



**Less Waste, Better Baltimore**  
Rethinking our waste management future

# Planning Commission Meeting Final Master Plan

10 September 2020

# Goals for the LWBB Plan



- Help the City achieve their vision for improving solid waste and recycling in Baltimore over both the short- and long-term by implementing the options recommended:
  - Consistent with the existing **Solid Waste Management Plan**
  - In accordance with the **Baltimore Sustainability Plan** and associated strategic plans
  - In accordance with the **Climate Action Plan**
  - In support of **Disaster Debris Management Planning**
  - Consistent with **City Council** legislative efforts

# Guiding Principles



- Maximizing **waste reduction and diversion** while meeting the City's short- and long-term needs for solid waste disposal;
- **Resource conservation**, including outreach efforts to inspire conscious decision making to reduce consumption and waste generation;
- Meeting goals for accountability, transparency, and **equity**;
- Aligning environmental, economic, and social needs to achieve **operational and financial sustainability**;
- Creating **green jobs** in the recycling and reuse sectors; and
- Seeking opportunities for **cooperation and collaboration**.

# Outline of Final Master Plan



1. Introduction
2. Stakeholder Outreach
3. Assessment of Existing System, Options, and Needs
4. Methodology for Prioritizing Options
5. Strategies for Encouraging Waste Reduction and Reuse
6. Recycling and Diversion Options
- ~~7. Mixed Waste Processing Options~~
8. Transfer and Disposal Options
9. Summary

Background and Set Up

Recommendations

# Stakeholder Input



**Less Waste, Better Baltimore**  
Rethinking our waste management future

## Survey Results

April 18, 2019

Prepared for



Prepared by

**Geosyntec**  
consultants

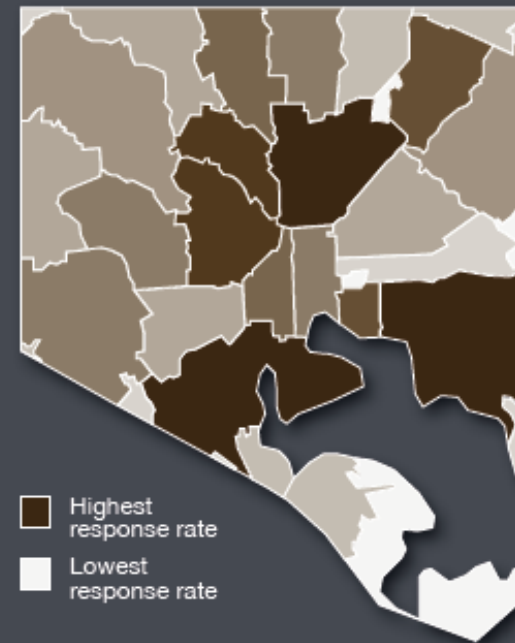
**NEXIGHT GROUP**

### Overview of Survey Respondents

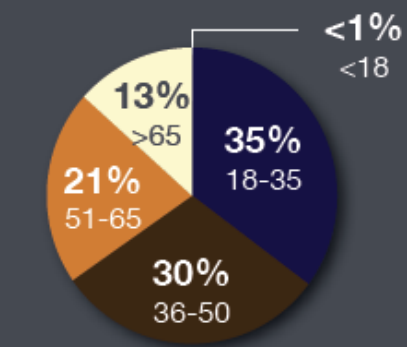
**2,004**  
total responses

**1,724**  
completed surveys

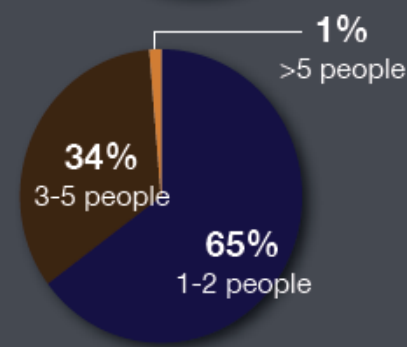
### Geographic distribution of responses (by zip code)



Age



Household size



# Stakeholder Input



## Support for Potential Policies and Approaches



**96%**

of people surveyed agree or strongly agree that they **support policies that lead to improved waste reduction, recycling and reuse**

### The City should:



**Provide literature that focuses more on waste reduction and reuse**



**73%**

agree or strongly agree



**Increase access to curbside recycling** (e.g., provide recycling bins/carts to every single-family homes, provide multi-unit buildings with assistance in implementing recycling)



**84%**

agree or strongly agree



**Encourage reduced waste from construction and demolition**



**90%**

agree or strongly agree



**Provide more alternatives to waste disposal** like curbside collection of organics for composting, even if these alternatives cost residents more



**66%**

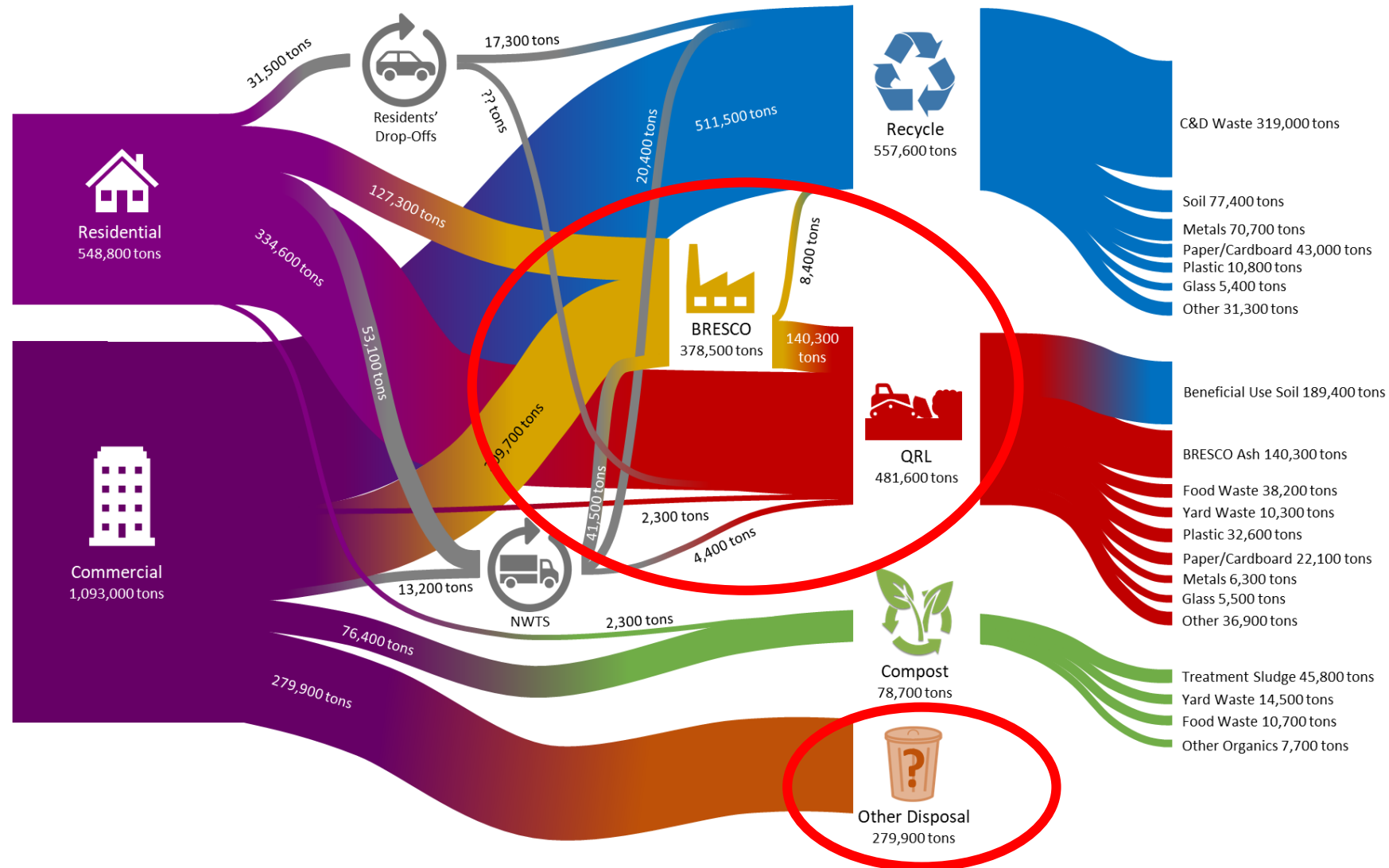
agree or strongly agree



**86%**

of people surveyed agree or strongly agree that they **support policies that ban single-use plastics or other manufacturer/retailer responsibility laws**

# Waste Flows in Baltimore City



# Estimated Quantities of Materials (2017 data)



Category	Residential Waste (tons)	Commercial Waste (tons)	Total (tons)
<b>Total Disposal</b>	<b>319,450</b>	<b>496,650</b>	<b>816,100</b>
Food Waste	65,450	44,050	109,500
Other Compostables	35,250	15,150	53,700
Cardboard	24,600	32,350	56,950
“Easy-to-Recycle” Plastics	12,700	7,550	20,250
Other Recycl. (incl. “Hard to Recycle”)	95,100	68,400	163,500
Mixed C&D Waste	3,100	261,200	264,300
Wood	2,400	22,000	24,400
Non-Trad. Recycl. (Bulky Waste)	2,800	2,800	5,600
Unclassified	77,050	40,850	117,900



# Expected Maximum Diversion Potential (MDP)

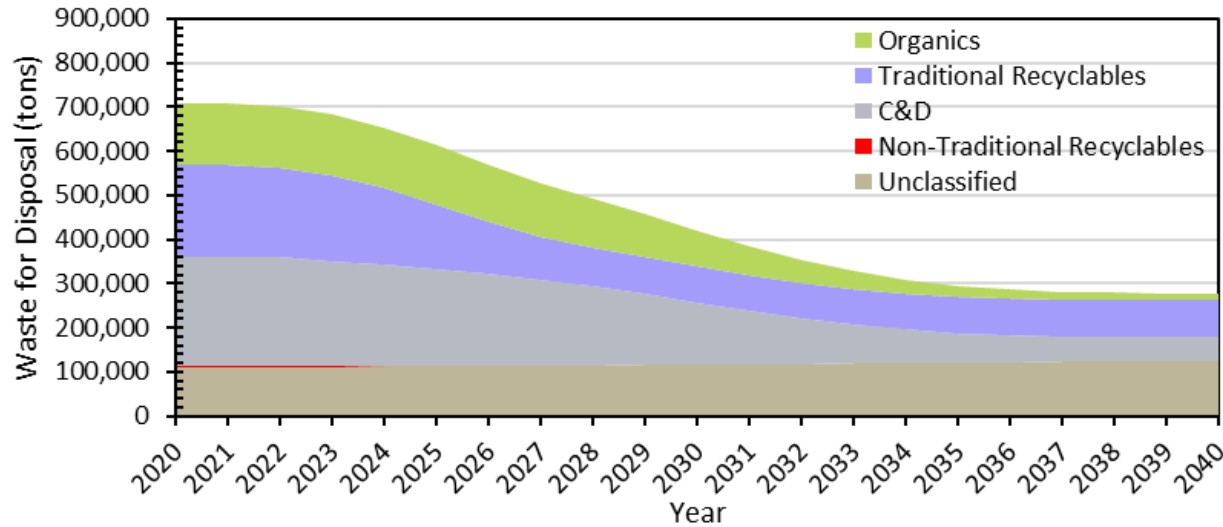


Diversion/Recycling Option	Maximum Diversion Potential (tons)	Expected Performance Timeframe (years)
Food Waste Reduction	72,400	20
Residential Organics Diversion	42,800	20
Commercial Organics Diversion	35,500	20
Improved Recycling Collection	84,200	10
Expanded Recycling Collection	69,300	10
C&D Reuse and Reduction	28,400	10
C&D Diversion	200,100	20
Bulk Waste Diversion	4,100	10
Drop-Off Center Improvements	16,100	5
<b>TOTAL</b>	<b>552,900</b>	-

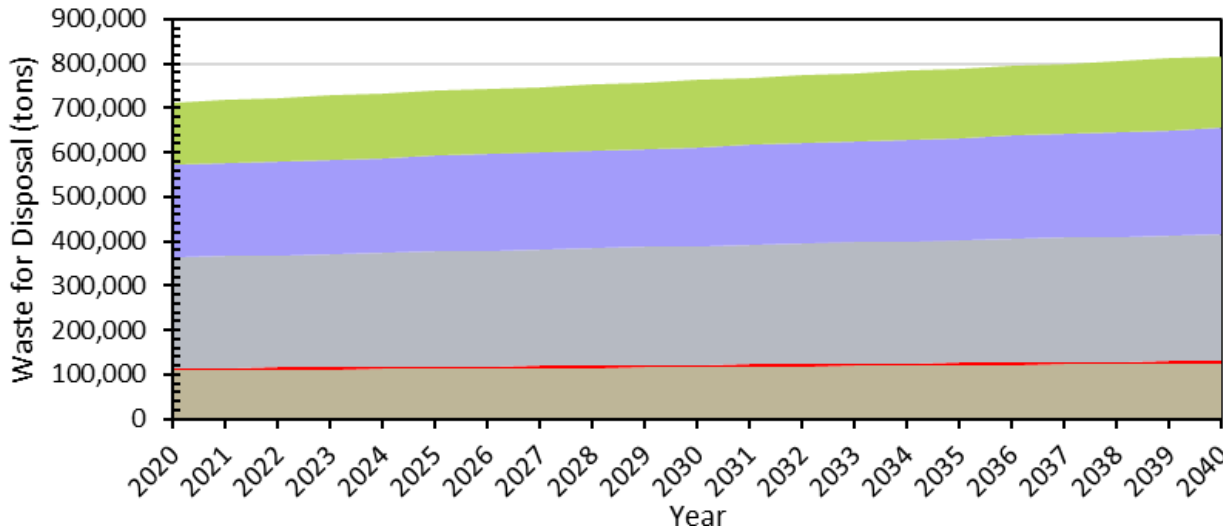
**Achieving the MDP would increase the overall diversion rate for all waste in Baltimore to about 83%**



# Expected Changes in Waste Disposal



**If we achieve 100% of the Maximum Diversion Potential by 2040**



**If we maintain the status quo**

# Ch. 5: Strategies for Waste Reduction/Reuse



### Legislative Initiatives



### Education and Outreach

May 2020  
\$250,000 Grant



**THE RECYCLING PARTNERSHIP**

### Incentive/Reward Programs



### Reuse and Swap Events



### Green Procurement



### Sharing and Reuse Libraries



# Ch. 6.1: Organic Waste Food Waste Reduction



BALTIMORE FOOD  
WASTE & RECOVERY  
STRATEGY

Goal  
50-100% food waste  
reduction by 2040

Developed by The Baltimore  
Office of Sustainability

2018

Requires significant political action and behavioral changes by consumers, manufacturers, restaurants, stores, etc.

Reduction	
Costs	
Timeframe	
Benefits	
Mechanism	City + Nonprofits

## Food Rescue Programs



## Education and Outreach



# Ch. 6.1: Organic Waste Residential Organics Collection



**BALTIMORE FOOD  
WASTE & RECOVERY  
STRATEGY**

Goal  
**80-90% food waste  
diversion by 2040**

Developed by The Baltimore  
Office of Sustainability

2018



**Encourage Backyard and Community Composting**



**Separate Curbside Collection**

Diversion	↑ ↓
Costs	\$ \$ \$
Timeframe	📅 📅 📅 📅
Benefits	👍 👍 👍 👍
Mechanism	Public-Private Partner



**New Composting Capacity**

# Ch. 6.1: Organic Waste Commercial Organics Collection



- Achieved through selective policy implementation and enforcement, not by DPW stepping in to collect commercial organics and operate additional processing capacity.
- Requires action by City Council to pass regulations and enforcement by DPW.
- Phased in policy approach, starting with subsidies or credits for voluntary participation before moving to mandatory participation.

Diversion	↑ ↓ ↑ ↓
Costs	\$ \$ \$
Timeframe	📅 📅 📅 📅
Benefits	👍 👍 👍 👍
Mechanism	Private Sector



Separate Organics Collection



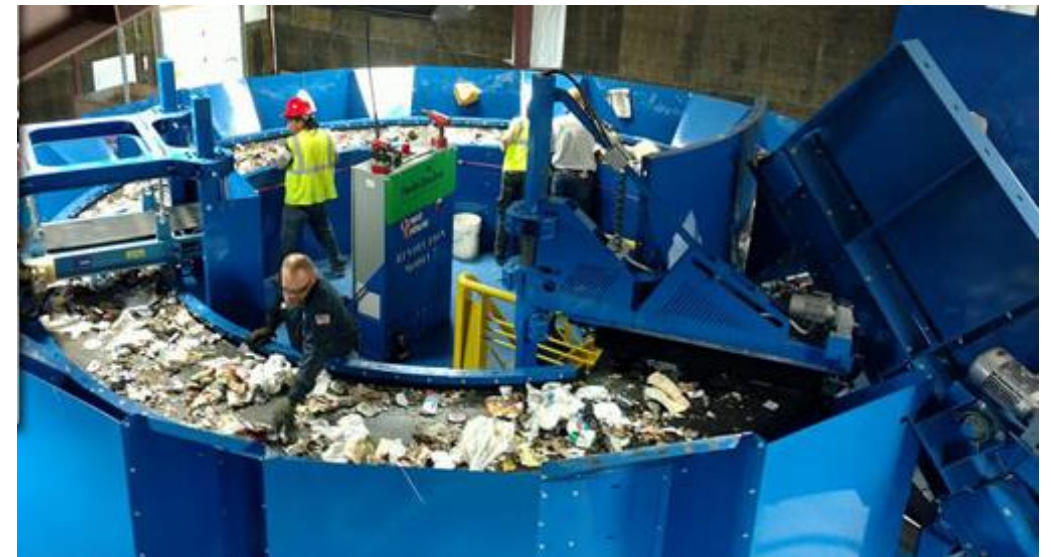
New Composting Capacity

# Ch. 6.2: Traditional Recycling Improve Residential Curbside Recycling



- The option recommended for improving the existing curbside program is providing free recycling carts with secure covers to residents to increase participation in curbside recycling.
- Maintain weekly collection.
- Significant education and outreach to minimize contamination and improve recycling habits.
- Transition from sending recyclables to WMRA to developing “mini-MRFs”

Diversion	↑ ↓ ↑ ↓
Costs	\$ \$ \$
Timeframe	📅 📅
Benefits	👍 👍 👍
Mechanism	Public-Private Partner



Workers at a Simple Mini-MRF Sorting System

# Ch. 6.2: Traditional Recycling Expand Recycling Services



Expand Access to Recycling  
Multifamily Buildings + Commercial Sector  
**Mobile Collection**  
**Public Spaces**

Requires Action by City Council to Pass Ordinances plus Enforcement of Rules by DPW

Diversion	
Costs	
Timeframe	
Benefits	
Mechanism	Private + City

## Increased Access to Recycling



## Mobile Collection Units



## More Smart Cans in Public Spaces





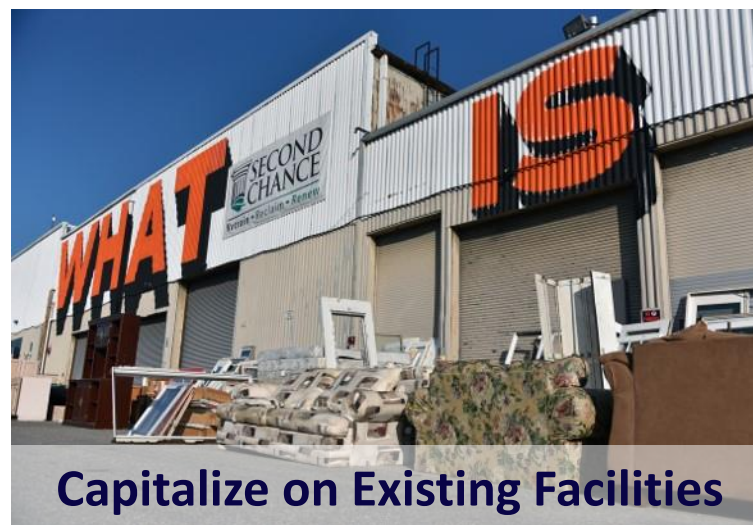
# Ch. 6.3: C&D Waste Increase Reuse and Diversion



- C&D waste represents the single largest component of the waste stream for disposal, comprising about 288,700 tons (35% of the total disposal waste stream in Baltimore) in 2017.
- Current C&D recycling rate is 48%.

- Reuse Program
  - Deconstruction Policy
  - Architectural Salvage
- Diversion Program
  - Diversion Ordinance
  - Expand Recycling Capacity

Diversion	↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓ ↑ ↓
Costs	\$ \$ \$
Timeframe	📅 📅 📅
Benefits	👍 👍 👍
Mechanism	Private



# Ch. 6.4: Non-Traditional Recycling Bulk Waste Recycling and Reuse



## Support Donations



## Waste-to-Art Initiatives



Diversion



Costs



Timeframe



Benefits



Mechanism

Private + City

## Develop Recycling Capacity for Bulky Items

### Fix-It/Repair Clinics



# Ch. 6.5: Upgrading Residents' Drop-Off Centers



- This option assumes that DPW would upgrade five existing DOCs to accept additional recyclable and donatable materials
  - Bulky items – mattresses, carpet, furniture, homewares, textiles, ceramics, and porcelain
  - Items that are currently accepted but are not separated – C&D waste, bulky waste, food scraps and other organics, appliances with large amounts of rigid plastic, and yard waste)
  - This option could include a materials exchange network/partnership to partner with nonprofits to expand donation of items

Diversion	
Costs	
Timeframe	
Benefits	
Mechanism	City

**Austin's Recycle and Reuse Drop-Off Center and ReUse Store**



# Options for Handling What's Left

## Ch. 8.2: Continued Disposal in the City



### 1. QRL

- a. Key goal of LWBB Plan is to preserve airspace at QRL
  - Contingency capacity for disaster debris
  - Delayed cost of full expansion construction
- b. Unlikely to be able to develop new large landfill in Baltimore area

### 2. BRESCO

- a. For disposal beyond 2021, it is assumed Wheelabrator will make capital improvements to emission controls to satisfaction of the City
- b. City should sign 5 or 10 year contract extension to allow time for recycling options to mature and to develop waste transfer capacity

QRL	QRL Savings	-
	Capital	\$85.5M
	Operating	\$67.50/ton
	Timeframe	Immediate
	Mechanism	City

BRESCO	QRL Savings	150,000 tons/year
	Capital	\$95M
	Operating	<\$50/ton
	Timeframe	Immediate
	Mechanism	Private

# Options for Handling What's Left

## Ch. 8.3: Waste Transfer Options



### 1. Existing NWTS

70,000 tons/year capacity by 2022

### 2. New Truck Transfer Station (TS2)

Additional 165,000 tons/year capacity by 2026

### 3. Large Rail Transfer Station (RTS)

Additional 530,000 tons/year capacity by 2030

#### Notes:

1. Size based on 125% of future needs under worst case assumptions
2. Timing of TS development and use depends on BRESCO status
3. Once RTS is Available, NWTS and TS2 are used for intra-city only
4. RTS capacity is initially for residential sector only, then commercial as spare capacity develops

	NWTS	TS2
QRL Savings	70,000 tpy	165,000 tpy
Capital	-	\$16M
Operating	\$75/ton	\$75/ton
Timeframe	Immediate	5+ years
Mechanism	City	City

RTS	QRL Savings	315,000 tons/year
	Capital	\$61M
	Operating	\$50/ton
	Timeframe	10 years
	Mechanism	Public-Private Partner

# Summary of the LWBB Plan



- Provides a roadmap for getting to 83% diversion of waste from disposal by 2040
  - Additional diversion needs to come from policy/regulatory initiatives
- Consistent with Baltimore's existing strategic plans
- Seeks to preserve contingency disposal airspace at QRL
- Strategic plan with performance-based structure
  - Operationally focused to aid implementation of options
- Most options are phased, starting modestly and building over time
- Success will require concerted effort by all sectors of the city
- Long-term disposal of residuals will transition to out-of-city
  - Redundant transfer capacity accounts for potential disruptions

# Thank you

