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Food waste to biogas? Asheville studies mass composting

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(Photo: Katie Bailey/bkbailey@citizen-ti)

ASHEVILLE - Of the trash tossed into the city's garbage cans annually, 12 million pounds are organic materials including everything from vegetable peelings to used pizza boxes.

That's according to a 2015 study contracted by the city and Buncombe County on how to divert organic material from the landfill. The study said a quarter of what was thrown away was organic and could probably be broken down. That could help it avoid taking up increasingly premium space in the county solid waste facility.

Asheville and the county are now entering a second phase of the composting study to see if those items can in fact be broken down and even turned into energy in the form of a something called "biogas."

Late last month the City Council voted unanimously to take part in the composting feasibility study being done by the county, paying half of the $75,000 study cost. There was no timeline given for completion.

"The second phase of the study is to look at the amount of feedstock that is available. That is from large industry and local businesses in addition to residences," said Asheville Sustainability Officer Amber Weaver. "We're trying to capture organics that are presently being thrown away."

The move is part of the city's 50 percent waste reduction goal, Weaver said.

But adding a mass composting program would come with costs.

A 2015 estimate from the first phase of the study by the Boston-based engineering and construction consultant CDM Smith said removing the organics could cost more than $1 million annually. That includes yearly payments for investments in equipment and operating costs. That amount also takes into account more than $70,000 in estimated revenue from power sales from the biogas.

An "anaerobic digester" would likely be used to break down the material and do energy production, Weaver said.

According to the American Biogas Council, anaerobic digestion is actually a different process than composting. It involves "a series of biological processes in which microorganisms break down biodegradable material in the absence of oxygen."

One of the end products is biogas, which can be used "to generate electricity and heat, or can be processed into renewable natural gas and transportation fuels," the council's website says.

Of the remaining material, there are solids that can then go through the composting process using oxygen. Those solids can also be used for dairy bedding or "directly applied to cropland." Liquids left over can be used as agricultural fertilizer, the council says.

Past city composting efforts have focused on at-home programs. In 2010, for example, the city arranged a deal on discounted compost bins to residents.

In terms of large-scale private composters, there are few. Danny's Dumpster in East Asheville collects about 4 million pounds annually of organic material mostly from restaurants. It produces a soil amendment sold to farmers and gardeners.