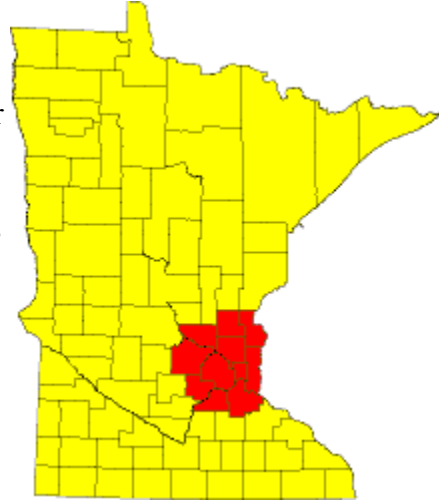




Ground Water Profile:

Greater Metro Region

This is a ground-water profile for Minnesota's Greater Metro Region, which is comprised of Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington and Wright Counties.



HYDROGEOLOGY:

- High-yielding bedrock aquifers form the Twin Cities basin.
- Buried sand and gravel recharges deeper bedrock aquifers.
- Extensive sand-plain aquifers are present in the north, east and southeast parts of the region.
- Natural ground-water quality is good, but is susceptible to contamination from the effects of urbanization.

QUANTITY ISSUES:

- There is a need to match urban development with ground-water availability.
- The continued long-term impact from pumpage, with regards to water levels in the Prairie du Chien-Jordan and Mt. Simon aquifers, is not well known.
- Irrigation-related well interference can be a problem under drought conditions, especially on portions of the Anoka sand plain.

QUALITY ISSUES:

- Widespread, low-level contamination of upper aquifers has been observed from the effects of urbanization.
- Growth areas are served by ground water, but are often susceptible to geology and the lack of proper sewer systems in developing areas.
- Nitrate contamination of sand-plain aquifers is noted.

INFORMATION NEEDED:

- Monitoring of water levels and baseline water quality is needed to identify ground-water quality and quantity trends.
- Evaluate lake and ground-water interactions as well as how wetlands such as fens are affected by increasing ground-water use.
- Determine shifts in pumping as population centers shift to the suburbs.
- Define recharge rates to buried glacial and bedrock aquifers.

DESIRED ACTIONS:

- Continued coordination among state and federal agencies is needed to focus regional studies on important issues like the Upper Mississippi National Water Quality Assessment (NAWQA).
- Increase the number of observation wells to better monitor water levels.
- Complete geologic atlases, evaluate confining units and glacial aquifers, and perform detailed (1:24,000 or 1:50,000) mapping activity.
- Collect chemical and physical information that better defines recharge rates.
- Continue to develop the Twin Cities ground-water model and use it to help target areas needing trends monitoring and the collection of additional geologic data.
- Develop monitoring strategies to track ground-water quality trends in developing sand-plain areas and compare them to areas using mainly bedrock.
- Develop a ground-water quality database for this region using the resources of the Land Management Information Center.