
Meeting:	County Council Briefing	Date:	1/28/2025
Subject:	Current and Future Plans for Zero Waste in the County		
Document:	DEP Follow-up Responses to County Council Questions	Date:	2/12/2025

I. Background

On January 28, 2025, Director Monger provided an update to the County Council on DEP’s Aiming for Zero Waste Initiative. The update focused in particular on projected timelines for implementing alternatives to the County’s current system for MSW management via the resource recovery facility (RRF). The presentation emphasized the operational imperative for the short-term extension of the operating agreement for the RRF until April 2031, and the need for the County to move forward with an alternative system expeditiously.

At the Council meeting, several councilmembers requested additional detail on the timelines and necessity for the short-term RRF extension. This document provides additional detail and explanation on questions posed at the Council meeting.

II. What would happen if the short-term extension to the RRF operating agreement is not approved and the County was forced to pursue long-hauling after April 2026?

Failure to approve the short-term RRF extension would likely result in interruption of solid waste collection and disposal services to County residents and businesses. The Arcadis analysis of alternative MSW management systems included an evaluation of necessary capital improvements that would be needed for a transition to long-hauling of MSW to an out-of-County landfill, as well as a transition to a different processing technology for MSW. These capital improvements inform the timelines involved in each alternative.

Arcadis evaluated multiple scenarios for long-hauling of MSW from the transfer station (TFS) to an out-of-County landfill. In all scenarios, significant capital projects would be required at the TFS and/or RRF to accommodate the large volume of waste loading, staging, and transportation at sites not currently designed for those activities.

Of the long-haul scenarios evaluated, the most feasible option (referenced in the slides as alternative 2A) would be to:

- Compact MSW into intermodal transport containers (ITCs) at the TFS
- Transport the ITCs by rail from the TFS to the RRF railyard in Dickerson
- Stage the ITCs on rail cars at the RRF railyard in order to form longer train lengths (a requirement of CSX)
- Transport the ITCs by rail to an out-of-County landfill

While this scenario avoids the roadway improvements that would be necessary for the other long-haul scenarios, it still requires track and railyard improvements at the RRF to accommodate the large quantity of MSW that would be staged at and transported from that site. Additionally, the round trip cycle time by rail from the RRF to an out-of-County landfill is likely to be at least 8 days.

This means that, in order to keep a steady pace of hauling commensurate with the rate of incoming MSW, a large number of new rail cars are needed, which involves time for manufacturing as this stock is manufactured-to-order. Arcadis engineers estimate that an aggressive timeline for the capital projects would be 6-12 months for the planning, procurement, and contracting, and 48 months for the design, permitting, rolling stock fabrication, and construction of facility modifications. Altogether, this is a total timeframe of a minimum of 54 months or 4.5 years.

It would be a logistical impossibility to complete the above necessary steps to implement long-hauling between now and the original April 2026 expiration of the RRF operating agreement (a period of just over a year). Therefore it would not be possible to maintain the necessary continuity of solid waste collection and disposal services without the short-term extension.

III. What were the conditions that enabled MSW to be long-hauled on an emergency basis in 2016? Why would those conditions not apply to long-hauling as an interim measure over the next several years?

Emergency hauling operations occurred during a roughly 19-day period in December 2016 because of a fire at the RRF. That short term, emergency scenario is not comparable to a current long-haul alternative for the County's MSW for the following reasons.

First and most significantly, the volume of MSW that was hauled from the TFS in December 2016 was only approximately one third of the volume of MSW that is currently managed at the RRF and would need to be long-hauled as an alternative option today. That is because during the December 2016 emergency, MSW collected curbside was redirected away from the TFS and instead hauled directly to alternative regional disposal facilities. The TFS also temporarily imposed restrictions on acceptance of certain materials, including bulky waste and construction and demolition debris to reduce tonnage. MSW was also temporarily stored in the TFS pit and rail containers, a situation that is not permitted except in emergency.

The approximately 30% of MSW that was hauled from the TFS was transported to multiple regional facilities, including primarily the Reworld RRF in Lorton, Virginia. This transportation occurred via tractor-trailer, with a round trip cycle time of about 2 hours. Obviously transport to the Lorton RRF facility, even if that option was still available, would be counter to the goal of discontinuing use of the RRF. Instead, the nearest potential out-of-County landfills that could be used in a long-haul scenario today would require at least a 160-mile travel distance. This significantly increases the round-trip cycle time, increasing the number of vehicles (tractor-trailers or rail cars) needed to transport the same quantity of waste.

Finally, during the short-term emergency, hauling contractors directed their own CDL drivers from existing routes and hired new CDL drivers with tractor-trailers.

It is also important to note that any partial shift to long-hauling of a portion of the County's MSW would significantly increase the overall costs of MSW management and disposal. This is because it would require operating two concurrent systems of MSW management: the continued operation of the RRF (with costs that are largely fixed regardless of volume) as well as the new long-haul system.

IV. How would acceleration of up front programs to reduce the MSW disposal stream affect the decision on the short-term RRF extension?

Accelerating up-front diversion programs, whether it be Save-As-You-Throw or food scrap collection and composting, is a key part of DEP's overall Aiming for Zero Waste strategy. These programs will, over time, help to improve incentives to recycle or reduce waste, and capture portions of the waste stream that are currently under-captured. These programs, however, are not anticipated to reduce the remaining waste tonnage in the timeframe and at the scale needed to avoid development of an alternative primary technology in lieu of continued operation of the RRF. For example, food scraps make up 16.6% of the total MSW stream in Montgomery County (based on the 2023 SCS Waste Composition Study).

New organics diversion programs typically take several years to ramp up participation, and no diversion program will capture all divertible material. Still, even if all food scraps were diverted from MSW and composted, the remaining 83% of the MSW stream would still require management through an alternative technology. Short-term extension of the RRF operations agreement would still be required to manage this remaining stream of waste materials. Implementation of a long-term solution to managing the remaining stream of waste materials requires greater time than the remaining duration of the current operating agreement.

V. Supporting Documentation

DAFIG Presentation

Below are several slides that were presented at the Dickerson Area Facility Implementation Group (DAFIG) meeting on January 29, 2025. The first slide compares short-term emergency hauling operations with long-term sustained operations for long-haul. The second slide elaborates on the conditions under which short-term emergency hauling was implemented in 2016. The third slide outlines the conditions that would exist if the County shifted to sustained long-hauling going forward.

The full presentation can be found on the DAFIG website here:

<https://www.montgomerycountymd.gov/DEP/trash-recycling/dafig/index.html>

Aiming for Zero Waste Website

This document is available at the Montgomery County Aiming for Zero Waste website:

<https://montgomerycountymd.gov/zerowaste>

Long-Haul Options – Operations Comparison



Short-Term Operations	Long-Term Operations
Unplanned Long-Haul via Tractor Trailer (Emergency Scenario)	Planned Long-Haul via Tractor Trailer or Rail (Engineered Scenarios)
<p><u>Baseline Conditions</u></p> <ul style="list-style-type: none"> Unplanned RRF Closure or CSX Rail Disruption Emergency Operations/Procurement No infrastructure improvements implemented No new rolling stock pre-purchase Tractor Trailers w/ Walking Floors for transport 	<p><u>Baseline Conditions</u></p> <ul style="list-style-type: none"> Planned long-haul operations RFP Procurement Design, permit, and construction of infrastructure improvements Rolling stock pre-purchase (by County or Contractors) Tractor Trailers w/ Walking Floors or Rail Containers/Rail Cars for transport
<p><u>Operational Conditions for Tractor Trailers at TFS</u></p> <ul style="list-style-type: none"> Various locations for loading and staging Multiple Hauling Contractors for over-the-road Contractors – Redirect own CDL drivers with Tractor Trailers from existing routes Contractors – Hire new CDL drivers with Tractor Trailers County instituted restrictions to limit inbound tonnage Curbside Collections redirected to Alternative Facilities MSW at TFS transported to Multiple Regional Facilities (Transfer Station, Landfill, Incinerator) MSW Temporarily Stored in TFS Pit and in Rail Containers 24/7 Operations for Transfer and Hauling 	<p><u>Operational Conditions for Tractor Trailer and/or Rail Haul at TFS or RRF</u></p> <ul style="list-style-type: none"> Designed and Designated loading and staging areas with 24/7 operations Multiple Hauling Contractors for over-the-road or Use of CEX Rail Line Contractor hires CDL & pre-purchases rolling stock Transfer Building, Rail Yard, Operational/Staging Area site modifications Local/Regional Roadway Improvements or CSX Rail Line modifications Nuisance/Aesthetic Impact Abatement or Mitigation (Vector, Odor, Dust, Litter, Noise and Light Pollution) Procurement (6 - 12 months) Design and Permitting (12 - 24, up to 36 months) Construction (24, up to 36 months) Rolling Stock Manufacturing (18 - 24 Months)
<p><u>Route Conditions</u></p> <ul style="list-style-type: none"> Reworld Facility: Energy Resource Recovery Facility Location: Lorton, VA 37 Miles Travel Distance 2-hour cycle time (round trip) 	<p><u>Route Conditions</u></p> <ul style="list-style-type: none"> Tractor Trailer WM Facilities: Maplewood, Atlantic, Middle Peninsula MSWLF <ul style="list-style-type: none"> Location: Amelia County, Waverly or Gloucester, VA - 160 to 170 Miles Travel Distance; 9 - Hour Cycle Time (round trip) Rail Haul WM Facilities: Maplewood or Atlantic MSWLF <ul style="list-style-type: none"> Location: Amelia County or Waverly, VA - 160 Miles Travel Distance; > 8 - Day cycle time (round trip) Rail Haul Republic Facilities: Sunny Farms, Tunnel Hill or Green Valley MSWLF <ul style="list-style-type: none"> Location: OH or KY - 340 - 350 Miles Travel Distance; > 12 - Day cycle time (round trip)

Long-Haul Options – Operations Review



Short-Term Emergency Long-Haul via Tractor Trailers at the Transfer Station (Logistical Changes for MSW Collection and Transfer during December 2016 Emergency Event)

- Curbside Collections – MSW was redirected (hailed directly) to Alternative Regional Disposal Facilities
- Transfer Station – Restrictions for acceptance of specific materials
 - Bulky Waste and Construction and Demolition Debris
 - Commercial-collected MSW (multi-family and non-residential)
- Transfer Station – MSW loaded and hauled via Tractor Trailers with walking floors
 - Multiple locations for MSW loading and Tractor Trailer staging
 - Multiple Hauling Contractors for over-the-road transport
 - Contractors – Redirect own CDL drivers with Tractor Trailers from existing routes
 - Contractors – Hire new CDL drivers with Tractor Trailers
- Transfer Station – MSW Temporary Storage in the Tipping Floor Pit and Rail Containers
- MSW hauled to Alternative Regional Disposal Facilities
 - Annapolis Junction Transfer Station (in Anne Arundel County, MD); 36 miles (one-way)
 - Brown Station Road Landfill (in Prince George's County, MD); 36 miles (one-way)
 - Energy Resource Recovery Facility (Reworld Incinerator in Lorton, VA); 37 miles (one-way)
- 24/7 Operations for MSW loading, storage, hauling, and tractor-trailer staging
- MSW By-Pass Operations instituted from December 8 – 26, roughly 19-days.

Overview

Schedule

Alternatives

Cost

Q&A

Long-Haul Options – Operations Logistics



Considerations for Sustained Long-Haul Operations via Tractor Trailers at the Transfer Station

- MSW Generation in Maryland has continued to increase from 2016 to Present; different market conditions
- Disposal Facilities used in 2016 Emergency Event have contracts for committed long-term tonnages
 - These disposal facilities may not be available to accommodate additional long-term tonnages
- The Reworld Facility in Lorton, VA accepted a large volume of MSW during the 2016 Emergency Event
 - This disposal facility may not be available if there are operational or contractual changes
- Transfer Station Facility and Site are not designed for Long-Haul via Tractor Trailer
 - Limited Ingress and Egress on-site, which will require site reconfiguration and modifications
 - Shady Grove Road / I-270 Interchange may be entry and exit points, which may require roadway modifications
 - Tractor Trailer staging requirements will require conversion of the Rail Yard
 - Tractor Trailer staging requirements may require nearby property acquisition or leasing
 - Transfer Building and Operational Areas for top loading of Tractor Trailers will require modifications
 - Nuisance/Aesthetic Impact Abatement or Mitigation required (Vector, Odor, Dust, Litter, Noise and Light Pollution)
- ~ 100 – 125 Tractor Trailers required per day at an average of 20 tons each to transfer MSW
 - Estimated Tractor Trailer counts significantly increase for long-haul to out-of-state Landfill due to cycle times
- 24/7 Operations for MSW loading, storage, hauling, and tractor-trailer staging
- Request for Proposal (RFP) for Multiple Disposal Facilities. Long-term disposal capacity commitment
- Request for Proposal (RFP) for Multiple Hauling Contractors. Long-term CDL drivers and Rolling Stock
- Request for Proposal (RFP) for Engineering/Permitting/Construction. TFS Site Modifications
- Request for Proposal (RFP) for Rolling Stock. Tractor Trailers with Walking Floors, if not provided by Contractor

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