Information Item

Metro Area Water Supply Advisory Committee

Meeting Date: July 10, 2024

Topic

Proposed definition of water supply sustainability for the updated Metro Area Water Supply Plan

District(s), Member(s):	All
Policy/Legal Reference:	Minnesota Statute 473.1565
Staff Prepared/Presented:	Lanya Ross, Environmental Analyst, 651-602-1803
Division/Department:	Environmental Services

Background

Our region continues to wrestle with a definition for water supply sustainability, as conditions and values continue to evolve.

MAWSAC is asked to review, recommend revisions to, and approve the high-level regional definition for water supply sustainability included in the draft Metro Area Water Supply Plan update. MAWSAC input will inform the draft Metro Area Water Supply Plan to be released for public comment. Once finalized, this definition can help inform outreach, performance evaluation, and assessments.

This document includes:

- Feedback received from TAC in June 2024
- A revised definition for water supply sustainability, based on TAC feedback
- As background information, the 2015 Metro Area Water Supply Plan definition of water supply sustainability and statutory references

Input from TAC

At their June 18th, 2024, meeting, the Water Supply Advisory Technical Advisory committee discussed the definition of water supply sustainability. In that meeting and through a follow-up survey, they shared the following recommendations and questions for MAWSAC to consider:

- Change some terminology related to safe-yield and protected flows.
- Revise the sentence about uncertainty and risk, for a better fit with the rest of the content.
- Does the definition apply to supply infrastructure or just source? There are benefits of specifically focusing on supply source, leaving infrastructure aside. However, some of the biggest concerns when looking at the entire system and what people are drinking are related to infrastructure. TAC's general consensus after discussion: assume "water supply" includes all water (even water not for consumption).
- The definition is based on knowing the limits of available sources, but generally we don't know the limits and that should be acknowledged. If the definition is not the same as the statutory definition, we should at least acknowledge that. All uses degrade water quantity so we should include the social, economic and environmental changes that we are willing to accept.
- The discussion of water supply system infrastructure capacity should allow for capital planning and expansion of infrastructure that still meets the criteria of design capacity based on

sustainable sources.

- The discussion of water use efficiency and conservation should be more specific and not rely on mindsets or behavior to forego nonessential water use during emergencies.

Request for MAWSAC

Review, recommend revisions to, and approve a high-level regional definition for water supply sustainability to include in the updated Metro Area Water Supply Plan, which is connected to the 2050 Water Policy Plan. Consider the following questions:

- Does the definition of water supply sustainability resonate with you and how you feel it should be considered at a local and regional scale?
- If the definition does not resonate, why?
    - Is it missing some key element from statute or experience?
    - Is wording unclear?
    - Does it need to be more measurable?

Revised definition of water supply sustainability, based on input from TAC

Water use is sustainable when the use does not harm ecosystems, degrade water quality and quantity, or compromise the ability of future generations to meet their water resource requirements.

The region's water supply may be considered sustainable when:

- Water use does not exceed the estimated limits of available sources, taking into account:
    - Impacts to aquifer levels (such as reducing water levels beyond the reach of public water supplies and privately-owned wells),
    - Impacts to surface waters, including diversions of groundwater that affect them, to maintain flows and water levels, and
    - Impacts to groundwater flow directions in areas where groundwater contamination has, or may, result in risks to public health.
- Planned land use and related water demand is consistent with long-term design capacity for water supply infrastructure, when that design capacity is based on sustainable sources.
- Individual water use supports sustainability and appropriate mechanisms are in-place to limit or forego nonessential water use during emergencies.
- Risk to infrastructure and public health is managed through ongoing assessment and investment.

Background information

2015 Metro Area Water Supply Plan definition for water supply sustainability

A definition of regional water supply sustainability was first developed for the 2015 Metro Area Water Supply Plan. That definition incorporated statutory descriptions of sustainability from that time, considered infrastructure, and was described in a way that can be translated into more quantifiable terms to support technical analyses.

The 2015 Metro Area Water Supply Plan described water supply sustainability as:

Water use is sustainable when the use does not harm ecosystems, degrade water quality, or compromise the ability of future generations to meet their own needs.

Considering the statutory definitions and Thrive MSP 2040, the region's water supply may be considered sustainable when water users maximize their use of existing water supply infrastructure investments within the sustainable limits of available sources, and use water in a way that:

- Is efficient and conserves water
- Maintains aquifer levels consistent with safe-yield conditions defined in Minnesota statutes

- Maintains surface water by managing withdrawals, including diversions of groundwater that support them, to maintain projected flows and water levels
- Minimizes impacts to groundwater flow directions in areas where groundwater contamination has, or may, result in risks to the public health
- Recognizes uncertainty and seeks to minimize risk

Legislative definitions related to water sustainability
The following statutes and rules should inform the definition of water supply sustainability. It is important to note, however, that the definitions should not be limited to these statutes and rules, for example, they do not include elements related to infrastructure. A Community Technical Advisory Group and the Metro Area Water Supply Advisory Group in 2014 identified a need to include consideration of infrastructure in the definition of water supply sustainability.

Minnesota Statues 103G.005 defines a sustainable diversion limit as a maximum amount of water that can be removed directly or indirectly from a surface water body in a defined geographic area on a monthly or annual basis without causing a negative impact to the surface water body.

Minnesota Statutes 103G.287, subdivision 2 prohibits groundwater appropriations that negatively impact surface waters. Subdivision 5, includes a sustainability standard for groundwater appropriation permits that prohibits uses that harm ecosystems, degrade water, or reduce water levels beyond the reach of public water supply and private wells constructed according to Minnesota Rules, chapter 4725.

Minnesota Statutes 103G.223 limit water appropriation impacts on calcareous fens.

Minnesota rules, chapter 6115.0630 define groundwater safe-yield for water table and artesian conditions.

- "Safe yield for water table condition" means the amount of groundwater that can be withdrawn from an aquifer system without degrading the quality of water in the aquifer and without allowing the long-term average withdrawal to exceed the available long term average recharge to the aquifer system based on representative climatic conditions.
- "Safe yield for artesian condition" means the amount of groundwater that can be withdrawn from an aquifer system without degrading the quality of water in the aquifer and without the progressive decline in water pressures and levels to a degree which will result in a change from artesian condition to water table condition.

Minnesota rules, chapter 8420.0935 define standards and criteria for identification, protection, and management of calcareous fens. Subpart 1 states that calcareous fens must not be impacted or otherwise altered or degraded unless the commissioner, under an approved management plan, decides some alteration is necessary.