

## Sewage plant upgrades to meet higher standards

By [Lenay Ruhl](#), January 8, 2016 at 3:00 AM



Michael Kyle is executive director of the Lancaster Area Sewer Authority, which serves eight Lancaster County municipalities. An 18-month expansion at the municipal authority's Manor Township facility will include a new biosolids treatment system. - (Photo / Amy Spangler)

The idea of human sewage being used in soil and fertilizer may cause some to cringe, but the practice is common throughout the midstate.

It also is regulated by the federal government, and those regulations are setting the bar for [upgrades](#) to a Lancaster County plant that treats the material, known as biosolids.

Over the next 18 months, the Lancaster Area Sewer Authority is making changes to its Manor Township plant so it can meet the U.S. Environmental Protection Agency's highest standards for biosolids treatment. The plant is one of about 45 municipal wastewater plants in the five-county area, and one of several to attempt compliance with the higher standards.

The standards govern the processing of biosolids before they are recycled for land application, whether they are mixed with soil or turned into fertilizer. The goal is to ensure that useful materials are recycled on land and that harmful materials are kept out of water.

Midstate plants process about 35,565 tons of sewage sludge, or biosolids, annually. The biosolids are then applied to about 21,795 acres of land, according to data compiled by the Mid Atlantic Biosolids Association..

The Lancaster sewer authority is planning to process biosolids in a new way. The authority broke ground in December on the \$26.8 million project, which is expected to be completed by mid-2017, according to Jeff Culton, the project manager from York-based Buchart Horn Inc., the engineering and architectural firm working on the upgrade.

The authority has been treating biosolids to meet EPA's so-called Class B standard, which limits the reuse of biosolids to farmland applications. After the upgrade, the material will be processed to a higher Class A standard and will be available for use in soil amendments, as a mix in fertilizer and on golf course greenery.

Users could include landscapers, farmers and private consumers who purchase commercial fertilizer at stores.

## **Breaking down biosolids**

The new process will yield material that is 95 percent solid, according to Mike Kyle, executive director at LASA. Kyle described the material as granular.

“It looks very similar to BB's,” he said.

The sewer authority has no specific plans for marketing its upgraded biosolids yet.

The decision to undertake the upgrade, which was not required, followed studies by six consulting firms looking at all aspects of processing.

Kyle explained that the authority compared the long-term cost of the project to the alternative — continuing what it was already doing. Over time, the project will be cost effective because the plant's end product will have more uses and value than it does today.

First, tanks or reactors that break down biosolids will be constructed. Through an anaerobic process, bacteria is used to break down sludge and produce methane gas. The gas can be used as a fuel source to heat the tanks, as well as a fuel source for drying biosolids.

In the next step, water is removed from the sludge. The process is similar to the spin cycle in a washing machine, according to Kyle.

“It spins really fast and pours the water out of the solids,” Kyle said. “And then from there we go into the dryer. The dryer then greatly removes the water from the biosolids.”

Derry Township has a similar process in place.

“It's not really common, because it's not required. There's few communities that go above and beyond what's required,” Kyle said. “It may be something that's ultimately required in the future.”

LASA does not expect to hire any additional people after the upgrade.

The authority, meanwhile, should be able to operate as normal during construction, Culton said.

## **Biosolids in the midstate**

The reuse of biosolids, when done properly, does not hurt water, air or land, according to William Toffey, executive director of the Mid Atlantic Biosolids Association.

“A quick scan of media coverage might give you the impression the biosolids recycling entails a lot of controversy, but for the vast majority of agencies and communities, this is an accepted and valuable recycling program,” Toffey said via email.

The challenge is recycling it properly.

“This is a challenge that we have figured out pretty well with sewage, but our colleagues dealing with manure still have mega-challenges ahead,” Toffey said, explaining that manure undergoes less processing than biosolids.

“That manure which ends up in bags at the store goes through processing, but most of what you smell out in the countryside is manure that has just been lagooned,” Toffey said.

Lagooning is a method of sludge treatment that includes the spreading of manure.

According to Toffey, agencies serving Lancaster County are starting to invest in the type of biosolids processes that yield a product for recycling into soil and fertilizer.

Where these processes are in place already, the recycled product is well-received by farmers and other landowners, because they can save on production costs by using biosolids in place of other soil and fertilizer options.

“For good biosolids, we find there are more farmers interested in receiving biosolids than there are products available,” Toffey said.

## Biosolids by the numbers

The Lancaster Area Sewer Authority is one of about 45 municipal wastewater plants in the midstate. Here is a look at how much sewage sludge plants in the five-county area process and apply to land:

<b>County</b>	<b>Plants</b>	<b>Dry tons annually</b>	<b>Acres of land applied</b>
Cumberland	11	4,418.49	3,464.57
Dauphin	8	6,537.32	3,582.11
Lancaster	14	14,808.64	6,219.85
Lebanon	3	1,547.26	1,401.16
York	9	7,127.63	7,127.63

*SOURCE: Mid Atlantic Biosolids Association, based on 2012 annual reports, surveys*