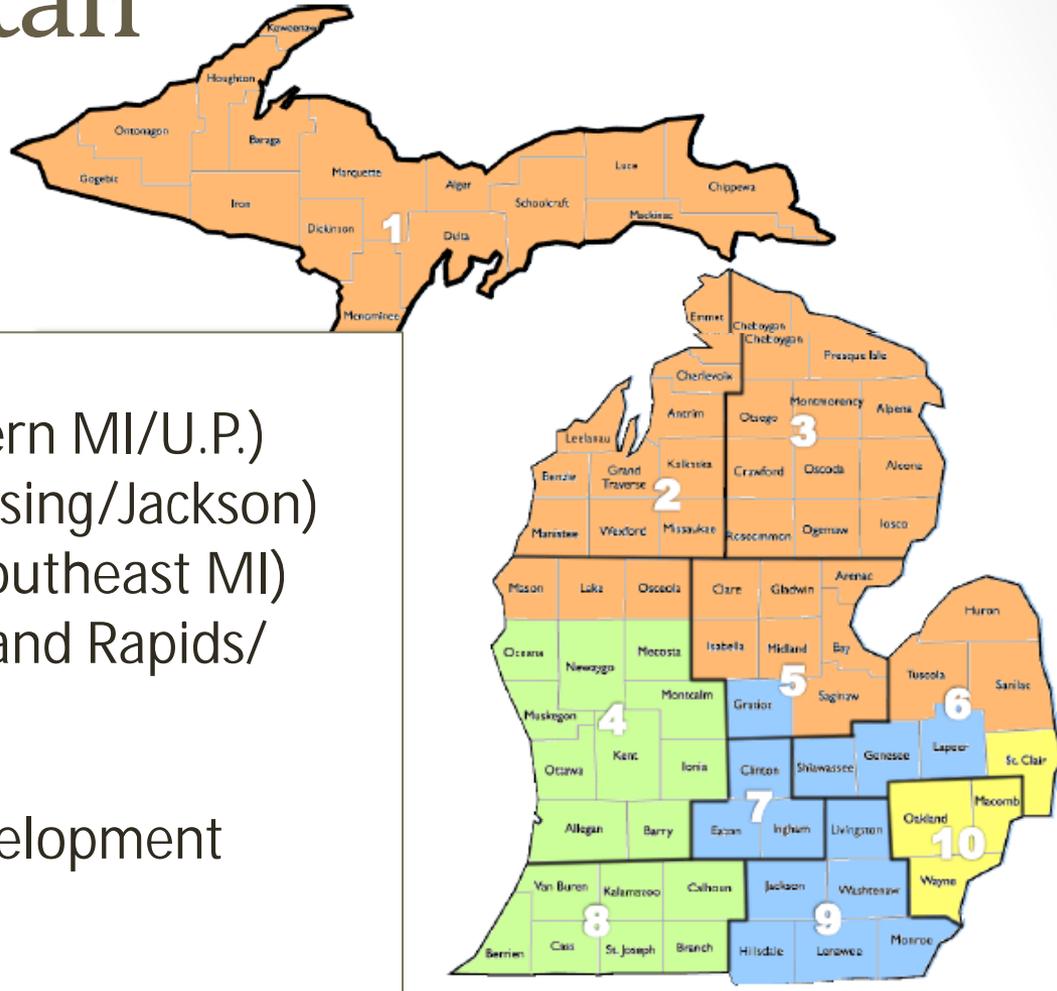


Sorting Recycling Facts from Fiction to Optimize Your Recycling Program



Recycling Program Specialists, Michigan DEQ
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Regional Specialists:

- Brian Burke (Northern MI/U.P.)
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- Matt Flechter

Agenda

- Regulatory Considerations
- Recycling 101
 - The Basics
 - How to do it right!
- Program Planning
- Contracting Considerations
- Why does recycling cost money?
- Conclusions and Q&A

Regulatory Considerations

Public Act 55 of 2016: Part 175 Recycling Reporting

- Recycling Establishment
- Reportable Recyclable Materials

Other potential requirements:

- Part 115 Solid Waste Management
- Part 173 Electronics
- Part 121 Liquid Industrial By-products
- Part 167 Used Oil Recycling
- Part 169 Scrap Tires
- Part 171 Battery Disposal

Local Requirements

Recycling 101 : The Basics

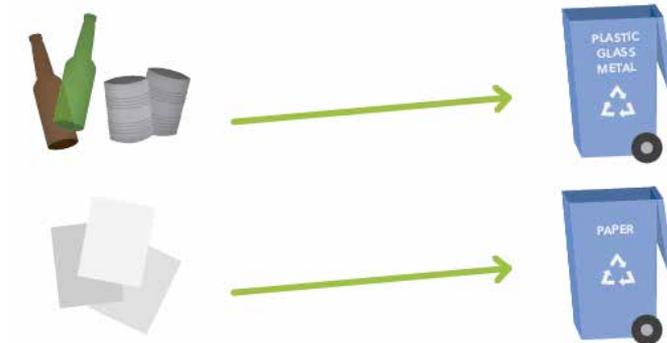
Program Types

- Single Stream: All recyclables go into a single cart, increasing convenience and participation



VS

- Dual Stream: Recyclables are sorted into different categories. Commonly fibers are separated from plastics, metals and glass



Materials Recovery Facility



Recycling 101 : The Basics

Safety at Recycling Facilities

- Remember that people at recycling centers are employed to sort, manage and store the recyclable items.
- Used medical devices and personal hygiene items should never be placed in curbside bins.



Recycling 101 : The Basics

The Truth about Contamination

- Three types to consider:
 - Placing garbage in your recycling bin
 - Contamination from excessive residue
 - Material contamination (i.e. wishful recycling)



Recycling 101 : The Basics

Why does contamination matter?

- Recyclables are competing in market against virgin materials
 - Commodity values are currently low, increasing the importance of quality recyclables
- Material Recovery Facility operations are absorbing the cost of waste management and operational challenges, increasing the cost to process

Recycling 101 : The Basics

Cleaning your Recyclables

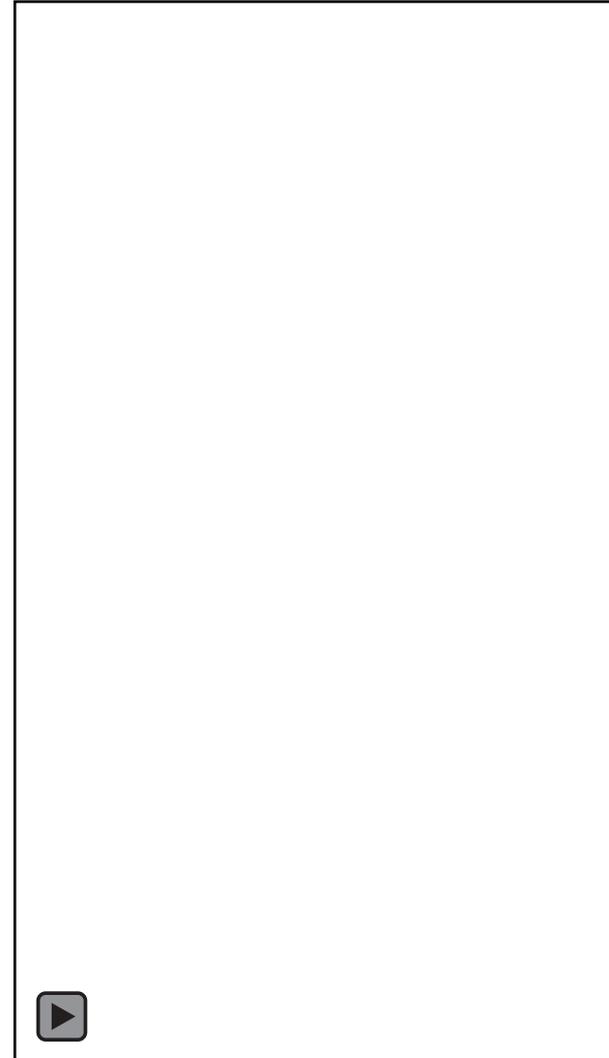
- Generality: The higher the contamination, the lower the value of the collected materials
- Some recyclables are cleaned before re-manufacturing, but collection of dirty recyclables can still contaminate fiber materials during transport and processing



Recycling 101 : The Basics

Fiber Materials and Contamination

- When fiber materials are recycled they are mixed with water and turned into a slurry (“paper pulp”)
- Residues such as grease, food, and beauty products follow the paper pulp through the process and cause holes and imperfections in final paper product



Recycling 101 : The Basics

Fiber Materials and Contamination

- Pizza Boxes: cut the clean top off and recycle it, put the greasy bottom in the garbage



Recycling 101 : The Basics

Material Contamination

- When you place the wrong items in the recycling bin, you're not doing the recycling center any favors!
- “Wishful recycling” slows down the recycling process, sends items on a longer trip to the landfill, or reduces the value of recycled bales



Recycling 101 : The Basics

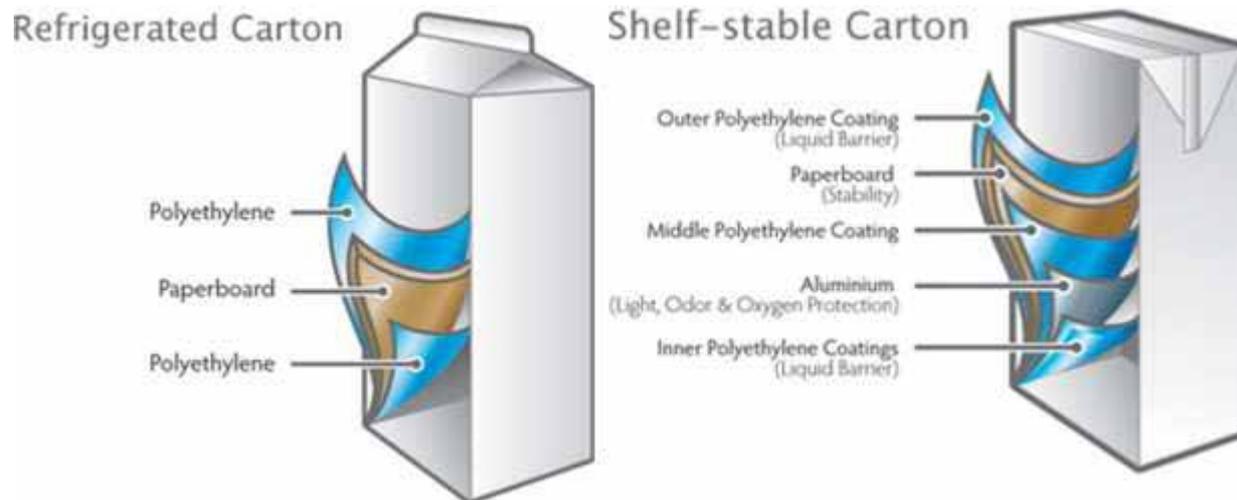
Material Contamination

- Commonly misunderstood “fiber based” items:
 - **Paper coffee cups:** lined with a thin layer of wax or plastic to keep coffee from leaking through cup
 - **Frozen food boxes:** manufactured with wet strength chemicals to help box maintain structure when wet (reinforces fiber web)
 - **Carton containers:** often mistaken for paperboard, carton containers are three materials layered together (paper, plastic, aluminum)

Recycling 101 : The Basics

Examples of Material Contamination

- Carton containers recycling programs are increasing across the United States. They are not material contamination- if the local program accepts them.



Graphic: U.S. Carton Council

Recycling 101 : The Basics

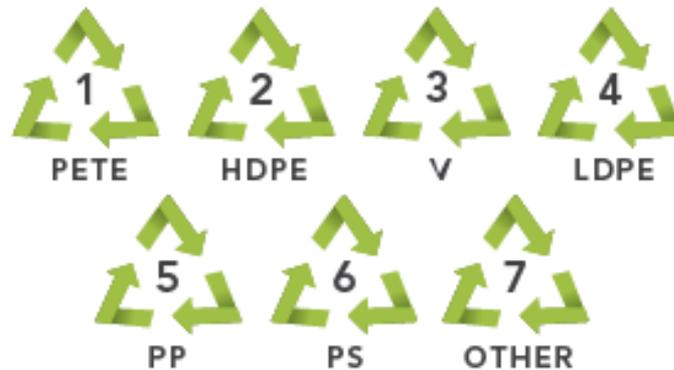
Examples of Material Contamination

- Plastic bags and film packaging
- Expanded polystyrene (Styrofoam)
- Random household items like garden hoses, old furniture, etc.
- Bulky rigid plastics
- Incorrect plastic resins

Recycling 101 : The Basics

Material Contamination: Incorrect Resins

- What does the number symbol on plastic really mean?
 - “Resin Identification Code” labeling system (not a universal recycling code)



- Fast Facts:
 - #1 and #2 are the most widely accepted plastics
 - #3-6 are more difficult, but are still commonly accepted
 - #7 most challenging, some programs do not accept

Material Contamination: Plastic Bags and Film Packaging



Recycling 101 :

Use this information to recycle right!

- Always work with your material recovery facility to understand what they can recycle
- If you run a municipal program, coordinate education to residents about acceptable recyclables
- Help people understand what happens to recyclables when they leave the curb

Program Planning



- Learn your current program and obtain management support
- Obtain maintenance/janitorial support
 - Consider a coordinator or sustainability team
- Contact your waste hauler
- Conduct a waste assessment and plan your program or program improvements
- Budgeting
- Promotion and Education

Program Planning

Consider some key questions



- Who from your business will be involved in implementing any changes?
- How much and what type of waste does your business generate?
- Who is your current waste hauler and do they provide recycling services? Existing contracts?
- What, Where, When, Why and How?
- Do you have adequate storage space for additional containers?
- Do employees understand the recycling program and its benefits?

Contracting Considerations

- What is your goal?
- Standard contracts can be changed to fit with your organizational or community needs
- Clear expectations
 - Roles/responsibilities of both parties
 - Definitions
- How to protect both parties from market fluctuations
 - Who owns materials?
 - Revenue sharing, ceiling/floor pricing

Contracting Considerations

- Collection details
 - Frequency, ownership of containers, etc.
- Contamination
 - Maximum non-recyclables level / reject limit
 - Who pays for disposal of rejected loads?
- Education/outreach
 - Must be continuous
 - Clear roles/ responsibilities of each party
 - Deliverable specifications

Contracting Considerations

- Customer service
- Metrics
 - Importance
 - Establish type, format, frequency of reports
- Performance requirements/goals/bonus
- Goal: 3-5 bids
- Must be win/win for both parties
- Building a relationship

Partnerships: Maximizing the impact

Types of Partnerships

- Public/Public
- Public/Private
- Private/Private



Why does recycling cost money?

It is commonly overlooked that recycling is a service that costs money. When recyclables and waste leave our curb, they are managed through the recycling system or the disposal system.

Landfill



- Collection costs \$
- Tipping fee \$
- Engineering design and construction \$
- Operational management and monitoring \$
- Closure costs and long term monitoring \$

Recycling



- Collection costs \$
- Tipping fee \$
- Engineering design and construction \$
- Processing costs \$
- Market considerations \$
- Feedstock for local, state, regional, national, international manufacturing

Why Recycling Costs Money

- When you recycle, the costs necessary to transport and process the recyclables support the manufacturing of new materials.
- When you do not recycle, the recyclable items are buried in a landfill and must be managed as a waste for years to come.

Questions?