The Rush to Landfill Free

Everything There is to Know About Building a Program

PATH TO ZERO LANDFILL

- What is landfill free?
- Anyone can be landfill free?
- What is our responsibility?
- The path before landfill free.

Recycling is the Path:
It starts with a Green Plan

Basics of Forming a Green Plan

- Support
- The Plan
- Leadership
- Champions
- Buy-in
- Maintaining
- Celebrate

Management Support

- Commitment to Success comes from the top
- Management on board
- Employees and Suppliers need to believe the Importance of the Program
- Resources and Dollar commitment
- ‘Brands’ Recycling as a Company Program

Appoint or Hire a Recycling Program Manager/Leader

- Full or Part Time
- Must have Support to Implement
- Must have Passion and Knowledge
- Must have Resources, people more than dollars

Create a Plan

- Goals
- Who needs to be involved
- What will it take
- Present the Plan
- ALL Leaders must support the Plan
- Provide employee time
- Volunteer’s with Passion

Create the Team

- What is with a name (Champions)
- Inspired with the Plan
- Enthusiastic about it
- Knowledgeable
- Approachable
- Team Player

Maintain the Team

- Regular Meetings
- Attendance by All
- Consistent Information and Communication
- Make Assignments and Share the Load
- Working Together
- Changing members
- Recognizing Success

Team Success

- Being Accountable
- What works/What doesn't
- Sharing Information
- Planning Events together
- Keeping Communication Open with Success stories
- Continuous Plan Review and Improvement

HAWORTH Hometown

Search:

Home | Departments | Resources | On-Line | Systems | Frankly Speaking | Sustainability | HMS | Submit News | News Archives | Strategy | Weather

Quick Links

- HelpDesk
- Phonebook
- Librarian
- Web Mail
- Web Training
- MyCareer
- Diversity
- Ethic Helpline
- Global Site Directories

Recycling does more than save natural resources; it saves energy, helps reduce pollution, and creates jobs. At Haworth, striving for sustainability is our corporate responsibility, which is why our organization engages members, processes and employs resources to provide sustainable and adaptable workspace solutions in a manner which protects and restores our environment, creates economic value, and supports and strengthens our communities.

2011 Environmental Savings

02/7/2012 -A year-end report that tracks the amount of plastic, paper and cardboard product recycled by Haworth's NA sites revealed that 1,818,572 pounds -- or 909.29 net tons -- have been recycled in 2011. For those of you who prefer to view the stats in black 'n' white, click here. For the rest of you, the statistics indicate that by recycling this amount of paper-based and plastic product, we have saved 12,676 trees, 5,219,410 gallons of water, more than 3.672 cubic yards of landfill space, and kept more than 44,738 pounds of air pollution effluents out of our air, 7,130,512 Kwh of energy and 120,767 gallons of oil. (Additionally, members at the Haworth corporate site who have been conscientiously recycling their pop cans can be pleased with the fact that $3,332. collected in bottle/can returns had been distributed among several local charities.)

2011 Recycling stats -- can we count on your recycling support in 2012?

04/22/2012 - Whether you're a guru who loves excel sheets full of data or not so much, we think you'll find the 2011 results for Haworth's North America recycling efforts for a multitude of materials, totaling over 53 million pounds, rather interesting. And, while you're thinking about these numbers, we look

WHAT'S NEW?? COMPOSTING IN THE MEMBER CENTER: it's your food scraps, as well as the paper products associated with serving or eating food, including paper plates (non-coated), napkins, cups, food "boats", and sandwich wrappers. (NO PLASTIC)

Recycling Guide:
View lists of what can be recycled
Where can it go
Labels for Recycling Containers
Recycle Center Forms

Making Headlines:

Today's Guests

Celebrate and Recognize Success

- Praise Employee's
- Commend the Team

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Pursuing Environmental, Energy and Economic Opportunities

Waste Assessments

And Waste Audits, a.k.a. Dumpster Dives

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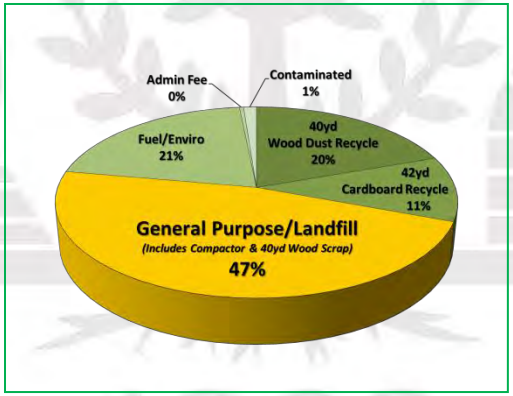
Getting started…

- **Establish the baseline**
- **Annual, monthly, weekly, other**
- **Costs of landfilling the waste**
- **Frequency of pickups**
- **Initial audit**
  - Facility walk through
- **Quantify the waste**
  - Dumpster dives



Walking through…

TO DO

- **Interview associates**
- **Various departments**
- **Current waste management?**
  - Type of waste generated
  - Waste disposal practices
  - Waste reduction activities
- **Plan the waste audit**

TO EXPECT

WTs provide a snapshot of the current waste situation

BUT

Will not provide actual weights/volumes of waste generated

You have to dive in!

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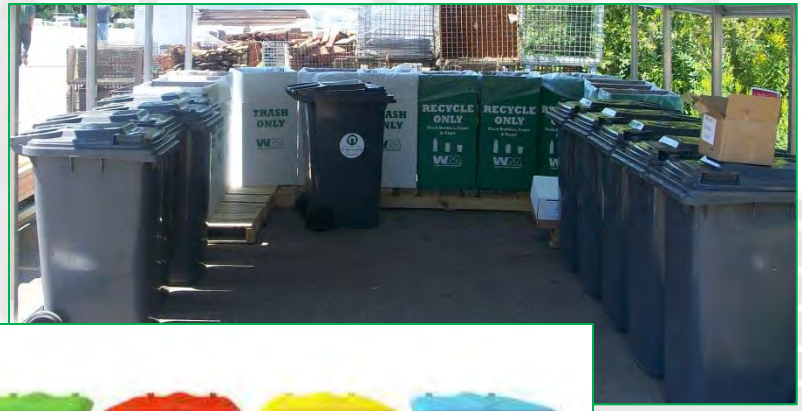
How to "audit"?

Dumpster Dives?!

- **Holistic approach**
  - Landfill cycle
  - Waste entire facility
  - Large scale
- **Sampling approach**
  - Snapshot
  - Proportion, inference



Before you…

- **Safety**
  - Identify potential dangerous or hazardous materials
  - Use proper PPEs, i.e. safety glasses, gloves, shoes, body suits, dust masks, etc.
- **Equipment**
  - Tarps, mats
  - Scale
  - Bins, carts
- **Timing**
  - Minimize interference with daily work
  - Wait for a "fresh" collection dumpster

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When 'diving'…

- Identify waste collection areas
- Transport receptacles to sorting area
- Sort and quantify collected waste materials
- Collect recycling and general purpose waste individually
- Record relevant waste metrics
- Present results

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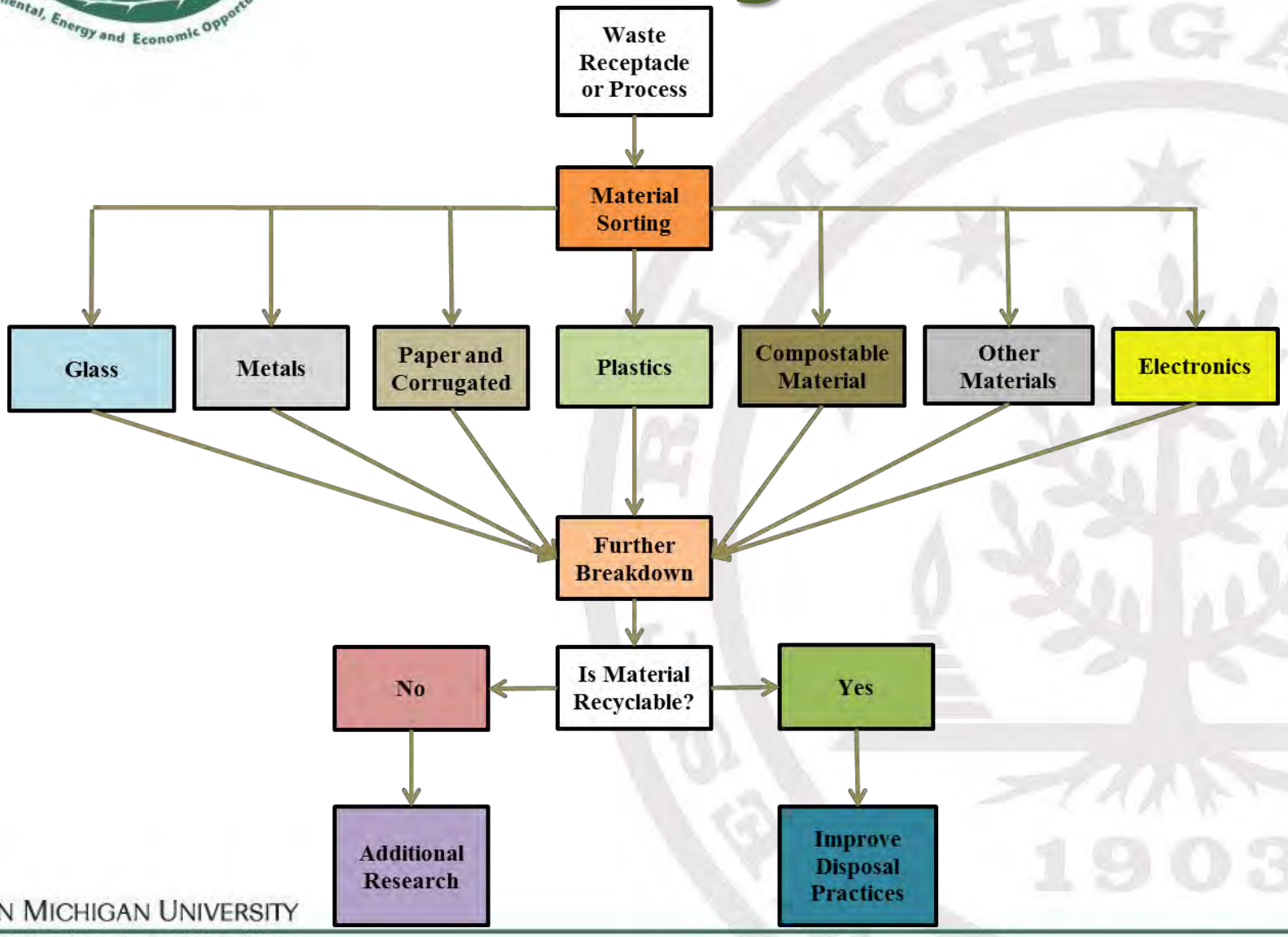
Sorting the Waste



Tracking the Waste

PLANT	DEPT.	DATE	POLYSTYRENE	WOOD	PLASTICS	CARDBOARD	W2E	OTHER

Tracking the Waste

WASTE TRACKING SHEET

Company name:		Company name:		Company name:				
Coordinator:		Coordinator:		Coordinator:				
Date:		Date:		Date:				
Team members (names):		Team members (names):		Team members (names):				
Material Category		Net Weight	Material Category		Net Weight	Material Category		Net Weight
Paper	Mixed Paper		Paper	Mixed Paper		Paper	Mixed Paper	
	Office Paper			Office Paper			Office Paper	
	Glossy Sheets			Glossy Sheets			Glossy Sheets	
	Cardboard			Cardboard			Cardboard	
Plastics	PET#1		Plastics	PET#1		Plastics	PET#1	
	HDPE#2			HDPE#2			HDPE#2	
	PVC#3			PVC#3			PVC#3	
	LDPE#4			LDPE#4			LDPE#4	
	Polypropylene#5			Polypropylene#5			Polypropylene#5	
	Polystyrene#6			Polystyrene#6			Polystyrene#6	
	PLA#7			PLA#7			PLA#7	
	Film			Film			Film	
	Bubble Wrap			Bubble Wrap			Bubble Wrap	
	Baanding			Baanding			Baanding	
	Caps/Plugs			Caps/Plugs			Caps/Plugs	
	Parts			Parts			Parts	
Rubber	Caps/Plugs		Rubber	Caps/Plugs		Rubber	Caps/Plugs	
	O-Rings			O-Rings			O-Rings	
	P-Tank Gaskets			P-Tank Gaskets			P-Tank Gaskets	
	Tubes			Tubes			Tubes	
Metals	Copper		Metals	Copper		Metals	Copper	
	Steel			Steel			Steel	
	Tin-coated steel			Tin-coated steel			Tin-coated steel	
	Aluminum			Aluminum			Aluminum	
	Non-ferrous			Non-ferrous			Non-ferrous	
	Multi-metal			Multi-metal			Multi-metal	
Glass	Clear		Glass	Clear		Glass	Clear	
	Green			Green			Green	
	Amber			Amber			Amber	
	Other			Other			Other	
Other	Compostables		Other	Compostables		Other	Compostables	
	Refundables			Refundables			Refundables	
	Textiles			Textiles			Textiles	
	Leather			Leather			Leather	
	Toner cartridges			Toner cartridges			Toner cartridges	
	Ceramics			Ceramics			Ceramics	
	Wood			Wood			Wood	
Comments:			Comments:			Comments:		

Company name: _____
Coordinator: _____
Date: _____

Team members (names):

Material Category		Net Weight
Paper	Mixed Paper	
	Office Paper	
	Glossy Sheets	
	Cardboard	
Plastics	PET#1	
	HDPE#2	
	PVC#3	
	LDPE#4	
	Polypropylene#5	
	Polystyrene#6	
	PLA#7	
	Film	
	Bubble Wrap	
	Baanding	
	Caps/Plugs	
	Parts	
Rubber	Caps/Plugs	
	O-Rings	
	P-Tank Gaskets	
	Tubes	
Metals	Copper	
	Steel	
	Tin-coated steel	
	Aluminum	
	Non-ferrous	
	Multi-metal	
Glass	Clear	
	Green	
	Amber	
	Other	
Other	Compostables	
	Refundables	
	Textiles	
	Leather	
	Toner cartridges	
	Ceramics	
	Wood	

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Tracking the Waste

TRASH-SORT/WASTE COMPOSITION WORKSHEET

① DATE:	TIME:	INSPECTOR:
② CONTAINER TYPE:	CONTAINER NUMBER:	CONTAINER LOCATION:
③ LIST OF DEPARTMENTS USING CONTAINER:	1.	2.
	3.	4.
④ CONTAINER VOLUME:		
⑤ % OF CONTAINER FILLED:		
⑥ NET VOLUME:		
⑦ MATERIALS	PERCENTAGE OF TOTAL VOLUME	ACTUAL VOLUME
TOTAL		

① Date that container was inspected.
Time that container was inspected.
Name of person who inspected the container.

② Type of container (dumpster, waste basket).
Assign each container a unique number.
List where the container is located.

③ List the departments serviced by the container.

④ List the total volume of the container.

⑤ Estimate the percentage that the container is filled.

⑥ Multiply ④ by ⑤ to determine the total waste volume within the container.

⑦ List the material noted within the container.
List the percentage of each material within the container.
Multiply the net volume by the percentage of total volume to determine the actual volume of each material within the container.

Visualizing the Waste

Material Type	Weight (lbs.)
Compost (with mixed paper/cardboard and PLA)	3.6
Commingled (plastics, metals, glass)	6.8
Foam	0.6
Powder paint	3.6
Film, plastic bags	2.8
Snack bags/wrappers	0.8
Batteries	1
Other (landfill)	15
Office supplies (landfill)	1
TOTAL	**35.2**

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Visualizing the Waste

		Dive Date:	2/18/13	2/19/13	2/20/13		2/21/13	2/22/13	2/26/13				2/28/13		10/29/13	10/31/13	11/1/13	11/20/13		
		Hopper Location:	B-12	B-22	V-06	V-10	K-05	P-13	X-18	B-12	A-08	S-10	P-13	Q18-L18	Cafeteria	Restrooms	Cafeteria	Cafeteria		
	Material Category																		Material Total	
Paper	Mixed Paper		1.440 lbs	6.950 lbs	5.100 lbs	18.420 lbs	29.155 lbs	24.221 lbs	3.370 lbs	2.350 lbs	7.420 lbs	1.243 lbs	9.640 lbs	6.070 lbs		1.200 lbs			116.579 lbs	Mixed Paper
	Sticker Backing		3.220 lbs	5.495 lbs	15.140 lbs	25.260 lbs	12.235 lbs	22.257 lbs	1.340 lbs	0.070 lbs	0.230 lbs		2.980 lbs	7.120 lbs					95.347 lbs	Mixed Paper
	Cardboard		2.400 lbs	10.360 lbs	2.230 lbs	1.675 lbs	14.280 lbs	6.580 lbs	5.090 lbs		3.060 lbs	1.100 lbs	1.940 lbs	1.050 lbs	0.100 lbs	1.000 lbs		0.250 lbs	51.115 lbs	Cardboard
Production Plastics	Film		1.390 lbs		3.075 lbs	5.625 lbs	13.170 lbs	2.835 lbs	1.840 lbs	2.470 lbs	14.270 lbs	1.630 lbs	9.600 lbs	1.610 lbs		1.000 lbs			58.515 lbs	Plastic Film
	Bubble Wrap						16.075 lbs				2.450 lbs								18.525 lbs	Plastic Film
	Banding						4.450 lbs	3.275 lbs	1.670 lbs		2.870 lbs		1.900 lbs	0.600 lbs					14.765 lbs	Banding
	Caps/Plugs			130.970 lbs				7.432 lbs											138.402 lbs	Caps/Plugs
	Parts		0.576 lbs		2.804 lbs	2.025 lbs	25.550 lbs	7.130 lbs	1.230 lbs				3.330 lbs						42.645 lbs	Parts
Rubber	Caps/Plugs		0.095 lbs	11.790 lbs				5.250 lbs											17.135 lbs	Trash or Recycle
	O-Rings		2.920 lbs		38.060 lbs	8.645 lbs				0.110 lbs									49.735 lbs	Trash or Recycle
	Tubes				0.080 lbs			0.565 lbs	3.120 lbs										3.765 lbs	Trash or Recycle
Metals	Copper Wire				0.200 lbs		6.025 lbs	4.730 lbs			0.080 lbs		0.255 lbs						11.290 lbs	Special Metals
	Copper/Brass				0.140 lbs														0.140 lbs	Special Metals
	Miscellaneous Steel		0.528 lbs	10.100 lbs	1.965 lbs	5.080 lbs	14.990 lbs	15.230 lbs	1.300 lbs	0.015 lbs	1.370 lbs		0.030 lbs						50.608 lbs	Miscellaneous Steel
	Aluminum				0.085 lbs				0.045 lbs	0.090 lbs	0.110 lbs		0.070 lbs						0.400 lbs	Clean Aluminum
	Banding						4.100 lbs												4.100 lbs	Miscellaneous Steel
	Multi-Metal		0.975 lbs																0.975 lbs	What was this?
Others	Plastics (#1-#5, #7)		5.665 lbs	5.590 lbs	10.750 lbs					0.132 lbs	1.030 lbs	1.800 lbs	1.160 lbs	0.040 lbs	0.100 lbs				26.267 lbs	Misc. Recyclables
	Styrofoam (plastic#6)			1.200 lbs	1.440 lbs	0.515 lbs	12.230 lbs	1.473 lbs	1.060 lbs	1.740 lbs	2.840 lbs	0.176 lbs	1.730 lbs	0.260 lbs	9.315 lbs	1.000 lbs	11.950 lbs	9.178 lbs	56.107 lbs	Trash or Replace
	Plastic#6 (others)			11.220 lbs			25.860 lbs	1.230 lbs		0.030 lbs	1.990 lbs								40.330 lbs	Trash or Replace
	Refundables		2.480 lbs	3.050 lbs	0.870 lbs	2.250 lbs	11.600 lbs	1.320 lbs			0.060 lbs	0.030 lbs	0.090 lbs		0.178 lbs	3.500 lbs	0.730 lbs	0.400 lbs	26.558 lbs	Refundables
	Commingled			8.140 lbs		7.570 lbs	16.515 lbs	3.642 lbs		3.470 lbs	3.760 lbs	2.850 lbs	6.040 lbs	0.340 lbs	12.904 lbs	5.000 lbs	7.690 lbs	8.465 lbs	86.386 lbs	Misc. Recyclables
	Compostables		13.310 lbs	49.600 lbs	42.170 lbs	4.880 lbs	12.860 lbs	9.432 lbs	0.230 lbs		5.470 lbs	4.720 lbs	1.370 lbs	0.720 lbs	34.614 lbs	3.500 lbs	24.510 lbs	27.795 lbs	235.181 lbs	Compost
	Stickers/Adhesives		2.760 lbs	6.520 lbs	7.460 lbs	7.040 lbs	16.625 lbs	24.155 lbs	1.860 lbs	1.320 lbs	3.510 lbs	0.240 lbs	3.210 lbs	5.910 lbs					80.610 lbs	Trash
	Silica Gel Packets						24.396 lbs						12.630 lbs						37.026 lbs	Trash
	Trash aka WTE		39.765 lbs	35.720 lbs	42.100 lbs	33.110 lbs	60.080 lbs	40.970 lbs	7.430 lbs	1.463 lbs	14.040 lbs	2.420 lbs	22.570 lbs	2.670 lbs	58.823 lbs	10.000 lbs	9.825 lbs	21.650 lbs	402.636 lbs	Trash
	Lunch Boxes														4.063 lbs				4.063 lbs	Trash or Donate
	PPE			10.380 lbs	9.650 lbs	3.295 lbs	22.745 lbs	3.120 lbs	2.020 lbs	1.860 lbs	0.075 lbs		4.730 lbs	0.150 lbs	0.264 lbs	1.000 lbs			59.289 lbs	Reuse
	Brown Paper Towel		9.750 lbs	52.820 lbs											44.844 lbs	112.000 lbs	4.300 lbs	2.125 lbs	225.839 lbs	Paper Towels
	Filters			1.180 lbs			4.120 lbs												5.300 lbs	Trash
	Paint Markers				0.175 lbs														0.175 lbs	Haz Waste
	Total Bin/Area Net Weight		87.274 lbs	361.085 lbs	183.494 lbs	125.390 lbs	347.061 lbs	184.847 lbs	31.605 lbs	15.120 lbs	64.635 lbs	16.209 lbs	83.275 lbs	26.540 lbs	165.205 lbs	139.200 lbs	59.005 lbs	69.863 lbs	1,959.808 lbs	

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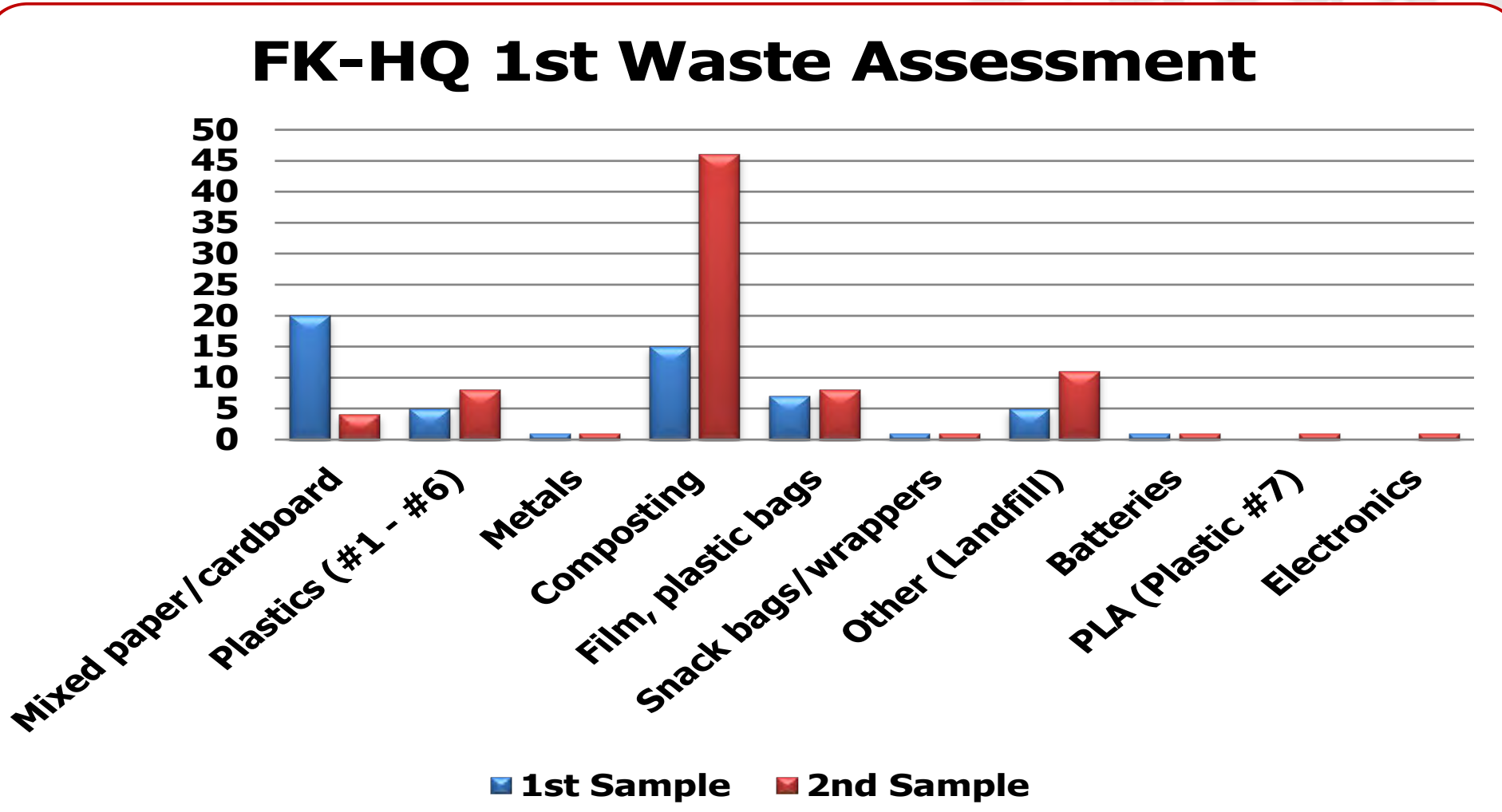
Visualizing the Waste



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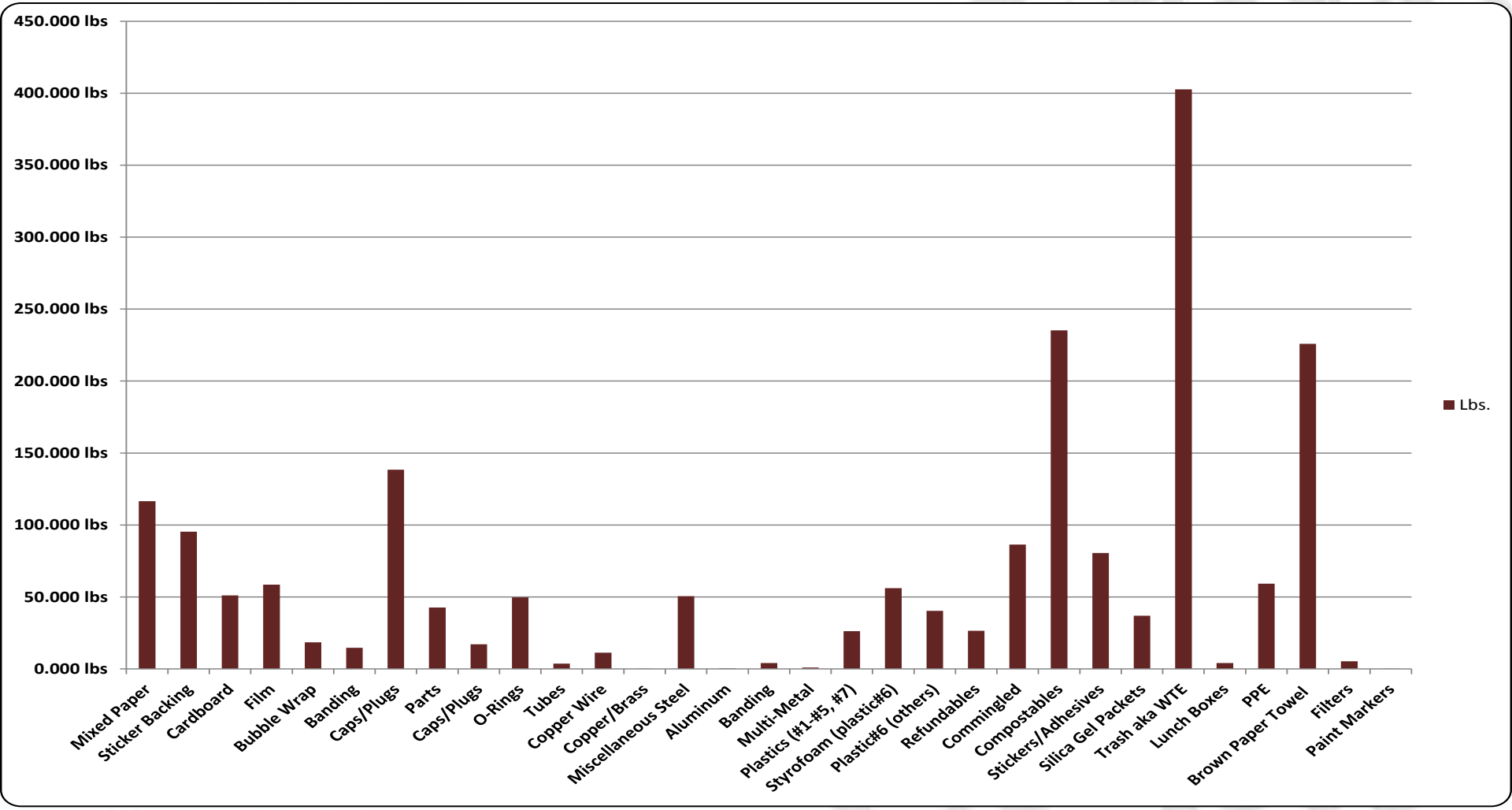
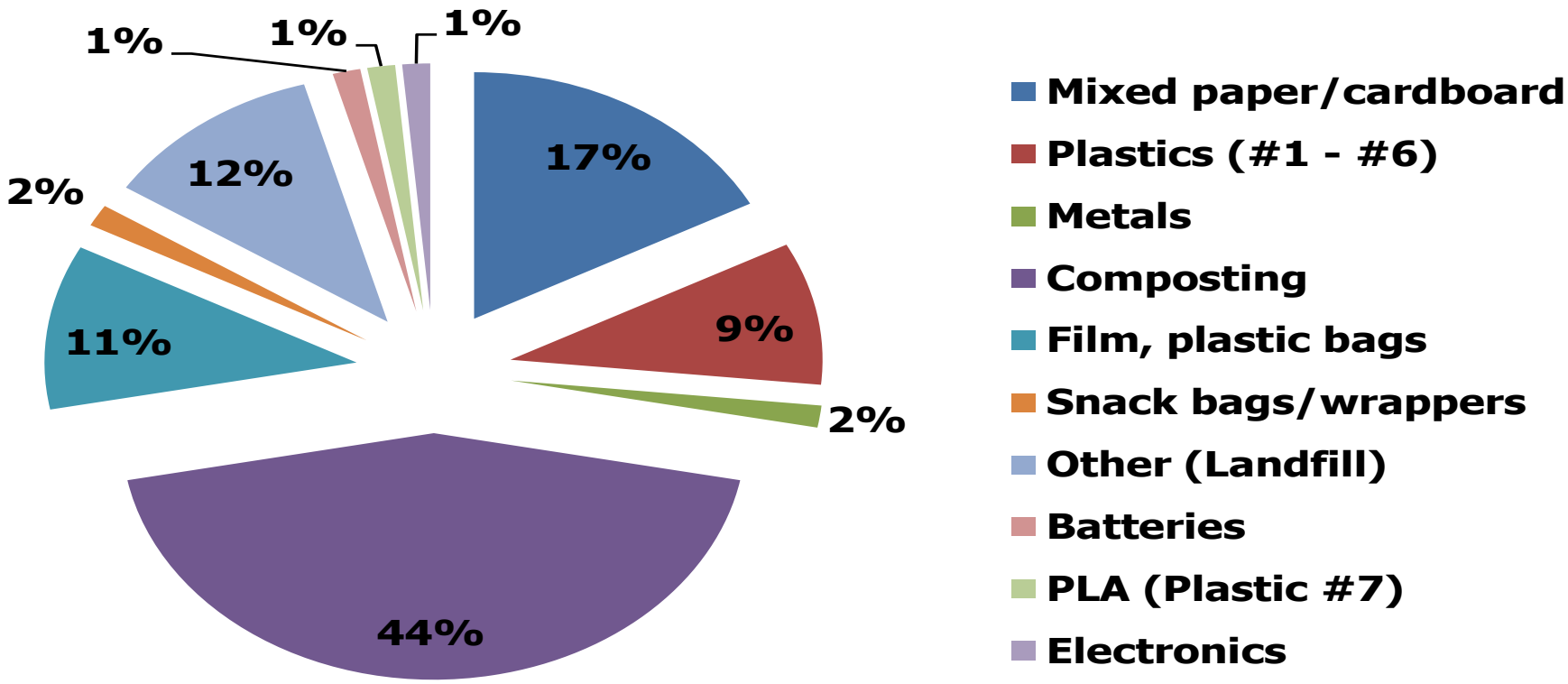
Visualizing the Waste



Visualizing the Waste

FK-HQ 1st Waste Assessment

Averaged Proportions of Weight



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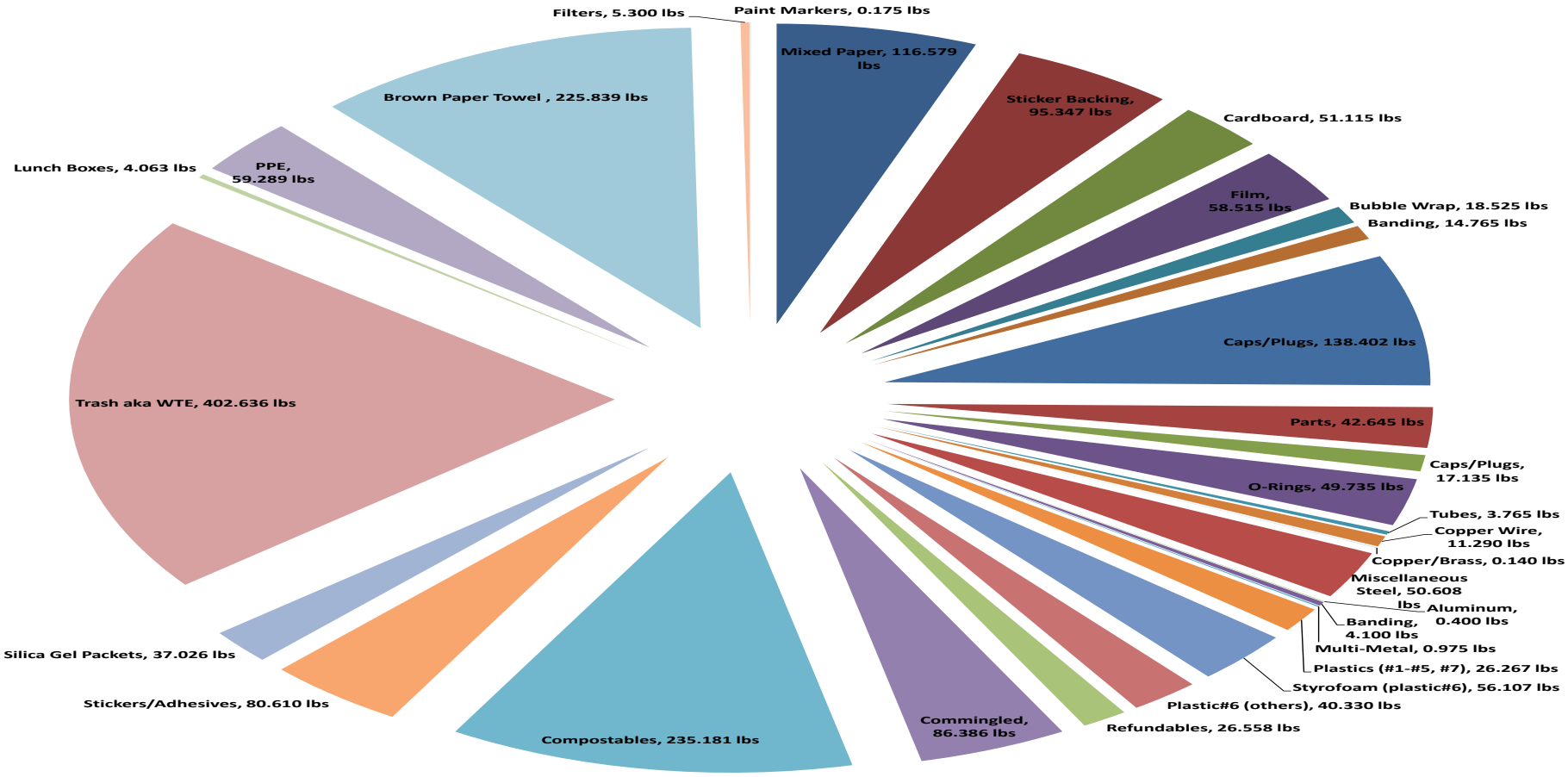
Visualizing the Waste



Forms of material disposal

Defining recycling program

- **Recycling**
  - Most common form of waste reclamation.
  - Material is broken to create new, non-virgin material.
- **Composting**
  - Break down of organic material
- **Waste to Energy (WtE)**
- **Incineration**
- **Re-using, re-purpose**
- **Re-sale**
- **Reduce → MAIN FOCUS!**

Tackling the Waste

- **Prioritize**
  - Highest weight
  - Highest costs

- **Easy 'hitters'**
  - Find a 'home' for them right away?
  - Use current waste management service?
- **Hard to handle materials**
  - Hold on to them?

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Tackling the Waste

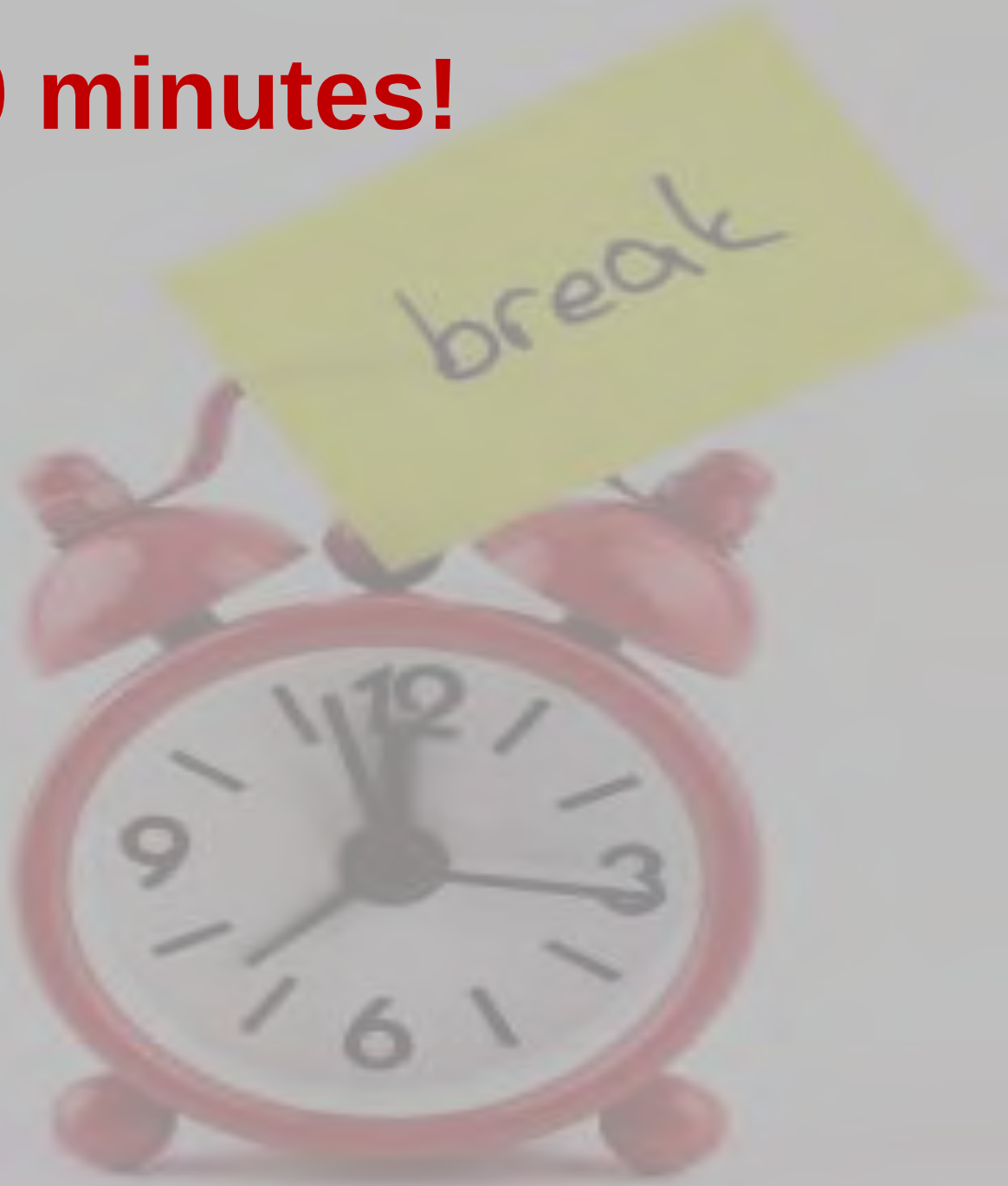
Divertable

68.52%

	Material Category	Categories	Material Total
Paper	Mixed Paper	Mixed Paper	116.579 lbs
	Sticker Backing	Mixed Paper	95.347 lbs
	Cardboard	Cardboard	51.115 lbs
Production Plastics	Film	Plastic Film	58.515 lbs
	Bubble Wrap	Plastic Film	18.525 lbs
	Banding	Banding	14.765 lbs
	Caps/Plugs	Caps/Plugs	138.402 lbs
	Parts	Parts	42.645 lbs
Rubber	Caps/Plugs	Trash or Recycle	17.135 lbs
	O-Rings	Trash or Recycle	49.735 lbs
	Tubes	Trash or Recycle	3.765 lbs
Metals	Copper Wire	Special Metals	11.290 lbs
	Copper/Brass	Special Metals	0.140 lbs
	Miscellaneous Steel	Miscellaneous Steel	50.608 lbs
	Aluminum	Clean Aluminum	0.400 lbs
	Banding	Miscellaneous Steel	4.100 lbs
	Multi-Metal	What was this?	0.975 lbs
Other	Plastics (#1-#5, #7)	Misc. Recyclables	26.267 lbs
	Styrofoam (plastic#6)	Trash or Replace	56.107 lbs
	Plastic#6 (others)	Trash or Replace	40.330 lbs
	Refundables	Refundables	26.558 lbs
	Commingled	Misc. Recyclables	86.386 lbs
	Compostables	Compost	235.181 lbs
	Stickers/Adhesives	Trash	80.610 lbs
	Silica Gel Packets	Trash	37.026 lbs
	Trash aka WTE	Trash	402.636 lbs
	Lunch Boxes	Trash or Donate	4.063 lbs
	PPE	Reuse	59.289 lbs
	Brown Paper Towel	Paper Towels	225.839 lbs
	Filters	Trash	5.300 lbs
	Paint Markers	Haz. Waste	0.175 lbs
	Totals		1,959.808 lbs

Group discussion

10 minutes!



IMPLEMENTING A RECYCLING PROGRAM

FINDING SERVICE PROVIDERS

Some Providers are easy to find

- Metals
- Cardboard
- Paper
- Electronics

Some Providers Are Not Easy To Find

Everyone has those items you don't know what to do with

- Plastics
- Glass
- Powder Paint
- Wood
- Fabric
- Building Material
- Drywall
- Concrete
- Many Others

SOURCES TO USE

- The MRC
- The Internet
- Waste Haulers
- Recyclers
- Service Companies specialize in setting up recycling programs
- Companies in the same kind of business
- Companies with Quality recycling programs

2009/2010 CERTIFIED RECYCLER mrc michiganrecyclingcoalition

GP Georgia-Pacific

3M Worldwide

NICHOLS

Stay in tune with being green. Sign up for the SUSTAINABILITY NEWSLETTER

SERVICE PROVIDERS

- Some are much better than others
- Partner with those providers willing to help

CONTRACTS OR NOT

Agreements or Partnerships

- Contracts may be necessary
- Contracts can leave you locked in
- Service Agreement
- If you have partners then they are working for the best deal for both
- The more and diversified they are, the better opportunities
- You always have the leverage of moving to someone else
- You can move with the market

MATERIAL COLLECTION

CONTAINERS – WHAT – WHERE - HOW

- You need a Plan on how to gather material
- Work with recycling champions
- Engineers, plant managers, designers input
- Feedback from employee's
- Recycle Bins accessible, trash bins hidden
- Buy anything, make what you need, cardboard boxes
- Special applications, brainstorming, team work

MATERIAL HANDLING

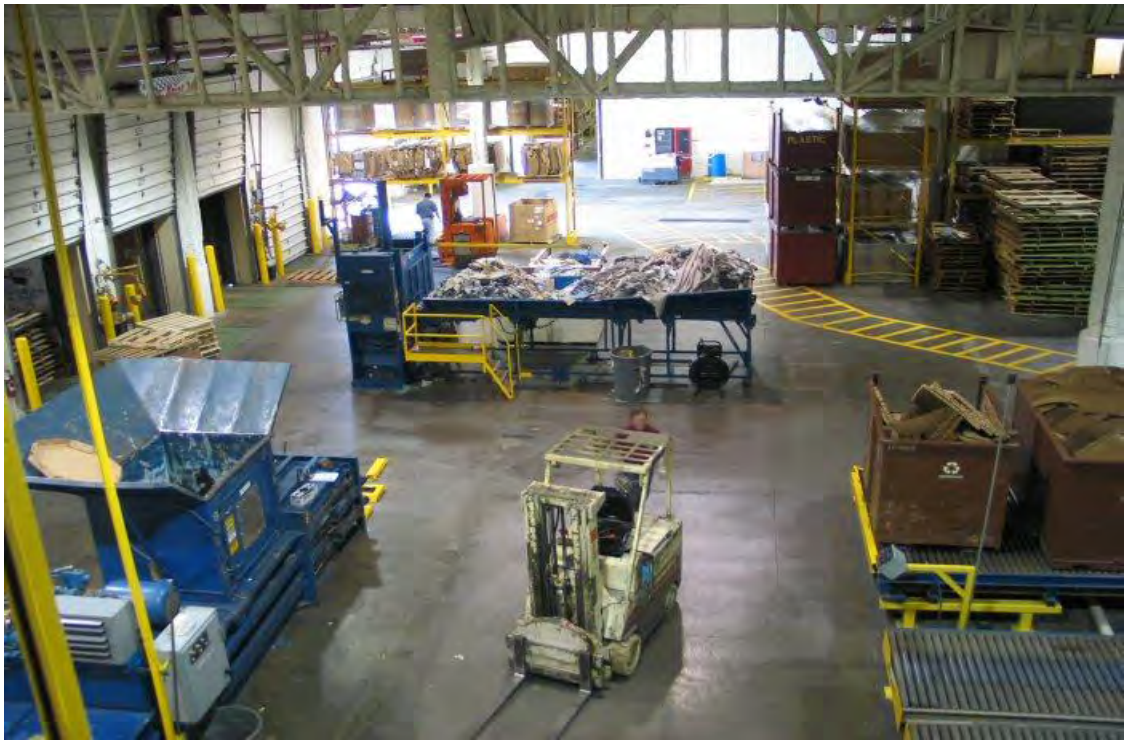
You Need a Plan

- Recycling team input
- Who handles what on site
- How to transport material on site
- Where do you take your material
- Then what do you do with it
- Bale or not to bale
- Hold or not to hold
- Small quantities/large

HOW A PROGRAM CAN WORK

HAWORTH AND RECYCLING

- New Haworth Fac. 1980 & We Were Recycling
- Recycle Center Opens 1993
- Over 604,000,000 lbs Recycled since 1993



Haworth Recycling Awards

- 1993 Environmental Quality Award
- 1999 Evergreen Award
- 1999 MRC Recycler of the Year Award
- 2004 MRC Recycler of the Year Award
- 2004 EPA Waste Wise Sustained Achievement

HAWORTH AND RECYCLING

- 18 MILLION POUNDS RECYCLED 1995
- 53 MILLION POUNDS RECYCLED 2011 – North America
- 48 MILLION POUNDS RECYCLED 2012 – North America

Commodities Recycled 2012

Co-Gen/Wood Waste	20,435,135 lbs
Crete	11,804,060 lbs
Metals	8,775,409 lbs
Powder Paint	843,600 lbs
Cardboard & Paper	2,063,043 lbs
Mineral Board & Dust	1,141,220 lbs
Fabric	557,787 lbs
Drywall	677,840 lbs
Plastic	274,342 lbs
Other Materials Recycled	765,334 lbs
Waste To Energy NA	962,280 lbs
2012 Total Recycled N.A.	48,300,050 lbs
(Equivalent to 1,207 Semi-Truck Loads)	
2012 Gross Profit	$ 1,705,850.00
2012 Total Cost to Recycle	$ 556,187.00
2012 Total Revenue N.A.	$1,149,664.00
2012 Landfill Costs	$ 0.00

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DENSO NORTH AMERICA

Case Study #1 @Denso

Battle Creek, MI

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Background

- High commitment to their Eco-Vision
- Maintain a landfill free facility
  - Zero trash
  - Waste to Energy (WtE)
- Turn trash to cash whenever possible
- A recycling program already exists
- Waste trackers
- Regular waste assessments

Main Objective

- **Move up the waste disposal hierarchy**

Other Objectives

- **Continuous improvement**
  - **Follow up waste assessment**
  - **Reinforce existing recycling program**
    - **Who are you're current service providers?**
  - **Add new waste streams as needed**
    - **Who should we partner with next?**
  - **Program support**

Recommendations

- **Associates education/information**
- **Proposed recycling streams**
  - **Composting**
  - **PPEs**
  - **Filters**
  - **Plastic bags**
  - **Refundables**
  - **Lunch boxes**

How to setup new waste streams

- **Existing service providers**
- **MRC members, conference sponsors**
- **GMI/GMIC**
- **Ask others in your industry**
- **Web search?**

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Costs & Savings

WtE Diversion

- 2012 waste records
- 69% or 191 tons divertible per year
- $76 per ton, WtE cost
- Up to $14,516 savings per year

Recycling

- Quote services
- Track costs and material weights as services are provided

Cash for Trash

- Paper
- Cardboard
- Plastics
- Metals
- Refundables
- Some recyclables hauled at no charge!
- Value determined by the material
- Up to $29,563 in recoverable dollars per year
- $44,000 in total savings!

Case Study #2
@Fabri-Kal Headquarters
Kalamazoo, MI

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Baseline

- **2012 waste records (lbs/year)**
  - Landfill: 14,448
  - Paper/cardboard recycling: 10,526
  - Ink cartridges: ~50

57.74% landfilled versus 42.26% recycled

Goal: 75% landfill free

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After 1st Round of DDs…

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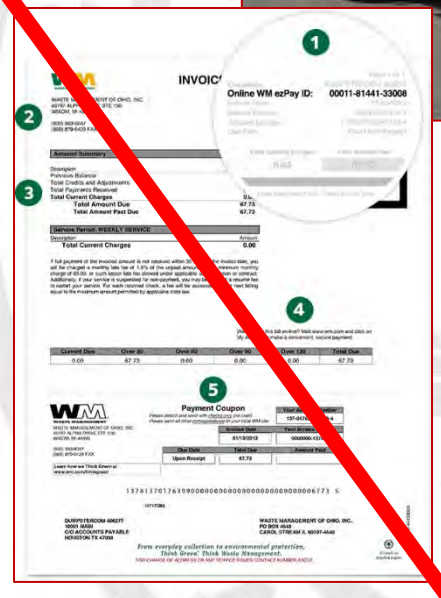
Recommendations

- **Adjust frequency of landfill waste pickup**
  - Call to be serviced *only* when full
  - *Decrease hauling costs*
  - Recycling streams reduce landfill pickups too!



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Recommendations

- **Create a composting stream**
- ***Organicycle***
- **Accepted waste**
  - Food
  - Greasy boxes, e.g. pizza
  - Mixed paper
  - Paper towel
  - Polylactic Acid (PLA)
  - Organic materials

organicycle
renewable | organic | energy

Recommendations

- **Create a co-mingle stream**
- ***Waste Management***
- **Materials Reclamation Facilities (MRF)**
- **Accepted waste**
  - Plastics
  - Metals
  - Glass
  - Clean office paper (<u>not</u> glossy)

Recommendations

- **Office electronics**
  - *Kalamazoo County Electronics*
  - *Schupan Industrial Recycling*
  - *Best Buy*, other
  - Low volume
  - Only when needed
- **Batteries, light bulbs, ballasts**
  - *Batteries Plus*
  - Low volume
  - Send to FK-MMF

Recommendations

- **Plastic film and bags**
  - Plastic #2 HDPE
  - Plastic #4 LDPE
- *Super Centers*
  - E.g. Walmart, Meijer
- *Waste Management*
  - Mail-in program

- **Soft drink containers**
  - Polyethylene terephthalate (PET)
  - Aluminum
- **10¢ refunds**
- *Super Centers*
  - E.g. Walmart, Meijer

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Recommendations

- ***Tyvek* media**
- *DuPont*: brand holder
- Material: HDPE
- 100% recyclable
- Partner with *WM*, mail-in program for recycling

- *TerraCycle*

TERRACYCLE

- **Recycling brigade programs**
  - Chip bags
  - Candy wrappers
  - Cigarette waste, other

Recommendations

Sorting Bin Systems

- **Remove small receptacles**
- **(3) Four-bin systems**
  - (2) main floor, (1) lower level
  - Compost
  - Co-mingle
  - Paper/cardboard
  - Landfill
- **Specific bins, specific areas**
  - Tyvek media (print room)
  - Refunds (break room)
  - Batteries (reception)
  - Plastic bags and film (break room)

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After 2nd Round of DDs…

Recommendations

Phase II

- **Re-training**
- **Separate components when some are recyclable, for example**
  - **Label backs and labels**
    - **Label backs → compost**
    - **Labels → landfill**
- **Add 4th cart from Organicycle**
- **Team up with other companies/schools**
  - **TerraCycle: chip bags/candy wrappers**
- **TerraCycle 's NEW Zero Waste Boxes**
  - **Coffee/tea/kitchen, office supplies, others**

Phase III

- **Consider getting a 2nd opinion**
  - **Future Organics**
- **Update all bin signage with custom, FK signs**
  - **Eliminate confusion**
  - **Increase sorting accuracy**
- **Track all waste streams**
  - **In addition to compost, commingled and landfill**
  - **Track both weights and dollars**
  - **Account for landfill reduction**

LANDFILL

Can it be composted?

Can it be recycled?

No?

Put it here!

Candy wrappers

Snack bags

Dirty recyclables

(Clean, if possible, and place in recycling bin!)

Mixed materials

(If possible, separate materials and recycle!)

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When in doubt, throw it out here.
It's better to do so than contaminate recyclables.

COMPOST

- **Food scraps**
- **Paper and organic plates, cups and cutlery**
  (No plastics!)
- **Polylactic Acid PLA**
- **Paper (all)**
- **Dirty cardboard**
  (Recycle clean cardboard!)
- **Paper towels**
- **Napkins**
- **Coffee filters and tea bags**
- **Food wrap paper**
- **Wooden sticks, chop sticks and tooth picks**
- **Tree trimmings and dirt**

If in doubt, keep it out!

COMPOST

Paper Towels
Cardboard Tubes

If in doubt, keep it out!

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CO-MINGLED

Single Stream

Paper, unprocessed

(No glossy paper; place in composting bin!)

Plastics

(No PLA; place in composting bin!)

(No plastic bags; place in plastic bag bin!)

(No state refunds; place in refund bin!)

(No *Tyvek* media; place in *Tyvek* media envelope!)

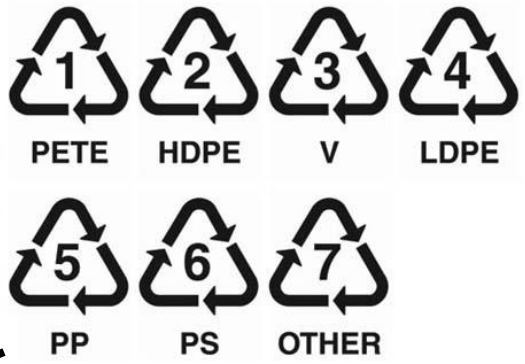
(No foam; place in landfill bin!)

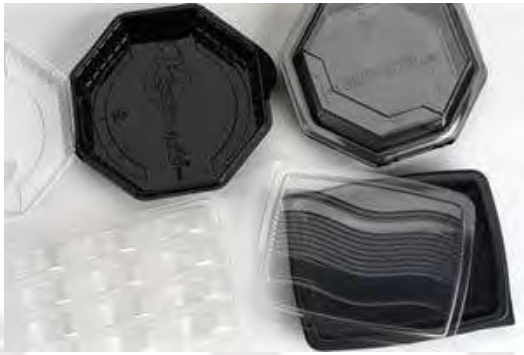
Glass

(No state refunds; place in refund bin!)

Metals

(No state refunds; place in refund bin!)





Only CLEAN materials, please!

If in doubt, keep it out!

BATTERIES

If in doubt, keep it out!

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REFUNDS

State labeled refunds

METAL CANS

GLASS BOTTLES

PLASTIC BOTTLES

Check for state labels!

If in doubt, keep it out!

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PAPER/CARDBOARD

Compost

- Office paper
- Magazines
- Notebooks
- Junk mail
- Glossy paper
- Newspapers
- Catalogues
- Phone books
- Empty/flatten cardboard

(No tape, no clips, no staples!)

If in doubt, keep it out!

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PLASTIC BAGS

Plastic bags

Store bags

***Ziploc* bags**

Stretch wrap

Bubble wrap

(Clean, please!)

If in doubt, keep it out!

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INK CARTRIDGES

recycle

If in doubt, keep it out!

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TYVEK MEDIA

If in doubt, keep it out!

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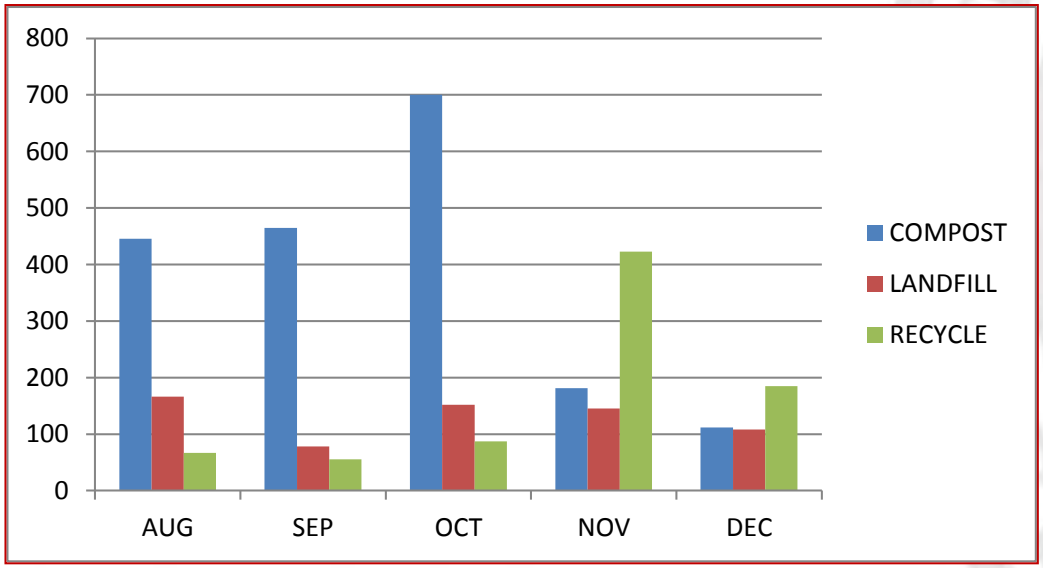
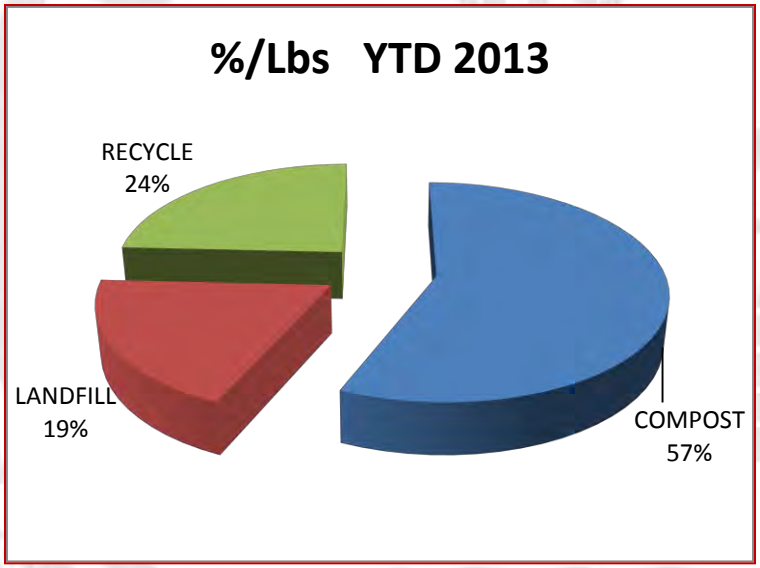
Waste Tracker

- **Continuous improvement**
  - **Improve upon baseline: ~42% landfill free**
  - **Goal: at least 75% landfill free by EOY**





Beyond recycling

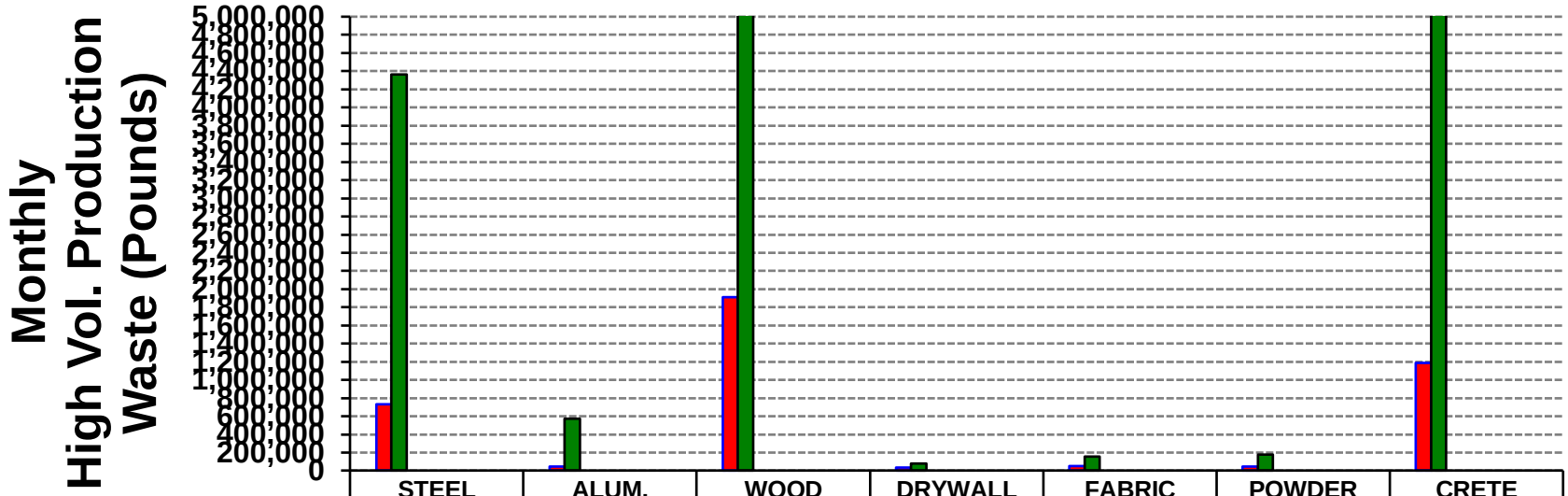
Are we done?!

NO!

Zero Landfill → ZERO WASTE

High Volume Production Waste

- What is it
- What do you track
- What does it accomplish
- What are the savings



	STEEL	ALUM.	WOOD	DRYWALL	FABRIC	POWDER	CRETE
DECEMBER RECYCLED	734,640	45,036	1,910,820	33,200	50,407	48,406	1,186,520
DECEMBER PURCHASED	4,361,669	575,488	5,594,774	80,640	158,130	175,887	5,833,480
PERCENTAGE	17%	8%	34%	41%	32%	28%	20%
Purchased Value/lb.	0.46	1.39	0.16	0.14	9.84	2.88	0.0461
Value of Material Scrapped	$337,934	$62,600	$305,731	$4,648	$496,005	$139,409	$54,699
YTD Recycle Aver.	683,789	47,095	1,582,497	56,487	45,641	61,494	983,688
YTD Purchase Aver.	3,152,035	610,588	4,290,472	176,294	128,441	161,751	5,414,524
YTD Percentage	22%	8%	37%	32%	36%	38%	18%

OUR GOALS – No Waste

- Reduce
- Re-Use
- Recycle
- Co-Gen
- Waste-To-Energy

- April 2009 all U.S. Facilities, Pune,India & Shanghai,China went Zero Landfill

- May 2012 Europe went Zero Landfill

RECYCLING CHAMPIONS

Leading the Way

- Our success is through our members
- Executive Support

Questions, Comments, Suggestions???

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