

# Calgary Biosolids: beneficial reuse

## How do biosolids help the environment?

Biosolids are a valuable local resource rich in organic matter, nitrogen, phosphorus, potassium, and essential micronutrients, which make it valuable as a natural nutrient source and soil conditioner for agricultural lands.

Land application of biosolids enhances soil health by improving physical, chemical, and biological properties of the soil, ensuring nutrient cycles continue and increasing crop productivity by the addition of moisture and organic matter to soil.

Biosolids also help sequester carbon, reducing the release of carbon dioxide (a greenhouse gas) to the atmosphere.

## Is biosolids land application regulated?

Yes. The federal government (Canadian Council of Ministers of the Environment) has a Canada-wide approach that supports the beneficial use of biosolids. The land application of biosolids in Canada is regulated by provincial governments. Alberta's provincial regulator is Alberta Environment and Protected Areas (AEPA). The guidelines we follow are the *Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Lands – 2009*.

## Is land application of biosolids safe?

Yes. The City applies biosolids in accordance with the strict land application guidelines set by AEPA and tests samples from different stages of the advanced wastewater treatment process to ensure the quality of the biosolids produced meets the specifications in these guidelines.

## How are biosolids used in Calgary?

Biosolids produced through our advanced wastewater treatment process are used to improve the quality of soil for farming, reduce the need for chemical fertilizers and are a high-quality component of compost.

The City of Calgary beneficially uses biosolids in three main ways:

### The Calgro™ Program

The Calgro™ Program has been enriching agricultural lands since 1983 and remains a proven and safe way to recycle biosolids. Biosolids are transported from the Shepard Lagoons to approved agricultural land, where specialized equipment is used to subsurface inject biosolids 5 - 10 cm below the ground surface into the soil.

### Compost production

Since 2017, the Calgary Composting Facility has been composting dewatered biosolids produced at the Bonnybrook Wastewater Treatment Plant into Category A compost that is sold commercially.

### Demonstration projects

Since 2013, the Biosolids Demonstration Projects have used dewatered biosolids to improve the quality of soils considered "marginal" for agriculture and as a nutrient source for a willow tree farm. The City's willow farm is the largest willow plantation in North America. Harvested willow whips and woody biomass has many uses but is primarily used as feedstock material for composting and feed material for the Calgary Zoo.