

What is the story of Cambridge's food scraps?

The City of Cambridge's curbside compost program serves 25,000 households citywide. More than four years of planning and piloting went into developing the program. The goal of the program is to place the City on a trajectory toward reducing trash 80% by 2050, in accordance with the Massachusetts Department of Environmental Protection (MassDEP) goal. Currently, the City hauls food scraps and compostables to the new Centralized Organic Recycling (CORe) facility in Charlestown built by Waste Management (WM) in partnership with Save that Stuff (STS). The food is processed using anaerobic digestion at the Greater Lawrence Sanitary District (GLSD) in North Andover, MA. As a result, trash has declined 9% in the first 4 months of the program. Prior to the launch of the citywide composting program, it took 6 years for Cambridge to reduce trash by 9%.



How did the City decide where to have food waste processed?

As the program grows, we need a facility that can meet the needs of the City, immediately and in the future. The Department of Public Works conducted a thorough analysis, with the assistance of solid waste consultants, before deciding to use the Charlestown CORe facility. The present contract is for three years and it will be reviewed again at the end of that period. There are several reasons that the City is using the Charlestown CORe facility for processing food scraps. Some of the criteria for a facility to process Cambridge's food were:

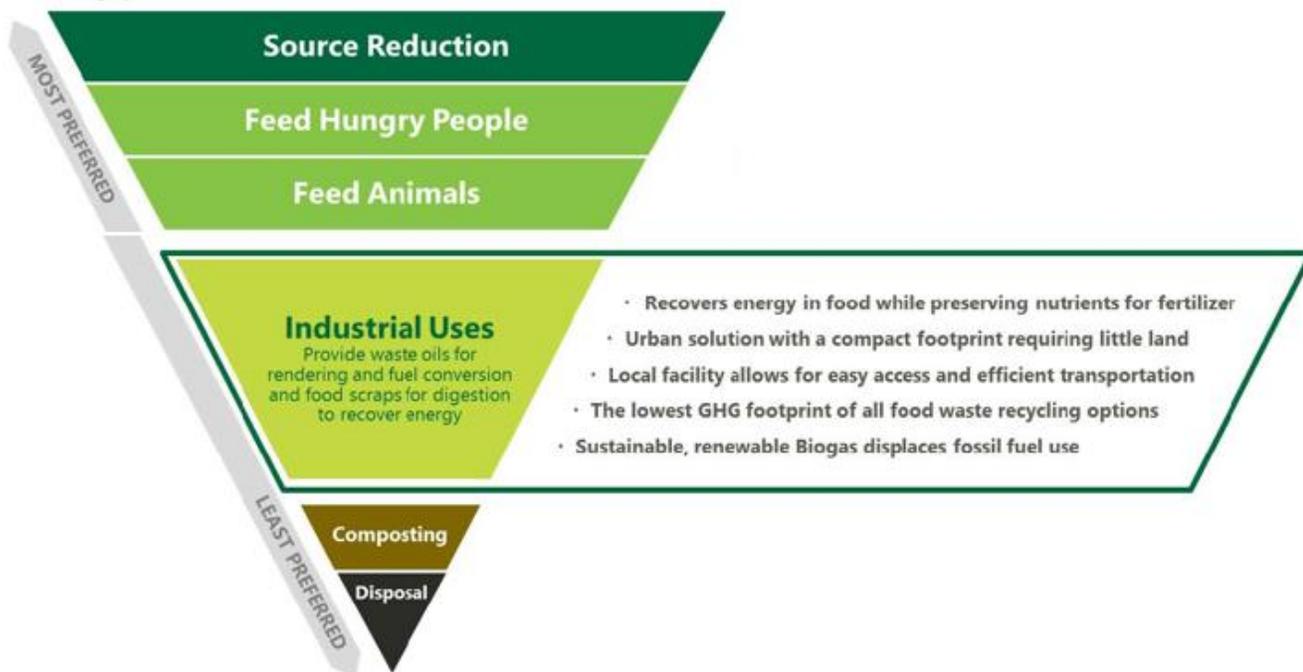
1. Must be permitted to accept at least 10 tons of food waste per day,
2. Must help reduce the City's greenhouse gas emissions,
3. Must be located within 5-7 miles of Cambridge, and
4. Must be open Monday-Saturday, 7am-3pm.

None of MassDEP-permitted facilities could meet all of these criteria, except the Charlestown CORe facility. Furthermore, we used the EPA's hierarchy for food recovery (see graphic below) to determine that the CORe facility and partnership with GLSD's anaerobic digestion system offered the best option for recovering the resources (nutrients and energy) in our food waste.

Proximity of a disposal site was an overriding factor to program planning. The next closest suitable facility is 30 miles from Cambridge. Without the convenience of the Charlestown CORe facility, the City simply could not have expanded the curbside compost program. Furthermore, traveling to a more distant facility would require more vehicle miles traveled, but would also require an additional collection truck or two, increasing greenhouse gas emissions of the program.



Food Recovery Hierarchy



Why does the EPA consider industrial use (such as anaerobic digestion) better than composting?

EPA ranks industrial use higher than composting for managing food waste. Traditional windrow composting yields a soil amendment, whereas industrial uses yields energy and a soil amendment. While windrow composting sequesters most carbon, anaerobic digestion recycles the carbon into methane to produce energy. The production of this energy offsets the demand for fossil fuels (both natural gas and electricity transmission). Harvesting and producing energy on-site is as much as 60% more efficient than energy from fossil fuel sources on the grid.

How is Cambridge's food waste processed?

The Charlestown CORE facility processes Cambridge's food waste into an organic slurry. The slurry is added to sewage sludge at the GLSD wastewater treatment plant in North Andover, MA. With the aid of bacteria, the anaerobic digesters convert the sludge and food into methane and solids. More than 90% of Cambridge's food waste goes toward making clean energy through the production of methane. In other words, the vast majority of food scraps go toward making clean energy. The remainder is water and trace nutrients.

What is sewage sludge?

Sewage sludge is the material residents send down their kitchen sinks, toilets, and shower drains—minus the water. Wastewater treatment facilities treat and recycle water back into the environment. The water discharged from wastewater treatment facilities is regulated and tested daily to comply with EPA and MassDEP Clean Water Act standards. The remaining sewage sludge is organic material. Bacteria helps breakdown the sludge into methane and solids. The methane is used to supply energy to the treatment facility to offset the demand for fossil fuels. The remaining solids are comprised of valuable macronutrients (i.e. nitrogen, magnesium, and phosphorous) and micronutrients (i.e. iron, zinc, copper), which are made into biosolids.

While the term sewage sludge may invoke a visceral negative response, after treatment the solids become nutrient-rich biosolids.

What are Biosolids?

Biosolids are the nutrient-rich materials resulting from the treatment of sewage in a wastewater treatment facility. GLSD has been producing the highest quality of biosolids, Class A biosolids, for more than a decade. They meet the EPA's requirements to be certified as Exceptional Quality (EQ)* The fertilizer is tested under MassDEP testing procedures. It is valued for providing a sustainable alternative to synthetic fertilizers. More than 15 million tons of biosolids are produced by wastewater treatment plants in the US, diverting waste from landfills and offsetting the use of fossil-fuel intensive fertilizers. For more information on biosolids, visit <http://www.nebiosolids.org> or www.epa.gov/biosolids.

Is GLSD and Cambridge alone in processing food waste with sewage sludge?

Nationally, the practice of digesting food waste at wastewater treatment facilities is not uncommon. Approximately 1,200 wastewater treatment facilities in the U.S. have anaerobic digesters to manage wastewater solids. Furthermore, about 20 percent of wastewater treatment facilities process food products with sewage sludge, like GLSD is doing. Communities that collect food scraps curbside and process them along with sewage sludge include New York City, Los Angeles, and New Jersey.

GLSD's "Organics to Energy Project" was conceived to assist MassDEP in diverting organics from landfills. GLSD is aiming to become a Net-Zero facility, producing its own energy from natural gas generated on site. This project includes over \$25 million in investments; including more than \$7.5M in Massachusetts State funding, to develop one of the most advanced recycling and renewable energy programs in the US.

Why is the program called curbside composting?

During much of the Pilot stage of the curbside composting program, the City sent food scraps and compostables to a farm-based composting facility in Saugus. Given the larger scale of our citywide operation and the strict curbside collection logistics, the present contract with Save That Stuff/Waste Management was executed and will continue for the next three years. Prior to executing the next processing contract, the City will again assess all options to maximize diversion, environmental benefits, and day-to-day logistics.

DPW spent months considering different names for the curbside collection program. While the current method for processing food waste is via anaerobic digestion, DPW found that calling the program anaerobic digestion was overly technical. We eventually settled on curbside composting because it was the most inclusive and recognizable phrase. Options such as "curbside organics" caused confusion among some Cambridge residents. For example, some thought that curbside organics meant only those who eat organic food could use the program.

When surveying businesses and residents, DPW found that the most common term that residents recognized when thinking of diverting food scraps was the term composting and compostables. To make the program more inclusive and inviting, we decided that "curbside composting" will help reach residents that may be put off by technical or confusing program name options.

What is the finished compost that Cambridge DPW offers at its Recycling Center?

The finished compost DPW offers at the Recycling Center is from a farm-based compost site in Saugus. It is made from food and yard waste from the North Shore area.

Why should residents divert food scraps?

The City has two goals for the curbside compost program: 1) To divert food and compostables away from landfills and, 2) reduce greenhouse gas emissions. Because more than 40% of our trash is food waste, this program is a critical step towards meeting our waste reduction goals. Using the City's curbside composting program, a private service, or a backyard compost system are all great ways of diverting food waste. The City doesn't have a preferred method for diverting food waste. The primary goal is getting food out of the trash stream.

In 2008, Cambridge set a goal of reducing trash 30% by 2020. With the launch of the Curbside Compost program, we are on track to achieve that goal. In order to achieve the next goal (reduce trash 80% by 2050), we need to each do our part to divert waste from the trash.

For further questions, contact Deb Albenberg (dalbenberg@cambridgema.gov), Waste Reduction Program Manager for the City of Cambridge.

*Exceptional Quality (EQ) www.epa.gov/biosolids. A Plain English Guide to EPA Part 503 Biosolids Rule (1994) Chapter 1 Page 7.