



## **Building Better Systems Infrastructure That Drives Recycling Behavior**

### **Webinar Questions**

**Q: Question for Ashlea: here in CA where food waste composting is mandatory, based on my discussions with residents, the biggest barrier to them putting their food scraps into the green bin is their belief that the green bin attracts flies and rodents, whereas if they put their food scraps into the black bin, it's not a problem. Given this perception, how to persuade them to use the green bin?**

- A: There are similar concerns in DC, and while the level of concern may not be uniform across the board, having options for residents to place their food waste in rodent-proof containers, like we have in DC, may help address those worries. We also have sized our curbside collection containers to be smaller and easier to clean (only 7 gallons each) and to have animal locks. Our communications do focus on cleanliness to prevent odors (which attract flies and rodents), I encourage you to review the FAQs that have included on our website to see if this information can be helpful to you:  
<https://zerowaste.dc.gov/curbsidecomposting>.

**Q: Question for Ashlea, how is the D.C. food waste program funded? Is the funding sustainable?**

- A: DC DPW's food waste diversion programs are funded through the DC Budget (General Fund).

**Q: Ashlea, how does your department handle compostable plastics in your composting efforts? Does your department accept it, and if not, how do you sort through what is compostable or not?**

- A: Great question: Our guidance to residents is that we will accept Food Waste and Food-soiled Paper, and BPI-certified compostable bags, which can include paper bags and compostable plastic bin liners (must be BPI-certified compostable). Food-soiled paper does include BPI-certified compostable fiber products that are food-soiled, including but exclusive to paper napkins, coffee filters, bags, and greasy pizza boxes. The guidance does not cover compostable plastic food packaging, except for the BPI-certified compostable plastic bin liners. I hope that helps.

**Q: Does DC do Waste Characterization studies? And can they also do Capture Rates?**

- A: Yes, DC does characterization studies of diverted materials. Our most recent characterization study was of single-stream recycling.

**Q: What was the approximate cost of producing the smart bins used by Washington DC? Also, what vendor did your department use for those?**

- A: (ND - advise approximate cost of the enclosures at \$3-5k depending on specification and quantity)

**Q: How much does each smart bin (in DC) cost, from initial investment to ongoing monitoring? How is the technology working for DC? Any big glitches?**

- A: (ND - as above, plus \$200-400 per unit per year monitoring, depending on services offered and quantity)

**Q: Who empties these bins, and what type of processing is used, land-based composting? Anaerobic digestion?**

- A: The bins in Connecticut program are emptied by a paid compost vendor. This is only until the HRRRA receives the funding for a regional truck and then they will be emptied by the HRRRA. The material (depending on location in the region) is sent to a commercial composting processor, an AD Facility or a municipal ASP system we operate. It is the goal to have all the material processed at a municipal system.

**Q: How do Ashlea and Jennifer see their programs being scalable to counties of more than 1M residents and hundreds of square miles. Or states with more than 20M?**

- A: The larger the population the more locations and types of collection systems are needed. The bins in the CT program are intended to “expand” collection capacity. It’s an extension of existing curbside collection, municipal drop off and backyard composters who want to also dispose of dairy, bones, cooked food etc. I would not imagine that we would serve a large 1M population with only these types of bins.

**Q: I noticed that all the drop off, the composting materials are in plastic bags, isn't it better to be paper bags**

- A: In the Connecticut program participants are only allowed to use compostable bags that we provide or recommend. At this time, the 64 gallon carts that are inside the MetroSTOR enclosure are lined with a heavy duty plastic bag and in some locations a 65 gallon compostable bag is placed inside the plastic bag. This is required by the current service provider. The compostable bag, made by BioBag, is what is removed from the cart, not the plastic bag. The plastic bag serves as a protective liner. The cart does not have to be

washed as often using this method. Plastic bag liner will be discontinued when we have our own truck to service the units.

**Q: I'm curious if anyone has comparative per ton costs for managing food vs waste?**

- A: The comparative cost includes the local tip fees for MSW v. Organics (Food Scraps). In the HRRR region, organics typically are cheaper per ton, (\$111 v. \$65) however you still have to pay for transportation, which accounts for most of the cost.

**Q: How does the municipal solar powered ASP composting system work? Who manages it? Is it at the transfer stations? How much space does it take? And how many staff?**

- A: The system is a blower that pushes air through pipes set on a timer. The blowers are powered by the solar. The material sits on the pipes for 30 days. After 30 days the pipes are removed and the material is moved to another set up pipes. Moving the material helps mix and create a more homogenous pile that will sit on the pipes for another 15 days. The forced air and the right C:N ratio help speedup the decomposition of the material.

Yes the two ASP systems we have are located at municipal transfer stations. They take up about ¼ acre. It takes 1-2 staff about 4 hours a week to run the system.

**Q: For Jennifer Heaton-Jones: On the regional collection cost slide, what is the name of the system/device that is attached to the truck that picks up the cart?**

- A: The truck shown in the slide is a retrofit truck using Perkins equipment. Here is a link: <https://www.municipalequipmentinc.com/equipment/perkins-manufacturing-company-sat6-6-yard-unit/>

**Q: This question is for Jennifer: what is the largest municipality (population wise) you've worked with to implement the ASP system to drive down the T&D costs? To follow up on that, what is the spacing required for the ASP solution?**

- A: The town of Newtown, CT has a population of approximately 27,000 people. The ASP system at the transfer station is currently about an acre but as we grow it will likely expand.

**Q: In developing the food waste collection program, was PFAS an issue when considering the use of PLA bags and/or accepting soiled paper products?**

- A: In the Connecticut program, we only allow compostable bags made by BioBag. We do not allow any solid paper products. Paper towels used only for food are accepted (not used with cleaning products). PFAS will always be a concern, but we do our best to restrict what is accepted in the program.

**Q: Jennifer - did you say that costs went down for waste management by implementing regional ASP's?**

- A: Yes, the town of Newtown experienced a cost savings once they implemented their ASP system.

**Q: What education/outreach strategies techniques did your programs find to be most impactful?**

- A: Social Media

**Q: How many households or people per bin?**

- A: (ND - there's no hard and fast rule here, due to the high number of variables - participation rate, travel distance, etc. The good news is that it doesn't really matter, you make a start with as many units as you can afford, then scale up as demand increases. You can accommodate a considerable expansion without adding additional units by simply increasing your collection frequency.)

**Q: You mentioned the 3 month priors with less use when bins are first installed, is there a trend in perhaps vandalism or misuse at those times as well? What is the strategy used to educate the nearby population on the bin when it is first installed?**

- A: In Connecticut, we did not experience and still do not experience any vandalism. We launched a ribbon cutting for the bins, invited folks from the neighbor, the mayor and other local elected officials. We contacted the press, took lots of photos and pushed it out on social media.

**Q: What are the privacy concerns you've encountered related to cameras inside the bins, and how have you handled them?**

- A: We haven't encountered any significant issues with privacy. Our residents in CT also have the option of using a local transfer station for dropoff outside the smart bins. The camera does not capture images of people, only the material that is deposited.

**Q: Have you involved grocery stores for dropoff locations? Food waste connection, already dropoffs for recycling...**

- A: (ND - some of our clients have them located at grocery stores - works well.)
- A. In the HRRRA region we have a separate program for large generators. The MetroSTOR units are for residential use only.

**Q: Can the bins be located in a parking lot so they are accessible from both sides? I'm thinking of buffet lines -- it moves along faster if there are lines on each side. Not sure if this would work. How often are the bins emptied - as in how much capacity is in the bin? Do people leave stuff outside them if they fill up or do they just throw it in the trash if it is full?**

- A: (ND - the enclosures are accessible from one side only and accommodate 32, 48 or 64-gal carts. We do recommend the optional fill sensors in high volume applications, so that servicing can be optimized to avoid overflow scenarios.)
- A. In the HRRRA CT program the bins are mostly located in parking lots. No matter where they are located, the bins are designed for one user at a time. The enclosure we purchased hold a 64 gallon container. They are emptied every few days. No, we have not had any issue of the bins being too full and/or residents leaving material behind outside the enclosure.

**Q: Nigel, how do you all see the metroSTOR systems and principals working in places like Africa? They have established reuse systems for plastic and glass bottles. Repair is common. The dumps on the curbsides looked like lots of filmy plastics and organics but there is no single stream curbside service where I visited...**

- A: (ND - I'm not familiar with the situation in Africa yet, we can work with all common dumpster and roll-cart sizes, but it sounds as though they might need to get these in place first...)