

DATE: July 20, 2021
TO: Wendy Wulff, MAWSAC Chair
FROM: Mark Maloney, TAC Chair
SUBJECT: Recommendations around the intersection of land use and water supply

This memo includes information for the Metropolitan Area Water Supply Advisory Committee (MAWSAC) to consider as the committee develops recommendations around the intersection of land use and water supply. It reflects past MAWSAC and Technical Advisory Committee (TAC) committee meeting discussions, recent interviews with a limited number of TAC and MAWSAC members, and internal MCES conversations.

Request to MAWSAC

Share your thoughts on what recommendations to make as a committee around the intersection of land use and water supply

Background

The Metropolitan Area Water Supply Policy Advisory Committee (MAWSAC) is responsible to assist the Council in its water supply planning work. One of the committee's responsibilities is to produce, by 2022, a set of recommendations and supporting information around high-priority water supply topics to support the update of the regional development guide and related policy plans. The Metropolitan Area Water Supply Technical Advisory Committee (TAC) informs MAWSAC's work by providing scientific and engineering expertise. Recommendations to the Metropolitan Council (Council) and Minnesota Legislature (Legislature) may address technical studies, policy updates, collaboration, and/or funding.

In March 2021, MAWSAC and TAC adopted a work plan to develop recommendations in the areas of:

1. Contamination and water quality
2. Intersection between land use and water supply
3. Groundwater and surface water interaction
4. Infrastructure

TAC Meeting Highlights

At their meeting on June 15, 2021, TAC was asked to share information with MAWSAC to consider related to potential recommendations around the intersection of land use and water supply. This reflects MAWSAC's intention to approach the development of recommendations by working directly with local technical and scientific experts throughout the process to ensure their concerns are consistently understood and considered.

TAC provided input and suggestions to revising the draft problem statement, goal, and proposed actions on pages 3-5 below. They also shared the following high-level considerations:

- Land use control lies with each individual city so it may be hard to get all cities to be consistent with how they apply land use controls.
- Economics impact land use decisions. Different parties need to be present in the discussions and recommendations (ex: land use planners, developers, etc.)
- It is important that proposed approaches and recommendations be more specific.

RECOMMENDATIONS TO CONNECT LAND USE & WATER SUPPLY

Goal

The TAC, serving at the pleasure of the MAWSAC, recommends that the MAWSAC, with the Metropolitan Council and the State of Minnesota, promote actions so that public water suppliers, land use planners and developers have tools and are empowered to work together to support communities' economic needs while protecting the quantity and quality of critical source waters. Local actions that protect source water need to be better understood, coordinated, and incentivized in the region. Forethought in land use planning today provides opportunities to prevent contamination in the future.

Problem

Many of our current water quality problems came about because we didn't realize the implications of our land use – and related industrial and commercial waste – years ago. We have opportunities to make choices now with our current land use that help prevent the kind of legacy contamination that past land use practices have caused.

As committees form recommendations around this challenge, look for opportunities to:

- Increase support for inter-jurisdictional analyses and coordination. Considering the overlap of source water protection areas, the challenges that hinder local actions to protect source water need to be better understood, coordinated, and incentivized. Certain areas contribute more than others to the number of people drinking that water and should be prioritized (ex: where DWSMAs overlap).
- Clarify roles and financial and logistical responsibilities for water utilities, community planners, regulators, and others.

Questions to consider

Consider the following questions in preparation for the meeting. The [Master Water Supply Plan](#) and [Thrive MSP 2040](#) outcomes, principles, and goals are a resource to draw on.

- 1) **What trade-offs or tensions do you perceive might shape public support for protecting source water through land use choices?** What political or regulatory pressures are you trying to balance?
- 2) **What resources would help most?** What financial resources, information, plans, permits, or technical assistance set us up to do better? Anything missing from current local, regional, or state agencies?
- 3) **Who in your community is most impacted by source water protection expectations or concerns about infrastructure changes/expansion?** What outreach approaches have been most effective? Are there any gaps in resources?
- 4) **How could the Council and/or organizations represented on TAC help?** How could the region be better prepared to support land use choices that promote source water protection and water supply sustainability?

Potential solutions or approaches

The following proposed solutions or approaches come from conversations had by MAWSAC, TAC, and Council staff. At their meeting on June 15, 2021, TAC spent some time reviewing, revising, and doing some preliminary sorting of these proposed solutions according to ease of implementation and impact. Actions marked with an asterisk (*) were not ranked by TAC due to technical difficulties with Mural (online application).

Financial support

Proposed action	Ease of implementation versus impact
a) State of Minnesota provides financial incentives to encourage developers to implement best management practices to protect source water (example: resources to target MN Technical Assistance Program or other programming in high-priority source water protection areas)	Relatively easy to implement with longer-term or bigger impact
b) State of Minnesota increases incentives for communities to conserve natural lands or shift land use for source water protection, as tax revenue may be lost on conserving versus developing land	Relatively easy to implement with longer-term or bigger impact
c) State of Minnesota increases funding and outreach for agricultural practices to protect source water	Relatively hard to implement with longer-term or bigger impact
d) State of Minnesota funds investigation and programs to move unlined landfills out of source water areas	Relatively hard to implement with more immediate or smaller impact
e) State of Minnesota financially supports sub-regional wellhead protection implementation projects that extend beyond political boundaries of one community	Not ranked*
f) State of Minnesota, with Metropolitan Council and other partners, provides funding for grants for communities that are prioritizing redevelopment and high-density housing (examples: Metropolitan Council Livable Communities Grants)	Not ranked*

Outreach, engagement, and training

Proposed action	Ease of implementation versus impact
a) Committee members and partners commit to participating in and supporting Minnesota Source Water Protection Collaborative and subregional partnerships (examples: proposed Dakota County Groundwater/Source Water Collaborative, Anoka County Municipal Wellhead Protection Group). Includes partnering with agricultural community	Relatively hard to implement with longer-term or bigger impact

Proposed action	Ease of implementation versus impact
<p>b) Metropolitan Council's Local Planning Assistance program provides resources for community planners and public water suppliers to protect source water areas (examples: Local Planning Handbook, PlanIt):</p> <ul style="list-style-type: none"> ○ information about the location, vulnerability, and population served by source water areas ○ model ordinances and other best practices ○ tools to target well sealing programs (examples: Fridley, Edina) ○ checklist for source water protection analysis for new construction ○ customizable education campaign materials for public water suppliers highlighting the value of protecting source water, water treatment methods and costs, and how community members' actions impact health. ○ clearing house of suggestions from public water suppliers to join land use in water supply (example: review development codes and modify if it can benefit water supply) 	Not ranked*

Research

Proposed action	Ease of implementation versus impact
a) Leverage internet of things (IOT) technologies to collect regional groundwater elevation data	Relatively easy to implement with longer-term or bigger impact
b) State of Minnesota continues to work to identify and publish presence of contaminants in drinking water supplies in metropolitan area, filling gaps in monitoring and analyzing how past and current land use practices impact soils and water	Not ranked*
c) Metropolitan Council, with state and local partners, proposes approach to consistently delineate wellhead protection areas using updated data and analytical approaches	Not ranked*
d) Metropolitan Council, with partners, analyzes and creates maps of areas where development should be guided for water supply sustainability. May include source water protection and availability challenges caused by the intersection of groundwater, geology, topography, infrastructure, current and future development density, etc.	Not ranked*
e) Metropolitan Council, with partners, research how different land uses benefit or hurt water supply and quantify impacts	Not ranked*
f) Explore the regional costs and implications of maintaining or improving land use and waste disposal practices to protect the Mississippi, Minnesota, and St Croix Rivers and vulnerable groundwater sources of drinking water. May include looking at regional benefits of density changes/redevelopment, wetland restoration in source water areas, enhanced infiltration/recharge projects, and other topics	Not ranked*

Regulatory

Proposed action	Ease of implementation versus impact
a) State of Minnesota requires coordination between land use planning and environmental benefits and protection. For example: wellhead protection plans become a required component of local comprehensive plan (this requirement existed before 2007 when the Council supported changes to MS 473.859, Subd. 3 and 103G.291 to clarify and consolidate water supply planning requirements)	Not ranked*
b) Minnesota Rules are revised to streamline wellhead protection plan update process and requirements to encourage communities with overlapping DWSMAs to work together	Not ranked*

Regional policies and planning (Council and partners)

Proposed action	Ease of implementation versus impact
a) Metropolitan Development Guide update recognizes source water protection as a crucial public health issue that should be recognized as appropriate and feasible in all the Council's work, not just in watershed and wastewater realms. Related regional policies and programs should consider vulnerable areas within source water protection areas for both surface water and groundwater sources. Examples: <ul style="list-style-type: none"> ○ considering high priority source water protection in property acquisition and management criteria ○ considering forecast scenarios in the context of water supply availability ○ considering downstream users of surface water and groundwater sources 	Not ranked*
b) Updated expectations for local water supply plans and comprehensive plan content so that land use planners and developers understand and are empowered to implement strategies for urban and agricultural land use practices to protect critical source water protection areas. Examples: <ul style="list-style-type: none"> ○ working with water suppliers to understand critical source water protection areas ○ supporting agricultural land use practices that protect ultimate source areas ○ consideration of water supply issues in land use planning 	Not ranked*

Resources related to land use and water supply

The following resources were shared or referred to during conversations with committee members or highlighted by staff as this document was developed. They may be useful to review related to committee conversations around land use and water supply. This is not intended to be a complete list of resources.

Key source water protection laws and rules

- Minnesota wellhead protection program laws and rules ([MDH website](#))
- 2007 version of MN Statute 473.859, Subd. 3 (4) (vii) illustrating changes to wellhead protection plan requirement in local comprehensive plans ([State of MN website](#))

Land use and landscape information

- MDH Source Water Protection Web Map Viewer ([interactive map tool](#))
- MDH list of Land Cover Types and Associated Potential Contaminant Sources ([3 page pdf](#))
- MPCA Effects of Land Use on Ground Water Quality, St. Cloud Area, Minnesota ([short report](#))
- Metropolitan Council report 'Growing Greener, Getting Leaner: Land Use in the Twin Cities Region in 2016' ([7 page pdf](#))
- Metropolitan Council report 'Release of the 2016 Generalized Land Use Inventory (2017)' ([15 presentation slides](#))
- DNR Watershed Health Assessment Framework ([interactive map tool](#))

MDH source water protection program

- MDH Source Water Protection program ([MDH website](#))
- MDH Resources for Source Water Protection ([MDH website](#))
- MDH Source Water Protection Grants ([MDH website](#))

Examples of collaborative approaches

- Upper Mississippi River Source Water Protection Project ([UMRSWPP website](#))
- Environmental Initiative Source Water Protection Collaborative ([EI website](#))
- MN Rural Water Association (MRWA) Source Water Protection Resources ([MRWA website](#))
- DNR Community-based Aquifer Management Partnership (CAMP) brochure 'Getting to know your community's groundwater story' ([DNR website](#))
- Talking drinking water with local ag producers ([3 min video](#) and [factsheet](#) by MDH)
- MDA Drinking Water Protection resources ([MDA website](#))

Examples of Metropolitan Council technical assistance (grant programs & guidance)

- [Transit-Oriented Development Account \(TOD\)](#) (Metropolitan Council program website)
- [Tax Base Revitalization Account \(TBRA\)](#) (Metropolitan Council program website)
- [Livable Communities Demonstration Account \(LCDA\)](#) (Metropolitan Council program website)
- [Local Planning Handbook](#) (Metropolitan Council program website)
- [PlanIt](#) (Metropolitan Council program website)

Examples of local source water protection work

- Hugo's using less water despite a growing population. How they do it. ([Pioneer Press article](#))

- Washington County 'Our Groundwater Connection' ([5 minute video](#) on basics of groundwater and land use impacts)
- Burnsville Drinking Water Protection Overlay District ([Burnsville website](#))
- White Bear Township wellhead protection guidance ([White Bear Township website](#))
- City of Fridley 'Well Finder' supports well sealing and source water protection ([online map tool](#))
- Hennepin County's 'Landowner Guide – Maintaining Wells' ([guidance document](#))
- Starting a Sustainable Cycle, presented by WSB ([Finance & Commerce webinar panel including City of Hugo](#))
- From Portland, Maine: 'Source Protection Video Series: Protecting a Trillion Gallons of Water' ([1 ½ min video](#))
- City of Edina private well policy ([Edina website](#))
- Dakota County 2020-2030 Groundwater Plan ([Dakota County report](#))
- Dakota County program to support sealing unused wells ([Dakota County website](#))

Groundwater monitoring data

- [MDH drinking water quality](#)
- [MDH consumer confidence reports](#)
- [MPCA Petroleum Remediation Program Maps Online](#)
- [MPCA groundwater quality data](#)
- [DNR groundwater level data](#)
- [MDA agricultural monitoring and assessment](#)
- [MC environmental information management system](#)
- [Dakota County water quality monitoring and drinking water studies \(website\)](#)

Community data

- [MC Community Profiles interactive datasets](#)
- MC Equity Considerations for Place-based Advocacy and Decision Dataset ([website](#))
- [MPCA Understanding environmental justice](#)