



# TAKE BACK CONTROL OF YOUR RECYCLING PROGRAM

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Resource Recycling Systems

Michigan Recycling Coalition Conference May 2019

# AGENDA

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- RRS – What We Do
- The Current Context
- Responding with Best Practices
- Available Resources

# ABOUT RRS

**SINCE 1986** serving industry/governments/non-profits

- Plan and implement materials management and zero waste solutions
- Facilitate recovery value chain collaboration to increase commodity recovery for industry and municipalities
- Analyze packaging recyclability and compostability
- Business case and net system cost analysis
- End market and recovery systems development for circular economies
- Adapt MRF systems & composting facilities with new technologies to process today's recyclables
- Develop and implement multi-stakeholder communications and outreach



recycle.com

# WHO WE ARE

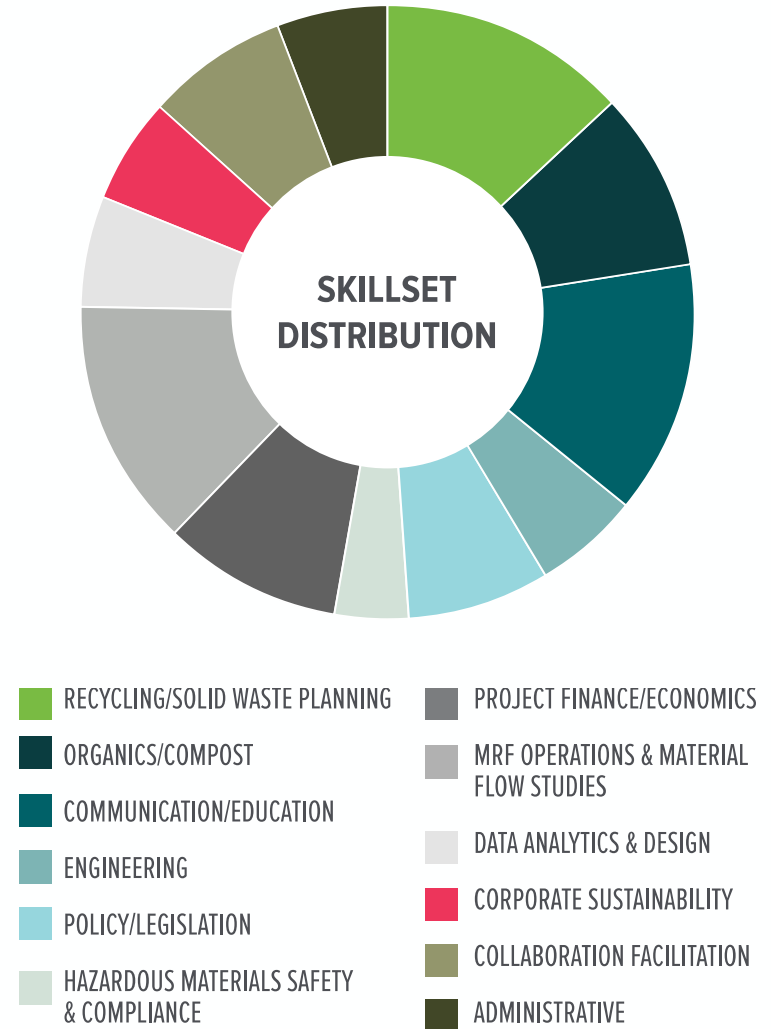
**33** years in recycling and managing resources

**45** employees in 4 countries

**660** years combined field experience

**1,000** projects across 9 markets

# OUR SKILLS







# COMMON CHALLENGES:

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- Volatile recycling markets
- Pressure from MRFs to drop materials
- Paying for recycling (processing fees), instead of being paid (rebates)
- Questions from administrators / elected officials on program costs
- Public expectation of access to recycling

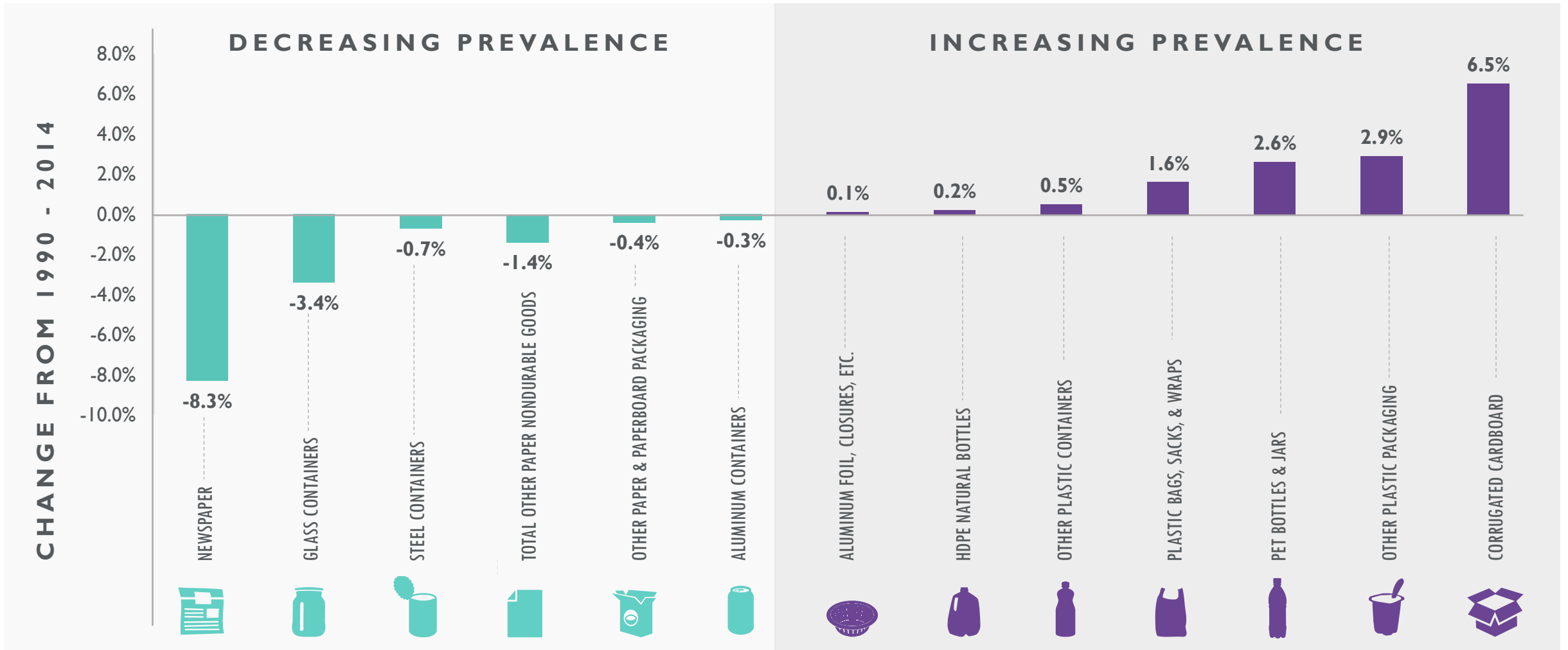
# GLOBAL MARKET DISRUPTIONS — MICHIGAN STYLE



## WHAT'S REAL:

- Contamination quandries
- Wish-cycling
- Increased Processing Costs
- Lower market prices
- Tighter quality control specifications
- Contracts up for renegotiation
- Tight labor pool

# THE EVOLVING TON







# RESPONSES TO MARKET DISRUPTIONS VARY WIDELY

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- Haulers & Processors drastically increasing rates for community service; some communities paying more, some pushing back; some banding together to achieve economies of scale & bargaining power
- MRFs slowing down lines, adding optical and manual sorters
- Brokers and end markets tightening specifications to ensure quality
- Programs suspending service due to limited markets, escalating costs
- Some programs cutting back on materials accepted for recycling
  - Glass
  - #3-7 plastics (#1-7 non-bottle plastics)





# MEANWHILE, ON PLANET EARTH





We've heard the phrases "back to basics" and "recycle light" floating about the industry, but is it really time to pull back when we have a **real opportunity** in the US to **keep moving forward**?







# WE'VE BUILT SUCCESSFUL RECYCLING PROGRAMS WE SHOULDN'T PUT THEM AT RISK

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- In Michigan, there are an estimated:
  - 2,242 establishments in recycling and reuse industry
  - With receipts of \$11.6 billion
  - And 35,954 direct jobs with payroll of about \$2.6B
  - And 93,722 total jobs with a payroll of about \$5.7B
- Total economic benefit of \$24.3 billion

**AND THIS IS WITH MICHIGAN RECYCLING RATE AT 15%**



# BE CAREFUL! SHORT-TERM DECISIONS CAN HAVE LONG-TERM IMPLICATIONS

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- Picking and choosing material for value only threatens supply chains and consistency for communities and residents
- Can't “turn off and on” recycling for our residents – the long term is important..
- MRFs that suddenly and dramatically increase tip fees in the middle of contracts will lose tonnage required to cost effectively operate – and public support!





# WHAT'S A RECYCLER TO DO?

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- Sustainable materials management & food waste reduction can get us to 75% diversion – reducing landfill tons and cost
- BEST PRACTICES will maximize recovery, cost-effectiveness, quality and success
- And the best part is... you're not alone!
- Rising tide lifts all boats
- Together – municipalities have each others backs!



**ASPIRATION**

**Zero Waste  
Circular Economy**

\*US EPA defines Recovery Rate as Recycling and Composting. 65% of US population has curbside access. Construction & Debris is accounted for separately.

# THE U.S. WASTES BILLIONS PER YEAR LANDFILLING MATERIALS WITH ECONOMIC VALUE

MUNICIPAL SOLID WASTE

**34.3%**

2013 U.S. Recovery Rate\*

**52.8%**

Landfill

**12.9%** Waste to Energy



**8.9%**

Average organics recycling rate



**25.4%\***

Average recycling rate





# WHAT IS THE DIRECT ECONOMIC OPPORTUNITY FOR MICHIGAN?

Total Material Value of Disposed  
Recyclables/Organics:

**\$368M to \$600M**

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Current Spend on Waste  
Collection and Disposal

**\$1.2 B**

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Infrastructure Investment to  
Double MI Recycling Rate

**\$250 to \$500M**

# WHAT COMMITMENTS ARE GLOBAL COMPANIES MAKING?

**100% reusable, recyclable  
or compostable plastic  
packaging by 2025**

FOLLOW THEIR LEAD



Plastic has risen to the top of business risk for consumers, regulators - and for brands it is a license to operate issue

# THE ALLIANCE TO END PLASTIC WASTE



## OUR COMMITMENT

**\$1.5 Billion**  
over the next  
five years

Joining forces with governments at the national, regional and municipal level and organizations of civil society, we're bringing new ideas and ways of thinking to the table.

We're starting with \$1.5 billion over the next five years – and we welcome all companies, big or small, from all regions and sectors to support this effort.

## Sources of Plastic Marine Debris

Much of the world's unmanaged plastic waste ends up fouling global waters



Origin by country of unmanaged plastic waste in 2010 (metric tons)

Sources: Science; University of Georgia; University of California; Sea Education Association

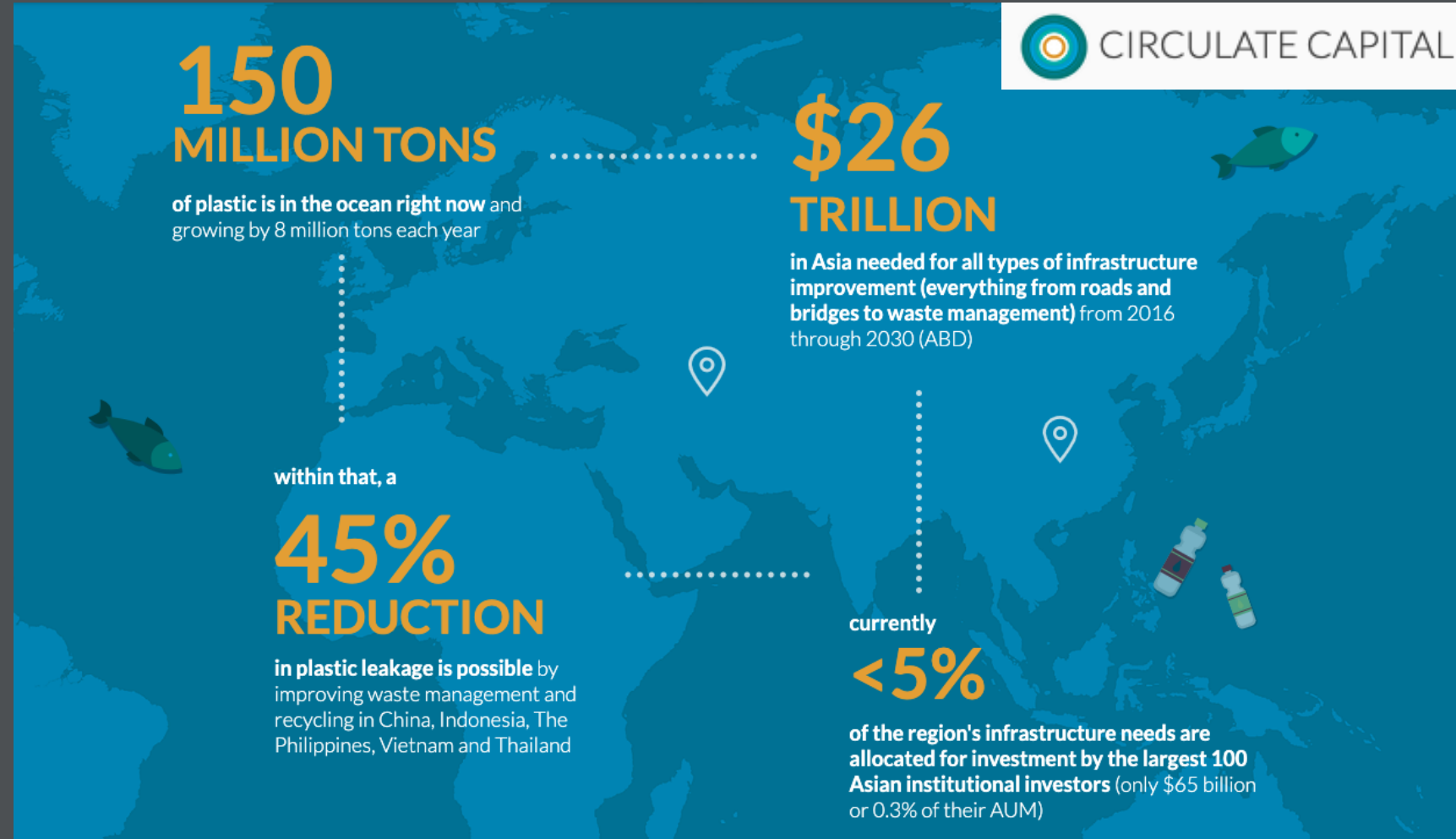




# CIRCULATE CAPITAL - \$100M+ IMPACT INVESTMENT FUND



Circulate Capital is an impact-focused investment management firm dedicated to financing innovation, companies, and infrastructure that prevent the flow of plastic waste into the world's ocean while advancing the circular economy.







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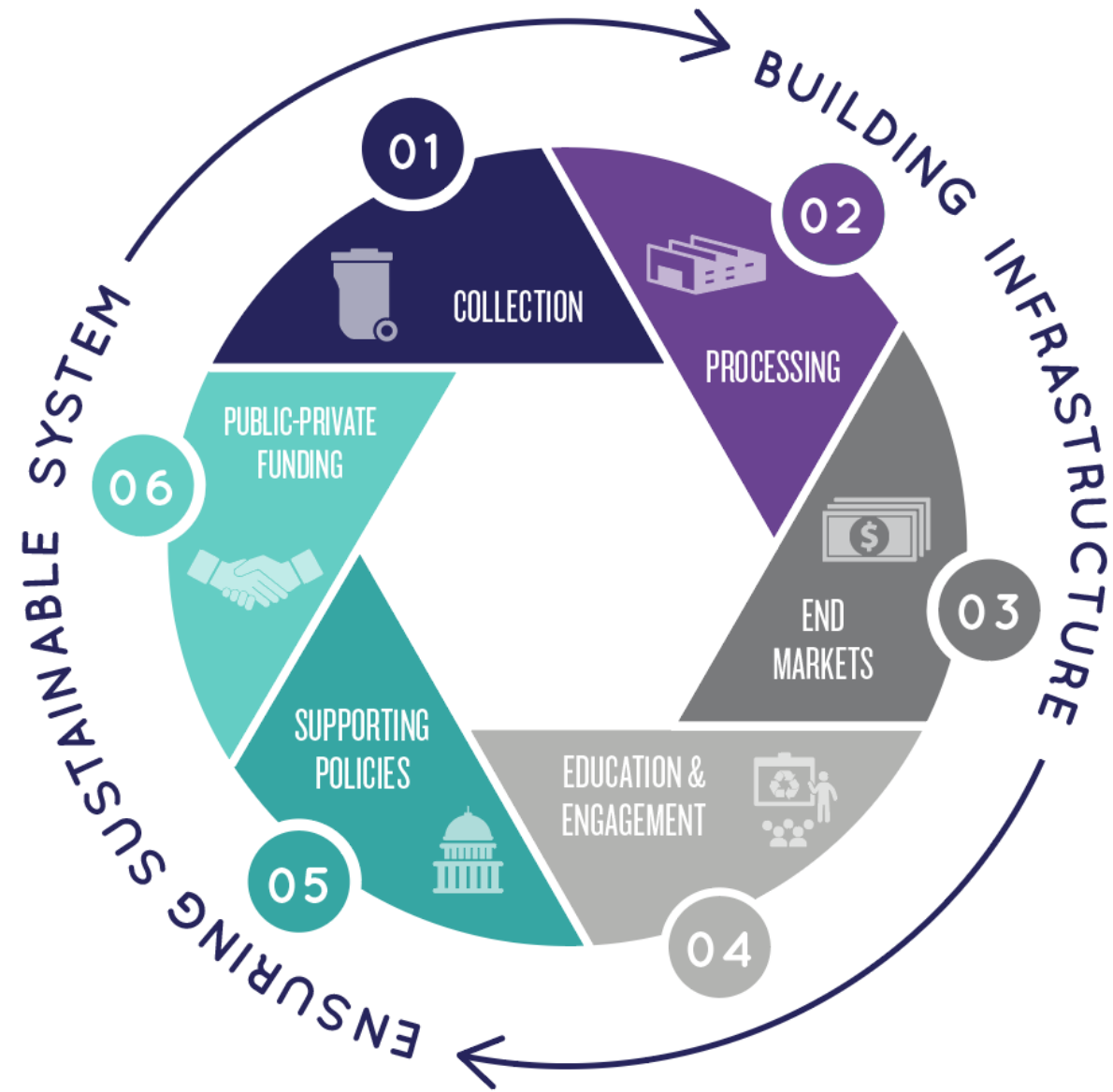


ADAPT. EVOLVE. RECYCLE

**IF YOU ARE GOING BACK TO  
BASICS, GO BACK TO THIS**

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# THE SIX RECYCLING SYSTEM BEST PRACTICES



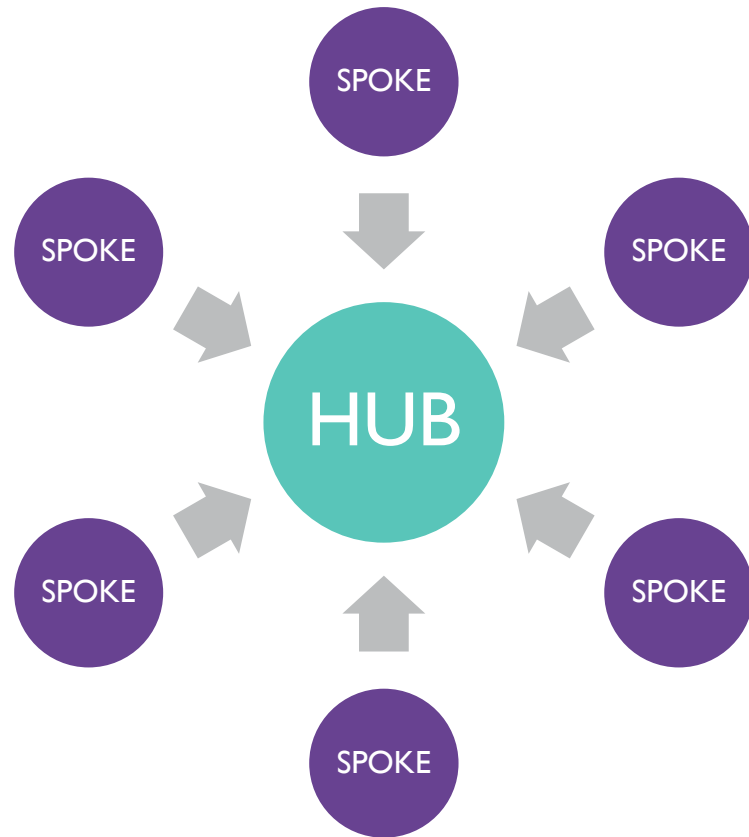




# COLLECTION

# THE HUB AND SPOKE REGIONAL RECYCLING MODEL

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## BENEFITS:

- Recycling costs are shared among communities and reduced
- Avoids duplicative infrastructure
- Consolidating materials from multiple communities creates larger, stable supply to attract processors / buyers





# CONTRACTED OR REGULATED SERVICES VS. SUBSCRIPTION

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- Potential to lower costs for everyone involved
- Similar services offered across larger region
- Consistency in acceptable materials facilitates regional education



# PROCESSING

# UNDERSTANDING CONTAMINATION



- Contamination - items that should not be in the recycling stream in the first place – tangles, diapers, etc.
- Contamination is NOT materials that a facility no longer wants in the stream. That is just less materials accepted, not contamination.



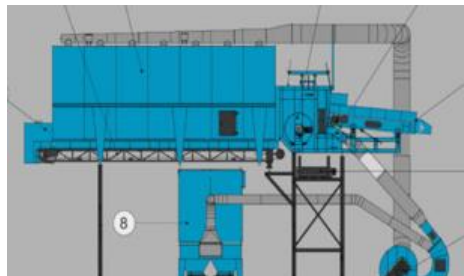


# EMERGING TECHNOLOGIES

- Robotic Sorting,
- AI Image Recognition, and
- Higher Level MRF Automation..
- Requires Capital Investment
- But Lowers Operating Costs, and
- Results in Higher Quality Material
- With Increased Flexibility

# SORTING TECHNOLOGY- RELIABLE MANUFACTURERS GETTING BETTER

Flats from Rounds, lights from heavies, smalls or “fines” capture



Advanced Air Knives:  
Nihot/WalAir/CP

- Closed system
- Positive/Negative
- Lights from heavies,
- floating flat material from dimensional material (rounds)



Optical Sorters  
In-flight, TiTech, MSS

- Colors, Papers, individual containers
- Positive/Negative
- Lights from heavies
- X-ray fines separation
- floating flats material from 3D smaller material



Dimensional Trommels

- Dimensional layers and hole openings
- Air assisted
- Replaces high maintenance disk screens
- Captures organic sweet spot fraction (<-6”)



Robotics & Automation

- Stadler **Fully Automated** Plant in Europe (2 FTE, 14 NIROS, CCTV)
- RFID tags and robotics
- Practical improvements in metering and screening

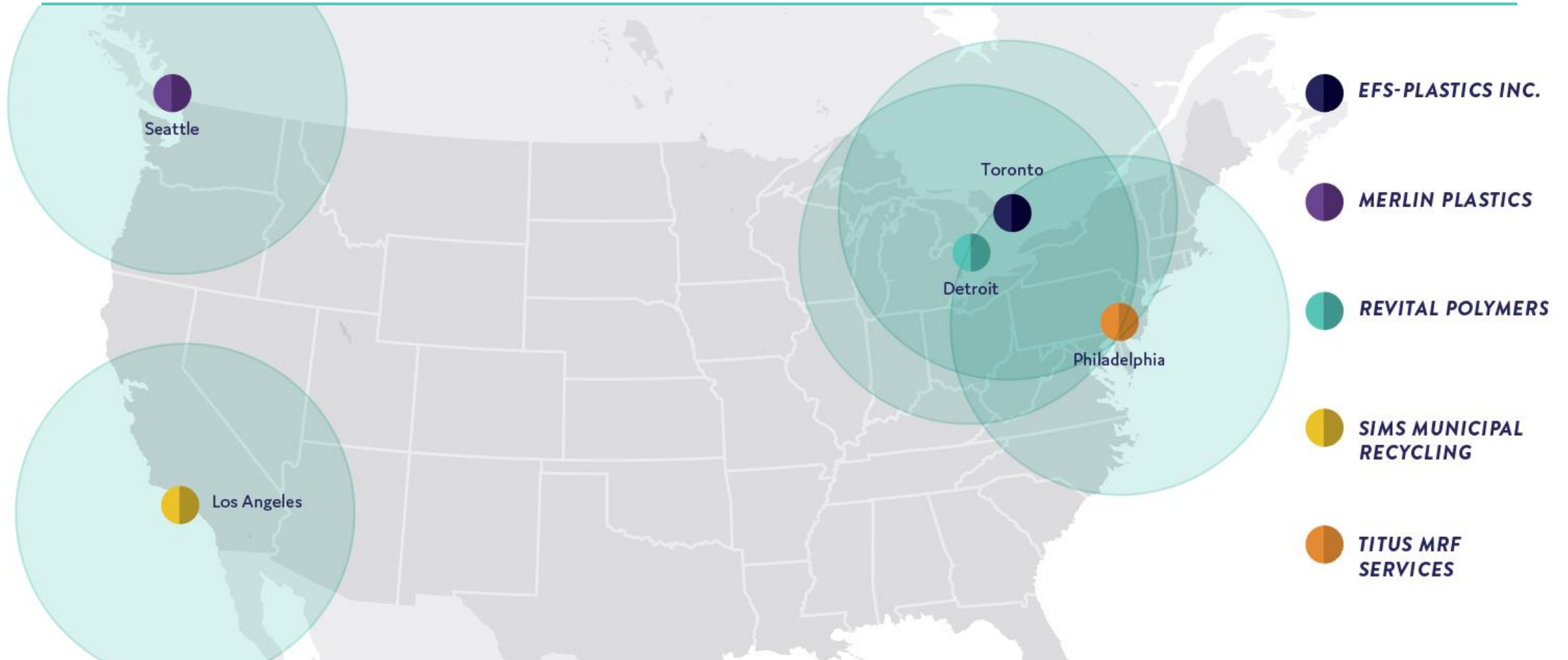




# END MARKETS

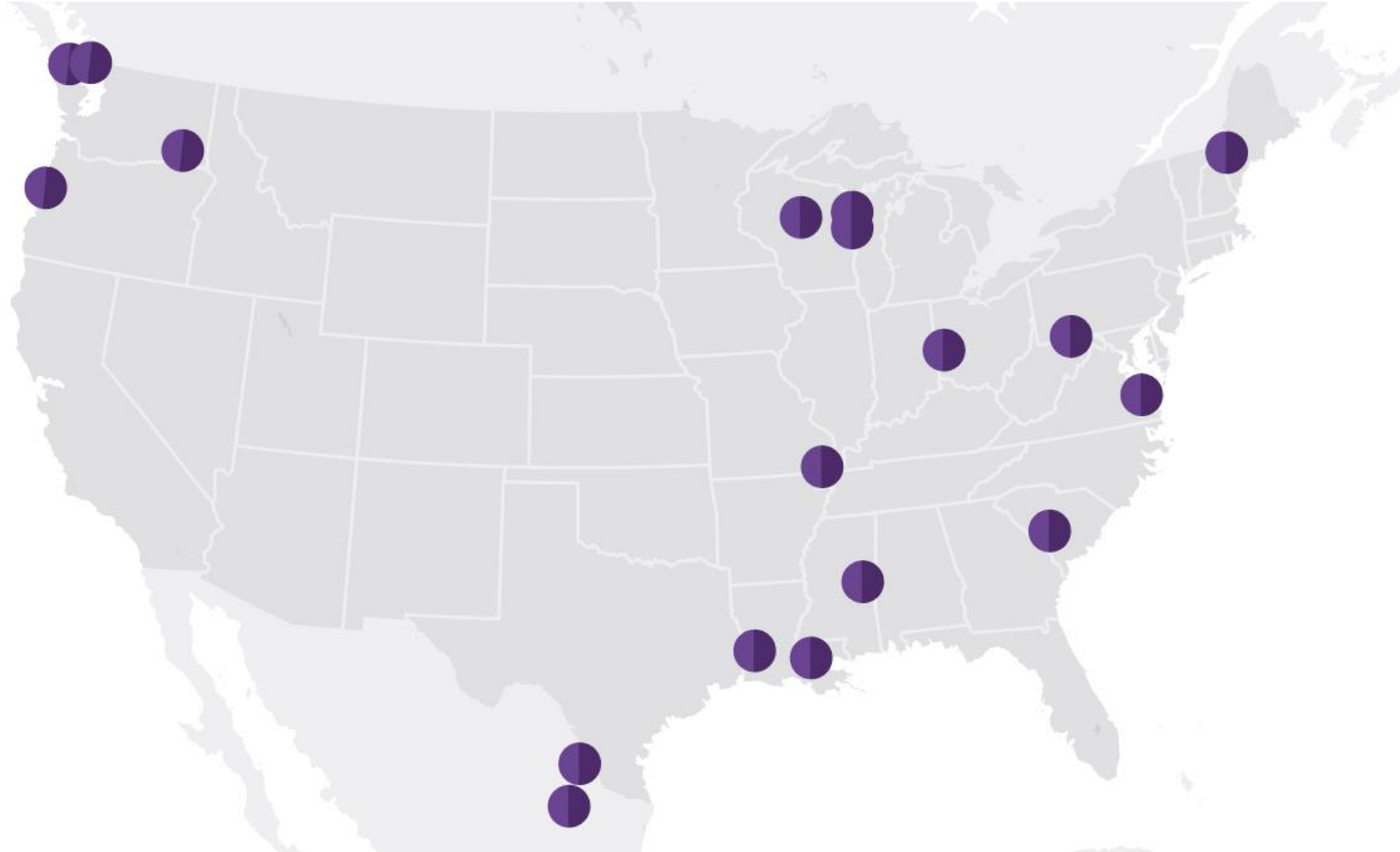


# MIXED PLASTICS MARKETS ARE NOT DEAD!



# NEW PAPER MILLS ARE BEING DEVELOPED

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# CURRENT STATE OF CARTON RECYCLING IN U.S.



STRONG CARTON RECYCLERS IN NORTH AMERICA





# EXPECTED GRADE 52 INFRASTRUCTURE IN NA BY Q3 2019



● ANNOUNCED PROJECT

● EXISTING RECYCLER

## EXPORT OPPORTUNITIES TO RECYCLE CARTONS

- South Korea
- Japan
- India
- Thailand

China is not an end market for Grade 52



# EDUCATION + OUTREACH

A man in a plaid shirt is shown from the side, placing a cardboard box into a recycling bin. The bin's lid is open. The background shows a residential building with a porch. The entire image has a purple color overlay.

# REFOCUS EDUCATION EFFORTS

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powered by RRS





# EDUCATING DECISION MAKERS

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- Be the resource for your decision makers
- Make the case!
  - \$\$ and cents work
- State lawmakers are important as well
  - Work with SROs

# THE FUNDING AND ACCOUNTING HANDBOOK

## AN INTRODUCTION TO FUNDING AND ACCOUNTING FOR INTEGRATED SOLID WASTE MANAGEMENT PLANNING

*Created by CSRA and RRS  
on behalf of EPA Region 4*



- Creates a planning tool for budget preparation and for determining the future of ISWM services.
- Provides a framework to identify all costs allowing a more accurate comparison of various ISWM services.
- Provides ready-to-use spreadsheets to identify the costs of ISWM services.
- Identifies various sources and methods of department funding.
- Helps explain ISWM costs to the public



# SUPPORTING POLICIES



# JUST BREATHE

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# PUBLIC/PRIVATE COORDINATION



# RECYCLING IS EVOLVING EVERY DAY

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- Trade organizations like Carton Council (CCNA) and Foodservice Packaging Institute (FPI) are voluntarily expanding the recycling opportunities of the materials they produce
  - Funding, technical assistance, outreach support, best practices
- Partnerships to explore how to materials that are becoming more prevalent in the stream – Materials Recovery for the Future (MRFF)



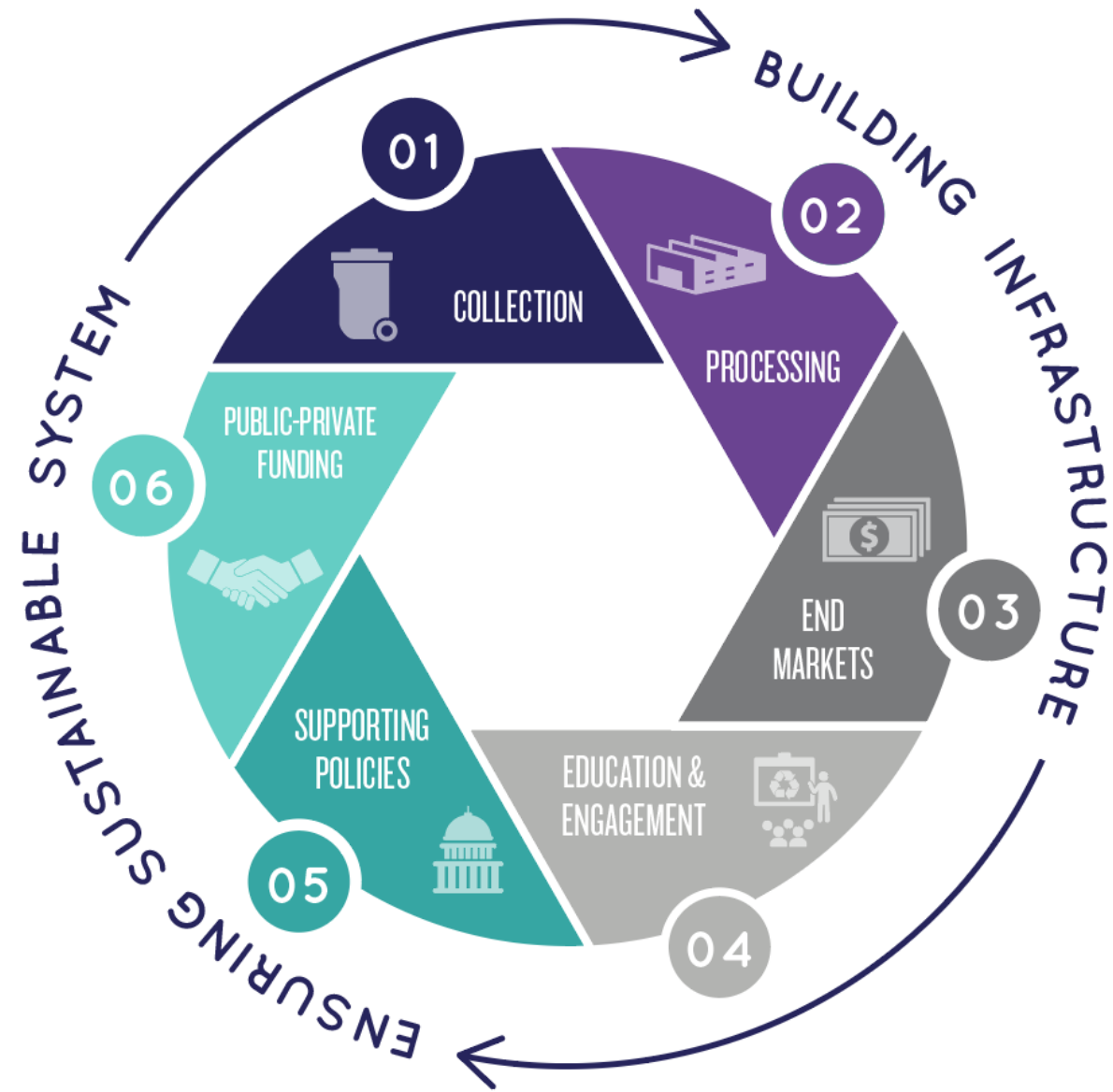


# FOOD AND BEVERAGE CARTONS

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- Increasing access to carton recycling by working backwards through supply chain
  - Develop end markets
  - Recovery at MRFs as Grade 52 w/equipment solutions
  - Add to community recycling programs
- Financial and technical support to facilities, communities, and schools

# THE SIX RECYCLING SYSTEM BEST PRACTICES





# COLLECTION: CONNECT WITH YOUR NEIGHBOR!

How are recyclables collected in your community?

Do you know how/where recyclables are processed?

Do you know what they're turned into/where they go?

Does the current system encourage participation and recovery with convenient, comprehensive collection?





# COLLECTION

# COST EFFECTIVE RURAL COLLECTION





# RESIDENTIAL CURBSIDE COLLECTION

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# COMMERCIAL CURBSIDE RECYCLING



## Restaurateurs Rave About Recycling

"We love the curbside service, especially the wheeled carts. They're easy to maneuver and they look good."  
—Mary Keedy

"Recycling is a no-brainer with curbside collection. It just makes sense—it's cheaper to recycle it!"  
—Bob Keedy

Bob and Mary are the proprietors of Roast & Toast Coffee & Cafe and are partners in the City Park Grill.



Call  
**348-0640**  
to learn how easy  
recycling can be!



**Hoteliers Happy With Recycling**  
"We get it to the curb and  
Emmet County Recycling does the rest."  
—David Marvin  
Stafford's Hospitality

Call  
**231-348-0640**  
to learn how easy  
recycling can be!

# COMMERCIAL FOOD SCRAP PICK-UP





# DUAL STREAM PROCESSING

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# MIXED CONTAINERS INFEEED

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# SORTING FOR QUALITY

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# BUILDING LOADS TO MARKET SPECS





# DIRECT TO MARKET

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# PAPER CARTONS & EMMET COUNTY

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- Carton Council grant facilitated upgrades
- Vacuum Chutes to increase efficiencies





# POSITIVE SORTATION FOR QUALITY





# CARTON BALES TO GREAT LAKES TISSUE



# LATEX PAINT – CIRCULAR ECONOMY





# INCENTIVE PRICING TO DRIVE RECOVERY

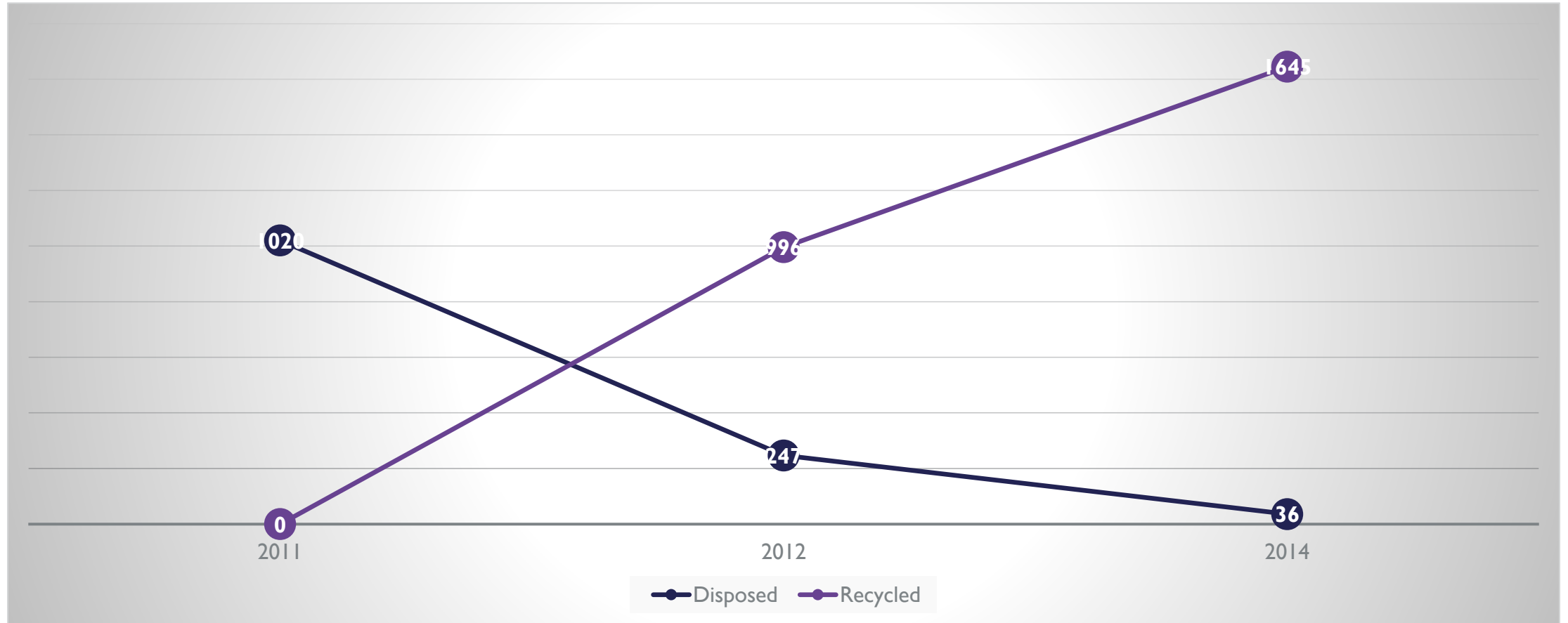


Bay Area  
Recycling for  
Charity



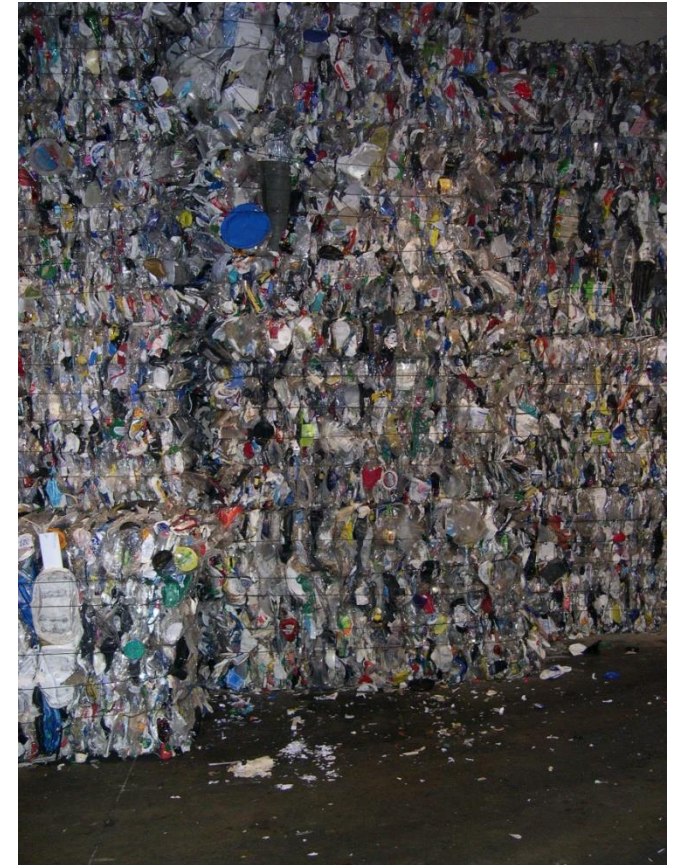


# MATTRESSES RECYCLED VS DISPOSED



# #1-7 NON-BOTTLE PLASTICS TO REVITAL

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# MAXIMIZING MARKETABILITY

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# PLANT PLASTICS TO EJ PLASTICS

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# FILM PLASTIC









# EDUCATION & OUTREACH





# THE BASICS

1. Bin/Tote/Cart Labels
2. Website
3. Paper Recycling Guide
4. Phone number and someone answering

THEN, take on press releases, school outreach, events, advertising, parades, promo items, etc.

# DROP SITE BINS AS MESSAGE CENTERS



Consistent Labeling

No scavenging

Recycling info website  
address

Phone number

Visuals for what is (and is  
not) accepted

No littering



# THE CARTON COUNCIL

## Promotion/Education Grant

“10,000 Pounds in 10 Weeks” campaign

- Where you buy products in cartons
- Where you recycle
- Where you go for information
- Public art



# WHERE YOU BUY YOUR CARTONS





# WHERE YOU RECYCLE

## Recycle your cartons!

HELP US RECYCLE  
10,000 POUNDS  
OF CARTONS  
IN 10 WEEKS!

NOV 14 - JAN 22  
AND BEYOND

 EmmetRecycling.org





# WHERE YOU GO FOR INFORMATION

## Recycle your cartons!

Help us recycle 10,000 pounds of cartons in 10 weeks!

**NOV 14 - JAN 22**  
AND BEYOND

In the Container Bin at all Emmet, Charlevoix, and Cheboygan county drop sites and curbside



**EmmetRecycling.org**  
Visit us for more information



**Emmet County MICHIGAN**  
Quality of life is everything.

CONTACT US SITE MAP HOME Search Site

GOVERNMENT DEPARTMENTS DOING BUSINESS LIVING HERE VISITORS COUNTY NEWS HISTORY

Home > Departments > DPW - Recycling and Waste Services > Recycling > Cartons -- Recycle Yours!

### Cartons -- Recycle Yours!

Recycling\_carton\_images\_mixed\_WEB.jpg

Did you know that you can recycle paper cartons in your Container bins? You can! Cartons - for example, milk cartons and juice boxes - were added to the Emmet County Recycling program last year as part of the "Recycle More, Sort Less" system.

The cartons you recycle supply Great Lakes Tissue (GLT) in Cheboygan (in the former Proctor and Gamble plant on Main Street). Cartons are composed of three layers: an outer, printed plastic layer, a white middle layer made up of high quality paper, and an inner layer including plastic and sometimes aluminum. GLT uses a machine called a hydropulper to separate the paper from the plastic and/or aluminum. They produce napkins, paper towels, and facial tissues from the recovered paper.

Great Lakes Tissue can use wine boxes, broth/soup cartons, paper cups and paper ice cream tubs, so you can recycle those, too!

Want to "close the loop" by buying and using their products? Great Lakes Tissue products are available locally at the KSS Enterprises showroom at 2861 U.S. 31 N (between Petoskey and Alanson).

**Beyond the Bins: What happens next?**

Emmet, Charlevoix, Cheboygan County

# PUBLIC ART DRAWS ATTENTION



“They seem to be quite the thing. It has me wondering where they’ll go next, and, well, we want them!”





# PROMOTIONAL CAMPAIGN RESULTS

- Met and exceeded challenge
- 50% increase in volume coming in
- Boyne City Schools implemented recycling due to Carton Campaign - 500 cartons/day
- The Carton Crane circulated throughout the four-county service region
- “Recycle Your Cartons” Shelf talkers remain on store shelves county-wide



# THE LAST WORD (ON CARTON GRANT)



The Emmet County Recycling Program, which does not rely on tax dollars, “...is a dream for Republicans.”

Bonnie Lucas, Chair  
Emmet County Republican Women

# SUPPORTING POLICIES



Economies of scale  
Regional Collaboration  
Pay as you Throw  
Incentivized Pricing  
Leveraged Funding  
Public Private Partnerships  
Flow Control Solid Waste  
Surcharge  
Hub & Spoke  
Highest & Best Use

# Pay-as-you-Throw (PAYT)





# WHY SURCHARGES MAKE SENSE





# LEVERAGED CARTS FUNDING

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# PUBLIC PRIVATE PARTNERSHIPS

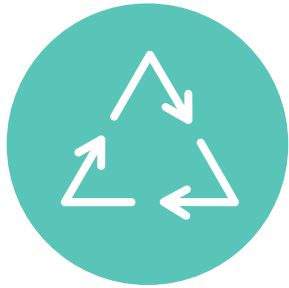


Recycle  
for  
Michigan



# WRAP-UP

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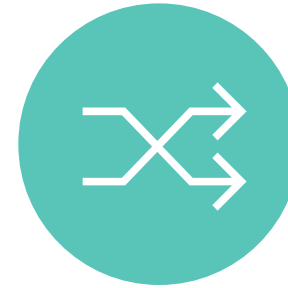
Recycling  
is not  
dead



It's time to  
take stock,  
evaluate  
and  
improve



Landfilling  
everything  
is not the  
answer



Recycling is  
constantly  
evolving



Educate,  
communicate,  
then educate and  
communicate  
again!



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