

Information Item

Metro Area Water Supply Advisory Committee



Meeting Date: July 10, 2023

Topic

Developing shared definitions for selected water supply planning terms.

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

Introduction

Several terms are used by water supply utilities and local governments, Met Council, Minnesota Department of Health (MDH), and Minnesota Department of Natural Resources (DNR) in local comprehensive plans, local water supply plans, and wellhead protection and source water protection plans. A review of how these terms are used highlighted that these terms are not consistently defined or understood across organizations. This situation has created difficulties for our community partners to understand the different terms and definitions that are being used by the various agencies for permitting compliance and planning. This situation can also lead to misunderstanding about plan expectations, reduces the quality of data used to track conditions and program effectiveness, and reduces trust in planning efforts.

Some key terms that need more consistently understood definitions are shown on the following pages.

Input from TAC

At their June 18th, 2024, meeting, the Water Supply Advisory Technical Advisory Committee discussed these terms and made the following recommendations and had several questions for MAWSAC and water agencies to consider.

Recommendations:

- Revise MDH definitions to better distinguish municipal from non-municipal public water supply systems. The text included in this information item reflects their proposed changes for MDH to consider.
- Include descriptions of why and how each of these terms are used. For example, is population served indicative of a broad measure, or is it used to calculate other values?
- Clarify differences between the amount of water pumped from sources into the public water supply system versus the amount of water provided delivered to user from the public water supply system. These are not the same thing. Also, clarify the differences between “pumping”, “production”, “demand”, and “delivery”.
- Clarify commercial water use versus institutional water use to better support emergency response planning.
- One city TAC member recommended replacing maximum daily demand and the date of maximum daily demand with peak demand. The MDH TAC member offered these definitions:

- Design capacity: the amount of potable water the water system is designed to produce
- Emergency capacity: The amount of potable water the water system can produce when using only emergency power
- Maximum daily production: The maximum gallons pumped as recorded from the previous year. This may be taken from the DNR report or system SCADA reports.
- Average daily production: the total amount of gallons pumped the previous year divided by 365. This may be taken from the DNR report or system SCADA reports.
- Recommend that definitions for the following terms be included in guidance for local water supply plan updates:
 - Total billed
 - Total produced
 - Total distributed

Questions:

- How are employees considered in the definition of population served? Many people visit communities and are served by the public water supply system, but the current definition does not distinguish between the two.
- Is water use considered power generation if the water is "used" for cooling, or is this industrial water use?
- In some communities, irrigation may be tracked and billed as commercial. This may be okay, but some properties like homeowners associations may be considered commercial water use but serve residential users. Some communities may consider HOA water use for irrigation as a commercial use complicating the ability to generate values matching the current definitional. Do we need more thought here?

MAWSAC input requested

MAWSAC is asked to review and recommend revisions to definitions for the following terms related to water systems and water use. The terms on the following pages are based on MDH and DNR language and include revisions based on TAC input in June 2024.

Committee input will be shared with communications staff at Met Council, DNR, and MDH to update the terms and definitions. The updated terms and definitions will be included in the final 2050 Water Policy Plan (including the Metro Area Water Supply Plan), and in updated guidance for water supply-related planning, implementation and tracking.

Water supply system terms

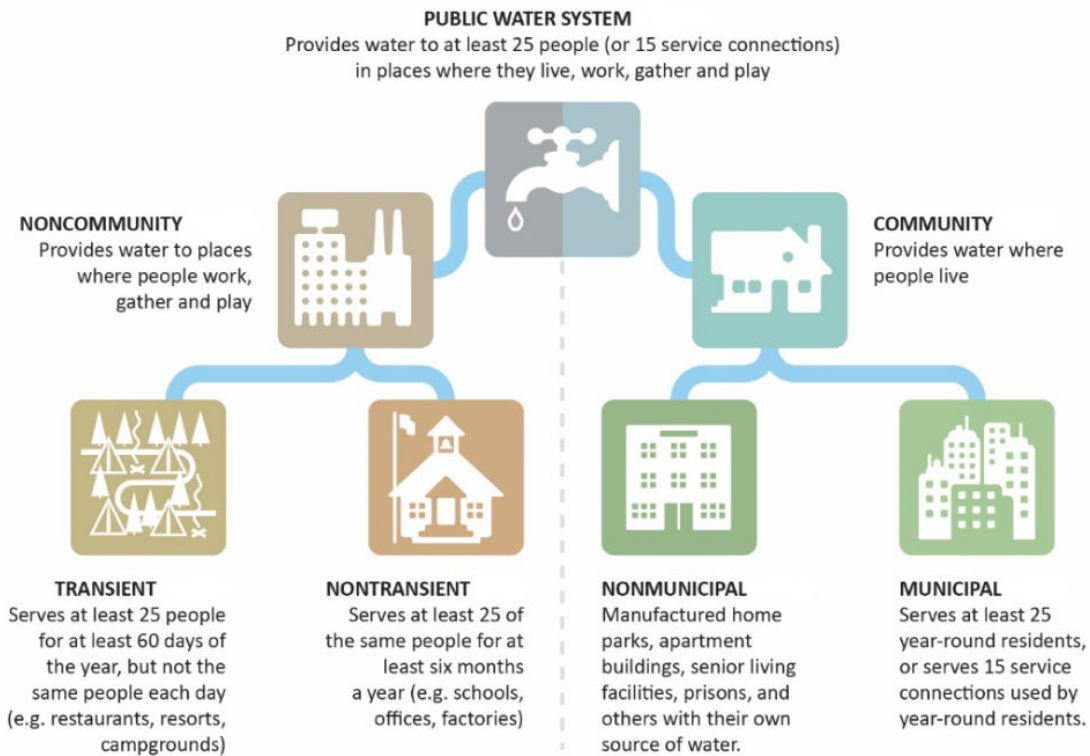
MAWSAC and TAC propose generally using Minnesota Department of Health (MDH) terms and definitions when referring to water supply systems in the 2050 Water Policy Plan, the Metro Area Water Supply Plan, and in guidance for local plan updates. These terms are consistent with the federal Safe Drinking Water Act.

Figure 1 illustrates the different public water supply systems recognized by MDH.

Key terms, which include proposed revisions to MDH definitions, are in alphabetical order below. An additional term has also been proposed for non-public, privately-owned wells.



Figure 1. Public water system classifications (from Minnesota Department of Health)



Community public water systems provide water where people live.

Municipal community public water systems serve at least 25 people year-round residents or serve 15 service connections used by year-round residents. These systems are owned or operated by a city, town, or water user district”.

Noncommunity public water systems provide water in places where people work, gather and play.

Nonmunicipal community public water systems include entities like manufactured home parks, apartment buildings, senior living facilities, prisons, and others with their own source of water.

Nontransient noncommunity public water systems serve at least 25 of the same people at least 6 months a year (examples: schools, offices, and factories).

NEW TERM: Privately-owned wells can provide water for a range of different purposes. Privately-owned drinking water wells provide indoor and outdoor water for normal household purposes and drinking water in businesses and industry. Some of these wells are used by nonmunicipal community or noncommunity public water supply systems. Privately-owned non-drinking water wells provide indoor and outdoor water for non-potable activities like industrial processing, agriculture, irrigation, and dewatering. Any well that uses more than 10,000 gallons of water per day or 1 million gallons of water per year needs a groundwater appropriation permit from the Minnesota Department of Natural Resources.

Public water systems provide water to at least 25 people (or 15 service connections) in places where they live, work, gather and play. They include both community and noncommunity systems. All public water suppliers in Minnesota that operate a public water distribution system that provide water to more than 1,000 people and all communities with a municipal community public water system in the seven-county Twin Cities metropolitan region, must submit a local water supply plan to the Minnesota Department of Natural Resources for approval. Metro region communities must also submit this plan to Met Council as part of the local comprehensive plan update.

Transient noncommunity public water systems serve at least 25 people for at least 60 days but not the same people each day (examples: restaurants, resorts, and campgrounds).



Water use terms

The following terms are used in the Minnesota Department of Natural Resources' (DNR's) local water supply plan template (Table 2) for reporting historical water use. This table and a glossary of terms can be found online at

https://files.dnr.state.mn.us/waters/watermgmt_section/appropriations/plan_template.pdf

The data reported in Table 2 of the local water supply plan template are used by local, regional, and state utilities and agencies for multiple analyses. However, stakeholders have commented that there isn't widespread understanding about how to report this information and that the requested information doesn't always represent their water supply system.

MAWSAC and TAC propose clarifying the definitions of terms used in the DNR's local water supply plan template and using these revised definitions when referring to water use in the 2050 Water Policy Plan, the Metro Area Water Supply Plan, and in guidance for local plan updates.

Key elements that support regional water demand projections

Population served is the number of people who are served by the community's public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community's public water supply system. It should not include residents in the community who have privately-owned wells or get their water from neighboring water supply.

Total water delivered is the sum of metered residential, commercial, industrial, institutional, water supplier services, and other water delivered (including water supplied to neighboring public water supply systems). Total water delivered may be calculated by subtracting total water loss from total metered water pumped.

Average daily pumped is the total water withdrawn (pumped) through the entry point(s) of the water system during the year, divided by 365 days. Any well with a groundwater appropriation permit from the Minnesota Department of Natural Resources should be metered to measure pumping and this data reported annually.

Total per person pumped is the total amount of water withdrawn (pumped) from all water supply sources through the entry point(s) of the water system during the year, divided by the population served divided by 365 days.

Key terms that support water efficiency programs and emergency response planning

Commercial/Industrial/Institutional (C/I/I) water delivered is the sum of water delivered (sold) for commercial, institutional, and industrial purposes.

Commercial water use is the water used by motels, hotels, restaurants, office buildings, commercial facilities. Water used by multifamily dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use. Public water suppliers may report institutional water use together with commercial water use. However, public water suppliers are encouraged to track institutional water use separately from commercial water use for emergency planning and allocation purposes.

Industrial water use is the volume of water used for functions such as but not limited to manufacturing, steel production, chemical and allied products, paper and allied products, petroleum refining, and electric power generation.

NEW TERM: Institutional water use includes water used by civilian and military institutions other than for water supplier services. This is water used by government, public and private educational institutions, churches and places of worship, and other organizations within the public domain such as hospitals or prisons. Tracking this information particular water used for essential services like drinking, cooking, and bathing, separately from commercial water use can support better emergency planning.

Date of Maximum Daily Demand is date of the maximum (highest) water demand that occurs in one

day for each year. Typically this is a day in July or August.

Maximum daily demand is the maximum (highest) amount of water used in one day for each year.

Percent unmetered/unaccounted is the metered volume of water withdrawn from all sources minus the metered volume of water delivered. This value represents water “lost” by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category “Water Supplier Services”.

Residential per capita demand is the total residential water delivered during the year divided by the population served divided by 365 days.

Residential water delivered is the same as residential water use. This is the amount of water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

Total connections refers to the number of active service connections to the public water supply system. Connections may include household, commercial, industrial, or others.

Total water pumped is the cumulative amount of water withdrawn from all water supply sources during the year.

Water used for non-essential is water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

Wholesale deliveries is the amount of water delivered in bulk to other public water suppliers.

Water supplier services is water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and/or other uses.

