The US Recycling Landscape

The Recycling Partnership
Solving for Circularity

We mobilize people, data, and solutions across the value chain to reduce waste and our impact on the environment while also unlocking economic benefits.

The Recycling Partnership: Overview

US Recycling Landscape

Policy

System Investment and Technology

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The Recycling Partnership

Building a recycling system that works for people, communities and companies.

People

Recycle consistently, correctly, & confidently

Communities

Provide equitable access to all households

MRFs

Accept & process all materials

Manufacturers
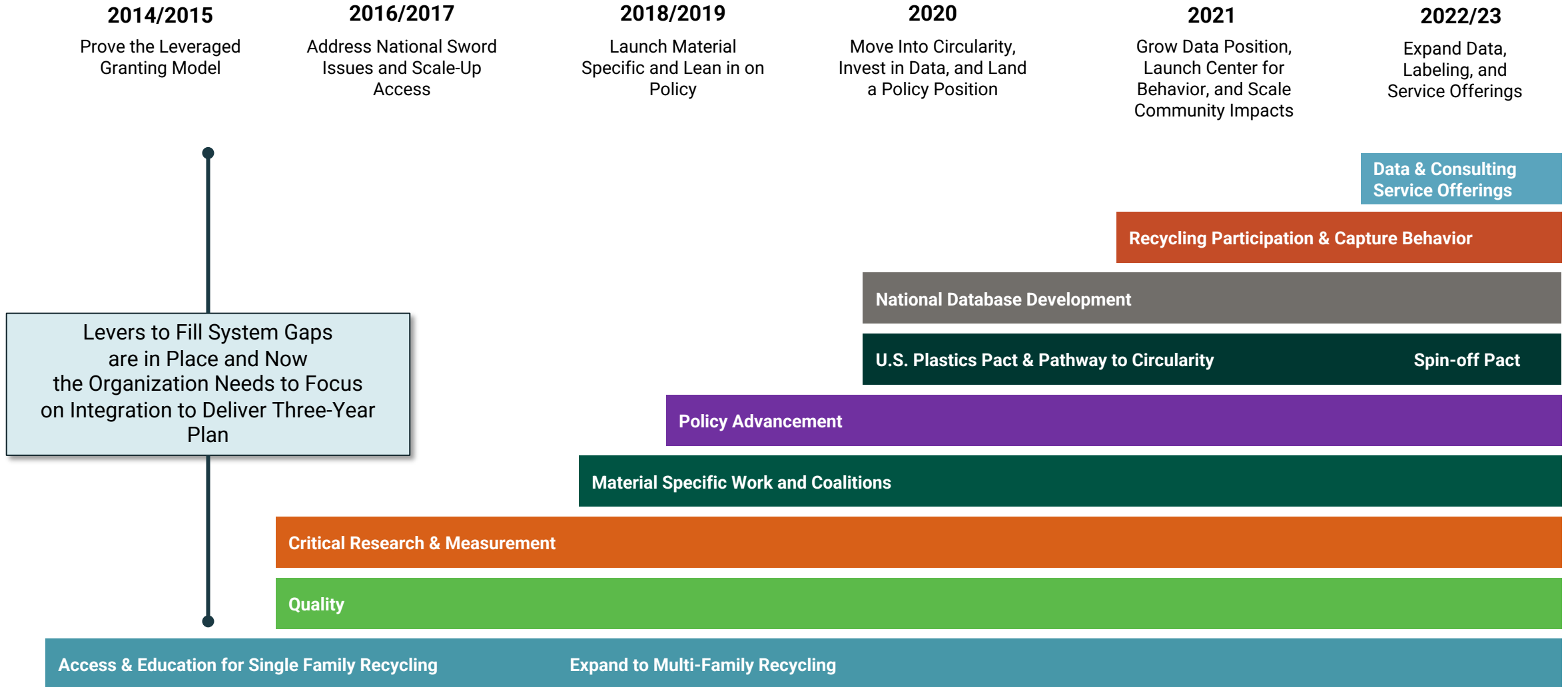
Transform recycled material into valuable inputs

Brands & Retailers

Develop & market recyclable packaging

Data driven decision making & well-designed recycling policy

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The Partnership Model

2014/2015	2016/2017	2018/2019	2020	2021	2022/23
Prove the Leveraged Granting Model	Address National Sword Issues and Scale-Up Access	Launch Material Specific and Lean in on Policy	Move Into Circularity, Invest in Data, and Land a Policy Position	Grow Data Position, Launch Center for Behavior, and Scale Community Impacts	Expand Data, Labeling, and Service Offerings

Levers to Fill System Gaps are in Place and Now the Organization Needs to Focus on Integration to Deliver Three-Year Plan

Data & Consulting Service Offerings

Recycling Participation & Capture Behavior

National Database Development

U.S. Plastics Pact & Pathway to Circularity   Spin-off Pact

Policy Advancement

Material Specific Work and Coalitions

Critical Research & Measurement

Quality

Access & Education for Single Family Recycling   Expand to Multi-Family Recycling

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5

106 Active Grant Projects

17 Additional Contracts Pending

18.7M HHs Impacted

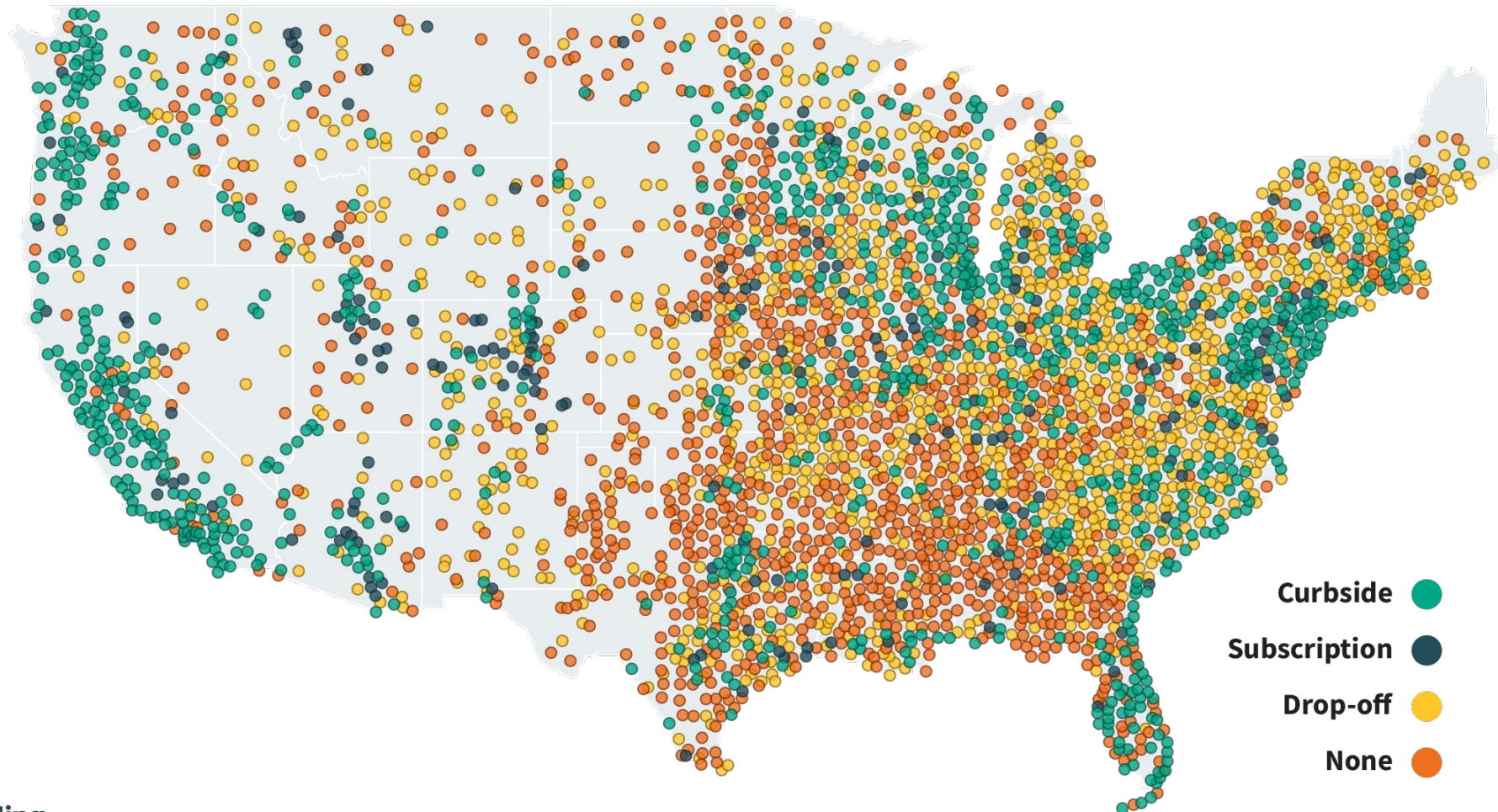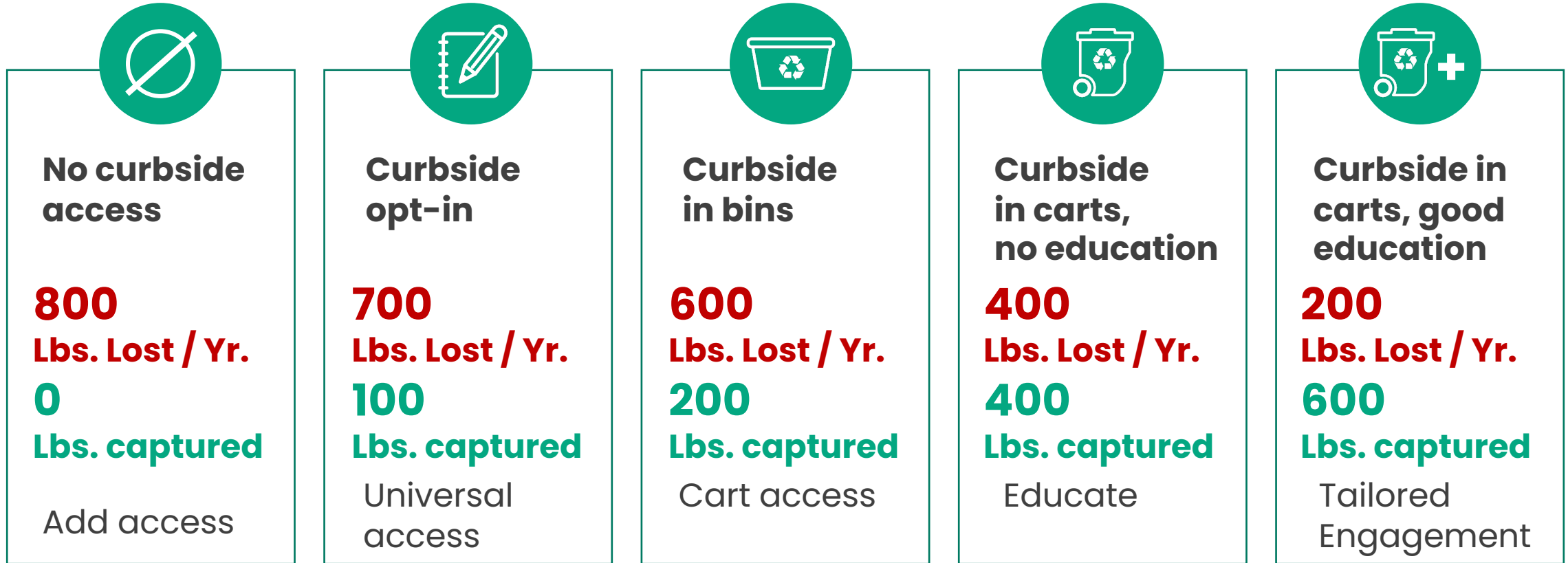**128K** New Tons Captured

263K New Access

$31M Encumbered

$30.9M*
Total Cost

$10.3M
Curbside/
Drop-Off

$1M
Multifamily

$2.8M
Quality
Improvement

$350K
Participation

$175K
Capture
Behavior

$16.1M
MRF & End
Markets

*In Thousands of Dollars

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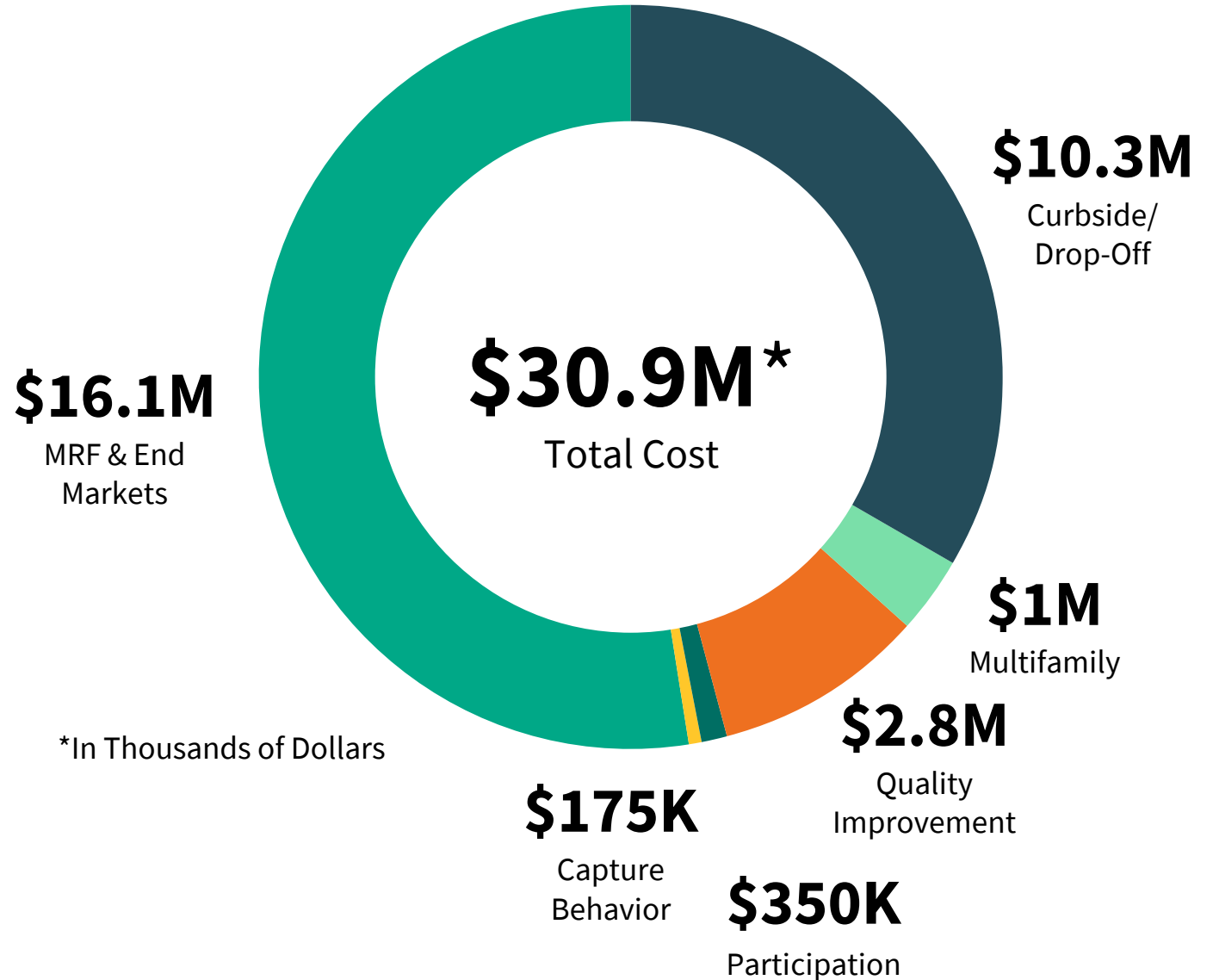
The U.S. Recycling Landscape

9,000+ programs | 30,000+ communities

Curbside ●
Subscription ●
Drop-off ●
None ●

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No curbside access	Curbside opt-in	Curbside in bins	Curbside in carts, no education	Curbside in carts, good education
800 Lbs. Lost / Yr.	**700** Lbs. Lost / Yr.	**600** Lbs. Lost / Yr.	**400** Lbs. Lost / Yr.	**200** Lbs. Lost / Yr.
0 Lbs. captured	**100** Lbs. captured	**200** Lbs. captured	**400** Lbs. captured	**600** Lbs. captured
Add access	Universal access	Cart access	Educate	Tailored Engagement

How do we ensure this valuable material is accepted and processed?

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Policy

Goals

Overarching Goal: Engage policymakers to pass more harmonized and effective recycling policies at the state and federal level.

1

Improve, advance and support the implementation of **smart, well-designed state recycling collection policies** throughout the country;

2

Shape and catalyze **effective federal government action** that advances recycling

3

Convene, equip, and lead an **impactful network of stakeholders** across the recycling value chain

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Extended Producer Responsibility Legislation*

● EPR Laws Passed & Currently Being Implemented
(California, Colorado, Maine, Oregon)

● EPR Legislative Activity in 2023

Packaging/Printed Paper and Packaging EPR

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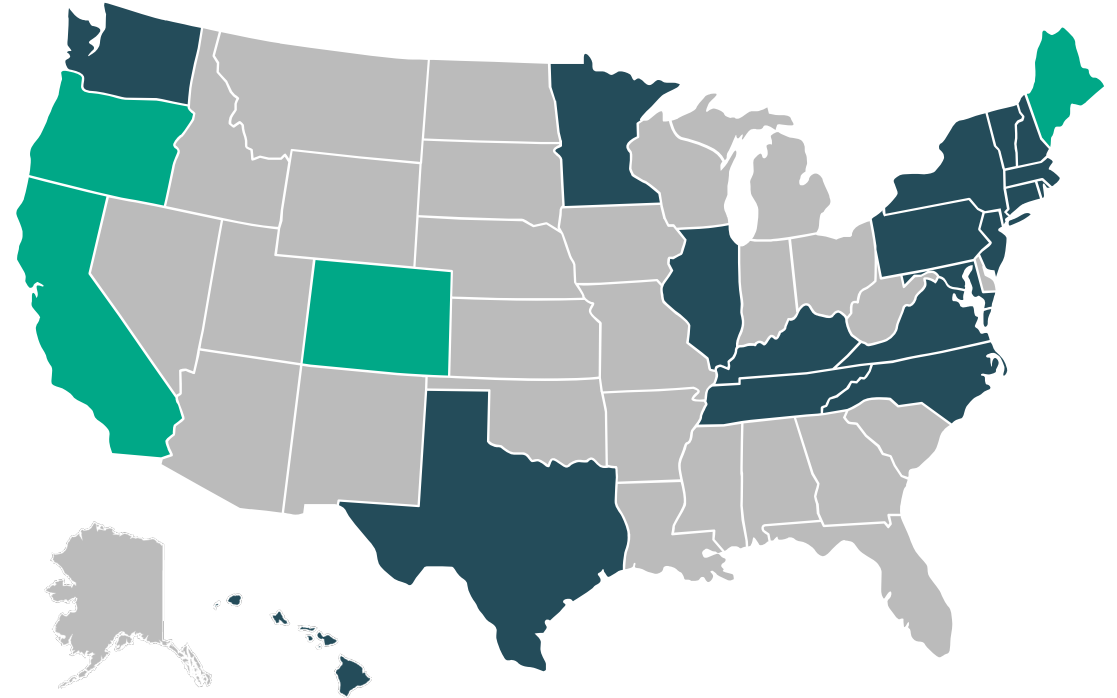
Policy Landscape

- **We expect 3-6 states to pass EPR in the next 1-3 years**
  - West Coast – WA; Midwest – MN, IL; Northeast – NY, NJ, CT, MA, RI, VT

- **U.S. recycling collection is overwhelmingly single-stream**
  - Material-specific EPR for packaging is not used globally – *We are all in this bin together*

- **EPR Recyclability can impact all**
  - Packages deemed recyclable could change across the country

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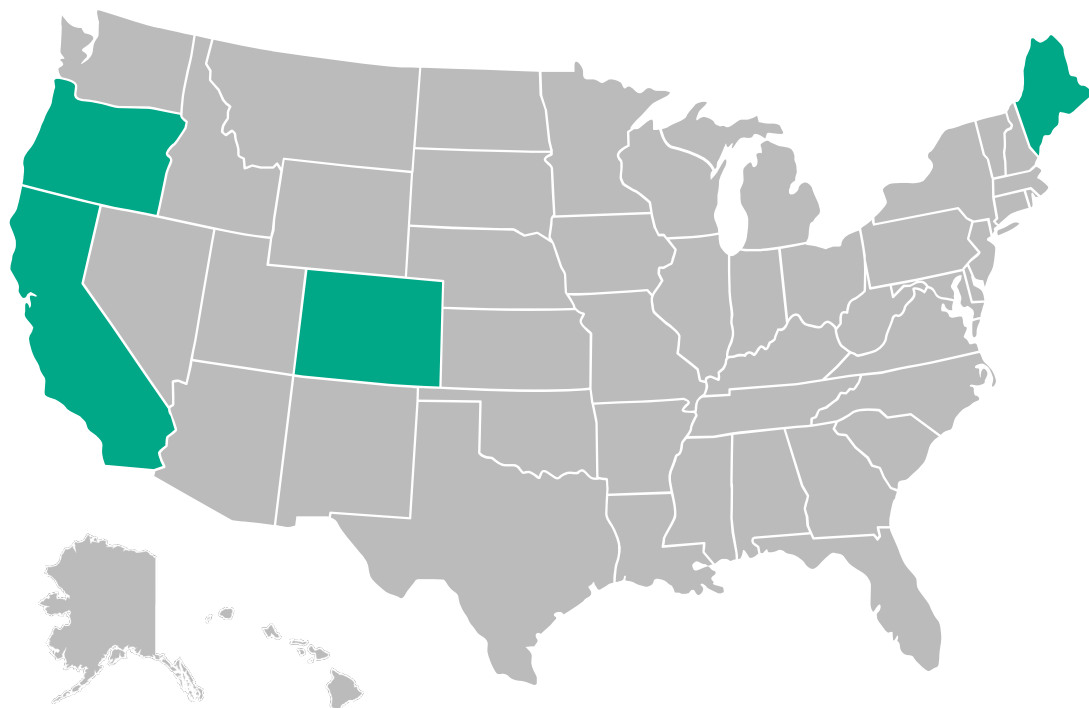
EPR States

Policy state implementation in four states will increase the national rate by 4-5%.

The Partnership will need to focus on both EPR and non-EPR states to be successful at improving the national recycling rate.

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System Investment

Investing in the System

Ensure All Households Can Recycle

Help the Public Recycle Correctly, Consistently, and Confidently

Make Packaging Recyclable

Support Smart Policy to Pay for the System

Innovate for a Better System

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9,000+ programs | 30,000+ communities

Curbside ●
Subscription ●
Drop-off ●
None ●

The Recycling Partnership
Solving for Circularity
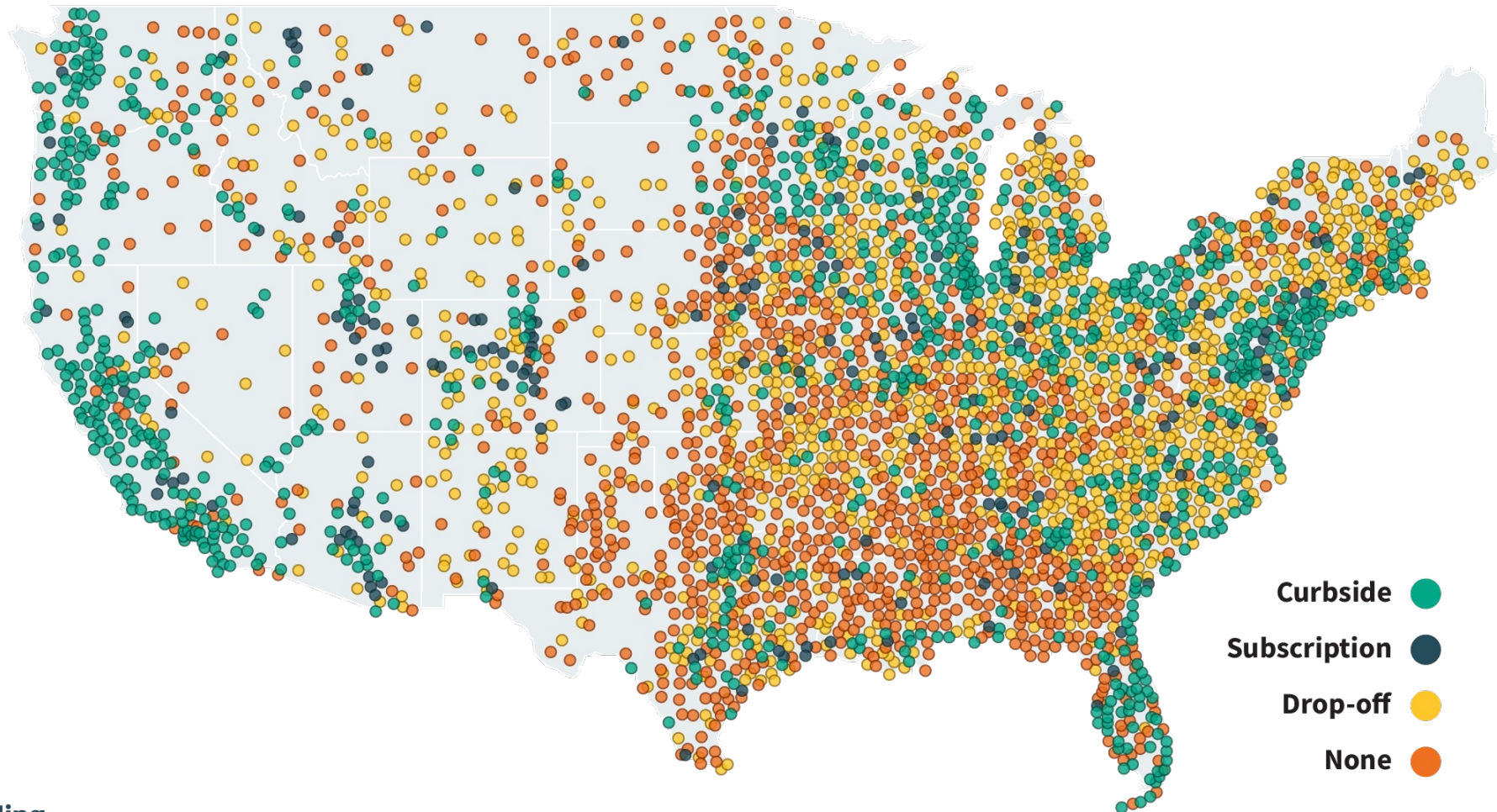
States that have passed EPR represent just 15% of the U.S. Population
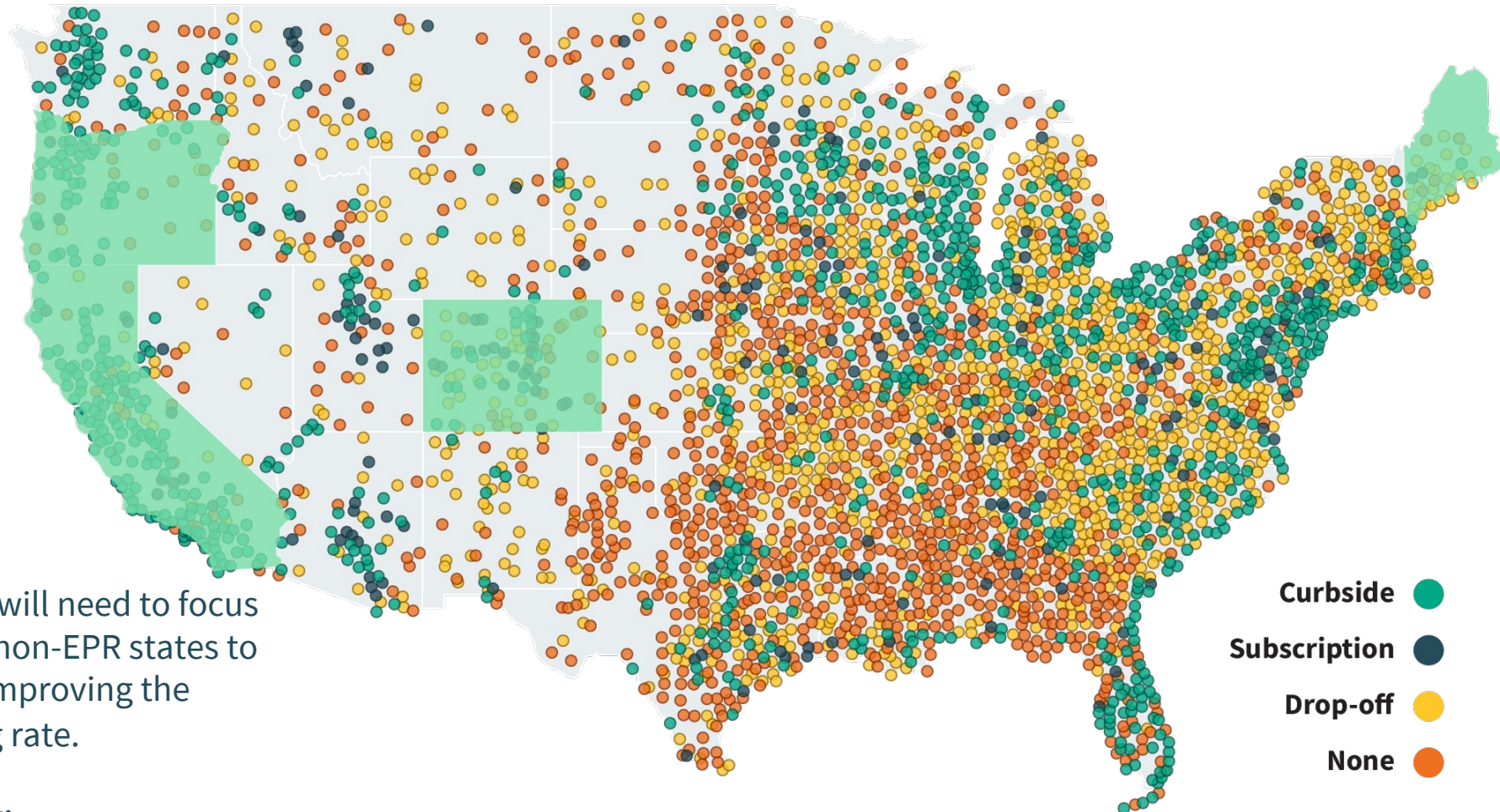
The Partnership will need to focus on both EPR and non-EPR states to be successful at improving the national recycling rate.

Curbside ●
Subscription ●
Drop-off ●
None ●

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Leveling the System Needs National Investment

Regions without policy have the largest opportunity to capture tons and improve the national rate.
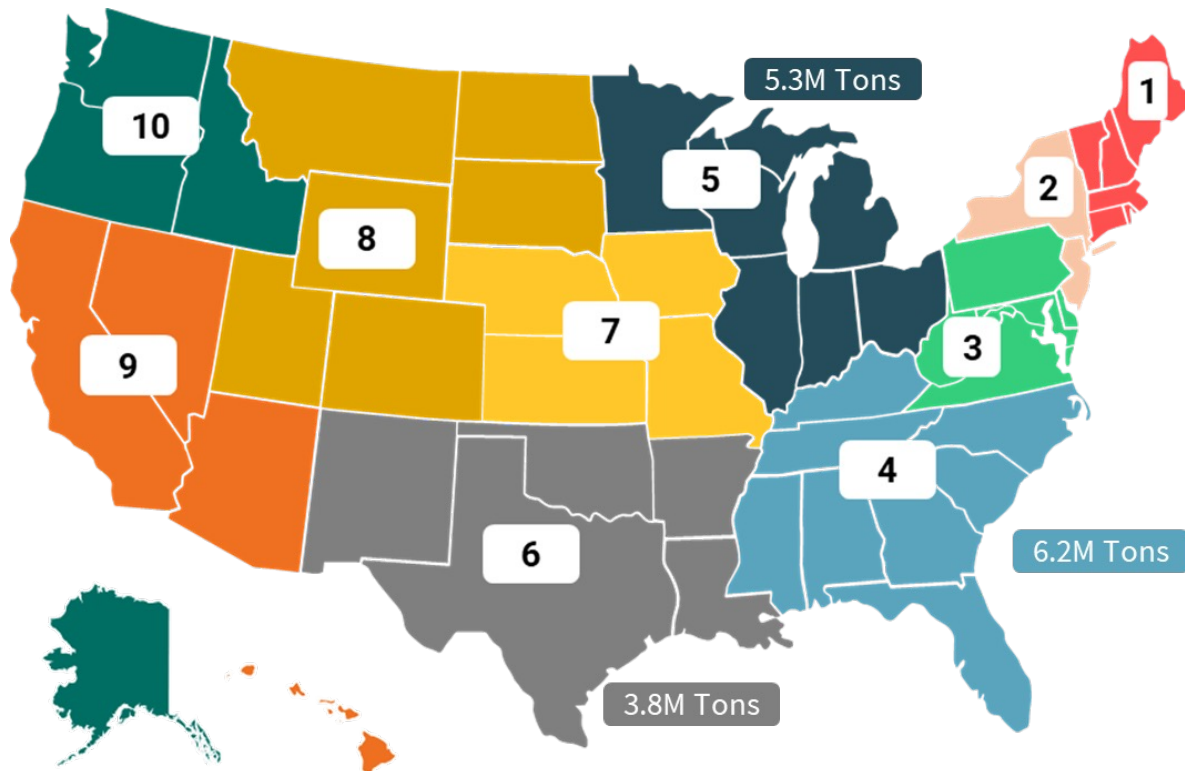
EPA Region	Lost Tons Per Year (M)	Est. Region Recycling Rate
4	6.2	18%
5	5.3	23%
6	3.8	17%
3	3.1	20%
2	2.1	29%
9	3.3	36%
7	1.6	15%
8	1.2	15%
1	1.4	28%
10	1.2	28%

5.3M Tons

6.2M Tons

3.8M Tons

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Technology for MRFs

Computer vision to identify broad categories of materials to specific items

✓ Retrofit or new equipment buying decisions

✓ Staffing and operational decisions

✓ Specific-educational guidance

Resources
- www.greyparrot.ai
- www.endwaste.io
- www.everestlabs.ai
- https://binit.ai/
- www.max-ai.com
- www.amprobotics.com
- https://wasterobotic.com/

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✓ Ideal for quality control

    ✓ Capture a new commodity

    ✓ Capture commodities recycled the wrong way

✓ Space requirement easier than optical, etc.

✓ High quality sorting during difficult labor markets

✓ Reduce downtime and increase revenue with operational adjustments

X Space concerns

X Speed of belt

X Incline of belt

X Width of belt & burden depth

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- Tools for fighting contamination

- MRF Contracting Guide

- Material-specific MRF assistance
  - Polypropylene
  - Used-beverage cans (UBC)
  - PET
  - Film and flexibles

- General MRF assistance

Technology for Measurement

Zabble (Multi-Family)
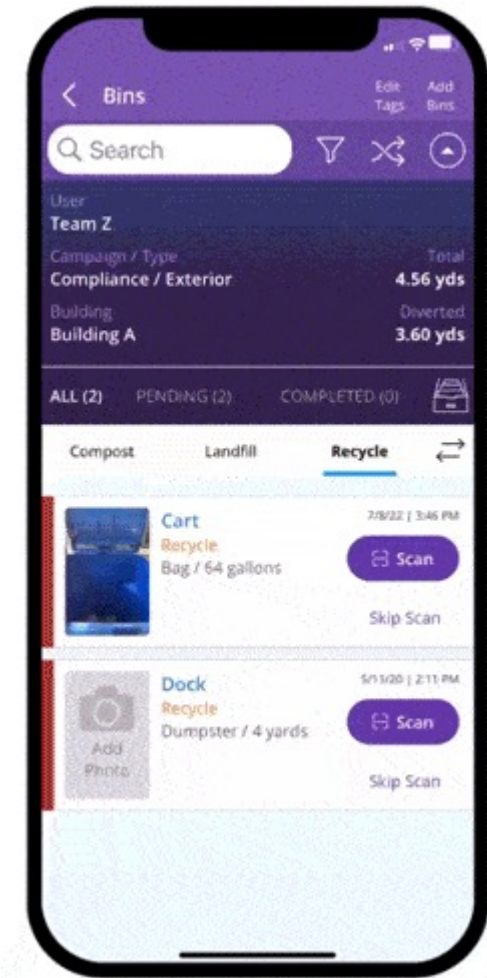
- ✓ Powerful, data-driven

- ✓ No development time

- ✓ Volume & materials data from photos

- X Staff time

- X Operational costs

Compology (Multi-family)

✓ Remote quality control

✓ Re-routing efficiencies

✓ Collection efficiencies

X   Adding contaminants

X Interior-container color

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✓ Ideal for roll-off containers

✓ Reduce collection & labor costs

✓ Collection schedule recommendations
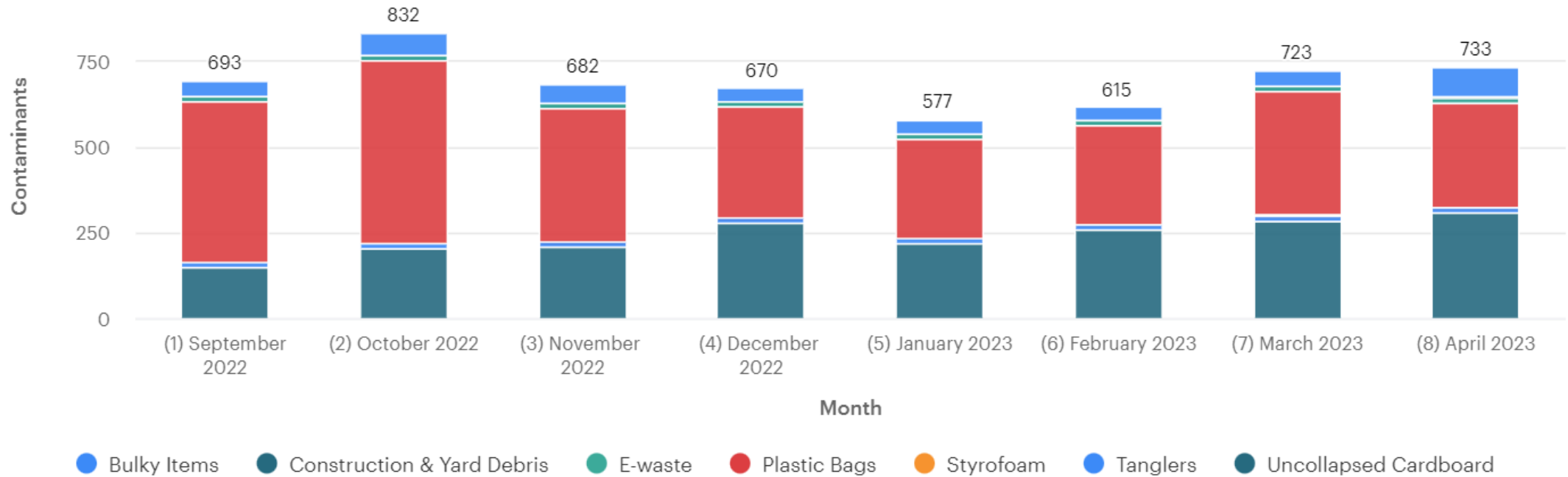
✓ Efficient quality control

✓ Top issue reporting

Container 08-3546

🗑 **65% Full**

X   Contamination priority reporting

X   Site size (container movement during collection)

X   Data customization

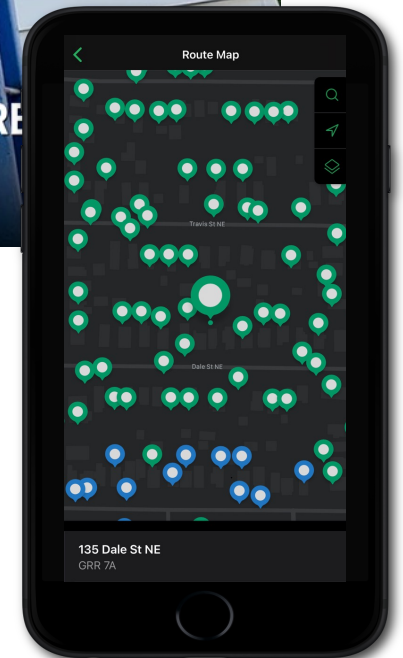# Technology for Single-Family Measurement

Tagging and Tracking Outcomes

40% reduction in contamination

Improved **capture of recyclables,** less going to waste
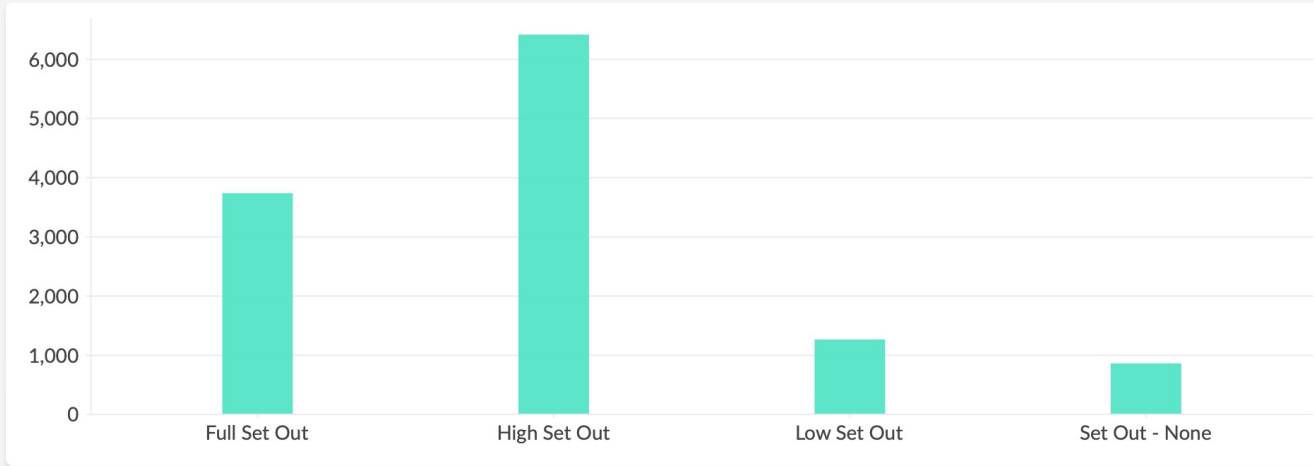
App generated lists

- Households that did not set out recycling for 8 weeks.

- Households that had contaminated carts three consecutive weeks

SEE SOMEONE GOING THROUGH YOUR RE
GR? THIS IS WHAT'S UP

JANNA | Published: August 31, 2020

Route Map

135 Dale St NE
GRR 7A

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Recyclist App (Curbside)

Set-Out Portraits

Full Set Out
Generator set out a container for all observations.

High Set Out
Generator set out a container for more than half (but not all) observations.

Low Set Out
Generator set out a container for less than half (but not 0) observations.

Set Out - None
Generator did not set out a container for any observations.

Portraits are calculated for the 12,238 generators that were observed on all passes.

Contamination Portraits
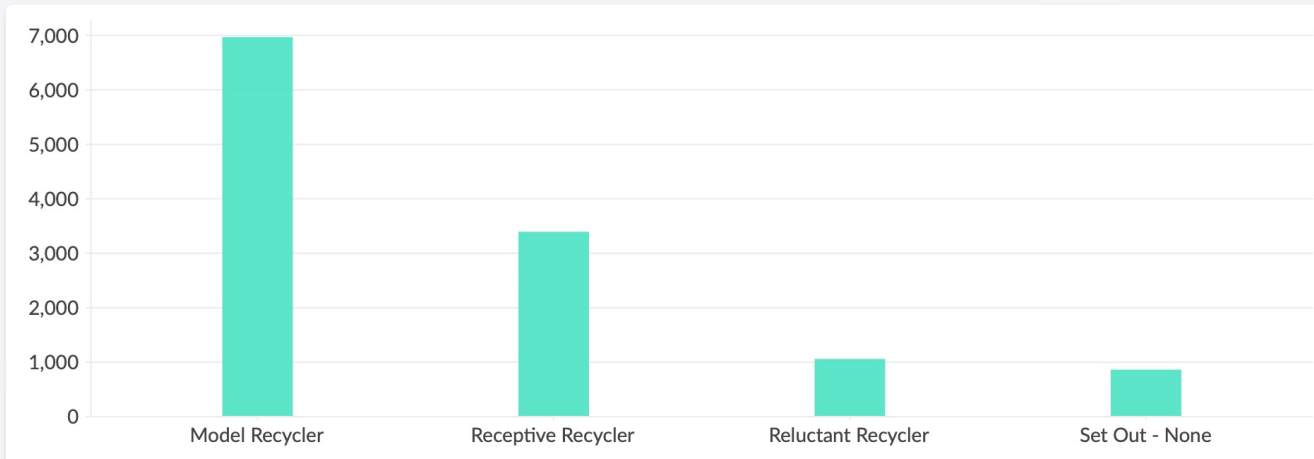
Model Recycler
None of the generator's observed containers were contaminated.

Receptive Recycler
At most half of the generator's observed containers were contaminated.

Reluctant Recycler
More than half of the generator's observed containers were contaminated.

Set Out - None
Generator did not set out a container for any observations.

Portraits are calculated for the 12,238 generators that were observed on all passes.

Camera in truck photographs contents of cart after tipped

Contaminants are identified and labeled
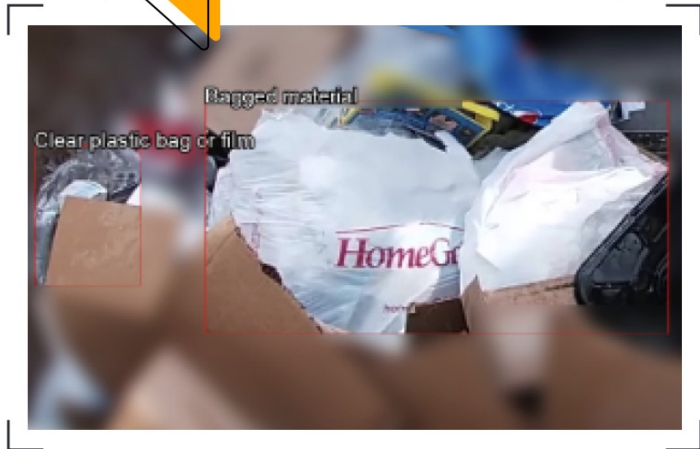
Postcard with photo sent to household

Measure for decrease in contaminated carts and determine effectiveness method

When we emptied your recycling into the truck— our team noticed these "NO" items in your cart.

OOPS!

Please leave these items out of your recycling cart!

Do Not Bag Recyclables

No Garbage

No Plastic Bags or Plastic Wrap (return to retailers)

No Styrofoam™ (DPW drop-off site only)

YUCK No Food or Liquid (empty all containers)

No Yard Waste

cityofeastlansing.com/recycle
517-337-9459

PRAIRIE ROBOTICS
RECYCLING MADE SIMPLE

EGLE

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1 Using **artificial intelligence (AI) on trucks** to identify contamination

2 Sending **standard and "moral nudge" mailers** to determine effectiveness

During your most recent collection – *our team noticed the incorrectly sorted items in your cart.*

DO YOU KNOW WHAT TO THROW?

We need to **recycle the YES things** and **keep the NO things out**.

Scan to find out what's recyclable in East Lansing.

517-337-9459

cityofeastlansing.com/recycle

ARE YOU WISHCYCLING?

Scan this **QR code** to make sure you are recycling the right things and are helping to keep recyclables out of the landfill.

517-337-9459

cityofeastlansing.com/recycle

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Data-driven Localized Recycling Information on Packaging

Local Recycling Program Dashboard with Customized Recommendations

Data-driven Actions to Optimize Access, Measurement, Engagement

Launching Spring 2023

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Informing Labeling and Communications on Packaging

Driving Behavior Change with Dynamic Information on Packaging and in Your Communities

1

Your Community Verifies Its Data and Accepted Materials List

2

National Recycling Database Updated in Real-Time

3

Residents Scan on Package QR Code for Updated Information

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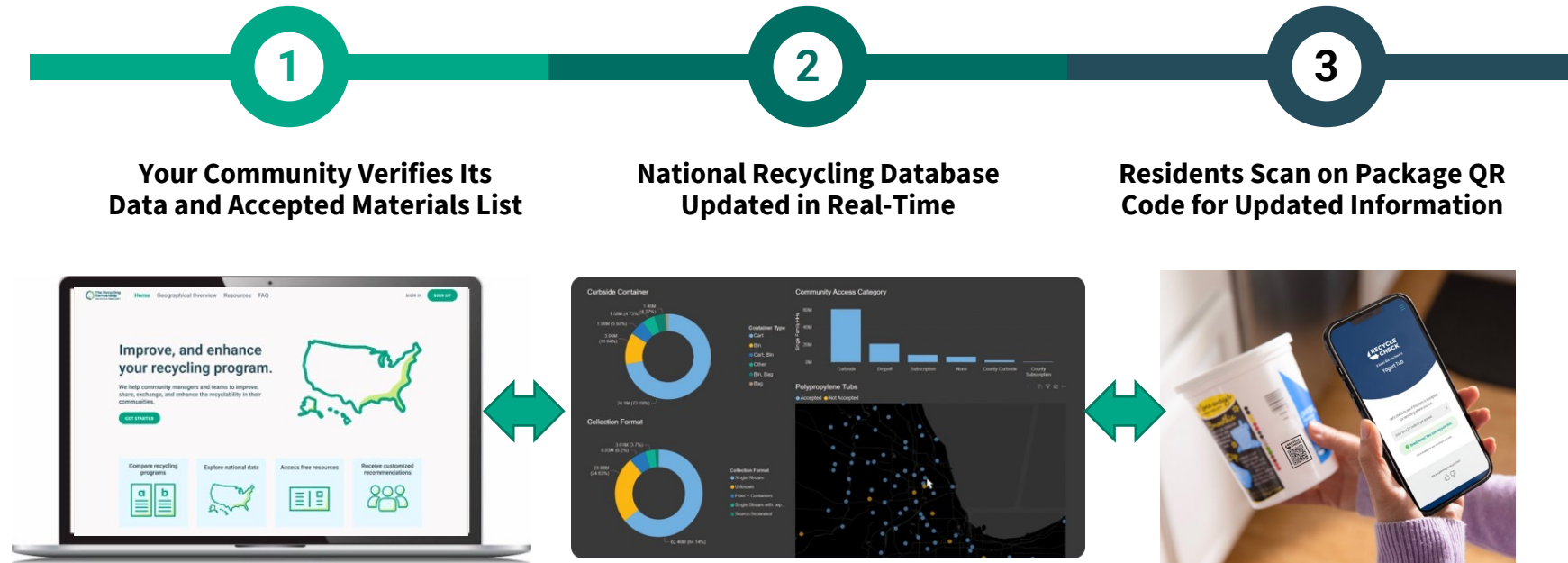
Connect with US!

Thank You to Our Partners!

Get in Touch:

Craig Wittig

✉ cwittig@recyclingpartnership.org

🌎 recyclingpartnership.org

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