Metro Area Water Supply Plan Update

METROPOLITAN COUNCIL

Metro Area Water Supply Technical Advisory Committee | October 10, 2023 | Lanya Ross

Goal for today: TAC input on MWSP

Topics

- Proposed shift in MWSP outline
- Draft regional dashboard measures
- Next steps

Potential revision to Metro Area Water Supply Plan content (draft)

Part 1
Desired Outcomes

- Rational and approach to regional water supply planning
- Connection to regional goals and objectives in the Water Policy Plan
- Regional desired outcomes with 2050 water supplies in mind

Part 2
Regional Commitments

- Connection to regional policies in the Water Policy Plan with more detail around water supply-related actions

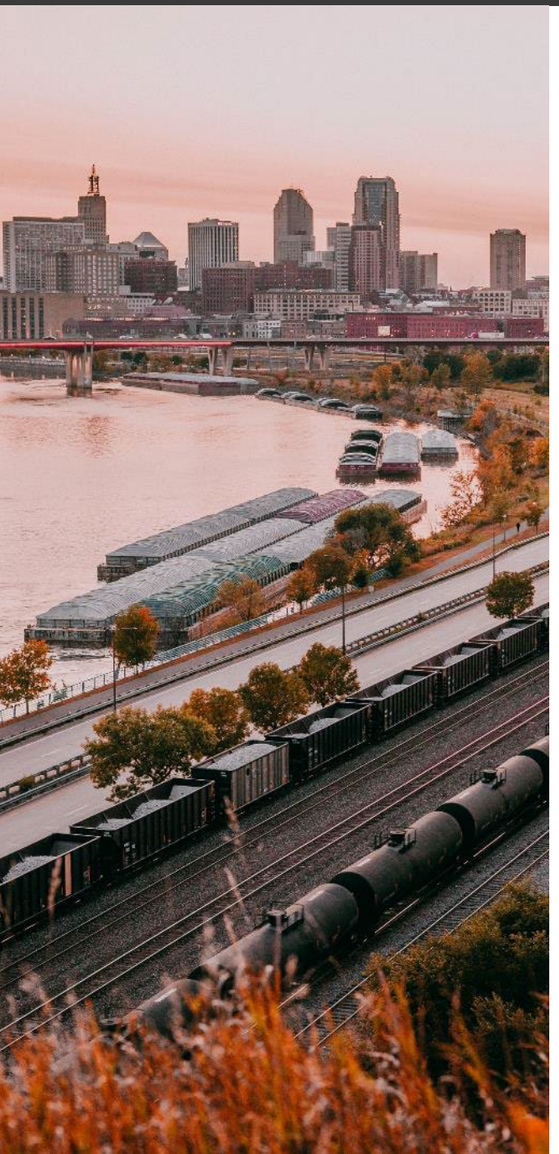
Part 3
Regional Dashboard Measures

- Regional summary of information that provides context for water supply planning, describes the current state of sustainable water supply practices, and supports the development of measurable and trackable regional targets

Part 4
Subregional Info

- Subregional information related to water, land use, and other factors
- Key water supply issues, risks and opportunities identified by stakeholders
- Implementation needs (high-level)

TAC action requested



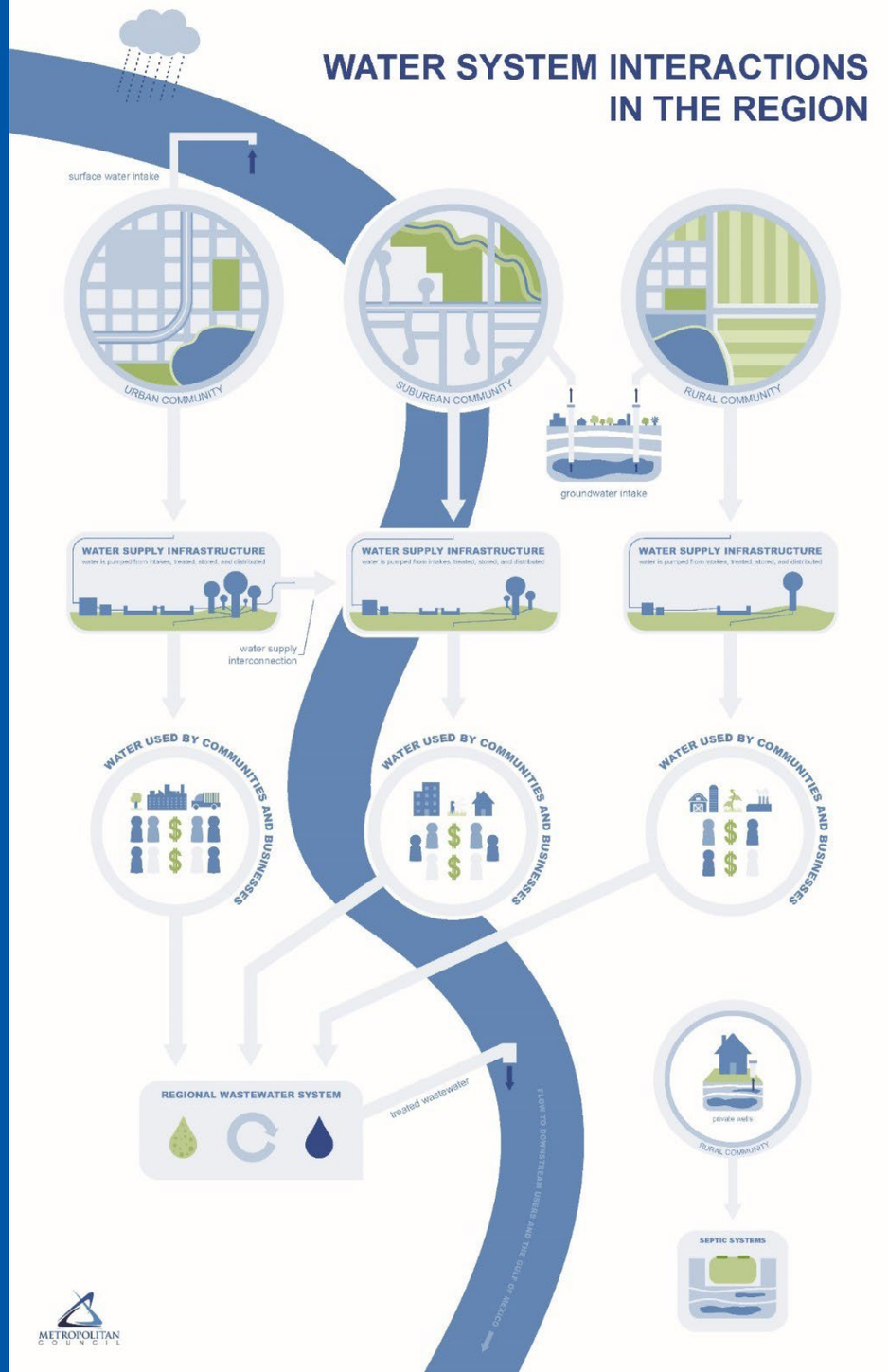
Provide input on measures

What kinds of information would you look for to understand:

- What progress are we making through our regional commitments?
- Are we moving toward a sustainable water supply for the region?

Across all the region's water supply parts →

What measures illustrate water supply conditions, hazards, and sustainable outcomes?



Climate

Landscape

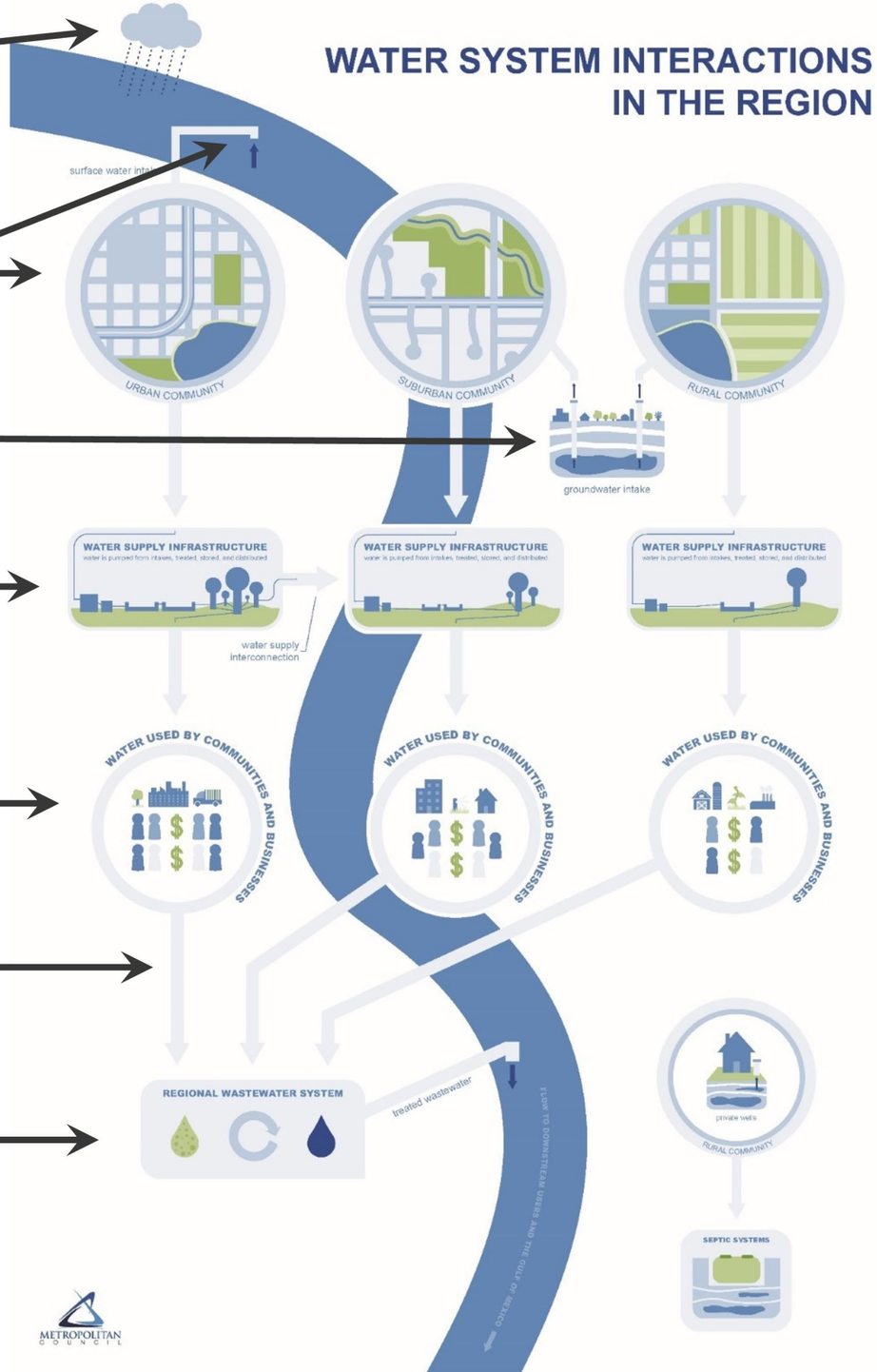
Sources

Local water supply infrastructure

Water users

Local wastewater infrastructure

Regional wastewater infrastructure



Group activity: exploring dashboard measures to communicate about water supply conditions, hazards, and sustainable outcomes

For all = what investments, actions, outcomes?	**Collaborate and build capacity**	**Assess the region's water supplies**	**Evaluate hazards and risks**	**Evaluate mitigation measures**
Climate	Subregional work group activity Technical assistance for local planners	Minneapolis/St. Paul climate	Drought monitor River monitor (flood)	Community awareness of drought and flood conditions (web hits) Local controls for water conservation (ordinances, rates, etc.) Mutual aid agreements and interconnections Tree canopy
Landscapes and sources	Subregional work group activity Technical assistance for local planners	Land use and associated contaminants # of building permits (density/distribution) Groundwater quality (MPCA, MDA) Surface water quality Sustainable limit of sources (use MC estimate?) Recharge estimates Groundwater levels	Land use change that increases contaminants in DWMSAs Widespread gw declines and near sensitive resources Well interference, conflicts Emerging sw & gw quality issues, trends Increased # priority waters on the impaired waters list Impervious surfaces limit recharge, increase runoff	Local controls for source water protection and conservation Source water protection BMP grants in metro DWMSAs Acres and practices in the Agricultural Preserves program Contaminant site clean up through Tax Base Revitalization Account
Local water supply infrastructure	Number of community rate payer assistance programs Customer confidence and satisfaction (Survey?) Interconnections and mutual aide agreements Number of licensed water operators Subregional work group activity Technical assistance for local planners	Firm capacity of existing infrastructure (MDH) Miles of pipe installed/replaced (how to document?) Current treatment in place (MDH) Number public and private wells drilled (MWI)	Firm capacity versus future demand PWS water quality violations Age of infrastructure(how to document?) Unused wells in DWSMAs	Interconnections and mutual aide agreements for resilient supply Funding awarded for treatment, addressing lead Reuse infrastructure (how to document?) Number of unused wells sealed (MWI)
Water users	Customer confidence and satisfaction (Survey?) Number of licensed water operators Subregional work group activity Technical assistance for local planners	Residential, industrial, business use (current and future) Total Per capita water use Total water use of gw versus sw sources Water rates	Well interference Ratio of indoor versus outdoor water use or max day pumping Use compared to capacity and to estimated sustainable limits	Water efficiency grants/activities funded (grant program reporting) Local controls for water conservation (ordinances, rates, etc.) Setting and tracking progress against regional goal (ex: 90 gpcd)
Local wastewater infrastructure	Number of licensed wastewater operators Subregional work group activity Technical assistance for local planners	I & I estimates (MCES data)	Wastewater spills; actions leading to MPCA permit enforcement	Funding awarded for treatment
Regional wastewater infrastructure	Task forces established with local stakeholders Subregional work group activity Technical assistance for local planners	Volume of water treated at regional facilities (MCES data) Regional system condition (MCES data)	Wastewater spills; actions leading to MPCA permit enforcement	Volume of water recharging groundwater (MCES data)

What existing resources could we tap into (example: 2015 MWSP profiles)

Overview of water system and use in the community

The community owns and operates their own water supply system, as well as supplying water to additional communities.

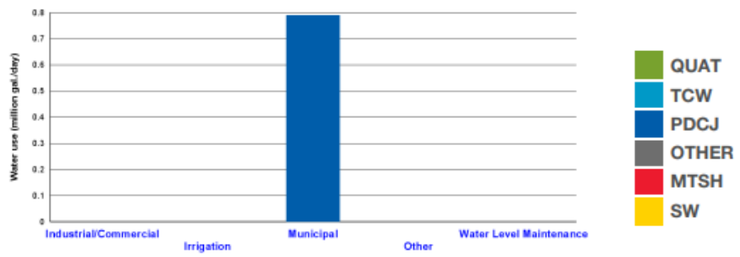
Available approaches to meet current and future demand

1. Conservation
2. Groundwater sources
3. Stormwater reuse
4. Reclaimed wastewater
5. Enhanced recharge
6. Surface water sources

Number of active public and private DNR-permitted wells and surface water intakes that provide water to residents and businesses in the community

Source	Municipal Wells or intakes in the community	Non-Municipal Wells or intakes in the community	Municipal Wells or intakes outside the community
Mt. Simon-Hinckley (MTSH)	0	0	0
Prairie du Chien-Jordan (PDCJ)	2	0	0
Quaternary (QUAT)	0	0	0
Tunnel City-Wonewoc (TCW)	0	0	0
Multi-aquifer (MULTI)	2	0	0
Surface Water (SW)	0	0	0

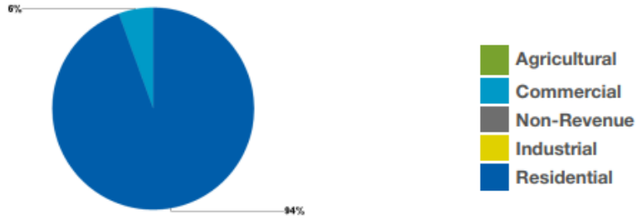
Amount of water used, on average, by water appropriation permit holders in key water use categories (chart will be blank if no DNR-permitted wells or intakes provide water in the community)



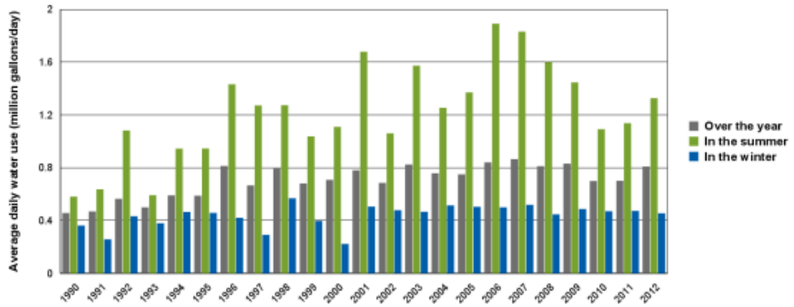
Municipal Water Use

Municipal water treatment: Fluoride , Iron/Manganese Sequestration, Disinfection
Rate structure: Flat and Increasing Block depending on customer classification
Permitted amount in 2012: 315 (million gallons/year)
Reported use in 2012: 296 (million gallons/year) 0.81 (million gallons/day)
Note: this may be higher than permitted amount if, for example, water is purchased from a neighbor
Residential water use per person in 2012: 95 gallons per person per day

Water use by major categories in 2012



Historical municipal water use in the community



Projected municipal water use

	2020	2030	2040
Population Served	7,131	7,031	7,031
Total Population	7,800	7,700	7,700
Projected Average Daily Water Use (Million Gal./Day), Plus or Minus 20%	0.81	0.79	0.79
Total Per Capita Water Use (Gal./Person/Day)	113	113	113
What per capita water use would be, if population grew without changing total water use:	114	115	115

Water resource plans and permits that address the following issues support more sustainable water supplies

- State and federal requirements, such as Safe Drinking Water Act standards, conditions identified on water appropriation permits issued by the DNR, water quality permits issued by the MPCA and others
- Potential for water use conflicts and well interference
  - Due to the pervasiveness of private wells in the metro area, there exists a potential water use conflict and well interference of all appropriators
- Potential for impacts of groundwater pumping on surface water features and ecosystems
  - A state-designated trout stream has been mapped nearby
  - Surface waters in this area may be directly connected to regional groundwater system
- Significant vulnerability to contamination
  - A sinkhole (karst) has been mapped nearby
  - A vulnerable Drinking Water Supply Management Area has been designated in the area
  - Travel time from land surface to bedrock aquifers is estimated to be less than 50 years
- Significant uncertainty about aquifer productivity and extent
  - Part of the area may not be well-represented by a Minnesota Department of Health aquifer test
  - The county geologic atlas is more than twenty years old
  - Part of the area may not be represented by a Minnesota Department of Natural Resources or community observation well
- Regulatory considerations
  - A Groundwater Management Area has been designated within the community

Note: Local studies may be underway or completed to provide more information about these issues.

The Metropolitan Council's Local Planning Handbook contains interactive maps of all of these issues, and they are also summarized in Chapter 5 of this Master Water Supply Plan.

As appropriate, incorporate the following actions into plans and programs, consistent with your organization's roles and responsibilities

- Acknowledge the issues above and support partnerships to address them in local water supply plans and water appropriation permit applications.
- Explore and support water demand (water conservation) programs such as incentives, ordinances, education and outreach, rates and other approaches. The Metropolitan Council Water Conservation Toolbox can support these efforts.

Examples of state datasets that did not exist or were not online 10 years ago

New online datasets from the U.S. Drought Monitor for Minnesota

DNR Watershed Health Assessment Framework

More obwell locations and monitoring frequency on DNR Cooperative Groundwater Monitoring

More data available on the MPCA groundwater monitoring website

MDA Fall Nitrogen Fertilizer Application Restrictions

MDH Source Water Protection Web Map Viewer

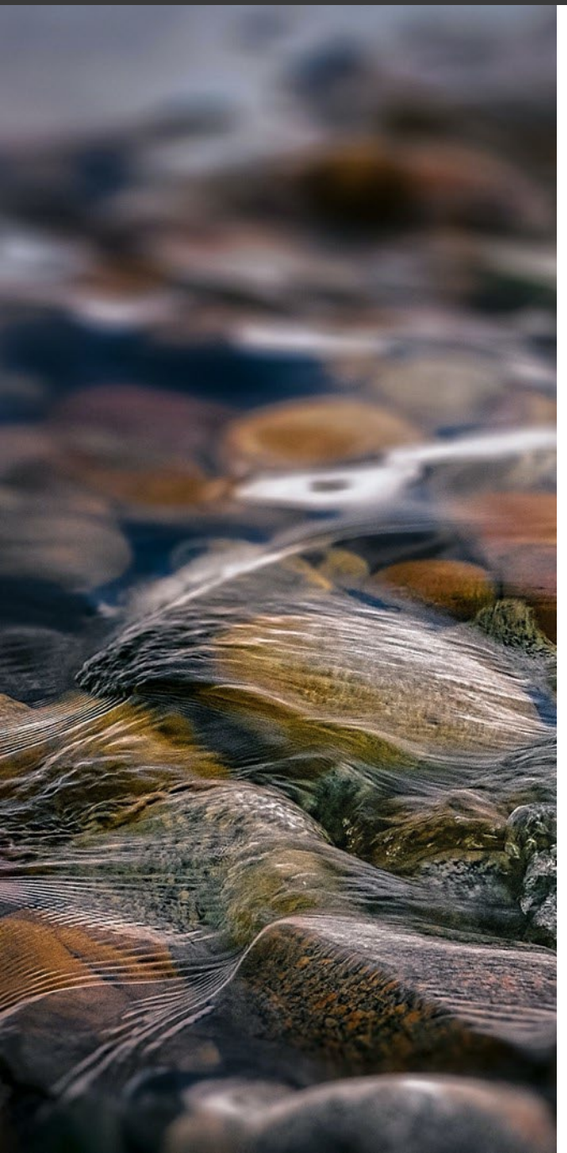
MDH Source Water Assessments

MDH Minnesota Public Health Data Access – Drinking Water Quality

DNR Water Conservation Reporting System

BWSR State-Funded Best Management Practices (eLINK)

Overall process timeline and next steps



Upcoming work

- Revise draft content based on MAWSAC, TAC and Met Council staff input
- Fall engagement to support subregional chapters
- TAC and MAWSAC input to water policy development and projects
- Development and approval of Metro Area Water Supply Plan

Thank you!

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