



City Manager's sustainability and energy topic of the month: wastewater

Responsible resource management is an important consideration at the city of Mankato for today and generations to come.

Q. What is the city of Mankato doing to be sustainable through wastewater treatment?

A. Mankato is a state leader in meeting wastewater quality standards and has put initiatives into place to help benefit the environment:



Mankato's wastewater treatment plant, 701 Pine Street, services the cities of Mankato, North Mankato, Eagle Lake, Madison Lake, Skyline, South Bend Township and the Lake Washington Sanitation District.

Reclaimed water

Mankato's water reclamation facility serves the region, helping enhance regional financial stability since it reduces the need to build similar facilities. Advanced wastewater treatment makes it possible to use reclaimed water in other ways:

- ◆ *Mankato's partnership with Mankato Energy Center*, which uses between 1.5 and 2 million gallons (each day when producing power) of reclaimed water for cooling.
Benefits:
 - water use from deep wells is reduced;
 - city saves approximately 400 million gallons of water;
 - extremely low phosphorous discharged into the Minnesota River, which benefits the environment;
 - citizens realize a savings of at least \$10 million for this first of a kind agreement in Mankato.

- ◆ *City of Mankato*
Reclaimed water is used:
 - as part of the wastewater treatment process, which saves about \$875,000 each year;
 - in city parks and green spaces—last year 750,000 gallons of reclaimed water was used, achieving a cost savings of more than \$3,200;
 - for street sweeping—this past year 175,000 gallons of reclaimed water was used, resulting in a savings of more than \$700.

City staff also works with landscapers to use reclaimed water for sod management, helping further decrease reliance on groundwater resources. Staff continues to look for opportunities to use reclaimed water, such as using in Mankato's ice rinks.

Methane gas

A by-product of wastewater treatment is methane gas. The city has found heating is a way to reuse this gas. The wastewater treatment plan burns more than 4 million cubic feet of methane to heat buildings and equipment, averaging an annual savings of \$125,000 compared to using natural gas.

Emission reduction and pumps

Emission reduction equipment has been installed on back-up generators. This Environmental Protection Agency mandate enables the city to continue to get a rate reduction on its electric bill at a value of \$60,000 a year. In addition, pumps are designed to use minimal energy needed by programming them to come on slowly until they reach peak use.

Biosolids

Mankato was the first city in Minnesota and 28th in the nation to earn national biosolids partnership certification for its biosolids management program. Biosolids are nutrient-rich organic matter recycled for reuse through Mankato's wastewater treatment efforts.

City staff works with area farmers to reuse biosolids as fertilizer because they have a nutrient value that's beneficial to the environment and can also help soil retain moisture. Biosolids must meet environmental, public health and safety criteria to be used as a fertilizer. About 1,200 tons are applied over 250 acres each year. The city of Mankato saves \$95,000 each year by using biosolids as fertilizer, rather than hauling to a landfill.

The city of Mankato provides wastewater services to Mankato, North Mankato, Eagle Lake, Madison Lake, South Bend Township, Skyline and the Lake Washington Sanitation District.

Mankato is committed to benefit the environment and sustainability through affordable and practical advanced wastewater treatment efforts, some of which includes reuse.

Please contact me at 507-387-8695 or phentges@city.mankato.mn.us anytime I can be of service.

What are biosolids?

Biosolids are nutrient-rich organic matter resulting from the treatment of wastewater. When treated and processed, local farmers reuse this product as fertilizer to improve and maintain productive soils and stimulate plant growth.

How are biosolids treated?

Biosolids treatment begins before wastewater reaches the wastewater facility. Industrial facilities are required to pretreat wastewater and remove pollutants before discharging it into the sewer.

1. City of Mankato staff regularly monitors wastewater discharged into the collection system.
2. Once wastewater reaches the plant, it undergoes physical, chemical and biological processing to clean, remove and stabilize solids.
3. Water is removed from the solids, converting them to biosolids.