

Enhancing Loudoun County's Waste Reduction Plan: A Comprehensive Report

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## Abstract

Like the Commonwealth of Virginia, Loudoun County has a robust recycling program. While Virginia only has a mandatory effective recycling rate of 25% per year, Loudoun has an effective recycling rate of 36% per the Virginia Annual Recycling Summary Report for CY 2021<sup>1</sup>. Recycling remains an important and effective component of Loudoun's waste management services, however, there is little to no diversion of compostable organic materials from the Loudoun County landfill. I conducted an informal survey of 5 restaurants, 2 supermarkets, 30 residents, 1 business in Eastern Loudoun County and 1 restaurant in Western Loudoun. This survey revealed that food scraps from all 5 Eastern Loudoun restaurants and the 1 business ended up in a Loudoun County landfill. Food scraps from the 1 Western Loudoun restaurant were diverted from the county landfill. My findings suggest that most restaurants and businesses that have cafeteria services in Eastern Loudoun were not participating in a program or process that diverts food scraps or organic material from the County landfill, despite most residents, restaurants, and businesses strongly supporting the goal of "Reducing" the amount of compostable organic material that is sent to the landfill through a clearly identified diversion process. In my report, I outline the benefits and costs associated with increased diversion of compostable organic materials. Additionally, I identify and explain 3 key processes that need to be implemented in order to help Loudoun reach this goal: Culture change, reduce and reusing, and Composting Organics out of Landfills.

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<sup>1</sup> Virginia Department of Environmental Quality (2021). *Virginia Annual Recycling Summary Report* Virginia Department of Environmental Quality. <https://www.deq.virginia.gov/home/showpublisheddocument/16533/638053236961770000>.

## Introduction

Loudoun County, Virginia has an excellent, progressive recycling program that contributes positively to the slowing of global warming. However, numerous research suggests that while recycling is beneficial to the environment, composting bioplastics and organic material “provide the opportunity for products to be remade indefinitely [and] create a fully circular economy for packaging and other products.” Additionally, composting costs less, allows for more usage of a material, produces higher quality products, decreases the amount of waste in landfills, reduces greenhouse gas emissions, and creates nutrient rich soils<sup>2</sup>. In a sense, composting is added to soil to better its physical properties and is created by “combining organic wastes, such as food, yard trimmings, and manures in the right ratios into piles, rows, or vessels; by adding bulking agents such as wood chips, as necessary to accelerate the breakdown of organic materials, and allowing the finished material to fully stabilize and mature through a curing process”<sup>3</sup>.

We, here in Loudoun County, Virginia have a wonderful opportunity to collaboratively reduce wastefulness and increase reusing, recycling, and diversion of organic materials (composting) from our county landfills. Through the engagement of residents, restaurants, and businesses that are not currently using composting services for their organic materials (food waste), we can effectively begin to track our waste diversion rate. Collectively, as we use composting services, we can become a zero waste community, as we increasingly save money,

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<sup>2</sup> UrthPact (2020, August 5th). *10 Reasons Why Composting is Better than Recycling*. UrthPact. <https://www.urthpact.com/10-reasons-why-composting-is-better-than-recycling/>.

<sup>3</sup> Environmental Protection Agency (2023, April 4th). *Reducing the Impact of Wasted Food by Feeding the Soil and Composting*. United States Environmental Protection Agency. <https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting>.

reduce liabilities, reduce greenhouse gas emissions (GHG), and increase efficiency and productivity.

The goal of Zero Waste is to focus on new initiatives for eliminating wasteful practices and economic inefficiencies and setting up expanded reuse systems, then recycling, composting, digesting, and redesigning remaining discarded materials. Evidently, many residents and businesses in Loudoun County attending community conservation/preservation meetings, commissions and county environmental meetings expressed support for the idea of Zero Waste. Extensive outreach also showed that there are many goals, objectives, values, and principles that should be adopted to achieve the many benefits from more waste reduction and recycling that are reflected in this plan.

### **Data Collection and Results**

To demonstrate community support for this project, I conducted an informal, qualitative survey that had a total of 48 respondents. Of those respondents, 30 were Loudoun County residents, 5 were restaurants, 2 were supermarkets, and 1 was a business, all of which were located in Eastern Loudoun County. Additionally, 1 Western Loudoun restaurant also responded to the survey. The data collected revealed that food scraps from all 5 Eastern Loudoun County restaurants and the 1 business ended up in a Loudoun County landfill. Food scraps from the 1 Western Loudoun County restaurant were diverted from the county landfill. Of the 2 supermarkets, 1 has a robust program that diverts food waste from Loudoun County landfills for their stores and the other supermarket did not have a robust program that diverted food waste from the County landfill. 10 of the 30 residents were aware of the benefits of diverting food

scraps from the Loudoun County landfill and actively participated in a program or process to compost organic materials.

Through my informal survey, it became clear that most restaurants and businesses that have cafeteria services in Eastern Loudoun County were not participating in a program or process that would divert food scraps or any type of organic material from the County landfill. These restaurants and the one business that stated they *would* participate in a program to divert compostable organic material from the County landfill with proper guidance and the “green light” from their respective corporate office. Also, most of the residents surveyed stated that they would participate in a program to divert compostable organic material from the County landfill with proper guidance and a clear process. In Loudoun County, most residents, restaurants, and businesses strongly support the goal of reducing the amount of compostable organic material that is sent to the County landfill through a clearly identified diversion process.

## **DISCUSSION AND RECOMMENDATIONS**

Various agencies such as the Environmental Protection Agency vouch for the implementation of composting as a method of “improving the structure and health of your soil, helping to retain soil moisture and nutrients, attracting beneficial organisms to the soil therefore reducing the need for pesticides and fertilizers, reducing the potential for soil erosion, sequestering carbon in the soil, and building resiliency to the impacts of climate change”<sup>4</sup>. In order to achieve our goal, AgriCair has developed values, principles, goals and objectives that the County can adopt.

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<sup>4</sup> Environmental Protection Agency. (2023, June 14). *Composting At Home*. United States Environmental Protection Agency. <https://www.epa.gov/recycle/composting-home#:~:text=Improves%20the%20structure%20and%20health,the%20potential%20for%20soil%20erosion.>

## **Values and Principles**

The following values and principles will contribute to our county's vision to contribute to achieving Virginia's goal of net zero greenhouse gas (GHG) emissions by 2045 and a carbon-free grid by 2050. These will help guide the community's adoption and implementation of new policies, programs and facilities that are needed:

*Universal Opportunities* – A key goal to ensure equal opportunities are provided for all sectors to reduce waste and recycle more, including residents who live in multi-family dwellings, industries, commercial businesses, institutions, and visitors, is to create more comprehensive and convenient access to reuse, recycling and composting services. This can be done through collaboration and partnerships that encourage innovations in the community, similar to the composting services provided by WormWorks, LLC and other regional composting service providers. Programs, focusing on education and partnerships, encourage the community to work together.

*Incentives* – AgriCair's primary role in improving the local landscape for recycling and waste reduction activities is to facilitate, educate and bring awareness to our county's strategic vision to contribute to achieving Virginia's goals of net zero greenhouse gas (GHG) by 2045. Through the use of financial incentives via subsidized subscriptions of composting services provided by AgriCair will encourage more waste reduction through the diversion of organic materials.

## Goals and Objectives

The following goals and objectives are recommended for Loudoun County to adopt as targets for the next 6 to 21 years in renewing our incremental commitment to waste reduction. The resulting benefits are directly in keeping with the goals listed in the 2023 Loudoun County Energy Strategy report, including increasing waste diversion from landfills, developing greater economic value and reducing greenhouse gas emissions. These goals are proposed to serve as primary performance measures for tracking how well the plan is implemented over the course of time.

### **Objective 1:** Increase Organic Materials Diversion Rate

As a member of Loudoun County, we will begin to track the organic material diversion rate. Next, we adopt a new goal of incrementally increasing the county's diversion rate by 2030.

### **Objective 2:** Add Value to Local Economy

As the number of residents, restaurants and businesses divert organic materials away from county landfills through the use of local and regional composting services, this results in the creation of more local jobs and increased use of local marketing services (i.e. WormWorks, LLC).

### **Objective 3:** Reduce Greenhouse Gas Emissions

Waste reduction diversion of organic material and recycling contribute to our County's Energy Strategy and Virginia's statewide goal to reduce GHG emissions by 2045.

Given the goals I have outlined, AgriCair has several recommended steps that the county can take towards accomplishing these goals. In Loudoun County, many residents, restaurants, and business owners are aware of the benefits of reducing greenhouse gasses (GHGs). Reinforcing culture change through community-wide action, such as composting, will bring even greater reductions of GHGs. AgriCair, in partnership with WormWorks LLC and Loudoun County Government Recycling Services will kick off a campaign to educate residents, businesses and visitors about how and where to reduce, reuse and recycle in Loudoun County. Using local resources, this partnership will also develop decals that can be strategically placed with residents, restaurants and businesses throughout our county to provide clear, consistent messages about what can be composted, using both graphics and multiple languages (especially for larger decals). To accomplish culture change, we plan to develop a comprehensive, community-based social marketing program, using local resources, that will address: awareness, by making sure everyone knows that Zero Waste is a priority in Loudoun County and that composting is one way of contributing to that goal; education, whereby residents, business, and visitors know how to participate in local Zero Waste initiatives; training, where employees in Zero Waste participating businesses and nonprofits know how to work with residents, businesses and visitors to gain support for local Zero Waste programs, and lastly, reinforcement and compliance, where we will continuously meet with residents and businesses to highlight how Zero Waste policies and programs work; we would also help them to comply by adopting County ordinances that guide the implementation of the initiative.

We will collaborate with nonprofit organizations and students to help event organizers to obtain volunteers on a regular basis; volunteers can assist in educating the public about where to discard different materials/products at venues and special events. For events at all County Park



venues with more than 1,000 attendees, the County should adopt requirements to meet Zero Waste standards such as:

- Only allowing exhibitors/vendors to give out products that are reusable, recyclable, or compostable
- Requiring the use of durable serving-ware (and dishwashing machines for the serving-ware) if food services are in one central location where deposits can be charged for durables to be returned
- Requiring recycle bins next to all trash bins and composting bins in areas where food is sold
- Using prominent and comprehensive signage above bins with graphics and narrative
- Encouraging use of volunteers stationed at bins to assist attendees in making right choices in discarding their trash.

In summation, the Zero Waste initiative seeks to only benefit and uplift the goals of the County by using a community-based approach to tackling climate change. Our plan wants to foster community involvement and have Loudoun residents recognize that they have control over their environment. If we want change, we have to be that change that we want to see.