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AN INTRODUCTION TO ASTRX

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We work across the system ... across the country...



STATE and LOCAL



HAULERS



MRF



BRANDS



RESIDENTS



**250+ community
partners**

**... growing access to
resources and data**



**~400,000 carts
More than \$20MM
of new infrastructure**

47%

of Americans don't automatically have curbside recycling.

2016 SPC Access Study

&

60%

of packaging is not being recovered in the home.

The Recycling Partnership

Half plus half equals
A WHOLE LOT OF OPPORTUNITY.

RECYCLING IS A LOOSELY CONNECTED, BUT HIGHLY DEPENDENT SYSTEM



A man in a grey cardigan and dark polo shirt stands on a sidewalk next to three recycling bins. The bins are blue, green, and grey. The blue bin has 'Portland Recycles' and a recycling symbol on it. The green bin has 'Portland Composts' and a composting symbol. The grey bin is partially visible. In the background, there is a house with a porch and some greenery.

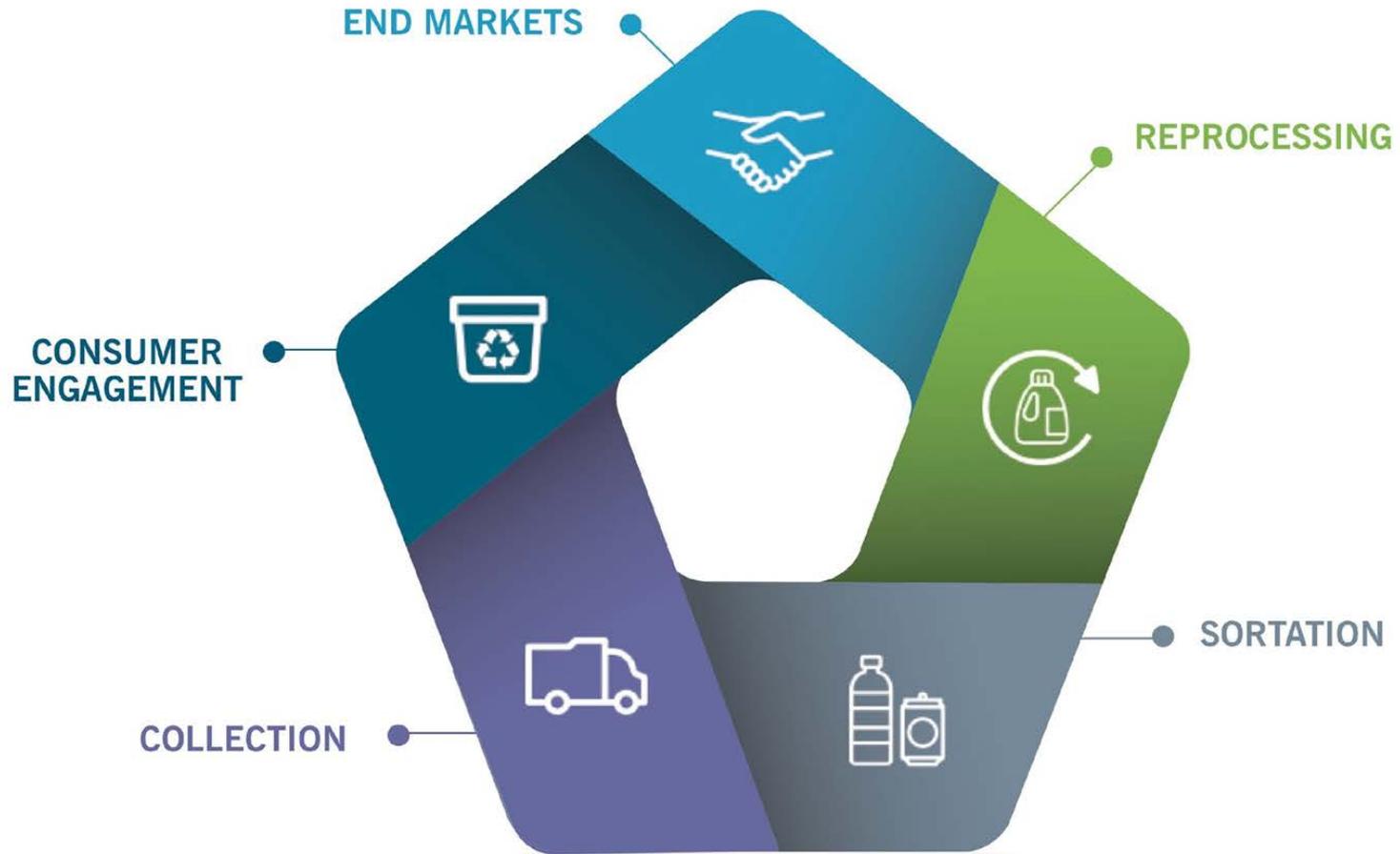
ASTRX: Applying Systems Thinking to Recycling

The Sustainable Packaging Coalition and The Recycling Partnership have started a new initiative that will build a roadmap for a stronger American recycling industry.

What *is* Systems Thinking?



NAVIGATING THE RECYCLING SYSTEM



NAVIGATING THE RECYCLING SYSTEM

For packaging to be recycled successfully, we must consider how it flows through each of the five elements of the recycling system: manufacturing, reprocessing, sorting, collecting and engaging consumers. To start thinking about the criteria that can help assess the recyclability of a product and its ability to create reliable and valuable manufacturing feedstock, use the table below. Think of this as a starting point for a conversation about the recyclability of a product. Start by considering the ultimate goal: that a recycled product finds an end market.



END MARKETS (Feedstock for Manufacturing)

Supply/Demand

Is there demand to use the recycled material in products?

Design

Are brand companies creating a "Demand Pull" by using recycled materials?

Specifications

Do the product specifications allow for the use of recycled content in it?

Contamination

Are there contaminants in the material that hinder the end application?

Infrastructure

Education

Profitability

Does it have a positive profitability analysis?



REPROCESSING (Paper Mills, Plastic Reclaimers, etc.)

Supply/Demand

Is there demand for the reprocessed material?

Design

Are there design flaws that prevent reprocessing and recoverability?

Specifications

Can material be combined or is it compatible with other currently recycled material?

Contamination

Does the material cause harm or contamination to other materials?

Infrastructure

Is a new investment required to reprocess the material? Are there markets in different geographic areas?

Education

Profitability

Does it have a positive profitability analysis?



SORTATION (MRF – Materials Recovery Facility)

Supply/Demand

Do reprocessors want to buy the material? Are there markets? Are they positive?

Design

Are there design flaws that impact sortation? Does its form enable it to be properly and consistently sorted (size, flatness, 3D, labeling, etc.)?

Specifications

Do new bale specifications need to be developed? Do bale specs allow for inclusion of the material?

Contamination

Can the product damage the recovery of other materials? Are there contaminants (moisture, food, etc.) that impact sortation?

Infrastructure

Is a new investment required to sort the material? Are there MRFs available that can sort and market the material?

Education

Do MRFs know that it is possible to sort the material? Are pick line workers trained to identify the material?

Profitability

Is there adequate volume to justify recovery, particularly if it must be marketed independently? Does it have a positive profitability analysis?



COLLECTION (Curbside and Drop-Off)

Supply/Demand

Design

Is there a defined common suite of outreach materials for the region?

Specifications

Contamination

Does this material hurt the recyclability of other materials?

Infrastructure

Is an investment required to collect the material? Are there collection carts or bins? Vehicles? Drop-off locations?

Education

Do local governments know all the materials that their MRF will accept?

Profitability

Is there adequate volume being collected to support recycling?



CONSUMER ENGAGEMENT (Access and Participation)

Supply/Demand

Design

Does it have a How2Recycle® label to describe recyclability and any actions consumers need to take to recycle it, such as removing components or returning to a store drop-off location?

Specifications

Is access to recycling collection automatic or must residents ask for/pay for the service?

Contamination

Do consumers know how to prepare their materials for recycling (no food residue)?

Infrastructure

Education

Do consumers know the material is accepted? Do they know how to recycle it (via curbside, or community or store drop-off)?

Profitability



Manufacturer
DEMAND DRIVES
environmental gains.

The system needs
reliable quantity, quality,
and cost in supply.

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END MARKETS

- Critical to success of recycling industry
- “You don’t sell scrap, someone buys it”
- Brands/Producers have power to support (while helping own triple-bottom line)



Each material type
REPROCESSOR
has unique challenges.

One thing in common is the need
for **predictable quality**
as both input and output.

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REPROCESSING



- Core, Transitional & Fringe
- The future of the material mix



The **MRF**
is the backbone of the
recycling system.

But not all
**Materials Recovery
Facilities** are the
same.

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SORTATIO N

- What is contamination?
- MRF-sheds



WHAT'S

a MRF-shed?

ASTRX
Applying Systems
Thinking to Recycling



Like a Watershed, but for Recyclables



MRF-shed Mapping



Sample Common Suite

Cans



Aluminum and Steel Cans
empty and rinse

Cartons



Food and Beverage Cartons
empty and replace cap

Glass



Bottles and Jars
empty and rinse

Paper



Mixed Paper, Newspaper, Magazines, and Flattened Cardboard

Plastic



Kitchen, Laundry, Bath: Bottles and Containers
empty and replace cap

NO!



Do Not Bag
Recyclables
No Garbage



No Plastic Bags
(return to retail)



No Food
or Liquid
(empty all
containers)



No Clothing
or Linens
(use donation
programs)



No Tangles
(no hoses, wires,
chains, or electronics)



We need to
**MEASURE what is
CAPTURED** at the
curb more accurately so
we can better
plan and collect more quality
materials at the curb.

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COLLECTION



- How do we measure recycling?
- Capture Rate vs. Recycling Rate

**Recycle if
Clean & Dry**



PLASTIC

BAGS / FILM / WRAP

how2recycle.info

Clean and consistent
COMMUNICATION
can change behavior.

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**SHINE
ON.
Recycle.**





CONSUMER ENGAGEMENT

- How2Recycle
- Making Recycling MoreBetter

How2Recycle is designed with the consumer in mind.



***Not recycled in all communities**

Widely Recycled

At least 60% of Americans can recycle this package at curbside recycling or drop-off recycling.

Sometimes Recycled

Between 60% and 20% of Americans can recycle this package at curbside recycling or drop-off recycling. Check your local program.

Not Yet Recycled

Either less than 20% of Americans can recycle this package, or, it could cause a problem in a recycling facility.

Store Drop-off

Anyone who lives near a store that accepts plastic bags and wraps for recycling can take this packaging to that store and recycle it there.



how2recycle.info



how2recycle.info

Keep It Simple

ALUMINUM

Aerosol
Can
Foil or Foil-like Container
Other Aluminum Containers

CARTONS

PAPER

Cold Cups
Hard Cover Books
Hot Cups
Ice Cream Container
Junk Mail
Kraft Bags
Magazines
Newspaper
OCC
Office Paper
Paperback Books
Paperboard Boxes
Pizza Boxes
Shredded Paper

GLASS

Bottles and Jars
Drinking Glass
Mugs
Window

PLASTIC

Buckets
Bulky Plastic
EPS Foam
Flower Pots
HDPE Bottles & Jars
Non-bottle HDPE Containers & Lids
Non-bottle PET Containers & Lids
Other Containers & Packaging
Other Drink Bottles
Other Food Bottles & Jars
Other Household Bottles & Jars
Other Tubs & Lids
PET Bottles & Jars
PET Thermoform
PP Bottles
PP Containers & Lids
Produce, Deli & Bakery
Containers, Cups, Trays

STEEL

Aerosol
Can
Pots and Pans
Scrap Metal

Cans



Aluminum and Steel
Cans
empty and rinse

Cartons



Food and Beverage
Cartons
empty and replace cap

Glass



Bottles and Jars
empty and rinse

Paper



Mixed Paper,
Newspaper, Magazines,
and Flattened
Cardboard

Plastic



Kitchen, Laundry, Bath:
Bottles and Containers
empty and replace cap



What will we sort out next?

ASTRX
Applying Systems
Thinking to Recycling





NEXT STEPS:

- Recommendations on metrics
- Recycled content goals and best practices
- Recycling workshops
- Working with other organizations
- Open to ideas

Thank You!

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ASTRX.ORG

