Biosolids produced at the Empire Wastewater Treatment Plant can be used by local farmers to improve soil health and promote plant growth. Land application services are free to farmers enrolled in the program.

"We've used the product as the first-year treatment and utilized the nitrogen value, which reduces our costs. And in the fall [application] years, it's helped raise our phosphorous levels. So, it's been a cost value for us."
— Paul Beskau, Marshan Township

Biosolids land application is a common practice. Nationwide, over 50% of biosolids are land applied¹ and more than 98% of Minnesota’s wastewater treatment plants land apply².

Learn more:
- epa.gov/biosolids
- pca.state.mn.us/water/biosolids

¹ USEPA, 2019 ² MPCA, 2014

MCES works with farmers and community leaders to deliver biosolids to MPCA approved fields in Dakota County.

Key Steps
- Test biosolids before application
- Select farm fields and determine application rate
- Notify neighbors and community leaders

MCES applies biosolids before planting (spring) or after harvest (fall), and farmers incorporate biosolids into the soil.

Key Steps
- Control dust on delivery routes
- Repair and level roads
- Submit annual reports to MPCA to confirm best management practices are followed.

What is in biosolids?

Beneficial elements in biosolids increase crop yield, improve drought tolerance, and reduce the need for commercial fertilizers:

- **Carbon**
  - Holds nutrients near the soil surface
  - Improves overall soil health
  - Retains water, reduces runoff, and prevents erosion

- **Nitrogen**
  - Slow-release organic nitrogen, phosphorus, and potassium are fertilizers

- **Phosphorus**
  -

- **Potassium**
  -

- **Copper**
  - Trace elements essential for plant growth and development

- **Nickel**
  -

- **Zinc**
  -

Throughout this process MCES:
- Manages odors associated with biosolids to be a good neighbor
- Works with farmers to minimize compaction
- Monitors weather conditions

For more information, contact: Colton Janes • Empire Wastewater Treatment Plant, Business Unit Manager • colton.janes@metc.state.mn.us • 612.597.1728
Production

The Empire Wastewater Treatment Plant produces biosolids through natural biological processes that break down pollutants, kill germs, and generate biogas, a renewable fuel. Biogas is used as fuel to produce heat and electricity for use at the wastewater treatment plant. Biosolids are stored at the plant and land applied in the spring and fall when farmers need them.

Quality Control and Best Management Practices

Quality standards and best management practices established and overseen by the EPA and MPCA are protective of public health and the environment. The MPCA approves sites for biosolids land application and trains and certifies operators who oversee the use of biosolids.

**MPCA Site Approval Process:**
- A certified operator prepares an application including:
  - Where, how much, and when biosolids will be applied
  - Soil conditions
  - How surface and ground waters are protected
- Interested parties review and comment on the application
- MPCA reviews the application and approves, if appropriate
- Changes from the approved application require new MPCA approval

**Before each land application season:**
- Biosolids are tested for solids content, pH, nitrogen, phosphorus, potassium, and trace metals
- Application rates are determined based on current and past farming practices, specific crops, and soil health

**Annually:**
- Submit annual reports to the MPCA to confirm best management practices are followed

For more information, visit metrocouncil.org/landapp