

Organic Materials Recovery Centre Delivers Innovation and Sustainability

Southgate Organic Materials Recovery Centre (OMRC) Dundalk, ON

Lystek
Nothing wasted.
Everything to gain.



*Southgate wanted
to become an
environmental leader
by embracing green
technologies and
innovative, sustainable
organics management
solutions.*

ABOUT

Southgate is a township in southwestern Ontario, Canada, in the southeast corner of Grey County. Agriculture serves as the township's dominant economic sector, with a small industrial sector that is mostly concentrated in the largest town, Dundalk. www.southgate.ca

CHALLENGES

- Limited options for beneficial use of biosolids, particularly in winter or wet weather conditions for nearby towns and larger municipalities in the Greater Toronto Area and Golden Horseshoe Region
- Undeveloped Eco Park in Southgate Township
- Farms in the region transitioning from mixed animal and cropping operations to cash cropping, losing sources of nutrients and organic matter (manure)

SOLUTION

Lystek initiated development of the Southgate Organic Materials Recovery Centre (OMRC) in 2012. Designed, built, owned and operated by Lystek, the OMRC provides these benefits:

- A sustainable outlet for municipalities and residual generators to ensure beneficial use for biosolids
- Significant storage volumes on-site to provide a secure option for year-round biosolids and organics management
- Production of a high-quality fertilizer product, providing a source of organic matter and cost-effective fertilizer for local farmers

RESULT

- Creation of **11 full-time jobs** for the community of Southgate to staff the OMRC
- More than **700,000 tonnes** of high-solids liquid fertilizer produced from biosolids and organic residuals.
- Application of recycled fertilizer to **more than 50,000 ac** of local farmland
- More than 30 municipal and private residuals generators serviced in the region



KEY METRICS

Lystek OMRC Annual Capacity: 150,000 tons

Lystek THP Module Size: 3 x **LY10** (4.0 dry tonnes / hr)

Lystek THP Processing Footprint: 3,800 sq ft.

Feedstock: Municipal biosolids (anaerobically digested aerobically digested, undigested), anaerobically digested organic waste products, organic-based liquid materials and processed food-grade wastes

Prior to the year 2000, the town of Dundalk purchased approximately 150 acres of land on the edge of town, immediately adjacent to the township's own sewage lagoons. The town had the vision to create an Eco Park in this area with supporting infrastructure, to help diversify the local economy and attract new green businesses to the area.

In 2010, Lystek was scaling up its patented thermal hydrolysis technology (Lystek THP) after demonstrations at the City of Guelph's WWTP. The company was evaluating the need for biosolids processing and management solutions across the province and saw the perfect fit between the Eco Parkway, the proximity to larger cities and municipalities needing biosolids management solutions and a receptive agricultural community.

In 2011 Lystek purchased a lot in the Eco Parkway, and after extensive community engagement and environmental review by the Ministry of the Environment, Lystek was given approval to move forward with construction of the OMRC in October 2012.

The OMRC was constructed with the capacity to accept 150,000 wet tonnes of third-party biosolids and organic residuals between 1% and 35% solids. Upon reception, the material is conveyed to one of three Lystek THP reactors, where it is converted to LysteGro, a fertilizer regulated under the Federal Fertilizers Act by the Canadian Food Inspection Agency. The facility can store approximately 90,000 tonnes of fertilizer over the winter months, until it is hauled and subsurface injected to local farms. The OMRC also features a QA/QC and, research and development laboratory where both incoming feedstock and the final product, LysteGro, is continually analyzed and sent to third-party laboratories to ensure compliance with regulatory guidelines.

Like many proposals for biosolids management facilities, this OMRC faced some community opposition during the siting process and early operations. Through this phase of

facility development, there were many challenges, lessons learned, and ultimately the relationship with the host community has evolved to a point of general acceptance and support. Further, this regional facility has resulted in notable economic benefits for the host municipality and local businesses. "The OMRC has had a very positive impact on our community," confirms former Mayor, Brian Milne.



Since the Southgate OMRC became operational in 2013, the regional facility has grown to provide biosolids management and resource recovery services for over 30 generators across Southern and Central Ontario. For municipalities with objectives of beneficial use for their organic residuals, winter can be challenging with limited options due to wet and/or snow covered ground, and inadequate storage space. The OMRC is able to accept residuals year round, store the fertilizer over the winter months, and land apply from spring to fall.

A major success has been the development of a strong regional market for the liquid fertilizer product, which is regulated under the Federal Fertilizers Act by the Canadian Food Inspection Agency (CFIA). Since the OMRC opened, over 700,000 m³ of fertilizer has been successfully produced, managed, and sold. Growing demand for this biosolids-based fertilizer has resulted in product prices increasing 300%. This has also led to farmers adopting innovative practices, such as variable rate application, strategic placement of the product relative to the planted seed, and side dressing into established corn, which all maximize product value and enhance nutrient use and agro-environmental stewardship.



About Lystek

Lystek is a leading provider of Thermal Hydrolysis solutions for the sustainable management of biosolids and organics. The multi-use, award-winning Lystek system reduces costs, volumes and GHG's by converting municipal and industrial wastewater treatment facilities into resource recovery centers. The technology transforms organic waste streams into value-added products and services, such as the patented LysteMize® process for optimizing digester performance, reducing volumes and increasing biogas production; LysteGro®, a high-value, nutrient-rich fertilizer and LysteCarb®, an alternative source of carbon for BNR systems.