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City of Gainesville Policy Program Preliminary Research & Analysis

TOPIC: Commercial Composting Program
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DATE SUBMITTED: May 16, 2019
REQUESTED BY: Commissioner Adrian Hayes-Santos

INTRODUCTION

According to the Zero Waste International Alliance, "Zero Waste is the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning, and with no discharges to land, water, or air that threaten the environment or human health." Gainesville has the goal of being a Zero Waste City by 2040 and one strategy for this initiative is composting. Composting can be defined as the practice of decomposing organic materials, such as food waste, into a rich soil that can be used for various purposes such as raising crops.

Commissioner Hayes-Santos has recommended implementing a pilot commercial composting program, as food waste in Gainesville makes up 18% percent of the waste stream.¹ This will require that research be done to determine logistics and planning for the composting facility, as well as how commercial facilities will respectively adhere to and fully utilize the system through sufficient community engagement.

¹ Alachua County Waste Composition Study, 2010.

http://www.alachuacounty.us/Depts/SolidWaste/Info/Update%20Documents/AC_Report_Feb_2010_2.pdf

HISTORY/BACKGROUND INFORMATION

Nationally

Each year Americans waste around 25% of all food purchases,² which has led to increases in landfill waste by the tons. Grocery stores are responsible for tossing around 10%³ of the U.S.'s yearly food waste, translating to about 43 billion pounds.⁴ Similarly, across the US about a half pound of food waste is created for every meal served in a restaurant.⁵ However, when these businesses begin to repurpose and compost food waste, they can experience cost savings through reduced hauling fees that are paid to cover trash collection.⁶

The State of Florida

In 2016, organics accounted for 36% of Florida's waste stream. The state of Florida has addressed this issue in relation to its goal of 75% recycling by 2020. Much of the organic recycling has been through compost made from solid waste, yard trash, animal byproducts and bio solids. These are processed at source-separated organic processing facilities (SOPFs). As of 2016, Florida had around 260 SOPF facilities.⁷ Despite these efforts, today the state of Florida is lacking facilities or means to process greater amounts of organic food waste. Private industry, however, has recognized the value of these processing facilities and hauler Waste Management opened two facilities in Florida in 2011,⁸ one in Okeechobee serving southwest Florida and one in Apopka serving central Florida. According to BioCycle.net, the 8-acre, \$2 million Okeechobee composting facility is permitted to process 30,000 tons/year (15,000 tons of yard trimmings and 15,000 tons of pre-consumer food waste) and almost reached capacity after 10 months of operation. The site was opened in partnership with Publix Supermarkets to process pre-consumer food waste—including produce, bakery and floral items — with yard waste into organic compost products.⁹ Waste Management trucks were collecting and transporting the organic material from 40 Publix stores in Miami-Dade County and two Publix GreenWise Markets in Palm Beach County in the first phase of the program.¹⁰ Waste Management's Okeechobee facility was the first fully-dedicated organics composting facility in South Florida to accept yard trimmings and pre-consumer food waste. For the time after their opening, the finished compost was being sold to area farmers in bulk for agricultural application.

As of 2013, Palm Beach County Solid Waste Authority was producing about 240,000 tons of compost a year.¹¹ This was done through the use of vegetation, such as yard waste, and sludge

² <https://www.compostfoundation.org/c2c/Resources/C2C-Tools/Article/177/Food-Waste-Prevention>

³ <https://www.businessinsider.com/why-grocery-stores-throw-out-so-much-food-2014-10>

⁴ <https://www.nrdc.org/sites/default/files/wasted-food-IP.pdf>

⁵ https://www.biologicaldiversity.org/programs/population_and_sustainability/grocery_waste/

⁶ <https://greenblue.org/changing-behavior-to-reduce-food-waste-in-restaurants/>

⁷ <https://www.citylab.com/environment/2017/11/cities-businesses-food-waste-partnerships/544526/>

⁸ https://floridadep.gov/sites/default/files/FinalRecyclingReportVolume1_0_0.pdf

⁹ <https://www.biocycle.net/2012/10/25/food-waste-composting-progress-in-the-southeast/>

¹⁰ <https://www.chainstoreage.com/store-spaces/waste-management-and-publix-open-composting-center-florida/>

¹¹ <https://www.businesswire.com/news/home/2011115007149/en/Waste-Management-Publix-Celebrate-America-Recycles-Day>

¹¹ <https://www.palmbeachpost.com/article/20130926/NEWS/812052199>

which came from human waste water. However, the County decided to shut down the program by 2014 since county residents produce more solid waste than the authority can process in the time-consuming process of making compost. Whereas it can take weeks to make compost, it takes just hours to make pellets, which are dried out and compressed balls of waste material about the size of peppercorns. Then, the County was paying around \$100/ton to process compost, whereas typical municipal solid waste typically costs around \$42/ton to process. While Palm Beach County's effort was shut down due to time constraints and costs of the effort, this still highlights an example of attempting to compost in South Florida and what can be learned from the endeavor.

Alachua County and Gainesville

In 2010, the Alachua County Department of Public Works, Division of Waste Management commissioned the Solid and Hazardous Waste Management Research Group at the University of Florida's College of Engineering to perform a municipal solid waste composition study. The study found that organics, like food waste, make up 18% of the waste stream, paper products make up 29% and plastics 16%.¹² At the commercial scale, organic materials can be attributed to a large amount of food waste from restaurants and multi-family complexes. The study reported that 80% of Gainesville's waste comes from commercial businesses, and of those are local restaurants which stand as Gainesville's third largest industry.

In 2013, the University of Florida was moving towards zero waste goals and began a composting program in the Ben Hill Griffin Stadium. The stadium used a separate bin for food waste which WCA hauled to Watson C&D, a composting operation in Levy County. Much of this compost was returned to the university to use with the turf on the football field as well as for research. Seeing its success, the dining facilities, particularly Fresh Food Company and Gator Corner Dining Services, started up a similar operation to divert the food waste that accumulated. Dining food waste, however, is hauled by the University of Florida instead of WCA. According to the Director of the Sustainability Office, Matthew Williams, and the Program Director, Liz Storn, the slow rollout of a composting program on campus has led it to divert about 450-500 tons of organic food waste per year. In looking towards further expansion, they are working on diverting food waste with dining facilities in the Reitz Union.

Presently, there is no widespread publicly-driven composting effort in the City of Gainesville or Alachua County. It should be noted that Watson C&D is currently the only facility in the region which accepts food waste but struggles with contamination issues that result inconsistent quality compost, which is hard to sell. It is unclear whether this facility is willing or available to accept additional food waste at this time. Some years ago, however, Alachua County had been working on plans for a regional solid waste facility, including a composting operation, on a property behind the Leveda Brown Environmental Park. Staff changes at the county seem to have stalled the project but this would be an ideal solution to current capacity challenges. Still, the Solid Waste division at the City of Gainesville's Public Works Department reports the potential to process some material on site at existing city facilities, particularly for a limited pilot project. At the moment, they are piloting the composting of street sweeping material which has been saving

¹² http://www.alachuacounty.us/Depts/SolidWaste/Info/Update%20Documents/AC_Report_Feb_2010_2.pdf

money in hauling and disposal plus producing a decent quality compost. The point stands, nonetheless, that there is a need to have a place to take and process collected food waste.

In envisioning a consistent and comprehensive Commercial Composting program in Gainesville, the city's Public Works Department will be an important driver and stakeholder. Though there is currently an open market system for commercial establishments to find waste haulers, Public Works reports an interest in looking beyond hauling, especially when it comes to our largest food waste producers (grocery stores and restaurants). Hauling just food waste, with no other product in the truck, can result in a slop that might slosh out and be hard to completely empty. There is the potential for some on-site processing at those locations with pulpers and dehydrators (which would reduce moisture content when hauling), disposals (which would release food waste into wastewater stream for processing down the line), and on-site composters (electric devices that accelerate the process on-site). There might be opportunities for creative public-private partnerships to reach Zero Waste in this sector.

Finally, moving forward, it should be noted that multi-family residential is considered "commercial" for hauling contract purposes. Because of variances between hauler contracts and general cooperation among residents, there is only a 3-4% residential recycling rate among these properties. There might be an opportunity to convert these buildings to "residential" hauling to standardize their services and increase oversight and participation. A caveat is that mixed-use buildings might need their own category but straight apartment and condominium buildings might be ripe for this type of opportunity.

PRELIMINARY RESEARCH AND FINDINGS

The following are examples of municipalities that have implemented commercial composting programs:

City of Seattle, WA

Seattle enforces a mandatory Compost Collection service in which all Seattle commercial operations must compost all food scraps (including meat, fish, dairy and produce), food-soiled paper, waxed cardboard, and yard debris. The program also requires that yard waste not be mixed with garbage, refuse or rubbish for disposal. To participate in this program and receive collection containers, businesses must contact their City of Seattle garbage service provider or another hauler of choice. The hauler will deliver an outdoor compost collection container and empty the container at least once per week. The city of Seattle's Code of Ordinances¹³ includes language on the food service business requirements. Seattle also prohibits food service businesses from providing disposable food ware and requires that containers for recycling and composting food service ware be made available.

Seattle employees have indicated that the main complaint of the program has been the smell of compost. The city has since recommended that people sprinkle their container with

¹³ Ordinance No. 21.36.086 found in Seattle Code of Ordinances Title 21 – Utilities, Subtitle III – Solid Waste, Chapter 21.36 – Solid Waste Collection, Subchapter I – General provisions.
https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT21UT_SUBTITLE_IIISOWA_CH21.36SOWACO_SUBCHAPTER_IISOWACO_21.36.086COREFOSEWARE

vinegar and/or a layer of grass clippings, citing that the solution has helped many users overcome the smell. Overall, citizens are happy and satisfied with the notion that far less waste is ending up in the landfill and being reused for soil and other purposes. Since the program became mandatory in 2010 for the purpose of achieving a higher participation rate, far more residents and businesses have enrolled and reported positive feedback.

City of San Francisco, CA

The City of San Francisco passed a Mandatory Recycling and Composting Ordinance (2009, updated 2019)¹⁴ which covers property owners' requirements for the program where they must:

- Provide Adequate Refuse Collection Service to the tenants, employees, contractors, and customers of the properties.
- Supply appropriate containers, placed in an appropriate location, to make source separation of recyclables, compostables, and trash convenient for the tenants, employees, contractors, and customers of the properties.
- Provide information and/or training for new tenants, employees and contractors, including janitors on how to source separate recyclables, compostables and trash, and must re-educate existing tenants, employees and contractors at least once a year.
- Work with on-site janitors to create effective source separation programs as a means of achieving compliance, meeting citywide diversion goals, and achieving the diversion or disposal rate reported annually to the State of California.

In 2009, the ordinance required only restaurants to compost in a 'pay as you throw' system. Now, the ordinance has extended from food vendor establishments to owners or managers of multifamily and commercial properties. The City currently works with one hauler to cover the entire municipality allowing them to establish a strong long-term relationship that can support efficiency through incentives. In order to implement the program city-wide, additional compost facilities had to be established.

Extensive outreach and education in the form of advertising through trade associations and onsite visits to business owners to educate staff was carried out to ensure a smooth transition into the ordinance. To address issues of smell, the city offered aerated pails wherein the top has holes and there are flutes inside the bucket to facilitate air travel. Also, compostable bags have been distributed and allotted for use, however many municipalities struggle with bags because often facilities cannot process the bags and they end up being discarded.

City of Boulder, CO

The City of Boulder, Colorado, utilizes a free-market system for trash, recycling, and compost. This allows for a market to be generated for haulers while costs are kept low and maintenance efforts are not the responsibility of the municipality. However, this makes it hard for Boulder city employees to measure specific data on waste collection numbers, as that is typically held by the hauling companies. It should be noted that Boulder, Colorado is similar in population

¹⁴ Ordinance. 10009, File No. 081404, App.6/23/2009 under the San Francisco Environmental Code Chapter 19: Mandatory Recycling and Composting
[http://library.amlegal.com/nxt/gateway.dll/California/environment/environmentcode?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:sanfrancisco_ca\\$sync=1](http://library.amlegal.com/nxt/gateway.dll/California/environment/environmentcode?f=templates$fn=default.htm$3.0$vid=amlegal:sanfrancisco_ca$sync=1)

size to Gainesville, with a population of 108,090 people as of 2016 and the University of Colorado Boulder campus reports enrollment of 35,230 students as of 2018.

The city has implemented Ordinance No. 8045 (2015)¹⁵ which establishes requirements for recyclables and compostables collection applicable to all business owners. Entailed are requirements for providing recycling and compost containers wherever there are trash containers, to be used by both employees and customers. Additionally, at least once yearly all business owners must conduct training to instruct all employees on how to use the designated recycling and composting containers. Then, picture-only signs are required to be provided at each recycling and composting container to indicate the appropriate materials to be placed in either one.

City of Portland, OR

The City of Portland suggests that businesses set up compost pickup service from one of the City's almost 36 permitted garbage and recycling companies. In Portland the garbage service for businesses is an open, competitive market—the City of Portland does not set rates. The City also does not require businesses to enter into a contract with a garbage and recycling company. The City itself exercises the following process:

- The commercial program which oversees waste, recycling, and composting collection services, is provided by private hauling companies to businesses and multifamily customers. BPS (The Bureau of Planning and Sustainability) establishes service standards, issues permits to haulers and ensures compliance with City requirements. [Commercial service is not franchised (rate-regulated) in Portland].
- Expenses for the City of Portland's composting initiative consist of staff salaries (34% of the budget) and external materials and services including professional services (66%) (e.g., contracts that support the residential rate review process, the purchase of recycling and composting containers for businesses and public trash can program). Also included is an interagency agreement with BDS (Bureau of Development Services) to resolve nuisance issues, and staff education and professional development.

In the greater region of Portland, there are currently about 1200-1500 businesses participating in the commercial composting process which began in 2005. The regional government in Portland is the entity in charge of both directing the collection of waste and determining where it is distributed. Given that participation is lower in number for smaller jurisdictions in the greater Portland area since the process is currently optional, municipalities are looking towards implementing a mandatory composting ordinance for commercial businesses. So, as opposed to a franchised commercial collection system or a free-market hauler system as seen in the city of Portland, businesses will be required to compost.

After years working with the open market system, Portland can now utilize its lessons learned and apply them to a mandatory program soon to be established. First off, Portland learned that the types of containers that work for businesses vary. It turned out that indoor

¹⁵ Boulder, Colorado – Municipal Code / TITLE 6 – HEALTH, SAFETY, AND SANITATION / Chapter 3 – Trash, Recyclables, and Compostables / 6-3-14. - Business Owner Requirements for Recyclables and Compostables Collection.
https://library.municode.com/co/boulder/codes/municipal_code?nodeId=TIT6HESASA_CH3TRRECO_6-3-14BUOWRERECOCO

containers for food scraps worked well when lined with bags that are either compostable or meant to be discarded with solid waste when the compostables have been tossed in their appropriate bin. It should be noted that a large majority of composting facilities do not process plastic bags - much less any items other than food scraps for cost related reasons - even if they claim to be compostable, so this will vary by municipality and facility.

In order to process the amount of compost that would be received with a mandatory composting ordinance, the city must consider investing in a new facility. This will likely require a regional government approach in which a contract with a company must be entered into for the opening of a new facility. Another question that comes with the proposal of a new facility is who would be in charge of where the waste goes after it is initially processed, as many facilities only grind or compost the waste, but few do both.

Communication was another lesson learned in Portland; it is important to clarify communication logistics between the business owner(s) and their employees, the hauler collecting material, and the facility receiving the waste. In the event there are issues of contamination or tipping fees, it is important to know who to contact and how before the program is implemented.

In terms of education and outreach, something essential for a streamlined implementation, the City of Portland has designated city employees within their Bureau of Planning & Sustainability to go to businesses and talk to their staff about issues and work to implement solutions. Ultimately, once a mandatory program has been initiated, ensuring that everyone is participating will be another consideration to attend to. The city has considered complaint-based enforcement wherein an employee performing something erroneously will be cause for a city employee to address the business and its employees. Then, there is the more equitable approach of going out on a regular basis or rotation to be proactive and ask businesses if they are doing things the right way; essentially enacting proactive enforcement.

City of Sonoma, CA

In the state of California, “starting April 2016, AB 1826 will require businesses that generate 8 cubic yards of organic waste to arrange for organic waste recycling services” and has since extended to businesses generating 4 cubic yards of organic waste.¹⁶ The City of Sonoma exercises an optional commercial composting program through a partnership with Sonoma Garbage wherein businesses have the option to:

- Source separate organic waste from other waste and participate in a waste recycling service that includes collection and recycling of organic waste on site, or it can be self-hauled off site for recycling.
- Or, subscribe to an organic waste recycling service that may include mixed waste processing that specifically recycles organic waste.
- Businesses can utilize free curbside food waste collection with their garbage service [note that the garbage service is not free; a 2-yard bin emptied once weekly costs \$201.64 per month, a 3-yard bin emptied once weekly costs \$297.23 per month, a 4-yard bin emptied once weekly costs \$393.29 per month].

¹⁶ <https://www.sonomagarbage.com/organic-commercial-recycling-laws.html>

- Commercial composting facilities are permitted with a use permit in agriculture. Rural development, residential, and coastal districts (Chapter 26, Articles III, 06, 08, 10, & 16).

City of Austin, TX

In the City of Austin, Texas, there is a commercial composting program set up wherein qualifying businesses can earn up to \$1,800 in rebates to start, expand or improve recycling, composting or other zero waste programs.¹⁷ From there, it is up to the businesses to decide what methods to use. Some of their options include feeding hungry people by donating to food banks, feeding animals, composting either on-site or through a private service provider, or other alternative and innovative means.¹⁸ This program was introduced under The Universal Recycling Ordinance (URO),¹⁹ where organic diversion requirements support Austin's Zero Waste goal by ensuring that employees of food permitted businesses have convenient access to landfill diversion methods for organic materials (e.g. food scraps or soiled paper products). Austin intends for the URO to not only increase the life of local landfills, but also reduce harmful environmental impacts, and encourage economic development.

PRELIMINARY COST/BENEFIT ANALYSIS

Benefits²⁰

- Environmental
 - Second-most preferred method for managing waste ²¹
 - Reduces the amount of waste deposited into local landfills
 - Decreases pollution potential and increases land space
 - Using composts makes the soils stronger biologically, physically, and chemically, which helps prevent and remediate pollution.
- Social
 - Opportunity for community involvement as it is a local level operation
 - A gateway for furthering other environmental initiatives as it introduces 'green' values into the community and households
 - Increased public education on where our waste goes
 - Consumer and citizen awareness is improved as education on composting and its processes are learned by those involved.
- Economic
 - Extends the longevity of landfills and delays the construction costs of new ones
 - Reduces and avoids landfill tipping fees and the collection/transportation costs

¹⁷ <https://www.austintexas.gov/zwbizrebate>

¹⁸ <https://www.austintexas.gov/bizorganics>

¹⁹ https://library.municode.com/tx/austin/codes/administrative_rules_for_solid_waste_services?nodeId=CH15-6SOWASEDMRU_8.0UNREORURRU

²⁰ <http://www.ffc.agnet.org/library.php?func=view&style=&id=20110804100401&print=1>

²¹ <https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy>

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Commercial Composting Program

- Creates a marketable product with jobs for those involved in the pickup, processing, and distribution of the compost
 - According to a study by the Institute for Local Self-Reliance in 2013, composting operations in Maryland sustained more total jobs than the state's incinerators.²²
- Better managed hauling fees when we aggregate all commercial pick-ups with one provider

Costs

- Environmental
 - The nutrient value of compost is lower than chemical fertilizers, and its composition is highly variable.
 - Long-term and/or heavy application of composts to agricultural soils has been found to result in salt, nutrient, or heavy metal accumulation and may adversely affect plant growth, soil organisms, water quality, and animal and human health.
- Social
 - Agricultural users have concerns about compost contaminants, especially made with solid wastes, that may seep into the food supply if it is used on food crops
 - Educational materials need to be extensive to ensure residents are compliant and not contaminating the waste streams with items that cannot be composted.
 - Residents are deterred by the "ick" factor.
- Economic
 - The product is weighty and bulky, which makes it expensive to transport
 - Cost of compost in the area is high at \$25/30 yards according to a Watson C&D representative
 - The need for more composting capacity either through conversion/expansion of an existing facility or the construction of a new one.

PRELIMINARY AND ILLUSTRATIVE LIST OF POTENTIAL STAKEHOLDERS
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People Interviewed

- Brad Avery, former WCA employee
- Jim Bacom, Watson C&D Sales Manager
- Arianne Sperry, Portland Recycles! Coordinator
- Kevin Drew, City of San Francisco
- Matthew Williams, Director of the Office of Sustainability at UF
- Liz Storn, Program Coordinator for the Office of Sustainability at UF
- Employee at Boulder, Colorado Zero Waste Office
- Steve Joplin, City of Gainesville Department of Public Works

²² <https://ilsr.org/wp-content/uploads/2013/05/Pay-Dirt-Report.pdf>

Potential Partners

- United States Composting Council, a national, non-profit trade and professional organization promoting the recycling of organic materials through composting
- Sustainable UF
- Solid Waste Division, Department of Public Works of the City of Gainesville
- Dr. Ann C. Wilkie, Leader of the BioEnergy and Sustainable Technology Laboratory at the University of Florida
- Zero Waste Gainesville

RECOMMENDED POINTS FOR FURTHER RESEARCH/DISCUSSION

Preliminary Challenges Identified through this Research Include:

- The need for a local facility to process the required volume of material
- The varying capabilities of existing commercial haulers operating in Gainesville
- Identifying markets for the finished compost product. The product's quality affects its value and quality is impacted by factors beginning at source separation.
- A comprehensive education campaign will be necessary to ensure consistent compliance.

ADDITIONAL RESOURCES

Zero Waste in Gainesville

The following attachments are included on the City Commission Meeting Agenda for January 17, 2019 under Ordinance 170487.

170487_Zero Waste_20171026 .pdf

170487_Zero Waste Presentation_20171026.pdf

170386C_Zero Waste Proposal Presentation_20180322.pdf

170386D_draft ordinance for discussion_20180322.pdf

170386A_Zero Waste Budget and Timeline Memo_20180419pdf.pdf

170360 Zero Waste Recommendations for the City to Reach Zero Waste Goals 20170907 .pdf

Budget

<http://budget.cityofgainesville.org/#!/year/2019/operating/0/unit/Refuse+Collection/0/fund>
p. 131 of City Budget

<https://www.cityofgainesville.org/Portals/0/bf/PDF%20for%20website.pdf>