



Lowering Carbon Footprint with Landfill Diversion and Efficient Production of Class A Biosolids

ABOUT

The Commerce Wastewater Treatment Plant (WWTP) treats approximately two million gallons per day (MGD) of municipal wastewater and has a permitted capacity of 8.5 MGD. The WWTP services the majority of Commerce Township as well as portions of White Lake Township, the Village of Wolverine Lake, West Bloomfield Township, and City of Novi. The WWTP is operated by the Oakland County Water Resources Commission.

<https://commercetwp.com/>

CHALLENGES

- The WWTP relied on off-site landfill disposal
- Average 30% annual increase in disposal costs
- Insufficient storage capacity on-site to return to previous practice of liquid Class B Biosolids management

SOLUTION

Commerce Township engaged Lystek under a Progressive Design-Build agreement to:

- Deploy Lystek THP® following the existing belt filter presses
- Use the existing solids conveyance equipment to transport dewatered biosolids directly into the LY10 THP Module
- Install the Module within a portion of the existing solids handling building and make use of the existing mezzanine
- Incorporate indoor LysteGro® truck loading
- Use the existing liquid storage tanks for Class A LysteGro

RESULT

- Design-build project completed in less than two years
- Optimized use of existing infrastructure by complementing previous capital investments
- CAPEX and OPEX savings
- More than 12 months of storage with high-solids LysteGro
- Long-term price certainty with multi-year LysteGro management agreement

Commerce Wastewater Treatment Plant Commerce, MI

"The overall project went smoothly from the initial discussions with the Township all the way through design and construction. The project was completed on time and on budget and is functioning well."

Jason Mayer, Partner, Giffels Webster



KEY METRICS

Population Served: 43,165

WWTP Rating: 8.5 MGD; ADF 2 MGD / (64,000 m³ /day)

Lystek THP Processing Footprint: 1,265 ft² (118 m²)

Lystek THP Module Size: 1 x LY10 (1.0 dry tons / hr)

Feedstock: Municipal biosolids (undigested)

Project Delivery Model: Progressive-Design-Build;
On-site Retrofit

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The Commerce WWTP historically generated liquid Class B Biosolids for land application. This liquid biosolids program created operational stress with insufficient storage on-site. In 2010 the WWTP installed belt-filter presses to dewater the biosolids and transition to landfill disposal. The cost of landfill disposal increased substantially, with an average annual increase of over 30% since the dewatering program was implemented. These cost increases led the Township to question the viability of this program.

Lystek THP® eliminates the Township's reliance on unsustainable landfill disposal with the production of Class A LysteGro® Biosolids fertilizer. This sustainable biosolids management program provides the Township with long-term cost-certainty and reduce the facility's carbon footprint.

This Project was completed as a Progressive Design-Build. The Charter Township of Commerce awarded Lystek a preliminary design contract in summer 2021 to complete

the 30% design phase required for permit application to the Michigan Department of Environment, Great Lakes, and Energy (EGLE). This design was completed December 2021 in collaboration with the Township's engineering firm, Giffels Webster, and the Oakland County WRC operations and engineering team. EGLE awarded permits for the project in April 2022 and Commerce Township awarded Lystek the Design-Build contract shortly after in May. The Design-Build project began in July 2022 and the system was commissioned 18 months later with operations handed over in March of this year. EGLE authorized the Commerce WWTP Class A Biosolids permit in June 2024 and land application will begin this fall.

The Lystek THP Module was installed into a portion of the existing solids handling building space on-site with no major infrastructure being decommissioned. Incorporating Lystek THP downstream of dewatering operations built upon previous capital investments at the WWTP with use of the existing belt filter presses and dewatering conveyance equipment located in the dewatering building. Producing a high-solids liquid Class A Biosolids brings new life to the existing liquid biosolids storage tanks, while extending capacity to alleviate this historical point of operational stress.

The Township has engaged Lystek in a multi-year agreement for comprehensive Class A LysteGro Management Services.



"The Lystek system fit perfectly within our wastewater treatment plant. We didn't have to build any buildings. We had an open stall that we could fit the system right in. Working with Lystek was seamless. Any time the Board or I had questions, they were quick to respond. They were very helpful. They hit every target moving forward. Promises made, promises kept." – Larry Gray, Commerce Township Supervisor

About Lystek

Lystek International is the leading provider of advanced thermal hydrolysis solutions in North America, servicing over 60 Utilities globally. Lystek offers turnkey solutions including technology supply, design-build and installation services, regional processing solutions, and comprehensive LysteGro sales and management. **Lystek THP®** is proven across a range of small, medium, and large communities. We work with public and private sector clients to enhance operations, reduce GHG emissions, and recover valuable nutrients and carbon from biosolids and organic feedstocks through the production of increased renewable biogas with **LysteMize®** Digestion and **LysteGro®** Class A quality biosolids fertilizers.