

A photograph of the Boston skyline, including the Hancock Tower and other skyscrapers, viewed from a park area with trees and a body of water. The entire image is overlaid with a semi-transparent blue filter.

Boston Zero Waste Advisory Committee Meeting July 16, 2018



Agenda

- Welcome and Introductions
- Review Agenda and Desired Outcomes
- Project Update, Including Community Engagement
- Economic Development Recommendations
- Zero Waste Plan Outline & Initiatives Summary
- Zero Waste Plan Estimate of Costs
- Breakouts: Challenges, Costs and Timing
- Reports Back from Breakouts
- Next Steps

Desired Outcomes

Update ZWAC and get feedback on:

- economic development recommendations
- ZW Plan structure
- initiatives, costs, and timing

Update ZWAC on outreach:

- community meetings
- survey
- how responses to comments will be handled
- case studies

Since Last Meeting....

- ✓ Considered and integrated Zero Waste Advisory Committee and community input
- ✓ Refined zero waste options
- ✓ Started outreach case study research
- ✓ Drafted economic development recommendations
- ✓ Drafted impact analysis
- ✓ Drafted Zero Waste Plan outline

**Questions?
Comments?**

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Zero Waste Plan Community Engagement



Community Engagement Since Last Meeting...

- ✓ Held 9 neighborhood meetings (5 more planned) and participated in 10 of Mayor's neighborhood coffee hours
- ✓ Drafted survey based on Evaluation Criteria
- ✓ Tracked comments from ZWAC and community meetings



GREENOVATE
CITY *of* BOSTON

Discussion

A blue-tinted photograph of a university campus. In the center, a large, leafy tree stands next to a statue of a man in a long coat, mounted on a stone pedestal. To the left is a building with arched windows, and to the right is a taller building with classical architectural details. The word "Discussion" is written in white, bold, sans-serif font across the middle of the image.

Zero Waste Economic Development



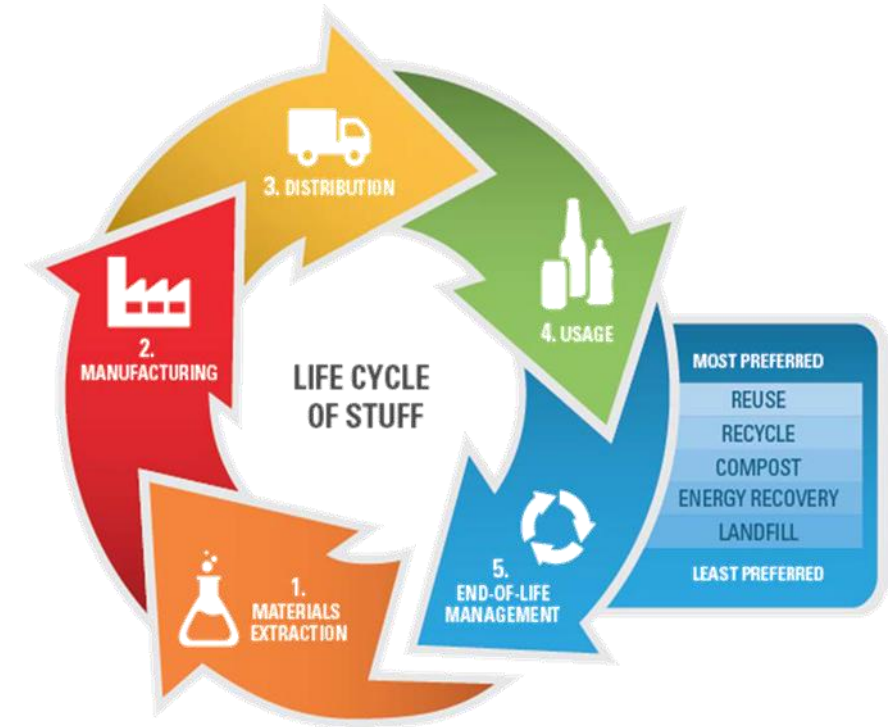
What Is Zero Waste Economic Development

- Primary focus for this purpose is on the market/demand side: repair, reuse, remanufacture, compost, and recycling.
- Strategies geared towards supporting, retaining, and creating a wide range of jobs and businesses that utilize a diversity of materials.



Why Focus on Demand?

- Markets first: materials can't be diverted without markets
- Most of Plan already geared towards reduction and collection
- Many recommended strategies can also cover those activities



Benefits of Economic/Market Development

- Create local jobs
- Shield City from some of the ups/downs of international commodities
- High value markets are more resilient
- Reduce GhG impacts of transportation
- Bring in tax revenue
- Raise awareness about Zero Waste to local community



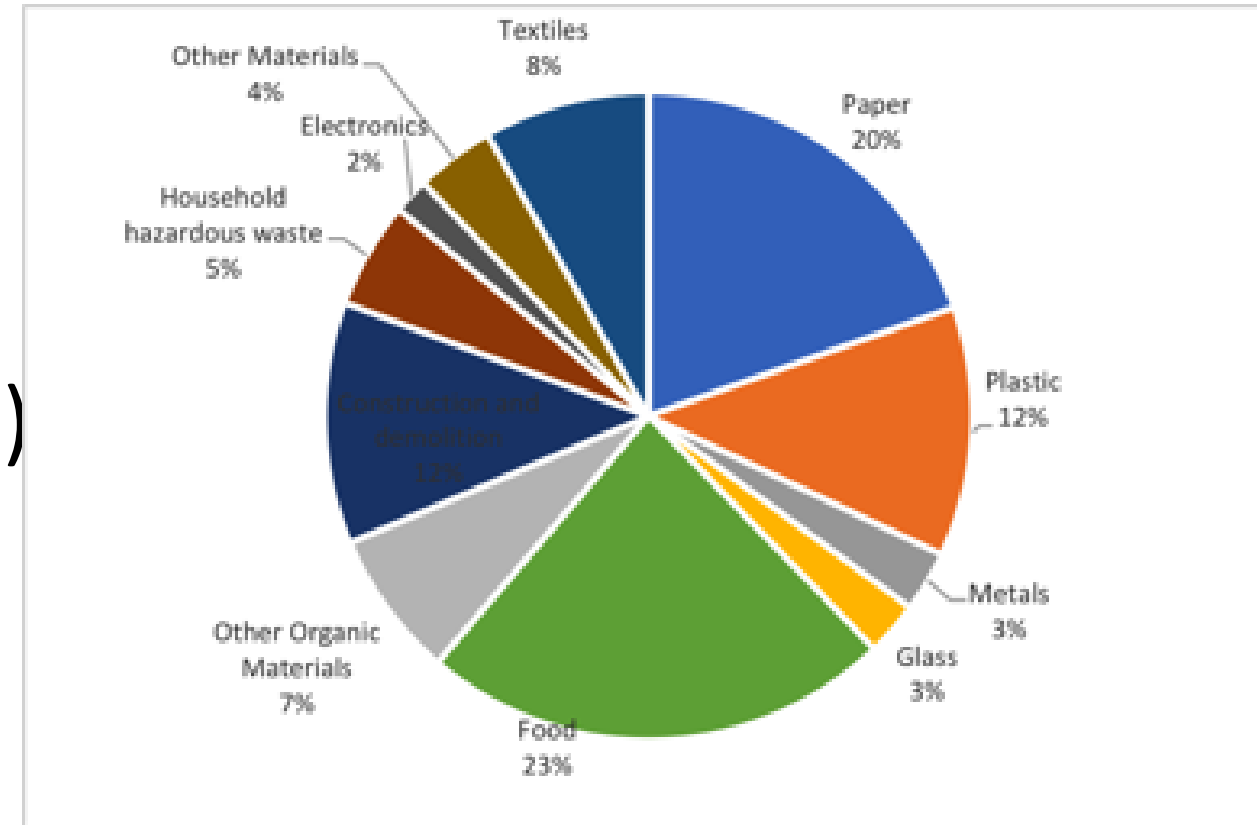
Challenges of Economic/Market Development

- Competing against international commodities
- Lack of adequate supply or demand
- Expense of land and buildings
- Loss of commercial and industrial zoning



Boston Materials Particularly Suitable for Economic/Market Development

- Organics (rescue and composting) (32-34%)
- Construction, Demolition, Deconstruction Debris (17%)
- Glass (1-3%)
- Reusables



Recommended Strategies for Economic/Market Development

- Create a cohort of Zero Waste businesses
- Educate the public about local Zero Waste service providers (app, website)
- Create mechanisms to help businesses acquire new land or buildings
- Develop the workforce
- Ensure that zoning supports recycling and manufacturing

Recommended Strategies for Economic/Market Development, cont'd

- Use Boston's recycling processing contract to support markets
- Develop a Zero Waste business attraction strategy
- Take advantage of universities in the region
- Identify local manufacturers that can utilize secondary feedstock
- Sponsor demonstration projects
- Provide Recycling Market Development grants

Recommended Strategies for Economic/Market Development, cont'd

- Work with business accelerators and entrepreneurship programs
- Use the City's purchasing power
- Support a local Materials Exchange
- Encourage measures to improve the safety, health, and jobs of workers
- Work regionally
- Ensure there is a key staff person in the City's office of Economic Development



Companies Possibly Interested in Boston

Utilize:

- Cartons
- Paper
- Glass
- Organics



Discussion

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Boston Zero Waste Plan Outline, Themes, Initiatives, Costs and Benefits



Boston Zero Waste Plan Outline

1. Overview (Process, Guiding Principles, Evaluation Criteria)
2. Existing System (Data, Programs, Opportunities)
3. Initiatives: Services, Rules, and Outreach & Education
4. Impact Analysis (Cost/Benefits, Staffing, Jobs, GHGs)
5. Implementation (Goals and Milestones, Funding Options, Data and Reporting, Timeline)
 - Short-term (2019-2024)
 - Medium-term (2025-2030)
 - Long-term (2031-2040)
6. Appendix: Full Initiative Descriptions

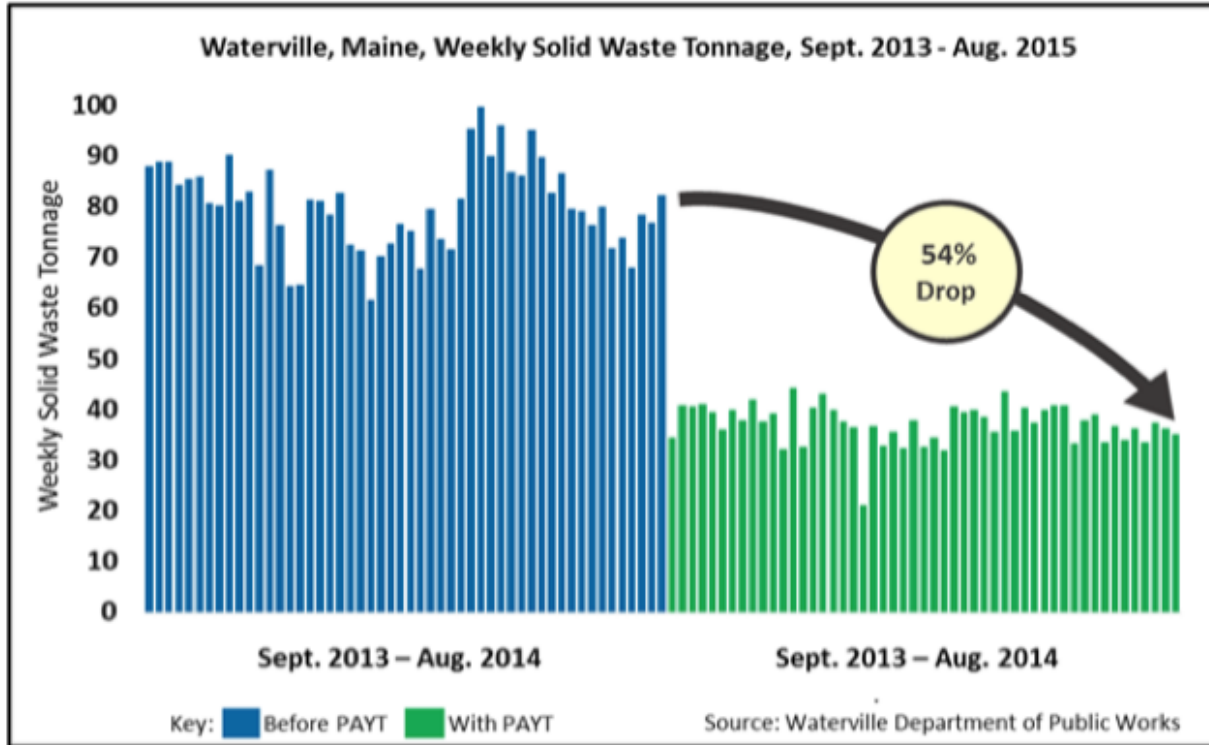
Key Themes in Recommended Initiatives

- 3-Clean Streams (recycling, compost, trash)
- Smart Carts & SMART Rates
- Education & Incentives first
- Improve Efficiency
- Phase in Services Universally
- Enforce Fairly
- Create and Retain Jobs
- Get Better Data



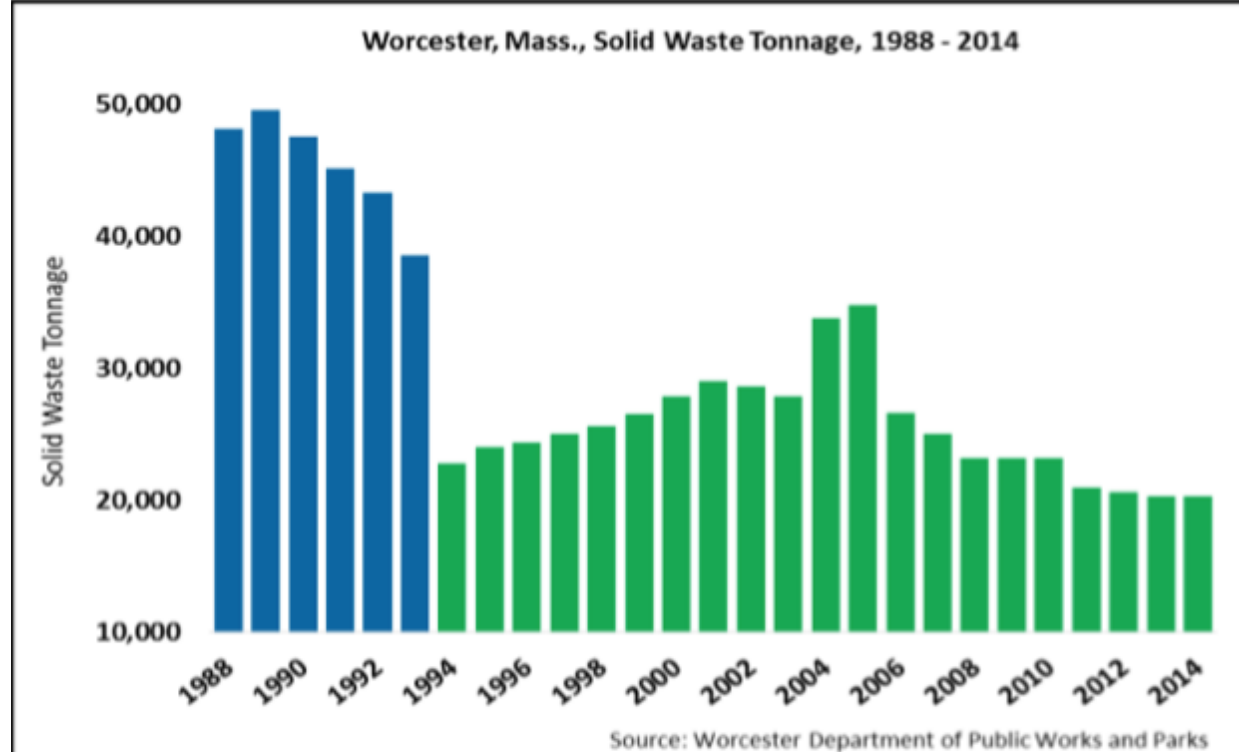
New Rules

Save Money and Reduce Trash (SMART)



WATERVILLE, MAINE

54% DECLINE IN MSW IN 1 YEAR



WORCESTER, MASS.

55% DECLINE IN MSW OVER 21 YEARS

Summary of Boston Zero Waste Plan

1. **Services**
2. **Rules**
3. **Outreach & Education**



Efficiency is key

Services

A1.	Expand Residential and Commercial Organics Diversion
A2.	Reuse Collection and Facilities
A3.	Residential Collection System Changes
A4.	Neighborhood Drop-off Centers
A5.	Zero Waste Research Initiative
A6.	Lead by Example
A7.	City-Owned Transfer and Processing Facilities

Rules

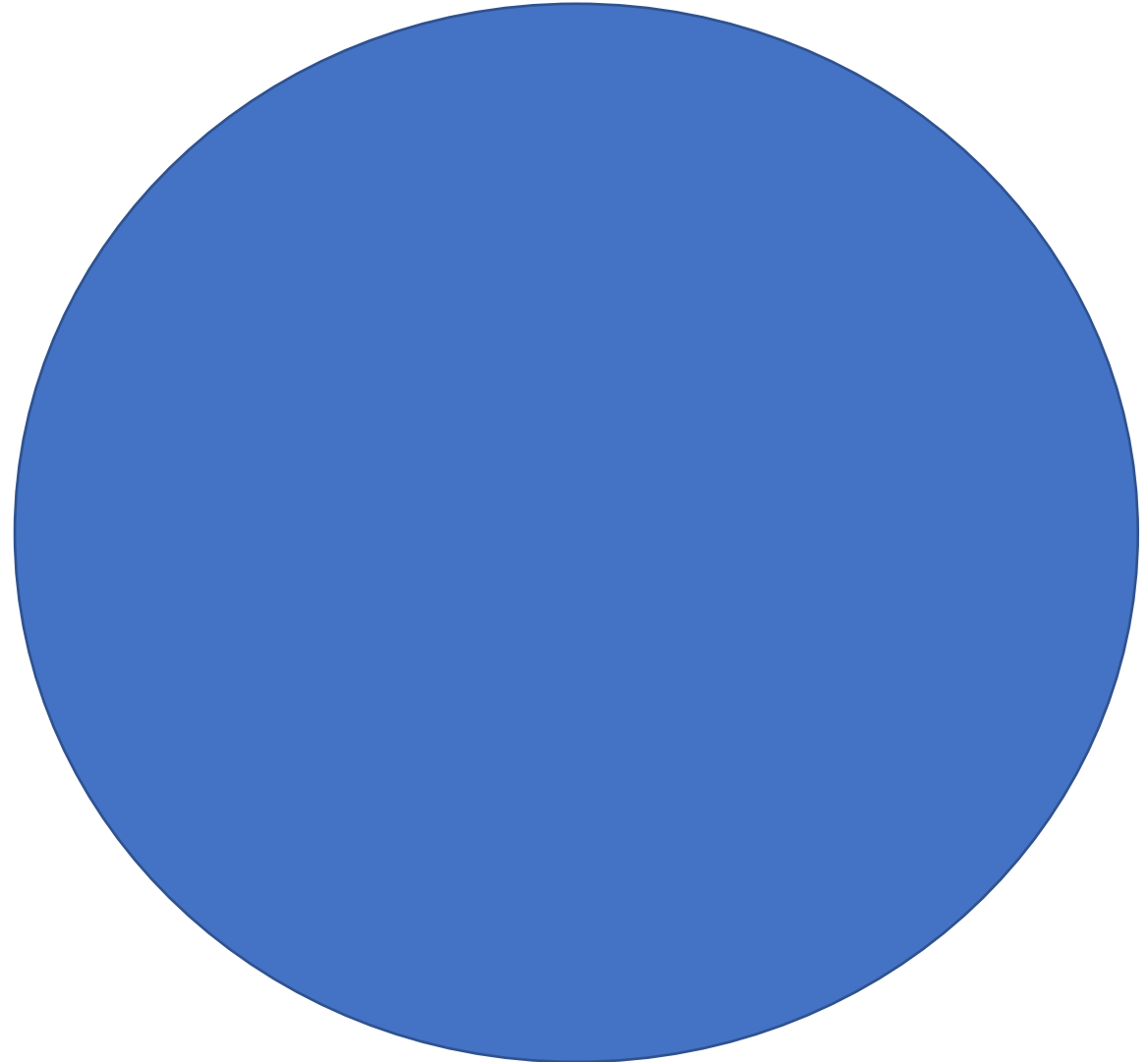
B1.	Mandatory Waste Reduction Ordinance
B2.	Institutional, Commercial and Industrial Options
B3.	Product and Packaging Waste Reduction
B4.	Environmentally Preferable Purchasing
B5.	Zero Waste Venues & Events Ordinance
B6.	Ban Reusables from Disposal and Fees to Enforce
B7.	Deconstruction, Recycling and Source Separation of Construction and Demolition Materials

Outreach & Education

C1.	Outreach and Technical Assistance
C2.	Behavior Change Marketing
C3.	Awards and Certifications
C4.	Grants for Outreach, Waste Prevention, Infrastructure and Business Development
C5.	Zero Waste Economic Development

Circle of Control and Circle of Influence

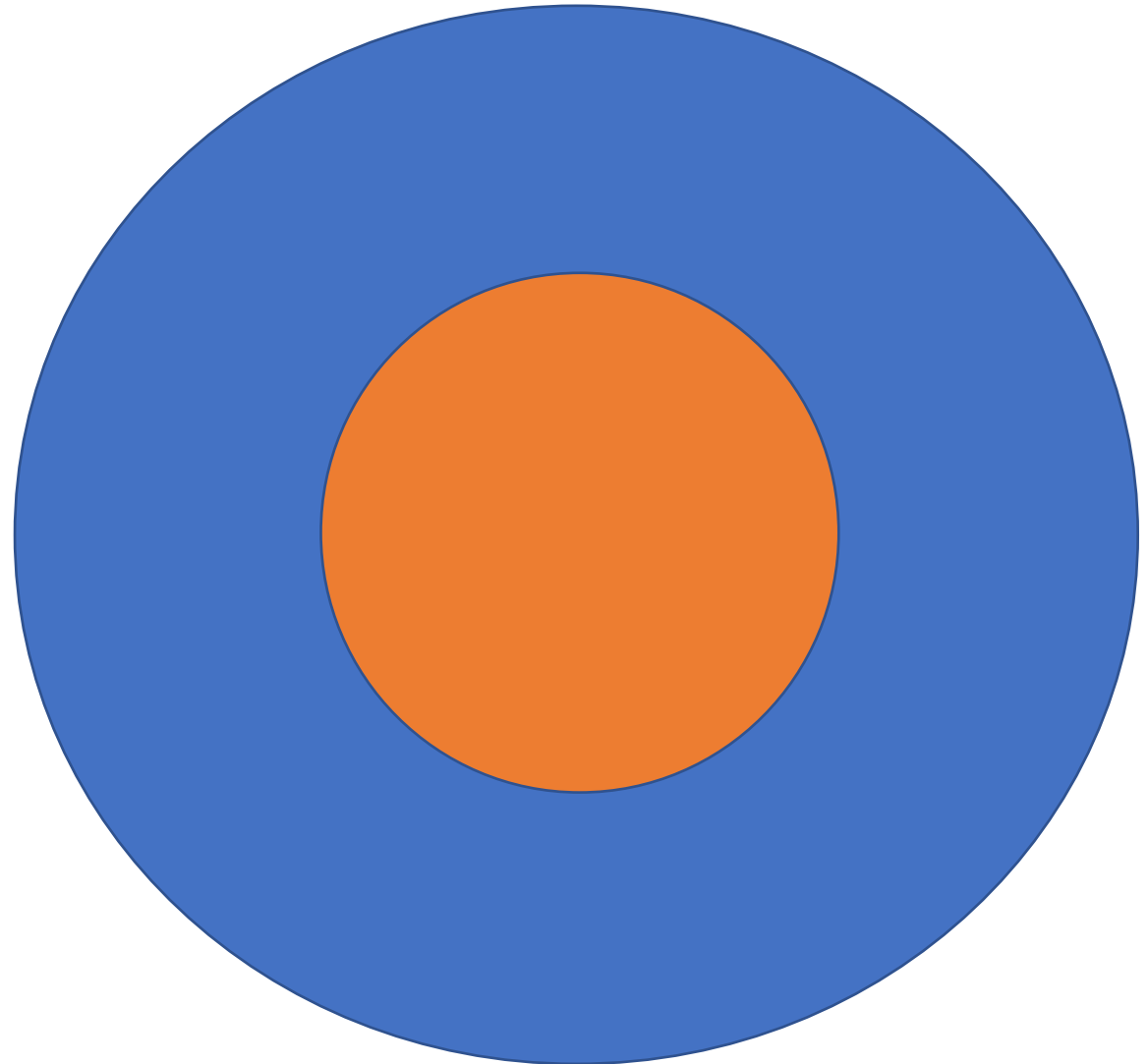
Boston Residents, Businesses and Visitors Dispose of approximately 874,000 tons per year



Circle of Control and Circle of Influence

Boston Residents, Businesses and Visitors Dispose of approximately 874,000 tons per year

Residential Trash is 22% of Total Trash

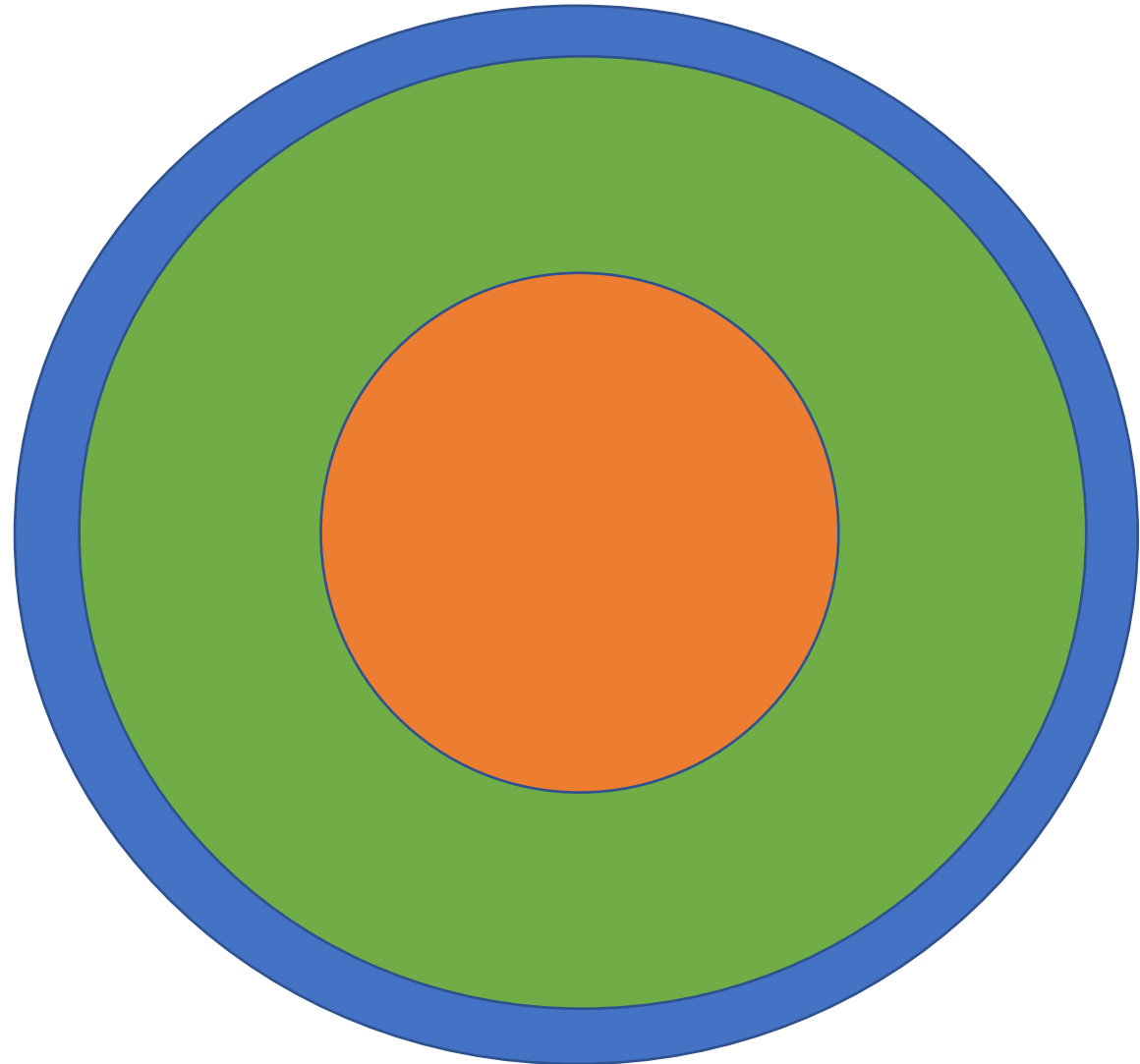


Circle of Control and Circle of Influence

Boston Residents, Businesses and Visitors Dispose of approximately 874,000 tons per year

Residential Trash is 22% of Total Trash

Commercial Trash is 78% of Total Trash



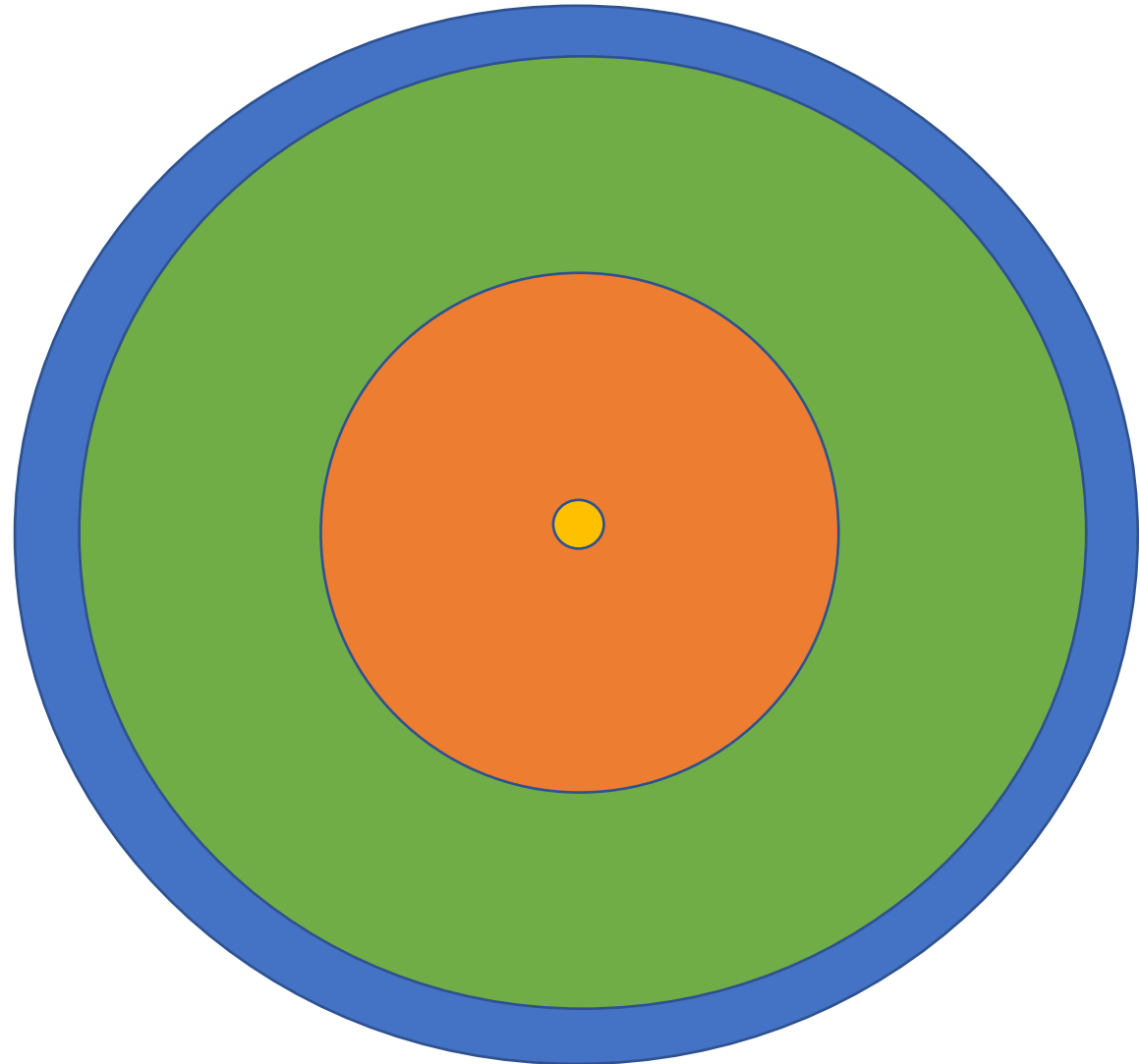
Circle of Control and Circle of Influence

Boston Residents, Businesses and Visitors Dispose of approximately 874,000 tons per year

Residential Trash is 22% of Total Trash

Commercial Trash is 78% of Total Trash

City Government Trash is 1% of Total Trash



Leadership and Policy are Essential Elements of Zero Waste

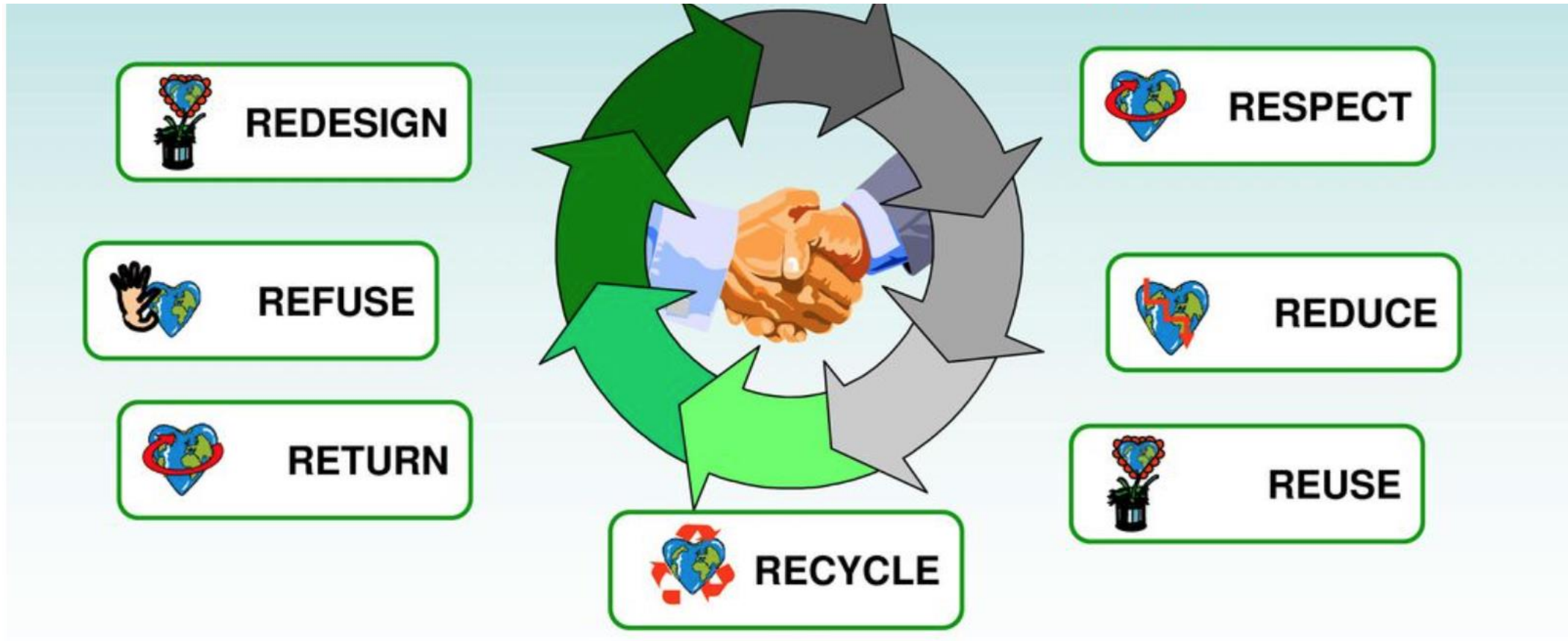


Leadership has a Multiplier Effect



Rules

Zero Waste saves money for institutional, commercial and industrial generators



Estimating Diversion Potential Example



9,700 tons of cardboard disposed by residential customers

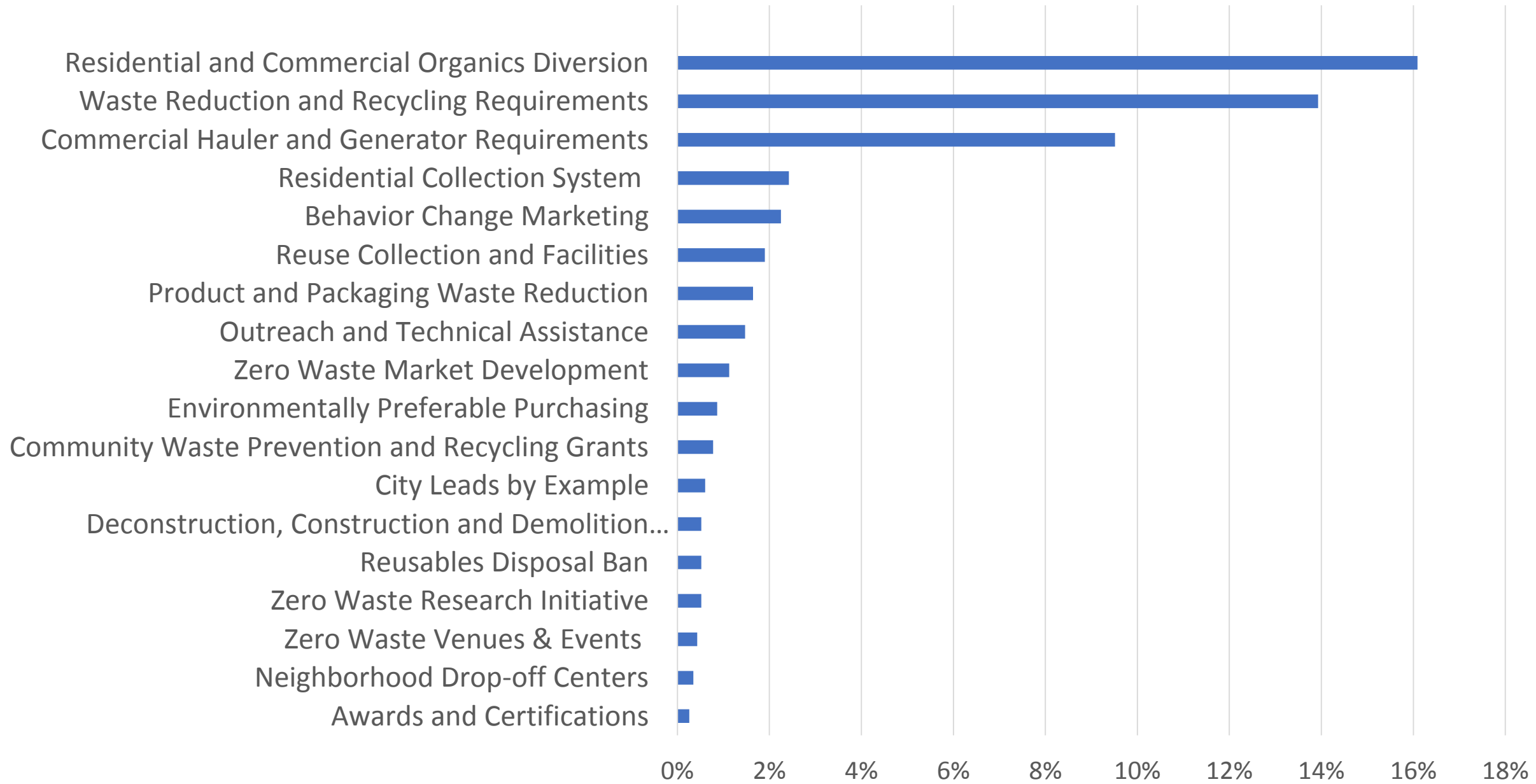
B1. Mandatory Waste Reduction Ordinance

Implementation of mandatory requirements is estimated to capture 25%



2,400 tons of cardboard diverted from disposal

Estimated Diversion Potential by Initiative



Estimating Costs

Estimates are based on incremental additional costs, including

- Additional City staff time
- Outreach contractors
- Facilities and equipment
- Additional processing costs
- Additional collection costs (average citywide)
- Includes disposal cost reduction
(but no estimated savings through increased efficiency)

Estimating Costs

Current systemwide costs are not included

- Current residential contracts total about \$40M annually
- Current ICI costs are not known (could be \$100-200M annually)



Net New Estimated Costs

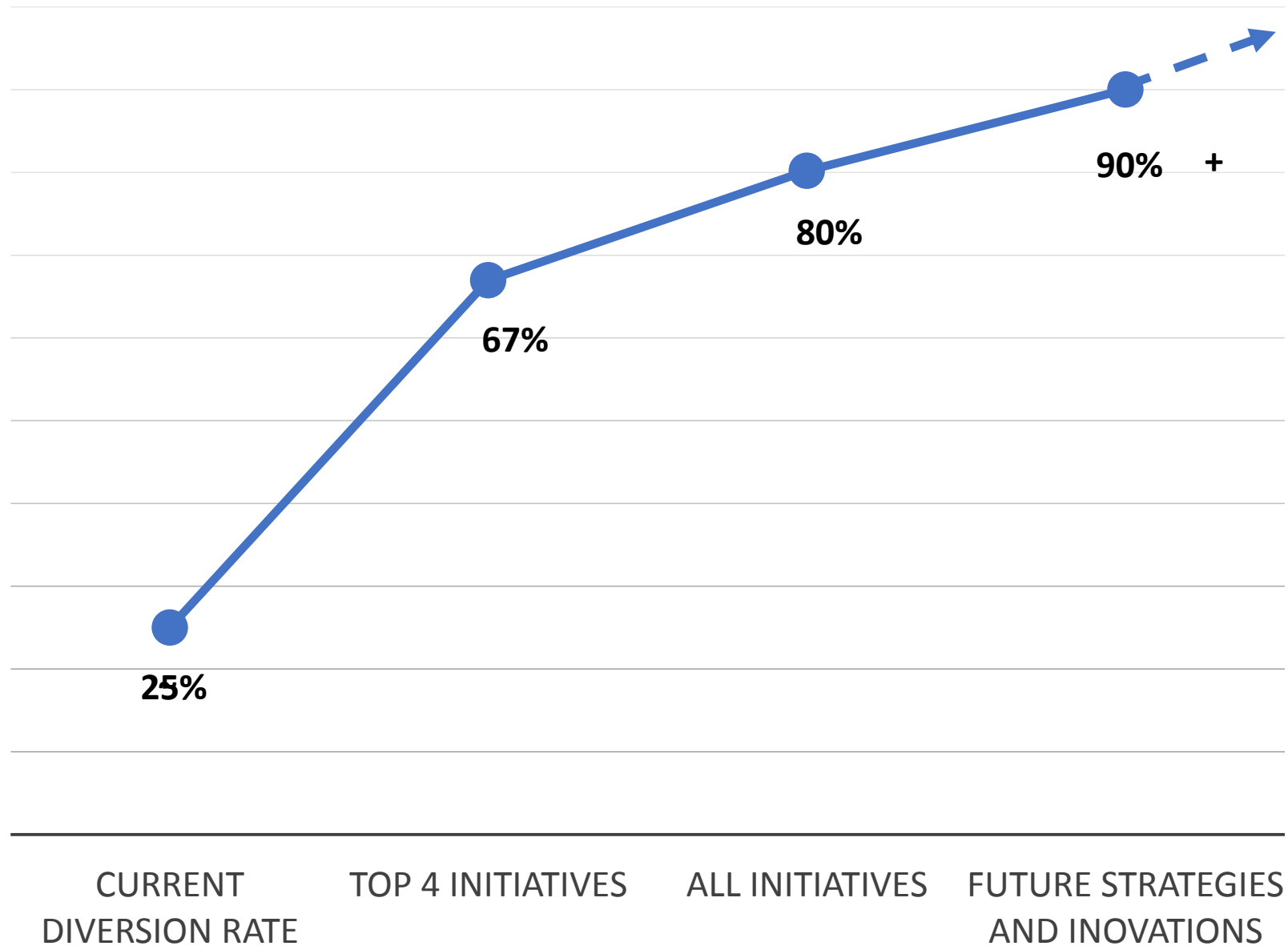
Additional Full-Time Equivalent Staff	20
Annual Staff Costs	\$2,000,000
Other Annual Costs	\$4,095,000
Processing Costs	\$18,740,000
Collection Costs	\$31,900,000
Disposal Cost Reduction	(\$41,470,000)
Total Net New Annual Cost	\$15,265,000
Total Additional Costs Per Household or Business Per Month	~\$5

Benchmarks	Annual Costs	Per Capita	Includes
Boston (Current)	\$40M	\$59	Residential collection, processing, disposal
Boston (Proposed)	\$55M	\$82	Residential collection, processing, disposal Residential estimated additional collection, processing ICI estimated additional collection, processing Zero Waste programs Estimated additional City staff costs
Austin	\$94M	\$99	Residential collection, processing, disposal ICI requirements Zero Waste programs City staff costs
Los Angeles	\$450M	\$113	Residential collection, processing, disposal ICI requirements Zero Waste programs City staff costs
San Francisco	\$178M	\$204	Citywide collection, processing, disposal (residential, ICI) Zero Waste programs City staff costs

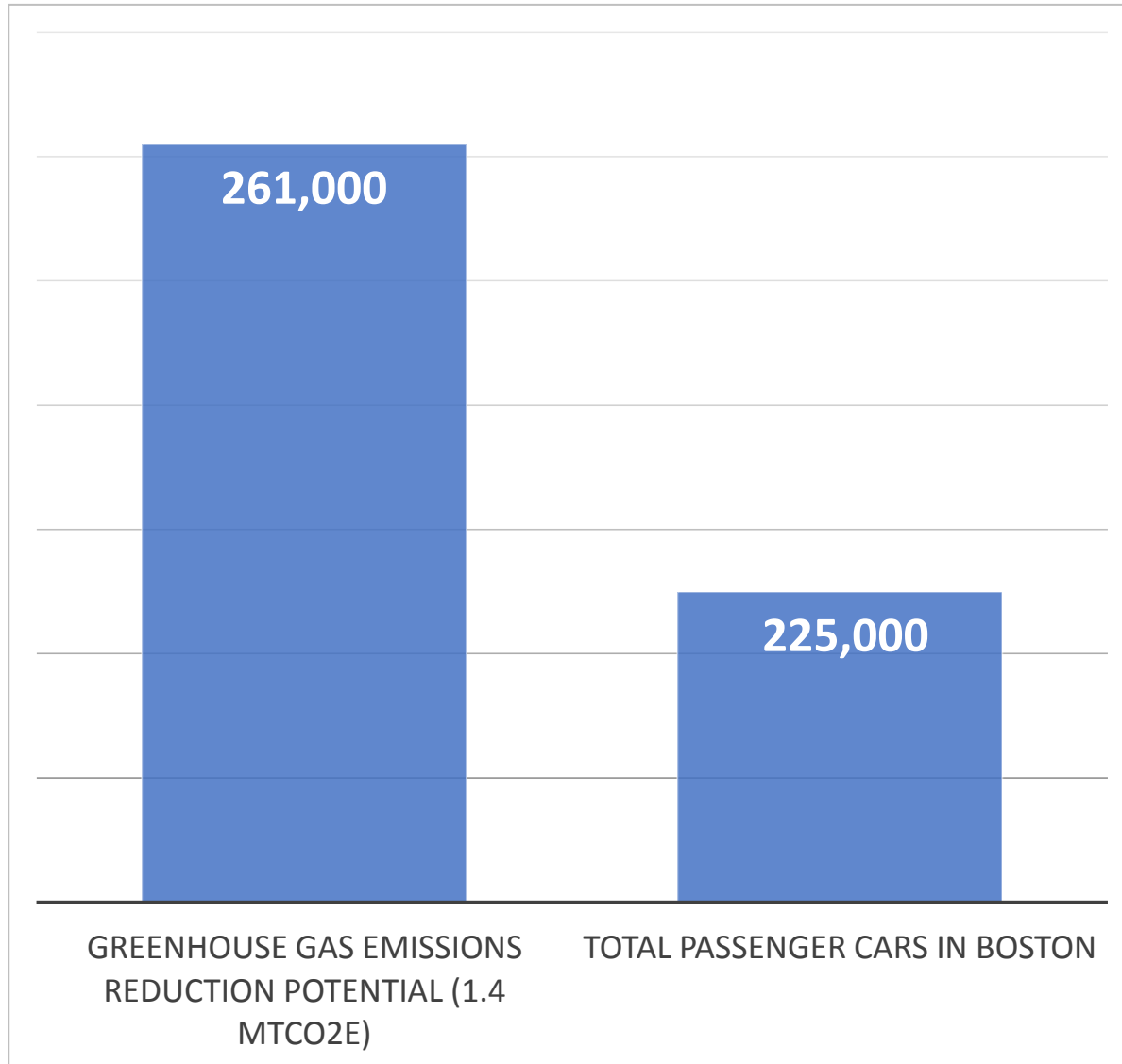
Diversion vs. Cost



Citywide Diversion Rate Potential



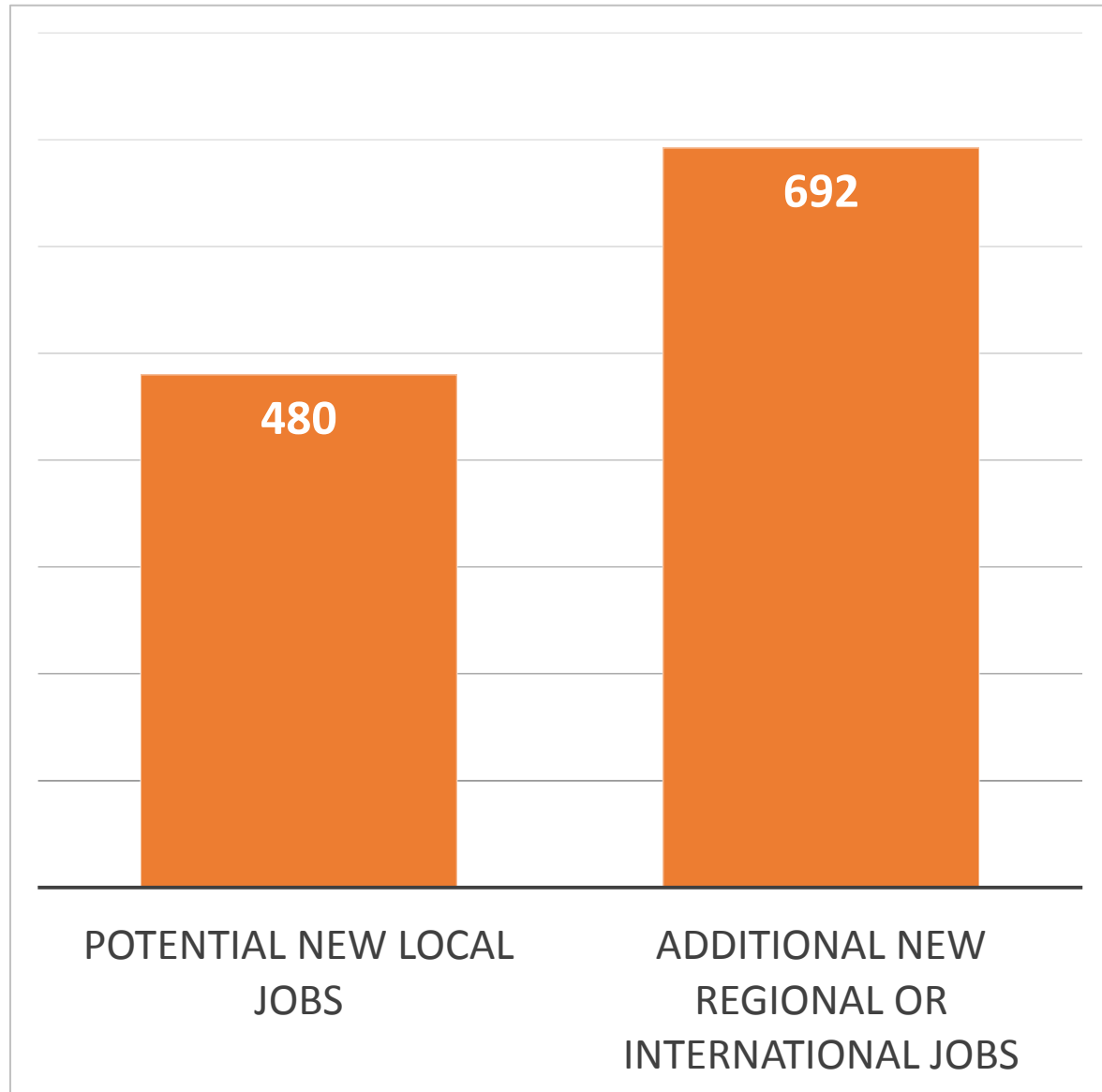
Additional Benefits



The greenhouse gas emissions reduction potential of implementing all Zero Waste initiatives is equivalent to eliminating all passenger cars in Boston

Source: U.S. EPA Waste Reduction Model

Additional Benefits



As many as 1,172 potential new jobs would be created in collection, processing and manufacturing by implementing all of the Zero Waste initiatives.

Source: Institute for Local Self-Reliance

Implementation Timeline

Expand Residential First

- | | |
|-----|--|
| A1. | Expand Residential and Commercial Organics Diversion |
| A3. | Residential Collection System Changes |
| A6. | Lead by Example |

Institutional, Commercial and Industrial

- | | |
|-----|---|
| B1. | Mandatory Waste Reduction Ordinance |
| B2. | Hauler and Generator Requirements – Short-term begin stakeholder engagement |

Outreach and Technical Assistance for both Residential &ICI

Discussion

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Questions

- Are there any questions, comments or feedback about the cost, timing or implementation of initiatives?
- Who are the stakeholders we should be engaging?
- What is the kind of data or metrics that we should be collecting from contractors in order to track progress?

Reports Out

- Advisory Committee member report out to full group

Next Steps



Boston Zero Waste Plan Timeline

Task	January	February	March	April	May	June	July	August	September
1 ZWAC meetings									
1 Community input on recommended programs (City led)									
2 Data gathering									
2 Population and business activity									
2 Generation/diversion assessment									
2 Current conditions memo									
3 Opportunity assessment									
3 Matrix of Zero Waste sector strategies									
3 Summaries of policy, program and infrastructure initiative									
3 Recommended programs, policies, and infrastructure memo									
4 Conduct diversion estimates and cost/benefit analysis									
5 Draft Final Report									
5 Final Report									
6 Business Inventory									
6 Market development memo									
7 Summaries of public education programs									

Deliverable = x

Next Steps

- Integrate input from Zero Waste Advisory Committee
- Complete Zero Waste Plan elements
- Complete Outreach case studies
- Draft Zero Waste Plan
- Final ZWAC meeting

**Questions?
Comments?**

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