

January 4, 2024

**To:** Mayor and Members of City Council

**From:** Sheryl M.M. Long, City Manager

**202400037**

**Subject:** Long-Term Upgrades for the Yard Waste Removal Program

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### **Reference Document #202300958**

The City Council, at its session on March 29, 2023, referred the following item for review and report:

MOTION, submitted by Councilmember Cramerding, WE MOVE that the Administration prepare a second report that outlines the cost, feasibility, and timeline for long-term solutions to improve the City's yard waste program. The report should, at a minimum, address the program constraints as listed on page 3 of Item No. 2023-00558. Additional solutions to be considered should include but not be limited to:

- The potential for alternative waste providers to accept yard waste.
- Combining the natural collections with the City's yard waste program with the biochar pilot program, thereby using residents' yard waste to create biochar and supplement the ongoing efforts of the Parks Department.
- In addition, the report should include the types of third-party end users that may benefit from use of the compost created by Rumpke, including whether the City would be able to request having compost be delivered back for use in City operations such as Parks or Recreation outdoor greenspaces.
- Any other recommendation to improve the program.

### **Yard Trimmings Program Background**

The City's source separated yard trimming program was started in the 1990s, initiated to comply with Ohio Law HB 592. The program's history, status, challenges, and opportunities are outlined in recent reports to Council (2023-00558, 2023-02409). Key aspects of these reports are summarized here.

Currently, the City has a contract to deliver yard trimmings collected from residents to the Rumpke Sanitary Landfill in Colerain Township. The City provides curbside yard trimmings collection bi-weekly from April to January to respective solid waste customers. The current agreement for yard trimmings disposal with Rumpke has an initial term that expired at the end of February 2023, with three one-year renewal periods extending as late as February 2026.

Rumpke currently meets State requirements for collecting, separating, and disposing of yard trimmings. Rumpke uses the City's curbside collected yard waste as daily cover in the sanitary landfill which is helpful in odor control at the facility. This practice is compliant with State law but

diverges from the City's current environmental sustainability goals outlined in the 2023 Green Cincinnati Plan (GCP). The GCP includes goals to divert organics from landfills, thereby reducing greenhouse gas emissions, increasing landfill capacity, and creating a circular economy.

## **Program Constraints**

The current yard trimmings program has constraints identified below (from page 3 of Document No. 202300558) that point to the need for long term solutions. Some practices that could be implemented to align City sustainability goals with the yard trimmings program were previously explored in Document Nos. 202300558 and 202302409. Additional long-term solutions to these constraints are presented in the following section.

- 1) *Participation in the City's yard waste collection program is not mandatory although commingled yard waste is prohibited; however, residents are still not completely separating out yard waste from curbside garbage collection.*
- 2) *Ohio law allows Rumpke to accept in some instances yard waste at their sanitary landfill, and Rumpke is permitted by the Ohio EPA to use compost as alternative daily cover at the landfill.*
- 3) *Ohio law does not expressly provide the Ohio EPA authority to regulate transporters of yard waste or require generators of yard waste to source-separate for delivery to a particular facility.*
- 4) *The contract between the City and Rumpke does not restrict yard waste or compost from being placed in their sanitary landfill including as alternative daily cover.*
- 5) *Rumpke does not have a third-party end user for the yard waste that it composts. The City has not identified potential third-party end users of the compost. The City as a potential end user has not requested the compost be delivered back for use in City operations.*

## **Potential Long-Term Solutions**

### **A. Solicitation for Solutions**

The City has recently issued a Request for Proposals (RFP RFP019\_2024) to solicit yard trimming collection, processing, and mid- and end-market solutions. As part of this solicitation, 1) bidding venders have been notified that they will be prohibited from landfilling collected yard waste or compost including as daily cover, and 2) processors and mid- and end-users of yard trimmings and compost have been requested to propose sustainable service solutions that support a circular economy.

The RFP is hoped to provide details on the local market options available, including collection, processing, and cost information for yard trimmings. The Administration believes that this next step coupled with the County's organics management planning, described below, will help to better understand best options for aligning the yard trimming program with the environmental sustainability goals of the City. The RFP is open for responses until January 11, 2024. A new yard trimmings contract is anticipated to be in place by August 2024.

### **B. Organics Management Planning**

In alignment with the Hamilton County Solid Waste District Plan, Hamilton County R3Source, Recycling, and Solid Waste District has recently solicited for professional services to prepare an Organics Processing Feasibility Study. The District has awarded the project to GT Environmental with the anticipation that the study will be completed in 2024. The Administration believes this study will complement the results of the Recycling RFP described previously.

As part of the organics management study, the consultant will evaluate:

- 1) Potential organics diversion from Hamilton County and the surrounding region including processing needs, generation estimates, infrastructure landscape, and mass balance.
- 2) Recommend the best processes and infrastructure or combination of opportunities to effectively manage organic material including existing facilities and infrastructure with a

footprint analysis, technical evaluation, case studies, and sample public-private-partnership models.

- 3) Research and recommend available potential locations for facility(s) with siting criteria, siting recommendation, and probable cost estimate.

### **C. Anaerobic Digestion**

Anaerobic digestion is a proven technology to sustainably manage organic waste used around the world. This process uses bacteria to break down organic matter in the absence of oxygen, producing renewable gas and digestate as byproducts. Two anaerobic digestors are in the design-build stage locally. The first will be located in St. Bernard and plans to accept organic waste from industrial food processors. It will not accept organic material from residential sources. This will make recoverable gas although there is no diversion plan for the digestate, which will be landfilled at a reduced volume of about 90%. The second will be located within the City at the Little Miami Wastewater Plant to process sewage, operated by the Metropolitan Sewer District. Siting and permitting for anaerobic digestors is complex, and the timing for these digestors to enter operation is unknown.

Neither of these anaerobic digestors is currently planning to receive yard trimmings as a feedstock, but they help build new solutions and end markets for organic waste. An anaerobic digester solution to process residential and commercial yard trimmings and food waste can be designed and built according to specific feed stocks or carbon-nitrogen ratios; however, one has not yet been brought forward locally. This regional solution to yard trimmings and food waste management could be funded through the various partnership models or potentially through federal funding.

### **D. Composting & Mulching**

Ohio law defines composting as a method of solid waste disposal using controlled biological decomposition. The state's solid waste composting regulations require that a facility obtain a registration, license and/or permit. The law regulates the types of wastes that can be accepted for composting, operational requirements of the facility, and testing requirements for the finished product prior to distribution. The City and County do not currently operate a registered composting facility. However, there are privately operated registered composting facilities in the region.

Composting activities occurring at a residence and those activities using less than 500 square feet at a non-residential location are not subject to Ohio's composting regulations. A network of small-scale composting facilities is locally feasible, and this model has been successfully orchestrated in Cleveland. However, a facilitator, outreach, resources, and end-markets for such a public-private partnership have not been locally developed.

Hamilton County operates yard trimmings drop-off locations from March to December each year, located at Oakdale Elementary School in Green Township, Bzak Landscaping in Anderson Township, and Rumpke Sanitary Landfill in Colerain Township. The County reports that all material dropped off at these sites is composted.

Mulching is another environmentally acceptable application of yard trimmings, and it is not subject to the same regulatory restrictions as compost. Woody content that is often included in yard trimming collections works well as a feedstock for mulch. There are several private mulch producing facilities located in the County that currently provide a volume-limited solution for some of the regions woody yard trimmings.

The Organics Management Study and the Recycling RFP described previously are the next steps in evaluating feasibility of composting and how yard trimmings along with food waste may be best managed. This may include technologies such as in-vessel composting, tunnel reactor composting, bunkered compost-covered aerated static pile, and agitated bed composting.

## **E. Biochar**

The Park's Department is currently in the site-design phase of a municipal scale biochar production facility. This pilot project is in its infancy with the goal of repurposing wood debris generated through municipal tree care into a soil amendment used to increase the growth rate and survivability of the City's urban forest. Upon approval of the Board of Park Commissioners, the production facility will be located at Warder Nursery and operated by a third party under the oversight of the Division of Natural Resources. The proposed operations model is to sell the majority of the biochar in bulk, to pay for the cost of annual operations and maintenance of the machine as needed.

In addition to the Park Board of Commissioners, Great Parks of Hamilton County have substantially invested in this pilot project with the intention of addressing the manure waste generated at Parkey's Farm. Therefore, the supply of compost needed to charge the biochar with nutrients for tree planting objectives and sales is not currently necessary. The City yard trimmings program could be modeled to provide one or more roles in the biochar supply chain within the current project scope, but this would require designated drop off locations for brush and wood waste and funding for chipping, collection, and transport of the material.

Future applications for biochar creation should model and complement this pilot. Therefore, further assessment of facility siting, compost processing, and/or compost transportation could be part of the operations model in the future. The Recycling RFP and Organics Management Plan previously described are anticipated to provide needed market information to support next steps such as these.

## **F. Volume-Based Pricing Incentives - Pay As You Throw**

Many communities incentivize responsible disposal of waste, organics, and recyclables by implementing Volume-Based Pricing, commonly called pay-as-you-throw (PAYT). PAYT is a variable-rate pricing structure that charges households based on the amount of trash they produce. This model reflects the true cost of waste generation and incentivizes recycling and composting practices at the household level. There are more than 7,000 thousand PAYT communities in the US, and over 200 PAYT programs in Ohio.

PAYT is considered a best management practice for waste diversion and has consistently delivered significant reductions to average household landfilled waste in communities where implemented. It has the added benefit of generating revenue to help offset the cost of waste collection and fund implementation of waste diversion solutions. Revenue from a PAYT model could be used to support the siting and operation of a community composting facility as an example of scaling up yard trimming collection and processing infrastructure locally.

Implementation of volume-based pricing may require changes to the City's Charter Article XVI which states:

*"The City, including its various Boards, agencies and departments, shall not assess, levy or collect any tax or general assessment on real properties, or against the owners or occupants thereof, for the collection, transportation or disposal of trash, garbage, waste, rubbish or refuse."*

## **G. State and Local Law Compliance**

State and local regulations provide constraints and opportunities in aligning yard trimmings management with sustainability goals. State yard trimmings and composting law can be found under Ohio Administrative Code (OAC) 3745-27-19 and 3745-560, respectively, and are not directly within the control of the City.

As described above, State law affects source-separation, transportation, and landfilling of yard trimmings. State law permits Rumpke to use the City's yard debris as alternative daily cover, although this is not aligned with the City's environmental priorities.

Within this context of state law, the City could consider 1) policies to require specific practices in disposing of yard trimmings; 2) support environmentally sound practices in the development of state regulations and regional waste plans; and 3) amend city administrative regulations to require specific practices in procurement and contracting for city services and operations.

The City's Municipal Code (CMC) Chapter 729-88 states: "*Yard waste materials from a dwelling shall not be co-mingled with other waste if the city provides separate yard waste collection.*"

Without strong end-market options for yard trimmings, near-term enforcement of the yard trimmings separation requirement presents an administrative burden with limited benefit. When strong end-markets for this material are established, enforcement then becomes important for minimizing contamination and maximizing landfill diversion.

The previously described City Recycling RFP and County Organics Management Plan are mechanisms the Administration is using to evaluate potential long-term end-market yard trimmings collection and compost solutions. In concert with potentially identified solutions, the Administration may also consider programmatic revisions to provide operational reliability and technical support, resident education, confidence, and compliance support, and administration management and enforcement support.

#### **H. Federal Funding**

The Investment in Infrastructure & Jobs Act (IIJA) and Inflation Reduction Act (IRA) mark significant federal investment in infrastructure, clean technology, and climate solutions. The reduction of methane emissions driven by organic waste production are one of the priorities receiving funding. The City is actively pursuing funding opportunities that support long-term organic waste solutions, including grants from the U.S. Environmental Protection Agency (USEPA) and the U.S. Dairy Association (USDA). The Investment Tax Credits of the IRA are reshaping the financing options for clean energy projects, including the biochar and anaerobic digestion projects.

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