LEXINGTON

WASTE DIGESTER TASK FORCE REPORT OUT

Environmental Quality & Public Works Committee
December 3, 2024
Nancy Albright, Commissioner, Environmental Quality & Public Works

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Task Force Members

- Dave Sevigny – 10th District Councilmember, Chair
- Hannah LeGris – 3rd District Councilmember
- Jennifer Reynolds – 11th District Councilmember
- Nancy Albright – Commissioner, Environmental Quality & Public Works
- John Howard – Deputy Director, Waste Management
- Alicia Larmour – Council Research Analyst
- Kendra Thompson – Council Research Analyst

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Task Force Background

2015 and 2022

- LFUCG staff and council members visited Sevier Solid Waste in Sevierville, TN.
- Toured the facility and learned about its waste digester.
- Discussions on composting options continued.

May 2022

- Commissioner Albright presented to the EQPW Committee on Sevierville waste digester tours.
- A feasibility study of waste digesters in Lexington was recommended.

October 2023

- Commissioner Albright presented the results of the Waste Digester Feasibility Study to the EQPW Committee.
- The consultant recommended Source Separated Organic Aerated Static Pile composting.

November 2023

- VM Wu formed the Waste Digester Task Force to further review the study's 3 composting options.
  - Rotary Drum Digester
  - Tunnel Reactor Digester, and
  - Aerated Static Pile

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Purpose

More vigorously review the August 2023 Feasibility Study In-Vessel Waste Composting Digester Solution Report.

Understand the financial, operational, and environmental impact of proposed solutions.

Determine the solution investment that aligns with Imagine Lexington 2045 for which the city should plan and prioritize.

Timeline of Work

- **January 18, 2024**
  - Established our purpose and scope of work and set expectations.

- **February 1 & 15, 2024**
  - Extensively reviewed the consultant's report and formed questions for the consultant.

- **March 21, 2024**
  - Held a virtual Q&A meeting with Jamie Zawila from GT Environmental and Craig Coker from Coker Consultants
  - Planned composting and waste facility tours.

Timeline of Work (continued)

- **May 9, 2024**
  - Held a virtual Q&A meeting with US Composting Council Executive Director Frank Franciosi, and Rich Riedel (Virginia Composting Facility)
  - **Voted to remove the Rotary Drum and Tunnel Reactor Digesters from further discussions.**
    - The Rotary Drum Waste Digester has higher capital, operational, and maintenance costs. Due to contamination rates, it is seen less frequently in other municipalities (only four remain as of 2023). It would require a larger scale to handle the amount of our waste.
  - **Voted to focus on Source-Separated Organics Aerated Static Pile (SSO ASP) composting.**
    - The SSO ASP has lower capital, operational, and maintenance costs. It can be more easily scaled to handle our waste (2 – 3 bunkers). It is easier to pilot-test and is commonly used in the US with over 300 current programs. Currently, about 32% of our divertible waste stream is suitable for the SSO ASP composting stream. Additionally, it supports the 2045 Comprehensive Plan and 2023 Empower Lexington Plan.

Timeline of Work (continued)

- **August 13, 2024**
  - Visited Smith Creek's composting facility in Borden, IN
    - The Task Force is interested in pursuing a composting model like this.

165-acre facility focusing on grocery, manufacturing, and restaurant food waste.

Manages Louisville Metro's Central Business District's composting program.

Before composting, there is about 30,000 tons of waste on 22 acres; after composting, there is about 80,000 tons of waste on 15 acres.

80% of the cost for composting needs to be collected from the supply side.

20% of their income comes from end-user product sales.

Their suppliers are fined/billed for any contaminated material they send to the facility.

It was a hot day, but no smell was noticed.

Timeline of Work (continued)

- **August 21, 2024**
  - Visited UK's Food Waste & Organics Diversion Program – student center and farm/research facility in Woodford Co.

All prep and post-food waste at the Student Center is ground into a sludge/slurry.

Most establishments on campus participate in at least the prep side of food waste collection.

They use washable utensils and plateware.

They switched to brown napkins as they compost better.

All their product is used on campus property.

In November, a new on-campus system on < 2 acres began operating. It creates compost in 21 days.

Timeline of Work (continued)

- **August 22, 2024**
  - Visited Waste Management's Landfill in Morehead, KY

Trucks and transport are the biggest carbon emitters in the collection process.

An example of landfills reducing their carbon footprint by generating electricity or vehicle fuel on-site.

Gas is captured to generate power.

An on-site grid allows it to connect for electricity.

In general, landfills compact 1 ton per cubic yard.

The facility grounds were clean and did not smell.

How do We Prepare for Success

- Addressing contamination is key
  - **Our current contamination rates**
    - Recycling: 30 – 35%
    - Yard waste: 50 – 60%
  - **National contamination rates**
    - Recycling: 17%
    - Yard Waste: no average contamination rate for municipal yard waste available because so few municipalities do it
- To have the greatest impact, most efficiently, contamination should be addressed first

Task Force Recommendations

- **Recommendation #1**
  - Develop and begin implementation of a recycling and yard waste contamination reduction plan by 12/31/2025.
  - Reduction plan could include:
    - Workgroup creation
    - Public outreach and education
    - Marketing
    - Modification of ordinances and/or resolutions
- **Recommendation #2**
  - Develop and implement aerated static pile (ASP) composting as an offering to commercial clients by 12/31/2027.
- **Recommendation #3**
  - Develop and implement ASP composting as an offering to residential clients by 12/31/2029.
- **Recommendation #4**
  - EQPW staff will update the committee every six months beginning July 1, 2025, until implementation is complete

Costs and Funding

- Current costs
  - <$75,000 (Professional Services-Solid Waste) to develop the recycling and yard waste reduction plan
- Future costs
  - FY 2026- TBD-Implementation of pilot contamination reduction plan, Educational and marketing materials, additional staff, violation tracking, etc.
  - FY 2027-2029-Capital cost ^$8 million for ASP facility (per study)
  - FY 2027-203X Operating cost per year ^$1.4 million + collection cost method TBD (per study)

- Sources of funding
  - Budget request(s) from Environmental Quality & Public Works
  - Urban Services Fund Balance and Annual Ad Valorem
  - Landfill Fund Balance and Annual Fees
  - Potential grant opportunities (e.g., KY Pride Composting, EPA, USDA)

Questions?

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