



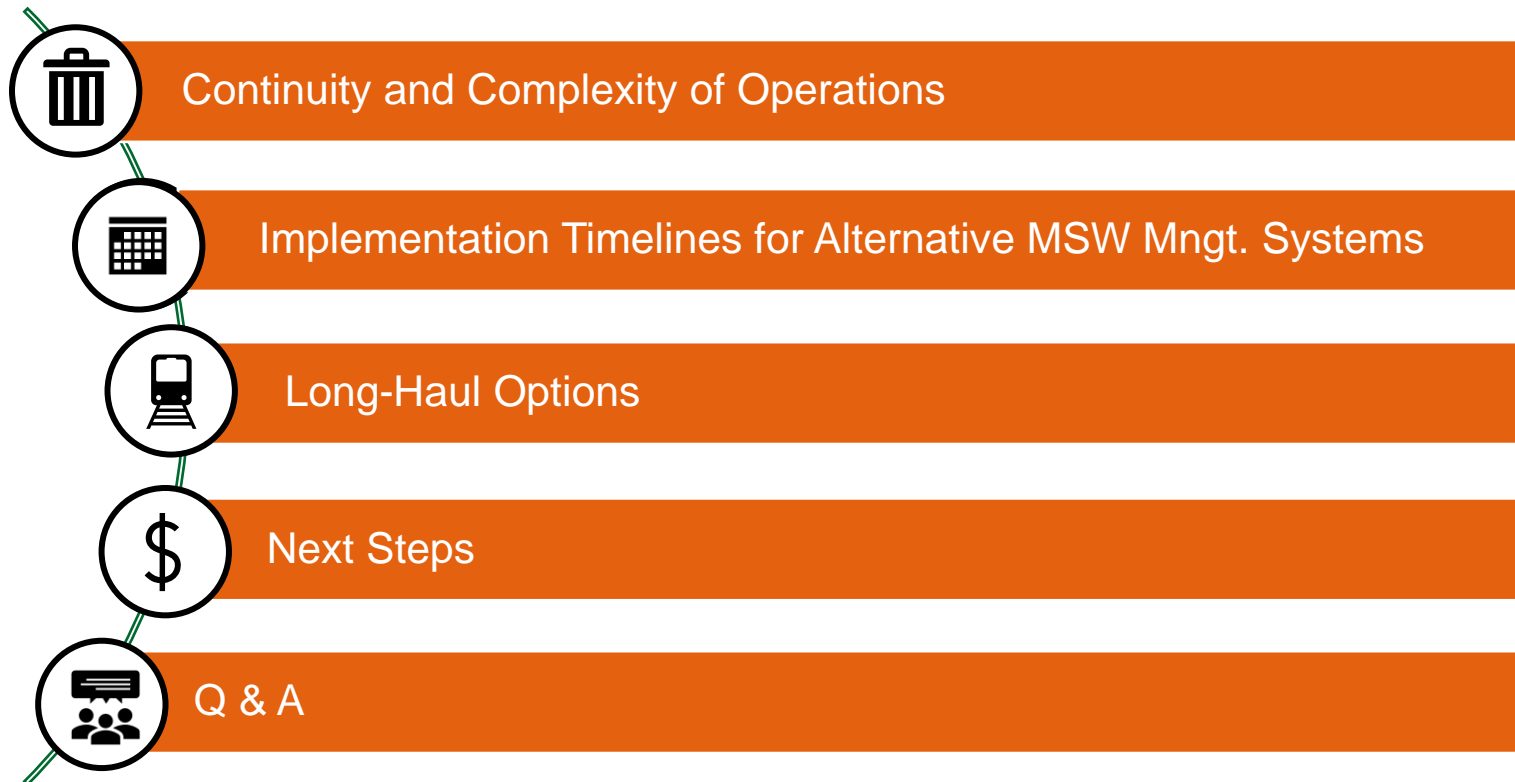
**Sustainable
Project Choices**

MSW Management Systems Analysis Montgomery County, MD

Status Update for DAFIG – January 29, 2025

Steve Nesbitt, Vice President

Agenda



Continuity and Complexity of Operations

Extension

Short Term 5-Year Extension (April 2026 – April 2031) to the RRF and TFS Operating/Service Agreement (Reworld) is required for **Continuity of Operations** to ensure uninterrupted solid waste management services to County residents and businesses. The extension will include an early termination clause.

Schedule

Implementation Timelines for Alternative Municipal Solid Waste (MSW) Management Systems such as **Material Recovery and Biological Treatment (MRBT) with Long-Haul or standalone Long-Haul to Out-of-County Landfill** have an estimated 5-6 Year duration (2025-2030) depending on procurement and capital project start dates.



Veolia Southwark Mechanical Biological Treatment (MBT) Facility, Southwark, England (photo courtesy Veolia Southwark)

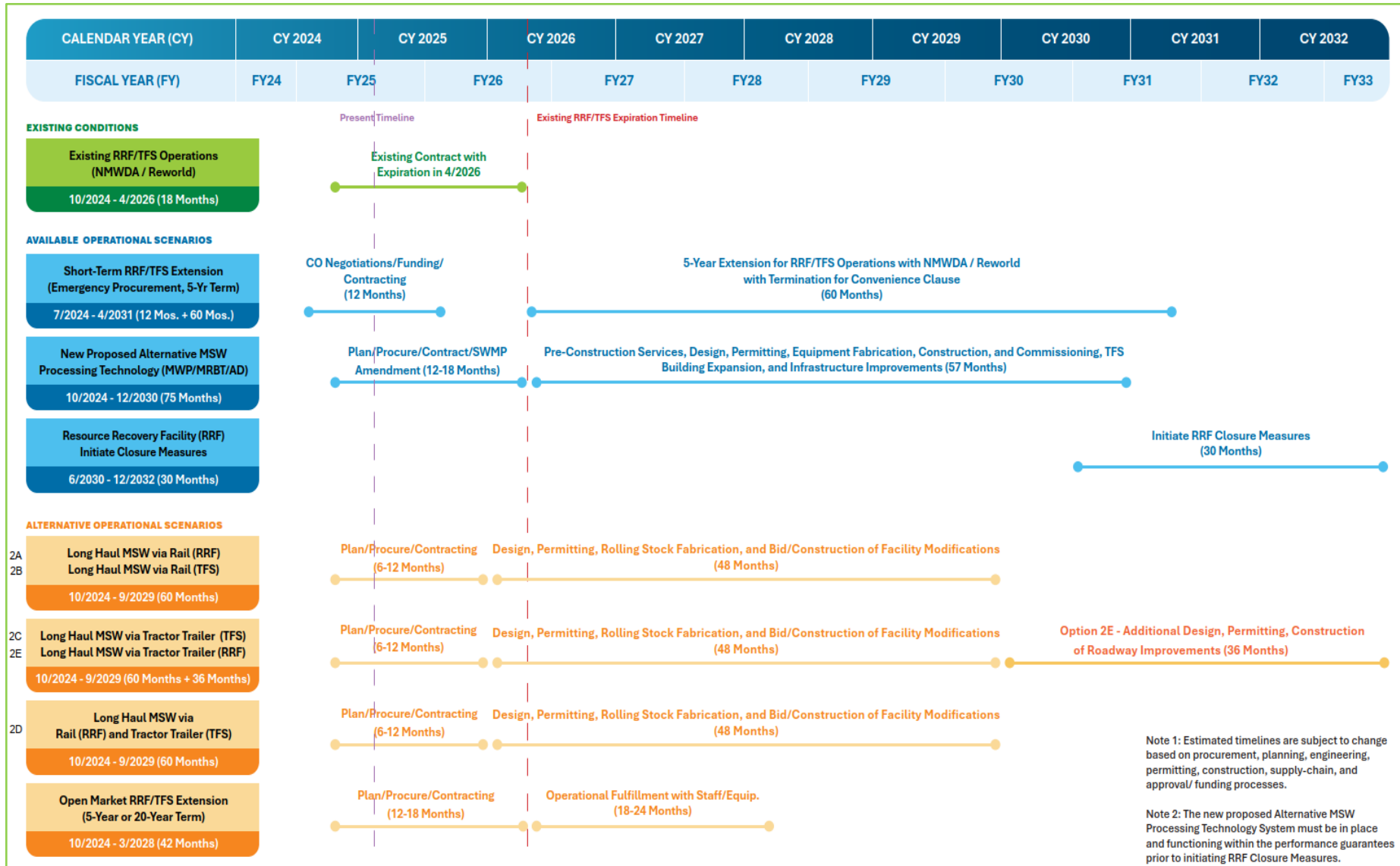
Operations

If Alternative MSW Management Systems were selected, implementation would trigger the relocation of existing operations and site infrastructure modifications under **multiple complex capital projects occurring in parallel at the TFS and RRF**. Significant rolling stock purchases with staging space would also need to be accommodated at the TFS and RRF based on the selected Long-Haul option.

Costs

Along with the Short-Term Extension of the RRF and TFS Operating Agreement, there are **significant costs associated with transitioning to Alternative MSW Management Systems**. Costs need to be evaluated along with other factors including but not limited to potential impacts to public health and the environment, social equity and environmental justice, and regulatory acceptance, etc.

Implementation Timelines for Alternatives



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)

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.

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

Long-Haul Options – Cycle Time Review



		WM, VA 160 to 170 mi.		WM, VA 160 mi.	Republic, OH/KY 340 - 350 mi.
		Long-Haul Via Tractor Trailer		Long-Haul Via Rail	Long-Haul Via Rail
Loading at TFS/RRF & Exit	Activity	Duration	Activity	Duration	Duration
	Position Trailer	1 hr.	Position ITC	2 hr.	2 hr.
	Top Loading		Compaction		
	Final Weighing		Final Weighing		
	Tarping		Loading onto Railcar	12 hr.	12 hr.
	Exit/Egress		Staging	2 days	2 days
Long Haul	Return Travel Time to MSWLF	6 hr.	Return Travel Time to MSWLF	6 days	10 days
	Queue & Initial Weighing	2 hr.	Queue & Initial Weighing	3 hr.	3 hr.
	Queue & Un-tarping		Queue & Un-tarping		
	Unload @ Working Face		Unload @ Working Face		
	Re-Tarping		Re-Loading onto Railcar		
	Exit/Egress				
Total Duration		9 hr.	Total Duration	> 8 days	> 12 days

Overview

Schedule

Alternatives




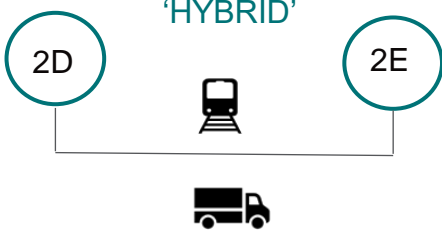
Next Steps

Q & A

Long-Haul Options – Overview

<div>MRBT with Long-Haul →</div> <div>'HYBRID'</div>	2A		100%		TFS>RRF>MSWLF
	2B		100%		TFS>MWSLF
	2C		100%		TFS>MSWLF
	2D	<div> <div>■ Rail</div> <div>■ Truck</div> </div>	<div>65%</div> <div>35%</div>		<div>TFS>RRF>MSWLF</div> <div>TFS>MSWLF</div>
	2E		100%		<div>TFS>RRF</div> <div>RRF>MSWLF</div>

Long-Haul Options – Major Capital Projects

	2A	2B	2C	2D	2E
					
Major Components	RRF	TFS	TFS	RRF/TFS	RRF
Rolling Stock Manufacture	✓	✓	✓	✓	↑
Roadway Modifications & Traffic Controls			✓	✓	↑
Transfer Building and/or Railyard Retrofit		↑	✓	✓	↑
MSW Staging in Railyard	✓	✓	✓	✓	✓
Studies, Design, Permitting & Extensive Construction	✓	✓	✓	✓	↑
Schedule (Months)	54 - 60	54 - 60	54 - 60	54 - 60	54 - 84



Long-Haul Options include the specified major capital project components.



Long-Haul Options include increased level of impact and complexity for the specified major capital project components.

(2A-2E) All Long-Haul Options include site modifications to Operating, Rail Yard, and Staging Areas with Potential 24/7 Operations.

Overview

Schedule






Alternatives

Next Steps

Q & A

Long-Haul Options – Major Capital Projects

Long-Haul Options require implementation of Major Capital Projects at the TFS or RRF with associated Feasibility Studies, Design, Permitting, and Construction activities Prior to Start-Up

Intermodal Haul Options require implementation of for Capital Projects at the TFS or RRF with dated Feasibility Studies, Design, Permitting, Construction activities Prior to Start-Up					
	2A 	2B 	2C 	2D 	2E 
	RRF	TFS	TFS	'HYBRID'	
Track Construction					
Main Line Track Shift	✓	✓		✓	✓
New Siding Track	✓	✓		✓	✓
Yard Turnout for Train	✓	✓		✓	✓
Signal Modification	✓	✓		✓	✓
Embankments/Grading					
Sub-Ballast	✓	✓		✓	✓
Earthworks	✓	✓		✓	✓
Structural Elements					
Bridge Reconstruction		✓			
Retaining Walls	✓	✓		✓	✓
Sound Barriers		✓	✓	✓	✓
Transfer Building Retrofit / Rail Yard Mods			✓	✓	✓
Roadway Improvements					
Ingress/Egress		✓	✓	✓	✓
Widening/Shoulders				✓	✓
Roadway Cross-Section Upgrades			✓		✓
Intersections				✓	✓
Staging Areas/Rigid Surface Cross-Sections			✓	✓	✓
Culvert Extensions					✓
Property Acquisition					✓
Rolling Stock					
Intermodal Containers and Rail Cars	✓	✓		✓	✓
Walking Floor Tractor Trailers			✓	✓	✓
Specialty Rail Cars for Tractor Trailers					✓

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Next Steps

Scheduled Briefings/Public Hearings

- SWAC Briefing – MSW Mngt. System Analysis Update with Long-Haul (1/22/25)
- Council Briefing – Current and Future Plans for Zero Waste in the County (1/28/25)
- DAFIG Briefing – MSW Mngt. System Analysis Update with Long-Haul (1/29/25)
- Council Public Hearing for Solid Waste Management Plan 2025-2034 (2/11/25)

Planned Future Briefings

- SCA Briefing – MSW Mngt. System Analysis Update with Long-Haul (Feb./Mar. 2025)
- ZWMC Briefing – MSW Mngt. System Analysis Update with Long-Haul (Feb./Mar. 2025)
- Multiple Briefings – Arcadis Evaluation Model and Preliminary Analyses (Feb./Mar. 2025)
- Multiple Briefings – Save-As-You-Throw Phase I Implementation (Feb./Mar. 2025)
- Multiple Briefings – MSW Mngt. System Analysis, Draft Report Findings (May 2025)

Deliverables

- Council Adoption of SWMP 2025-2034 and submission to MDE (Spring 2025)
- Arcadis Draft Report – MSW Mngt. Systems Analysis (Spring 2025)
- RFP Advertisement for Alternative MSW Mngt. System (Spring 2025)

