

COMMITTEE MEMORANDUM

TO: Land Use and Sustainability Committee

FROM: Rickelle Williams, Interim City Manager

DATE: June 10, 2024

TITLE: **DISCUSSION REGARDING RECOMMENDATIONS FOR A POTENTIAL COMPOSTING PROGRAM**

HISTORY:

On March 19, 2024, the Land Use and Sustainability Committee discussed item 7 and provided recommendations for the expansion of the City's community composting program; directing City staff to explore four (4) options:

1. Community program to provide small-scale in-home food waste processing equipment;
2. Compost program at City Hall;
3. Additional locations around the city for compost drop-offs; and
4. Explore incorporating composting into the new waste hauler agreement.

On February 21, 2024, the Mayor and Commission referred a discussion item (C4 L) to the Land Use and Sustainability Committee to discuss recommendations for a potential composting program. This item is sponsored by Mayor Steven Meiner,

ANALYSIS:

Miami-Dade County, like many other communities, does not have authorized large-scale public composting facilities. Small-scale community programs have become an integral part of the reduction of food waste and greenhouse gas emissions. The City of Miami Beach has two successful composting hubs located at the North Beach Compost Hub (85th St and Collins Ave) and the Miami Beach Botanical Garden (MBBG). The City is currently in the process of creating a Mid Beach hub in the parking lot at 4000 Chase Avenue. The hubs are managed by the MBBG, which has been a great partner in expanding community composting.

Composting turns organic waste into a rich, soil-enhancing amendment by layering nitrogen-rich "greens" and carbon-rich "browns" and keeping them moist and aerated, allowing microorganisms to break down the material. Diverting food scrap waste into a regenerative system can improve the health of the soil and provide multiple community benefits through a closed-loop system.

The Environment & Sustainability Department is currently working on the City's first Climate Action Plan (CAP). The goal of the CAP is to prioritize actions to reduce GHG emissions community-wide, to reach the City's emissions reduction goal of net-zero GHG emissions by 2050. One of the proposed actions of the CAP is to compost 25% of organic waste that is currently landfilled. Expanding the City's community composting program has the potential to enhance the City's sustainability efforts by reducing waste sent to landfills, lowering greenhouse gas emissions, and creating nutrient-rich soil amendments for local gardening and landscaping projects. The success of existing initiatives, such as the composting hubs and workshops in collaboration with the MBBG, as well as the distribution of free compost bins by the Surfrider Foundation through their Miami Beach Rising Above grant project, highlights a growing interest and participation among residents.

Options

The following information contains research, recommendations, and cost estimates for the four options directed by the Committee. The options range from in-place processing equipment to a broader expansion of compost hubs. It is notable that working with the Miami Beach Botanical Gardens may incur the cost of part-time compost manager for options two (2) and three (3).

Option 1: Small-Scale Food Waste Processing Equipment Program

The first option directed by the Committee would launch a pilot program to provide a select number of residents with small-scale food waste processing equipment for their home kitchens. These devices reduce the volume and weight of waste. Although the initial cost for the devices may be prohibitive for many households, a bulk purchase, rebate, or subsidized cost program could encourage adoption. This equipment could also be attractive to residents who live in multi-family units without access to sufficient space for backyard composting.

There is also the possibility of using the equipment as a component within the other scenarios, which presented within throughout this memorandum. The equipment could prove to be an appropriate tool to test compost collection in, and not just serve the purpose of being provided to individual households.

This innovative technology would require thorough planning, community engagement, and training to ensure successful implementation. Market research was conducted and, after researching various equipment options, devices like Mill and Reencle are examples reviewed due to their larger capacity, ease of use, and experience with municipal partnerships.

Mill has developed a food recycler that turns food waste into shelf-stable grounds by dehydrating and grinding it. It's important to note that Mill does not produce finished compost and that the end product would need to be integrated into a full compost system, whether through Mill's collection program or by working with the MBBG. Mill has previous experiences working with municipalities.

The Reencle composter decomposes food waste through its proprietary microorganism, ReencleMicrobe, a supplemental compost starter that is added to the device to decompose food waste and produce finished compost, unlike Mill. Reencle has experience partnering with large organizations, such as Crespi High School in Los Angeles, California.

If the pilot program involves 200 participants using the Mill or Reencle food waste processor as examples through market research, taking into account bulk discounts, the cost estimate is as follows:

Brand	Price/Unit	Lower Bound Cost	Upper Bound Cost
Mill	\$650 - \$850	\$130,000	\$170,000
Reencle	\$280 - \$350	\$56,000	\$70,000

The City could work to negotiate discounts or rebates such as \$100 per unit, with 20 'giveaways' to generate interest and participation. Note that the City's competitive procurement process would need to be followed, and this information is being presented as market research only. While the Committee asked that staff investigate bulk purchasing and distribution, this is not a service that the City has capacity to provide.

Depending on the type of equipment purchased, the product would be dehydrated food waste or finished compost. If the product is dehydrated food waste, it would be transferred to a Compost Hub for processing. MBBG recommends testing of the materials to ensure the final product meets nutrient standards and enhances soil quality, which has an added cost of \$6,400 - \$15,220.

Option 2: Compost Program at City Hall

A drop-off bin system at City Hall offers an option for organic waste collection that is accessible for City staff to dispose of compostable materials. Smaller bins would be placed in shared locations throughout City Hall in high volume foot traffic areas that are accessible for the pickup team. Additional considerations would be coordinated with Facilities and Fleet Management Department. Potential bin locations could include the employee lounge on the first floor of City Hall or the outside breezeway where employees have lunch and is easily accessed. The material would be picked up from the small bins and would then be transferred to a large final bin.

There are two ways to achieve this:

(A) City Hall food waste transported to Miami Beach Botanical Garden Compost Hub

The collected material can be taken to a Compost Hub for processing into compost in partnership with Miami Beach Botanical Garden (MBBG). MBBG recommends two pickups per week; however City or janitorial staff would need to transfer the compost to the Garden. Funding would be required to cover labor and material costs. With the support of the MBBG, the pilot composting program at City Hall would require about \$15,000 - \$20,000 in the first year. This would include the cost of building new stalls at the MBBG for increased processing capacity. Additionally, MBBG advised they may need to hire an additional compost manager to work on processing, programming, administrative tasks, and chemical analysis for an annual cost of \$31,000. The overall cost estimate for the first year is \$46,000 - \$51,000.

(B): City Hall food waste placed in on-site small or medium-scale processing equipment

Another option is to install small or medium-scale food waste processing equipment at City Hall. This equipment yields an odorless, shelf-stable product that reduces the need for frequent transportation. Depending on the type of equipment purchased, the product would be dehydrated food waste or finished compost. If the product is dehydrated food waste, it would be transferred to a Compost Hub for processing. MBBG recommends testing of the materials to ensure the final product meets nutrient standards and enhances soil quality. In lieu of the small-scale equipment previously discussed, a larger dehydrator can be acquired to increase the capacity for collecting food waste. The estimates are: small equipment \$840 - \$4,250 for three (3) to five (5) bins; or a larger dehydrator is \$20,000 - \$56,000; and the cost for testing is \$6,400 - \$15,220. The overall cost range estimate is: \$7,240 - \$71,220.

Option 3: Expanding Drop-Off Locations

The Environment and Sustainability Department, with the support of partner departments, is developing a Compost Hub that will serve the Mid-Beach community, similar to the ones at North Beach and the Miami Beach Botanical Garden (MBBG). The hub is planned for the center of the parking lot at 4000 Chase Ave. Once this location is complete, the three areas of the City will be served: North Beach, Mid Beach, and South Beach. One way to increase participation with composting is to increase the number of drop-off locations.

There are two ways to achieve this:

(A): Mini-Hubs

One way is to create mini hubs where organic waste can be processed into compost. These would be smaller than the main compost hubs, which would serve as the "flagship" hubs with smaller offshoots. However, though the mini hubs are smaller, there is not a significant cost savings from the implementation of a main compost hub since four (4) full-size compost stacks would still be required

significant cost savings from the implementation of a main compost hub, since four (4) full size compost stacks would still be required as the minimum. There are several considerations to examine when selecting a location, including accommodating for a minimum area of 200-square feet to house the four (4) stacks. Locations would need to be coordinated with the Parks and Recreation Department and acceptable to the neighboring residents. Funding would be required to cover labor and material costs. With the MBBG's support, the buildout of mini hubs cost estimate is \$71,000 – \$73,000 for the first year, which would increase depending on the number of hubs built. The subsequent annual operational cost would be \$63,000. The facilitation and administration of additional compost hub locations may necessitate MBBG hiring an additional part-time compost manager, and the facilitation and administration may require additional support from MBBG administration. Estimates include: Buildout per mini hub: \$10,000 - \$12,000; annual salary for manager: \$31,000; garden facilitation and administration: \$30,000; Education and outreach events: \$2,000 per event. The overall cost estimate for the first year is: \$73,000 - \$81,000.

(B) Youth and Recreation Center Food Waste Processing Equipment

Another option would be to install small or medium-scale food waste processing equipment in youth centers. Youth centers are already community hubs and a natural point for educating youth and their families about responsible waste management and composting. Families would have a convenient location to drop off food waste which can then be processed. Depending on the type of equipment purchased, the end product would be dehydrated food waste or finished compost. The following locations have been identified as possible locations for food waste dehydrators: Flamingo Park PAL Gym, Scott Rakow and North Shore Youth Center. Funding would be required for the purchase of equipment and to pay for labor. Each of the three (3) youth centers could have between three (3) to five (5) pieces of equipment with a total cost ranging from \$2,520 to \$12,750. It is important to conduct tests on the dehydrated material to ensure safety of the compost. A larger dehydrator can be acquired to increase the capacity for collecting food waste. The larger dehydrator must possess a minimum capacity of approximately 150 gallons per week, which is comparable to the stacks present at the North Beach Compost Hub. Estimates include: Cost of small equipment: \$840 - \$4,250 for three (3) to five (5) bins; or cost of large dehydrator: \$20,000 - \$56,000; and cost for testing: \$6,400 - \$15,220. The overall cost estimate per youth center is: \$7,240 - \$71,220. For all three youth centers, the overall cost estimate is \$21,720 - \$213,660.

Scenario 4: Incorporating Composting into Waste Hauler Agreements

The Public Works Department has explored the feasibility of including compost services as part of the new waste hauler contract negotiations. However, since there are no authorized industrial composting facilities in Miami-Dade County, this poses challenges as the City of Miami Beach does not have the available land or zoning to create a large-scale composting operation. Miami-Dade County is currently working on a long-term Zero Waste Master Plan that will include short-, medium-, and long-term planning for the disposition of Miami-Dade County's waste stream. It will identify solutions to meet the Miami-Dade County's solid waste needs. This project seeks to identify measures and paths towards implementation of programming and needed infrastructure to reduce waste and improve and increase recycling and organics processing in a manner that is consistent with State laws and regulations.

CONCLUSION:

The options presented support the reduction of food waste, increase community interest in composting and reduce greenhouse gas emissions through the creation of nutrient-rich soil amendment. The Administration recommends that the program begin as a pilot program. For option 1) Residents: staff can work with vendors to see if there could be a discount for homeowners and offer a rebate of \$100. This option would have an estimated cost of \$35,000. For option 2) City Hall: equipment can be purchased and deployed to encourage staff participation and to become more familiar with the compost process. This option would have an estimated cost of \$19,000 for small-scale equipment and \$71,000 for medium-scale equipment. For option 3) Youth and recreation centers: the City can purchase small- and medium-scale equipment which would allow the testing of the different use cases for this equipment and community participation for a cost estimate of \$28,000 for small-scale equipment and \$183,000 for medium-scale equipment. Based on market research, the overall cost estimate is \$82,000 if using small-scale equipment and \$289,000 if using medium-scale equipment. Note that the use of small-scale equipment has less processing capacity than the medium-scale equipment. The options are presented for the Committee's review, consideration, and potential forwarding to the City Commission for approval to be prioritized in the FY 2025 budget process.

Applicable Area

Citywide

Is this a "Residents Right to Know" item, pursuant to City Code Section 2-14?

Yes

Does this item utilize G.O. Bond Funds?

No

Departments


Environment and Sustainability

Strategic Connection

Environment & Infrastructure - Work regionally and nationally to protect Biscayne Bay water quality and to maintain a healthy dune and beach system.

ATTACHMENTS:

Description

 Referral Memo from 2/21/24 Commission

Type

Memorandum

