

Comments for CCSMM
Samuel King <sam@blueearthcompost.com>

Good morning!

I hope this message finds you well. I would like to submit comments on behalf of Blue Earth Compost. Attached to this message is our public comment as well as a report that we prepared on municipal curbside organics collections. The report is Hartford-centric, but much of what is included is pertinent to the discussions the CCSMM is having.

Thank you!

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Samuel King

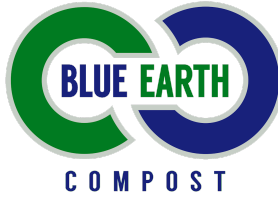
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From:
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Dear CCSMM Committee Members,

October 27th, 2020

I'm grateful to offer my recommendations and input to the Connecticut Conference of Sustainable Materials Management on behalf of Blue Earth Compost. The very existence of this Conference is an encouraging sign for the future of our state. The opportunity to provide our experience, research, and knowledge is an honor. Our remarks will be focused on the topic of organics; however, you may find that some of the concepts that I discuss will be applicable to the other fields of study for the CCSMM.

With the goal of increasing the diversion of organics, I submit to you that success can be attained by implementing all or many of the following:

- Choosing collection techniques that require source separation at the consumer level,
- Advocating for legislative action to update the Commercial Organics Ban,
- Finding resources for programs in ambitious municipalities and,
- Pairing organics diversion with unit-based pricing wherever feasible.

Collection Technique

A successful organics collection program relies upon effective *source separation of organics* (SSO). Residents and consumers must be educated and involved in the process of diverting food scraps and other compostable materials out of their standard trash stream. Requiring this method in municipal collection provides a cleaner and more usable stream of material for compost processors. It also cultivates the behavioral shift towards stewardship of the Earth in our communities.

Another advantage is that SSO collections pair well with unit-based pricing models. By separating streams, municipalities can more accurately understand their costs for disposing of specific streams and in the process, apply the correct price points to each one. In this way, the diversion of recyclables and organics is incentivized because they cost less to dispose.

Municipalities that implement curbside organics and unit-based pricing models have seen very high diversion rates, up to 80%¹.

The main issues that go along with SSO as a collection format are a) controlling contamination and b) adding a collection truck to the road and containers at the curb.

Contamination: Whether SSO is collected in a different container or bag, contamination is an issue to address. The most successful communities at mitigating contamination do so by:

- Providing all participants with clear, picture-based signage that is bi- or tri-lingual,
- Engaging their community through forums where the reasoning behind implementing composting is fully explained and concerns can be heard,
- Utilizing thorough online tools that answer FAQs and help participants to troubleshoot and,
- Dedicating resources towards quality control by finding frequent sources of contamination and supporting participants to improve their sorting.

Adding Trucks and Containers: The purchase of new trucks or repurposing of existing trucks translates into higher fuel costs and CO₂ emissions from transportation. While these costs are not insignificant, they don't carry the same price tag as the investments required to redevelop waste infrastructure for transfer station side recovery at a Materials Recovery Facility (MRF). Additionally, new collection vehicles can use different fuel sources, such as electricity or CNG, in order to improve their emissions.

We recommend that the state avoid any route that requires a MRF to take in commingled MSW with recycling or organics. These facilities, often referred to as "dirty MRFs", are known to have very low success rates (between 5 and 45% recovery²), produce low quality feedstock³, and are more expensive to operate⁴. In the case of recovering organics, these facilities also require vast amounts of water and incur additional costs⁵. In comparison, single stream MRFs, or "clean MRF"s, that complement robust SSO and recycling programs have much higher rates of diversion and cost less to operate.

Legislative Levers

We believe that Public Act 11-217, the Commercial Organics Ban, should be amended in order to strengthen its effectiveness as well as to aid in the state's goals of increasing recycling rates, improving public health, and building the infrastructure for sustainable waste management. After all, food waste makes up about 20-25% of the waste stream and is the largest recyclable material stream that we don't currently separate from trash at a significant scale.

Specifically, we advocate for these changes:

Remove the Geographic Requirements: Currently the rule only applies to food waste generators within 20 miles of a composting facility in CT. We argue that the ban should be statewide,

because there is no scientific or economic reason for this arbitrary distance. Currently, trash and recycling haulers cover much longer distances - there is no reason food waste can't also be done this way. In comparison, Massachusetts does not have a geographic requirement, but they allow for businesses to apply for an exemption if they are too far away from a composting facility for this option to be economically or environmentally feasible.

Remove the Exemptions for Certain Industries: Currently the law **only** applies to commercial food wholesalers or distributors, industrial food manufacturers or processors, supermarkets, resorts and conference centers. Left out of this list are: universities, hospitals, restaurants, long-term care facilities, food courts, and stadiums, among other entities. By leaving these other types of institutions out, the law is not nearly as effective as it could be in achieving its goals. Imagine if you were a firefighter, but you were only allowed to fight blazes at certain types of buildings. There is no logical reason why these entities should have an exemption. Again, these exemptions do not exist in other states.

Lower the Ban to 1/2 Ton per Week: Currently, the ban only captures those that produce more than 1 ton per week of food scraps. We believe that the logical next step is to reduce that threshold to 1/2 ton per week by 2023 - the year that the incinerator in the South Meadows is predicted to stop operating. A 1/2 ton is still above what most mom and pop restaurants or similar, small businesses generate weekly.

Allow for Fines for Businesses that Don't Comply: There are no penalties for non-compliance in the current ban. While we don't advocate for DEEP to use a punish-first approach, we do believe that they should have that power for businesses that refuse to comply. As a parallel, imagine if they were dumping vast amounts of pollutants into the waterways? They would be fined millions of dollars. Even failing to comply with single stream recycling can come with fines. However, they throw away vast amounts of food, creating a similar public health issue, but it's in our air instead of the water. There are no teeth to the bill as currently written.

Fund a Full-Time Compliance Officer at DEEP: Work of this importance requires full time attention. In comparison, the City of Seattle alone has 12 full time compliance officers. If CT is going to take this seriously, we need to have at least one person dedicated to this issue on a full-time basis.

Funding for Pilot Programs, Compost Processing Facilities, & Infrastructure

A survey of curbside organics programs nationally shows that nearly all have started thanks to grant funding from county or state entities⁶. These funds have been employed to purchase equipment, create and distribute educational material, and hire administrative staff, among other things. It is a matter of fact that these programs must eventually become self-sustaining, but outside funding is a key component to getting them off the ground. The State of Connecticut has a role to play in assisting ambitious municipalities with their start-up costs through grants.

The state should also consider providing grants to qualified entities for building and operating organics processing facilities. These grants should be available to municipalities, but also to private and not-for-profit organizations seeking to process organic materials. For example, the Massachusetts Department of Environmental Protection provides multiple types of grants and funding opportunities and could serve as a good template for our state.

Lastly, we are very excited at the prospect of transitioning our collection fleet towards electric or CNG service vehicles. We look forward to these opportunities and the development of this technology in our industry.

Summary

The declaration by the Governor that the state would not fund the upgrade of the MIRA facility created a significant opportunity to improve our waste infrastructure well above business-as-usual. At the same time, it set the clock ticking on the eventual shut-down of the incinerator and its afterlife as a transfer facility. This was not merely hitting the “snooze” button on our waste problems. Intrinsic to the Governor’s decision is the imperative to act now through investing in infrastructure that is better for our people and planet such as recycling and composting. By working to push the above initiatives forward, we can do the right thing for our state and its residents.

Citations

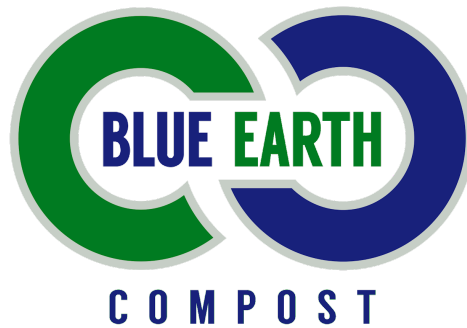
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A Proposal for a Curbside Organics Collection Program in Hartford, CT



Prepared by: Blue Earth Compost



August 2020

Introduction

Municipal curbside organics collection is one of the most promising ways to increase recycling rates in Hartford. This is because organic materials (i.e. food scraps and yard debris) are actually a resource, and they can be utilized both for energy and compost production. Hartford currently collects yard debris; however, it doesn't have a formal program for food scrap collection, as many other municipalities in the country do.

This document was created to address the challenges that Hartford's current waste management infrastructure faces and to provide examples by which the City could use curbside organics collection as one tool to address them. Included in this proposal are case studies of over a dozen municipal curbside organics collection pilots and programs in the United States. This document also includes general information about Connecticut's current waste management methods and the opportunities and benefits that would result from waste diversion.

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General Information

Connecticut has a waste management problem. Incineration is the primary waste disposal method in Connecticut, though waste produced in the state is also sent to out-of-state landfills. In 2018, 1,900,494 tons of municipal solid waste were sent to Connecticut Resource Recovery Facilities; 507,545 tons of which were sent to the Materials Innovation and Recycling Authority (MIRA) in Hartford's South Meadows. Of the municipal solid waste disposed of in Connecticut, as of 2016, 87% goes to the state's 5 waste-to-energy plants (CT DEEP). In 2015, Covanta Wallingford closed. In 2018, the MIRA plant shut down for several months because of mechanical issues. The shutdown resulted in garbage backlogs and millions of additional dollars in disposal costs (Hartford Courant). Closures and shut-downs meant that the capacity of CT's resource recovery facilities was lower. In these years, more municipal solid waste was sent to out-of-state landfills (CT DEEP).

In 2015, food waste made up about one-quarter of disposed waste in Connecticut (Spiegel 2020). According to the Comprehensive Materials Management Strategy by the Connecticut Department of Energy and Environmental Protection, 40% of Connecticut's trash is organic material (not just food scraps) that could be composted (CT DEEP). If curbside organics collections were successfully established, it would aid in achieving Connecticut's waste diversion goal of 60% of materials diverted, as described by Public Act 14-96.

On top of MIRA being an unreliable facility, municipal waste incinerators are a public health concern, as they emit pollutants such as particles, heavy metals, and acid gases, including nitrogen oxides (Gallastegi-Villa, et al.). The incinerators in our state are an environmental injustice, as they disproportionately impact limited-income black and brown communities. In Connecticut, the two largest incinerators are located in Hartford and Bridgeport in low-income communities of color (Kevin Budris 2020). The presence of an incinerator in a populated city causes concern for public health, as the pollutants released contribute to poor air quality. The nitrous oxides and volatile chemicals that are released from industrial and electrical facilities react with heat to form ozone (O₃) (EPA). Ozone levels in Hartford are very high. The American Lung Association gave Hartford an "F" based on ozone presence (State of the Air). People of Color, and especially African Americans, are more likely to experience health issues related to air pollution exposure (State of the Air).

Landfilling is also toxic as organic waste sent to landfills decomposes with time and releases carbon dioxide and methane, both of which are harmful greenhouse gases that contribute to climate change.

There are methods of waste disposal that are sustainable and do not rely solely on landfills and incinerators. By processing the organic matter separately from our incinerator-bound or landfill-bound waste, the gases can be harnessed and used as a green energy source through the process of anaerobic digestion.¹ Moreover, the solid material that results from the processing of organic material is turned into compost, which can then be used for city landscaping projects and can be distributed to Hartford residents for their home and community gardens. The implementation of an organics collection program would aid in the diversion of a significant portion of the waste stream thus lessening the burden on incinerators and improving quality of life for underserved neighborhoods in Hartford, CT. Additionally, this collection program will allow for more of Connecticut's waste to be processed within the state, instead of being sent out of state once MIRA transitions into a transfer facility (CT DEEP). There are many benefits to pivoting our waste infrastructure towards composting, including opportunities for a green energy source, compost production, job creation, and less frequent garbage collection.

Case Studies: Organized by technique

The case studies presented below are the culmination of online research, program reports, and phone and email interviews with the leaders of municipal curbside organics collection programs throughout the United States. There are a variety of techniques used by municipalities for curbside organics collection programs. A census of programs across the US show that these are the primary methods:

- Organized by a municipality and hauled by the municipality with an ordinance
- Organized by a municipality and hauled by the municipality without an ordinance
- Organized by a municipality and hauled by contracted hauler(s) with an ordinance
- Organized by a municipality and hauled by contracted hauler(s) without an ordinance
- A municipality passed an ordinance and hauled by “free market” of haulers

Organized by municipality and hauled by municipality with ordinance

These programs were initiated by the municipality. The municipality oversees the program and runs collections with city-owned trucks and city employees. These programs are typically under the municipalities' Department of Sanitation, Solid Waste Management, or Public Works. In these municipalities, an ordinance was passed that either prompted the creation of a curbside organics collection program or was created just after the establishment of the program to ensure participation.

New York, NY:

Year started: 2013

Description: This program was initiated by the New York City Department of Sanitation after Local Law 33 was passed calling for the establishment of a pilot program. New York has been successful in involving schools in the organic collection services and in educating the youth. New York's ultimate goal is to make curbside organic pickup mandatory in all five boroughs of the city.

Funding: The funding for this program comes from the tax base, specifically through the City's Office of Management and Budget.

¹ Anaerobic digestion is an option for sustainable energy production. Anaerobic digestion is a process by which biodegradable materials are broken down by microorganisms without the presence of oxygen. The gas that is released can then undergo combustion and produce heat or electricity (American Biogas Council).

City Oversight: The curbside program is run by the Department of Sanitation for New York City. The DSNY Sanitation workers are tasked with the collection and transportation of organics from curbside collections. There are a total of 10,000 employees of the DSNY.

Container: Orbis bins. DSNY purchased the bins and gave them to residents for free. NPL280 for 1-2 family homes and NPL285 for 3+ unit buildings. The indoor kitchen container NPL390 is also given to residents.

Processing Facility: Organics were brought to four different facilities: a composting facility owned and operated by Staten Island, an anaerobic digestion facility at Newtown Creek plant in Brooklyn, Peninsula Composting in Wilmington, Delaware, and McEnroe Organic Farm in Millerton, NY. As of 2015, Peninsula Composting has closed and NYC no longer sends organics to McEnroe Farm, however, the City has contracts with other compost facilities in the region.

Tonnage: 15,850 tons of organic material (from pilot); 114.7 tons/day in March of 2020, pre-suspension.

Successes: For decades, the City pushed for backyard and community composting. The curbside program built upon the residents' existing awareness of waste diversion and recycling. This may have influenced the high rates of participation seen today.

Challenges: The biggest challenge was finding facilities that are able to process the large volume of organics collected, however, the facilities within the region have since been established and operate effectively.

Current Status: At this time, New York City's program has been suspended due to COVID-19. Prior to suspension, 3.5 million New Yorkers received weekly organics collection services.

Berkeley, CA:

Year started: 2008

Description: Berkeley's food scrap collection program was started by the City with great citizen support. Local nonprofits and private businesses are also involved to promote participation and success of the program. For instance, a non-profit organization delivers City compost to school and community gardens. As of 2014, the "Mandatory Composting Ordinance" has been in effect, which requires that all businesses and multi-family tenants have access to composting services.

Funding: The program is paid for by resident's overall refuse service rates.

City Oversight: The collections are done by the City of Berkeley Zero Waste Division. The office works with nonprofits and private businesses to promote participation and success of the program. The Zero Waste Division has about 90 employees; however, there are no staff members specifically dedicated to the organics program.

Container: The City provides each household a 32- or 64-gallon cart and kitchen counter pail. The curbside carts are Toter brand. The 96-gallon carts are available, but are primarily for plant debris.

Processing Facility: Composting facility called Recology Blossom Valley Organics North, about 70 miles away in Vernalis.

Tonnage: 14,000 tons/year

Successes: The implementation of a Pay-As-You-Throw (PAYT) trash system has encouraged diversion efforts and increased participation in the organics collection program.

Challenges: Berkeley has faced challenges with multi-family house participation, as well as finding inexpensive compostable bag liners for restaurants.

Current Status: Nearly all residents of Berkeley participate in this program.

Organized by municipality and hauled by municipality without ordinance

The programs that fall under this category were organized by the municipality and are hauled by the municipality, similar to those listed above. However, these municipalities have no ordinances that enforce participation in the curbside collection program.

Cambridge, MA:

Year started: 2015

Description: The program that exists in Cambridge today began as an organics collection at businesses (in 2006) and then at schools. The City used the private hauler "Save That Stuff." During this time, there was a drop off location for residential compostables. In 2015, the residential curbside collection program began and the City took over the hauling in 2018.

Funding: Cambridge has a unique financial position, as the city had a \$1 million capital budget for the organics pickup program. The city also received a Massachusetts Department of Environmental Protection grant for a feasibility study for the compostables collection and a grant from Sustainable Materials Recovery Program for the early stages of the program.

City Oversight: The City's Department of Public Works both runs the program and handles collections. There are 2 collection trucks for food scraps, which typically have 3 employees on them at any given time: 2 workers on the back and 1 driver. As for the administrative tasks, Cambridge has only one employee that oversees the organics program.

Container: For buildings with 1-3 units: Orbis NPL280A – 12-gallon bins. 4+ units: Rehrig Pacific ROC 35 EG – 35-gallon bins.

Processing Facility: The organics are sent to a processing facility 3 miles away in Charlestown, MA where they are turned into a slurry for use in an anaerobic digestion facility called the Greater Lawrence Sanitation District in North Andover.

Tonnage: 34 tons/week; 1,768 tons/year

Successes: Cambridge has seen low rates of contamination in the curbside organics program. The City holds community meetings regarding the program and works with residents individually to address questions and concerns.

Challenges: Cambridge residents had some concerns regarding the program, most commonly residents worried that a compost bin would attract rodents and maggots and create mess and odor.

Current Status: There are currently 27,000 households that participate.

Madison, WI:

Year started: 2011- 2018 (curbside organics collection); 2019 (8-week trial collection of food scraps curbside); 2020 (drop-off location)

Description: Madison runs a voluntary food scrap-only curbside collection program. After the collected materials are processed, at a nearby manure anaerobic digester, the remaining organic material is used by a composter. The methane gas is collected and generates electricity that is sold back to the grid.

Funding: The program is funded through property taxes and the carts are purchased by the City.

City Oversight: The program is run through the City of Madison Streets Division.

Container: 35-gallon curbside collection carts

Processing Facility: Middleton Dairy digester, which generates electricity

Tonnage: 2,320 pounds of food, as of May 4, 2020; In 2018, 116.31 tons were collected (12.19 actually recycled, rest was landfilled)

Successes: The revamped program has had success due to clear regulations for what is and is not acceptable.

Challenges: The original organics collection program failed because of high rates of contamination.

Current Status: Unknown number of participants, though Madison could have approximately 5,000 likely volunteers for the drop-off program; However, limited drop-off site hours have limited participation.

Denver, CO

Year started: 2008

Description: This curbside program started as a result of a sustainability plan called "Greenprint Denver." It was led by the City, but had great support from residents. The original grant-funded pilot program offered free compost collection to 1,000 households and were all serviced by one collection route (truck). Today, the program is a fee-based, opt-in program offered to residents within the Denver Solid Waste service area. Denver does a survey online that asks about program satisfaction and how people found out about the program. Since the most common way that people hear about the program is through word of mouth (friends and neighbors), Denver is now experimenting with referral programs to help boost sign-ups.

Funding: The recycling grant program from the State of Colorado funded the pilot program. During the 2009/2010 recession, the program ran out of grant funds, and the City did not have the budget to fund the program. The program customers said they would pay for the service, so an ordinance was passed that allowed Denver to charge residents for this service (\$9.75/month, billed quarterly). This covers operating costs. Early in the program, the Solid Waste Management division also received an inter-agency loan from the City's Health Department for costs associated with program expansion, such as purchasing additional collection trucks.

City Oversight: The curbside program is overseen by Denver's Solid Waste Management Department, by about 2.25 full-time equivalent employees. The department currently has twelve trucks and drivers dedicated to compost collection and it's employees do the collections. Denver Recycles staff also help with overseeing the City's compost and recycling programs.

Container: Collection carts are 35-gallon, 65-gallon, or 95-gallon Toter brand rolling carts. Since the program accepts food scraps and yard debris, these three options are critical (residents with large yards choose the 95-gallon cart, and those with little to no yard often choose the 35 gallon option).

Processing Facility: Compostables sent to the City transfer station and then to A1 Organics, 45 miles away in Keenesburg, CO. Denver has a long-term contract in place with A1 for all organics processing.

Tonnage: 10,000 tons/year

Successes: Denver's program has great support and involvement from citizens. Participation increases significantly every year. The residents' support for the program was shown in 2010/2011 when many opted to pay a fee for the service rather than see the program come to an end due to City budgeting issues.

Challenges: In 2011, the city was to terminate the program due to high costs. This area also has one of the lowest landfill tipping costs in the US; less than \$20/ton. Therefore, there is low incentive for diversion efforts.

Current Status: 25,563 customers, about 14% of the 182,000 eligible households in the City's Solid Waste Management service area. There are about 182,000 households within the program's service area, though not all subscribe to the program.

Organized by municipality and hauled by contracted hauler(s) with an ordinance

The municipality oversees the program but private hauling companies are in charge of collections. The private hauler (or haulers) typically has a contract with the municipality, meaning that the municipality pays the hauler directly. These municipalities passed an ordinance that states that participation in the curbside organics collection service is mandatory.

Seattle, WA:

Year started: 2005

Description: Seattle had a yard waste collection program, but in 2005, the City decided to add food scraps to that collection. In 2008, collections increased due to an ordinance that made it mandatory for all residential buildings to recycle food scraps and compostable paper products. In 2011, food scrap collections became mandatory for commercial businesses. Seattle has another ordinance requiring that restaurants that provide

takeout use compostable/ BPI certified serviceware. Recology and Waste Management are the private haulers currently contracted by the city.

Funding: The collection service is funded from PAYT and from the fee that residents pay for the service based on bin size. The PAYT system functions as an incentive for composting and recycling, because the prices are lower than that of trash. Seattle also received a grant from the Washington Department of Ecology for outreach.

City Oversight: The curbside program is housed under the Seattle Public Utilities office. There are approximately 18 employees that perform the administrative work associated with the functioning of the curbside organics collection program.

Container: Rehrig 13-gallon (with a locking lid), 32-gallon, or 96-gallon Toter carts. Kitchen bins are also available for free for those who request them.

Processing Facility: Two composting facilities; 70% of materials go to Lenz Enterprises, about 50 miles away and 30% of materials go to Cedar Grove, about 35 miles away.

Tonnage: 175,000 tons/year

Successes: Seattle has frequent community outreach through partnerships with organizations and neighborhoods to engage with residents. The City tries to make education regarding the program visible to all residents. The City also has several organic waste and compost related ordinances that reinforce waste diversion efforts.

Challenges: The City found that the program must make frequent financial adjustments. There was also some minor pushback from residents with concerns of vermin at the curbside organics bins.

Current Status: Per the ordinance, all residents of Seattle participate in the program and receive organics collection services from one of the City's contracted haulers.

San Francisco, CA:

Year started: 2009

Description: The program was started by the city, but San Francisco hired a private waste contractor, Recology, which collects landfill waste, recycling, and compost. In 2009, San Francisco passed the Mandatory Recycling and Composting Ordinance which mandates that "all of San Francisco separate recyclable materials, compostable materials and landfilled trash" (EPA). San Francisco focuses on education as a way of limiting contamination and encouraging participation.

Funding: Recology charges residents a flat rate for the monthly services, though the program is also funded through the sale of compost, especially to California's agricultural industry.

City Oversight: The program's operations (distribution of carts, collection of organic material) are run by Recology. The Zero Waste Division of the San Francisco Department of the Environment partners with Recology on education, outreach, and enforcement.

Container: There are varying sizes, based on the service the tenant likes: 20-96-gallon carts are offered. All units have to have a minimum bin size of 16-gallon trash, 16-gallon recycling, and 4-8-gallon compost. If a building has multiple units, then compost containers must be equal to 4-8-gallons per unit.

Processing Facility: Two compost facilities; Jepson Prairie Organics, 55 miles outside of the City, and Blossom Valley Organics in Lamont, nearly 300 miles away

Tonnage: 220,000 tons annually

Successes: The program collects the most organics per capita of any municipality in the U.S., at 541 pounds per capita.

Challenges: San Francisco has faced challenges, particularly with promotion of the program in multifamily homes.

Current Status: All residents and business owners have organics collection services.

Brattleboro, VT:

Year started: 2011

Description: The residential program was created through a joint effort between citizens, the town, and the hauler, Triple T. Triple-T does all curbside collections for the town: garbage, recycling, and organics. Triple-T has been very open to new ideas that will better serve the community. Due to the weekly recycling and organics collections, trash collections are now done every-other-week.

Funding: The city pays for the hauler through a contract, which has been extended due to the hauler's ability and willingness to adapt. The City buys the organic curbside bins, and then sells them to residents at cost.

Brattleboro has spent about \$300,000 on the collection of recycling and compost. The City's funding for the organics program comes from property taxes.

City Oversight: Brattleboro's program is through the Town Manager's Office, though it is mostly oversight of the about ½ FTE employee.

Container: For the pilot, companies donated curbside carts for the town residents to try out. Now, residents can purchase any 5-gallon bucket with a lid for use as their curbside bin.

Processing Facility: The Windham Solid Waste Management District in Brattleboro

Tonnage: 650-700 tons/year

Successes: There is an incentive to use curbside compost because of the PAYT trash system. This encourages people to put more of their waste into recycling and compost bins instead. The program typically sees less than 1% contamination by volume.

Challenges: Some residents find that every-other-week trash pick up is too infrequent, for instance, residents that use diapers.

Current Status: There is no town ordinance related to this program; however, as of July 1, 2020, the State of Vermont passed a law that bans food scraps from being put in the trash. Therefore, all residents of Brattleboro (and Vermont) will have to compost or dispose of their food scraps through a curbside collection program. This program began before the state law was passed and functioned without a law or ordinance prior to July of 2020.

Organized by municipality and hauled by contracted haulers without an ordinance

These municipalities have contracts with private hauling companies for organics collection services. Though these municipalities did establish their organics collection programs, there was no ordinance created that mandated the programs' creation. There was also no ordinance passed in these municipalities after the establishment of the program that encourages residents' participation.

Portland, OR:

Year started: 2011

Description: The Portland City Council adopted the Portland Recycles! Plan that directed implementation of both new residential recycling programs and composting programs. The city has franchise agreements with 12 private residential haulers, and each hauler services a different neighborhood of the city.

Funding: Residential customers pay a uniform citywide rate for each level of service. Some education and outreach funding is from the regional government. All curbside collection expenses are paid out of a Solid Waste Management Fund. The total annual budget for residential and commercial collection is \$5.8 million.

City Oversight: Portland's curbside program is overseen by the City's Bureau of Planning and Sustainability.

Container: 2-gallon kitchen pail and 35- or 60-gallon rolling cart. All containers must meet the specifications for color, size and labels.

Processing Facility: Organic materials are brought to transfer stations and then to various processing facilities, including Republic Services Pacific Region Compost (70 miles away), Recology NW North Plains (20 miles

away), and Recology NW Aumsville (55 miles away). Organics may go to additional facilities, depending on facility capacity at any given time.

Tonnage: 81,000 tons of residential organics yearly (includes food waste and yard debris)

Successes: Portland had a notably successful first year of the composting program, with nearly 85,400 tons of food scraps, yard debris, and food soiled paper collected (Portland Bureau of Planning and Sustainability).

Challenges: There are different permitting restrictions for organic waste processing facilities that process just yard debris and those that process food scraps. Because of this, it was a challenge to find facilities that would accept food waste, as many organic waste processing facilities were permitted only to process yard debris at the time of the initiation of Portland's program.

Current Status: Now, there are about 165,000 households enrolled in the program, as it is provided for all residential households with trash service.

Falls Church, VA:

Year started: 2015

Description: Falls Church's program began with a drop-off location at the weekly farmer's market. It became so popular that the city decided to implement a curbside program. The City has contracts with the Compost Crew (curbside) and Veteran Compost (drop-off), two private organic waste hauling companies for the curbside collection program. Falls Church is proud to have the first curbside organics collection program in Virginia.

Funding: The City has a budget of \$30,000 for the curbside organics collection program and \$8,500 for the drop-off location. The residents that receive curbside pickup pay about \$6/month for the service. The price depends on how many are enrolled (price goes down as more people sign up for the service). The City pays for kitchen caddy for new participants.

City Oversight: The organics collection program (both curbside and drop-off) is run by the Solid Waste Program under the Falls Church Department of Public Works. There are two city staff members that work on the administrative tasks of the organics collection program. The Solid Waste Program Manager runs the program and another employee helps with community outreach.

Container: Compost Crew supplies small curbside bins that the City and residents pay for. The bins cost \$18. The City pays \$8 and the residents pay the remaining \$10. The lid is a gamma sealed lid, which is critter and weatherproof.

Processing Facility: A farm in Clifton, VA (20 miles away) and a farm in Maryland.

Tonnage: 109.5 tons annually

Successes: Overall, the program has had relatively low contamination levels. The City credits the lack of contamination to the simple rules and clear signage.

Challenges: There has been some illegal dumping (particularly at the drop-off location). This has decreased with the addition of signage at the location.

Current Status: 640 participants

Municipality created an ordinance and hauled by "free market" of haulers

These programs are overseen by the municipality; however, the residents who use the program may contract independently with one of various haulers that operate in the municipality. Typically, the haulers must obtain a license in the city where they haul and part of that license mandates that they must provide organics pickup to all residents that request it.

Boulder, CO:

Year started: 2009

Description: The program was created by the City, with the help of local hauler Western Disposal and EcoCycle, a non-profit organization that has worked to create zero waste communities in Boulder since 1976. EcoCycle is still very involved in the organics collection program, operating their own recycling and compost collection services and in educating Boulder Valley School District students and the greater public across Boulder County. In Boulder, residents must individually subscribe to private haulers of their choosing. Boulder's "Universal Zero Waste Ordinance" promotes reuse and waste diversion in homes, businesses, and at events and gatherings.

Funding: Residents pay haulers directly; however, the City's Zero Waste Team and additional program costs are funded through Boulder's Trash Tax, which is an occupation tax for haulers.

City Oversight: The program is run through the City of Boulder's Department of Climate Initiatives. There are 4-5 employees on a Zero Waste Team that run Boulder's program, as well as other waste diversion and circular materials economy initiatives.

Container: Carts are provided by the individual haulers and they vary in size and style. Western Disposal, a popular hauler, provides residents the option of a 32-gallon, 64-gallon, or 96-gallon container.

Processing Facility: A1 Organics Recycling Center, located 70 miles from the City.

Tonnage: 6,766 tons annually (in 2018)

Successes: Boulder mandated private haulers to institute PAYT for trash and provide recycling and composting services. There are Zero Waste initiatives to encourage waste diversion efforts in the City.

Challenges: Landfill tip fees are low, so they have not encouraged diversion efforts.

Current Status: Property owners are required to subscribe to recyclables and compostables collection and business owners are required to separate recyclables and compostables from trash. Many people use the separated collection services, but composting is not enforced for single-family house residents.

Hennepin County, MN:

Year started: 2003

Description: The program in Hennepin County began with a pilot program in Wayzata, MN in 2003. The pilot involved 1200 households and just one hauling truck. Since then, curbside organics programs (and some organics drop-off sites) have been introduced to many more municipalities in the county. Because Hennepin County includes many municipalities, there are various methods that the municipal programs use. However, the majority of municipalities in the county use open hauling systems where any hauler may provide service. Residential customers contract individually with private haulers. The hauling is relatively unregulated; haulers just need to obtain a license to show they have met the requirements to haul in that municipality.

Funding: For the early pilot curbside programs, Hennepin County paid for kitchen bins, a 3-month supply of bags, and signage for carts.

County Oversight: The State of Minnesota has high-level policies that are passed to counties. With Hennepin being the most populous county in the state, the County took the lead on the "Solid Waste Master Plan" by implementing programs in its municipalities. The programs are overseen by the Hennepin County Public Works, Environment & Energy Department.

Container: Varies among municipalities and haulers. Typically, residents use kitchen bins and 32-gallon carts for the curb.

Processing Facility: Specialized Environmental Technologies, which is located in Empire Township and the Shakopee Mdewakanton Sioux Community Organics Recycling Facility (SMSC), located in Shakopee.

Tonnage: 10,000-12,000 tons/year to the transfer station and another 7,000 tons/year directly to composting sites.

Successes: The County continues to work to establish curbside programs in all 45 municipalities within the county. The county's recycling ordinance was recently amended to include commercial and residential organics requirements. Effective January 1, 2022, all cities in the county are required to offer their residents the opportunity to recycle organics.

Challenges: Hennepin County has encountered issues related to limited processing capacity and widespread open hauling. Open hauling systems make it challenging to achieve the levels of route density required to make collection services more cost effective for households.

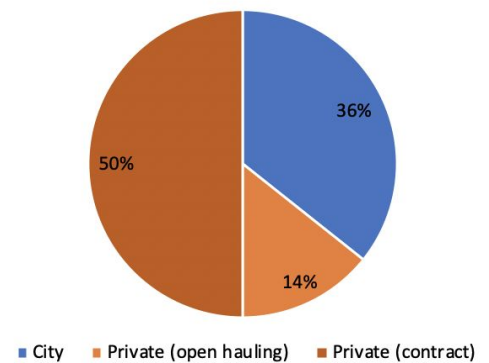
Current Status: By 2022, all municipalities in Hennepin County will have to offer an organics recycling service, through a curbside or drop-off collection program.

Trends from Case Studies

Through conversations with leaders of curbside compost programs and analysis of data, trends have arisen. This section highlights helpful information that was compiled based on the case studies presented above.

- **Contamination an issue? Use education over punitive measures.** Education seems to be the first and most important step in addressing and preventing contamination as well as encouraging participation. Many municipalities credit education and outreach with the success they have had. Most curbside programs try to prevent contamination at the consumer level, through handouts, guides for program participants, assemblies, and clear signage. It is important that handouts are easy to understand and printed in languages relevant to demographics of the area. Using icons or drawings has proven useful for other municipalities.
- Many municipalities received **grants**, which helped to fund the programs in the early years. Grants are a great way to help to fund a program, but a municipality cannot rely solely on them.
- Common advice was to **start small** by including only food scraps. It is easy to add items to a list of accepted materials, but it is difficult to remove items from the list.
- Some municipalities have found that the use of **compostable bags** has made the process more convenient, whereas others found that including the bags has caused more difficulties in processing.
 - 100% of programs accept food scraps
 - 87.50% of programs accept food soiled paper products
 - 56.25% of programs accept yard debris
 - 43.75% of programs accept BPI/compostable containers and bags
- Of the municipalities included, 50% contract with private hauling companies, 36% have city hauling, and 14% have open hauling systems, where residents contract individually with the private hauler of their choosing.
- 75% of programs send their organic materials to a composting or organics processing facility, 19% bring materials directly to a farm, and 25% bring materials to an anaerobic digester. ²
- The average difference in MSW and food scrap tip fees is \$33.39/ton³ - food scraps being cheaper.
- **Ordinances** encourage participation in the organics collection program. Seven of the municipalities included in the case studies have an ordinance (or law) that mandates participation in an organic collection program or backyard composting.
- **Resident's concerns** with regard to the curbside program tend to be related to rodents, maggots, odor, and mess.
- Municipalities that no longer have curbside compost programs typically ended due to budgeting issues (Arvin, CA; Burnsville, MN) however, the majority of programs continued after their pilot was over.
- The advice regarding **kitchen bins** varies. However, a useful system is to have kitchen bins (with lids to prevent odors from escaping) available for the residents who request them. The participants who do not want those provided can purchase their own.
- Utilize **online tools** and resources.
- **Community engagement** and participation are essential.

Case Studies: Haulers



² The total percentage does not equal 100% because several municipal programs bring the organic materials collected to multiple locations. For example, New York City brings organic materials collected from the curbside program to two different composting facilities, a farm, and an anaerobic digester.

³ This means that on average, \$33.39/ton is saved by bringing food scraps to a composting facility rather than a landfill or incinerator.

What is Accepted?					
	Food Scraps	Food-soiled/ low-grade paper	Yard Waste	Compostable/BPI Certified Containers/bags	Notes
San Francisco	x	x	x	x	
*Hamilton-Wenham	x	x	x	x	
Seattle	x	x	x	x	Only if bags are approved by facility
Portland	x	x	x		
Denver	x	x	x		
Boulder	x	x	x	x	
Cambridge	x	x			
NYC	x	x			
Berkeley	x	x	x	x	
*Eugene	x				
Madison	x				
Falls Church	x	x			Drop off locations are vegan only
*Austin	x	x	x		
*South Portland	x	x		x	
Brattleboro	x	x	x		Yard waste in small amounts only
Hennepin County	x	x		x	
Total (out of 16)	16	14	9	7	
Percentage of programs that accept material type	100%	87.50%	56.25%	43.75%	

Figure 1. This table presents the accepted materials in various municipal programs throughout the United States. All municipalities accept food scraps in their programs; however, less than half accept BPI certified containers and bags. ⁴

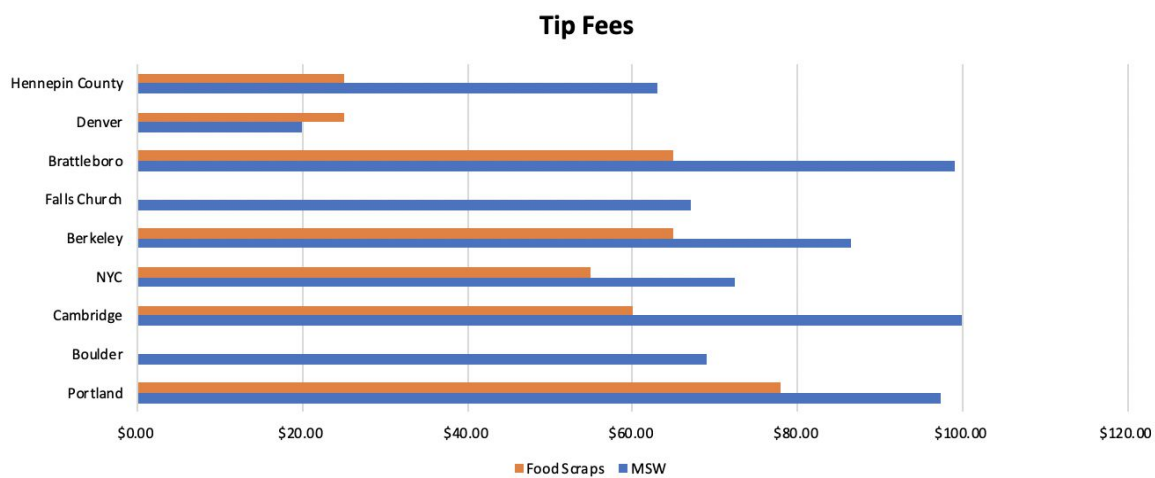


Figure 2. Tip fees for MSW and Food Scraps (Organics) can encourage or discourage waste diversion practices within a municipality. Please note that tip fees change often and may vary within a municipality. Some values used in this chart are averages for ranges of tip fees charged at facilities within a municipality.

⁴ Municipalities marked with “*” are not included in the case studies.

What Could a Pilot Program Look Like?

Hartford's Department of Public Works provides trash and recycling services to around 28,500 homes and apartments, collecting about a ton of MSW per household, per year. Of that ton of material, about 400-500 pounds is food scraps that the City collects and hauls to the trash incinerator.

Based on trends that became present in this study, a stepped approach to a curbside organics pilot would be the right course of action for the City, starting with a few thousand homes that have the same collection routes. Once the program is successfully implemented with this group, more residents can be introduced.

As education is a key predictor of success, the City would do well to partner with organizations, schools, churches, and businesses in the City to provide materials to participants as well as to host events where citizens can learn about the program and provide feedback. These efforts should help keep contamination rates low and additionally provide an opportunity to disseminate more information around single-stream recycling in the City. All printed materials and events should be bi- or tri-lingual.

Most municipalities offer a 32-gallon container for their programs and it should also work well for Hartford residents.

In order to fund the pilot program, the City should work with state and federal partners to secure funding for containers, hauling costs, and other materials. This will help cover the start-up costs until the program is at a scale large enough at which the savings (from lower tip fees and route efficiency techniques such as every-other-week trash or PAYT) can mitigate the added costs of the program. The City should be in a unique position to receive these types of resources if they engage with state and federal agencies early on.

An ordinance would provide an effective tool for spurring action and developing participation in the program.

Benefits and Opportunities

- **Reduce greenhouse gas emissions and still produce energy**

Collecting organic waste separate from garbage reduces the emissions of harmful greenhouse gases from landfills and incinerators and promotes waste diversion and reduction in households in Hartford. Composting organic waste is an environmentally sound method of waste disposal that results in the usable byproducts of compost and biogas for electricity production. Through this system, materials that are considered waste can be utilized, saving money and putting less stress on Connecticut's existing waste processing facilities.

- **Education**

The implementation of an organics program in Hartford can also allow for educational opportunities regarding recycling, waste reduction, and environmental stewardship. Outreach both encourages participation and decreases the amount of contamination. An organics collection program will allow for more community engagement, as well.

- **Sale of compost**

An opportunity through the curbside collection program is to compost the food scraps "in-house" with brown waste, like leaves and manure from the City. This could lead to the use of compost for city projects, as well as the sale of compost to local landscaping companies, residents, and gardens. This can occur throughout the duration of the organics collection program, as compost can be produced for as long as organics are collected. The sale of compost could generate some funding for the program.

- **Possibility of less frequent garbage pickup**

Where organics are collected, there may not be a need for weekly garbage collection as residents can recycle and compost more of their waste. For instance, garbage collection can occur every-other week, whereas the recycling and organics collections remain weekly. This cuts costs for garbage collection services and promotes recycling and composting, and waste diversion altogether. Operational hauling costs are reduced, as well as the amount haulers pay in tip fees.

- **Hartford becomes a leader in organics collection/green energy**

If the pilot program is adopted and finds success in Hartford, then the program can eventually be expanded and offered to the whole city. Hartford can also serve as a mentor for other municipalities in Connecticut that wish to adopt similar organics collection programs. Hartford would be seen as a leader for other municipalities in the state, and even in the region.

Summary

The declaration by the Governor that the state would not fund the upgrade of the MIRA facility created a significant opportunity to improve our waste infrastructure well above business-as-usual. At the same time, it set the clock ticking on the eventual shut-down of the incinerator and its afterlife as a transfer facility. This was not merely hitting the “snooze” button on our waste problems. Intrinsic to the Governor’s decision is the imperative to act now through investing in infrastructure that is better for our people and planet such as recycling and composting. It implores our leaders to do the right thing.

As the capital city and host to MIRA, Hartford must take the lead in lessening the public health burden and instead promote environmentally conscious waste disposal practices. A curbside organics collection program in Hartford would accomplish these goals and also aid in achieving Connecticut’s goal of 60% diversion from disposal by 2024.

Based on MIRA’s own estimates, the incinerator will likely run until 2023. It is clear that solutions for lessening our MSW stream need to be implemented as soon as possible and since these things don’t happen quickly, the City of Hartford must make it a priority to bring all stakeholders together in order to create a plan for action. Otherwise, the City will continue to contribute to the problem, rather than being a part of the solution.

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