assessments per reach, might do well to make the goal # of impaired reaches or some other measurable goal.
- 3.2.13, 3.2.14, 3.2.15, 3.2.16, 3.2.19, 3.2.20 – Long term goals should all state a reevaluation and assessment of resource/activity every 10 years.
- 3.2.11 Wetlands. Will the group take credit/keep account of wetland creation or restoration completed by groups like USFWS, DNR, DU?
- 3.2.18 Manure Application – Outside of mapping manure application and estimated rates, this goal really doesn’t seem to have goals that differ from Goal 3.2.17 (SOM Content)– *could be consolidated*. If we are opting to keep this goal, we will have to clarify how we target this action and what the resource outcome will result.

Section 4 Targeted Implementation

- Pages 4-11 through page 4-34 – where there is a callout in the charts regarding progress toward goals there seems to be an alternation between a the term “short term goal” and progress toward “goal” (example) 4-14 and 4-20. While what is listed is factual, have to do some mental gymnastics
- Table 4-7 – Should include activities that use tools available through this planning effort to explore, target, and set a schedule for possible larger scale retention projects and flood control opportunities.
- Section 4.2.1 – This is a good section; adds benefit to this plan.
- Pgs. 4-13, 4-19, 4-25, 4-31 consider adding creation and restoration of wetlands as actions to affect ground water nitrates and ground water supplies (Goal 3.2.1 and 3.2.3).
- Pgs. 4-17, 4-23, 4-29 (Surface Water Quality Charts): The term “low restoration effort” would indicate that an impairment exists; there are no corresponding impairments in a few instances (-551, -583, -501, -514, -519, -502, -507). Seem to be related to TSS or TP. **ALSO – The tabular data has reaches listed as “threatened impairment risk” when they are categorized as impaired – again, seems to be TSS or TP related (-527, -523, -520, -511).
- Pg. 4-23: Are we setting goals and measuring for E. coli, reaches -553 and -528 are a non-factor in the absence of bacteria/other measurable goals.

Section 5 Implementation Programs

- 5.1.4 Should be something more to outline O/M requirements, project easements, etc. if outside funding will be considered for capital improvement projects (projects that have an effective life over 25 years) – may refer to the BWSR Grants Administration Manual for ideas on a policy for this planning group.
- Table 5-2 – Though these projects may well be implied in the implementation schedule, there are no Capital Improvements Projects listed for the Kanaranzi-Little Rock WD for consideration in this table.
- 5.1.5.1 Cite Statute as Section 103F.48. in Riparian Protection subject paragraph.

- 5.1.5.3 First sentence might read "*Portions of the* Missouri River Watershed are within the . . . ; the way the sentence currently reads seems to indicate that the Missouri River Area is a subsection of the two watershed districts.
- Table 5-3; pg. 5-18 – "Public Drainage Systems:" – these activities should be listed as statutory responsibilities; also 103E activities should be listed separately from buffer compliance specifically to 103F.48 two separate sets of rules when it comes to buffers.
- 5.3.1 – … fiscal and administrative duties will be assigned to a planning entity… the term "planning entity" should be clarified or changed to something like "member LGU" or member of original planning partnership.
- 5.3.4.2 Biennial Evaluation. The Biennial Budget Request is not an evaluation. This section would better fit within 5.3.3 Work Planning ALSO, Replace references to BBR with Watershed Based Funding Work Plan Activities.
- 5.3.4.3 – Should mention ongoing 5 year reviews – section reads as though one review will be done and then the plan will remain in full effect thereafter. Also, plan operating procedures (Step 9.c.) lists required plan updates/revisions every 10 years as well; should be mentioned somewhere in this section.

Step 9. Implement, evaluate, and revise the plan. Additional information on plan content and evaluation requirements can be found in the *Plan Content* document.

a. Local development and use of an annual and/or biennial work plan and report between partners is recommended for accountability, e.g. holding an annual meeting in the watershed to discuss the previous year's accomplishments and confirm direction for the next year. Additional annual/biennial reporting requirements can be found on the BWSR website.

b. Five year evaluation of performance is required and updating (amendment) of implementation plan and schedule as needed.

c. Revisions required every 10 years. Depth of revision dependent on evidence that implementation is occurring. BWSR can issue 'findings' when a plan is good enough that complete revision is not required.

- 5.3.6 - Unless we are actually signing a Joint Power Agreement establishing a new entity, we should NOT use the language "the legal name for this new entity is…" The policy committee, if it continues in its current form, is advisory to the member LGUs to agree that the members will work together to implement. There may be additional sub-agreements and contracts that lay out how money changes hands between members and how they will share services, equipment, or staff, but those all should be specific for each implementation activity or initiative and may be limited to a subset of the partners, depending on the activity and how they are sharing any roles or financial resource to accomplish implementation. – Review the plan to be certain we aren't obligating an authority where it doesn't exist.
- An Implementation Agreement should be developed to further identify the structure of decision making, financial and admin responsibilities.

We would like to recognize the difficult work that the Planning Partnership has done and thoughtfulness of its members for open conversation. The plan should provide the tools for implementation with sound justification for programs and projects for the next ten years and a base for revisions to come. We look forward to continuing to work with you through the rest of the plan development process and into future implementation. If you have any questions, please feel free to contact me at 507-537-6636, douglas.goodrich@state.mn.us

Sincerely,

Douglas Goodrich
Board Conservationist

Mark Hiles
Clean Water Specialist

Cc: Margaret Wagner, MDA (via email)
Russ Derickson, MDA (via email)
Barbara Weisman, DNR (via email)
Robb Collett, DNR (via email)
Carrie Raber, MDH (via email)
Amanda Strommer, MDH (via email)
Juline Holleran, MPCA (via email)
Mark Hanson, MPCA (via email)
Ed Lenz, BWSR (via email)

February 22, 2019

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Dear Mr. Livdahl and Goodrich,

Subject: Minnesota Department of Health Comments for the Missouri River One Watershed One Plan - 60 Day Public Plan Review

The Minnesota Department of Health (MDH) Source Water Protection Unit appreciates the opportunity to review the draft Missouri River One Watershed One Plan (1W1P). MDH commends the plan partners for including drinking water as a priority. Thank you for allowing MDH the opportunity to be part of the planning and advisory committee and for incorporating our ideas and suggestions into the draft plan. We appreciate that you included the Groundwater Restoration and Protection Strategies (GRAPS) figures and referenced the document in the 1W1P.

MDH comments on the draft plan include:

- *Section 2 Figure 2-1 Issues Impacting Drinking Water* (page 2-17): The monitoring well nitrate concentration data does not appear to include all the public water supply monitoring data like other similar figures in the plan. Consider altering the monitoring well arsenic concentration legend and data to include a breakdown range of 5.0-10.0 ug/L since 10 ug/L is the drinking water standard.
- *Measurable Goal 3.2.3 Groundwater-Sustain Quality and Quantity* (page 3-7): The goal references the nitrogen infiltration risk maps from Appendix I but more explanation could be added to clarify why targeting low risk areas have an impact on quality and quantity. Specifically the long-term goal mentions “low risk areas in DWSMAs” and could state, “low nitrogen infiltration risk areas in DWSMAs”. Adding clarification, being clear and consistent with the wording, and referencing Appendix I may help plan readers better understand this measurable goal.

- *Section 4.4 Table 4-5* (page 4-41): Action number DGR-18 is to "Identify and implement opportunities to collect data to monitor effectiveness of best management practices on nitrate levels in groundwater." Recent conversations with local/state agency staff and public water suppliers has resulted in the recognition that this is a key need in this watershed in order to get landowners to implement practices. We would recommend considering moving this to a 'T' action level in the LBSR and RR watersheds.

We commend the planning team for their work in developing the plan. If you have any questions please contact me (507) 476-4241 or via email at amanda.strommer@state.mn.us.

Sincerely,

Amanda Strommer

Amanda Strommer, Principal Planner
Source Water Protection Unit, Minnesota Department of Health
1400 E. Lyon Street, Marshall, MN 56258

CC via email: Mark Wettlaufer, Planning Supervisor, MDH Source Water Protection Unit
Yarta Clemens-Billaigbakpu, Area Hydro, MDH Source Water Protection Unit
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Chris Elvrum, MDH Well Management Section
Mark Hiles, BWSR Clean Water Specialist
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DEPARTMENT OF NATURAL RESOURCES

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February 25, 2019

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RE: Comments for Missouri One Watershed One Plan (1W1P) document (12/21/2018 version)

Dear Mr. Livdahl and Mr. Goodrich,

The Minnesota Department of Natural Resources (DNR) is thankful for your time commitment, hard work and diligence in developing the draft Missouri River Watershed Comprehensive Watershed Management Plan. Southwest Minnesota is a diverse and unique part of the state, with rolling topography, native prairies, distinct communities, ancient geological features, varied recreational opportunities and many rare plant and animal species. We see great opportunities to protect and restore groundwater and surface waters resources, critical habitats, and provide enhanced recreational opportunities while balancing rural and agricultural livelihoods.

DNR staff appreciate the opportunity to contribute to the 1W1P process. Some of our contributed comments and priorities have been incorporated and others are less clear in the plan. Please allow us to reiterate some of our priority concerns. For consistency, the comments that follow are arranged per the priorities in our letter submitted in July 2017. I am hopeful watershed planning opens doors for continued collaboration. Improving water quality, protecting and recharge groundwater, restoring critical habitat, and improving and developing recreational opportunities are all opportunities for us to collaborate to enhance quality of life in the watershed.

A high level of coordination is needed to successfully implement this plan. We support the Counties, SWCD staff, and watershed district's commitment to achieving this goal. If you have any questions, please don't hesitate to contact DNR Area Hydrologist Tom Kresko at 507-832-6045.

Sincerely,

Scott W. Roemhildt
DNR Southern Region Director

EC: Tom Kresko, Area Hydrologist
Todd Kolander, EWR District Manager
Robert Collett, EWR Regional Manager
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Ryan Doorenbos, Area Fisheries Supervisor
Taralee Latozke, Fish Habitat Specialist
Bill Schuna, Area Wildlife Manager
Randy Schindle, Cooperative Forest Management Forester
Corrie Floyd, Research Scientist
Kristy Rice, Trail Development Specialist
Mark Hiles, BWSR Clean Water Specialist

DNR Priorities for the Missouri River Watershed

Altered Hydrology – The DNR recognizes two critical factors influencing hydrology in the Missouri River basin; climate and land use. Research indicates changes in climate and land use have a major impact on hydrology in Minnesota. The challenge is separating and quantifying the influence of each factor on the hydrologic system. Land use changes include the conversion of pasture and other vegetated acres to row crops, ditching, tiling, and wetland drainage which are resulting in surplus flow to receiving water resources. Climate changes include increased annual average precipitation, and an amplified intensity of individual storm events (all seasons).

Distinguishing between land use and climate change is important to help provide direction in developing land use strategies to reduce, mitigate, modify and limit human based hydrologic alteration for both the short and long term. Understanding and quantifying past and current land use influences on hydrology also helps us set realistic goals for land use management which are directly keyed to localized parameters. The same holds true in responding to specific climate based alteration in order to anticipate and predict and implement infrastructural changes designed to strengthen or increase the resiliency of the landscape and hydrologic system.

- **Short and Long-term goals on page 64 (3.2.10)** should allow for graduated targets referencing the differences between the Little Sioux and remainder of the Missouri River watersheds. Numerous existing wetlands and lakes provide storage and retention in the Little Sioux sub-watershed compared to the rest of the Missouri River basin. The Little Sioux also has more “pothole-type” wetlands; and its topography is better suited to wetland restorations than the wetland creation scenarios that are more appropriate for the primary Missouri River Watershed.
- **Measurable Goal 3.2.10** does not seem to adequately emphasize restoration of hydrologic and ecological functions. Given the watershed’s well-developed drainage-ways, both natural and artificial, storage goals cannot be met using an acre-foot goal alone. A wider variety of conservation practices are needed to achieve both water retention and ecological benefits in the watershed, including in the steeper upper tributaries, which generally support the best soils for agriculture and some of the best aquatic and terrestrial habitats.
- Storage as acres of “new wetland” identified in **Measurable Goal 3.2.11** discusses “increasing quality wetland areas” using primarily the PTMapp results and other datasets. To achieve ecological benefits,

restoring wetlands should be a higher priority than converting non-hydric soils into engineered wetlands. Action LSR SP-6 on page 115 should ideally separate "Create or restore wetlands" into two rows with preference given to wetland restorations for the multiple ecological and hydrological benefits.

Groundwater Sustainability - The DNR has oversight on groundwater appropriated for drinking water, agroindustry, commercial use, community water supply, domestic wells and rural water systems scatted across the watershed. Therefore, aquifer recharge is paramount, and an aquifer management approach is critical to address both surface, shallow and deeper water sources to allow for future users while maintaining capacity and quality for current use. Shallow wells are very susceptible to drought and contamination, while deeper wells are less susceptible to contamination but may have water that thousands of years old. Groundwater recharge areas must be protected and enhanced to ensure an adequate supply for future generations. Limitations in groundwater availability and quality can affect the location and capacity of community growth, agricultural processing facilities, livestock production potential, and agricultural irrigation opportunities. A good supply of clean water is critical.

- In **Figure 2-1**, the Arsenic Concentration Average in MDH Monitoring Wells (page 38), one of the graduated-triangle symbols represents a range of 5.0 to 19.9 ug/l. Since the federal drinking water standard is 10 ug/l, it is impossible to tell which wells in this group are below, versus nearly double, the standard.
- The data set for **Figure 2-2** "High Volume Groundwater Users" (page 39) lists the outmoded SWUDS as the source for the Agricultural and Non-crop irrigation categories. The go-to source for current data is the Minnesota Permitting and Reporting System (MPARS), which replaced SWUDS several years ago and is updated weekly. Also, the "non-crop irrigation" category is a misnomer since the locations on Figure 2-11 appear to be for municipal water supply. Finally, in the same figure, consider a more vivid color scheme for high recharge areas, many of which are Drinking Water Source Management Areas.
- The structural or management practices detailed in **Measurable Goal 3.2.1** should prioritize projects that enroll permanent easements for practices in Drinking Water Management Areas (page 53).
- The groundwater snapshot figure **(pages 95, 101, 107, and 113)** displays high risk infiltration areas in dark green, which seems counterintuitive. A yellow/orange or green/yellow graduated legend would dovetail nicely with the red dots that symbolize monitoring wells above the 10 mg/l standard.

Successful groundwater protection and restoration work has been achieved in other watersheds where partners have found value in the Community-based Aquifer Management Partnership (CAMP) approach. Sustainable water supplies are likely one of the most critical limiting factors in this watershed where the geology has imposed significant limitations on municipal and rural development. There are three substantial rural water distribution systems within this watershed; all a direct result of drinking water quantity and quality challenges.

Surface Water Quality

- Many lakes in the Little Sioux River Watershed need protection or restoration. The emphasis on addressing issues with agricultural BMPs and encouraging education and outreach is essential. Lake Bella functions as a surface water reservoir directly connected to the aquifer that supplies drinking water to the City of Worthington, therefore **Table 5-2** should include targeted initiatives for managing this extremely sensitive water resource (page 146).
- Many tributaries, streams, and rivers in the watershed are unstable and erosive, as they have become incised and wider, losing beneficial sinuosity and floodplain connectivity. Research indicates near-channel

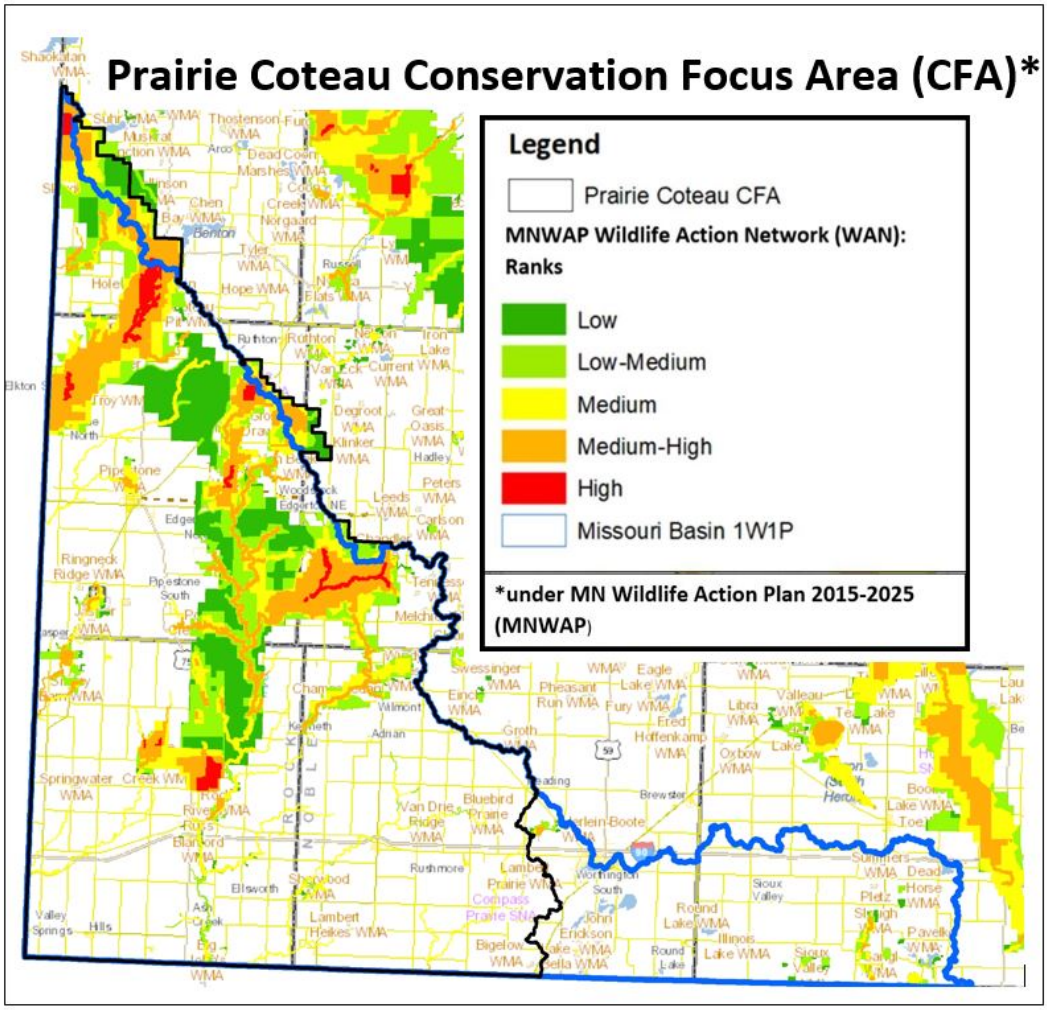
sediment accounts for 60-90% of suspended sediment and bedload contributions to sediment-impaired streams. The plan lists streambank/riverbank erosion as a Priority Tier A concern but is vague about stream/river restoration work, with few implementation strategies. PTMApp does not account for near-channel sediment sources yet. We recognize a perfect model to account for upland and near-channel sources does not exist at this time, but the largest sources of sediment loading (near-channel and bedload sources) are not being targeted in proportion to their contributing volume. This will obviously create a significant limitation to measuring or understanding sediment reduction goals.

- Riparian stewardship is highlighted with voluntarily limiting livestock access to streams and rivers being encouraged as a perennial vegetation strategy for riparian corridors. Agricultural BMPs appear well detailed. Projects and practices to store water in the upland will provide relief and alter run-off, but there is also an opportunity with natural stream channel restorations to improve channel stability, habitat conditions, reduce sediment and nutrients, and provide multiple ecological benefits.
- **Page 84**: Given the prevalence of pasture in the watershed **(Figure 3-9**), especially in the western half, consider more emphasis on establishing and maintaining healthy pastures, including rejuvenation initiatives, rotational grazing and off-site watering.
- For the year five update of this plan, DNR recommends an action item related to targeting stream restoration to more specifically address the near-channel sediment contribution. Targeted and prioritized subwatershed stream restoration projects could include re-meandering channelized reaches, restoring floodplain connectivity, reconnecting oxbows, planting protective riparian vegetation and working toward protective riparian flowage easements. Significant coordination and collaboration between landowners, scientists, engineers, local government units, and agency partners is needed. It is important develop a multi-disciplinary team to set goals and objectives, prioritize where to work, complete assessments, develop design plans, and implement projects.
- Stream restoration projects that overlap with the Prairie Coteau Conservation Focus Area (discussed further below) can benefit both water quality and habitat. In general, the greatest opportunities for collaboration will occur when Missouri 1W1P goals align with goals in other approved plans.

High Value Resources and Recreation

- **Prairie Coteau Conservation Focus Area**: In parts of the plan that address fish and wildlife habitat strategies, incorporate more information about the Prairie Coteau Conservation Focus Area (PCCFA) established under the **MN Wildlife Action Plan 2015-2025**. This will facilitate additional targeting and prioritization of multi-benefit implementation projects. Specifically, we request including the PCCFA map below. We can provide a higher resolution image or GIS shapefile on request. The intent of the PCCFA is to reduce ecological threats, improve ecosystem function, and increase the populations of designated Species in Greatest Conservation Need and other priority wildlife. This focus area was chosen because of threats to priority resources and opportunities to continue advancing collaborative conservation through coordinated resource management in the region.

- The Wildlife Action Network within the Prairie Coteau Conservation Focus Area (PCCFA) on the next page should also be incorporated into this plan.



- The PCCFA takes an integrated landscape-level approach using the MNWAP Wildlife Action Network, Minnesota Prairie Conservation Plan, and the Prairie Coteau Complex Important Bird Area as valuable decision-support tools. The associated PCCFA partnership includes the former Prairie Coteau Local Technical Team established under the Prairie Plan. The PCCFA partnership has been developing S.M.A.R.T.* objectives around connectivity, watershed conservation practices, habitat complexes, grasslands, native prairie, prairie streams, monitoring and adaptive management, and outreach and communication (*where S.M.A.R.T. = Specific, Measurable, Attainable, Results-oriented, and Time specific). Setting objectives using this approach will prioritize work and allow opportunities to monitor progress and apply adaptive management to the process over time. Although a "living document", we anticipate Version 1 of the PCCFA SMART Objectives document to be available by March 2019. The PCCFA partnership seeks to collaborate with other initiatives, including the Missouri 1W1P for an integrated, more effective approach to conservation."
- On **page 115**, the PCCFA does not incorporate the Little Sioux Basin. Please remove PCCFA text from this watershed's implementation table.

Calcareous fens are one of the rarest natural communities in Minnesota with only around 200 confirmed in the state. The Missouri 1W1P plan should include protection measures to preserve these fens, which are protected

by state law (statute 103G.223), but are at risk to encroachment and damage from adjacent land use practices. Calcareous fens are totally dependent on protection of the specific groundwater sources that feed them. Consider including more information on the special protection and management strategies for the watershed's ten identified calcareous fens.

- In **section 3.1.5,** insert "Protect calcareous fens" and remove "*Habitat loss from reduction in calcareous fens*." The text to the right should read "Protect rare and natural features" and remove *Protecting or improving use for aquatic life, recreation, and hunting* (page 24 of 166).
- Please **revise 3.1.5** to "*Protect calcareous fens and rare and natural features*" instead of habitat loss from reduction in calcareous fens (page 30 of 166).
- In Figure 2-8 on page 45, the legend indicates calcareous fens with a green triangle, however none of the watershed's ten calcareous fens appear on the map. Let us know if you need the shapefile in order to add them.
- Include the following or similar text within the WCA regulation language or as a separate row (page 128 of 166): *Calcareous fens are protected under statute 103G.223. Any calcareous fen related activities should be coordinated with DNR (Division of Ecological and Water Resources at 651-259-5125) as a permit may be required for certain activities.*
- In the Appendix, please include the status rank of each rare plant community along with its name (**pages 65-66**). If you do not have access to this information, contact Megan Benage at Megan.Benage@state.mn.us or 507-389-6079.
- In the appendix on **page 155 of 331**, please re-word the calcareous fen sentence to "*Protection of calcareous fens from disturbances by livestock and impacts from tile, hydrologic diversion, and groundwater appropriation*." The draft accidentally mentions a *reduction* in the amount of calcareous fens. There are ten identified calcareous fens in the basin and they support 11 rare plant species in MN. These communities are protected in statute and are covered under the Wetland Conservation Act (WCA).

Mineral and Aggregate Resources

The potential exists for conflict between protecting sensitive natural resources and developing mineral and aggregate resources. This includes gravel extraction near lakes, rivers, and sensitive features like calcareous fens and drinking water sources. Hard rock mining, mostly quartzite, has also been shown to host many rare plants and animal communities. In the five-year update, DNR asks that we include strategies developed between agencies and local government to avoid potential conflicts when aggregate interests intersect areas targeted for conservation practices.

Recreation

The Missouri River Watershed offers many and varied opportunities for outdoor recreation. DNR would like to further expand opportunities to promote state and local programs, such as Walk-in-Access. In addition, consider developing and exploring new outdoor recreational plans, programs and experiences for future generations to enjoy natural resources.

MINNESOTA POLLUTION CONTROL AGENCY

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February 25, 2019

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RE: Missouri River Watershed One Watershed, One Plan 60-Day Review

Dear Mr. Livdahl and Mr. Goodrich:

The Minnesota Pollution Control Agency (MPCA) received a 60-day review notice on December 21, 2018, for the submittal of comments of the draft Missouri River Watershed (MRW) One Watershed One Plan (1W1P). Overall, the MPCA is pleased with the planning effort, commitment to detail, and extensive utilization of the Watershed Approach documents (Monitoring Assessment, Stressor ID, TMDLs, WRAPS Report, and other available data) in the MRW 1W1P. For your consideration, the MPCA recommends that a revision be written to include the following comments:

1. On the cover page, the document needs the Clean Water Legacy logo. Clean Water Fund projects need the logo in accordance with state law.
2. Where possible, please use the same scale on the maps throughout the plan. Figure 3-2 through 3-7 are full-page maps, but the scale changes from map to map (e.g. 0-9 miles, 0-10 miles. 0-12 miles). MPCA also recommends checking all the map scales as the scales in Figure ES1 and Figure 1-1 are incorrect. Based on the scale shown, the Missouri basin is over 1800 miles wide.
3. Figures 2-2, 2-3, and 2-4, have “Draft 2016” behind Assessed Streams, Impaired Streams, Impaired Lakes, and Assessed Lakes in the legends. Please remove “Draft” as the Environmental Protection Agency has recently approved the 2016 303(d) impaired waters list.
4. It is somewhat confusing to show “Assessed streams” (narrow green line) with “Impaired streams” (thicker red line that creates a red “outline” on the green line) in Figure 2-3. If a stream is labeled as impaired it was assessed so there is not a need to show it as assessed. Since Figure 2-2, shows “Assessed Streams”, it may be better to

only show the streams that were assessed and are not impaired (fully supporting) in green and impaired streams in red as this would better relate to the explanation given.

5. Based on the legend for Figure 2-4, it appears that Split Rock Reservoir in Pipestone County was "Assessed". However, the MRW Monitoring and Assessment Report states that no assessment data were collected.
6. It is hard to tell in Figure 2-4 what symbol is used or the difference between "Impaired Lakes" and "DNR Hydrography – Lakes of Phosphorus Sensitivity Significance Priority Class" which also uses "impaired lakes".
7. The narrative for Figure 2-4 states that "Other lakes within the MRW are assessed and are not impaired". The MPCA is not aware of any lakes in the MRW that have been assessed and found not impaired as all nine lakes that were assessed are on the 303(d) list, and now have completed TMDLs.
8. In the explanation of Figure 2-8, please change the word "assesses" to "assessed". MPCA may not continue to assess many of the same locations for biological health in the future.
9. Page 3-3, Section 3.2, states above-average quality means "Portions of a stream or river in this subcategory exhibit water quality conditions that significantly exceed numeric water quality standards for a given parameter". Please change to "Portions of a stream or river in this sub-category exhibit water quality conditions that are significantly better than numeric water quality standards for a given parameter".
10. In pages 3-8 through 3-12, Measurable Goals 3.2.4-3.2.7, the word "length" is used in various statements such as "length of streams classified as impaired" and/or "Reduction in the length of impaired streams". The MPCA suggests using a different term than "length" of streams since the MPCA assesses the whole reach as either impaired or not impaired (supporting). Perhaps the word "number" would be better.
11. The order of "Goals" and "Why these Issues Are Important" on pages 3-10 and 3-11 is reversed compared to the other Measurable Goals pages. MPCA recommends the order be changed to be consistent with the rest of the document.
12. MPCA requests "bio-impaired" be changed to "impaired" on pages 3-10 through 3-12, Measurable Goals 3.2.5-3.2.7.
13. The 14 lakes number referenced on Page 3-14 is based on a typo in the WRAPS report. There are approximately 40 lakes (graph on page 15 of WRAPS) in the MRW. Twelve lakes in the MRW had some monitoring data with nine of them having sufficient monitoring data for assessment. All nine of the assessed lakes were determined to be impaired. As written, page 3-14 indicates all 12 lakes had assessment level data which would suggest three of the lakes were not impaired.
14. Page 3-14 references LPSS lakes. Are there any lakes designated as LPSS? If there are not, and there are no plans from DNR to list any, then should that be in the "goals"?
15. Page 3-15 states "altered hydrology is a term commonly used in Minnesota to describe the changes associated with excess surface runoff". MPCA recommends using a broader definition for altered hydrology such as "altered hydrology is a term commonly used in Minnesota to describe changes in the amount and pathways that water moves through the landscape".

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16. The last paragraph of the blue section on page 3-21 states "This measurable goal is aimed at learning the current extent and conditions of subsurface drainage within the watershed area". Please expand on how this will be accomplished when the goal is to host one event a year to address drainage, landowner and drainage authority rights, and opportunities to improve water quality while maintaining drainage capacity.
17. The goal of increasing soil organic matter (SOM) by 1% stated on page 3-23 is fairly lofty. Since the metric is "percent of applicable cropland treated with management practices" maybe it would be better to just say "to increase SOM" and leave off the 1%.
18. The Goals section on page 3-25 states "implement management practices". This should say "implement manure management practices" as it appears the SOM goals are just copied. Please expand on the types of manure management practices to make this applicable to manure application.
19. In the "Why These Issues Are Important" portion on page 3-26, the MPCA 2017 reference should be MPCA 2018.
20. Please insert the words "not impaired" after (threatened impairment risk) in the narrative paragraph of the Surface Water Quality portion of each figure on pages 4-11, 4-17, 4-23, and 4-29.
21. A turbidity impairment for reach -527 is referenced on page 4-17, but Total Suspended Solids is in the "Threatened Impairment Risk" (not impaired) category. If the reach is impaired shouldn't it be in the "Low Restoration Effort" (impaired) category?
22. Similarly, a TSS impairment for reach -523 is referenced on page 4-23, but Total Suspended Solids is in the "Threatened Impairment Risk" (not impaired) category. If the reach is impaired shouldn't it be in the "Low Restoration Effort" (impaired) category?
23. On page 5-21, Table 5-5, MPCA is listed in the Federal source/organization column with "Federal Clean Water Act Section 319 Grants". This can be deleted as this is an EPA's program and already is listed below. Also in Table 5-5 for MPCA, Clean Water Partnership (CWP), change "Financial" to "Loan", since CWP no longer offers grants.
24. Throughout the narrative, tables, figures, and references section of Appendix A, references to the Missouri River Basin Watersheds of Minnesota: Watershed Restoration and Protection Strategies and the MPCA Missouri River Basin Total Maximum Daily Load: Lower Big Sioux River, Little Sioux River, and Rock River Watersheds are listed as "Draft". These reports are approved and final. Please delete the "Draft May 2017" for the WRAPS report and replace with "January 2018", and delete the "Draft April 2018" for the TMDL report and replace with "February 2018".
25. Figure 9 in Appendix A does not represent Little Spirit Lake in red (impaired). Replace this map with the final approved map, which can be found in the TMDL report at (https://www.pca.state.mn.us/sites/default/files/wq-iw7-44e.pdf).
26. The MRW 1W1P provides a great deal of local partner knowledge and stakeholder input on setting priority concerns, issues, measurable goals, and targeted implementation actions. It also provides the process, tools (ie. PTMapp), and information to utilize for prioritizing within a planning region. However, the plan stops short of explicitly identifying priority management areas (ie. HUC 12), priority projects, or prioritized waterbodies within the Planning Regions for implementation funding. Providing that

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level of detail would help focus implementation efforts in the Missouri Basin for the next ten years.

We trust these recommendations will help with the completion of the MRW1W1P. If we may be of further assistance, please contact our lead contact Mark T. Hanson in the Marshall office at 507-476-4259 or myself at 507-344-5245 as needed.

Sincerely,

Wayne Cords

This document has been electronically signed.

Wayne Cords
Manager, South Watersheds Section
Watershed Division
Minnesota Pollution Control Agency
12 Civic Center Plaza, Suite 2165
Mankato, MN 56001

XX:xx

cc: Ed Lenz, BWSR
Scott MacLean, MPCA
Juline Holleran, MPCA
Shannon Lotthammer, MPCA

DEPARTMENT OF AGRICULTURE

February 27, 2019

Dan Livdahl
Okabena-Ocheda Watershed District
P.O. Box 114
Worthington, MN 56187

Doug Goodrich
BWSR Board Conservationist
1400 East Lyon Street
Marshall, MN 56258
(507) 537-6636

Thank you for the opportunity to review the Missouri One Watershed One Plan (plan). The Minnesota Department of Agriculture (MDA) appreciates being able to review and provide comments even though our comments are late in the process.

The plan is laid out in a user friendly way and it is helpful in that the priority Resource Concerns, and watershed areas are itemized.

The implementation tables are well laid out in providing the significant information on priority activities, partners, estimated cost, timelines, and the multiple benefits (measurable goal) of each measure is included.

We understand the plan is balance with providing adequate information on resource issues and implementation, but not being overburdened with too much information. However, it is likely that some may read only the plan, but not the appendix, so here are a couple of comments where more detail could be helpful in the plan (vs. appendix).

- Source(s) of Figures and tables – these should be listed on the Figure or table, or cross-referenced with the Appendix.
- Identifying specific targets and acres. Some goals contain specific acres while others provide a percentage reduction, and the plan does not explain/is not easily found how these numbers and percentages were arrived at.
- It is unclear how structural management practices will be chosen on goal acres to meet measurable goals. Is it assumed that all acre treatments are equal in effectiveness (Ex. Using fertilizer recommendations on row crop versus planting perennials are equally effective in reducing nitrate leaching)?

Figure 2-1 – In this figure (or elsewhere) you may wish to include the (initial) township testing results to illustrate additional nitrate monitoring that has been done. https://www.mda.state.mn.us/township-testing-program. The figure notes "Vulnerable Groundwater Areas" which appears different than the map developed by MDA using the same name. https://www.mda.state.mn.us/chemicals/fertilizers/nutrient-mgmt/nitrogenplan/mitigation/wrpr/wrprpart1/vulnerableareamap. Again, it would be helpful to list data source(s) here. If there is a location in the plan where this would be beneficial, feel free to use the link provided to incorporate this vulnerable area mapping in the plan. Also, the data source for nitrate is not indicated in this map unlike for Arsenic.

Figure 2-5:& 2-7: What source was used to generate the drainage network? (This is the "public drainage network" not agricultural drainage network as labeled (which would include private field drainage)?

Figure 2-12: Consider changing the color for the 0.2% chance flood as it is hard to separate it from the Riparian corridor.

Goal 3.2.1 – This goal aligns with the Minnesota Nitrogen Fertilizer Management Plan, and could be noted here (or referenced elsewhere as well). It is good to see that this goal includes targeted implementation of practices in the short term, and long term well monitoring to see if there is an improvement in drinking water. The goal acres are very specific; should they be rounded/combined especially for this drinking water measure, since groundwater may not follow a watershed boundary?
It seems like the 2nd long term goal ("reducing the number of (wells that have high nitrates)...") is 'Restoration' goal not a 'Protection' goal as listed.
Another practice that can also help improve nitrogen efficiency and therefore reduce off-site movement on nitrate (Measurable goal 3.2.1 and 3.2.7) is precision agriculture and variable rate N (AMT). Research in MN showed Variable Rate N can reduce leaching by 17% (Dr. Mulla's group at the UMN).

Goal 3.2.14 – Thanks for noting the Minnesota Agricultural Water Quality Certification Program. It is a good fit for this goal.

Goal 3.2.17 – Since an increase in soil organic matter is being used as the measure of soil health, a soil sampling program to directly measure organic matter would be beneficial. This may add to education and outreach and is a cost effective option and direct measurement. Implementing management practices on 6150 acres does provide a measure, however practices may or may not result in organic matter change.

Figure 3.7 - As noted above perhaps initial MDA Township Testing results should be shown here (or elsewhere in the document).

Appendix I and associated maps starting on Page 4-11, etc. - A change in title 'Nitrogen Infiltration Risk" should be considered to "Nitrate Leaching Risk" or something similar to this. We appreciate that this is a tool that considers land use and hydro-geologic features, but nitrate is the N form that is a concern to groundwater.

Below are some actions within the Targeted implementation tables where MDA could be included as a partner.
Some of these are action items in the NFMP which outlines the formation of Local Advisory Teams (LAT) that are intended to problem solve and address nitrate in groundwater. Several implementation activities in the plan are complementary to the NFMP actions, and therefore, MDA should be included. It appears that Action number EO-10 would include what MDA identifies as LATs. Here are additional areas that are addressed in the NFMP, so MDA could be included as a partner (Action items where MDA is already shown are not included below):
Page 4-33 action LRS MP-1; LRS MP-7
Page 4-41 action DGR-10; DRG-11

Page 4-37 Action Item EO-13 – "Reduced use" of ag. chemicals does not always correlate with proper management. (Ex. Under use of a pesticide may lead to pest resistance). Perhaps reword this to "proper management" or "judicious use", or "use integrated pest management" for pesticides, or similar.

Action # DGR-1 – MDA is noted as lead. Note that MDA testing include nitrate only (with follow-up pesticide testing). It is unclear if this is intended to include the MDA Township Testing and/or Nitrate Clinics.

Action # DGR-8 – It appears this is a groundwater quantity goal? Additional nitrate monitoring and modeling may be a component of NFMP implementation (if this fits here or elsewhere such as page 5-9).

Page 5-13 Regulatory. If it is desired to include ag. chemicals (pesticide and fertilizer) could include:

The Minnesota Department of Agriculture (MDA) is the lead agency for all aspects of pesticide and fertilizer environmental and regulatory functions as directed in the Groundwater Protection Act (Minnesota Statute 103H). These include but are not limited to the following:

- Serve as lead agency for groundwater contamination from pesticide and fertilizer nonpoint source pollution
- Conduct monitoring and assessment of agricultural chemicals (pesticides and nitrates) in ground and surface waters
- Oversee agricultural chemical remediation sites and incident response
- Regulate use, storage, handling and disposal of pesticides and fertilizer

Page 5-22, Table 5-5: The MAWQCP could be listed here.

Appendix A - You may wish to include Township Testing results (to date) here, and the vulnerable area map. (This may fit better elsewhere in the plan)

Appendix I – Nitrogen Infiltration Risk map – See comment above. Also here are a couple of comments regarding data used for to determine the "nitrogen infiltration risk:

- Pg 160: Except for soybeans, legume and alfalfa, the symbiotic contribution of N should not be credited. Corn and other cereals are not capable of symbiotic fixation of N.
- Pg 161: The denitrification potential seems to be exaggerated for the entire watershed (entire watershed is given high denitrification potential). I think using topography indices such as slope can help reclassify fields based on water ponding potential.

Appendix K Table 1, page 3 – Here some potential additions/edits.

- Nutrient Management - Include the U MN Nitrogen Fertilizer BMPs (https://www.mda.state.mn.us/pesticide-fertilizer/nitrogen-fertilizer-best-management-practices-agricultural-lands)
- Soil Health/Tillage – Is there on opportunity to include a soil testing program. Should this include other practices in addition to reduced tillage be included that can also increase organic matter (perennial crops, crop rotation, etc.)
- Pesticide Application – Include MDA here. (https://www.mda.state.mn.us/promoting-pesticide-bmps)

Appendix N – An introduction to this appendix would be helpful to explain the graphic material.

We would like to compliment on your hard work in developing this comprehensive plan. Thanks again for the opportunity to review.

Regards,

Aicam Laacouri
Research Scientist
MDA

Jeffrey Berg
Water Policy Specialist
MDA

Response to Comments Received Prior to and During the 60-Day Notification and Public Hearings
Missouri River Watershed Comprehensive Watershed Management Plan
5/31/2019

KEY
Material Comments represent changes in material and content of the plan.
Editorial Comments represent spelling, grammatical, clarification, or visual issues with graphics.
Note Generally consist of a statement expressing a perspective.

Commenter	Comment #	Page / Section	Comment	Material	Editorial	Note	Plan Change Made (Yes/No)	Comment Response / Action
60-Day Notification								
BWSR	1	General	A clearer description of the conservation delivery system should be included. This should include a general discussion of the partners' roles and authorities in implementing the Plan.			x	No	Agree. We believe more information can be included in future planning efforts to better guide conservation delivery decision making on the ground. See Emerging Issue "Conservation Practice Delivery Mechanism" (Section 2.4.2.2) for more information.
	2	General	We appreciate that the group has identified a tiered implementation based on funding levels. Identifying efficiencies using known funds when compared to the total amount needed is valuable information in determining necessary funding allocations.			x	No	Comment acknowledged with thanks.
	3	General	Maps – General - Some maps show location of data points where analysis is performed or observed but don't list results or aren't really referenced in the plan, remove items that have no direct bearing on plan actions or prioritization otherwise explain better why the map subject exist – may have a better place in the resource inventory.		x		Yes	Maps revised to remove unnecessary shapefiles (e.g. MPCA biological monitoring sites).
	4	General	The baseline implementation level assumes statutory obligation and ordinance implementation levels will go unchanged. Will the local government units (LGU) self-report an audit to the partnership to ensure that this is taking place?			x	No	LGUs reporting responsibilities will be conducted per state agency requirements.
	5	General	The progress toward goal breakdown charts by planning region will be useful in building implementation plans, the planning group is to be commended for building implementation schedules specific to planning regions.			x	No	Comment acknowledged with thanks.
	6	General	While the process to prioritize issue statements yields ranked issue statements and action items for this planning effort, the concern is the ambiguity 'issue' connection to spatially prioritized areas for implementation of these actions – with this plan we have the what first, perhaps, but not necessarily the "where first" in the overall planning area. After taking into account waters that are of greatest local concern along with prioritized issues, there should be a section in the plan outlining a couple of areas on the planning area map where it would make the most sense to concentrate efforts in order to best address those issues. In doing so, this provides an area for any implementation funds to point to for focusing efforts as well as a starting point for future plan assessment and evaluation. A robust discussion and description on this subject would lend itself to other comments in this letter.	x			Yes	Subwatersheds (HUC 12) have been priortized to geographically target areas based on priority issues identified in the plan (see first page of each implementation profile). A methodology for this prioritization process has been included in Plan Appendix O.
	7	Executive Summary	Page ES-2 identifies as "14 lakes in the eastern half of the watershed; land and water resources inventory (appendix A) only lists eight in total.	x			Yes	Per MPCA Comment #13, there was a typo in the WRAPS that was cited. Executive summary changed to reflect there are 40 lakes in the planning area.
	8	Executive Summary	Page ES-2, ES-3 – perhaps expand on the definitions of the "tiered priorities" ("A" being highest and "E" being lowest priority) how will the lower priorities relate to implementation or future prioritization.		x		Yes	Revised text: "From this initial inventory, 27 issues emerged as "priority issues" (shown as either A or B Priority Tier) (Table ES-1). These issues were assigned a measurable goal and will be considered the focus for initial implementation efforts. Those issues designated as Tier C, D, and E are not anticipated to be directly addressed within this plan.
	9	Executive Summary	Table ES-2 - Good summary of targeted implementation results; will be a useful starting point for pace of progress and measuring progress toward the plan in reporting.			x	No	Comment noted with thanks.
	10	Section 2	2.2 – last paragraph – relating back to executive summary – show relation of these issues to future planning evaluation.		x		No	Change noted in Executive Summary to be consistent with 2.2
	11	Section 2	2.3.1 – Table 2-4 Priority Concerns and Issues addressing fecal coliform. Developing goals for bacteria? (Issue 1.1.2, 2.1.2) Specific Implementation?			x	No	Yes, as these are priority (Tier A or B) issues. See Measurable Goal 3.2.6 for issue 2.1.2 and Measurable Goal 3.2.2 for 1.1.2. Actions in each targeted implementation schedule relate to measurable goals (SW-Bacteria and GW - Bacteria).
	12	Section 2	2.4.2 Policy and Funding Emerging Issues. Title is confusing. Consider "Noted Impediments to Effective Water Plan Management".		x		Yes	Title revised as suggested.
	13	Section 2	2.4.2.1 – Second paragraph – an example of the use of the term "block" funding – request the word "block" be removed as the term has different connotations as currently used in state funding. This issue pops up in multiple areas through the report - suggest search and review for the word 'block'.		x		Yes	Block funding changed to "Watershed-based Funding"
	14	Section 2	2.4.2.5 – Are wind and solar activities covered by zoning authorities? This section might be rolled into land use due to ethanol/bio diesel in the previous section.		x		No	Yes. See Section 5.1.5.2 for a discussion about zoning authorities related to wind.
	15	Section 2	Figure 2-1 – since arsenic values are listed as 10 ug/L for public health risk, Arsenic symbols should break at 9.9 micrograms/L instead of 19.9.		x		Yes	Map legend changed to 0-4.9 ug/L; 5-9.9 ug/L; 10-49.9 ug/L; 50+ug/L

Commenter	Comment #	Page / Section	Comment	Material	Editorial	Note	Plan Change Made (Yes/No)	Comment Response / Action
	16	Section 2	Figure 2-3 – Streams listed as assessed are symbolled in green – a few of these aren't listed as assessed for lack of info; check to be certain they are assessed (same would go for Figure 2-11).		x		No	These streams were pulled directly from the MPCA Assessed Waters (2016) layer.
	17	Section 2	Figure 2-4 - Is this a map of areas where invasive species of carp have been documented or is this a potential threat as stated in the explanation – key should be clearer.		x		Yes	Revised explanation: Through connectivity analysis, the DNR has identified the area covered by the teal crosshatch at risk of becoming infested by the invasive Bighead Carp and Silver Carp, as many waterbodies in this area are listed as infested for the species.
	18	Section 2	Figure 2-5 – Meaning of 'Agricultural' Drainage System isn't clear – dashed lines don't come across well in the map at this scale. Recommend using 103E Public Drainage Systems.		x		Yes	From Figure 2-7: "Included in this map are known ditch locations from local counties. Also included are reaches classified as "ditch" in the DNR 24K River and Streams layer, and as "Canal / Ditch" in the NHD Flow line data layer. Agricultural drainage systems removed from this map, as it is not needed to describe issues impacting surface runoff.
	19	Section 2	Figure 2-8 – Dam location map may be dated - ground truth; calcareous fens – if they exist, not seeing them on the map (clipped?); MPCA Biological Sampling Sites shown – are the results listed somewhere or play a part in the prioritization.		x		Yes	Dam location is derived from DNR (Inventory of Dams in Minnesota). Calcareous fens locations added. Removed biological sampling sites as the information is not used elsewhere in the plan.
	20	Section 3	Measurable Goal Sheets – Really like this idea – Assuming the idea is to treat these as goal documents independent of the plan, the reference callouts to issues and implementation within these sheets are very confusing for a reader unfamiliar with the plan. Not evident how specific goals and (multiple) implementation actions are related to issues. These pages should be easy to follow and succinct.			x	No	Correct, these are intended to summarize the goal in one document. The document will function independently with someone familiar with the plan, but there is still a need to refer to Section 4 for actions that get implemented to make progress towards stated goals.
	21	Section 3	Measurable Goal Sheets – Should format consistently (Issue explanation on one side, goals on the other) tend to flip back in forth in positioning; might be best to order the explanation before the actual goals on these sheets.			x	No	Format retained as much as possible. There are some instances where ordering of text changed to accommodate information (see MG 3.2.5). Here, if format was not changed, there would not be enough page space for the goals, which would necessitate a new page that is predominately white space.
	22	Section 3	Section 3.2, page 3-3, strike "BWSRs" when referencing the Nonpoint Priority Funding Plan (multiple instances). – (Minnesota's Nonpoint Priority Funding Plan for Clean Water Fund Implementation).		x		Yes	"BWSR" removed from reference as suggested.
	23	Section 3	3.2.3 Groundwater Quality and Quantity – are "low risk nitrogen infiltration areas" related to quantity somehow? I would assume that heavy clay would be low risk but really doesn't do much for quantity. Are we saying "target retention areas on low risk of infiltration areas"? – Not quite clear. Make it clear why targeting a lowest risk area is a priority.		x		Yes	Added statement to 3.2.1: "Nitrogen infiltration risk maps were developed to identify areas of high risk (where potential recharge and nitrogen loads are high) and low risk (where nitrogen loads are low)."
	24	Section 3	3.2.4, 3.2.5, 3.2.6, 3.2.7 - "Length of stream impaired" are not measurable goals in these instances as stream length doesn't enter into it – because the WRAPS goals are based on the pollutant reduction needs per reach, its either all or nothing for the impairment on a "reach-specific" scale. Unless there will be multiple assessments per reach, might do well to make the goal # of impaired reaches or some other measurable goal.	x			Yes	Reach-specific measurable goal changed to: "Reduction in the number of streams classified as impaired by meeting a load allocation (where a TMDL has been completed)."
	25	Section 3	3.2.13, 3.2.14, 3.2.15, 3.2.16, 3.2.19, 3.2.20 – Long term goals should all state a reevaluation and assessment of resource/activity every 10 years.	x			Yes	Long-term goal revised for each to "Reevaluation and assessment of resource/activity every 10 years to consider further extension."
	26	Section 3	3.2.11 Wetlands. Will the group take credit/keep account of wetland creation or restoration completed by groups like USFWS, DNR, DU?			x	No	Yes- if local dollars are spent and to the extent of groups working cooperatively using the plan.
	27	Section 3	3.2.18 Manure Application – Outside of mapping manure application and estimated rates, this goal really doesn't seem to have goals that differ from Goal 3.2.17 (SOM Content)– could be consolidated. If we are opting to keep this goal, we will have to clarify how we target this action and what the resource outcome will result.	x			Yes	Consolidated MG 3.2.18 (Manure Application) with 3.2.17 (Rural Land Stewardship - Soil Health).
	28	Section 4	Pages 4-11 through page 4-34 – where there is a callout in the charts regarding progress toward goals there seems to be an alternation between a the term "short term goal" and progress toward "goal" (example) 4-14 and 4-20. While what is listed is factual, have to do some mental gymnastics		x		Yes	Typo error resolved to consistently refer to "short-term goal."
	29	Section 4	Table 4-7 – Should include activities that use tools available through this planning effort to explore, target, and set a schedule for possible larger scale retention projects and flood control opportunities.	x			Yes	Revised CI-7: "Repair and maintain, and implement additional flood storage practices and larger scale retention projects."
	30	Section 4	Section 4.2.1 – This is a good section; adds benefit to this plan.			x	No	Comment acknowledged with thanks.
	31	Section 4	Pgs. 4-13, 4-19, 4-25, 4-31 consider adding creation and restoration of wetlands as actions to affect ground water nitrates and ground water supplies (Goal 3.2.1 and 3.2.3).	x			Yes	Added "x" under GW- Nitrate-Nitrogen and GW-Supplies for all actions to "Create or restore wetlands."

Commenter	Comment #	Page / Section	Comment	Material	Editorial	Note	Plan Change Made (Yes/No)	Comment Response / Action
	32	Section 4	Pgs. 4-17, 4-23, 4-29 (Surface Water Quality Charts): The term “low restoration effort” would indicate that an impairment exists; there are no corresponding impairments in a few instances (-551, -583, -501, -514, -519, -502, -507). Seem to be related to TSS or TP. **ALSO – The tabular data has reaches listed as “threatened impairment risk” when they are categorized as impaired – again, seems to be TSS or TP related (-527, -523, -520, -511).		x		Yes	Text revised to clarify map interpretation (further explanation in Section3). "Streams that are nearly or barely impaired for a particular water quality parameter are summarized in the table below. Please note that a stream could be listed as "impaired" for one parameter (e.g. total suspended sediments) but merit protection for another (e.g. total phosphorus).
	33	Section 4	Pg. 4-23: Are we setting goals and measuring for E. coli, reaches -553 and -528 are a non-factor in the absence of bacteria/other measurable goals.			x	No	Yes, as these are priority (Tier A or B) issues. See Measurable Goal 3.2.6 for issue 2.1.2 and Measurable Goal 3.2.2 for 1.1.2. Actions in each targeted implementation schedule relate to measurable goals (SW-Bacteria and GW - Bacteria).
	34	Section 5	5.1.4 Should be something more to outline O/M requirements, project easements, etc. if outside funding will be considered for capital improvement projects (projects that have an effective life over 25 years) – may refer to the BWSR Grants Administration Manual for ideas on a policy for this planning group.		x		Yes	Included language "For purposes of this plan, a capital improvement is defined as a major, non-recurring expenditure for the construction, repair, retrofit, or increased utility or function of physical facilities, infrastructure, or environmental features. Capital improvements are beyond the “normal” financial means of the MRW 1W1P planning participants, and therefore require external state and federal funding. To be considered a capital improvement, project must have an anticipated cost of at least $250,000."
	35	Section 5	Table 5-2 – Though these projects may well be implied in the implementation schedule, there are no Capital Improvements Projects listed for the Kanaranzi-Little Rock WD for consideration in this table.			x	No	KLRWD is covered by the Nobles County Local Water Plan. No other CIPs are recommended for likely implementation efforts at this time.
	36	Section 5	5.1.5.1 Cite Statute as Section 103F.48. in Riparian Protection subject paragraph.		x		Yes	Statute cited as suggested.
	37	Section 5	5.1.5.3 First sentence might read “Portions of the Missouri River Watershed are within the . . . ; the way the sentence currently reads seems to indicate that the Missouri River Area is a subsection of the two watershed districts.		x		Yes	Text revised as suggested.
	38	Section 5	Table 5-3; pg. 5-18 – “Public Drainage Systems:” – these activities should be listed as statutory responsibilities; also 103E activities should be listed separately from buffer compliance specifically to 103F.48 two separate sets of rules when it comes to buffers.	x			Yes	Public drainage systems moved to statutory responsibilities; Buffer compliance listed separately.
	39	Section 5	5.3.1 – … fiscal and administrative duties will be assigned to a planning entity… the term “planning entity” should be clarified or changed to something like “member LGU” or member of original planning partnership.		x		Yes	Text revised to "member LGU" as suggested.
	40	Section 5	5.3.4.2 Biennial Evaluation. The Biennial Budget Request is not an evaluation. This section would better fit within 5.3.3 Work Planning ALSO, Replace references to BBR with Watershed Based Funding Work Plan Activities.	x			Yes	Revised text in 5.3.3.2: The Planning Work Group will collaboratively develop, review, and submit a Watershed Based Funding Work Plan Activities summary from this plan to BWSR. This summary will be submitted to and ultimately approved by the Policy Committee, prior to submittal to BWSR. The summary will be developed based on the targeted implementation schedule and any adjustments made through self-assessments
	41	Section 5	5.3.4.3 – Should mention ongoing 5 year reviews – section reads as though one review will be done and then the plan will remain in full effect thereafter. Also, plan operating procedures (Step 9.c.) lists required plan updates/revisions every 10 years as well; should be mentioned somewhere in this section.	x			Yes	Text within 5.3.4.3 revised to read "This plan has a ten-year life cycle beginning in 2019. To meet statutory requirements, this plan will be updated and/or revised every 10 years.....in 2024-25 and at every 5 year midpoint of a plan life cycle, an evaluation will be undertaken to determine if the current course of actions is sufficient to reach the goals of the plan, or if a change in the course of actions is necessary."
	42	Section 5	5.3.6 - Unless we are actually signing a Joint Power Agreement establishing a new entity, we should NOT use the language “the legal name for this new entity is…” The policy committee, if it continues in its current form, is advisory to the member LGUs to agree that the members will work together to implement. There may be additional sub-agreements and contracts that lay out how money changes hands between members and how they will share services, equipment, or staff, but those all should be specific for each implementation activity or initiative and may be limited to a subset of the partners, depending on the activity and how they are sharing any roles or financial resource to accomplish implementation. – Review the plan to be certain we aren’t obligating an authority where it doesn’t exist.	x			Yes	Revised text: "The parties will be entering into an agreement for purposes of implementing this plan, and will be know as the Missouri River One Watershed, One Plan (MR 1W1P) Implementation Group."
	43	Section 5	An Implementation Agreement should be developed to further identify the structure of decision making, financial and admin responsibilities.			x	No	Agreed. The PC is in the process of drafting their implementation agreement.
DNR	1	Letter	DNR staff appreciate the opportunity to contribute to the 1W1P process. Some of our contributed comments and priorities have been incorporated and others are less clear in the plan. Please allow us to reiterate some of our priority concerns. For consistency, the comments that follow are arranged per the priorities in our letter submitted in July 2017.			x	No	All state agency priorities were reviewed and considered during the prioritization process. However, as this is a local plan, some state agency priorities were not identified as local priority issues to be the focus of initial implementation efforts. For mineral and aggregate resources, please see Issue 5.2.8 (Page 2-4). For recreation, please see Issue 4.1.4 (Page 2-4). These issues were not removed from the plan, and cooperative implementation to address these issues is still encouraged.

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	2	Section 3	Short and Long-term goals on page 64 (3.2.10) should allow for graduated targets referencing the differences between the Little Sioux and remainder of the Missouri River watersheds. Numerous existing wetlands and lakes provide storage and retention in the Little Sioux sub-watershed compared to the rest of the Missouri River basin. The Little Sioux also has more "pothole-type" wetlands; and its topography is better suited to wetland restorations than the wetland creation scenarios that are more appropriate for the primary Missouri River Watershed.			x	No	An Altered Hydrology Analysis (Appendix J) was conducted in order to close a data gap about defining if hydrology was altered, and if so, how much, and what acre-feet storage goal would be needed to return to a "natural" hydrologic state. As shown in Appendix J, the analysis is limited by the number of long-term USGS gage data in the plan area. Without additional long-term gages or additional modeling efforts, the storage goal is presented as a representative goal for the whole plan area. This need is addressed in action DGR-13: "Define impact of altered hydrology on surface runoff and water resources within the watershed and utilize results to generate quantitative storage goals for each planning region to mitigate impacts of altered hydrology."
	3	Section 3	Measurable Goal 3.2.10 does not seem to adequately emphasize restoration of hydrologic and ecological functions. Given the watershed's well-developed drainage-ways, both natural and artificial, storage goals cannot be met using an acre-foot goal alone. A wider variety of conservation practices are needed to achieve both water retention and ecological benefits in the watershed, including in the steeper upper tributaries, which generally support the best soils for agriculture and some of the best aquatic and terrestrial habitats.			x	No	An acre-foot storage goal is required per 1W1P Plan Content Requirements. During implementation, a wide variety of conservation practices will be pursued in order to track or measure progress towards this storage goal, including (but not limited to) large structural projects and soil health improvement (associated with a decrease in runoff volume, measured in acre-feet).
	4	Section 3	Storage as acres of "new wetland" identified in Measurable Goal 3.2.11 discusses "increasing quality wetland areas" using primarily the PTMapp results and other datasets. To achieve ecological benefits, restoring wetlands should be a higher priority than converting non-hydric soils into engineered wetlands.	x			Yes	Text changed to read: "The measurable goal for this comprehensive plan is focused on increasing quality wetland areas, focusing on restoring previously existing wetlands."
	5	Section 4	Action LSR SP-6 on page 115 should ideally separate "Create or restore wetlands" into two rows with preference given to wetland restorations for the multiple ecological and hydrological benefits.		x		No	Text revised to "Create or restore wetlands, with emphasis given to partial or complete restoration."
	6	Section 2	In Figure 2-1, the Arsenic Concentration Average in MDH Monitoring Wells (page 38), one of the graduated-triangle symbols represents a range of 5.0 to 19.9 ug/l. Since the federal drinking water standard is 10 ug/l, it is impossible to tell which wells in this group are below, versus nearly double, the standard.		x		Yes	Map legend changed to 0-4.9 ug/L; 5-9.9 ug/L; 10-49.9 ug/L; 50+ug/L
	7	Section 2	The data set for Figure 2-2 "High Volume Groundwater Users" (page 39) lists the outmoded SWUDS as the source for the Agricultural and Non-crop irrigation categories. The go-to source for current data is the Minnesota Permitting and Reporting System (MPARS), which replaced SWUDS several years ago and is updated weekly. Also, the "non-crop irrigation" category is a misnomer since the locations on Figure 2-11 appear to be for municipal water supply. Finally, in the same figure, consider a more vivid color scheme for high recharge areas, many of which are Drinking Water Source Management Areas.		x		No	There is not a publically accessible MPARS shapefile for use in this plan.
	8	Section 3	The structural or management practices detailed in Measurable Goal 3.2.1 should prioritize projects that enroll permanent easements for practices in Drinking Water Management Areas (page 53).	x			Yes	Text revised to "guide the location and quantity of management practices and structural BMPs that can be implemented to protect groundwater supplies from nitrate-nitrogen. Additional emphasis will be given to projects that enroll permanent easements for practices in Drinking Water Management Areas."
	9	Section 4	The groundwater snapshot figure (pages 95, 101, 107, and 113) displays high risk infiltration areas in dark green, which seems counterintuitive. A yellow/orange or green/yellow graduated legend would dovetail nicely with the red dots that symbolize monitoring wells above the 10 mg/l standard.		x		No	Colors remain green, as it is the only color not represented in the monitoring well protection / restoration categories. This makes the monitoring wells "pop."
	10	Section 5	Many lakes in the Little Sioux River Watershed need protection or restoration. The emphasis on addressing issues with agricultural BMPs and encouraging education and outreach is essential. Lake Bella functions as a surface water reservoir directly connected to the aquifer that supplies drinking water to the City of Worthington, therefore Table 5-2 should include targeted initiatives for managing this extremely sensitive water resource (page 146).	x			No	This was not included as a local CIP priority for implementation efforts.

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	11	Section 4	Many tributaries, streams, and rivers in the watershed are unstable and erosive, as they have become incised and wider, losing beneficial sinuosity and floodplain connectivity. Research indicates near-channel sediment accounts for 60-90% of suspended sediment and bedload contributions to sediment-impaired streams. The plan lists streambank/riverbank erosion as a Priority Tier A concern but is vague about stream/river restoration work, with few implementation strategies. PTMApp does not account for near-channel sediment sources yet. We recognize a perfect model to account for upland and near-channel sources does not exist at this time, but the largest sources of sediment loading (near-channel and bedload sources) are not being targeted in proportion to their contributing volume. This will obviously create a significant limitation to measuring or understanding sediment reduction goals.	x			No	This plan addresses unstable and erosive streams in Measurable Goal 3.2.19. The goal focuses on trampling streambanks, causing excessive erosion and widening (MPCA, 2017). This goal also includes a land use analysis map to target areas within the plan that are at highest risk for streambank trampling (Figure 3-9) which is also used to prioritized focused subwatersheds in Section 4.
	12	Section 4	Riparian stewardship is highlighted with voluntarily limiting livestock access to streams and rivers being encouraged as a perennial vegetation strategy for riparian corridors. Agricultural BMPs appear well detailed. Projects and practices to store water in the upland will provide relief and alter run-off, but there is also an opportunity with natural stream channel restorations to improve channel stability, habitat conditions, reduce sediment and nutrients, and provide multiple ecological benefits.			x	No	See response to Comment 11 above.
	13	Section 3	Page 84: Given the prevalence of pasture in the watershed (Figure 3-9), especially in the western half, consider more emphasis on establishing and maintaining healthy pastures, including rejuvenation initiatives, rotational grazing and off-site watering.			x	No	See Measurable Goal 3.2.19.
	14	Section 4	For the year five update of this plan, DNR recommends an action item related to targeting stream restoration to more specifically address the near-channel sediment contribution. Targeted and prioritized subwatershed stream restoration projects could include re-meandering channelized reaches, restoring floodplain connectivity, reconnecting oxbows, planting protective riparian vegetation and working toward protective riparian flowage easements. Significant coordination and collaboration between landowners, scientists, engineers, local government units, and agency partners is needed. It is important develop a multi-disciplinary team to set goals and objectives, prioritize where to work, complete assessments, develop design plans, and implement projects.			x	No	See response to Comment 11 above.
	15	Section 4	Stream restoration projects that overlap with the Prairie Coteau Conservation Focus Area (discussed further below) can benefit both water quality and habitat. In general, the greatest opportunities for collaboration will occur when Missouri 1W1P goals align with goals in other approved plans.			x	No	Agreed. Per DNR Advisory Committee comments during the plan drafting process, the Prairie Coteau area is highlighted specifically in Action UBSR SP-11, LBSR SP-13, RR SP-13, and LSR SP-14.
	16	Section 4	Prairie Coteau Conservation Focus Area: In parts of the plan that address fish and wildlife habitat strategies, incorporate more information about the Prairie Coteau Conservation Focus Area (PCCFA) established under the MN Wildlife Action Plan 2015-2025. This will facilitate additional targeting and prioritization of multi-benefit implementation projects. Specifically, we request including the PCCFA map below. We can provide a higher resolution image or GIS shapefile on request. The intent of the PCCFA is to reduce ecological threats, improve ecosystem function, and increase the populations of designated Species in Greatest Conservation Need and other priority wildlife. This focus area was chosen because of threats to priority resources and opportunities to continue advancing collaborative conservation through coordinated resource management in the region.	x			Yes	Changed text for Terrestrial Habitat measurable goal to: "The Prairie Coteau Conservation Focus Area (PCCFA) was established under the MN Wildlife Action Plan 2015-2025 to facilitate targeting of habitat conservation projects aimed at reducing ecological threats, improving ecosystem function, and increasing the populations of designated Species in Greatest Conservation Need and other priority wildlife (Figure 3-8). Targeting habitat conservation projects to areas identified in the Wildlife Action Plan and Prairie Plan increases the potential to realize the highest benefit from dollars invested in conservation and create multiple benefits, including cleaner water." Updated Figure 3-8 to include the PCCFA shapefiles provided by the DNR.
	17	Section 4	The Wildlife Action Network within the Prairie Coteau Conservation Focus Area (PCCFA) on the next page should also be incorporated into this plan.	x			Yes	See response to Comment 16 above.

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	18	Section 4	The PCCFA takes an integrated landscape-level approach using the MNWAP Wildlife Action Network, Minnesota Prairie Conservation Plan, and the Prairie Coteau Complex Important Bird Area as valuable decision-support tools. The associated PCCFA partnership includes the former Prairie Coteau Local Technical Team established under the Prairie Plan. The PCCFA partnership has been developing S.M.A.R.T.* objectives around connectivity, watershed conservation practices, habitat complexes, grasslands, native prairie, prairie streams, monitoring and adaptive management, and outreach and communication (*where S.M.A.R.T. = Specific, Measurable, Attainable, Results-oriented, and Time specific). Setting objectives using this approach will prioritize work and allow opportunities to monitor progress and apply adaptive management to the process over time. Although a "living document", we anticipate Version 1 of the PCCFA SMART Objectives document to be available by March 2019. The PCCFA partnership seeks to collaborate with other initiatives, including the Missouri 1W1P for an integrated, more effective approach to conservation."			x	No	The MRW 1W1P Planning Group looks forward to opportunities to partners with DNR in the future to implement conservation within the PCCFA.
	19	Section 4	On page 115, the PCCFA does not incorporate the Little Sioux Basin. Please remove PCCFA text from this watershed's implementation table.		x		Yes	PCCFA removed from LSR SP-14 as suggested.
	20	Section 3	In section 3.1.5, insert "Protect calcareous fens" and remove "Habitat loss from reduction in calcareous fens." The text to the right should read "Protect rare and natural features" and remove Protecting or improving use for aquatic life, recreation, and hunting (page 24 of 166).	x			No	As the Issues Table (Table 2-1) was vetted, approved, and used to prioritize issues during the planning process, no further changes can be made, as it would not accurately represent what the committees prioritized.
	21	Section 3	Please revise 3.1.5 to "Protect calcareous fens and rare and natural features" instead of habitat loss from reduction in calcareous fens (page 30 of 166).	x			No	See response to Comment 20 above.
	22	Section 2	In Figure 2-8 on page 45, the legend indicates calcareous fens with a green triangle, however none of the watershed's ten calcareous fens appear on the map. Let us know if you need the shapefile in order to add them.		x		Yes	Calcareous fens locations added.
	23	Section 4	Include the following or similar text within the WCA regulation language or as a separate row (page 128 of 166): Calcareous fens are protected under statute 103G.223. Any calcareous fen related activities should be coordinated with DNR (Division of Ecological and Water Resources at 651-259-5125) as a permit may be required for certain activities.	x			Yes	Added action. "Protect calcareous fens as specified under statute 103G.223."
	24	Appendix	In the Appendix, please include the status rank of each rare plant community along with its name (pages 65-66). If you do not have access to this information, contact Megan Benage at Megan.Benage@state.mn.us or 507-389-6079.	x			No	For purposes of this inventory, species of interest within the MRW 1W1P Boundary have been tabulated and provided in Attachment 1. The MRW 1W1P Planning Group will collaborate with Megan accordingly if additional information is needed for planning and implementation purposes.
	25	Appendix	In the appendix on page 155 of 331, please re-word the calcareous fen sentence to "Protection of calcareous fens from disturbances by livestock and impacts from tile, hydrologic diversion, and groundwater appropriation." The draft accidentally mentions a reduction in the amount of calcareous fens. There are ten identified calcareous fens in the basin and they support 11 rare plant species in MN. These communities are protected in statute and are covered under the Wetland Conservation Act (WCA).	x			No	See response to Comment 20 above.
	26	Section 2	The potential exists for conflict between protecting sensitive natural resources and developing mineral and aggregate resources. This includes gravel extraction near lakes, rivers, and sensitive features like calcareous fens and drinking water sources. Hard rock mining, mostly quartzite, has also been shown to host many rare plants and animal communities. In the five-year update, DNR asks that we include strategies developed between agencies and local government to avoid potential conflicts when aggregate interests intersect areas targeted for conservation practices.			x	No	See response to Comment #1 above. The Missouri 1W1P Planning Group looks forward to future opportunities to collaborate with the DNR when aggregate interests intersect areas targeted for conservation practices.
	27	Section 2	The Missouri River Watershed offers many and varied opportunities for outdoor recreation. DNR would like to further expand opportunities to promote state and local programs, such as Walk-in-Access. In addition, consider developing and exploring new outdoor recreational plans, programs and experiences for future generations to enjoy natural resources.			x	No	See response to Comment #1 above. The Missouri 1W1P Planning Group looks forward to future opportunities to collaborate with the DNR to expand recreational opportunities.
	1	General	1.On the cover page, the document needs the Clean Water Legacy logo. Clean Water Fund projects need the logo in accordance with state law.		x		Yes	Logo added to cover page.

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MPCA	2	General	2.Where possible, please use the same scale on the maps throughout the plan. Figure 3-2 through 3-7 are full-page maps, but the scale changes from map to map (e.g. 0-9 miles, 0-10 miles. 0-12 miles). MPCA also recommends checking all the map scales as the scales in Figure ES1 and Figure 1-1 are incorrect. Based on the scale shown, the Missouri basin is over 1800 miles wide.		x		Yes	Good catch. Scale size issue resolved and incorporated into all maps. Small scale size difference on other maps tailored to fit to title boxes.
	3	Section 2	3.Figures 2-2, 2-3, and 2-4, have “Draft 2016” behind Assessed Streams, Impaired Streams, Impaired Lakes, and Assessed Lakes in the legends. Please remove “Draft” as the Environmental Protection Agency has recently approved the 2016 303(d) impaired waters list.		x		Yes	"Draft" language removed from shapefile legend titles as suggested.
	4	Section 2	4.It is somewhat confusing to show “Assessed streams” (narrow green line) with “Impaired streams” (thicker red line that creates a red “outline” on the green line) in Figure 2-3. If a stream is labeled as impaired it was assessed so there is not a need to show it as assessed. Since Figure 2-2, shows “Assessed Streams”, it may be better to only show the streams that were assessed and are not impaired (fully supporting) in green and impaired streams in red as this would better relate to the explanation given.		x		Yes	Stream symbology changed as suggested so impaired streams = red and assessed = green without overlap.
	5	Section 2	5.Based on the legend for Figure 2-4, it appears that Split Rock Reservoir in Pipestone County was “Assessed”. However, the MRW Monitoring and Assessment Report states that no assessment data were collected.		x		No	These streams were pulled directly from the MPCA Assessed Waters (2016) layer.
	6	Section 2	6.It is hard to tell in Figure 2-4 what symbol is used or the difference between “Impaired Lakes” and “DNR Hydrography – Lakes of Phosphorus Sensitivity Significance Priority Class” which also uses “impaired lakes”.		x		Yes	Removed legend item for DNR LPSS "Impaired / proposed as impaired" as that information is covered within the Impaired Lakes shapefile.
	7	Section 2	7.The narrative for Figure 2-4 states that “Other lakes within the MRW are assessed and are not impaired”. The MPCA is not aware of any lakes in the MRW that have been assessed and found not impaired as all nine lakes that were assessed are on the 303(d) list, and now have completed TMDLs.		x		Yes	Language removed as suggested.
	8	Section 2	8.In the explanation of Figure 2-8, please change the word “assesses” to “assessed”. MPCA may not continue to assess many of the same locations for biological health in the future.		x		Yes	Text revised to "assessed" as suggested.
	9	Section 3	9.Page 3-3, Section 3.2, states above-average quality means “Portions of a stream or river in this subcategory exhibit water quality conditions that significantly exceed numeric water quality standards for a given parameter”. Please change to “Portions of a stream or river in this sub-category exhibit water quality conditions that are significantly better than numeric water quality standards for a given parameter”.		x		Yes	Language changed to "significantly better" as suggested.
	10	Section 3	10.In pages 3-8 through 3-12, Measurable Goals 3.2.4-3.2.7, the word “length” is used in various statements such as “length of streams classified as impaired” and/or “Reduction in the length of impaired streams”. The MPCA suggests using a different term than “length” of streams since the MPCA assesses the whole reach as either impaired or not impaired (supporting). Perhaps the word “number” would be better.		x		Yes	Reach-specific measurable goal changed to: "Reduction in the number of streams classified as impaired by meeting a load allocation (where a TMDL has been completed)."
	11	Section 3	The order of “Goals” and “Why these Issues Are Important” on pages 3-10 and 3-11 is reversed compared to the other Measurable Goals pages. MPCA recommends the order be changed to be consistent with the rest of the document.		x		No	Format retained as much as possible. There are some instances where ordering of text changed to accommodate information (see MG 3.2.5). Here, if format was not changed, there would not be enough page space for the goals, which would necessitate a new page that is predominately white space.
	12	Section 3	12.MPCA requests “bio-impaired” be changed to “impaired” on pages 3-10 through 3-12, Measurable Goals 3.2.5-3.2.7.		x		Yes	Language changed to "impaired" as suggested.
	13	Section 3	13.The 14 lakes number referenced on Page 3-14 is based on a typo in the WRAPS report. There are approximately 40 lakes (graph on page 15 of WRAPS) in the MRW. Twelve lakes in the MRW had some monitoring data with nine of them having sufficient monitoring data for assessment. All nine of the assessed lakes were determined to be impaired. As written, page 3-14 indicates all 12 lakes had assessment level data which would suggest three of the lakes were not impaired.	x			Yes	Text revised to: "There are 40 lakes in the MRW, primarily located within the eastern half of the watershed (MPCA, 2018). Twelve lakes in the MRW had some monitoring data with nine of them having sufficient monitoring data for assessment. All nine of the assessed lakes were determined to be impaired with phosphorus as a pollutant (MPCA, 2018)."
	14	Section 3	14.Page 3-14 references LPSS lakes. Are there any lakes designated as LPSS? If there are not, and there are no plans from DNR to list any, then should that be in the “goals”?		x		No	Yes, there are LPSS lakes in the MRW planning area. See Figure 2-4 for locations.

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	15	Section 3	15.Page 3-15 states “altered hydrology is a term commonly used in Minnesota to describe the changes associated with excess surface runoff”. MPCA recommends using a broader definition for altered hydrology such as “altered hydrology is a term commonly used in Minnesota to describe changes in the amount and pathways that water moves through the landscape”.		x		Yes	Text revised as suggested.
	16	Section 3	16.The last paragraph of the blue section on page 3-21 states “This measurable goal is aimed at learning the current extent and conditions of subsurface drainage within the watershed area”. Please expand on how this will be accomplished when the goal is to host one event a year to address drainage, landowner and drainage authority rights, and opportunities to improve water quality while maintaining drainage capacity.			x	No	This goal is used as one means of measuring progress. There are multiple actions associated with MG 3.2.15, found in Section 4.
	17	Section 3	17.The goal of increasing soil organic matter (SOM) by 1% stated on page 3-23 is fairly lofty. Since the metric is “percent of applicable cropland treated with management practices” maybe it would be better to just say “to increase SOM” and leave off the 1%.			x	No	A SOM change of 1% is needed in order to measure the environmental (sediment, phosphorus, runoff) benefits of management practices.
	18	Section 3	18.The Goals section on page 3-25 states “implement management practices”. This should say “implement manure management practices” as it appears the SOM goals are just copied. Please expand on the types of manure management practices to make this applicable to manure application.	x			Yes	See BWSR Comment #27 and proposed resolution.
	19	Section 3	19.In the “Why These Issues Are Important” portion on page 3-26, the MPCA 2017 reference should be MPCA 2018.		x		Yes	Reference changed to (MPCA, 2018).
	20	Section 4	20.Please insert the words “not impaired” after (threatened impairment risk) in the narrative paragraph of the Surface Water Quality portion of each figure on pages 4-11, 4-17, 4-23, and 4-29.		x		Yes	Text revised to clarify map interpretation (further explanation in Section3). "Streams that are nearly or barely impaired or a particular water quality parameter are summarized in the table below. Please note that a stream could be listed as "impaired" for one parameter (e.g. total suspended sediments) but merit protection for another (e.g. total phosphorus).
	21	Section 4	21.A turbidity impairment for reach -527 is referenced on page 4-17, but Total Suspended Solids is in the “Threatened Impairment Risk” (not impaired) category. If the reach is impaired shouldn’t it be in the “Low Restoration Effort” (impaired) category?		x		No	This map uses a statistical analysis of the TSS data and it shows that it should be in the TIR category. The method does not account for professional judgement or other WQ metrics that are used to assess a reach.
	22	Section 4	22.Similarly, a TSS impairment for reach -523 is referenced on page 4-23, but Total Suspended Solids is in the “Threatened Impairment Risk” (not impaired) category. If the reach is impaired shouldn’t it be in the “Low Restoration Effort” (impaired) category?		x		No	This map uses a statistical analysis of the TSS data and it shows that it should be in the TIR category. The method does not account for professional judgement or other WQ metrics that are used to assess a reach.
	23	Section 5	23.On page 5-21, Table 5-5, MPCA is listed in the Federal source/organization column with “Federal Clean Water Act Section 319 Grants”. This can be deleted as this is an EPA’s program and already is listed below. Also in Table 5-5 for MPCA, Clean Water Partnership (CWP), change “Financial” to “Loan”, since CWP no longer offers grants.		x		Yes	Row deleted as suggested, and changed from financial to "loan" as suggested.
	24	Appendix	24.Throughout the narrative, tables, figures, and references section of Appendix A, references to the Missouri River Basin Watersheds of Minnesota: Watershed Restoration and Protection Strategies and the MPCA Missouri River Basin Total Maximum Daily Load: Lower Big Sioux River, Little Sioux River, and Rock River Watersheds are listed as “Draft”. These reports are approved and final. Please delete the “Draft May 2017” for the WRAPS report and replace with “January 2018”, and delete the “Draft April 2018” for the TMDL report and replace with “February 2018”.		x		Yes	Materials were draft at the time they were reviewed for drafting the Land and Water Resources Inventory. Figures reviewed and updated references as suggested.
	25	Appendix	25.Figure 9 in Appendix A does not represent Little Spirit Lake in red (impaired). Replace this map with the final approved map, which can be found in the TMDL report at (https://www.pca.state.mn.us/sites/default/files/wq-iw7-44e.pdf).	x			Yes	Map revised and reference updated for this circumstance.
	26	General	26.The MRW 1W1P provides a great deal of local partner knowledge and stakeholder input on setting priority concerns, issues, measurable goals, and targeted implementation actions. It also provides the process, tools (i.e.. PTMapp), and information to utilize for prioritizing within a planning region. However, the plan stops short of explicitly identifying priority management areas (i.e.. HUC 12), priority projects, or prioritized waterbodies within the Planning Regions for implementation funding. Providing that level of detail would help focus implementation efforts in the Missouri Basin for the next ten years	x			Yes	See response to BWSR Comment #6
	1	General	•Source(s) of Figures and tables – these should be listed on the Figure or table, or cross-referenced with the Appendix.		x		No	Sources noted in maps were relevant (e.g. MPCA, 2016)

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MDA	2	Section 3	•Identifying specific targets and acres. Some goals contain specific acres while others provide a percentage reduction, and the plan does not explain/is not easily found how these numbers and percentages were arrived at.			x	No	Sources and rationale for goals (acres, % load reduction, etc.) are explained within each goal "Why These Issues Are Important" section. Example for phosphorus: "These WRAPS targets are used within this 1W1P to guide the phosphorus delivery and load reduction measurable goal."
	3	Section 3	•It is unclear how structural management practices will be chosen on goal acres to meet measurable goals. Is it assumed that all acre treatments are equal in effectiveness (Ex. Using fertilizer recommendations on row crop versus planting perennials are equally effective in reducing nitrate leaching)?			x	No	Acres treated are intended to summarize that management practices are implemented for a whole field.
	4	Section 2	Figure 2-1 – In this figure (or elsewhere) you may wish to include the (initial) township testing results to illustrate additional nitrate monitoring that has been done. https://www.mda.state.mn.us/township-testing-program. The figure notes "Vulnerable Groundwater Areas" which appears different than the map developed by MDA using the same name. https://www.mda.state.mn.us/chemicals/fertilizers/nutrient-mgmt/nitrogenplan/mitigation/wrpr/wrprpart1/vulnerableareamap. Again, it would be helpful to list data source(s) here. If there is a location in the plan where this would be beneficial, feel free to use the link provided to incorporate this vulnerable area mapping in the plan. Also, the data source for nitrate is not indicated in this map unlike for Arsenic.		x		Yes	Township testing added to Figure 2-1 as provided by MDA. Vulnerable Groundwater Areas map layer removed as data is obsolete.
	5	Section 2	Figure 2-5:& 2-7: What source was used to generate the drainage network? (This is the "public drainage network" not agricultural drainage network as labeled (which would include private field drainage)?		x		Yes	From Figure 2-7: "Included in this map are known ditch locations from local counties. Also included are reaches classified as "ditch" in the DNR 24K River and Streams layer, and as "Canal / Ditch" in the NHD Flow line data layer." Agricultural drainage systems removed from Figure 2-5, as it is not needed to describe issues impacting surface runoff.
	6	Section 2	Figure 2-12: Consider changing the color for the 0.2% chance flood as it is hard to separate it from the Riparian corridor.		x		Yes	Symbology color for riparian corridor changed as suggested.
	7	Section 3	Goal 3.2.1 – This goal aligns with the Minnesota Nitrogen Fertilizer Management Plan, and could be noted here (or referenced elsewhere as well). It is good to see that this goal includes targeted implementation of practices in the short term, and long term well monitoring to see if there is an improvement in drinking water. The goal acres are very specific; should they be rounded/combined especially for this drinking water measure, since groundwater may not follow a watershed boundary? It seems like the 2nd long term goal ("reducing the number of (wells that have high nitrates)…") is 'Restoration' goal not a 'Protection' goal as listed. Another practice that can also help improve nitrogen efficiency and therefore reduce off-site movement on nitrate (Measurable goal 3.2.1 and 3.2.7) is precision agriculture and variable rate N (AMT). Research in MN showed Variable Rate N can reduce leaching by 17% (Dr. Mulla's group at the UMN)			x	No	For purposes of this goal, "Restoration" refers to wells that are >10 mg/L, however, "protection" wells are broken into subcategories to place emphasis on those wells near the restoration level. The Nitrogen Fertilizer Management Plan was reviewed for actions related to nutrient reduction (Table 4-1) and is included in the targeted implementation schedule "Develop and implement nutrient and/or manure management plans for agricultural producers which follow operational best management practice recommendations, summarized within the MDA Nitrogen Fertilizer Management Plan and consistent with University of Minnesota recommendations."
	8	Section 3	Goal 3.2.14 – Thanks for noting the Minnesota Agricultural Water Quality Certification Program. It is a good fit for this goal.			x	No	Comment acknowledged with thanks.
	9	Section 3	Goal 3.2.17 – Since an increase in soil organic matter is being used as the measure of soil health, a soil sampling program to directly measure organic matter would be beneficial. This may add to education and outreach and is a cost effective option and direct measurement. Implementing management practices on 6150 acres does provide a measure, however practices may or may not result in organic matter change.			x	Yes	Language added to Section 5.1: The purpose of the walkover or consultation is to evaluate how to best plan to fix a problem. Structural and Management Practices Cost-Share Program dollars can then be used to design and implement solutions to problems once identified, and evaluate progress towards goals following implementation efforts (i.e. changes to soil health).
	10	Section 3	Figure 3.7 - As noted above perhaps initial MDA Township Testing results should be shown here (or elsewhere in the document).		x		Yes	Township testing added to Figure 2-1 as provided by MDA. Vulnerable Groundwater Areas map layer removed as data is obsolete.
	11	Section 4	Appendix I and associated maps starting on Page 4-11, etc. - A change in title 'Nitrogen Infiltration Risk" should be considered to "Nitrate Leaching Risk" or something similar to this. We appreciate that this is a tool that considers land use and hydro-geologic features, but nitrate is the N form that is a concern to groundwater.		x		No	Due to inputs used in this analysis, title must remain nitrogen. TN was used for Nitrogen Inputs under Mulla's study (Mulla et al., 2013).

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	12	Section 4	Below are some actions within the Targeted implementation tables where MDA could be included as a partner. Some of these are action items in the NFMP which outlines the formation of Local Advisory Teams (LAT) that are intended to problem solve and address nitrate in groundwater. Several implementation activities in the plan are complementary to the NFMP actions, and therefore, MDA should be included. It appears that Action number EO-10 would include what MDA identifies as LATs. Here are additional areas that are addressed in the NFMP, so MDA could be included as a partner (Action items where MDA is already shown are not included below): Page 4-33 action LRS MP-1; LRS MP-7 Page 4-41 action DGR-10; DRG-11		x		Yes	MDA added as a partner where specified, with thanks.
	13	Section 4	Page 4-37 Action Item EO-13 – "Reduced use" of ag. chemicals does not always correlate with proper management. (Ex. Under use of a pesticide may lead to pest resistance). Perhaps reword this to "proper management" or "judicious use", or "use integrated pest management" for pesticides, or similar.		x		Yes	Action text changed to "Promote judicious use of chemical management compounds (fertilizers, herbicides, pesticides, etc.) to support the function of healthy riparian corridors.
	14	Section 4	Action # DGR-1 – MDA is noted as lead. Note that MDA testing include nitrate only (with follow-up pesticide testing). It is unclear if this is intended to include the MDA Township Testing and/or Nitrate Clinics.		x		Yes	Split into 2 actions items, DGR-1: "Implement the Groundwater Protection Rule and pursue targeted township nitrate testing" Lead MDA; DGR-2: "Monitor water quality in private wells (nitrate, arsenic, manganese bacteria, etc.) by making information available to private well users about local drinking water quality and well testing. Host a well testing clinic or provide resources to well users to have their water tested"; Lead: County/SWCD
	15	Section 4	Action # DGR-8 – It appears this is a groundwater quantity goal? Additional nitrate monitoring and modeling may be a component of NFMP implementation (if this fits here or elsewhere such as page 5-9).			x	No	Yes, this is primarily focused on groundwater quantity. Outcomes will also help understanding of GW nitrate and bacteria flow / impacts to further target implementation efforts.
	16	Section 5	Page 5-13 Regulatory. If it is desired to include ag. chemicals (pesticide and fertilizer) could include: The Minnesota Department of Agriculture (MDA) is the lead agency for all aspects of pesticide and fertilizer environmental and regulatory functions as directed in the Groundwater Protection Act (Minnesota Statute 103H). These include but are not limited to the following: •Serve as lead agency for groundwater contamination from pesticide and fertilizer nonpoint source pollution •Conduct monitoring and assessment of agricultural chemicals (pesticides and nitrates) in ground and surface waters •Oversee agricultural chemical remediation sites and incident response •Regulate use, storage, handling and disposal of pesticides and fertilizer			x	No	This was not noted during the planning process as a primary statutory obligation, however, Table 5-3 is not intended to be all-inclusive. Comment noted for implementation purposes.
	17	Section 5	Page 5-22, Table 5-5: The MAWQCP could be listed here.		x		Yes	MAWQCP added to table as recommended.
	18	Appendix	Appendix A - You may wish to include Township Testing results (to date) here, and the vulnerable area map. (This may fit better elsewhere in the plan)		x		No	Township testing added to Figure 2-1 as provided by MDA. Vulnerable Groundwater Areas map layer removed as data is obsolete.
	19	Appendix	Appendix I – Nitrogen Infiltration Risk map – See comment above. Also here are a couple of comments regarding data used for to determine the "nitrogen infiltration risk: •Pg. 160: Except for soybeans, legume and alfalfa, the symbiotic contribution of N should not be credited. Corn and other cereals are not capable of symbiotic fixation of N. •Pg. 161: The denitrification potential seems to be exaggerated for the entire watershed (entire watershed is given high denitrification potential). I think using topography indices such as slope can help reclassify fields based on water ponding potential.			x	No	Comment noted for future planning purposes which consider the Nitrogen Infiltration Risk Map.

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	20	Appendix	Appendix K Table 1, page 3 – Here some potential additions/edits. •Nutrient Management - Include the U MN Nitrogen Fertilizer BMPs (https://www.mda.state.mn.us/pesticide-fertilizer/nitrogen-fertilizer-best-management-practices-agricultural-lands) •Soil Health/Tillage – Is there on opportunity to include a soil testing program. Should this include other practices in addition to reduced tillage be included that can also increase organic matter (perennial crops, crop rotation, etc.) •Pesticide Application – Include MDA here. (https://www.mda.state.mn.us/promoting-pesticide-bmps)			x	No	See response to Comment #9 above. Comments noted for future planning purposes which consider the Rural Land Stewardship Analysis.
	21	Appendix	Appendix N – An introduction to this appendix would be helpful to explain the graphic material.			x	No	Introductory text is provided in the body of the plan.
MDH	1	Section 2	Section 2 Figure 2-1 Issues Impacting Drinking Water (page 2-17): The monitoring well nitrate concentration data does not appear to include all the public water supply monitoring data like other similar figures in the plan. Consider altering the monitoring well arsenic concentration legend and data to include a breakdown range of 5.0-10.0 ug/L since 10 ug/L is the drinking water standard.		x		Yes	Updated shapefile to ensure all available public well supply monitoring data is present. Map legend changed to 0-4.9 ug/L; 5-9.9 ug/L; 10-49.9 ug/L; 50+ug/L
	2	Section 3	Measurable Goal 3.2.3 Groundwater-Sustain Quality and Quantity (page 3-7): The goal references the nitrogen infiltration risk maps from Appendix I but more explanation could be added to clarify why targeting low risk areas have an impact on quality and quantity. Specifically the long-term goal mentions “low risk areas in DWSMAs” and could state, “low nitrogen infiltration risk areas in DWSMAs”. Adding clarification, being clear and consistent with the wording, and referencing Appendix I may help plan readers better understand this measurable goal.		x		Yes	Added statement to 3.2.1: "Nitrogen infiltration risk maps were developed to identify areas of high risk (where potential recharge and nitrogen loads are high) and low risk (where nitrogen loads are low)."
	3	Section 4	Section 4.4 Table 4-5 (page 4-41): Action number DGR-18 is to “Identify and implement opportunities to collect data to monitor effectiveness of best management practices on nitrate levels in groundwater.” Recent conversations with local/state agency staff and public water suppliers has resulted in the recognition that this is a key need in this watershed in order to get landowners to implement practices. We would recommend considering moving this to a ‘T’ action level in the LBSR and RR watersheds.			x	No	Comment noted.
PWG: Rock County SWCD	1	Page ES-1 Paragraph 2	Wording does not sound correct “planning area is a hydrologically unique.”		x		Yes	Based on this definition, the MRW 1W1P planning area is hydrologically unique.
	2	Page 4-47 Capital Improvements Table 4-7	We have several “Critical Area Retirement” listings in section 5 But don’t specifically list Critical Area Retirement in table 4-7 Should we have practices or projects that are in Section 5 listed also in 4-7? Or maybe this is the only one that I noticed. I realize we do have the practice covered in the Management Practices in each watershed listing (MP3 in LBS, RR and MP4 in the LSR)		x		No	Added line item for Critical Area Retirement to Table 4-7 (purchasing land or permanent easements).
	3	Page 5-26 Section 5.3.2.2 Paragraph 1	Should we have MDH as part of the listings of agencies we have Vertical Coordination with since we do considerable amount with DWSMAs and Wellhead?		x		Yes	Added MDH to list of example entities listed.
	4	General	The acronym used for Water and Sediment Control Basins has usually been WASCBs, not WASCOBS even though they are pronounced as such.		x		No	Acronym remains unchanged as it is used in NRCS Practice Code 638 and PTMApp memoranda.
	5	Appendix A page 14	I do not think this section of Appendix A is correct. The Beaver Creek and Split Rock Creek are in the Lower Big Sioux River Watershed and are impaired also. I do not recognize the streams they do have listed. See section below: Lower Big Sioux River Watershed (10170203) - Impaired Streams □ West Fork Little Sioux River (10170203-502); □ Judicial Ditch 13 (Skunk Creek) (10170203-505); □ West Fork Little Sioux River (10170203-512); and □ Little Sioux River (10170203-522).		x		Yes	Stream segments and map updated to reflect the approved MPCA TMDL.

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	6	Appendix C page 9	Not sure if we need to add Ryan Holz to the Advisory Committee. He is the new Rock County Rural Water Manager and replaced Brent Hoffmann on the committee.		x		No	Advisory Committee roster in the Participation Plan remains unchanged as it was approved by the Policy Committee for planning purposes. Changes to the Advisory Committee roster is expected during plan implementation.
	7	Appendix G – letter from MDH	I spoke with Amanda Strommer on this but in their MRB Public Water Suppliers Table the City of Luverne Shows the Ashwood Cemetery sub-watershed and it should be the Poplar Creek. (maybe this cannot be changed because it is the letter that was submitted)		x		No	Correct- this cannot be changed as it memorializes the letter received from MDH.
	8	Appendix G	Great to see the Efficiency Curves for the water sheds for each spending level! (even though the cost and results on reducing Phosphorus is fairly discouraging)			x	No	Comment acknowledged with thanks.
PWG: BWSR (via email)	1	General	"Insignia" on each page header, etc. – "MISSOURI RIVER WATERSHED ONE WATERSHED, ONE PLAN" – might consider Missouri River Watershed Comprehensive Watershed Management Plan instead; reason being that the 1W1P is a state program and the plan itself is local. I was wondering if we should put it to the planning group to make that distinction. It also matches the title.		x		Yes	Logo changed to: Missouri River Watershed Comprehensive Watershed Management Plan
	2	Executive Summary	Executive Summary - goals - No real listing of goals in executive summary though a reference to chapter 3 and an example exist.			x	No	Correct. As there are 20 goals, arbitrarily summarizing one goal for the sake of providing a summary seemed to provide little to no value to justify the additional length.
	3	Executive Summary	Executive Summary – targeting – rewording of the plan content requirements – and summarizes result – method of targeting for this plan not clear			x	No	The best practices for implementation based on priority issues and measurable goals is shown at the field scale. Benefits of these practices is estimated.
	4	General	Page # on whole page maps throughout would be helpful		x		Yes	The PWG elected to keep the pages full PDFs (without the headers / page numbers) for maximum visibilitiy. Pages added manually to each map PDF.
	5	Section 2	Maps are clustered in Chapter 2 – not sure ease of printing trumps flow of report		x		No	Maps remain centralized at the end of the sections per feedback from the Planning Work Group during the plan development process.
	6	Section 2	Highlight section "tab" at bottom of page to correspond with the section reader is viewing		x		Yes	Section tabs updated in interactive PDF.
	7	Section 2	Section 2 – General – Separate Watershed Boundaries in maps still not discernable from overall plan area symbol – comes across as the same symbol		x		No	Planning regions are also shown in Figure 1-1 for further clarification.
	8	Section 2	In 2.4.2.1 – Strike Clean Water Accountability Act and replace with Clean Water Legacy Act		x		Yes	Revision made as suggested.
	9	Section 2	Section 2 – Maps – The term "issues impacting" is used universally but in many cases the subjects in the map are just physical representation descriptors of the resource or representation of spatial attributes of the watershed		x		No	Correct, however intent is to show that the focus of Section 2 is on issues impacting resources, not just resources (see Table 2-1).
	10	Section 2	Many map symbols are 'clipped' off or covered on various maps of Section 2		x		Yes	Maps reviewed for potential clipped issues (e.g. calcareous fens added to map).
	11	Section 2	Description of Groundwater Recharge Colors in Figure 2-2 list orange and green, more like brown and teal blue, may be confusing as green squares designate well numbers between 11 to 25.		x		No	Gradient for recharge colors does not include green. Symbology remains unchanged due to color limitations.
	12	Section 2	Figure 2-4 – symbols in the key renders this map nearly useless in the printed format;		x		Yes	Symbols adjusted per MPCA Comment #6
	13	Section 2	Section 3.2, page 3-3, strike "BWSRs" when referencing the Nonpoint Priority Funding Plan (multiple instances)		x		Yes	BWSR removed from reference as suggested.
	14	Section 2	Figure 2-12 – FEMA maps? Doesn't this exist outside of Nobles County?		x		No	That is all that is available in GIS format.
	15	Section 3	3.2.1 order the goals highest priority first, long term goals appear to be listed lowest to highest priority		x		Yes	Order kept, in order to be consistent with issues as introduced in Section 2 and Goals shown in Targeted Implementation Schedules.
	16	Section 3	3.2.19 – we should target these livestock exclusions to streams where the WRAPS indicates the greatest need or 'hot spots' defined by the planning group.	x			No	This plan addresses unstable and erosive streams in Measurable Goal 3.2.19. The goal focuses on trampling streambanks, causing excessive erosion and widening (MPCA, 2017). This goal also includes a land use analysis map to target areas within the plan that are at highest risk for streambank trampling (Figure 3-9) which is also used to prioritized focused subwatersheds in Section 4.
	17	Section 4	Page 4-35 – "Presented below" should be "presented in the following tables"		x		Yes	Text revised as suggested.
	18	Section 4	Action 'R-13' on page 4-45 could read 'Administer the MRW comprehensive watershed management plan as described in the implementation program portion of the plan'		x		Yes	"Share services" was language requested by the Planning Work Group. Text revised to read "Share services as needed to effectively administer the MRW Comprehensive Watershed Management Plan as described in the implementation program portion of the plan."
	19	Section 4	Location maps throughout section 4 – cross hatching for 'non' watershed areas may lead to confusion with certain maps.		x		No	Cross hatching removed during the planning process if an issue was presented.
	20	Section 5	Table 5-1 Reads: Probable list of structural and management . . . This term seems a bit uncertain –			x	No	Uncertain intentionally, as all practices require field verification and landowner willingness before they can move to implementation.

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	21	Section 5	Table 5-3: "Tile Drainage" row should clarify how it is different than "Public Drainage Systems" row. After clarification consider: Lincoln County – Tile Drainage – not sure this is 103E; KLR – Tile Drainage – no permit process?			x	No	These predominately related to WD rule differences, as explained in the 5.1.5.3 text.
	22	Section 5	Section 5.2.1 – Local Funding – There are a whole host of ways for local funding sources that aren't mentioned here: Levy authority through 103B.355, 103D, 103D.601 (special purpose), 103D.905 (various subd.), 103E.601, 103E.011, City Levies, etc.			x	No	Correct. Local funding sources are not explicitly mentioned here, due to the large list of sources that can be leveraged.
	23	Section 5	5.3.5: The reference to 103B.314 should say subd. 6, not subp. 6.; Why the term "general plan amendments"? (5.3.5.2) I think that this is vestigial from the removal of minor amendments. Suggest cleaning these out of the content as well		x		Yes	"General" removed and reference changed to 103B.314 subd. 6.
	24	Section 5	It would be helpful to re-arrange section 5.3.2: First criteria (through the first bulleted list in 5.3.5.1), then section 5.3.5.2, then the format discussed in the second half of 5.3.5.1. The sentence below "…this plan will…" is consistent with watershed law but not exactly consistent with the Operating Procedures (1.0)		x		Yes	Format revised as suggested.
	25	Section 5	5.3.4.3 – Should mention ongoing 5 year reviews – it reads as though one review will be done and then the plan will remain in full effect thereafter	x			Yes	Text within 5.3.4.3 revised to read "This plan has a ten-year life cycle beginning in 2019 to. To meet statutory requirements, this plan will be updated and/or revised every 10 years.....in 2024-25 and at every 5 year midpoint of a plan life cycle, an evaluation will be undertaken to determine if the current course of actions is sufficient to reach the goals of the plan, or if a change in the course of actions is necessary."
	26	Section 5	Section 5.3.5 – second paragraph, last sentence - The sentence "As such……seems to contradict the discussion of CIPs in section 5.2.	x			Yes	Sentence revised to say "As such, CIPs need only be approved by a local board to be amended to the plan if implementation of the CIP is funded by the local board, with notification to the Policy Committee. CIPs implemented with funding from the plan must follow the means and methods for funding new capital improvements as developed by members of the Policy Committee or the Planning Work Group's individual and representative Boards (Section 5.1.4)."
	27	Section 5	If we still have work to do in the planning process to figure out how we will implement CIP items using this plan, we might want more discussion beyond local approval? Suggestion: revise the "As such, CIPs need only…" sentence to say something like "CIPs need only be approved by the local board to be amended to the plan if implementation of the CIP is funded by the local board, with notification to the policy committee. CIPs implemented with funding from the plan must follow..."	x			Yes	Sentence revised to say "As such, CIPs need only be approved by a local board to be amended to the plan if implementation of the CIP is funded by the local board, with notification to the Policy Committee. CIPs implemented with funding from the plan must follow the means and methods for funding new capital improvements as developed by members of the Policy Committee or the Planning Work Group's individual and representative Boards (Section 5.1.4)."
Public Hearing								
No written comments were received during and within 2 weeks following the Edgerton and Worthington public hearings. No verbal comments received during either hearing led to modification of plan content. The public hearings were recorded and those recordings are available upon request.								
Working Draft Comments and Responses Prior to 60-day Notices								
	1	LWRI General	All references cited in the text must be listed in Section 10. This is a particular problem in about the first half of the Appendix, but is less of a problem in the second half.		x		Y	Good catch. Additions made and referenced further in responses below
	2	LWRI General	The most useful format for figures leaves off the areas outside the MRW and uses pie diagrams to compare and summarize the four constituent watersheds. Figure 33 on page 50 is an excellent example.		x		Y	With very few exceptions, this inventory utilizes and cites figures from existing reports and data. HEI made use of the best and most relevant figures found, and generated new figures only when needed to meet requirement for the LWRI. Moving forward, new figures generated by HEI will move the legend to reduce excess "white space," add HUC 8 Major Watershed (Planning Region) boundaries. New figures generated for the LWRI will be revised to include these formatting changes.
	3	LWRI General	When discussing the constituent watersheds be consistent and always list them from northwest to southeast, that is Upper Big Sioux, Lower Big Sioux, Rock, and Little Sioux.		x		Y	Change applied in LWRI and throughout plan. Restricted only in LWRI by citation of the MPCA document title: Upper Big Sioux River, Lower Big Sioux River, Little Sioux River, and Rock River Watersheds) Monitoring and Assessment Report
	4	LWRI General	The MPCA is okay for data on monitoring a variety of environmental parameters, but those reports should not be relied upon for accurate basic information on geology and hydrology. In general, reports by the MDNR, the MN Geological Survey, and the US Geological Survey need to be used and cited more extensively. Half a dozen specific suggested references are listed below.		x		Y	MN Geological Survey and other succinct sources were reviewed for inclusion in the geology section of the LWRI. Text has been revised to include these new references, yet align with results in the MPCA Monitoring and Assessment Report.
	5	LWRI	"…Inventory is largely transcribed" from three MPCA reports, but none of the three reports are listed in Section 10 References		x		Y	Good catch. Added the WRAPS draft and TMDL report to References.

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AC member-Emailed 9/12	6	LWRI 4	Rose (1918) is listed as (1911) in the References.		x		Y	Changed in text to Rose, 1911
	7	LWRI 5	Confused description of the Coteau and Buffalo Ridge that is even worse in Section 3.3.1. Need to more the important point that the Little Sioux is different than the other three watersheds because it has Des Moines Lobe glacial drift with lower elevations, lots of lakes, and poorly developed drainage.		x		Y	Addressed in comment 4
	8	LWRI 6	The total average precipitation is NOT 3.4 inches. That's the average for July! Figure 4 adds to the confusion because it's for July only and is not the average annual.		x		Y	Changed figure and text to summarize annual precipitation.
	9	LWRI 7	* Figure 5 format should be changed to that of Figures 2 and 3. The majority of the area shown in Figure 5 is OUTSIDE the MRW.		x		N	With very few exceptions, this inventory utilizes and cites figures from existing reports and data. HEI made use of the best and most relevant figures found, and generated new figures only when needed to meet requirement for the LWRI. Moving forward, new figures generated by HEI will move the legend to reduce excess "white space," add HUC 8 Major Watershed (Planning Region) boundaries. New figures generated for the LWRI will be revised to include these formatting changes.
	10	LWRI 8	*Floodplains in Figure 5 could be usefully summarized with pie diagrams for each of the four constituent watersheds similar to the format used in Figure 33. They could show percent of the 1% and .2% risk categories.		x		Y	With very few exceptions, this inventory utilizes and cites figures from existing reports and data. HEI made use of the best and most relevant figures found, and generated new figures only when needed to meet requirement for the LWRI. Moving forward, new figures generated by HEI will move the legend to reduce excess "white space," add HUC 8 Major Watershed (Planning Region) boundaries. New figures generated for the LWRI will be revised to include these formatting changes. Generation of pie charts may be considered in the plan itself.
	11	LWRI 9	It is confusing to discuss the Little Sioux before the Rock. Keep the geographic sequence used in the Introduction: Upper Big Sioux, Lower Big Sioux, Rock, and Little Sioux. Also, the MPCA (2017) report on TMDL is not listed in the References		x		Y	Addressed in comment 3
	12	LWRI 14	Again, follow the geographic sequence from northwest to southeast. Also, the MPCA (2008) report on TMDL in the Little Sioux is not listed in the References.		x		Y	Addressed in comment 3
	13	LWRI 16	Figure 10 would be improved by using pie diagrams for each of the four watersheds showing wetland types and historic changes.		x		N	Figures: Addressed in comment 9
	14	LWRI 18	*"Middle" Big Sioux should be "Upper" & the 8-digit code is wrong with an extra "0". * Rock and Little Sioux do not have 8-digit codes given. Be consistent. *"coarse sorted till" is wrong. Till is not sorted and most of the till in southwestern MN is clay-rich. *"shale bearing loess" is wrong. Loess is wind-blown silt and does not have pieces of shale. *This incorrect language is lifted from the MPCA (2014) Monitoring and Assessment report for the MRW, p.33. That source is not good for any geology, but it needs to be cited in the text.		x		Y	Text from Monitoring and Assessment Report. Additional in-text citations added; however, text remains from Monitoring and Assessment report, with disclaimer that this Inventory is not a scientific analysis or independent review of existing data.
	15	LWRI 20	US Fish and Wildlife Circular 39 (1971) is not listed in the References.		x		Y	Good catch. Added to references.
	16	LWRI 21	Figure 12 would be improved by adding pie diagrams that summarize public water courses and basins for each of the four watersheds. Also, watersheds outside the MRW should be removed to look like Figures 2 and 3.		x		Y	Figures: Addressed in comment 10. Map will be reformated to remove white areas.
	17	LWRI 22	Figure 13 needs to be cleaned up. Take off "B" and "5-Western Province" and all items in the Explanation except the 3 colors shown in this copied portion of the published cross section.		x		N	Figures: Addressed in comment 9. This was leveraged from the MDNR. A web link was provided in the text for further clarification.
	18	LWRI 23	MDH GRAPS maps would all be much more useful if the format of Figure 33 is used. Each of the four watersheds could be compared using pie charts.		x		N	Figures: Addressed in comment 9
	19	LWRI 30	Figure 21 could be improved using pie charts for the four watersheds.		x		N	Figures: Addressed in comment 9
	20	LWRI 33	MRW WRAPS document (Draft, May, 2017) is not listed in References.		x		Y	Will add the WRAPS draft and Monitoring and Assessment Report to Appendix.

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	21	LWRI 39	Figure 27 could have pie diagrams easily added.		x		N	Figures: Addressed in comment 9
	22	LWRI 41	Figure 28 is a complicated presentation of feedlots and could probably be made more understandable using the four watershed pie diagrams.		x		N	Figures: Addressed in comment 9
	23	LWRI 43	Figure 29 could also have the four pie diagrams added and the area outside the MRW removed.		x		Y	Figures: Addressed in comment 10. Map will be reformated to remove white areas.
	24	LWRI 44	Figure 30 should add pie diagram summaries and remove non-MRW areas.		x		Y	Figures: Addressed in comment 10. Map will be reformated to remove white areas.
	25	LWRI 44	Add Lehr and Gilbertson (1988) to the References.		x		Y	Changed in text citation to MPCA, 2017
	26	LWRI 45	The quartzite bedrock outcrop is NOT the ridge called Buffalo Ridge. This section is lifted from the MPCA (2014) Monitoring and Assessment report, page 15, and that's a problem. The geology language in that document is not good. Interesting use of a footnote here. Footnotes could/should be added through out this Appendix?		x		Y	Addressed in comment 4; Removed section and referred to earlier sections of the plan.
	27	LWRI 44	*Again, listing the four constituent watersheds should follow the consistent northwest to southeast sequence.		x		Y	Addressed in comment 3
	28	LWRI 44	*Figure 31 should use the four pie diagram format which could be easily done by using Table 5.		x		N	Figures: Addressed in comment 9
	29	LWRI 49	Figure 32 could have pie diagram summaries and should have the non-MRW areas removed.		x		N	Figures: Addressed in comment 10
	30	LWRI 50	Figure 33 is the BEST map format and should be used throughout the Appendix.		x		N	Figures: Addressed in comment 9
PWG Discussion 9/13	N/A	LWRI 1	Add reference that better Geologic Atlas data is coming		x		Y	Text added.
AC Discussion 9/13	N/A	LWRI 1	Add reference that future Township N testing data is coming		x		Y	Text added
PC Member	1	LWRI 25	Typo: change the word "that" to "than"		x		Y	Typo fixed
	2	LWRI 7	Remove sentence about agricultural drainage as it makes flooding a causal issue		x		Y	Sentence removed.
	3	LWRI 7	Add dates to the WRCC chart about low and high precipitation years		x		N	Years provided on the chart are in 10 year increments. Kept years in text as a range to ensure it accurately captures the low and high precipitation years.
	4	LWRI 35	Remove sentence "In the MRW, point sources have a minimal impact on the total loads of pollutants/stressors delivered to water bodies." Just present the contributions		x		Y	Sentence removed.
	5	LWRI 41	Relating to tile drainage and stream flow changes	x			Y	Removed paragraph, as it does not add to the discussion about pollutant sources in the watershed.
	6	LWRI 45	Typo: change the word "area" to "are"		x		Y	Typo fixed
	7	LWRI 47	Referenced table is 5, not table 6		x		Y	Typo fixed
PC 2/14/18	1	LWRI 25	Typo: change the word "that" to "than"		x		Y	Typo fixed
	2	LWRI 35	Typo: "longer-term"		x		Y	Typo fixed
MDH	1	N/A: Resource Concern Map Layers	We had previously sent some shapefiles to Rachel which included Pollution Sensitivity to Wells. Attached are some shapefiles for nitrate, arsenic, and well density. We have to remove the public water supply well locations from the figures we created for the initial comment letter because we can't distribute public water supply locations due to security.	x			Y	Added nitrate and arsenic data to Drinking Waters resource concern map. Added well density data to groundwater supplies map.
	2		Delete "Wellhead Protection Areas" layer as the Drinking Water Supply Management Areas layer that is listed will cover this topic. The public meeting maps had vulnerability for the Drinking Water Supply Management areas and that's a good idea to include that.		x		Y	Deleted Wellhead Protection Areas shapefile from Drinking Waters resource concern map
Policy Committee	1	2.4.2.4	Delete repetitive "the" in sentence		x		Y	Revision made to "profitability of crops produced in ~~the~~ Minnesota"
	2	1.2.2	Repetitive issue for 1.2.2			x	N	No repetitive issues listed in table- no change made

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Advisory Committee	1	General	Typos and editorial revisions		x		Y	Editoral revisions made.
	2	3.2.11	What is the known loss (historical evidence) of # of weltands / acres in MRW? Estimate goal of % per year restoration.			x	N	Goal of 500 acres set by PWG. Historical acreage of wetlands provided in Land and Water Resources Inventory.
	3	3.2.15	Delete "may" in statement: …drainage systems may have impacts on the natural hydrology of the landscape."		x		N	Text maintained per recommendation from Planning Work Group.
Policy Committee	1	3.2.1- GW Nitrate	Adjust text language so infants defined as 0-4 months and "substantial" risk to health is less definitive.		x		Y	Text revised to: "The U.S. Environmental Protection Agency (EPA) standard for nitrate in drinking water is 10 milligrams of nitrate (measured as nitrate-nitrogen) per liter of drinking water (mg/L). Consumption of too much nitrate be harmful to human health, especially infants (MDH, 2018)."
	2	Figure 3-1	Adjust figure so resource categories are shown first.		x		N	Figure designed to show format of measurable goals.
	2	3.2.18-Rural Land Stewardship	Revise wording related to sources of nutrient loads. Currently states that over application of manure and fertilizer is the primary source of nutrient loads.		x		Y	Text revised to: "Excessive application of applied fertilizer and manure on agricultural fields is a source of nutrient (nitrogen and phosphorus) runoff to lakes, streams, and rivers in the MRW (MPCA, 2018). "
	3	General	Typos and editorial revisions brought up during PC meeting (Luke Johnson)		x		Y	Editoral revisions made.
MPCA	1	5.1.3	To be consistent this section title should be “DATA GAPS and RESEARCH”. Maybe the narrative to follow should be a section on just “Data Gaps” part and a section on “Research” that better details what each is, who’s responsible, funded, etc..? Otherwise This section seems to document water quality monitoring that has occurred and may be ongoing. The monitoring may fill in some data gaps or research but this section 5.1.3 doesn’t (my opinion) really seem to address the list of data gaps in Section 4, table 4-4. There are only a few actions for data gaps and research in section 4 that have monitoring or research tied to them, but yet most of this appears to imply data gaps and research on water quality monitoring? I think data gaps and research is kind a above and beyond what has been or will be done. Will the 1W1P dedicate funds to this program other than existing programs to fill data gaps?		x		Y	Retitle to "Data Gaps and Research Implementation Program"
	2		Is this different from “data gaps and research” or is there overlap? Maintaining a monitoring network is of course high value but may not be interpreted as a data gap. I suppose everything becomes a data gap if it loses funding…			x	N	Conflicts with prevoius comment. Recommendation to retitle to "Data Gaps and Research Implementation Program"
	3		What is the source of the funds and/or agency. I don’t see anything on MDA’s pesticide or nitrate testing program. [local groups that conduct monitoring]			x	N	For group discussion
	4		This is a confusing sentence, what does it actually mean? Since this section is Research and Monitoring Implementation it reads like 1W1P is going to provide funding to train local partners to use new Research and Monitoring tools (like sondes? secchi tubes? drones??) ["This initiative will also be used to fund implementation of actions aimed to build and maintain technical capacity to fully utilize new technology and tools for water resource management. "]		x		Y	Revise to "This initiative will also be used to fund implementation of actions aimed to build and maintain technical capacity, as summarized in the targeted implementation schedule."
	5		In-text revisions (extensive) To be shown on screen		x		Y	Revise text as provided.
	6		Please be specific. Nowhere in this whole Research and Monitoring Implementation Program are any details given about what actually is needed. You could say for example, “the program will target the 1W1P priority management areas with funding for needed flow, chemistry and biological data collection. In additions funding for training and implementation of field surveys to document likely impacts and sources of altered hydrology, habitat destruction, etc. will be provided to local partners.”			x	N	This information is provided in detail within the targeted implementaiton schedule.

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MRWA	1	Section 4	Add action "Identify and implement opportunities to collect data to monitor effectiveness of best management practices on nitrate levels in groundwater." to data gaps and research table. Lead could either be local staff or PWS with MDH/MDA as partners.	x			Y	Action added
	2		Revise action: Implement practices which control ground water elevation, reduce water volume yield, and remove pollutants before entering ditches, streams and groundwater (e.g. drainage water management, conservation drainage, woodchip bioreactor, saturated buffers).		x		Y	Revise text as provided.
	3		Facilitate protection of natural and pervious lands through such programs as acquisition, property tax credits and easements. include high priority groundwater recharge areas.	x			Y	Discussion needed about what high priority recharge areas are.
	4		"Encourage use of conservation easement programs in marginal, erodible land, especially within DWSMAs." Why limit it to marginal and erodible lands? Many of our high priority easement sites are prime ag. I would include priority recharge areas within wellhead protection areas. Can we also add provide financial incentives?		x		Y	Revise text as provided.
	5		"Provide one-on-one consultations with landowners and producers (i.e. field walkovers) about agricultural BMPs, field productivity benefits of BMPs, and available financial incentive options for funding them." Where do we talk about alternative crops and land uses? Encourage different groundwater friendly landuses etc…Where are promoting CRP and perennials in wellhead protection areas?	x			Y	For group discussion- potentially expand action item or add new one.
	6		"Implement practices which control ground water elevation, reduce water volume yield, and remove pollutants before entering ditches and streams (e.g. drainage water management, conservation drainage, woodchip bioreactor, saturated buffers)." Bioreactors at tile outlets are needed in wellhead protection areas.		x		Y	Revise text as provided.
	7		Implement g drainage water management and conservation drainage practices to control ground water elevation, reduce water volume yield, and remove pollutants from tile discharge prior to entering surface waters and groundwaters		x		Y	Revise text as provided.
	8		"Develop new techniques to promote conservation efforts, such as administering a local certification training program or partnering with agribusiness retailers to recommend appropriate BMPs." Where are we including the certified crop advisor updates/meetings? Laura is starting them and they are very effective other parts of the state.		x		Y	Revise action to include language about CCAs
	9		Monitor precipitation and increase the number of volunteer rain gauge readers to evaluate short and long-term trends and their relationship to groundwater supplies and lake levels.		x		y	Revise text as provided.
	10		"Identify opportunities to fund sustainable forest management, prairie, wetland and other natural area preservation and restoration through grants and partnerships." Do we need a measure that talks about developing partners and funding sources to preserve and protect critical groundwater recharge areas?		x		Y	Text revised.

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	11		Develop a monitoring program and prioritization process to help identify priority watersheds/regions where nitrate loading to the aquifer is occurring. This process will help identify key spots where implementation activities can be implemented.		x		Y	Text revised within Section 4
	12		Create and implement a monitoring program to help track the effectiveness of ag. bmps on reducing nitrate loading to the aquifer.	x			Y	Action added
Policy Committee (4/10/2019)	1	Section 5	Include Ash Creek in the Capital Improvement Table (was recently removed as the cost was only $90K). Include an asterik that this was still included regardless of its cost as it is a high local priority project.	x			Y	Revision made as recommended.
	2	Section 2 and 3	Include page numbers on maps if possible, but keeping maps as large as possible is most important.		x		Y	Revision made as recommended.
	3	Page 3-3	Resolve grammatical error: "are" significantly better than…		x		Y	Revision made as recommended.
	4	Section 4	Revise labels in the nearly / barely maps for readability		x		Y	Revision made as recommended.
	5	Page 5-4	Resolve grammatical error: "others" instead of "other"		x		Y	Revision made as recommended.
	6	Page 5-6	Resolve sentence to read as "Plan participants have and will continue to facilitate the development and assembly of data and information.."		x		Y	Revision made as recommended.