

WATER SUPPLY IN THE TWIN CITIES REGION



Water supply - we're all in this together

The Twin Cities metropolitan area is fortunate to have relatively abundant groundwater and surface water supplies. The region is unique among major metropolitan areas in that it rests atop a groundwater flow system – the bowl-shaped Twin Cities basin – that does not extend far beyond the region's boundaries. This unique geologic situation provides the region with the ability and responsibility for managing much of its own drinking water resources.

The region's primary drinking water sources include the Mississippi River and three aquifers: the Prairie du Chien-Jordan, the Tunnel City-Wonewoc (formerly known as the Franconia-Ironton-Galesville), and the Mt. Simon-Hinckley.

Whether public or private, all water supplies are drawn from these essential natural resources that are shared by the entire region. Over half of Minnesota's population – more than 3 million people – relies on these sources. Approximately 90% are provided with water by the region's 100 municipal water supply systems; the remaining 10% are supplied by private wells.

While sufficient water supplies may exist in the seven-county metro area to meet future demand, the uneven distribution of drinking water sources consigns communities in some part of the region to an ongoing concern about water supply. For others, the competing demand between groundwater withdrawal and surface water protection poses a challenge. Contamination is a concern for all, as is the inevitability of occasional droughts.

Region faces several challenges to sustainable water

To meet the water supply challenges of a growing region, the Metropolitan Council has produced the Metropolitan Area Master Water Supply Plan. The plan provides a collaborative framework to work toward adequate and sustainable water supplies for future generations. The Master Plan indicates that although supplies are currently adequate in the region, water availability issues will arise if communities continue to expand water supply systems without considering the cumulative impact of increased water withdrawals. Water availability issues include:

- Over-withdrawal of aquifers
- Impact on water levels in other wells
- Impacts of groundwater pumping on lakes, streams and wetlands
- Groundwater contamination migration

Many of the issues can be mitigated by changing our management approach. Early identification of issues is critical.

Regional growth presents water supply challenges

Regional water demand totals more than a billion gallons a day. Almost half of that is municipal demand, the fastest growing water use. By 2030, municipal water demand is projected to increase 25% to support the region's larger economy and population.

Most communities operate independent water supply systems, constructing one well or surface water intake at a time. Municipalities have generally made independent resource evaluations and water supply system investments, without considering the cumulative impact of water withdrawal throughout the region. However, as cities continue to grow, competition increases for available water sources.

The drilling of a community water supply well can have unintended consequences. For example, the cumulative effect of pumping by adjacent communities increases the risk of wells interfering with one another. In addition, poorly planned well placement can increase the risk of impacting lakes, streams, wetlands and other sensitive and valuable surface water ecosystems. Dealing with these issues complicates the permitting process.

Water contamination increases costs, limits supply

Groundwater contamination exists throughout the metro area, in many forms: short-term (acute) or chronic, at the surface or in the ground, naturally occurring or human-caused, at very low levels or at concentrations that threaten public health, and from both known and unknown sources.

Some examples are highly publicized, such as the 3M-related perfluorocarbon (PFC) contamination in the east metro. Other sites are less well known. Petroleum compounds, solvents, fertilizers and other manufactured products, as well as naturally occurring radioactive compounds and other contaminants, have been found in various portions of the region's aquifers.

Protecting drinking water source areas benefits the region

Wise land use planning in drinking water source areas – aquifers and certain watersheds – has the potential to enhance and protect regional water supplies. The value of protecting drinking water source areas can be measured as the avoided costs to mitigate contaminated drinking water, dry wells and lost ecosystem services.

The region's Metropolitan Area Master Water Supply Plan, with its strong foundation of working principles and accessible technical information, offers state and local decision makers the tools and guidance they need to avoid costly, time-consuming delays in water supply development and to protect drinking water sources for future generations.

