Clean Water Council Policy Committee Meeting
October 27, 2023

Following introductions, the Committee discussed diversity, equity, and inclusion as it relates to the Clean Water Fund. Paul Gardner will provide more information for the Committees consideration at a future meeting.

Draft Drainage Policy Statement
Paul Gardner provided an overview of the feedback the Committee has received on the draft Drainage Policy Statement. The feedback ranged from "this is a nice start, do more" to "shrink the focus to where the CWC can do the most good." (comments received are included at the end of this document)

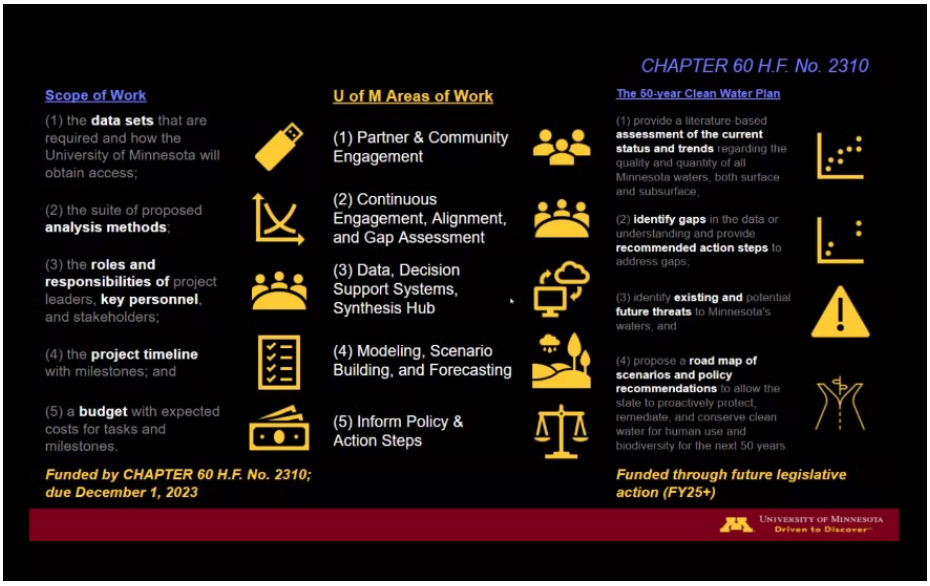
Discussion included:

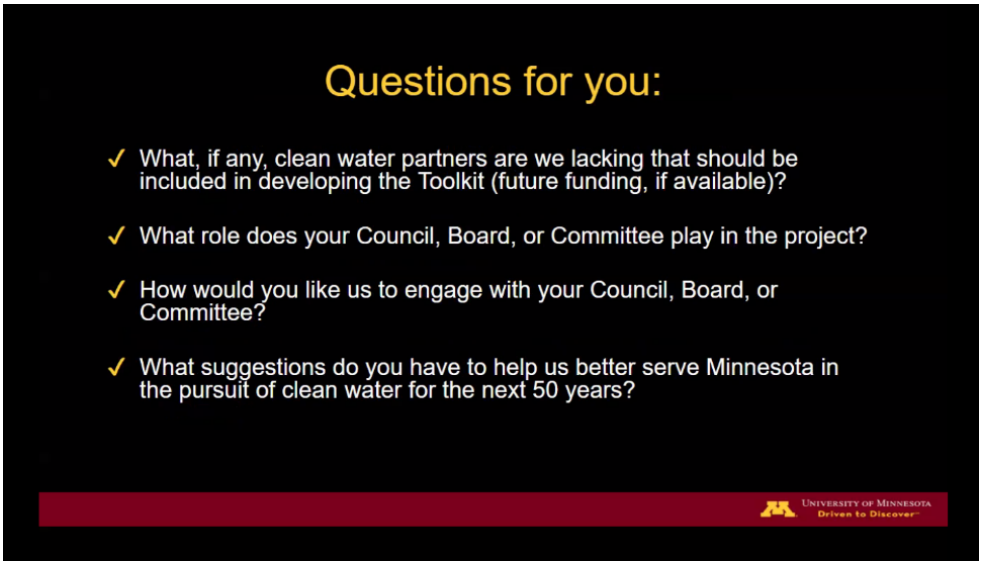
- Minnesota Watersheds and the Association of Minnesota Counties are concerned that the background included in the draft policy paints a narrative that lays the blame of water quality and hydrological conditions squarely on the shoulders of ag drainage. The landscape was altered for production pre-statehood and many of the changes made in these systems in recent decades have improved systems in a way that improves water quality and hydrologic impacts. We believe that the change in the timing for Multi-Purpose Drainage Management (MDM) grants will encourage more participation by drainage authorities.
- Rich Biske asked if Minnesota Watersheds and the Association of Minnesota Counties had comments on the eight recommendations in the draft policy. Our comments will be sent to Paul Gardner.
- Jamie Beyer recommended that the Council reach out to county highway engineers for input on the MDM grants, expressed concerns regarding the need for more funding, and the fact that drainage projects are expensive for landowners, even when water quality best management practices are included.
- Rich Biske stated that intentions are important. The Committee has discussed the role of drainage and wants to understand the role of drainage water management, as well as how to help with planning and implementation.
- Marcie Weinandt said that the Committee recognizes the important role that drainage plays. The idea is how can we elevate water quality in drainage projects without interrupting water quantity and management within the systems. We know that 103E must be following. The Council needs to stay within the water quality aspects we can provide and assist drainage authorities as they pursue water quality benefits in drainage systems. The needs for agriculture are much different tan the installation of a rain garden in a suburban area.
- Len Kremer spoke on behalf of the Minnesota River Collaborative. They believe that it is necessary to mitigate the effects of the impacts of drainage on water quality, load duration, and peak flows. He serves on the Outlet Adequacy Subcommittee of the Drainage Work Group. It is apparent, in his opinion, that there are a lot of issues in drainage that need to be addressed to restore the hydrology of the Minnesota River watershed, especially upgrading drainage law.
- Paul Gardner responded that many of Len's comments are of a broader scope. He is not sure how many of those recommendations the Council would want to take. There are proper safeguards in place to assure that projects don't accelerate water quality problems.
- Rich Biske stated that many of the elements in the Minnesota River Collaborative's comments are included in the draft policy such as collaboration and MDM. The specific changes to 103E are not in the Council's scope.

- Discussion was held regarding a drainage endorsement in the MAWQCP. MDA is happy to be involved in this, but it will require stakeholder input to have the correct standards and requirements. This could also open the door for more funding for water quality.
- Tom Gile commented on the Outlet Adequacy Subcommittee. The committee is developing a report that will be presented to the DWG to inform their deliberations about outlet adequacy and possible recommendations for changes to the Minnesota Public Drainage Manual or legislation. Policy questions have been raised during the committee's discussion that will need deliberation by the DWG.
- Discussion was held regarding the DNR's drainage engineering position. Haley Byron explained that this will be a statewide position that will hopefully be filled in the next two months. She also explained that early coordination is initiated with the local or regional DRN staff. For the southern part of the state, she is the main contact and is responsible for reviewing drainage project information. The DNR is continuing to pursue early coordination with drainage authorities and hopes to start pilot programs in southern Minnesota soon.
- Paul Gardner will provide a revised draft for the next CWC Policy Committee meeting. In revising the document, he will reach out to those who have commented for needed clarification.

Input on 50-Year Water Plan Scope of Work

A PowerPoint presentation was given and discussion was held regarding the 50-Year Water Plan.





Meeting notes by Jan Voit

Feedback on First Draft of Clean Water Council Drainage Draft Policy Statement

27 October 2023

From Policy Committee in August:

- Include more context up front on why the committee is doing this
- Break up ditch vs. tile inventories:
    - Ditches are well inventoried
    - Old tile maps get reviewed
    - What about private ditches
    - Some drainage authorities require permits for tile
    - Stress that government seek cooperation and consent from landowners
- Fund drainage authorities to be partners who identify opportunities for water quality, with the expectation that they integrate drainage into comprehensive watershed management plans
    - Integration with 1W1P is mostly happening
    - Drainage is prioritized in some 1W1P, not others
    - Water storage goals are ambitious, not always specified where it will happen
    - Multi-purpose drainage management (MDM) complements 1W1P
    - Bois de Sioux Watershed is a good example of coordination
- MN Ag Water Quality Certification Program (MAWQCP) could be used in areas where drainage is not a priority in 1W1P. We should connect drainage engineers with MAWQCP.
- Better understand training needs and whether the CWF would be a funding source
- Have Jeff Strock take a look at the statement draft

From Drainage Work Group Meeting 11 Sep 2023

- Outlet inventory is a big ask
- Drainage leads to longer growing season that facilitates no-till; give some credit to benefits
- Saturated buffers a good step
- Fix/add some background information; AMC will send
- Dialogue with DWG would be welcome; document “is a little scary”
- Train farmers on controlled drainage
- Restatement of concern about downstream hydraulic impact
- Value of multi-purpose drainage management not always understood
- Should address downstream flooding and its economic impacts

From Minnesota River Collaborative 25 Oct 2023

- Request that the Legislature establish a Minnesota River Board that will coordinate the current efforts and interests of the diverse stakeholders, local governments, state and local agencies, citizens, and other organizations working to manage and restore the hydrology of the Minnesota River Watershed. Coordination is also needed to ensure the collection of comprehensive data to evaluate current proposed projects and provide for development of a

comprehensive plan for the watershed, and to provide a mechanism to secure funding for project development, Multi-Purpose Drainage -Management development and maintenance.

- Coordinate the implementation of a comprehensive Minnesota River Watershed hydrologic data collection program that is currently needed to review proposed drainage improvement plans and will be the basis for future comprehensive planning and the implementation of Multi-Purpose Drainage-Management. Immediate focus should be on Minnesota River sub watersheds that are having the greatest impacts on water quality and hydrology.
- Encourage the approval of legislative funding for the development of a comprehensive hydrologic model proposed by BWSR for the Minnesota River Watershed that can be used to evaluate the impact of proposed drainage improvement projects that are currently being proposed and the cumulative impact of those projects and downstream public waters. The model will be the basis for development of a comprehensive Watershed Plan.
- Request that the Legislature modify drainage law to require that all private drainage systems tributary to a public drainage system or a public water submit plans for construction of the private system for approval of by the Drainage Authority or by the Department of Natural Resources if the private system is tributary to a public water. After completion of construction an as-built copy of the constructed project must be submitted to the drainage authority or the MDNR by the contractor.
- Request that the Legislature modify drainage law to require that frequent channel forming flows, the 1.5-year and 2-year frequency events be evaluated to determine impacts on project outlets. These events have been shown by research conducted by the Minnesota Pollution Control Agency as part of their 2015, Sediment Reduction strategy to result in the most erosion and the largest volumes of sediment.
- Request that the legislature modify drainage law to require that if the outlet of a proposed public drainage project is currently not adequate that it must be modified as appropriate so that it will be adequate for the proposed project before is approved.

CUMULATIVE EFFECT OF AGRICULTURAL LAND USE AND ARTIFICAL DRAINAGE, Minnesota River Basin (10/2/2022 update) Len Kremer

In the last 50 years the hydrology of the Minnesota River watershed has changed dramatically. The mean discharge at Jordon has doubled from 3100 cubic feet per second for the period 1936 through 1977 to 6100 cfs for the period 1978 through 2007. There has also been a three fold increase in rare and extreme flows. Flow duration curves at Jordon show that frequent channel forming flows have also changed significantly. During the period 1934 through 1949, a discharge of 1000 cfs was exceeded only 5 percent of the time for the period after 1949, 1000 cfs was exceeded more than 20 percent of the time. This change in the hydrology has been shown to be the result of the conversion of agricultural production from small grains and forage crops to soybeans and the more intense artifical drainage associated with the conversion.

The dramatic change in the hydrology of the watershed has had a significant effect on the water quality in the Minnesota River and its tributaries. Water quality data collected in the Minnesota River watershed indicates that the river and its tributaries have excessive sediment and phosphorus loads, elevated nutrient concentrations, high bacteria counts and other contaminants. The high bacteria count, principally caused by failing septic systems and the excessive sediment and nutrient loads, caused by increased runoff are of particular concern. According to a Minnesota Pollution Control Agency 2017 study, none of the 14 segments of the Minnesota River met the water quality standard for aquatic life in 2017, and only six of the 14 met the standard for aquatic recreation. Recent studies have determined that the principal causes of the increased runoff and sediment loading has been due to the cumulative effect of artificial drainage associated with the land use changes in the watershed.

Based on MPCA data sediment loads from the Minnesota River watershed to the Mississippi River have more than doubled over the period 1980 through 2005 from approximately 0.6 million tons per year to approximately 1.2 million tons per year. According to research conducted by the MPCA as part

of the the South Metro TSS TMDL, Lake Pepin is expected to be filled with sediment in 340 years at the current deposition rate. The MPCA research indicated that it would have taken 4000 years at the 1970's sediment deposition rate. The increased sediment loads have been shown to be caused principally by severe bank erosion due to the longer duration of channel forming flows. Because of the increased sediment loads barge traffic on the upper reaches of the Mississippi have had to reduce the size of their tow which has increased river transportation costs.

There have been suggestions that these increases in runoff and river flows have been due to increased precipitation, but that assertion has been proven to be insignificant by many investigations including the M PCA, Belmont, Schottler and many others. Their research has shown that the change in water yield, the percentage of rainfall that runs off and is tributary to the river has nearly tripled from 7 percent in the 1930's to over 20 percent at the present time.

Recent studies by Schottler and Kelly of the effects of artificial drainage projects have clearly demonstrated that each project has impacts on the watershed hydrology and that the significant increase in Minnesota River flow has been caused by the cumulative effect of those projects. The increased river flow has had a devastating effect on both the magnitude and duration of flooding, the extent of riverbank erosion, downstream water quality, aquatic life and downstream aquatic recreation. Recently, extensive riverbank riprapping projects have been completed by the City of Mankato to stop erosion of the banks of the river and protect municipal infrastructure and by the City of Savage to protect a future city park from riverbank erosion.

The drainage coefficient most frequently used for the design of improvements to agricultural drain tile systems in the Minnesota River watershed is 0.5 inches of subsurface runoff versus historical agriculture drainage of less than about 0.3 inches of subsurface runoff (in a 24-hour period). The current recommendation is typically about double the historic drain tile system capacity and results in increased peak discharge and runoff volume from the tile system which closely correlates with the increased mean discharge for the Minnesota River.

The change in subsurface runoff standards causes the runoff to occur faster and results in higher sustained channel forming flows downstream. Extensive research conducted by the MPCA as part of the SedIment *Reduction Strategy for the Minnesota River* has shown that the volume of sediment due to erosion from frequent channel forming events, 1.5 -2 year events, is much greater than the volume of sediment from infrequent events. Therefore, the MPCA's Sediment Reduction Strategy focuses on reductions in the both the magnitude and the duration of flow resulting from a two-year event.

Developed communities throughout the watershed have determined that flood control efforts will be needed to protect infrastructure and development from increased river flows. Increased river flows have created a need for reinforcement of muncipal flood control projects constructed in the past in order to provide continued protection. In addition, riverbank erosion has caused the destruction of public infrastructure and private residential properties and the sedimentation that results from the bank erosion has impeded downstream commercial riverborne shipping and recreational boating, increased sediment deposition in commerical and recreational marinas and destroyed floodplain lakes adjacent to the river. Many once successful agricultural production facilities in the vicinity of the river are currently subject to frequent crop losses. All of these impacts have been principally due to the effects of the change in upstream land use and more intense artificial drainage.

Memorandum

To: Clean Water Council Policy Committee

From: Association of Minnesota Counties (AMC) - Brian Martinson, Policy Analyst bmartinson@mncounties.org
Minnesota Watersheds (MW) - Jan Voit, Executive Director jvoit@mnwatersheds.com
Red River Watershed Management Board (RRWMB) - Rob Sip, Executive Director rob.sip@rrwmb.us

Date: October 25, 2023

Re: **Comments on CWC Drainage Policy Draft**

Minnesota's counties and watershed districts serve as drainage authorities and are responsible for managing and maintaining drainage systems on behalf of landowners that pay for the systems. The Association of Minnesota Counties (representing all 87 Minnesota Counties), Minnesota Watersheds (representing all of Minnesota's watershed districts), and the Red River Watershed Management Board (representing the seven watersheds in the Red River Valley) would like to offer the following comments regarding the current draft Clean Water Council policy on drainage. For the sake of this communication, we will keep our comments at a high level, but would welcome the opportunity to provide more detailed feedback as you continue your work on this document.

The *Draft Policy Statement* is quite expansive and addressing so many issues at once leaves many gaps that could cause confusion and misunderstanding. The *Drainage Information* section includes a listing of statutes, entities engaged in drainage work, and resources that provide guidance for drainage activities, but each of these lists is incomplete with a few key parties and resources omitted.

The *Background* section provides limited information but paints a negative picture that we feel misses the mark. If a background section is to be included in a future draft, we suggest a more thorough explanation of drainage system functions and review of both the challenges and opportunities they provide. There have been significant changes and improvements in drainage that provide benefits not only to the landowners and communities on the systems but also more broadly for water management.

The *Draft Policy Statement* currently includes a list of eight recommendations. We are supportive of the investments in the Multipurpose Drainage Management (MDM) program and agree there is a need to inform/engage more landowners and drainage authorities to take advantage of this program. We also support work to change the structure and timing of these grants to better align with project timelines.

However, several recommendations are unnecessary and seem to suggest prohibitions on certain uses to ensure that Clean Water Funds are not used to do environmental damage. Clean Water Funds have clear directives for water quality and protection, as do the programs that have been selected for funding. It seems unnecessary for the Clean Water Council to begin listing the things funding should not do, especially when they are already contrary to requirements of the Fund. The only Clean Water Council funded program specifically connected to drainage is the MDM program. These grants are for targeting critical pollution source areas to reduce erosion and sedimentation, reduce peak flows and flooding, and improve water quality, while protecting drainage system efficiency and reducing drainage system maintenance.

We believe that the Council's policies would do better to further clean water objectives by promoting positive investments and strategies. If the Council decides to adopt a drainage policy, it should focus on the intersection of the Clean Water Council's work and Minnesota Statutes 103E drainage systems by encouraging collaboration and shared objectives.