

E Environment Committee

Meeting date: June 26, 2007

For the Metropolitan Council Meeting of July 11, 2007

ADVISORY INFORMATION

Date:	June 19, 2007
Subject:	Approval of Report to the Legislative Commission on Minnesota Resources Titled: <i>Recycling Treated Municipal Wastewater for Industrial Water Use</i>
District(s), Member(s):	All
Policy/Legal Reference:	Framework Policy 4: Work with local and regional partners to reclaim, conserve, protect, and enhance the region’s vital natural resources.
Staff Prepared/Presented:	Bryce Pickart, 651-602-1091; Bill Cook, 651-602-1811
Division/Department:	MCES c/o William G. Moore, General Manager, 651-602-1162

Proposed Action/Motion

It is recommended that the Metropolitan Council approve the report to the Legislative Commission on Minnesota Resources (LCMR) Titled: *Recycling Treated Municipal Wastewater for Industrial Water Use*, MCES Project 070186. See attached Executive Summary.

Issue(s)

To fulfill the requirements of the LCMR grant that largely funded this project, a final report is due to LCMR by August 15, 2007.

Overview and Funding

This project determined that recycling treated municipal wastewater for industrial use is technically feasible and can be cost effective for some industries. In coming to this conclusion, the study identified and analyzed issues related to demand and supply, water quality and treatment requirements, costs and implementation issues. Non-power industries in Minnesota use 442 million gallons per day (mgd) of water from their own permitted supplies. The quantity of wastewater available statewide, estimated at 425 mgd, could fill some portion of this industry demand. However, industries and wastewater plants are not always close to each other. Municipal wastewater can be treated to match industry quality needs. Treatment technologies are available to meet the highest levels of water quality required by industries and those technologies are becoming more cost competitive. For some industries, the cost of treated municipal wastewater can be competitive with other water supplies. Implementation issues, identified through stakeholder meetings, were deemed addressable by the stakeholders. Recycling treated municipal wastewater for industrial use can conserve water resources and support industries and economic development.

This project is funded by a \$300,000 LCMR grant. At its July 27, 2005 meeting, the Council authorized its Regional Administrator to execute the grant agreement. The agreement was signed on January 9, 2006 and expires on June 30, 2007.

Executive Summary

Vision

Conserving Minnesota’s water resources is important to the state’s long-term development. The potential to use treated municipal wastewater as a water supply for industrial use is of interest as a way to conserve water resources while supporting economic development.

With interest in recycling treated municipal wastewater growing, the Metropolitan Council (Met Council) undertook this study titled, “Recycling Treated Municipal Wastewater for Industrial Water Use.” Funding for this project was recommended by the Legislative Commission on Minnesota Resources (LCMR) from the Minnesota Environment and Natural Resources Trust Fund. The Met Council and other agencies provided in-kind contributions of staff time and production services.

Guiding Goal: Conserve Minnesota’s water resources.

Benefits:

- Reduce ground water depletion by providing an alternative supply for nonpotable water uses
- Provide a reliable and potentially lower cost water source for industries in the long-term

The study’s objectives were: (1) Determine the feasibility of recycling treated municipal wastewater for industrial water use in Minnesota, and (2) Identify implementation issues associated with this recycling.

Findings and Next Steps

Recycling treated municipal wastewater can conserve water resources and support industries and economic development. In coming to this conclusion, the study first evaluated the feasibility of wastewater recycling as an industrial water source and then identified implementation issues. Findings are summarized in Figure ES.1 and described below.

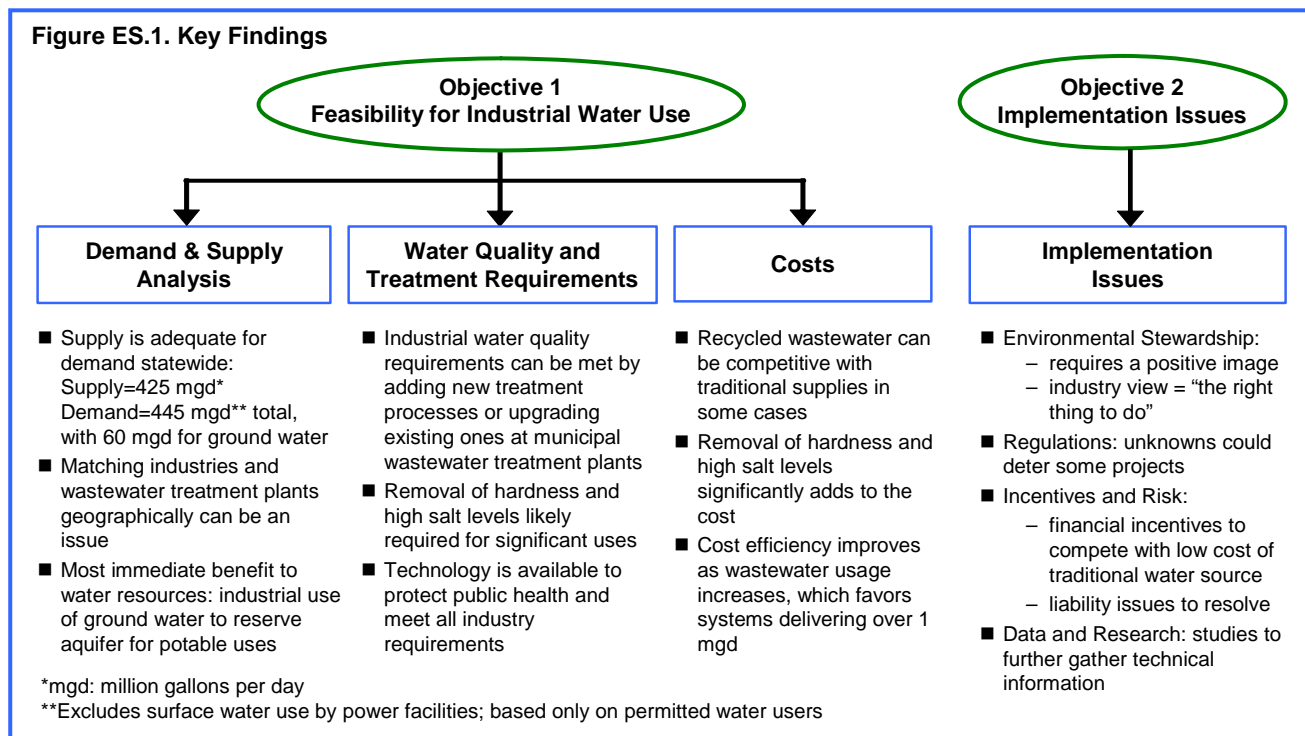
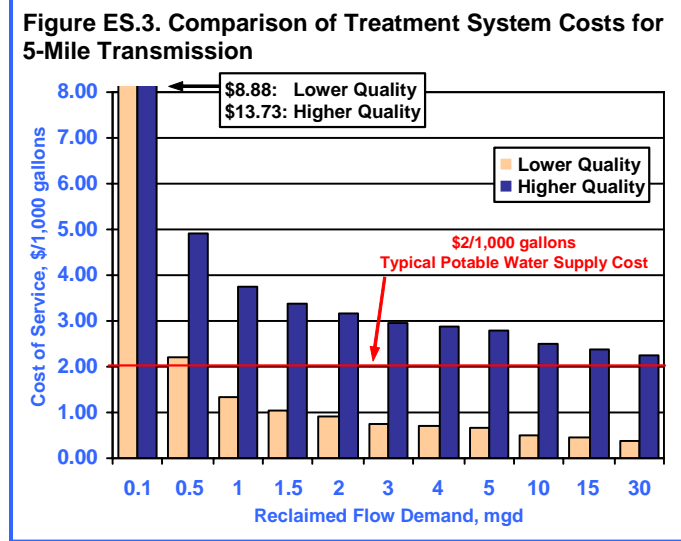
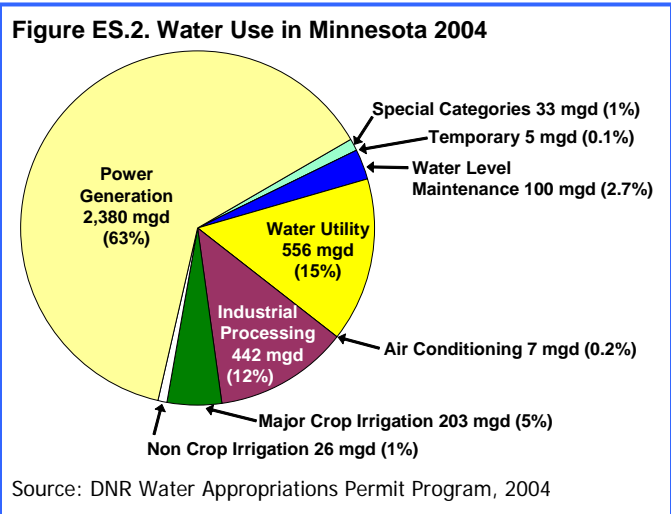


Figure ES.2 shows that non-power industries in Minnesota use 442 million gallons per day (mgd) of water from their own permitted supplies. The quantity of treated municipal wastewater available statewide, estimated at 425 mgd, could fill a portion of this industry water demand. However, industries and wastewater plants are not always close to each other. Over half of the treated municipal wastewater, 255 mgd, is generated in the Twin Cities metro area while industrial water demand in the metro area is estimated at 75 mgd.

Wastewater treatment technologies are available to meet the highest levels of water quality required by industries and protect public health. Treatment technologies are becoming more competitive. For some industry needs, only minimal changes to a wastewater plant’s disinfection process would be required. In other cases, significant additional treatment would be needed. Typically, removal of hardness and high salt levels would be required.

For some industry needs, the cost of treated municipal wastewater can be competitive with other water supplies. Recycled wastewater systems of 1 mgd or greater show the greatest cost competitiveness, as shown in Figure ES.3.



Systems of this size would likely serve one large or several smaller industries or multiple recycled wastewater users, industrial and non-industrial.

Stakeholders, including regulatory, industry, and broader-based representatives, identified implementation issues and deemed them addressable. Stakeholders considered wastewater recycling the “right thing to do” and advised more public education to move the recycling from unknown to accepted and positive. The current case-by-case regulatory approach matches the current demand for permitting recycling projects but unknowns associated with this approach may deter some projects. Addressing industry concerns regarding liability and providing economic

incentives beyond the market value of water versus treated wastewater would support new recycling projects.

Next steps could include demonstration projects with unilateral, partnered, or other approaches. A wastewater utility may unilaterally make treated wastewater available at a quality useable by various industries. In a “partnered” project, a partnered group with representatives from industry, water, wastewater, community, and regulatory sectors would walk hand-in-hand through the planning, design, and construction phases of a project.

Recycled treated municipal wastewater is an emerging water supply for Minnesota industries. Economic development, water supply limitations, and environmental regulations will increasingly drive the need to find alternative water supplies. Recycling treated municipal wastewater for industrial water use is feasible and, in some situations, cost competitive with other water supplies. Implementation issues are addressable. Recycling treated municipal wastewater can conserve water resources and support industries and economic development.