

**ATTACHMENT**

**A**



Infinitus  
ENERGY



IREP  
INFINITUS RENEWABLE ENERGY PARK

**“Redefining Waste”**





**NERC**  
NORTHEAST RECYCLING COUNCIL



**APRIL 7 – 8, 2015**



**WILMINGTON, DELAWARE**

***Infinitus Energy  
and the IREP Team of Professionals  
extend a warm welcome to the attendees of the  
NERC's Spring 2015 Conference***



**WELCOME**

# “Dirty MRF” = Mixed Waste Processing

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- Mixed waste processing (MWP) is a modern, integrated waste processing and recovery system
- Un-segregated mixed waste is processed using mechanical technologies to separate mixed recyclable materials from other waste



# History of MWP

- Dirty MRFs processed primarily commercial dry waste
  - i.e. Just chasing fiber (OCC and paper)
- Floor sorting at transfer stations: areas with high tip fees or lucrative paper markets – Or Both!
- Worked best when input came from homogenous sources like office complexes or retail



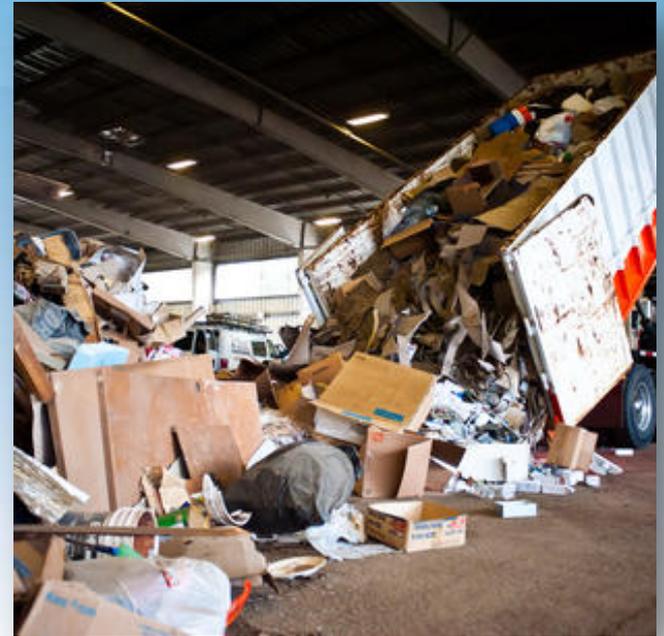
Photo credit: Bobcat

# History of MWP

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## Early Dirty MRFs:

- Low, inconsistent recovery rates
- Contamination issues
- Presented health and safety concerns
- Essentially manual and semi-automated floor sorting of garbage



# Why Mixed Waste Processing?

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- State and local legislation driving higher diversion rates – 60% > 75% > 80% > *Zero*?
- Access to more materials – “Close The Loop”
- Improvement in sorting technologies
- Shifting operating costs
  - From the Curb to Controlled Environment?
- Convenience?
  - *“Or are we just lazy?”*

Examples of successful MWP facilities now exist

# Why Mixed Waste Processing?

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- Communities are responsible for 100% of the waste stream, not just the valuable materials
- Voluntary source-separation collection programs can have low participation rates and depend on heavy education & outreach efforts
- Mandatory recycling programs may not be politically feasible

# Why Mixed Waste Processing?

- Single stream programs have increased voluntary recycling rates significantly; commercial lagging
- But, give folks a single cart/container and you are guaranteed a 100% participation rate



# Advances in Technology

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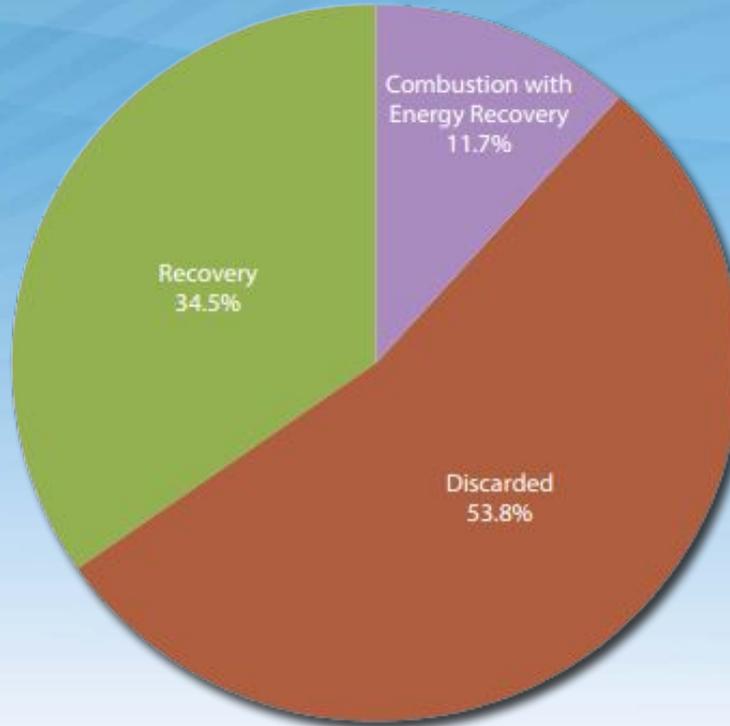
“Technological advances in the processing equipment have just begun...Hand-picking materials is the equivalent of digging ditches without bulldozers.”

October 1998 *Recycling Today* article

recycling  
today

# MSW Market Opportunity

**Only 34.5% of MSW  
Generated is recycled**



**A majority of the  
reusable resources in U.S.  
MSW remain untapped**

*\*Management of MSW in the United States, 2012 (per USEPA)*

**CNG-FUELED TRASH  
COLLECTION FLEET**



**ADVANCED MIXED MATERIALS RESOURCE FACILITY ("AMMRF")**



**ORGANIC WASTE**



**COMMODITIES**



**ANAEROBIC DIGESTION FACILITY**



**IREP**  
INFINTUS RENEWABLE ENERGY PARK

**DEVELOPMENT • MANAGEMENT • FUNDING**



**RECOVERED MATERIALS**



**COMPOST**



**COMPRESSED  
NATURAL GAS (CNG)**



**ELECTRICITY**



**ENGINEERED FUEL**



**RECOVERED MATERIALS TO LOCAL AND/OR  
INTERNATIONAL MARKETS**



**THE IREP MODEL**

# GRAND OPENING – APRIL 14, 2014



CNG-FUELED TRASH  
COLLECTION FLEET



**ADVANCED MIXED MATERIALS RESOURCE FACILITY ("AMMRF")**



**COMPLETED PHASE I**

ANAEROBIC DIGESTION



RECYCLED MATERIALS



COMPOST



COMPRESSED  
NATURAL GAS



MATERIALS TO LOCAL AND/OR  
NATIONAL MARKETS



**THE IREP MODEL**

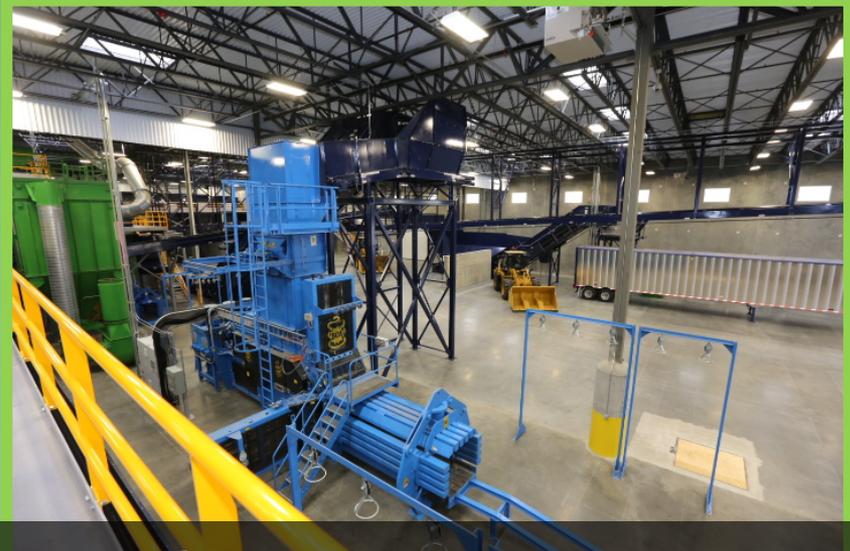
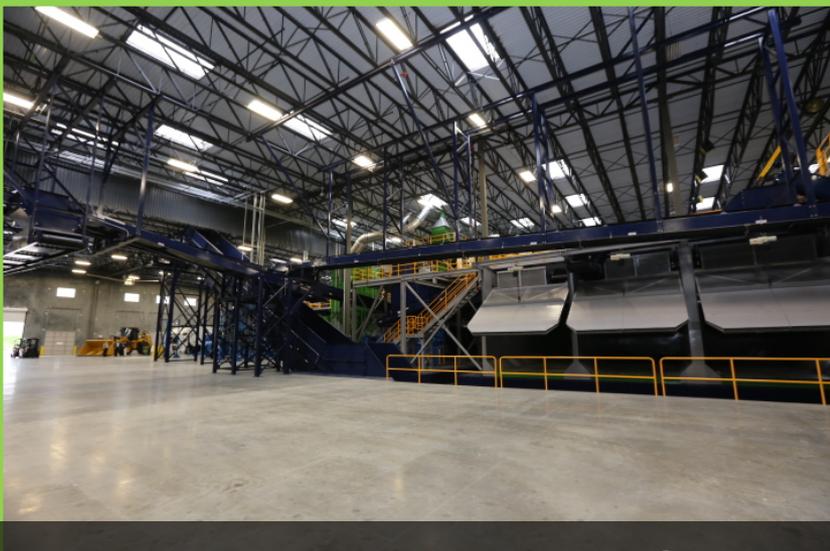
CSX - LOUISVILLE & NASHVILLE RAILROAD

**IREP MONTGOMERY  
MRF, L.C.C.  
± 81,992 S.F.**

86 PARKING SPACES



**MRF SITE PLAN**



## HIGH AUTOMATION



# Acceptance Test

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- 🌱 **Conducted by CDG Environmental Engineers selected by the City of Montgomery**
- 🌱 **Performed May 5-9, 2014**
- 🌱 **Confirmed processing rate of 32.36 tons per hour**
- 🌱 **Confirmed overall waste diversion above 60%**
- 🌱 **Confirmed recovery rates of:**
  - 🌱 **Plastics: 96%**
  - 🌱 **Mixed Paper: 95%**
  - 🌱 **OCC: 97%**
  - 🌱 **Tin/Steel: 94%**
  - 🌱 **Aluminum Cans: 90%**

# Montgomery, Alabama

## Before MRF

- ✓ Failed orange bag recycling program due to lack of participation

## After MRF

- ✓ 100% participation



- ✓ 100% to landfill

- ✓ 60% overall waste stream recovery, City-wide

# RECYCLABLES – Recovered Fiber

(Actual IREP@Montgomery Photos)



# RECYCLABLES – Recovered Plastics

(Actual IREP@Montgomery Photos)



HDPE Natural



Mixed Plastics



PET



HDPE Color



Film

“We find no statistical difference in the IREP material as compared to single stream material.”

-KM Plastics, Buyer

# RECYCLABLES – Recovered Metals/Other

(Actual IREP@Montgomery Photos)



Aluminum



Baled Steel



Compost

# Participation Rate vs. Efficiency

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National Recovery Rate: 10-34.5%\*  
(Montgomery 2012 – 1%)

## IREP Landfill Diversion Rates

♻️ Raw Material Fraction: 30-40% (current phase)  
(Traditional Recyclable Material)

♻️ Organic Fraction: 20-30% (future phase)  
(Utilized in AD and Compost)

♻️ Engineered Fuels 10-15% (future phase)  
(Fiber and Polymer Residue)

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Total IREP Landfill Diversion: 60-85%

**AVERAGE: 75%**

*\*Management of MSW in the United States, 2012 (per USEPA)*



# AMMRF System Advantages

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- 🌱 **Bale quality from our AMMRF technology allows us to compete in high quality markets including China**
- 🌱 **New technology for Montgomery sends PET with liquids in the bottle to the PET bin**
- 🌱 **Fiber (mixed paper/OCC) quality very important during lower demand months such as summer, including no glass in bales**
- 🌱 **Aluminum recovery rates are currently 95+%**

# IREP@Montgomery Benefits

(at full implementation of model)

- 🌱 **Environmental and Operational Impacts**
  - Up to 85% reduction in material to landfill (at system optimization)
  - 95% of organic fraction from MSW diverted to AD system to produce CNG
  - City will operate one of the Country's first carbon negative collection fleets
- 🌱 **Financial Impacts**
  - Up to \$1.6 M annual savings in landfill operations
  - Projected \$2.2 M net annual reduction in collection fleet operating costs
- 🌱 **No capital investment required by the City**
  - No capital investment from the City- 100% Private Investment
  - No risk to the City- no funds expended until project systems are delivered
    - Municipal obligation for tipping fee payment upon delivery of the facility
  - Recovery rates and system performance guarantees in Contract



# CHALLENGES

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## Operating Challenges

- Lack of cardboard in the waste stream (scavenging)
- Mixed waste processing requires aggressive training and labor transitions
- No labor pool for mixed waste processing even at the managerial level
- Changing the mindset of personnel trained in similar environments with other waste companies to understand we are a manufacturing company and process
- City and Private Organization must become a partnership and not adversarial

## Industry Challenges

- Opposition from both the paper and metals industry
- Misinformation in the marketplace
- Backlash from the recycling industry and political organizations to maintain source separation (“We are teaching our kids to NOT recycle”)

**THANK YOU**

**ATTACHMENT**

**B**



# COG Recycling Committee Metropolitan Washington Council of Governments

December 4, 2014



## Covanta: The World's Leading Energy From Waste (EfW) Company

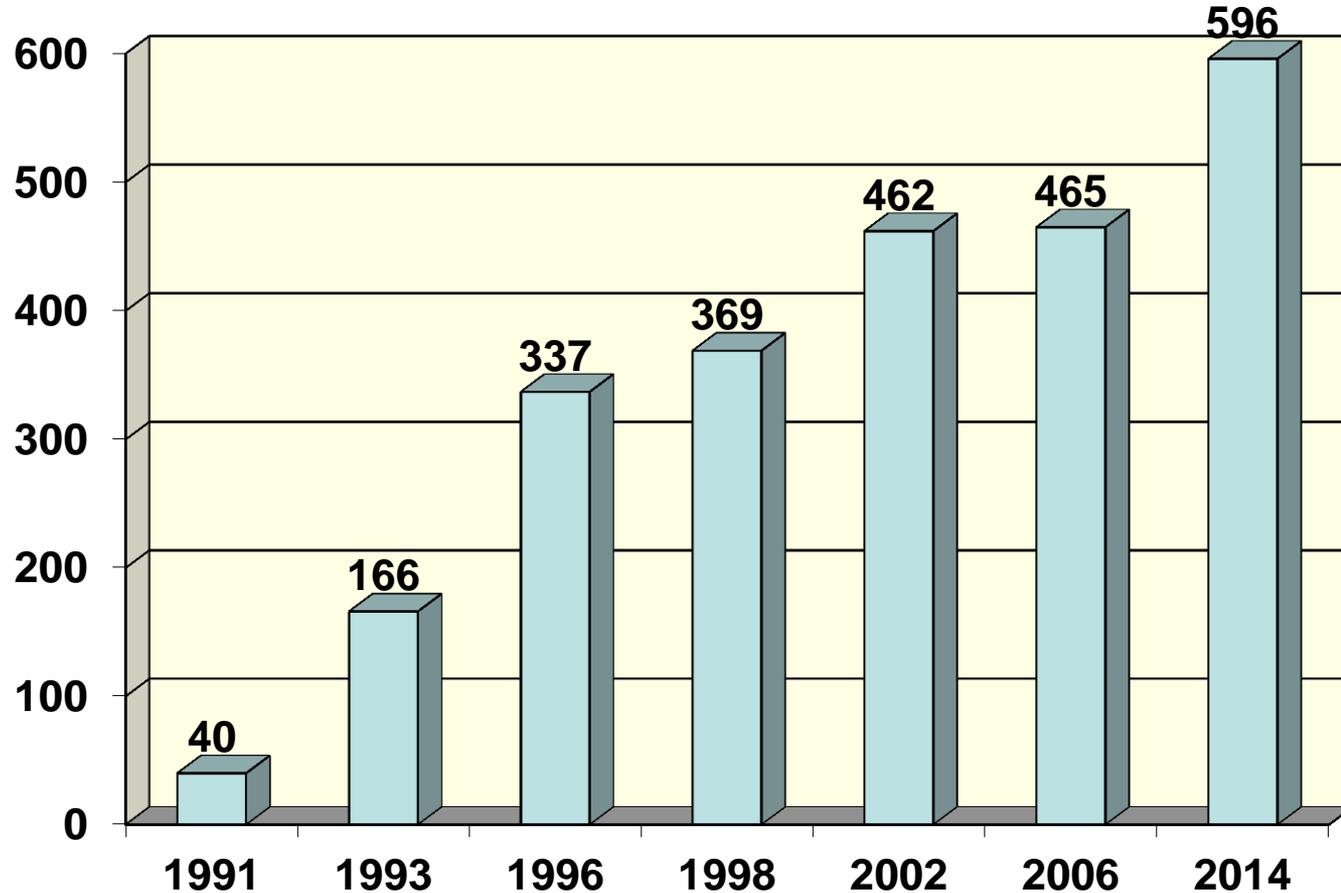
- Operate **45** modern EfW facilities in North America, China and Europe.
- Annual capacity to convert **20 million** tons of waste into more than **9 million** MWhrs — enough clean energy to power **1 million** homes.
- Annually recycle over **440,000 tons** of metal - the equivalent amount of steel that would be used to build **5 Golden Gate Bridges**.
- More than **3,500** professionals employed in North America.



## Material Recovery Facility (MRF) trends in U.S.

- Facilities are trending larger. Small facilities are giving way to regional projects.
- MRFs are accepting a broader range of materials
- Single stream curbside collection programs and supported by single stream MRFs are becoming the dominant form of recycling.
  - Replacing dual stream programs
- More facilities than in past are relying on mechanized and optical type sorting equipment.
  - More automation, fewer pickers
- Slow trend towards mixed waste processing MRF's – limited marketplace

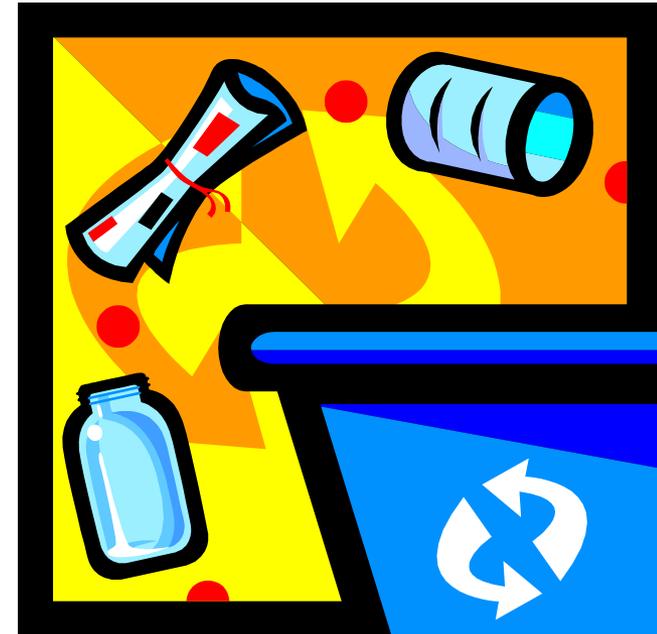
## Operating MRFs in the United States



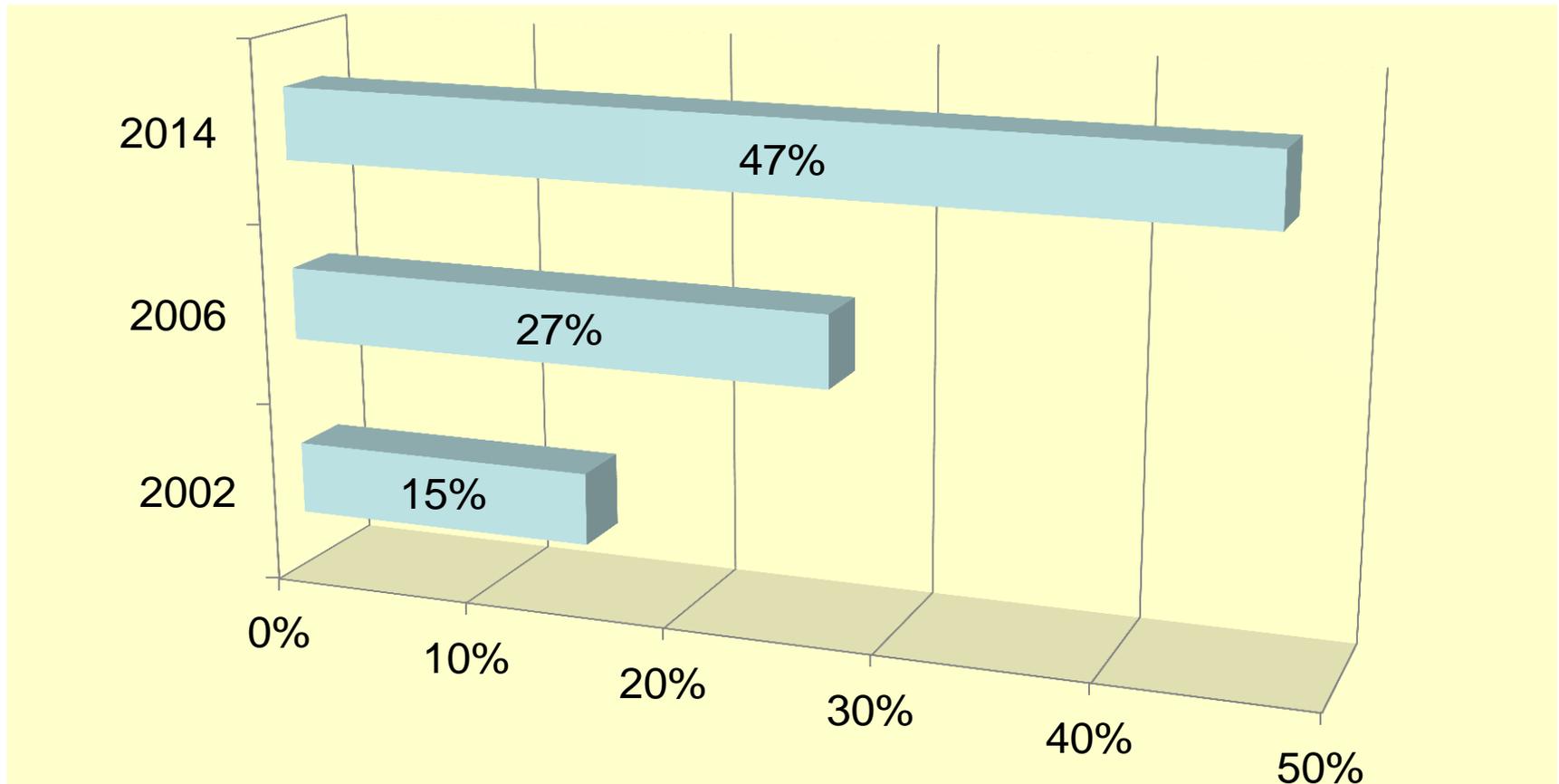
**Source: Materials Recycling and Processing in the United States: Yearbook and Directory.**

## Increase in Single Stream Curbside Collection Systems

- Single stream collection is where residents place all their recyclables in a single container, which is picked up at the curb for processing. Residents do not have to separate their recyclables into different containers (dual stream).
- Single stream approach reduces collection costs and tends to increase participation and tonnages of recyclables at the MRF
- Single stream implementation key driver in the development of larger MRF's.



## Percent of Single Stream MRFs



**Source: Materials Recycling and Processing in the United States: Yearbook and Directory.**

## Growth in Use of Optical Sorting Systems

- 2002: 6 facilities that had one or more optical sorters.
  - These were mainly for fiber and glass
- 2014: at least 150 facilities have installed optical sorting systems or have indicated that they are planning to install such systems.
- MRF's becoming more sophisticated – yield higher recovery rates
- The average throughput at these facilities is ~ 300 TPD

## Mixed Waste Plants – Growing Trend?

- Western Placer County CA-Operating since 1996. Underwent expansion and put in a new line to handle the recyclables.
- Advanced Mixed Recovery Facility, Montgomery, AL– Infnitis Energy Project began operations this year.
- Advanced Recycling Center, Indianapolis, IN
- Athens Services – Los Angeles, CA -\$50m Mixed Waste Facility
- Under review in Austin and Houston, TX

## Covanta Indianapolis Today

### Waste / Steam Production

- Began operating in December 1988; 2,200 TPD of MSW processed annually
- Produces 4 billion lbs. renewable steam annually → 50% of the City's needs

### Employment / Job Creation

- 78 permanent skilled jobs at the EfW plant

### Economic

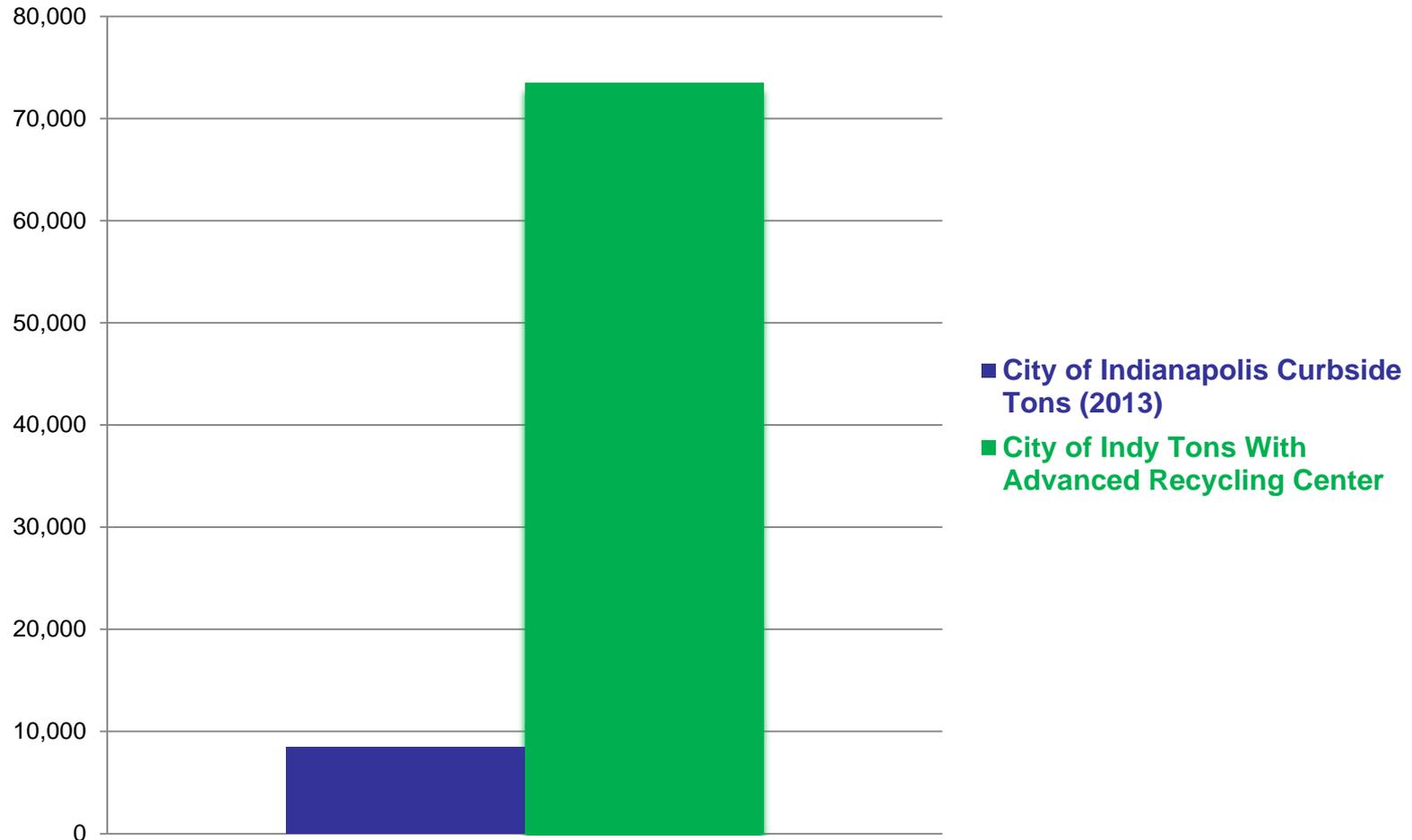
- \$2.5 M of steam revenues shared with the City
- \$19 M spent with local vendors/employees annually

### Environmental

- IDEM Environmental Stewardship program member
- Diverted over 18 million tons of MSW from landfills since beginning operations
- Recycle 16,000+ tons of metal annually

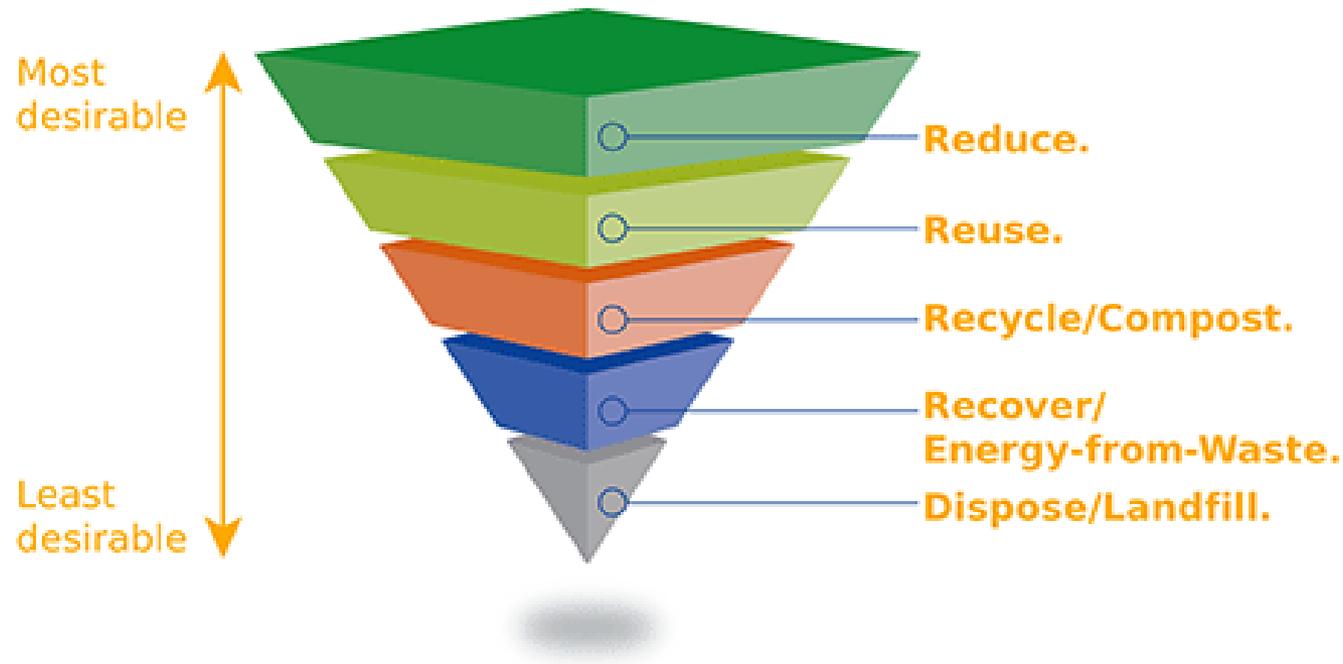


## Recycling Tonnage in Indianapolis



# Solid Waste Management Hierarchy

Implementing the Advanced Recycling Center moves Indianapolis up the waste management hierarchy adopted by the U.S. EPA and the European Union.



# Comparing the Options

	Advantages	Disadvantages
Source Separation	<ul style="list-style-type: none"> <li>• High material quality, potential for higher sales price</li> <li>• Lowest post-collection material loss rates</li> <li>• No MRF required</li> </ul>	<ul style="list-style-type: none"> <li>• Increased truck traffic</li> <li>• Greatest need for education</li> <li>• Difficult for multi-family</li> <li>• Highest collection costs</li> <li>• Lower participation rates</li> </ul>
Single-Stream MRF	<ul style="list-style-type: none"> <li>• Higher participation rates</li> <li>• Less consumer education required</li> <li>• Lower burden</li> <li>• More adaptable to multi-family</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for contamination, particularly fiber</li> <li>• Processing facility needed</li> <li>• Truck traffic</li> </ul>
Mixed-Waste MRF	<ul style="list-style-type: none"> <li>• All materials processed</li> <li>• Single truck</li> <li>• Minimal consumer education required</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for contamination, particularly fiber</li> <li>• Glass difficult to recover</li> <li>• Loss of “connection” to recycling</li> <li>• Sophisticated processing equipment needed</li> </ul>

**Bottom Line:** What delivers the best environmental return for the community with the financial resources available?

## Covanta Advanced Recycling Center



## FAST FACTS



The Covanta Advanced Recycling Center will immediately increase recycling up to **five** times

**ZERO**

cost to residents or the City. Fully funded by a **\$45MM** capital investment by **Covanta**



The Covanta Advanced Recycling Center will create **60** local full-time, green jobs once operational



Future enhancements would allow Indianapolis to reach a **world-class** recycling rate of over 50%

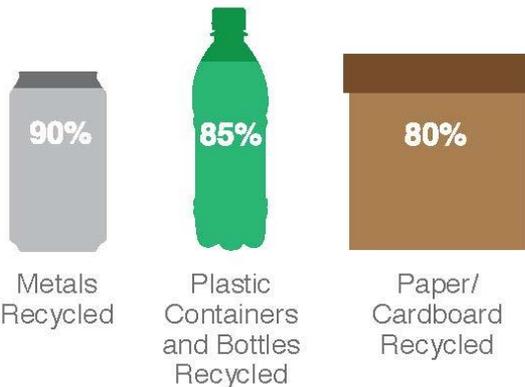
The Covanta Advanced Recycling Center

recovers up to **80-90%** of paper, cardboard, plastics and metals



Over **70** direct and indirect jobs will be created during construction

## RECYCLING IMPORTANT RESOURCES



The project will increase energy savings **8x** – equal to the total annual energy use of **over 20,000** homes



The Covanta Advanced Recycling Center will annually save greenhouse gas emissions equivalent to pulling **40,000** cars off the road



**One** bin for recycling and garbage. **No sorting!**

# Advanced Recycling Center: Sustainable Solution for Indianapolis

## Innovative Recycling Solution

- Single bin solution → zero cost to Marion County single-family residents
- High tech equipment to recover up to 90% of recyclable paper/fiber, plastic & metal

## Employment / Job Creation

- 70+ jobs during construction and 60+ additional permanent jobs once operational
- Additional jobs supporting processors of recyclables in the City and State

## Economic

- No additional cost to the City
- City will share in revenues from sale of recyclables

## Environmental

- Immediately increases recycling in the City by 5x
- Increases energy savings 8x → equivalent to annual energy use of 20,000 homes

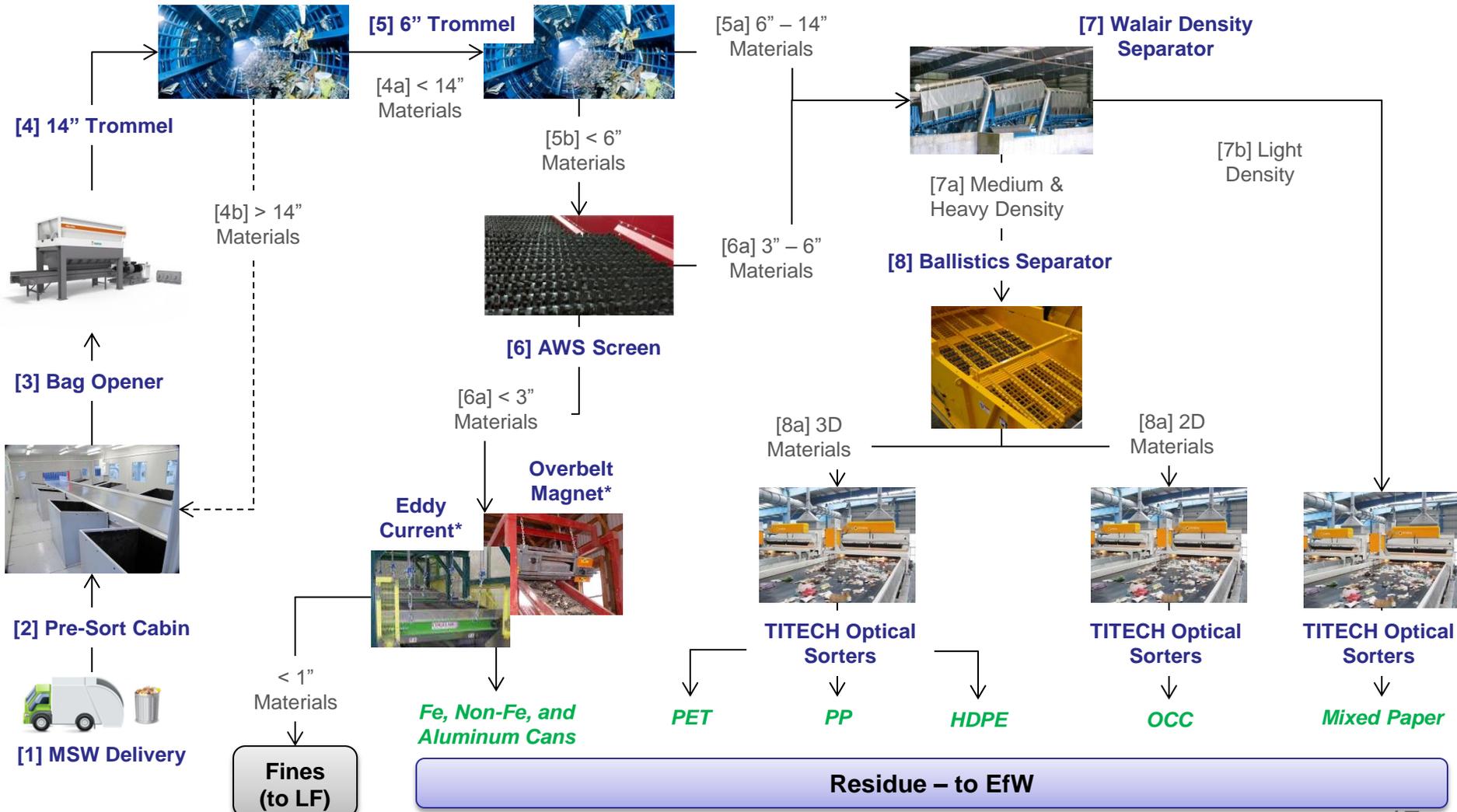
**Once complete, Indianapolis will have North America's  
1<sup>st</sup> integrated recycling and EfW facility**

## Van Dyk Recycling Solutions

- North America's leading recycling and MSW equipment supplier and systems integrator
  - Founded in 1984; Headquartered in Stamford, CT
  - 10 regional 10 sales offices in North America
  - Family owned; ~\$100 million in revenues
- Exclusive North American licensee of key ARC components:
  - Bollegraaf recycling machinery → 400+ Bollegraaf systems sold
  - Lubo screening equipment
  - TITECH sensor bases systems (i.e., optical sorters) → 250+ TITECH's sold in North America
  - Over 3,500 TITECH units are installed across 40 countries
- Specializes in “mega” single-stream recycling facilities
  - Delivered over 80% of all 40+ tph facilities in North America



## Summary Process Diagram



\* The ARC contains several magnets & eddy current systems in addition to what is highlighted above

# Two Choices for Post-Recycled Waste

ARC  
Residue

or



Landfill

- Landfills are a major source of man-made methane: 28-34X more potent than Carbon Dioxide over 100-years
- Landfills release uncontrolled emissions including carcinogens – over 170 air pollutants and over 40 air toxics.
- Potential ground water contamination
- Non sustainable use of land
- Renewable energy generation from landfills: **65 kWh per ton of waste**

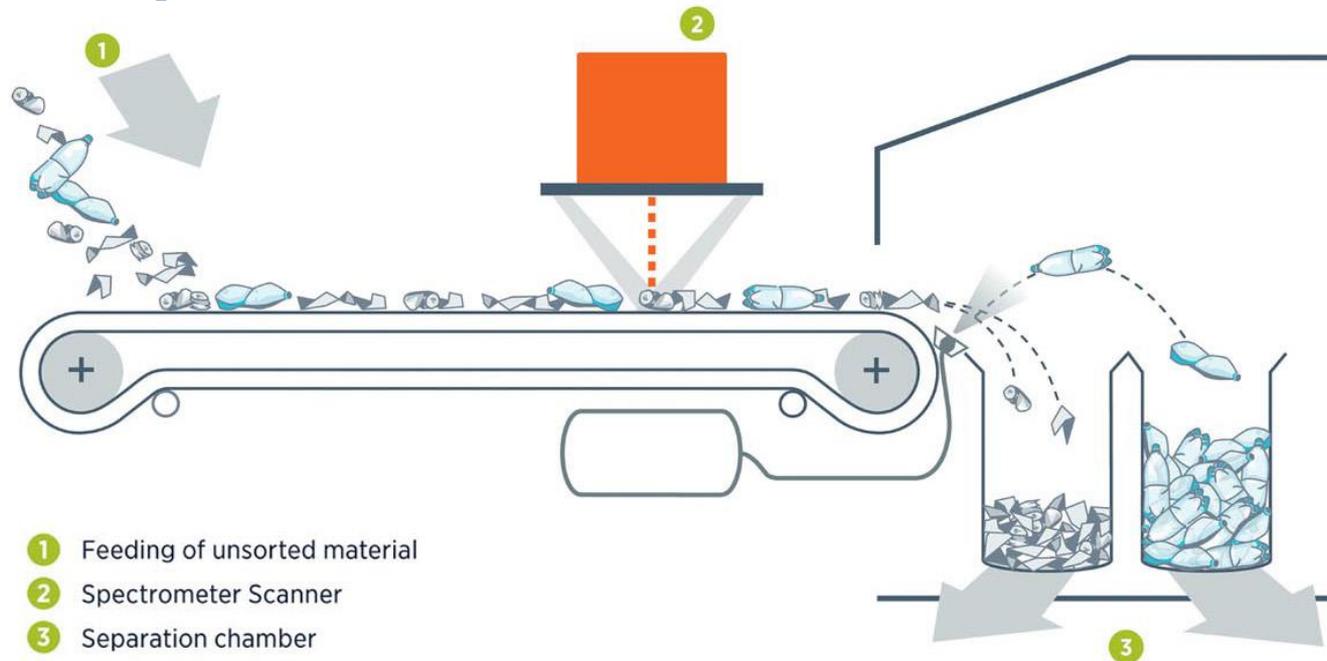


EfW

- 90% reduction of waste in volume
- Clean energy generation
- Recovers metals for recycling
- Offsets on average one ton of carbon dioxide equivalent for each ton of waste processed
- Compatible with recycling
- Renewable energy generation from EfW: **550 kWh per ton of waste**

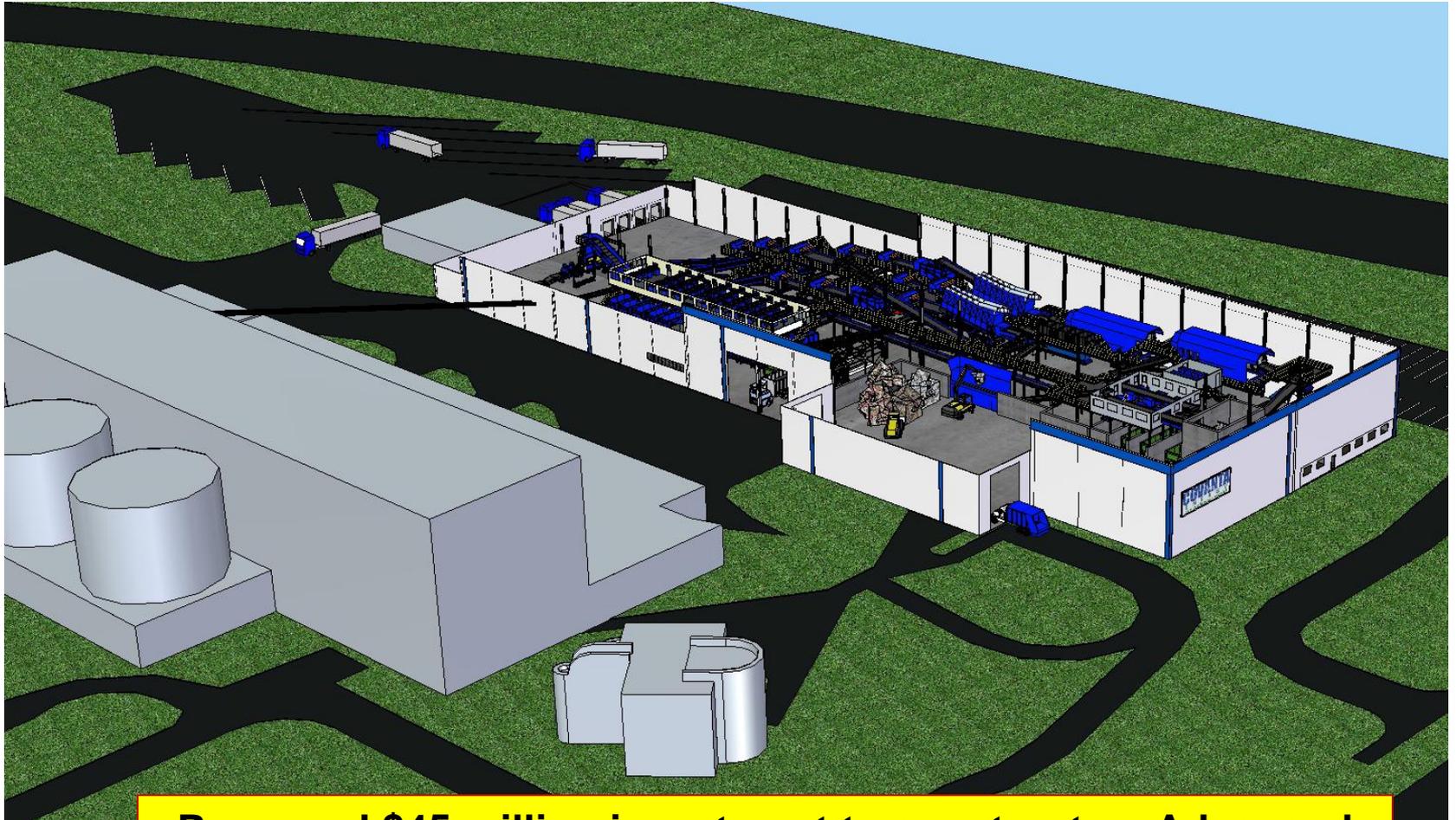
EfW produces 9 to 14 times the energy per ton compared to landfills.

## TITECH Optical Sorters



- “Eyes, Brains, and Hands” of the Advanced Recycling Center
  - Smart: Latest technology utilizing near infra-red sensors
  - Fast: 9 ft. wide belt, running at 9 ft. per second
  - Precise: 320,000 scan points per second to pick out recyclables
- ***Easy programmable to adapt to changing material streams***

## Covanta Indianapolis of Tomorrow



**Proposed \$45 million investment to construct an Advanced Recycling Center next to the Indianapolis EfW**

The logo for Covanta, featuring the word "COVANTA" in a bold, blue, sans-serif font.

Powering Today. Protecting Tomorrow.

A large, blue, sans-serif "Thank you." message centered on a background of a blue sky with white clouds and power lines.

**Scott Holkeboer**

**[sholkeboer@covanta.com](mailto:sholkeboer@covanta.com)**

**317-378-8717**



**ATTACHMENT**

**C**



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# Mixed Waste Processing (or whatever it's called)

## Shawn State

# Today



- **Briefly about Pratt**
- **Recovered Fiber Demands**
- **Recovered Fiber Quality**
- **Myths, Issues and Facts**
- **Conclusions**
- **Questions**

# Pratt Industries Overview



- **\$1.6 Billion, privately-held company**
- **Recycle 1.6 Million tons of recycled materials annually, saving...**
  - **20+ million trees**
  - **1 million tons of greenhouse gas emissions**
- **5<sup>th</sup> largest U.S. paper and packaging company - 4,000 employees**
- **Largest 100% recycled containerboard company in U.S.**
- **State of the art alternative energy generation**
- **16 Recycling Centers/MRFs**
- **3 - 100% Recycled Paper Mills...+ Coming Soon - 4<sup>th</sup> (Valpo)**
- **1 Clean Energy Plant**
- **12 Corrugating Plants**
- **26 Converting Plants**
- **6 Display Facilities**
- **9 Specialty Retail DCs**



# Our Locations



**EXPLORE THE MAP TO LEARN MORE**

 Paper Mills	 Displays
 Corrugating	 Retail Distribution
 Converting	 Recycling
 Clean Energy	 Corporate



# OUR CUSTOMERS

PRATT INDUSTRIES IS KNOWN BY THE COMPANIES WE KEEP





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# Curbside Recycling – Traditional MRFs



## Shreveport, Louisiana



## Greenville, South Carolina



## Atlanta, Georgia



## Fayetteville, North Carolina



# Curbside Recycling – Examples

## Public/Private Partnerships



### New York City



Only paper mill in NYC

### Columbus, Georgia



Pratt Equipped,  
County Operated

Located @  
correctional facility

### Denton, Texas



Located at  
landfill

### Conyers (Atlanta, Georgia)



MSW and  
Recycling  
Contract

# Commercial/Industrial Recycling Facilities



## Memphis, Tennessee



## Nashville, Tennessee



## Rock Hill, South Carolina

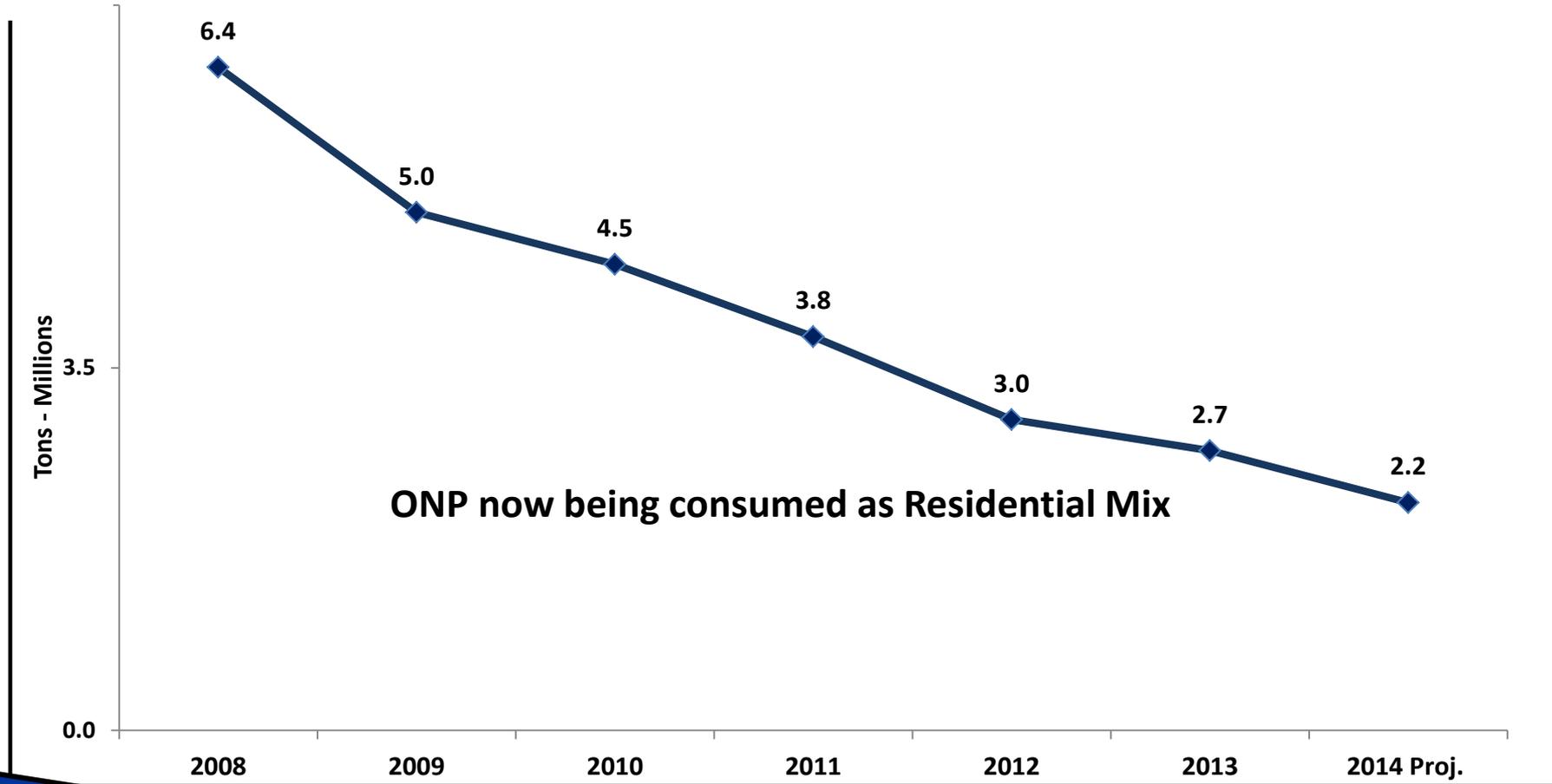


## Winston-Salem, North Carolina



# ONP - It's NOT Coming back...ever

## Tons-Millions - North American Consumption



# Global Paper Mill Requirements – Clean, Contaminant Free Recovered Fiber

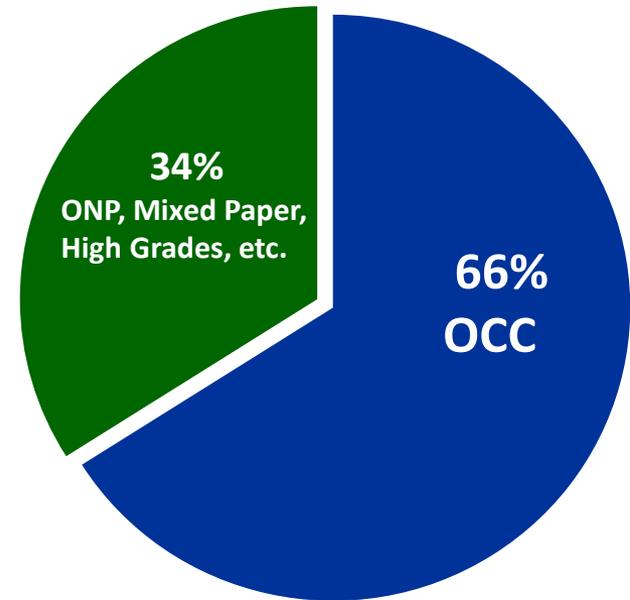


~ 20 Million Tons

~ 30 Million Tons



## N.A. Paper Mill Consumption



**The need is Quality, Quality, Quality**

# Mixed Waste Processing??



- Let's be frank...what are we really talking about?

## **DIRTY MRFs**

- Not “Mixed Waste Processing” Facilities
- Not “Advanced Recycling Centers” (ARCs)

# You can put lipstick on a pig... but it's still a pig



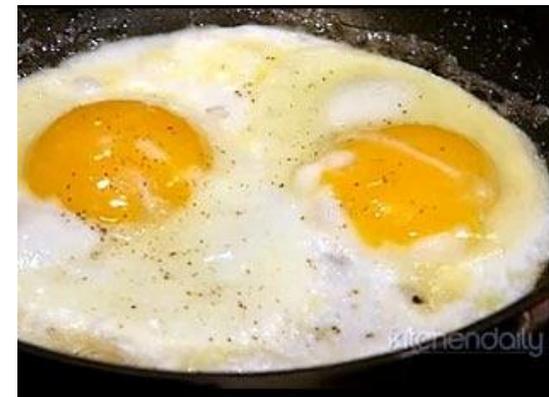
# Dirty Little Secrets of Dirty MRFs



**Myth:** Once recyclables are mixed with solid waste, they can effectively be recovered.

**Fact:** Paper is easily contaminated and you can't unscramble an egg

You can't make this .....into this



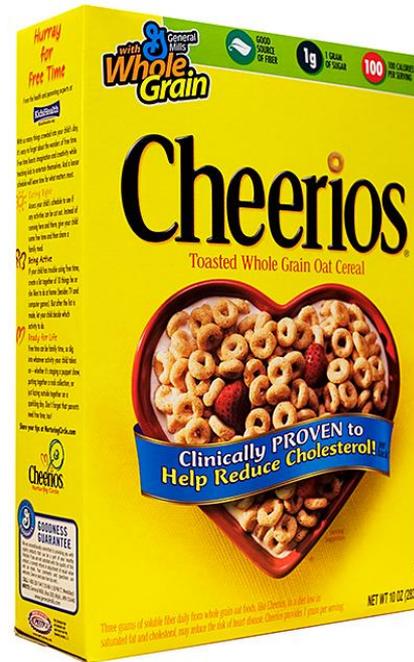
# Some of the packaging made from Recovered Fiber



## Pizza Boxes



## Folding Cartons



## Food Service Take-out



# A Few of the things that should NOT be part of the recipe for your pizza box



# WHY?

Because once an egg is scrambled,  
you can't UNSCRAMBLE it



# Dirty Little Secrets of Dirty MRFs



**Myth:** Once recyclables are mixed with solid waste, they can effectively be recovered.

**Fact:** A recent characterization study the Emerald Coast Utilities Authority (ECUA) revealed the following results:

Number Component Category (% by weight) of 10 Largest Subcategories of MSW

- 1 Soiled Paper Organic 10.8 %
- 2 Food Waste Organic 9.46%
- 3 Corrugated cardboard Paper 6.72%
- 4 Fines 1 to 2 inches Residual 5.44%
- 5 Other plastic films Plastic 5.37%
- 6 Fines <1 inch Residual 5.23%
- 7 Diapers and sanitary waste Organic 3.81%
- 8 Yard Waste Organic 3.58%
- 9 Pasteboard Paper 2.93%
- 10 Clear PET #1 Plastic 2.73%



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# Dirty Little Secrets of Dirty MRFs



**Myth:** Separation Technology has advanced significantly to enable contamination-free recovered materials

**Fact:** No leap-frog technology has emerged in the past 20 years. Still use conveyors, optical sorting, screens, trommels, with lots of hand sorting for quality.

- Slight “evolution” only; nothing revolutionary...don’t get sucked in with terms like “optical sorters” and “ballistic separators”



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Council of Governments

# Dirty Little Secrets of Dirty MRFs



**Myth:** Recovery rates from Dirty MRFs (or Mixed Waste processing facilities) are pretty high

**Fact:** Contaminants, Prohibitives and Outthrows are just taking a MUCH longer ride to the landfill, with a bigger carbon footprint, and dirty MRFs are counting these tons as “diversion”.





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# Dirty Little Secrets of Dirty MRFs



**Myth: Incineration, fuel pellets, and other waste to energy “counts” as recycling.**

**Facts: The value achieved from using commodities such as paper to create energy pales in comparison to the commodity value of recycling and reusing it.**



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# Dirty Little Secrets of Dirty MRFs



**Myth: The one-bin collection system ensures 100% household participation.**

**Facts: YEAH RIGHT!**

**(and by the way, what are we teaching the next generation about recycling)**



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Council of Governments

# Dirty Little Secrets of Dirty MRFs



**Myth:** The One Bin Program results in high recycling rates.

**Fact:** Covanta Projected Recover Rate - Indianapolis

- 50% - 58% of incoming Paper will be recycled
  - AF & PA numbers show 63.5% of all Paper is currently being recycled.
- 25% of Plastic will be recycled
- 0% (ZERO) of Glass will be recycled
  
- **TOTAL PROJECTED RECOVERY RATE - 18 - 22%...remaining material will be incinerated**

**\*\*\$16.0 MM dollars of recyclable material will be incinerated.\*\***



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# Dirty Little Secrets of Dirty MRFs



**Myth:** *“You can put it in your green can, and magically it all gets bundled and sold into the commodities market.”* – Mayor Todd Strange – City of Montgomery, Alabama

**Facts:** Paper commingled “wadded up” with a tin can and plastic bottle **CAN BE** separated with today’s sorting technology. (Single Stream -or- Two Bin Program)

**Facts:** Paper commingled “wadded up” with a plastic bottle, tin can, last night’s dinner, and last night’s cat poop, **CANNOT** be separated with today’s sorting technology. (One Bin Program)

**DO THE “GRADE SCHOOL” TEST**



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# Dirty Little Secrets of Dirty MRFs



**Myth:** Industry standards say mills can accept 5% contamination in bales of paper

**Facts:**

- P.S.I. standards state: “recovered paper stock must be free of food debris, medical or hazardous wastes, any poisonous or other hazardous substances or liquids”
- In certain paper grades, “prohibitives” can be “up to” 2%, but prohibitives in most paper grades are not permitted at all, or are allowed at 1/2 of 1% or 1%.

# Acceptable Recovered Fiber



# Unacceptable Recovered Fiber



# Conclusion

I love my daughter's cat



**But keep his “business” separated from recyclable materials**



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# Thank You

[ssstate@prattindustries.com](mailto:ssstate@prattindustries.com)

**ATTACHMENT**

**D**

# New Challenges for Recycling

## --Residential Dirty MRFs

Fran McPoland  
Paper Recycling Coalition  
Northeast Recycling Council  
April 9, 2015

# Paper Recycling Coalition

The Paper Recycling Coalition is a group of companies who have been working together for the past 25 years, many of which have been in the paper recycling business for more than a century. The companies are:

- Graphic Packaging International, Inc.
- KapStone Paper & Packaging Corporation
- Newman & Company
- Norampac, a division of Cascades Canada Inc.
- OX Paperboard
- PaperWorks Industries, Inc.
- Pratt Industries, Inc.
- RockTenn
- White Pigeon Paper Company

# Paper Recycling Coalition

The goal of the PRC is to ensure that government policies and programs do not inadvertently interfere with the domestic recovered fiber supply.

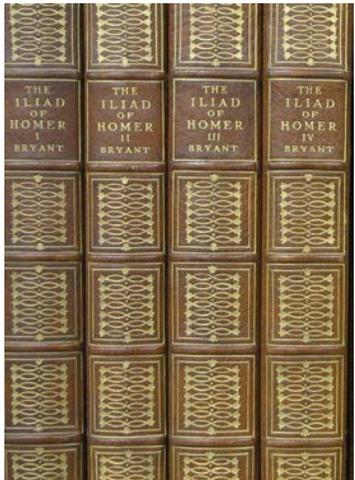
# What do we make?



Steven Griffin



# What do we make?



# What do we make?



# Residential Dirty MRFs

# What is a Residential Dirty MRF?

- ▶ A material recovery facility that collect all municipal solid waste AND recyclables in one container for subsequent processing.

Why is This a Problem?

# Remember What We Make!

Can we make those food packages and consumer items when they have been contaminated with some of the items commonly put into the garbage can?

NO



Baby and adult diapers



Kitty litter



Organic material like kitchen waste and grease



Animal waste



# Threats to the Fiber Supply

“The following materials are NOT allowed at ANY XYZ mill in ANY percentage.

## Source Contaminant Papers:

- ▶ Waste paper and board from hospitals contaminated with bio- hazardous material;
- ▶ Recovered paper and board which has been mixed with garbage destined for landfills and subsequently sorted out, rather than sourced from single and dual recycling streams;
- ▶ Secondary fiber from households containing used hygienic paper, such as used kitchen towels, handkerchiefs, facial tissue, toilet paper and diapers” .

# Actual RFP Language from a Mixed Waste Processing Facility

**XXXXXX** commodities are secondary post-consumer materials, recovered manually from municipal solid waste, and will not be technically perfect or completely free of contamination. It is the sole responsibility of the Purchaser to determine the suitability of **XXXXXX** materials for his purposes. **XXXXXX** will accept no responsibility for materials sold by **XXXXXX** as a certain grade and then resold by Purchaser as a higher grade, or for materials marketed by Purchaser to third parties or end users that have zero tolerance for items commonly found in municipal solid waste. In all such cases, Purchaser assumes sole responsibility for all costs associated with rejections, downgrades, sorting, disposal, and/or claims of any kind.

# Why is This Happening?



The amount of waste generated in the United States has increased steadily during the past 30 years. While, at the same time, municipal solid waste budgets have steadily declined.

# What is Recycling?

“I know it when I see it.” There are several widely used definitions of what recycling is and what it is not.

# What is Recycling?



eco, bio, green and recycle icons

MADE WITH RECYCLED CONTENT



100% RECYCLABLE

# What is Recycling?

“Recycling is a series of activities by which material that has reached the end of its current use is processed into material utilized in the production of new products.”

# What is Recycling?

Are Dirty MRFs simply another option to get more recyclable material?

NO

# Who is supporting Residential Dirty MRFs?

- ▶ Communities that feel they have no waste management alternatives because of costs and other factors.
- ▶ Those who are interested only in utilizing the material one time for energy recovery or anaerobic digestion.
  - ▶ The volume and BTU value of plastics and paper, are essential in order to offset the negative value of things like glass and organics.

# Who Opposes Residential Dirty MRFs?

- ▶ The Recycling Industries Coalition consists of consumers of recyclable material, such as recycled paper, glass and metal manufacturers.
- ▶ PRC
- ▶ Institute of Scrap Recycling Industries
- ▶ Steel Recycling Institute
- ▶ Glass Packaging Institute
- ▶ The National Recycling Coalition
- ▶ Numerous recycling industry companies
- ▶ State and local recycling organizations

## What Are the PRC and the Recycling Industries Coalition Doing About This?

- ▶ We stand ready to help communities throughout the United States to work to improve their existing recycling programs and evaluate their economics and practicalities of alternatives.

# New Challenges for Recycling

## --Residential Dirty MRFs

Fran McPoland

[McPoland@collingswifthynes.com](mailto:McPoland@collingswifthynes.com)

202-276-4931

**ATTACHMENT**

**E**

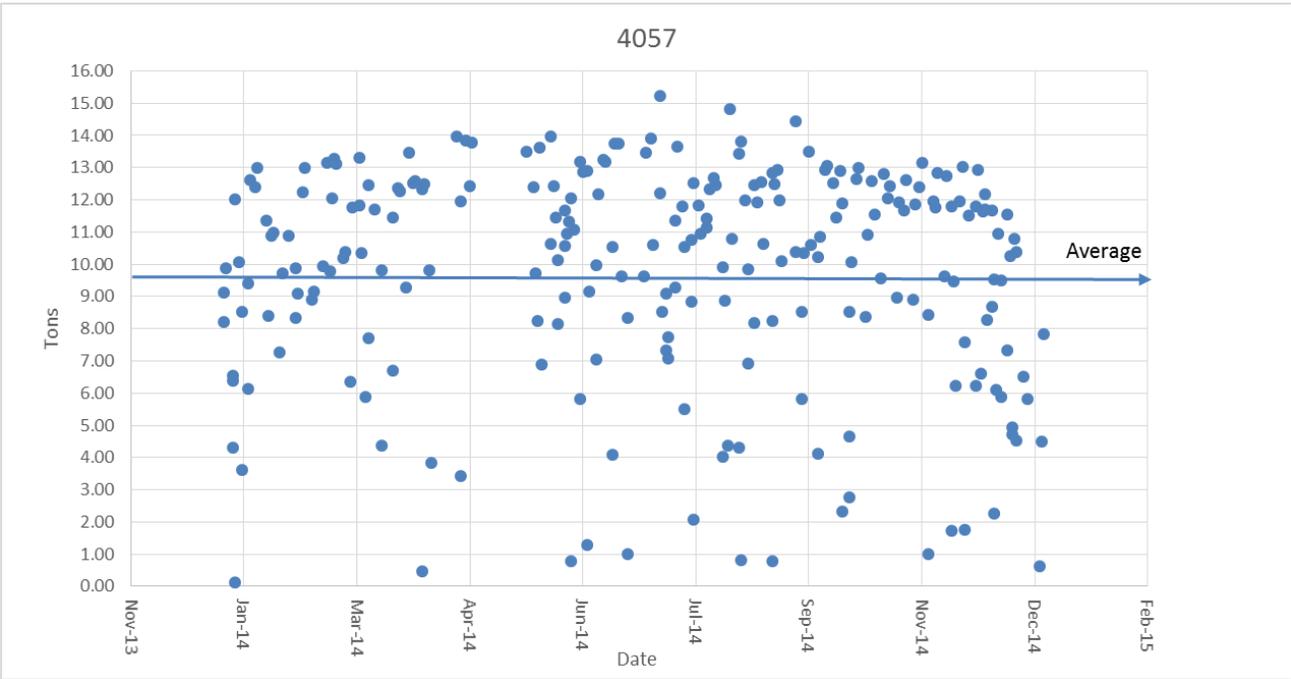
## **Attachment E**

### **Trash Load Weights Per Main City Trash Collection Vehicles**

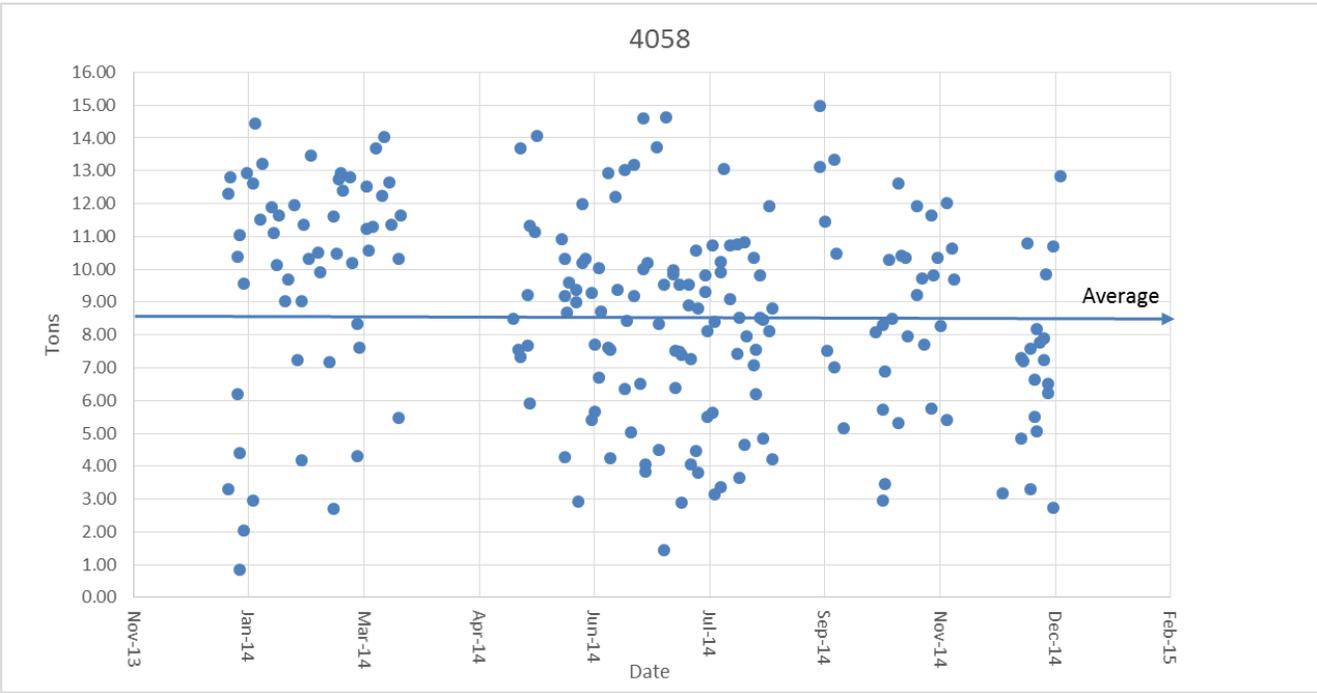
During the course of GBB's review of the city collection fleet, scale data was presented on all of the city trash collection transactions that took place upon entrance to the county landfill. With this large Excel spreadsheet information, GBB sorted the database based on the collection vehicle asset numbers to organize the specific loads associated with, and collected by, each vehicle.

The data was then reviewed to identify the collection vehicles that performed the greatest number of loads during the year, which tended to segregate the primary collection vehicles from the spare vehicles. Since the city was transitioning to automated side loaders and most were newer chassis, their uptime tended to be higher and thus their loads during the year were also higher as was expected.

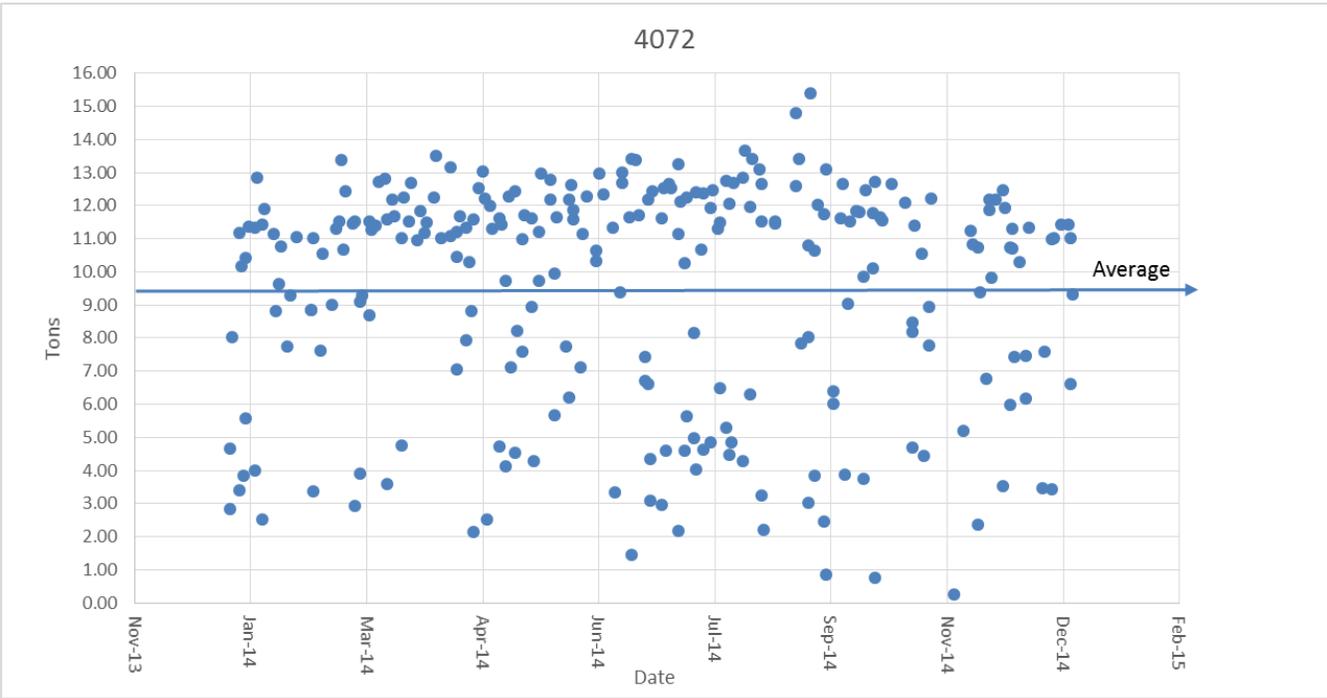
Of interest from the data presented in Attachment E is the actual average load that was collected by each vehicle and the number of trips that the weights were above the average.



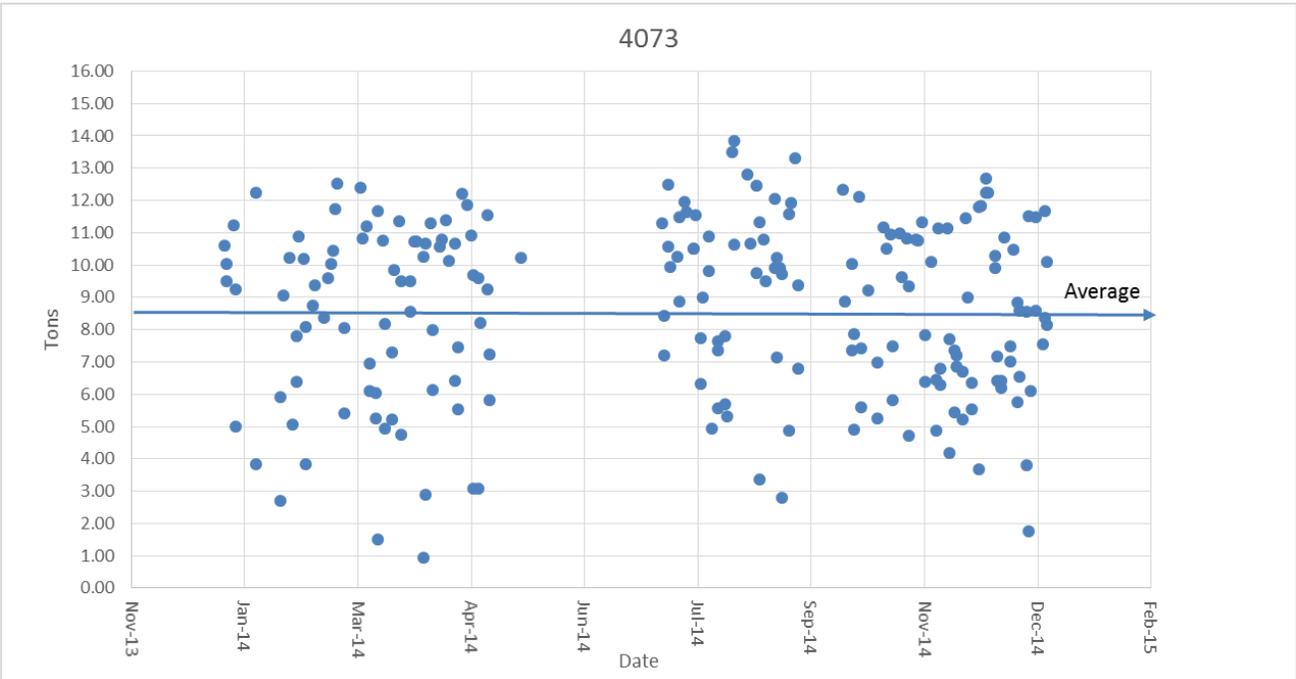
<b>TOTAL Count of Deliveries</b>	243	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,371	Tons per year
<b>Average amount of waste delivered</b>	9.76	Tons per delivery
<b>Above average</b>	147	Number of deliveries
<b>Below average</b>	96	Number of deliveries



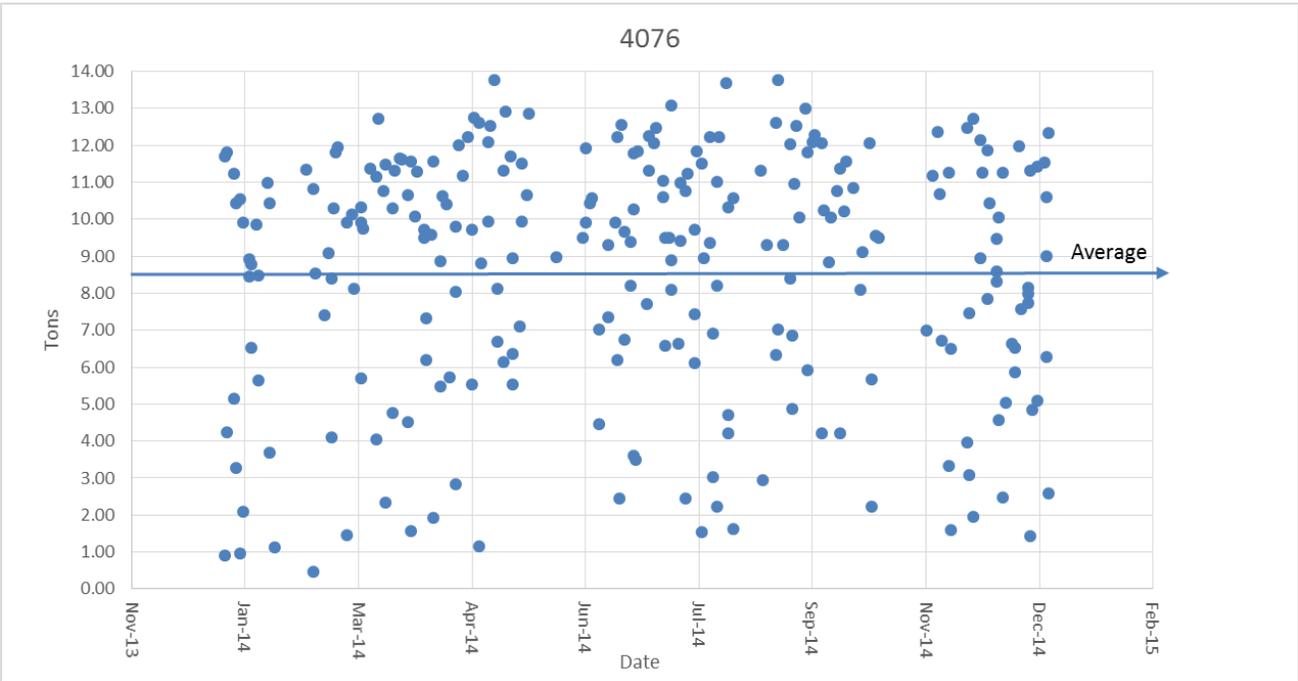
<b>TOTAL Count of Deliveries</b>	211	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	1,842	Tons per year
<b>Average amount of waste delivered</b>	8.73	Tons per delivery
<b>Above average</b>	112	Number of deliveries
<b>Below average</b>	99	Number of deliveries



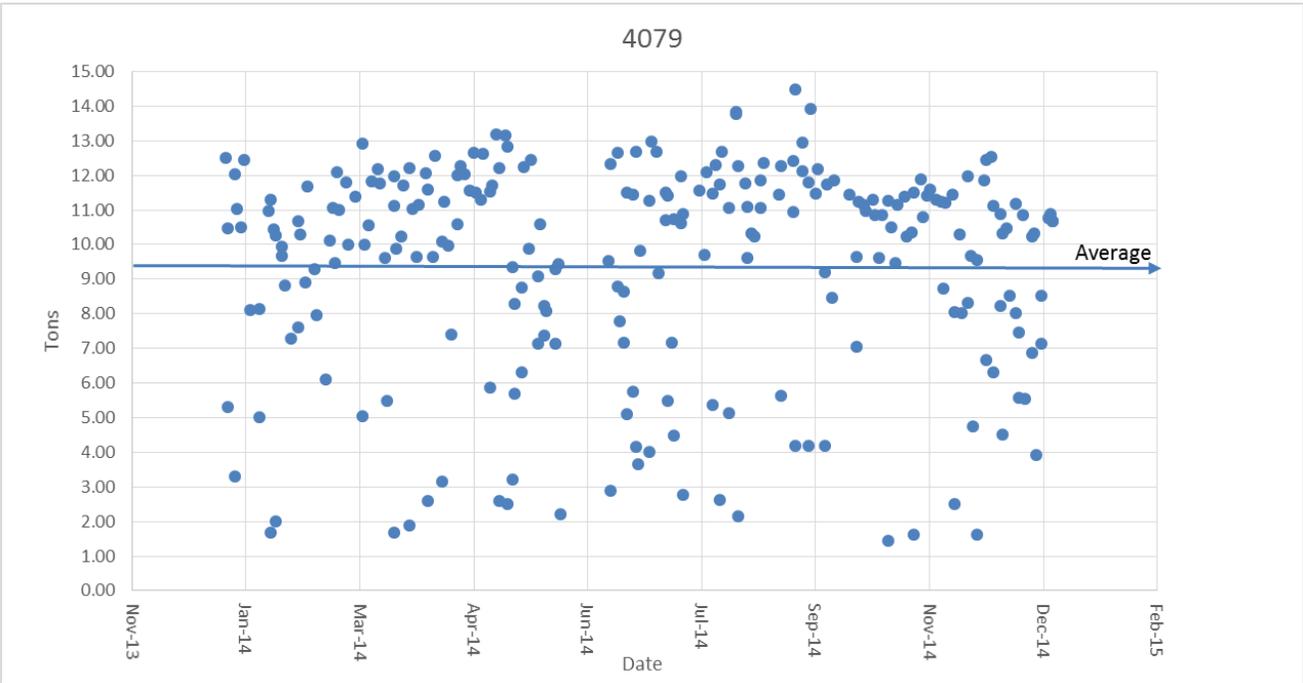
<b>TOTAL Count of Deliveries</b>	259	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,438	Tons per year
<b>Average amount of waste delivered</b>	9.41	Tons per delivery
<b>Above average</b>	160	Number of deliveries
<b>Below average</b>	99	Number of deliveries



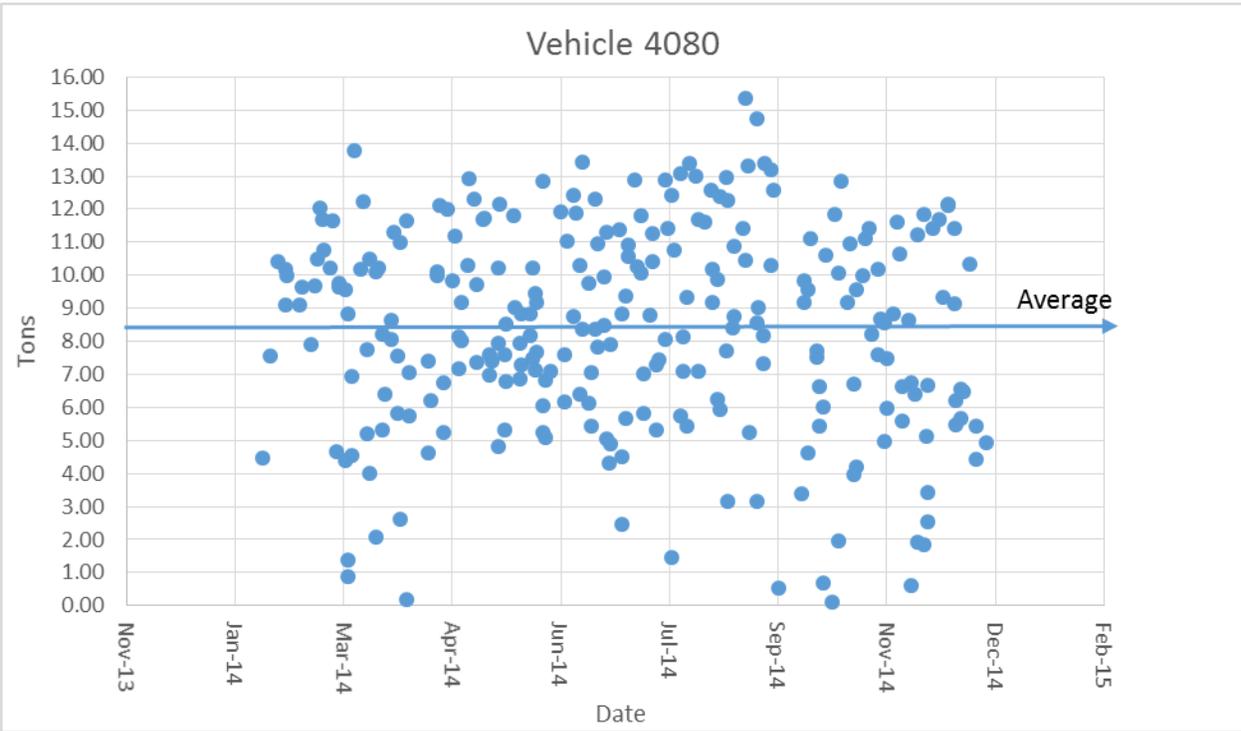
<b>TOTAL Count of Deliveries</b>	207	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	1,788	Tons per year
<b>Average amount of waste delivered</b>	8.64	Tons per delivery
<b>Above average</b>	112	Number of deliveries
<b>Below average</b>	95	Number of deliveries



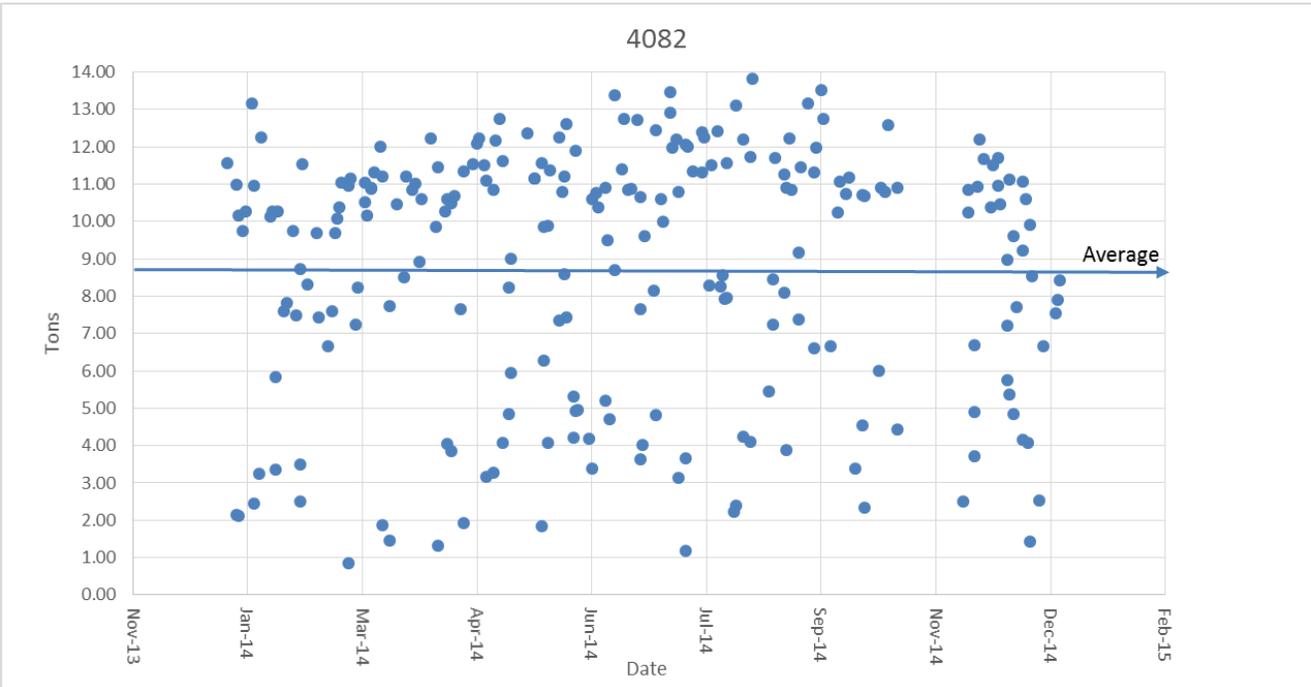
<b>TOTAL Count of Deliveries</b>	252	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,166	Tons per year
<b>Average amount of waste delivered</b>	8.6	Tons per delivery
<b>Above average</b>	149	Number of deliveries
<b>Below average</b>	103	Number of deliveries



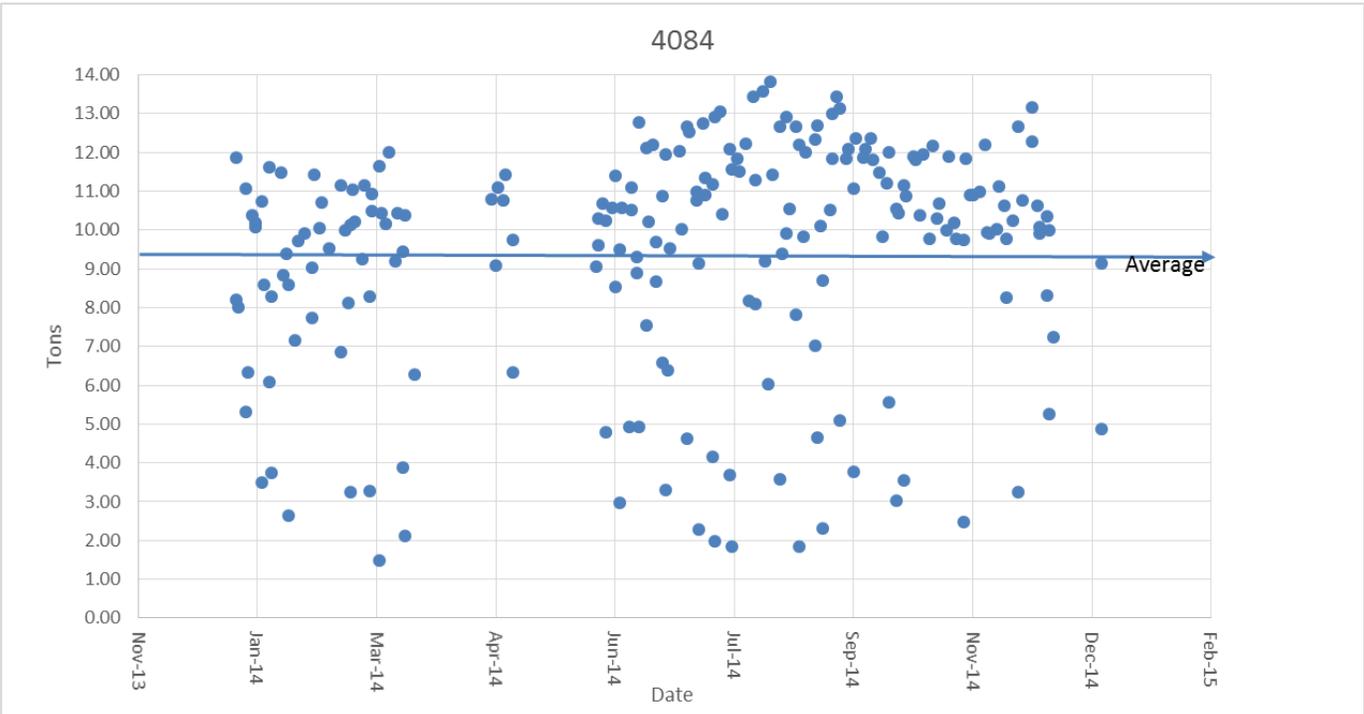
<b>TOTAL Count of Deliveries</b>	245	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,303	Tons per year
<b>Average amount of waste delivered</b>	9.4	Tons per delivery
<b>Above average</b>	159	Number of deliveries
<b>Below average</b>	86	Number of deliveries



<b>TOTAL Count of Deliveries</b>	264	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,214	Tons per year
<b>Average amount of waste delivered</b>	8.39	Tons per delivery
<b>Above average</b>	138	Number of deliveries
<b>Below average</b>	126	Number of deliveries



<b>TOTAL Count of Deliveries</b>	234	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,047	Tons per year
<b>Average amount of waste delivered</b>	8.75	Tons per delivery
<b>Above average</b>	137	Number of deliveries
<b>Below average</b>	97	Number of deliveries



<b>TOTAL Count of Deliveries</b>	215	Number of deliveries
<b>TOTAL Amount of waste delivered</b>	2,021	Tons per year
<b>Average amount of waste delivered</b>	9.4	Tons per delivery
<b>Above average</b>	141	Number of deliveries
<b>Below average</b>	74	Number of deliveries

**ATTACHMENT**

**F**

## **Attachment F – Definitions of Waste Categories**

### **PAPER**

Newsprint (ONP) – shall mean old newspapers that are clean and dry enough to be recycled as a commodity when separated. This shall include all newspaper inserts. This shall not include newspapers contaminated with food, animal waste, etc.

Office Paper – shall mean both white and colored office papers including junk mail that are clean and dry enough to be recycled as a commodity when separated. Glossy brochures, magazines, and folders shall be included.

Corrugated Cardboard & Kraft Paper (OCC) – shall mean old corrugated containers and kraft paper sheets or bags that are clean and dry enough to be recycled.

Paperboard – shall mean made from reclaimed paper and wood stock, including particleboard.

Other Dirty Paper – shall mean paper not defined by the above categories, or paper attached to other type of material that cannot be easily separated

### **PLASTIC**

PET (#1 Containers) – shall mean narrow necked or other containers identified by the recycling symbol with the number 1, contents shall be emptied into the Food category.

HDPE (#2 Containers) – shall mean narrow necked or other containers identified by the recycling symbol with the number 2, contents shall be emptied into the Food category.

Polystyrene – shall mean polystyrene foam, such as disposable coffee cups, coolers, or cushioning material in packaging, which are typically white and are made of expanded polystyrene beads.

Other Rigid Plastic – shall mean all rigid plastic containers or items identified by the recycling symbol with any other number but 1 and 2, or has no symbol, contents shall be emptied into the Food or other appropriate category, all colors shall be included.

LDPE – Film Plastic – shall mean all film plastic including trash bags, shrink wrap, plastic sheeting, etc., contents of bags shall be emptied and sorted and major contaminants of sheeting shall be removed.

Dirty Plastic – shall mean all plastic containers that are attached to other types of material that cannot be easily separated

### **GLASS**

Clear Glass – shall mean all containers made from glass (bottles, jars) shapes and sizes that is clear or translucent, contents shall be emptied into the Food or other appropriate category

Green Glass – shall mean all containers made from glass (bottles, jars) shapes and sizes that is green, contents shall be emptied into the Food or other appropriate category

Brown Glass – shall mean all containers made from glass (bottles, jars) shapes and sizes that is brown, contents shall be emptied into the Food or other appropriate category

Blue Glass – shall mean all containers made from glass (bottles, jars) shapes and sizes that is blue, contents shall be emptied into the Food or other appropriate category

Other Glass – shall mean all other container and non-container items made from glass

## **METAL**

Ferrous Metals - shall mean “tin” cans, and other metal items containing iron or iron oxides, these materials will be typically magnetic, contents shall be emptied into the Food or other appropriate category

Non-ferrous Metals –shall mean all metals not containing iron or iron oxides, including all aluminum beverage containers, disposable pans made from aluminum, and copper wiring, other contents shall be emptied into the Food or other appropriate category

## **ORGANICS**

Yard Waste Grass Clippings/Small Brush – shall mean both dry and green leaves and grass clippings, all brush, tree limbs, trimmings and shall not include lumber or other clean wood.

Food/Putrescible Waste – shall mean both uncooked foods such as potatoes and apples and cooked left over food from homes and restaurants. This shall include foodstuffs emptied from containers during the sort.

Miscellaneous Organics – shall mean paper products that are contaminated by food or other putrescible products including cotton diapers and other bath products, kitty litter, and compostable dog dropping bags.

## **SPECIAL WASTE**

Rubber – shall mean all rubber products

Textiles – shall mean all cloth items including apparel, linens, upholstery, shoes, belts, purses, carpet, and leather items.

Household Hazardous Waste (HHW) – shall be containers with contents meeting the definition of hazardous, including particles, solvents, used oil, etc. HHW materials include:

- Automotive fluids (motor oil, antifreeze, transmission fluid, brake fluid, fuel additives, engine degreasers, kerosene, gasoline, diesel fuel);
- Batteries (all types of batteries; including lead acid auto batteries);
- Cleaners and Chemicals (lighter fluid, nail polish remover, ammonia, rat poison, furniture polish, formaldehyde, lice shampoo, drain cleaners, arsenic, oven cleaner, drain cleaner, grease and rust removers, mold and mildew removers, detergents, fabric softeners, dyes, hair products, isopropyl alcohol, metal polish, aerosol cleaners, window cleaners, kitchen and bathroom cleaners, moth balls, bleach);
- Used cooking oil (not hardened greases);
- Lawn/garden/pool chemicals (fertilizer, pesticides, herbicides, weed killers, fungicides, chlorine, bug sprays);
- Light bulbs (fluorescent tubes, CFL, LED, Halogen);

- Paint & painting supplies (latex, oil-based, acrylic, artist paints, hobby chemicals, stains, enamels, paint thinner and stripper, turpentine, varnish, lacquer, epoxy, photography chemicals); and
- Mercury thermometers and thermostats.

Tires – shall mean all scrap tires, in whole or in part

Appliances and Batteries– shall mean all household appliances such as toasters, washing machines, etc. Electronics shall include cell phones, radios, televisions, computers and computer components.

Used Oil – shall mean any residues derived from household use of oil

C & D – shall mean construction and demolition materials, including concrete, wood, and salvaged building components.

Fines – shall mean any material that is less than two inches in diameter, such as the debris that is left on the sorting tables after all other material that can reasonably be separated has been sorted

Miscellaneous Nonorganics - shall mean all other inorganic materials not otherwise identified, including rock, bricks, ceramics, drywall, etc.

**ATTACHMENT**

**G**

## Appendix G - Collection Data Recording Sheet

Driver name \_\_\_\_\_

Partner name \_\_\_\_\_

Material to be Collected (Circle One):                      *Trash*                      *Recyclables*

Tare Weight of Vehicle \_\_\_\_\_ (tons)

Gross Weight of Vehicle with Load \_\_\_\_\_ (tons)

Net Weight of Load \_\_\_\_\_ (pounds)

Day    *M*        *T*        *W*        *Th*        *F*

<i>Route</i>	<i>Street</i>	<i>Number of Trash Carts</i>	<i>Number of Recycling Carts</i>
101	SILVER OAKS DR	5	5
101	SOUTHLAND DR	11	11
101	ARBOR RD	6	6
101	STACY WEAVER DR	10	10
102	SUNSET AVE	12	12
102	SCOTT AVE	4	4
102	IJAMS ST	9	9
102	POWATAN ST	9	9
103	CHLOE DR	10	10
103	SINCLAIR ST	9	9

**Totals**      \_\_\_\_\_ 75                      \_\_\_\_\_ 75

Signature \_\_\_\_\_

**Form to be Modified for Other Days, Routes and Streets**

**ATTACHMENT**

**H**



# QUALITY ALERT

**ReCommunity is committed to providing cost-effective, convenient recycling programs.**

Through commercial services and residential single-stream recycling, we provide numerous economic, environmental and social benefits to businesses and communities. A key component to our success, however, is the quality of material placed in curbside recycling carts.

**Nearly all of our facilities are experiencing an increase in non-conforming materials in the recyclables.**

Unacceptable items—such as garden hoses, plastic bags, diapers, needles and other medical waste, propane tanks, as well as yard and food waste—expose our employees to unsafe materials, lower productivity and reduce end-market quality of materials. This increases costs of operation and lowers the value of your recyclables. *In other words, poor quality jeopardizes the usability of recycled materials throughout the supply chain, which is critical to the success of our mission; diverting recyclable materials from landfills.*

**To help improve load quality, please ensure all users of your recycling program:**

- **Conform to the Acceptable Materials list.** Please distribute acceptable materials lists regularly to the users of your recycling program. If you need assistance, we can help link or post the list to your website.
- **Empty all containers.** Chemical containers must be clean and empty to prevent fires. Even small amounts of cleaning agents, pool chemicals, aerosols and solvents create fire hazards.
- **Remove unsafe and unsanitary objects.** Materials that are sharp, unsanitary, or not on the acceptable materials list may harm employees and damage processing equipment.
- **Remove large items that can harm persons or processing equipment.** Large objects may be recyclable, but big pieces—especially metal—are dangerous to employees and damaging to processing equipment and should be recycled at scrap metal companies.
- **Understand rejection and charge ramifications.** ReCommunity will reject unacceptable loads and charge generators (or downgrade prices) for the costs associated with such unacceptable items (such as transportation, re-loading, clean-up, alternate disposal).

Together, with your help, we can improve the quality of the recycling stream and optimize the value for the entire recycling supply chain. High-quality loads reduce the risk of ReCommunity rejecting, charging and/or downgrading for delivering non-conforming loads.

For more about what you can do to improve your load quality, please contact me with questions.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Jeffrey Fielkow'.

**Jeffrey Fielkow**

Chief Sales & Marketing Officer  
ReCommunity Recycling  
Jeff.Fielkow@ReCommunity.com



## SOME OF THE UNACCEPTABLE ITEMS FOUND IN THE PAST 60 DAYS



FOOD WASTE AND VEGETATION



CONTAMINATED MATERIAL AND FOOD WASTE



ONP SCREEN JAMMED WITH PLASTIC BAGS AND FOOD WASTE



CONTAMINATED MATERIAL AND FOOD WASTE



TANGLED WIRES AND WOOD



HOUSEHOLD TRASH, ELECTRONICS AND HOSES

# QUALITY ALERT

## HAVE QUESTIONS? CONTACT YOUR REGIONAL REPRESENTATIVE

### Midwest

#### Regional Business Manager

Stephen Klemann

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Email: [Stephen.Klemann@ReCommunity.com](mailto:Stephen.Klemann@ReCommunity.com)

### West

#### Regional Business Manager

Will Herzog

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Email: [Will.Herzog@ReCommunity.com](mailto:Will.Herzog@ReCommunity.com)

### Northeast/Mid-Atlantic

#### Regional Business Manager

Bob Anderson

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#### Regional Business Manager

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