

# BIOSOLIDS FACTS

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## What are biosolids?

*Biosolids are the nutrient-rich organic product of wastewater treatment. Biosolids are a valuable resource containing essential plant nutrients and organic matter and can be recycled as a fertilizer and soil amendment.*

## An overview

Wastewater treatment results in two products: clean water and a nutrient-rich solid material called biosolids. Biosolids can be incinerated, disposed of in landfills or recycled as a fertilizer and soil amendment.

When biosolids are recycled as a fertilizer and soil amendment, valuable nutrients are returned to the soil for use by plants. The organic matter in biosolids can also improve soil structure and moisture retention.

## Biosolids recycling

At the Western Lake Superior Sanitary District (WLSSD), biosolids are recycled by spreading them on land. This process, referred to as *land application*, is an effective way to reclaim the valuable nutrients and organic matter in biosolids.

WLSSD applies most of its biosolids on farm fields in Carlton and southern St. Louis Counties. Some biosolids are also used on the Iron Range to promote plant growth on taconite tailings basins; the organic matter in

the biosolids makes it possible for trees to grow on the otherwise virtually sterile land.

Biosolids are recycled throughout the United States. A survey by BioCycle Magazine found that in the year 2000 almost half of the reporting states recycled more than half of the biosolids generated. Eight states — Arizona, Colorado, Delaware, Indiana, Iowa, Maine, Oregon and Wyoming — beneficially use over 90 percent of their biosolids. More than 200 communities in Minnesota recycle approximately 32 percent of the biosolids produced statewide.

## Regulation of biosolids

To protect public health and water quality, federal and state laws provide strict quality control standards for the production and use of biosolids. The major concerns when land applying biosolids are preventing the transmission of pathogens and preventing metals and excess nutrients from impacting water quality. Federal laws require treatment methods that reduce the amount of pathogens in the

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Biosolids can be "recycled" and safely used to fertilize farm fields.



*By recycling biosolids, WLSSD reuses valuable organic material, minerals and nutrients, improves soil fertility, reduces the need for chemical fertilizers on agricultural land, and cuts down on the amount of material placed in landfills. Recycling biosolids also saves local farmers thousands of dollars in fertilizer costs.*

biosolids to specified levels and set limits on the allowable metal concentrations. They also require management practices that prevent runoff into local water supplies and reduce the possibility of human or animal contact with the biosolids.

In addition, Minnesota requires certification of land application operators and requires that the Minnesota Pollution Control Agency (MPCA) approve the land where biosolids are applied.

To protect groundwater and surface water, the MPCA has laid out specific criteria for site selection addressing soil pH, water table depth and the slope of land. Once a site has been approved, requirements must be met for buffer zones, or setback distances from water sources and human contact areas. Sites where biosolids are spread on the surface require greater setback distances than sites where biosolids are incorporated into the soil. For example, biosolids incorporated into the soil cannot be spread within 50 feet of open water. If the biosolids are spread on the surface, then the set back distance is

increased to 200 feet. Residential developments, public and private wells, and waterways are other features that are protected using setback distances.

Restrictions are also placed on land use following biosolids application. For instance, the land may not be used as pasture for 30 days, nor may feed crops like hay and silage be harvested within 30 days of applying biosolids.

When these and other regulations are followed, biosolids are safe. WLSSD follows all federal and state regulations that control the production and use of biosolids to ensure safety and quality.

### **The benefits of biosolids**

By recycling biosolids, WLSSD reuses valuable organic material, minerals and nutrients, improves soil fertility, reduces the need for petroleum-based chemical fertilizers on agricultural land, and cuts down on the amount of material placed in landfills. Recycling biosolids also saves local farmers thousands of dollars in fertilizer costs.

## **WLSSD Biosolids Fact Sheets**

- #1 General Information
- #2 Wastewater Treatment
- #3 Biosolids Processing and Quality Control
- #4 Regulation of Biosolids Land Application
- #5 Why Biosolids are Safe: Pathogens
- #6 Why Biosolids are Safe: Metals
- #7 Why Biosolids are Safe: Trace Organics
- #8 Best Management Practices for Land Application
- #9 Using Biosolids as a Fertilizer
- #10 Biosolids Markets and Uses

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