

Montgomery County Solid Waste Master Plan

Aiming For Zero Waste Plan *A Vision for Sustainable Materials Management*

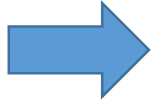
Discussion with Task Force

March 12, 2020

Objectives

Present results on evaluation of disposal alternatives for “What’s Left” after options to reduce waste and increase recycling have been implemented

- Improvements and new facilities needed to manage materials



Master Plan Options (Task 5 Report)

Reduce Waste & Reuse Items

- Food waste reduction campaign
- Fix-it/repair clinics
- Materials exchange network
- Reuse events
- Sharing libraries
- Reuse centers

Recycle

- Textiles
- Mattresses
- Carpets
- 2nd Cart to capture more commingles

Compost

- Commercial, School and Residential Food Waste
- Backyard and Community Composting

Convert Waste to Energy

Landfill

- Expand Trash Collection to Sub-district B
- C&D Materials Management
- Standard Trash Container

- Bulk Trash
- Regulatory Mechanisms
- Other Supporting Initiatives

Education, Outreach and Enforcement

Reduction and Reuse

- Low tons diverted
- Easy to implement
- Critical component of Zero Waste Plans
- Benefits more difficult to quantify
- Reuse Center ~5,000 tpy
- Food waste reduction campaign ~2,000 tpy
- Other options ~ 20-60 tpy
- Annual GHG emission reduction ~-38,000 MTCO₂e (depending on what materials are reduced/reused)
- Each option <\$.50/hhld for education and outreach

Recycling More Materials

- Textiles ~ 5,000 tpy
- Carpets ~ 1,500 tpy
- Mattresses ~ 600 tpy
- Replace blue box with a recycling cart for commingles in Sub-districts A&B to capture more materials ~ 2,000 tpy

Annual Costs

- Textile/Carpet recycling <\$.60/hhld (includes costs for storage, hauling, processing, education and outreach)
- Mattress recycling ~ \$2.00/hhld (includes costs for storage, hauling, processing, education and outreach)
- Second recycling cart for commingles ~\$10/hhld (includes cost of cart, education and outreach)

Annual GHG emission reduction ~ -27,000 MTCO₂e/year



Mandatory Commercial Organics Diversion

- Commercial sector estimated to generate approximately 80,000 tpy food waste
- Estimated to capture approximately 50% - 41,000 tpy
- Annual GHG emission reduction ~ -1,200 MTCO₂e
- Annual Cost ~ \$250/ business generating >2 tons of food scraps /week (County costs for education, outreach and enforcement – businesses would be responsible for costs for containers and collection)

Residential Organics Diversion

Recommendations

- Pilot Program
- Full-scale Program
 - Waste audits before and after
 - Roll out to both Sub-districts
 - Roll out to Multi-family once single family program fully established
- County needs to provide trash collection in Sub-district B to ensure a successful organics program and divert more materials
- Food scraps collected separately from yard trim
- Trash disincentives to encourage participation
- Ordinance for Multi-family diversion
- Education and enforcement is critical

Considerations

- Availability of processing capacity
- High support from residents (County survey – 31% of respondents indicated high interest in County providing curbside collection of food scraps)
- Estimated to divert ~17,000 tpy food scraps and non-recyclable paper
- Annual GHG emission reduction ~ - 500 MTCO₂e
- Annual Costs ~ \$14/hhld (includes cost of containers, education, outreach and enforcement)

Supplementary Organics Diversion

Community Composting, Backyard Composting, Food Scraps Diversion at Schools

Recommendations

- Implement backyard and/or community composting
- Support backyard composting through changes in County Code and provision of subsidized backyard composters
- Support food scraps diversion at schools

Considerations

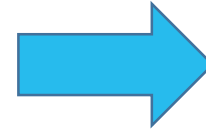
- Low tons (~600 tpy for Backyard Composting, ~ 20 tpy for Community Composting, ~900 tpy from schools)
- Minimal GHG emissions reductions
- Annual Cost ~\$1.00/hhld, ~\$.50/student (primarily education and outreach)
- Contributes to awareness of importance of organics diversion
- Low cost and low level of effort by County

How to Get People to Divert More Materials

- Trash Disincentives

Reduce Trash Allowance at the Curb

- Residents of Sub-district A can set out up to 5 containers weekly – up to 225 pounds/week
- Residents of Sub-district B contract privately for trash collection – no limits



Phase in reduction of number of trash containers collected



County controls trash collection in Sub-district B through expansion of service

Trash Disincentives to Get People to Divert More Materials

- Standard Trash Container – 16,000 tpy through reduction and increased capture of recycling and organics
- Annual GHG Emission Reduction ~ -40,000 MTCO₂e
- Annual Costs
 - Standard trash container ~ \$11/hhld/year (includes cost of container, education, outreach and enforcement)
 - Base cost for collection of this container would be included in system benefit charge.

Bulk Trash

Bulk Trash Pickup Recommendations

- Limit number of items collected at each pickup
- Reduce number of annual collection events

Bulk Trash Drop-off Recommendations

- Reduce limit from 500 lbs
- Institute a flat or minimum rate for a certain weight (e.g. 200 lbs)

Considerations

- Potential for illegal dumping at outset of changes to services
- High degree of education and enforcement required
- Determine an average load weight dropped off by residents at Transfer Station to set allowance

Changes to How Materials are Collected

- Expansion of Trash Collection to Sub-district B
 - Potential to divert an additional 2,000 tons of recycling and organics
 - Annual GHG emission reduction ~ - 4,700 MTCO₂e
 - Annual Cost ~\$100/hhld in Sub-district B (includes collection and education, outreach and enforcement)
- Change to Every Other Week Collection of Trash
 - Potential to divert an additional 23,000 tons of recycling and organics
 - Annual GHG emission reduction ~ - 30,000 MTCO₂e
 - Annual Cost ~ \$2.50/hhld (includes education, outreach and enforcement)

Regulatory Options – Additional Materials

- Ban single-use plastic shopping bags & increase fees
- Reduce single-use plastic water bottles
- Reduce single-use food service ware
- Reduce single-use plastic film packaging
- Reduce EPS through extended ban

- Potential to divert/reduce ~ 3,000 tpy
- Annual GHG emission reduction ~ -9,000 MTCO₂e
- Annual Cost ~ \$.30/hhld/option for education, outreach and enforcement



C&D Recycling

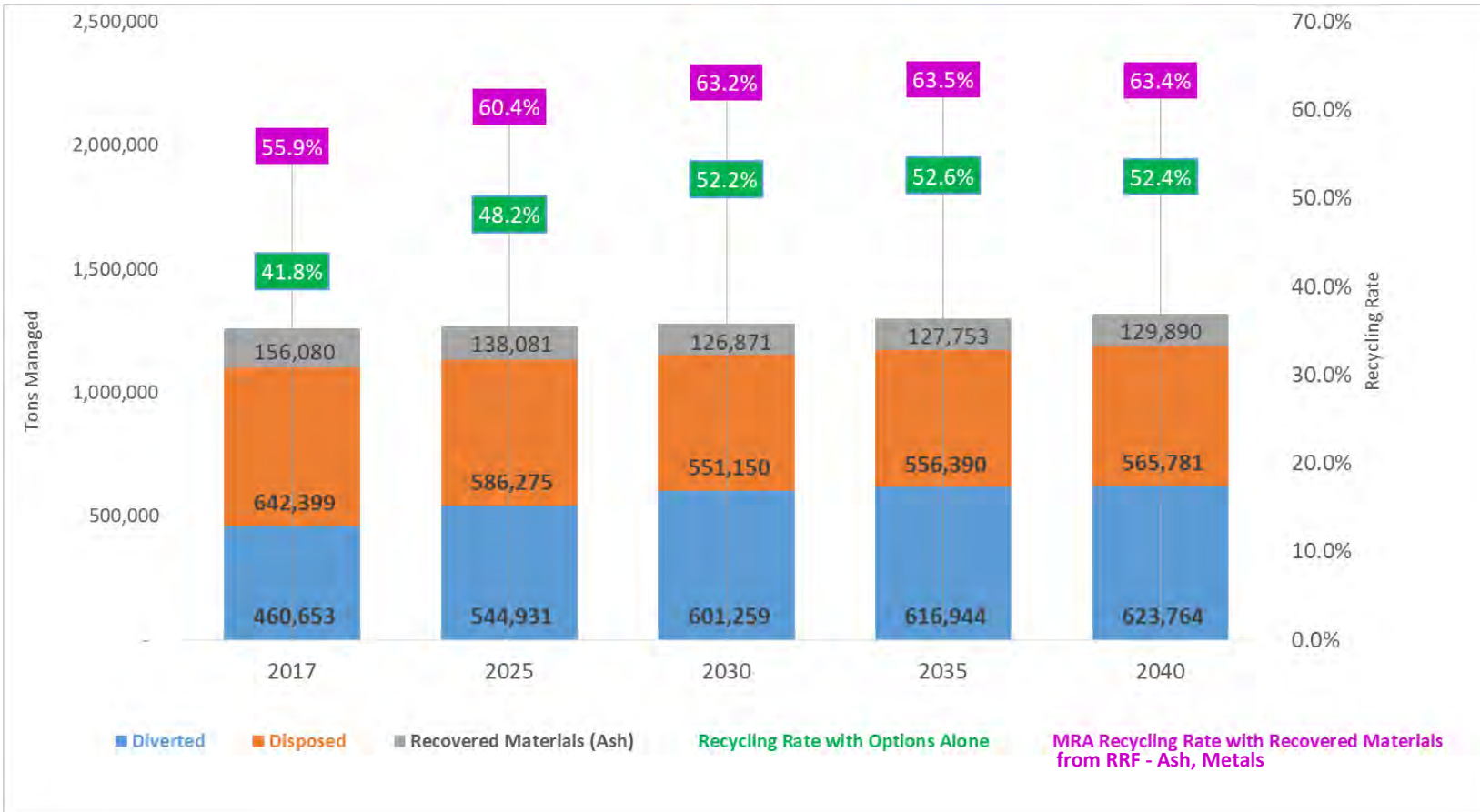
Recommendations

- Encourage use of private C&D recycling facilities by:
 - Increasing tipping fee for some C&D materials
 - Stop accepting some or all C&D materials at Transfer Station
- Enforce existing ordinance and consider regulations such as a deposit program (financial incentive to recycle)

Considerations

- Reduction in revenue at Transfer Station if no longer accept materials
- Offset costs due to wear and tear on equipment at Transfer Station
- Would free up capacity at Transfer Station
- Tons diverted do not count towards MRA recycling rate
- Potential to divert an additional 46,000 tpy
- Annual GHG emission reduction ~ -9,300 MTCO₂e
- Annual Cost ~ \$.60/unit or hhld (for education, outreach and enforcement)

Changes to Recycling Rate



What's Needed to Manage Materials?

- New facilities for composting and recycling
 - Current MRF cannot handle existing materials
 - Limited private options
- Transfer Station improvements
- Disposal facility – RRF or landfill?
- “Site 2” as well as the Composting Facility, both located in Dickerson, are currently only County-owned options for expansion or new capacity

What was Considered?

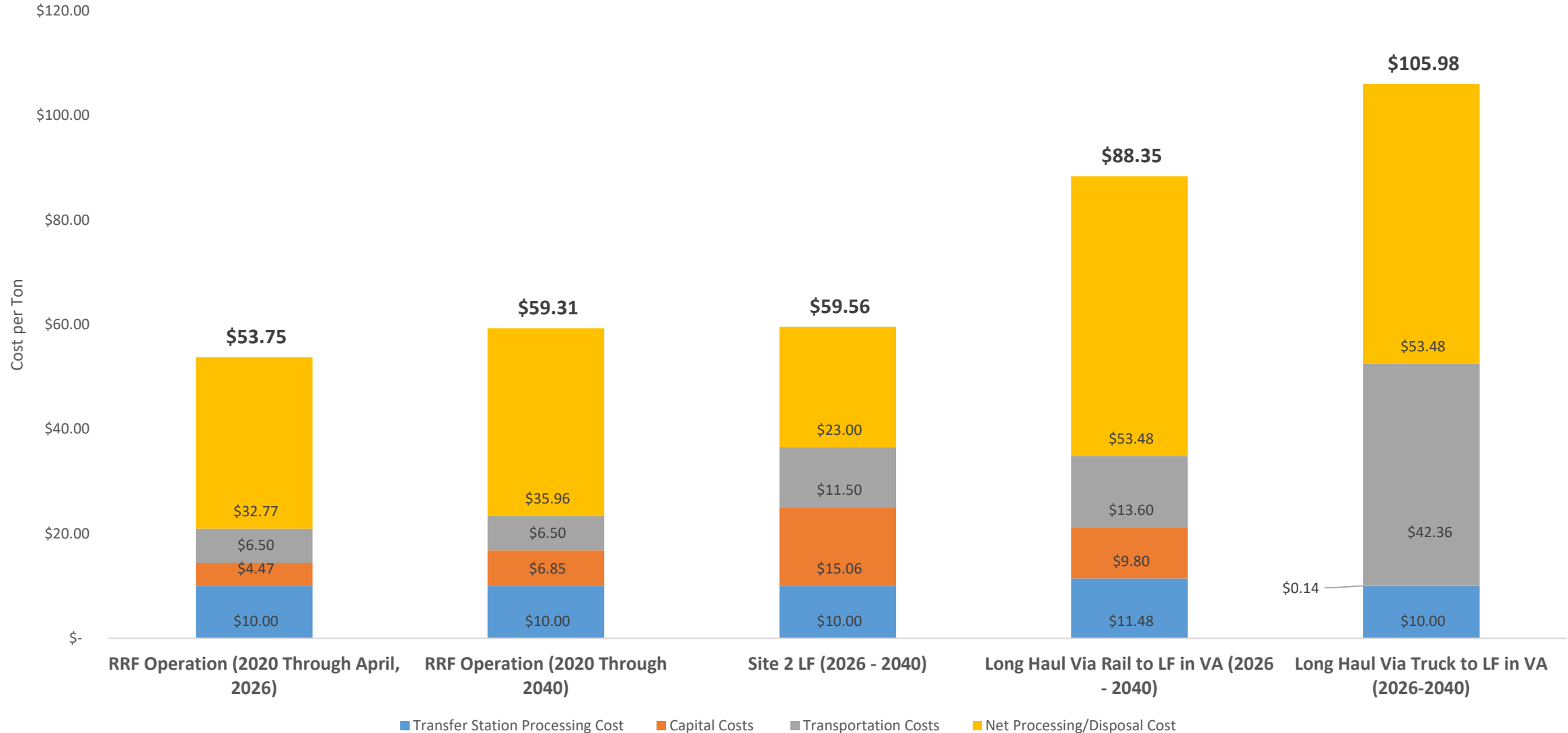
- Organics Processing Facility
 - Aerobic Composting (at Dickerson or new site)
 - Consider Anaerobic Digestion in the future
- Mixed Waste Processing
 - Not recommended for the County at this time
- Alternative Processing Technologies
 - Gasification/Pyrolysis – unproven and too risky at this time

Disposal Options – After Improvements to Waste Generation and Recycling/Reuse

- Continued use of the RRF
- Closure of the RRF
 - Rail haul to landfill located outside the County
 - Truck haul to landfill located outside the County
 - Develop “Site 2” as a landfill
- Challenging decisions
- Require further analysis

Lifecycle Cost Analysis – 2020-2040

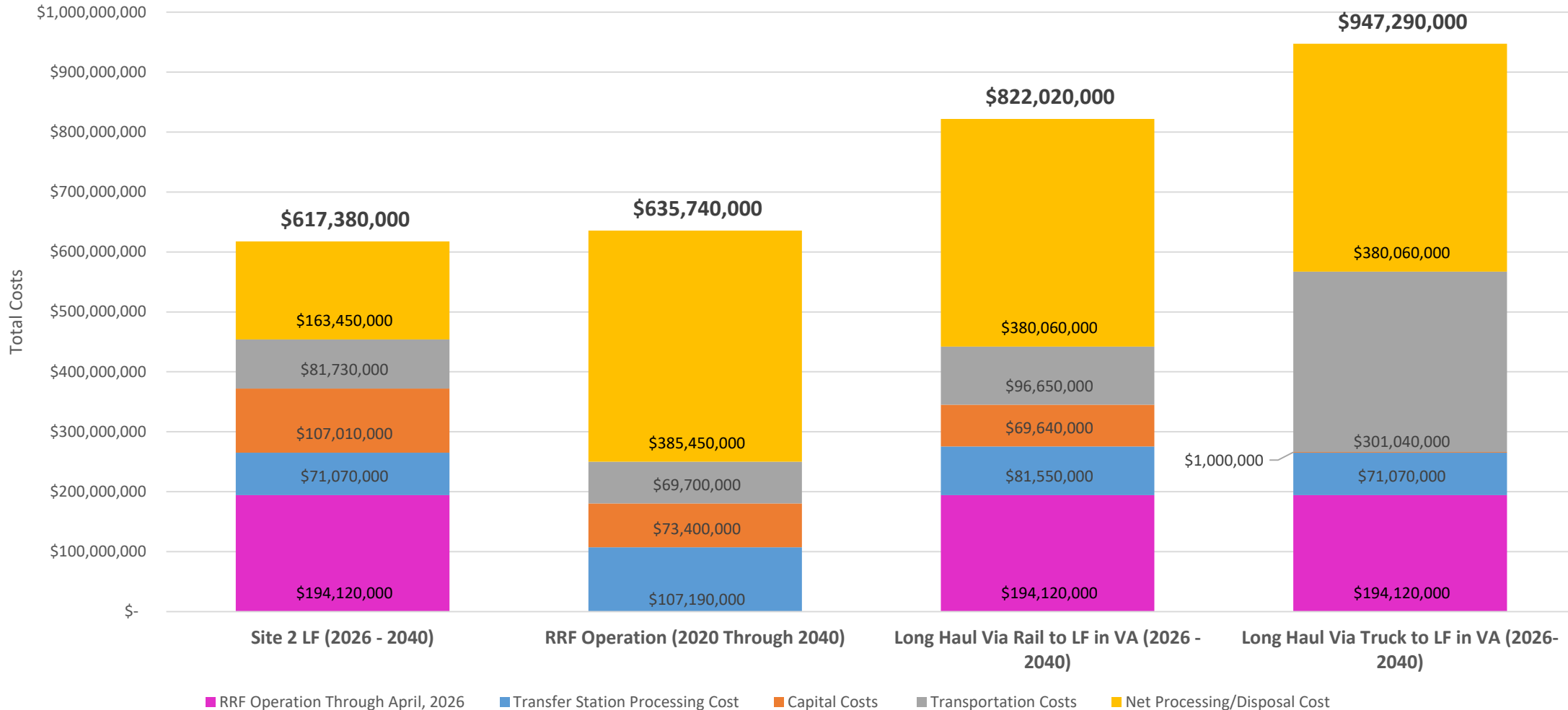
Cost per Ton – Breakdown by Scenario



Lifecycle Cost Analysis – 2020 - 2040

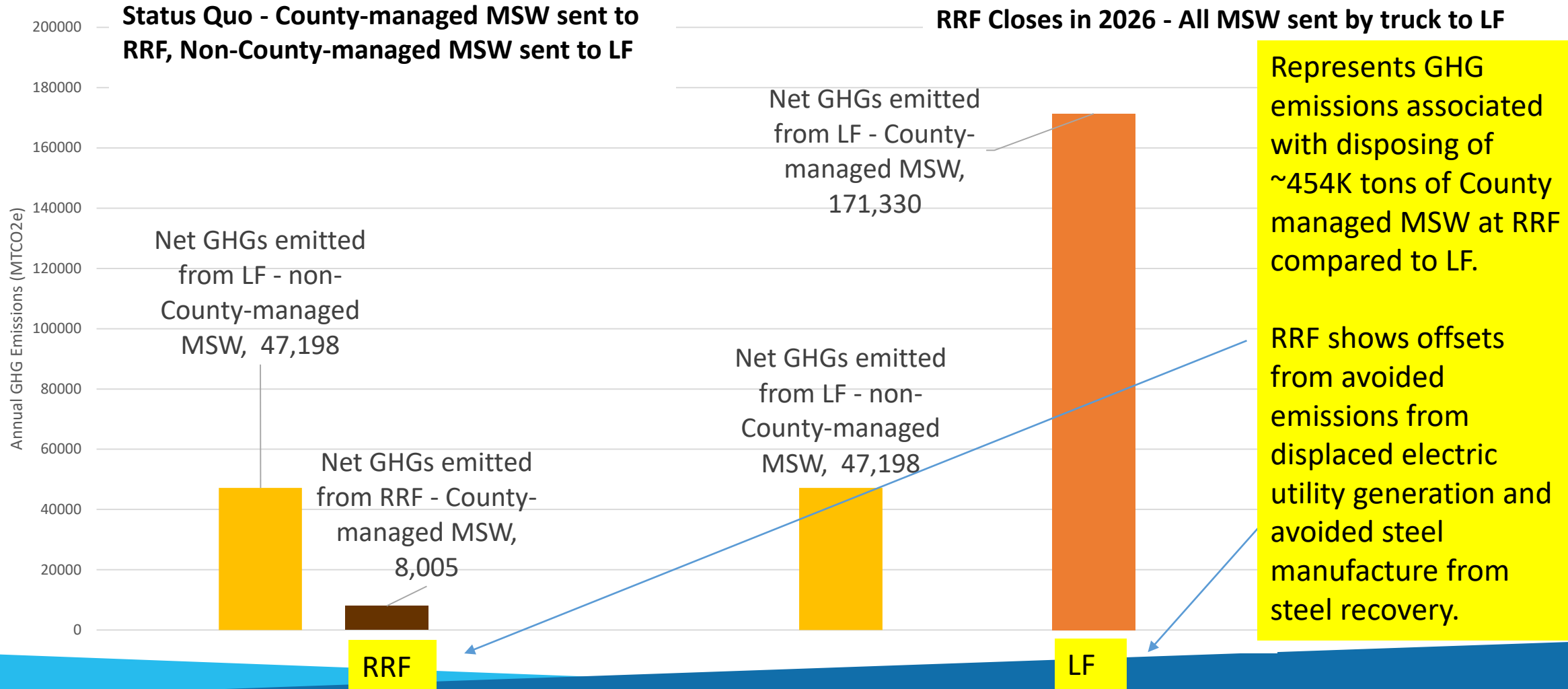
Breakdown by Disposal Scenarios

Undiscounted Dollar Value (\$2019) – (includes costs to operate RRF until 2026)



Comparison of GHG Emissions

Disposing Trash at RRF vs Trucking to a Landfill after 2026



Analysis of Disposal Options - Conclusions

Continued Use of RRF

- Hauling trash by rail to RRF minimizes impacts to road networks and traffic and reduces GHGs.
- Least costly and disruptive option.

Site 2 Development

- Similar to continued operation of the RRF through 2040.
- Least expensive option to manage waste after 2026 compared to hauling to a LF in VA.
- Would allow the County to continue to manage waste generated within its own borders at the least cost to rate payers.

Analysis of Disposal Options – Conclusions cont'd

Rail haul to a landfill located outside the County:

- More costly than Site 2.
- Fewer GHGs compared to long-haul by truck.
- Rail haul to VA LF costs ~48% more than Site 2 or continued RRF operation through to 2040 (not including cost for rail-yard).
- Need feasibility study and costing for rail-yard development.

Analysis of Disposal Options – Conclusions cont'd

Long-haul by truck to a landfill located outside the County:

- Increases GHGs, noise and traffic in the areas near Shady Grove as well as roads outside the County and in communities near the host landfill.
- Increases number of transfer trailers at Transfer Station (from ~700 to 20,000 annually).
- Not aligned with the Priority Outcomes of this administration and its goal of a carbon-neutral County.
- More costly and risky due to driver shortages.
- Truck haul to VA LF costs ~78% more than Site 2 or continued RRF operation through to 2040.

Conclusions

- Montgomery County has the opportunity to build upon an already, world class integrated waste management system.
- Recommendations build on the current system and identify opportunities to divert more materials.
- Options set the County on a path to “Zero Waste” and consider a range of social, environmental and financial aspects.
- County will need to undertake more studies, costing exercises and procurement processes when selecting options to implement.
- County will need to make significant investments in infrastructure for collection, transfer, processing and disposal.

Next Steps

- Participate in OLO discussions on extension of trash collection services to Sub-district B.
- Start with short-term options such as waste reduction and reuse which are low-cost, low-effort for the County and enhanced regulations such as single-use plastics, including straws.
- Conduct feasibility studies: standard trash container, train/truck haul for out-of-the county disposal, community negotiations to develop Site 2 or/and modification of Dickerson composting facility.
- Development of food waste processing capacity.
- Retrofit MRF and continue process for a new MRF in the County or a regional facility.



Comparison of Tons and GHG Reductions

