THE RECYCLING PARTNERSHIP™

Together, transforming recycling for good.

Thank You in Advance!!

- Excited to be part of your conference
- Hoping that the "virtual" aspects of this session go well!

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Healthy Recycling Needs a Systems Approach

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Recycling Partnership Support

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Overview

- Quick Dip into "State of Curbside 2020" Report
- Materials Generation from Big Picture to the Household
- The Commingled Ton
- Curbside Recycling:
  - Assessing Curbside Program Performance
  - Curbside Recycling BMPs
- More BMPs and the Relationship with Processing
- Framing the Need for System Investment
- Recycling Partnership Resources for Communities

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2020

State of Curbside Recycling Report

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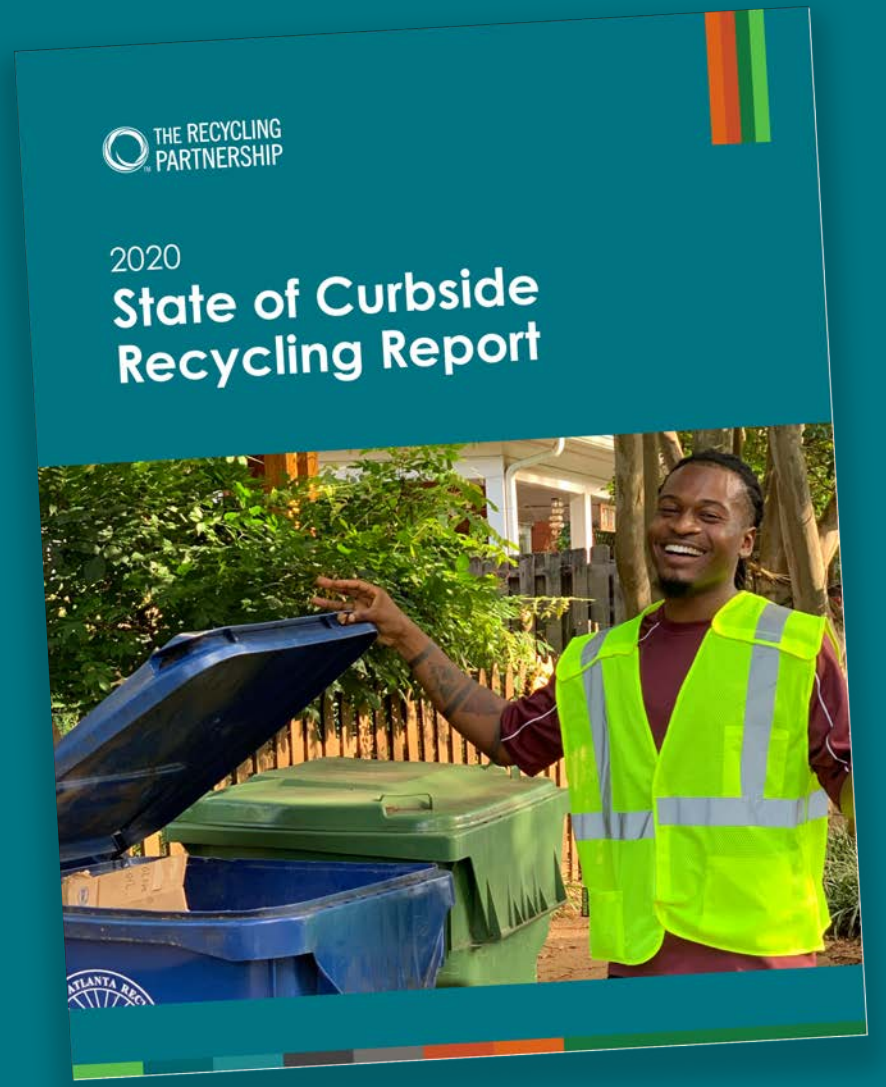
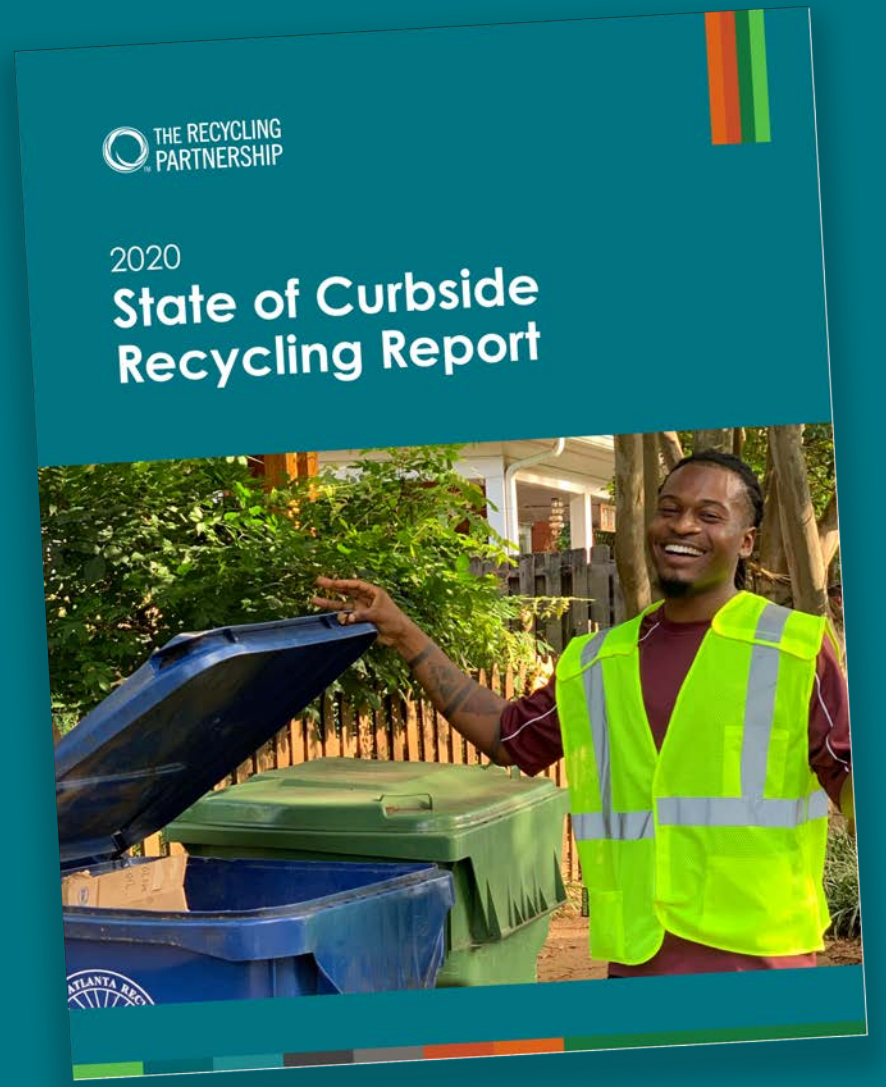


2020

State of Curbside Recycling Report



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https://recyclingpartnership.org/stateofcurbside/

Top 5 Perspectives on U.S. Curbside Recycling

1

More than 20 million tons of curbside recyclable materials are disposed annually. Curbside recycling in the U.S. currently recovers only 32% of available recyclables in single-family homes, leaving enormous and immediate opportunity for growth to support the economy, address climate change, and keep recyclable commodities out of landfills.

2

Only half of Americans have automatic access to curbside recycling, some who have access do not participate, and not all who participate do so fully. True access must be increased and the public can and should be engaged in improving participation and recycling behavior. All of these challenges can be successfully addressed through best management practices listed in this report.

3

Many communities are increasingly paying more to send materials to a MRF than the landfill and many programs lack critical operating funds. Helping community recycling programs improve will require addressing challenging market conditions, providing substantial funding support, and addressing inexpensive landfill tipping fees that make disposal options significantly cheaper than recycling.

4

Investing to clean up the stream benefits all sectors of the system. Contamination remains a critical issue, but it can be substantially reduced through the implementation of proven techniques across the country.

5

The ultimate fate of recyclable materials rests in the hands of a broad set of stakeholders who must all do something new and different to support a transition to a circular economy. Strong, coordinated action is needed in areas ranging from package design, capital investments, scaled adoption of best management practices, policy interventions, and consumer engagement.

Setting the Stage: Recyclable Materials Generation

with Focus on Printed Paper and Packaging in US Households

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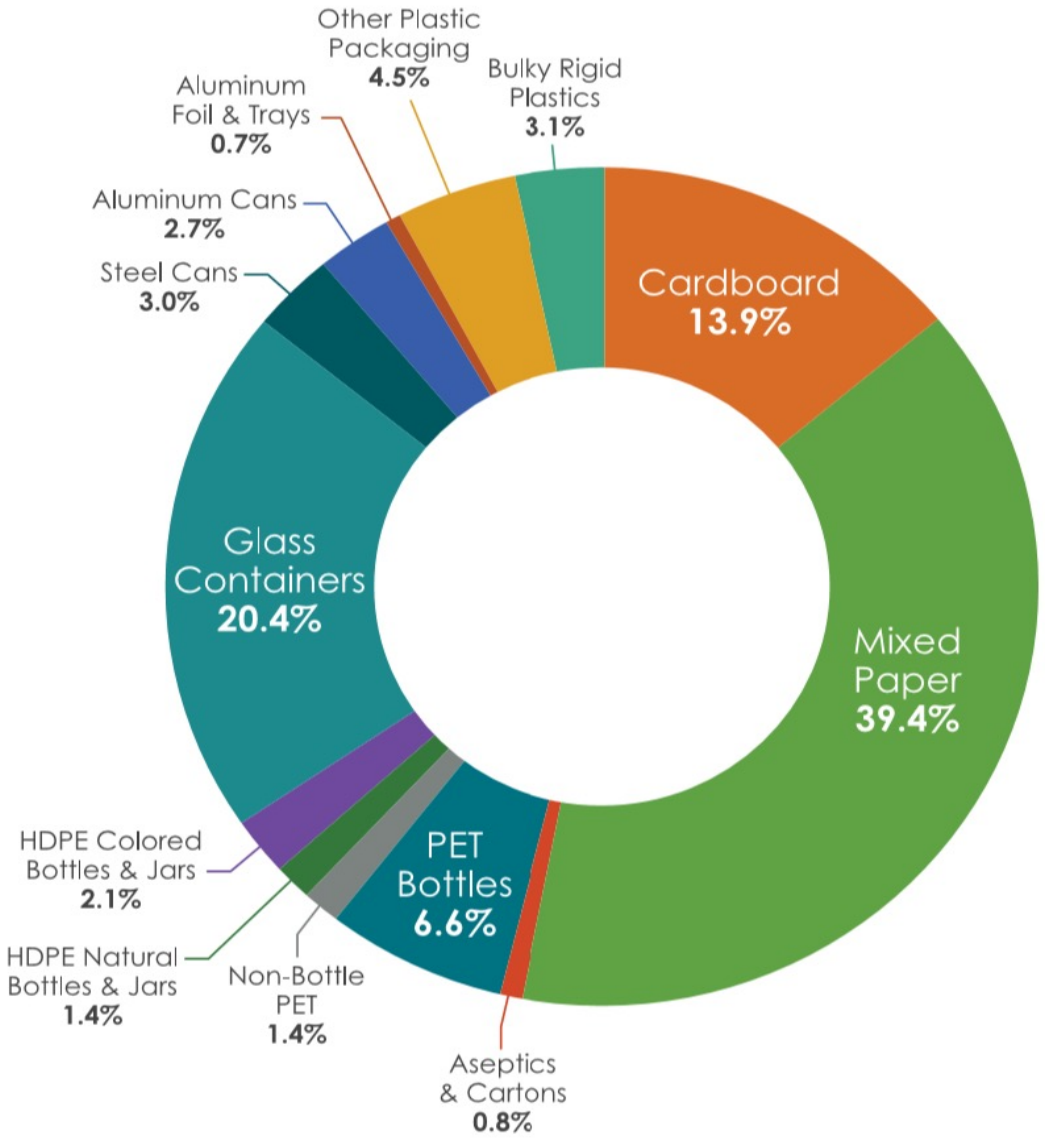
What does a Single-Family Home Generate?



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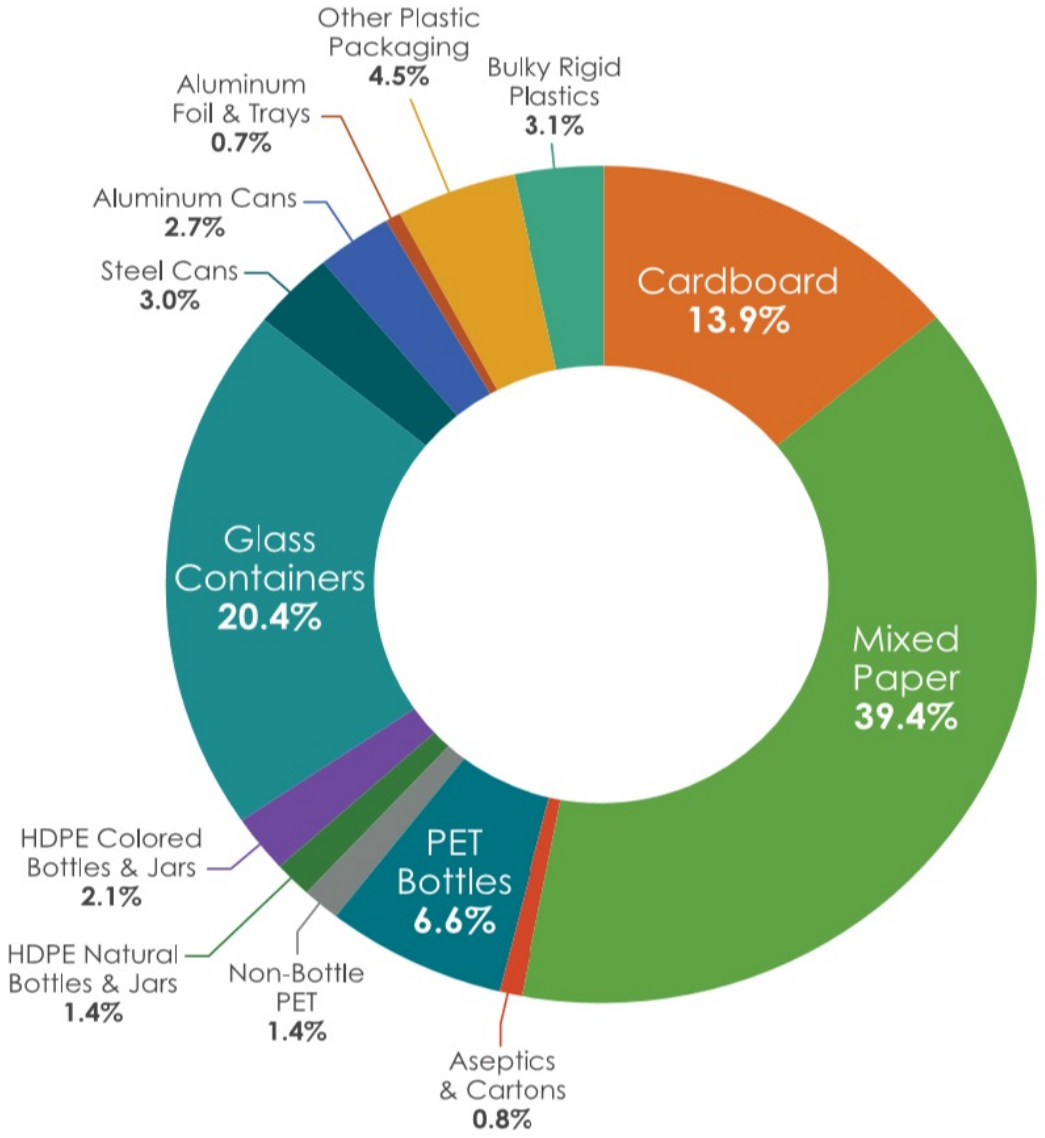
What does a Single-Family Home Generate?
768 lbs. of recyclables/year



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Average Generation per Single Family Household per Year

Material	Pounds of Annual Generation	Percent of Generation
Cardboard	106.76	13.9%
Mixed Paper	302.51	39.4%
Aseptic & Gabletop Containers	6.07	0.8%
PET Bottles	50.92	6.6%
Non-bottle PET	10.77	1.4%
HDPE Natural Bottles & Jars	10.54	1.4%
HDPE Colored Bottles & Jars	16.16	2.1%
Glass Containers	156.44	20.4%
Steel Cans	23.15	3.0%
Aluminum Cans	20.60	2.7%
Aluminum Foil & Trays	5.63	0.7%
Other Plastic Packaging (~#3-7s)	34.32	4.5%
Bulky Rigid Plastics	23.86	3.1%
Total Pounds/HH	767.74	100%

Estimate of Annual Tonnage of Curbside Recyclable Material Generation by all U.S. Single-Family Households

Material	Tonnage
Cardboard	5,195,756
Mixed Paper	14,722,469
Aseptics & Cartons	295,586
PET Bottles	2,478,193
Non-bottle PET	524,009
HDPE Natural Bottles & Jars	512,905
HDPE Colored Bottles & Jars	786,644

Material	Tonnage
Glass Containers	7,613,441
Steel Cans	1,126,674
Aluminum Cans	1,002,515
Aluminum Foil & Trays	273,814
Other Plastic Packaging (~3-7)	1,670,402
Bulky Rigid Plastics	1,161,215
Total	**37,363,622**

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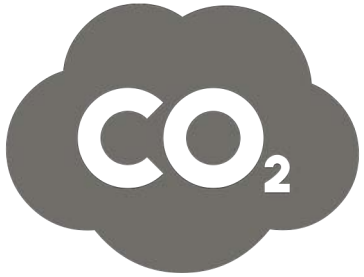
If all of the 37.4 million tons of single-family recyclables were put back to productive use instead of lost to disposal, what would that do?

It would generate

370,000

full-time equivalent (FTE) jobs



Reduce U.S. greenhouse gas emissions by

96 million

metric tons of carbon dioxide equivalent

Conserve an annual energy equivalent of

154 million

barrels of oil

Achieve the equivalent of taking more than

20 million

cars off U.S. highways

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And Yet

- Despite those environmental and economic benefits, public recycling programs decisions are largely driven by budget considerations

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- Recent stressors to recycling system and community programs
  - Changes in global marketplace for recovered materials and the resultant impact on commodity values
  - COVID-19

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- Recent stressors to recycling system and community programs
  - Changes in global marketplace for recovered materials and the resultant impact on commodity values
  - COVID-19

- Result: Lots of Difficult Decisions

Connecting this Conversation with Recycling Markets and Material Values

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The Commingled Ton
An Illustration of Material Value and Costs from the MRF Perspective

Commodity	% of Outbound Materials (Partnership's National Average)	Price / Ton (April 2021)	Weighted Value in Commingled Ton
Cardboard	19.50%	$90.00	$17.55
Mixed Paper	37.50%	$34.06	$12.77
Cartons/Aseptics	0.10%	$22.50	$0.02
Aluminum Cans	1.30%	$1,282.60	$16.67
Steel Cans	1.80%	$205.92	$3.71
Glass	18.80%	($24.06)	($4.52)
PET	3.90%	$229.40	$8.95
HDPE Natural	0.90%	$1,628.20	$14.65
HDPE Colored	1.00%	$590.00	$5.90
3-7 Plastics	1.10%	($2.60)	($0.03)
Mixed Rigid Plastics	0.40%	$72.60	$0.29
Residue	13.7%	($50.00)	($6.85)
Total	100.00%		$69.11
		Processing Cost	$90.00
Today's Net Value		Profit (Loss)	($20.89)

Today's Market Value if Processing Cost is $70/Ton

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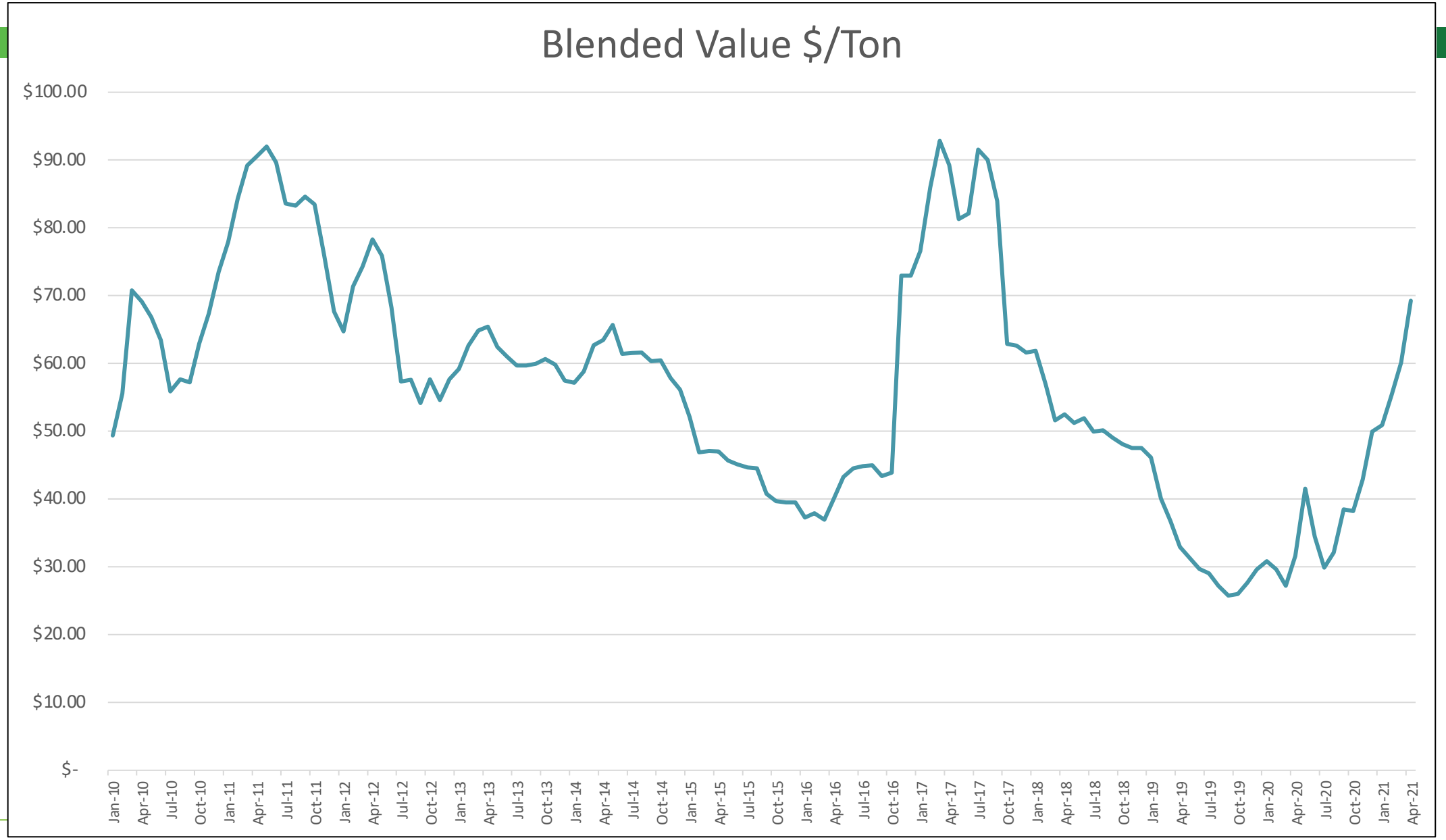
The Commingled Ton Over Time



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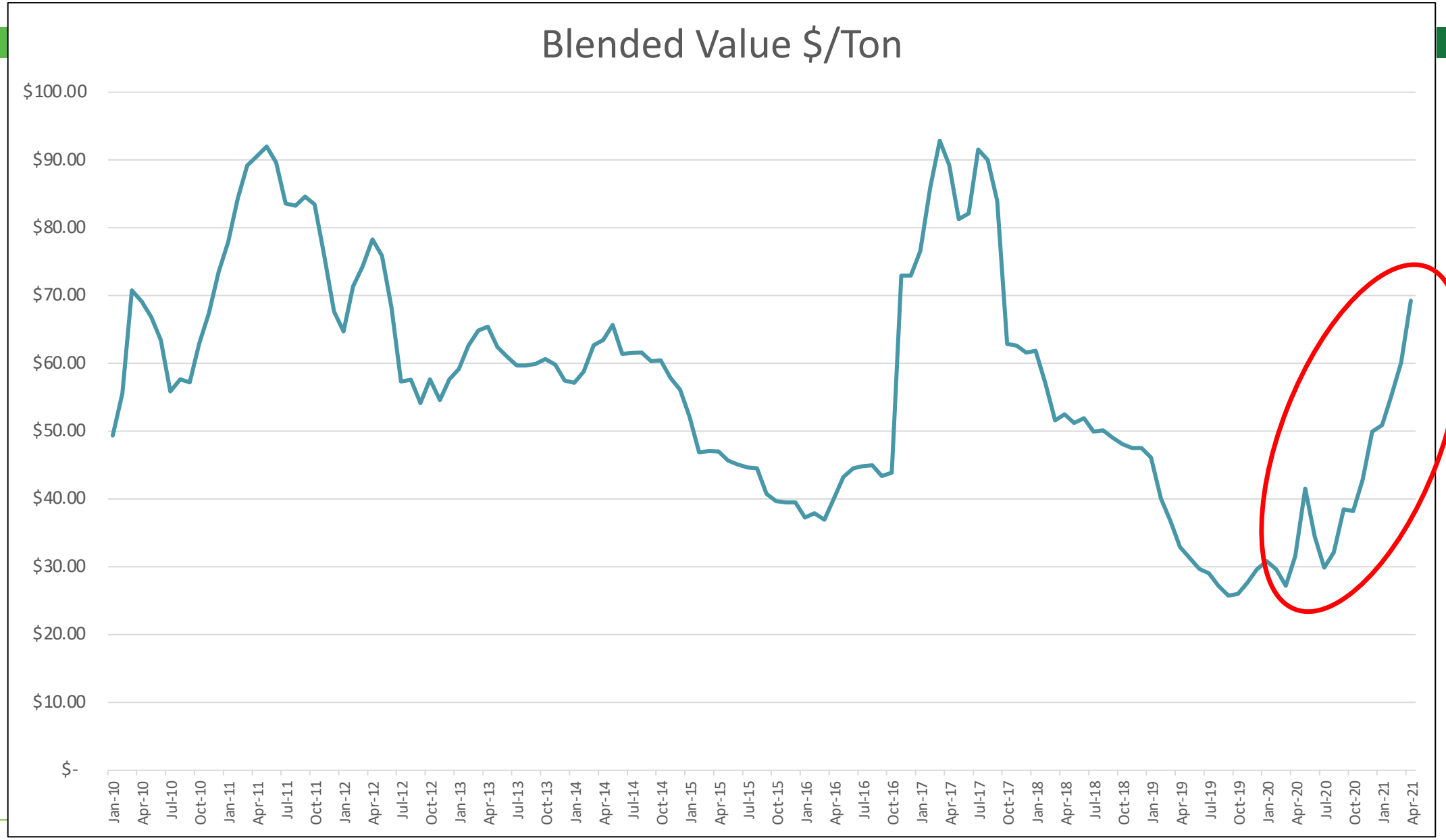
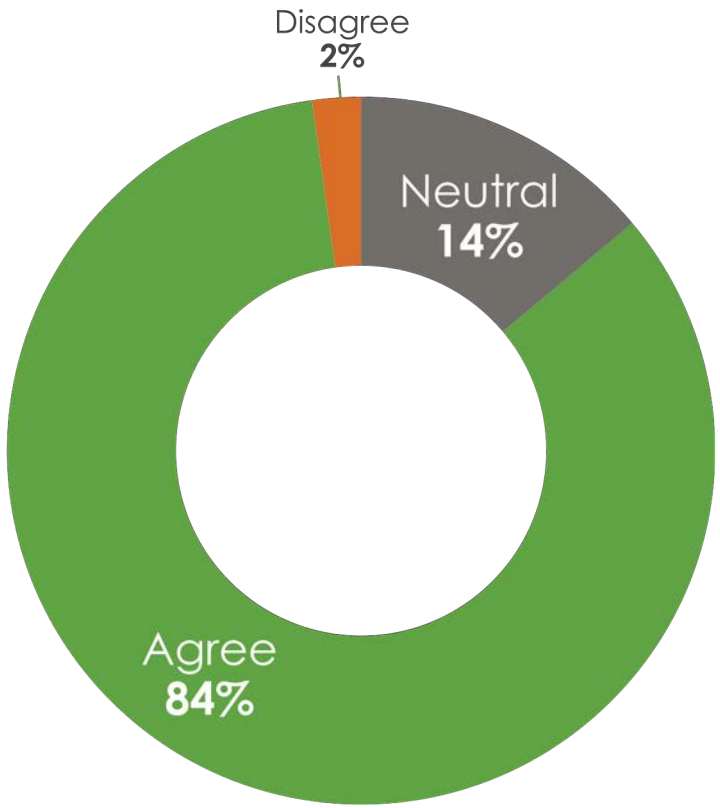


Possible Lessons for Public Recycling Programs

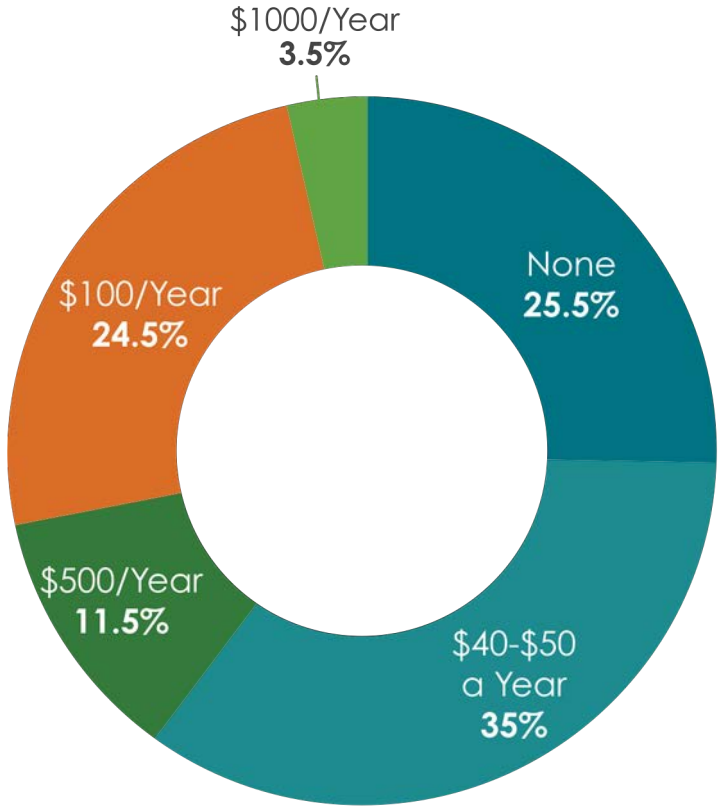
- Plan and budget for processing charges (new normal)
- Work on the variables you can influence:
  - Collection costs (more in a while on BMPs)
  - Contract with Processor
  - Contamination rates
- Make the case for recycling to community decision makers:
  - Recycling is an essential public service
  - Leverage sustainability messages as appropriate
  - Connect recycling to jobs and the economy
  - Citizens want to recycle and depend on local governments for access

Public Support for Recycling

Percentage of Americans Saying Recycling is as Valuable a Public Service as Waste and Water



Americans are Willing to Pay More Taxes for Better Recycling



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Curbside Recycling: Program Performance and Best Management Practices

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Pounds per Household Served as Measure of Effectiveness

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=

Pounds/ HH Served

Total Tons Collected (converted to pounds)

Number of Households (HH) served by program

Average Generation per Single Family Household per Year

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How Much Are You Capturing?

400lbs

RECYCLABLES

GO INTO **RECYCLING**

400lbs

RECYCLABLES

THEN GO INTO **TRASH**

50% CAPTURE RATE

A Look at State of Curbside Community Data Through the "Pounds Per Household" Lens Reveals Two Key Best Management Practices

Average and Median Pounds per Household per Curbside Survey Respondents

	Average Pounds per Household Collected on an Annual Basis	Median Pounds per Household Collected on an Annual Basis	Number of Community Data Points
All Programs	440.16	430.38	436
Programs with Automatically Provided Service	459.06	449.90	365
Programs Requiring Subscription or Opt-In Option	331.09	278.97	56
Other Programs - Mix of Automatic and Opt-In Options	392.77	337.50	15

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Automatic Access = Highest Performance

Pounds per Household Curbside Program Performance by Container Type

	Average Pounds per Household Collected on an Annual Basis	Median Pounds per Household Collected on an Annual Basis	Number of Community Data Points
Bin	360.38	363.33	48
Bag	324.79	353.68	6
Cart	458.81	452.60	242
Programs Using a Combination of Bins & Carts	451.54	448.77	47

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Cart-Based Collection = Highest Performance

Best Management Practices – Curbside Recycling

Cart-based Collection

294 Lbs/HH

409 Lbs/HH

Automated Collection

With thoughtful implementation
Carts DO NOT = more contamination

More Advantages of Carts

COST SAVINGS.
Budgets benefit from decreased disposal costs, smaller collection crews, more efficiency on the route, and decreased workers' compensation.

- Decreased disposal costs
- Smaller collection staff
- Automation & compaction mean more efficient routes
- Flexibility to collect bi-weekly
- Decreased Workers' Compensation claims

- Manual lifting/ twisting minimized
- Driver stays safe from traffic in cab

→ Increased safety

Safety = Savings

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Some Other Best Management Practices
+
A Discussion About Processing

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Best Management Practices – Dropoff Recycling

Use of Compaction

Greater Payload + Fewer Hauls + Greater Efficiency = High Return on Investment

Effective signage

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Dropoff Recycling + Commingled Compaction

- Requires concrete pads, electrical service, and staff supervision
- Delivers quick payback from reduced hauling cost

STATIONARY

SELF-CONTAINED

- Stationary and Self-Contained systems cost about the same
- Stationary compactors allow for switching out of containers

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Dropoff Recycling Performance Improvements

Compaction + Commingling: Impact on Hauling Cost:

Monthly Hauling Cost Per-Site		
NC County	Before (Source Separated)	After (Commingled)
Richmond County	$825	$450
Rutherford County	$918	$126

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Dropoff Recycling Performance Improvements

Commingling: Impact on Drop-off Tonnage

Annual Drop-off Recycling Program Tonnage			
NC County	Before (Source Separated)	After (Commingled)	Change
Franklin County	996	1,560	+56%
Moore County	1,035	1,356	+31%
Rutherford County	764	1,192	+56%

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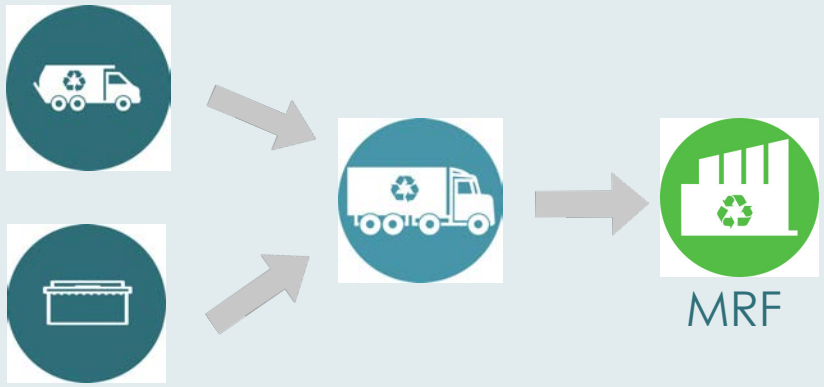
Best Management Practices – Hub & Spoke

MRFs need volume and scale for efficiency

Hub & Spoke transfer systems can create access to processing for communities w/o nearby MRF



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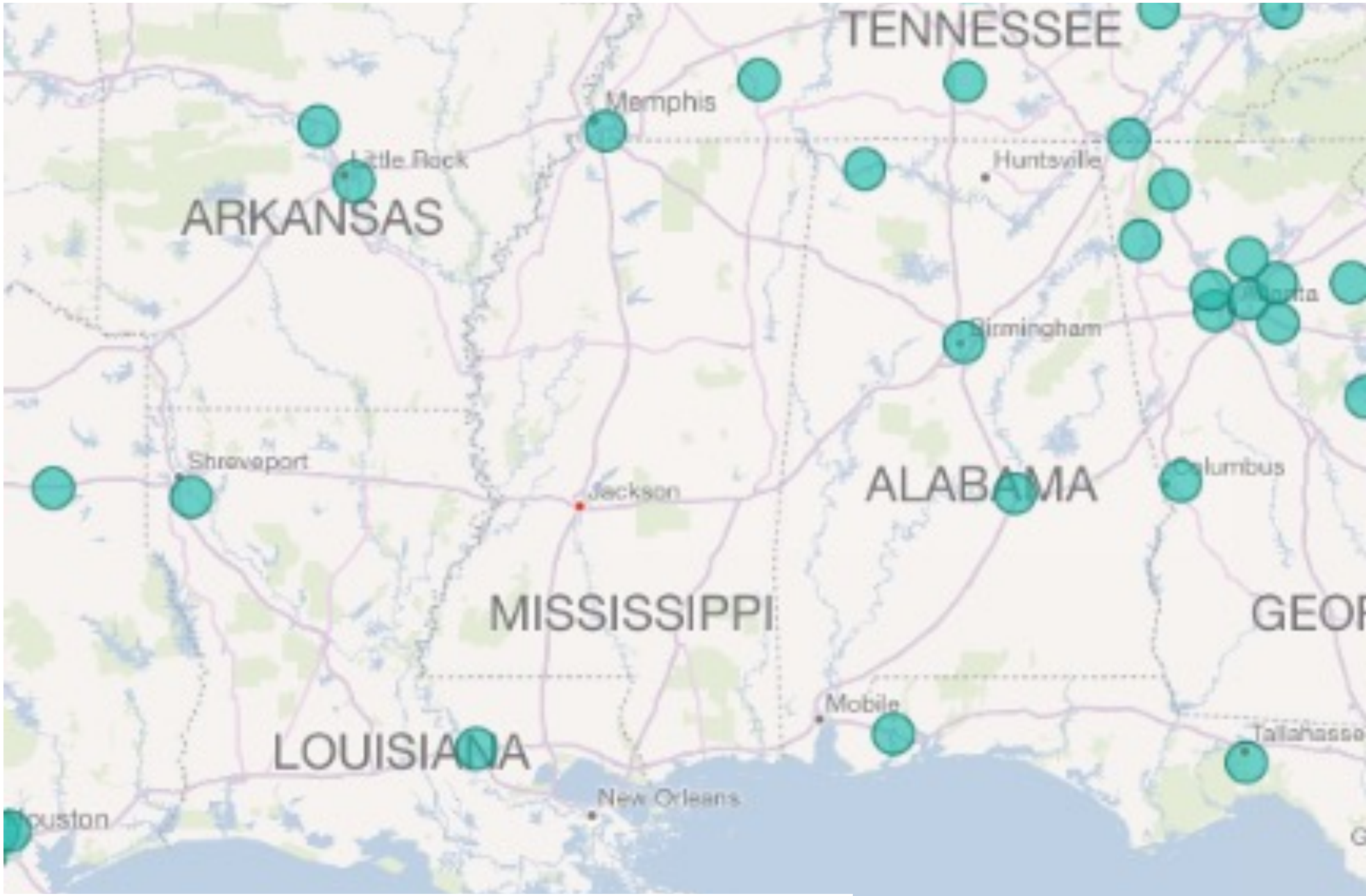
BMP Dependence on Processing

- Access to sorting capacity is integral to these BMPs
- Commingled processing unlocks key benefits:
  - Eliminates "inconvenience" associated with source separation
  - Enables significant collection efficiencies
- Commingled processing comes with key challenges:
  - Requires large capital investment and scale to enable efficiency
  - Even with scale, MRFs bring processing costs (new normal)
  - Commingled collection systems require outreach investment to control contamination

Recycling Partnership National MRF Map

Are we missing any MS facilities that accept and process commingled materials?



https://recyclingpartnership.org/residential-mrfs/

Commingled Processing Capacity: Challenges and Changes in Region

Loss of processing capacity:

- New Orleans, LA
- Shreveport, LA
- Sumrall, MS
- Huntsville, AL
- Others?

Lack of processing capacity constrains:

- Affordable collection
- Efforts to grow recycling and build supply

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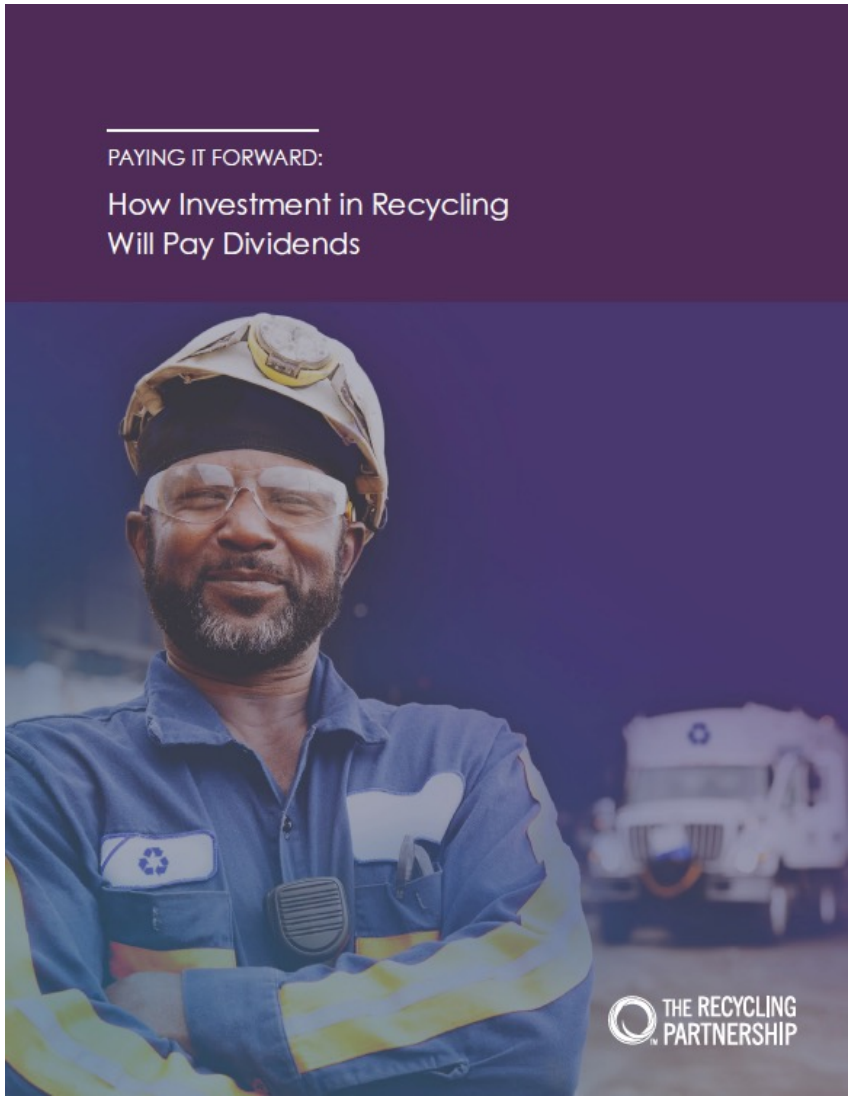
A Short Detour to Discuss Investment Need



New Report Just Released

Paying It Forward: How Investment in Recycling Will Pay Dividends

- Explores costs and benefits of fixing recycling in the U.S.
- $17 Billion investment needed to transform residential recycling
- https://recyclingpartnership.org/read-paying-it-forward/

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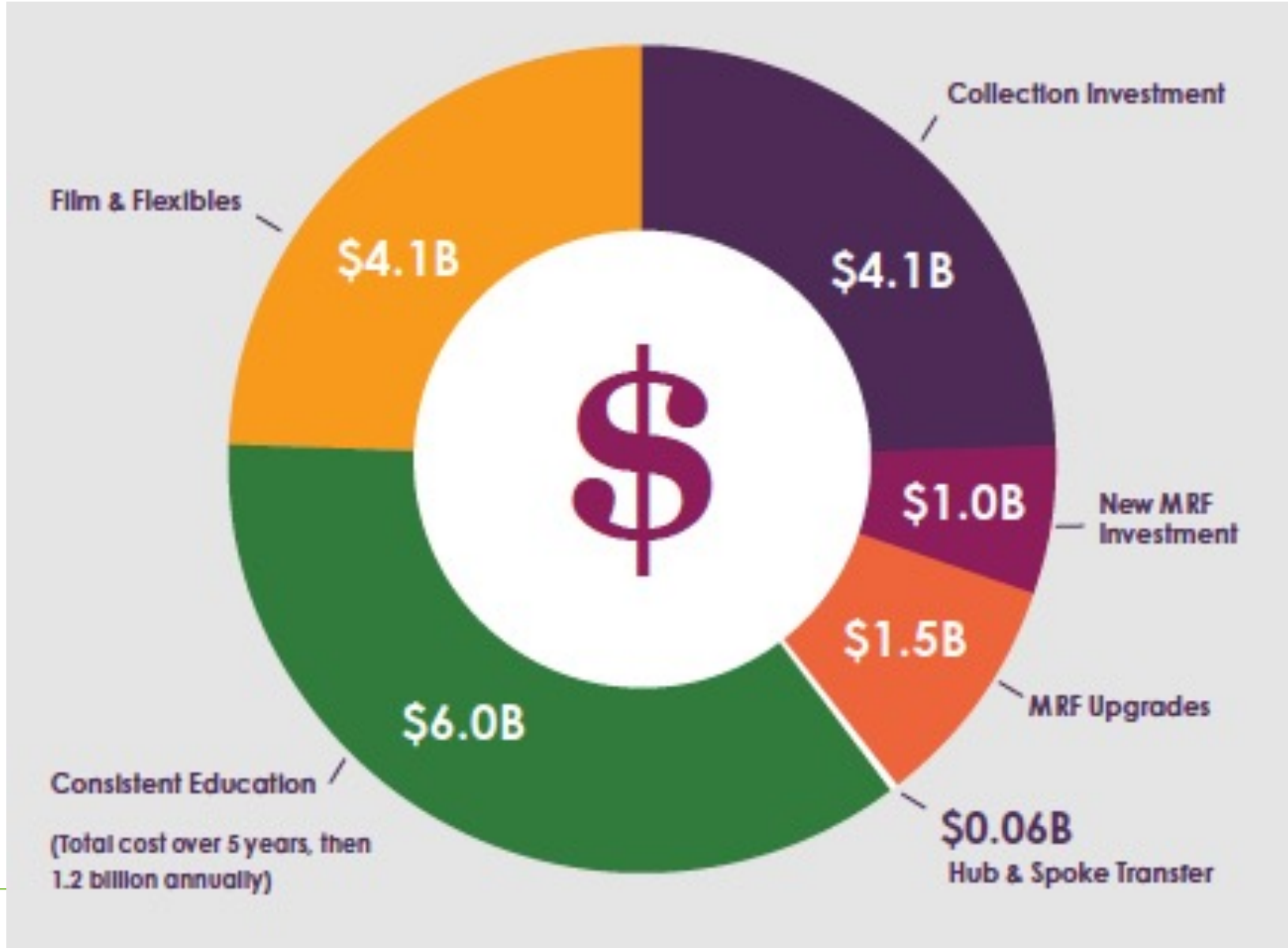
Breaking Down the Investment Need



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A Sampling of Additional Resources from The Partnership

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Recycling Partnership Cart Grants

- Grants for cart-based curbside recycling systems
- Funding up to $15/cart
- Technical assistance and design of education/ outreach materials
- RFP available on an on-going basis
- Designed to align with State grants

https://recyclingpartnership.org/recycling-cart-grant/

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Polypropylene Recycling Grants

- MRF grants to support investments in equipment that enables MRF acceptance and recycling of polypropylene
  - Optical or robotic sortation equipment
  - Conveyors, bunkers or other storage for materials
  - Dock space or PP related facility investments
- Maximum Grant = $500,000, with additional funding available for outreach
- Competitive grants prioritizing projects that create new access to polypropylene recycling
- Funding cycles, with 3rd round of awards imminent

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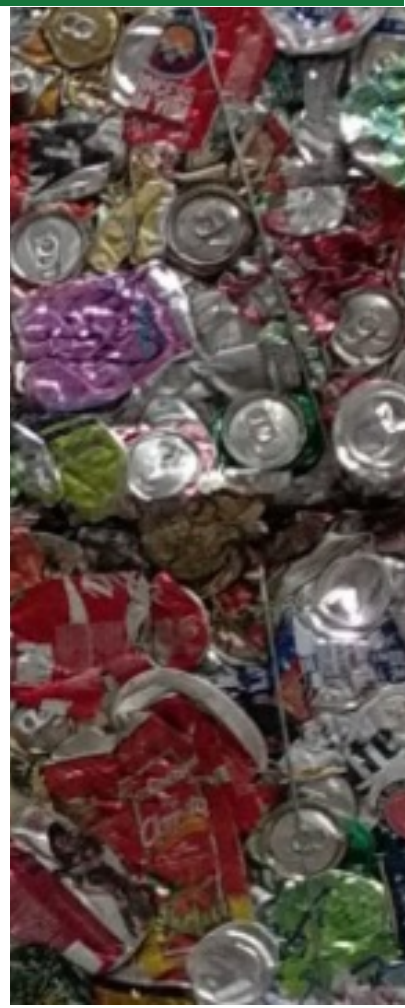
Can Capture Grants for MRFs

- MRF grants to support investments in equipment that increase the capture of aluminum cans
  - Eddy current, optical or robotic sortation equipment
  - Conveyors, bunkers or other storage for materials
- Maximum Grant = $75,000
- Two rounds of applications, first cycle focused on southeast, second cycle nation-wide
- Application deadline just passed, expect awards by July 31



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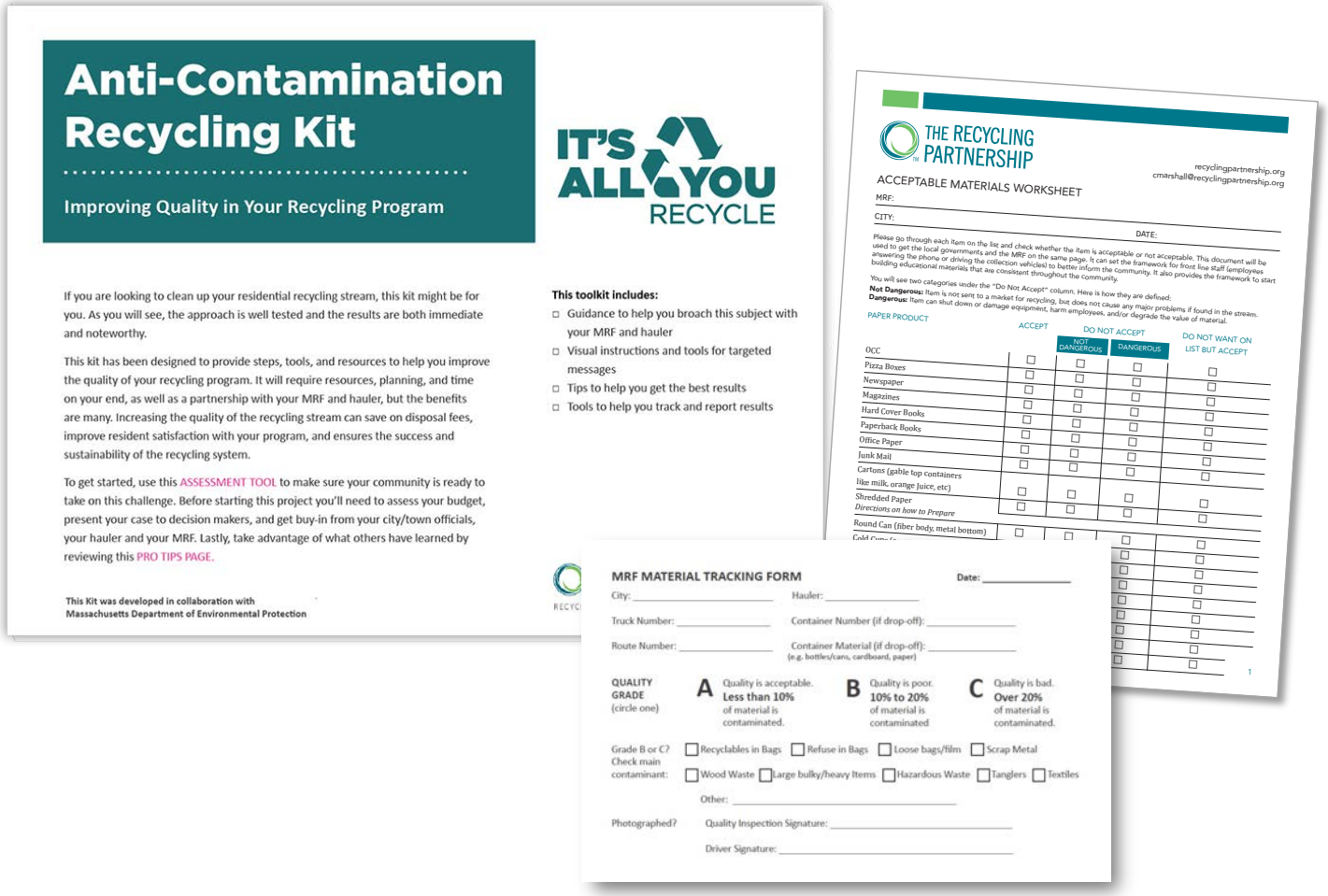
Anti-Contamination Kits and Resources

- Anti-Contamination Kits
  - Curbside
  - Drop-off
- MRF Survey
- MRF Tracking Form
- Cart-Tagging Training Video



Anti-Contamination Recycling Kit

Improving Quality in Your Recycling Program

IT'S ALL YOU RECYCLE

If you are looking to clean up your residential recycling stream, this kit might be for you. As you will see, the approach is well tested and the results are both immediate and noteworthy.

This kit has been designed to provide steps, tools, and resources to help you improve the quality of your recycling program. It will require resources, planning, and time on your end, as well as a partnership with your MRF and hauler, but the benefits are many. Increasing the quality of the recycling stream can save on disposal fees, improve resident satisfaction with your program, and ensures the success and sustainability of the recycling system.

To get started, use this ASSESSMENT TOOL to make sure your community is ready to take on this challenge. Before starting this project you'll need to assess your budget, present your case to decision makers, and get buy-in from your city/town officials, your hauler and your MRF. Lastly, take advantage of what others have learned by reviewing this PRO TIPS PAGE.

This Kit was developed in collaboration with Massachusetts Department of Environmental Protection

This toolkit includes:

- Guidance to help you broach this subject with your MRF and hauler
- Visual instructions and tools for targeted messages
- Tips to help you get the best results
- Tools to help you track and report results

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recyclingpartnership.org
cmarshall@recyclingpartnership.org

ACCEPTABLE MATERIALS WORKSHEET

MRF:

CITY: DATE:

Please go through each item on the list and check whether the item is acceptable or not acceptable. This document will be used to get the local governments and the MRF on the same page. It can set the framework for front line staff (employees answering the phone or driving the collection vehicles) to better inform the community. It also provides the framework to start building educational materials that are consistent throughout the community.

You will see two categories under the "Do Not Accept" column. Here is how they are defined:
Not Dangerous: Item is not sent to a market for recycling, but does not cause any major problems if found in the stream.
Dangerous: Item can shut down or damage equipment, harm employees, and/or degrade the value of material.

PAPER PRODUCT	ACCEPT	DO NOT ACCEPT: NOT DANGEROUS	DO NOT ACCEPT: DANGEROUS	DO NOT WANT ON LIST BUT ACCEPT
OCC	☐	☐	☐	☐
Pizza Boxes	☐	☐	☐	☐
Newspaper	☐	☐	☐	☐
Magazines	☐	☐	☐	☐
Hard Cover Books	☐	☐	☐	☐
Paperback Books	☐	☐	☐	☐
Office Paper	☐	☐	☐	☐
Junk Mail	☐	☐	☐	☐
Cartons (gable top containers like milk, orange juice, etc)	☐	☐	☐	☐
Shredded Paper *Directions on how to Prepare*	☐	☐	☐	☐
Round Can (fiber body, metal bottom)	☐	☐	☐	☐

MRF MATERIAL TRACKING FORM

Date: _____

City: _____ Hauler: _____

Truck Number: _____ Container Number (if drop-off): _____

Route Number: _____ Container Material (if drop-off): _____ (e.g. bottles/cans, cardboard, paper)

QUALITY GRADE (circle one)

A Quality is acceptable. **Less than 10%** of material is contaminated.

B Quality is poor. **10% to 20%** of material is contaminated

C Quality is bad. **Over 20%** of material is contaminated.

Grade B or C? Check main contaminant: ☐ Recyclables in Bags ☐ Refuse in Bags ☐ Loose bags/film ☐ Scrap Metal ☐ Wood Waste ☐ Large bulky/heavy Items ☐ Hazardous Waste ☐ Tanglers ☐ Textiles

Other: _____

Photographed?

Quality Inspection Signature: _____

Driver Signature: _____

https://recyclingpartnership.org/fight-contamination/

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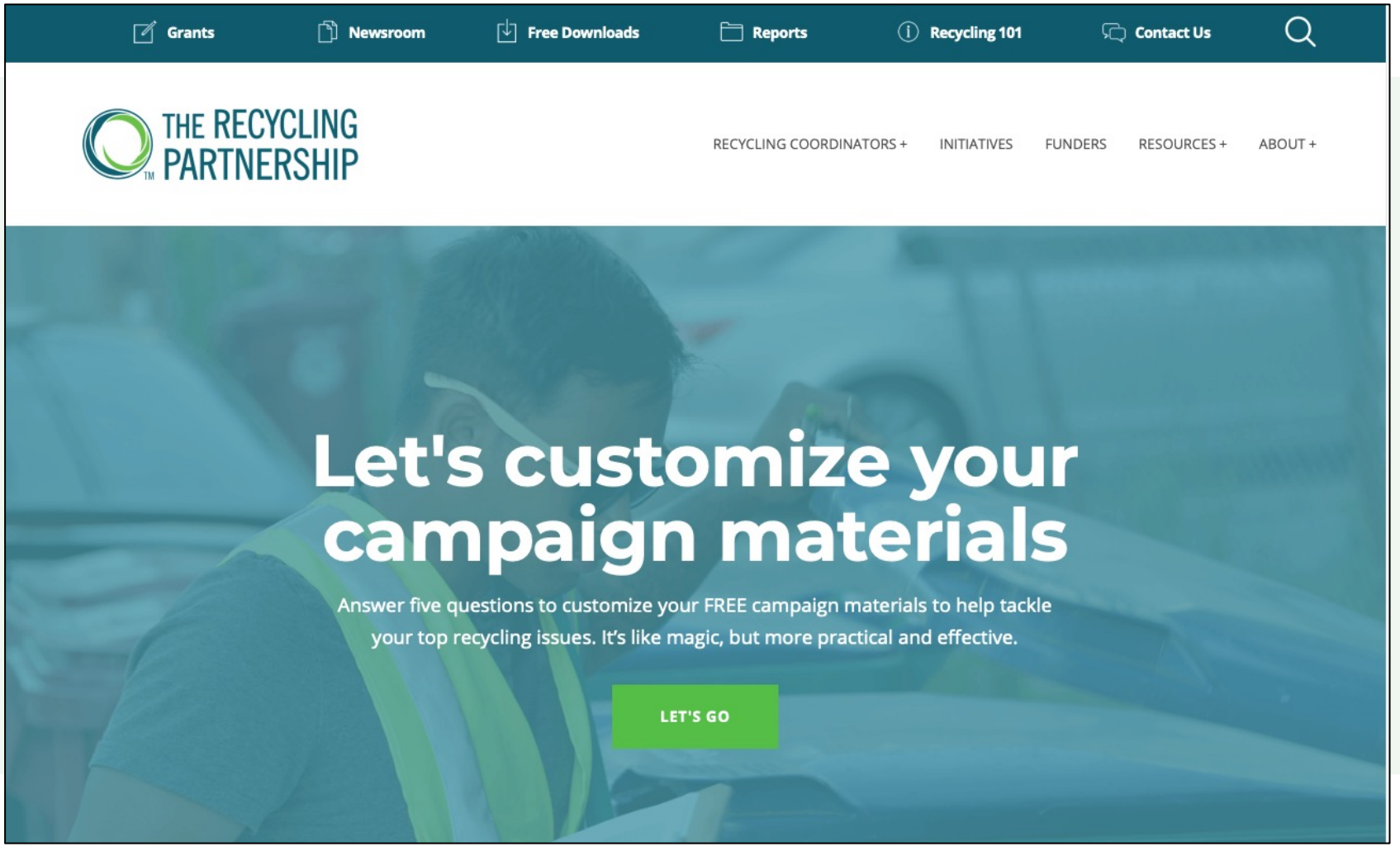
Online Campaign Builder

- Build Customizable Resources to Communicate with Public
- Build Information Cards about Acceptable Materials
- Design Oops Tags and Mailers



https://recyclingpartnership.org/pdf-builder-login/

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Campaign Builder Output

Info Card

Oops Tags

Top Issue Mailer

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DIYSigns for Recycling

- Free Open Source Templates
- Download and Personalize

https://recyclingpartnership.org/diysigns/

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Social Media Kits

- Newly released COVID-19 and Recycling Social Media Kit

- Pre-written post text for each image, or design your own message
- For use with Facebook and Twitter

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Questions?

Discussion

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Thank You!

Contact Info

Rob Taylor

Director of Grants and Community Development

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