BEYOND THE BIN

Env'tl Stewardship Program Annual Meeting 2.19.19

EMILY JACKSON | PROGRAM & EVENTS COORDINATOR
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INRECYCLING

Indiana RECYCLING COALITION

OUTLINE

- WHO IS IRC
- WASTE BACKGROUND
- COMMODITIES IN FOCUS
  - DISCLAIMER: WE WON'T HAVE TIME TO COVER ALL OF THEM
- STATE OF RECYCLING & TRENDS
- WHAT YOU CAN DO

Indiana RECYCLING COALITION

ABOUT THE IRC

MISSION

The mission of the Indiana Recycling Coalition is to support waste reduction, reuse, composting, and recycling activities in Indiana.

The Indiana Recycling Coalition is a not-for-profit representing concerned citizens, state and local government officials, business, industry and environmental groups since December of 1989.

WHAT IRC DOES

EDUCATION

PROGRAMS

PUBLIC SPACE RECYCLING

ADVOCACY

INDIANA FOOD SCRAP INITIATIVE

The CONFERENCE
Indianapolis, Indiana | June 10-12, 2019
@ the Marriott East

glass ISN'T TRASH

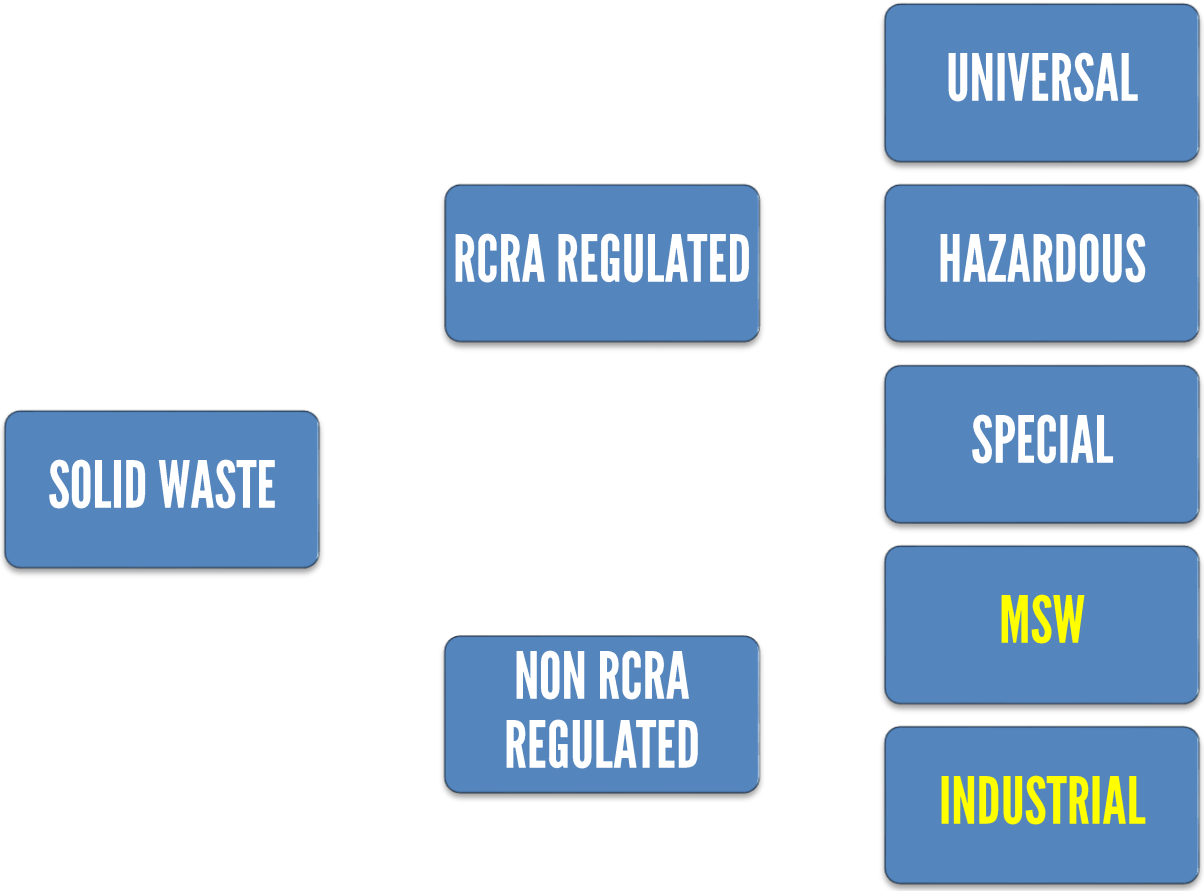
COMMERCIAL FOOD COMPOSTING PROGRAM

THE INDIANA STUDENT RECYCLING LEADERSHIP CORPS

PepsiCo Recycling
SIMPLE ACTS. BIG IMPACT.

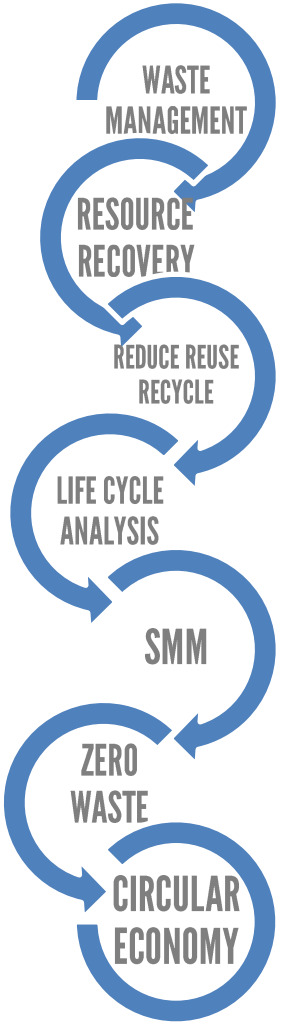
Indiana RECYCLING COALITION

WASTE CATGORIES IN FOCUS TODAY



Indiana RECYCLING COALITION

EVOLUTION OF THOUGHT



FOCUS ON RECYCLING
single issue & single solution approach

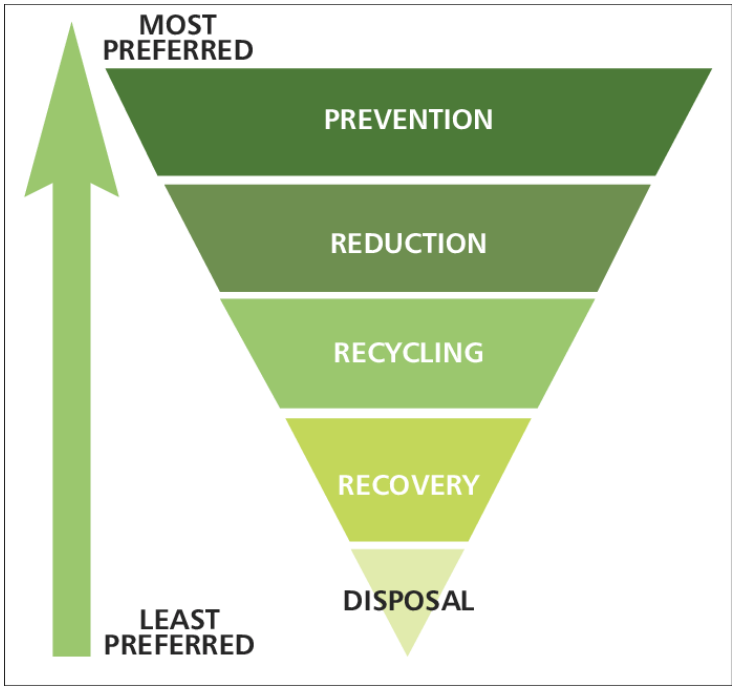
FOCUS ON RESPONSIBILITY
cradle-to-grave, env'tl persistence, EPR

FOCUS ON SYSTEM
designing out waste, cradle to cradle

Indiana RECYCLING COALITION

HIERARCHY & METHODS OF WASTE REDUCTION

- REFUSE
- REDESIGN
- REDUCE
- REUSE
- REPAIR
- REPURPOSE
- RECYCLE
- RE-EARTH



Indiana RECYCLING COALITION

WHY RECYCLE?

- CONSERVATION OF NATURAL RESOURCES
- ENERGY SAVINGS FOR MANUFACTURERS
- POLLUTION PREVENTION
- CUTS GHG'S
- CAPTURES ECONOMIC VALUE OF MATERIALS
- JOBS ENGINE

Indiana RECYCLING COALITION

RECYCLING & JOBS

JOBS ENGINE

Every 1K tons of material recycled creates:

- $14K in tax revenue
- $76K in wages

U.S. EPA Recycling Economic Information Report, 2016

Every 10K tons of materials sustains:

- 1 job if LF, WTE
- 4 jobs if composted
- 10-15.7 jobs if recycled (2016 EPA report)
- 25 jobs if used in recycled content mfg.
- 75-250 jobs if reused

Institute for Local Self-Reliance, 1997

Indiana RECYCLING COALITION

DEMAND FOR RECYCLED CONTENT MATERIAL IN INDIANA

This map highlights key manufacturers who look to recycled materials to make their products.

Sources:
"The Untapped Job Potential of Indiana's Recycling Industry"
Bowen Center for Public Affairs, Ball State University. July 31, 2013.
Google Maps 2013

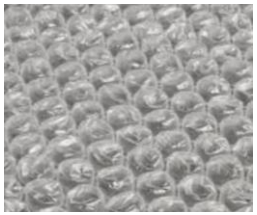
Indiana RECYCLING COALITION

~~WASTE~~ = COMMODITIES

- GLASS
- FIBER
- METALS
- POLYMERS
- ORGANICS

Indiana RECYCLING COALITION

AM I MISSING ANYTHING?



Indiana RECYCLING COALITION

Dunnage, off-spec, mfg. byproduct, breakroom

RAISE YOUR HAND IF YOU RECYCLE

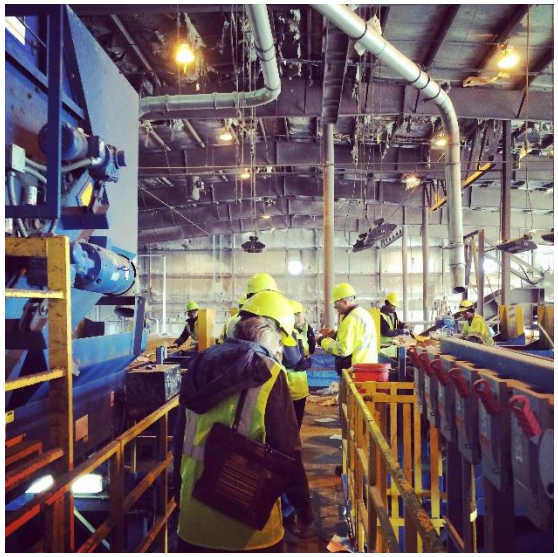
WHAT HAPPENS AFTER THE BIN?

1. Picked up by hauler

Indiana RECYCLING COALITION

WHAT HAPPENS AFTER THE BIN?

2. Processed at Materials Recovery Facility (MRF)



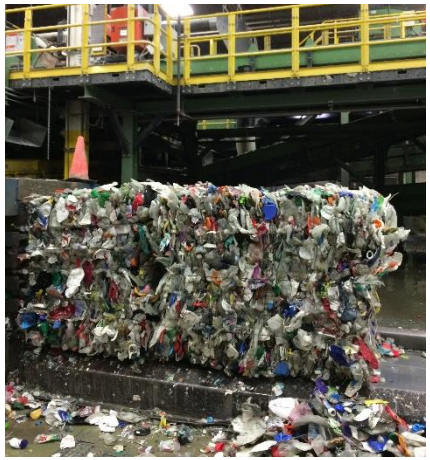
Indiana RECYCLING COALITION

INDIANA SERVICE PROVIDERS

Indiana RECYCLING COALITION

WHAT HAPPENS AFTER THE BIN?

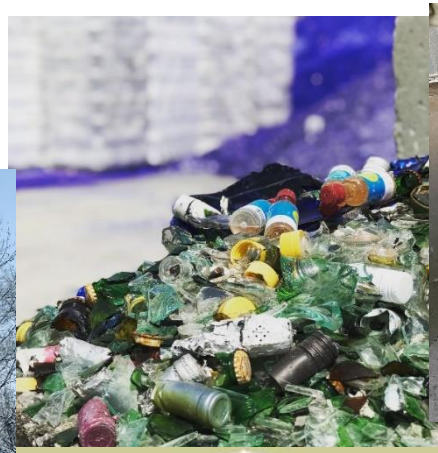
3. Baled & shipped to processors
4. Then what?



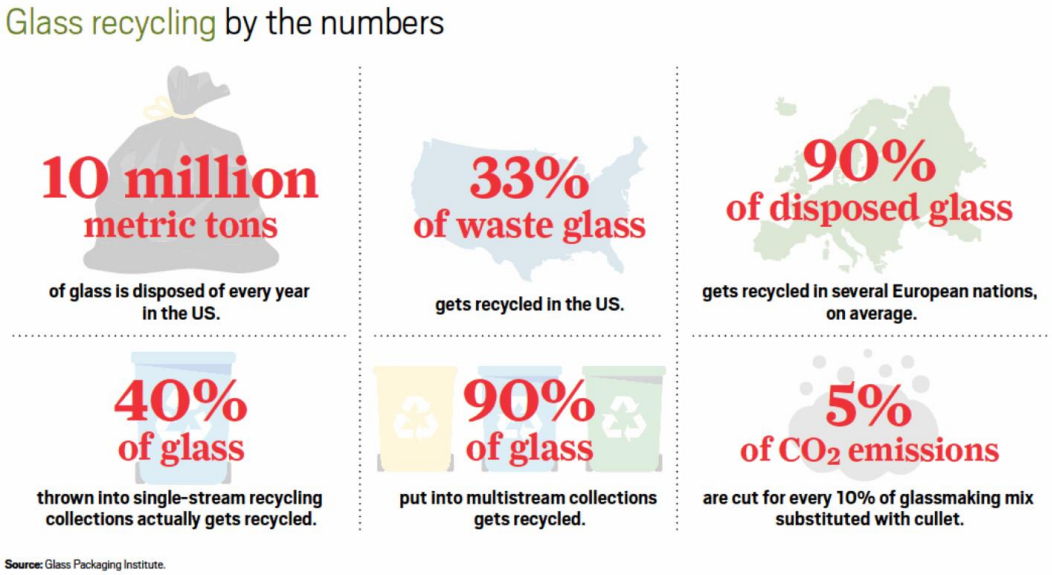
Indiana RECYCLING COALITION

GLASS

- **COMMODITY COOL FACTOR:** Infinitely recyclable
- **RESOURCE SAVINGS:** Over a ton of natural resources saved per ton of glass recycled
- **PROCESS:** Sorted by color & type, contaminant removal, crushed into cullet/dust/sand like specs, shipped to end users, melted, molded, or further pulverized
- **TOP USES:** What is the top use for glass?



- **TOP USES:** liquor packaging, fiberglass, reflective bead, Glasphalt, abrasives for blasting, fillers, tile
- **GLASS HALF EMPTY:** Only makes economic sense if within 150-200 miles of processor



Indiana RECYCLING COALITION

Indiana Glass Container Presence

Glass Plant Headquarters
Ardagh Glass – Muncie, IN

Glass Container Manufacturing Plants
Anchor Glass Container Corp. – Lawrenceburg, IN
Ardagh Glass – Dunkirk, IN
Ardagh Glass – Winchester, IN
O-I – Lapel, IN

Glass Machine Shop
Ardagh Glass Inc. – Marion, IN

Recycled Glass Sorting Plants
Strategic Materials, Inc. – Ashley, IN
Strategic Materials, Inc. – Indianapolis, IN
Strategic Materials, Inc. – Hartford City, IN
Strategic Materials, Inc. – Dunkirk, IN

glass packaging institute

Indiana RECYCLING COALITION

PULP & PAPER

- **COMMODITY COOL FACTOR:** when & where was it invented? # of grades of paper?
- **RESOURCE SAVINGS:** 12 trees for 1 ton low quality paper, 24 trees for high quality
- **PROCESS:** Sorted based on fiber length => baled=> shipped to mills => water and heat treated into pulp => dried & rolled => remaining pulp is land applied or burned
- **TOP USES:** rec. content paper, paperboard, tissue, egg cartons
- **DOWNSIDE:** it's downcycled

Indiana RECYCLING COALITION

FIBER PROCESSORS

Indiana RECYCLING COALITION

METALS

- **COMMODITY COOL FACTOR:** technically infinitely rec., alum - two-thirds is still in circulation, 3 month cycle
- **RESOURCE SAVINGS:** Aluminum offers 95% energy savings
- **PROCESS:** Sorted => crushed/baled => scrap yard/metal processor => magnet sorted, shipped, shredded, melted
- **TOP USES:** construction, cars, appliances, electronics, new cans
- **TAKEAWAY:** More ore above ground than in reserves so recycling is crucial

Indiana RECYCLING COALITION

METAL PROCESSORS

Indiana RECYCLING COALITION

POLYMERS

- **COMMODITY COOL FACTOR**: light-weight, long-lasting, flexible, helps extend life of perishables
- **PROCESS:**
  1. At PRF, bales are broken, plastics is further sorted to increase value using:
     - Manual sorting
     - Optical sorting
     - Float/sink tests
     - Density based sorting
  2. Plastics are ground into 'flake' and washed to remove adhesives, labels, and chemical and food residues.
  3. Clean flake is extruded (heated and densified)
  4. Dyes or other additives are added, as applicable
  5. Final product is pelletized (strung and cut into small pellets) and cooled in water
- **TOP USES**: carpet, drainage pipe, polyester, plastic lumber, new packaging

Indiana RECYCLING COALITION

POLYMER PROCESSORS

CHALLENGES W. PLASTICS

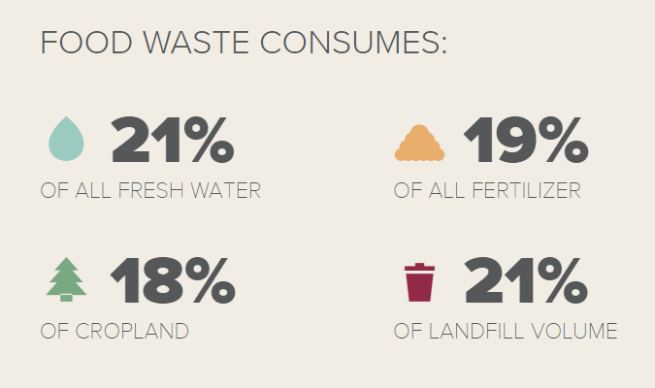
- Composition
  - Petrochemicals - contribute to fossil fuel dependence
  - Can leach chemicals, esp. PVC & PS
  - Durability = env'tl persistence – how long do they last?
- Hard to Recycle
  - Consumer confusion - what does the # mean?
  - MRFs – residuals, CC
  - PCR requires additives & more chemicals, downcycled
  - Negligible recycling rates (esp. #3,4,6,7)
    - 9% REC, 79% LF
    - 12% marine pollution & litter
    - "Production, Use & Fate of all Plastics ever Produced" *Science Advances*, 2017

Indiana RECYCLING COALITION

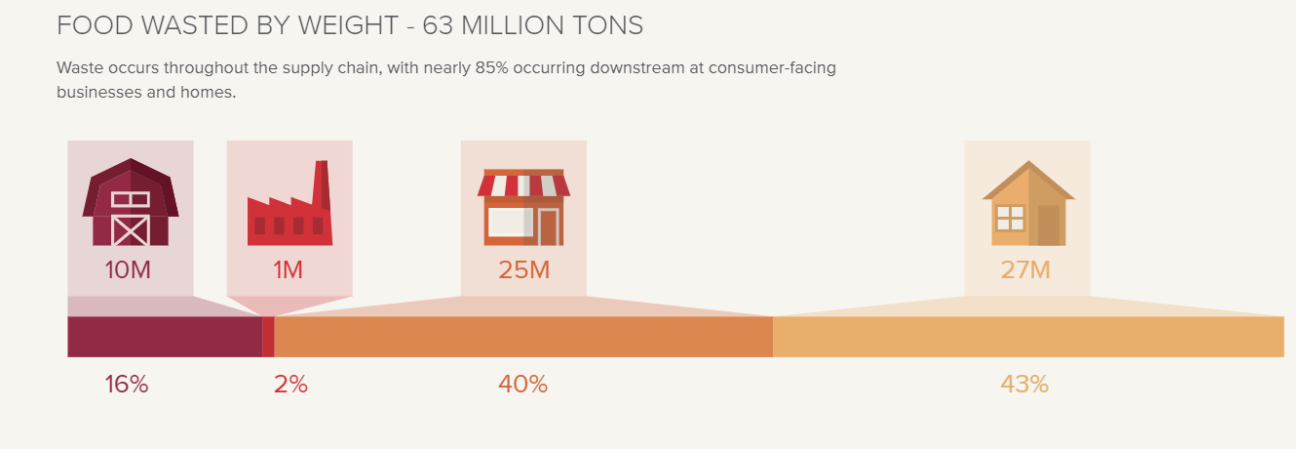
ORGANICS

STATS

- 1/7 Americans is food insecure
- 40% food wasted in US (NRDC)
  - From cultivation, harvest, transport, prep, to table
- 21% LF volume
  - Yard waste is banned
- Substantial methane emissions contributor
- No. 3 way to reverse climate change
  - *Drawdown,* Paul Hawken, 2017



ReFed.com, 2018



Indiana RECYCLING COALITION

FOOD RECOVERY LANDSCAPE

INDIANA'S FOOD RECOVERY LANDSCAPE

REGISTERED YARD WASTE COMPOST SITES

WASTE WATER TREATMENT FACILITIES
West Lafayette & Organic Solution Mgmt.

ANAEROBIC DIGESTORS
Bio Town AG, Inc., Green Cow Power, Homestead Dairy, Fair Oaks Dairy Farm, Martin Dairy, Windy Ridge Dairy LLC/Hidden View Dairy, LLC, Herrema Dairy, LLC, Bos Dairy, LLC, Homestead Dairy, LLC, Waste No Energy

ORGANICS COLLECTION SERVICES
Earth Mama, Green With Indy, Green Camino,Ray's Trash & Recycling, And Rose City Collection Service

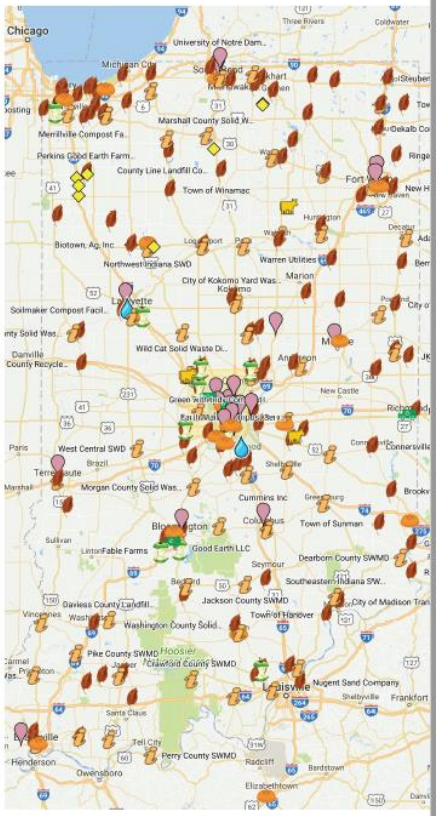
FARMS
Hawkins Family Farm, Local Farms Harvest, Blue River Natural Foods

LARGE GENERATORS OF FOOD SCRAPS

FOOD DONATION LOCATIONS
Gleaners, Second Helpings, Food Bank of Northwest Indiana, Community Harvest, Westchester Neighbors Food Pantry, White County Food Pantry, Food Finders Food Bank, Second Harvest Food Bank of East Central Indiana, Crooked Creek Food Pantry, North Dearborn Pantry, Hancock County Food Pantry, Midwest Food Bank, Hoosier Hills Food Bank, Washington County Foodbank, Tri-State Food Bank, Campus Kitchen at IUPUI, Paw's Pantry at IUPUI, Feeding America, Wheeler Mission Ministries

SWMDS & EDUCATIONAL FACILITIES

PERMITTED FOOD WASTE COMPOST FACILITIES
GreenCycle of Indiana, AgRecycle, Smith Creek, Subaru of Indiana Automotive, Greentree Enterprises, Fable Farms



INDIANA FOOD SCRAP INITIATIVE

THIS MAP WAS CREATED BY STAKEHOLDERS OF THE INDIANA FOOD SCRAP INITIATIVE,A PROGRAM OF THE INDIANA RECYCLING COALITION, IN AN EFFORT TO BETTER VISUALIZE THE CURRENT LANDSCAPE OF FOOD WASTE RECOVERY IN INDIANA.

INDIANA
FOOD SCRAP INITIATIVE

Indiana RECYCLING COALITION

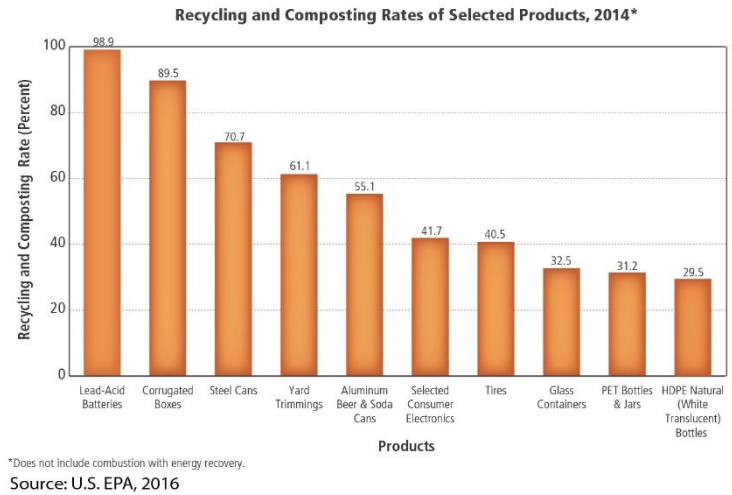
COMMERCIAL FOOD COMPOSTING PROGRAM

Indiana RECYCLING COALITION

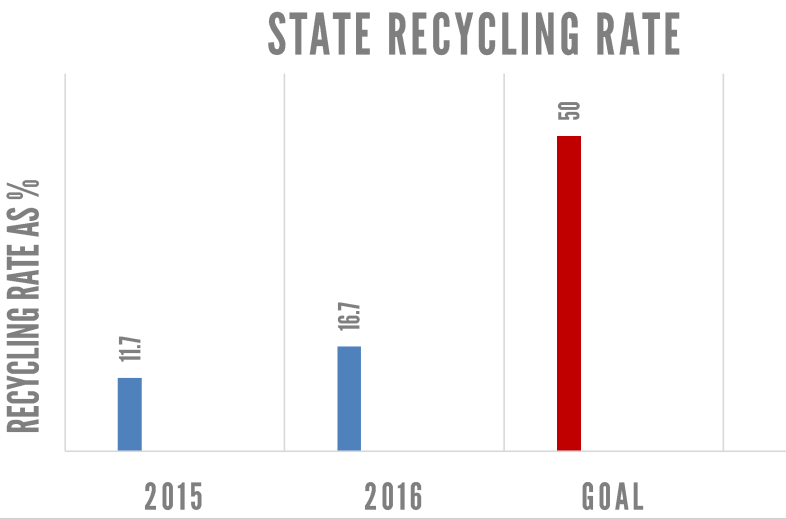
STATE OF RECYCLING

STATE OF RECYCLING

- National Rate - 34.7%
  - US EPA Recycling Facts & Figures Report, 2015
  - stagnant



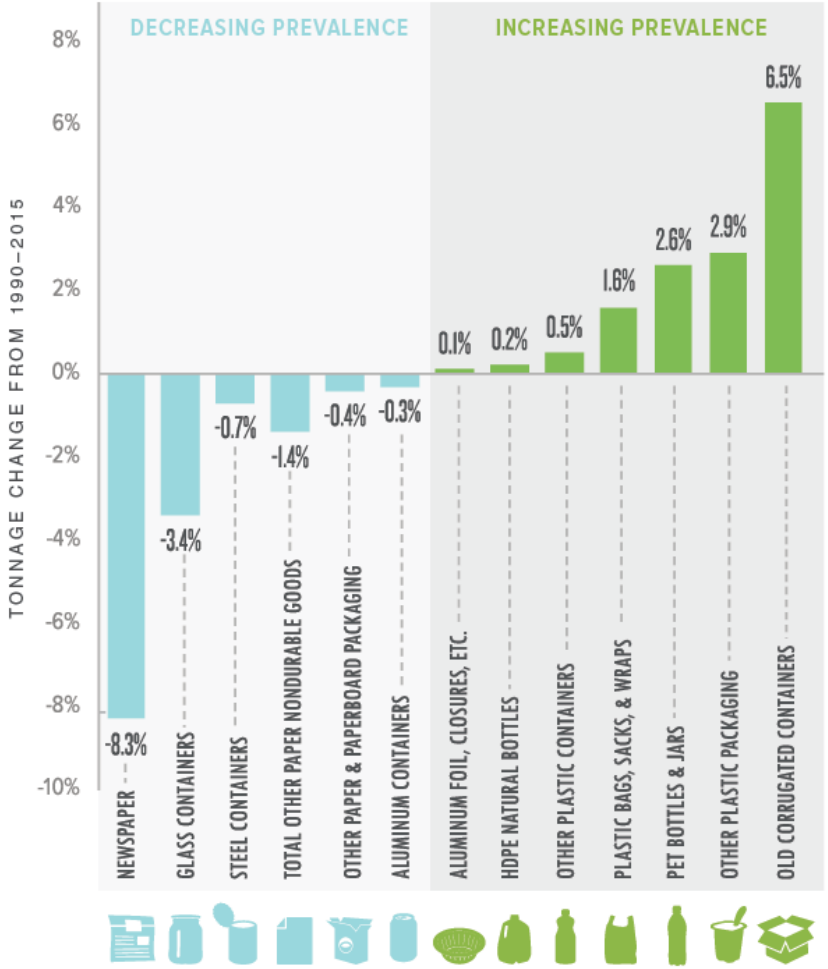
- Indiana's Rate - 16.8%
  - IDEM Recycling Activity Summary Report, 2017
  - leveled off



Indiana RECYCLING COALITION

TRENDS - THE EVOLVING TON

- Loss of paper & ONP
- Amazon Effect (^OCC)
- Increase in plastics
  - Hybrids
    - cartons
  - Film & flexible pckg
  - Light-weighting
- Li-on batteries
- MRF tech isn't as dynamic
  - long payback period for investments



Indiana RECYCLING COALITION

TRENDS - CHINESE IMPORT RESTRICTIONS

- China Ban / National Sword
  - 40% of U.S. exports
  - De facto bans - unrealistic contamination limits
  - De jure bans on mixed paper & plastics

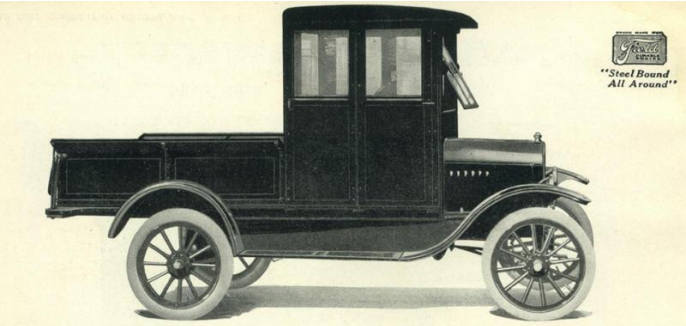
- Results
  - - Many commodity prices tanked
  - - / + Rush to find new markets to absorb
  - -/+ Chinese businesses relocating
  - - East & West Coast MRF's stockpiling
  - + Indiana somewhat insulated
  - + Rates will rise – contracts durable & fee based – not market based
  - + Focus on education and back to fundamentals
  - + Pressure on mfg sector to design readily recyclable materials
  - + disclaimer: industrial / commercial sector outlook is much better

Indiana RECYCLING COALITION

WHAT CAN I DO?

STEPS TO BE GOOD, BETTER, BEST

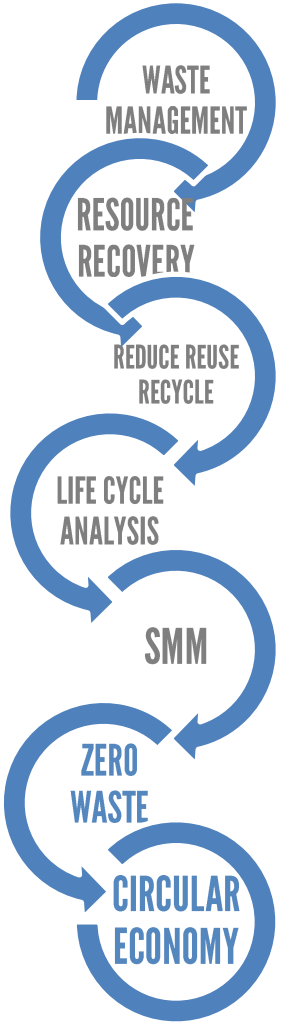
- GOOD: RECYCLE RIGHT
  - Keep it loose, clean, empty & dry - if you wouldn't want to touch it, assume others won't either
  - Keep it simple - when in doubt, throw it out – no wishcycling
- BETTER: IMPROVE YOUR EXISTING PROGRAM
  - Conduct a waste audit – what is your missed diversion potential
    - Educate & retrain staff on a regular basis
    - Right-size your bins
    - Develop a relationship with hauler
    - Open source soln's with other companies
- BEST: EXPAND YOUR PROGRAM
  - Become a certified zero waste facility – true.gbci.org
  - Ask more from your vendors
  - Budget for waste reduction goals
  - Purchase recycled content & compostable materials
  - Design out waste – engage employees in process



Model 1019. Light Express Body with Vestibule Front and 14″ Side Panels
For Ford Model "T"
Length Back of Seat, 66″; Width Inside, 45″; Panels, 14″. Code Word, Foster. Weight, 450 lbs.; Shipping, 550 lbs. Field Green Baked Enamel with Black Baked Enamel Trimmings.

Indiana RECYCLING COALITION

EVOLUTION OF THOUGHT



Indiana RECYCLING COALITION

ZERO WASTE

"Zero Waste is the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning, and with no discharges to land, water, or air that threaten the environment or human health."

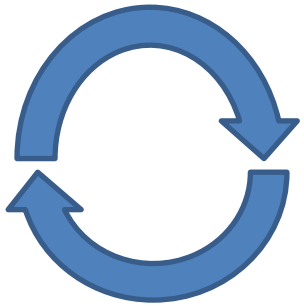
ZWIA, 2018

- HOLISTIC – NOT JUST DIVERSION RATE BASED
- ZW LIFESTYLES, COMMUNITIES, BUSINESSES

Indiana RECYCLING COALITION

CIRCULAR ECONOMY

- LINEAR ECONOMY
  - TAKE-MAKE-WASTE EXTRACTIVE INDUSTRIAL MODEL
  - WHERE DO MATERIALS GO AT THE END OF THE LINE?
- CIRCULAR ECONOMY
  - DESIGNS OUT WASTE
    - TO EXPEND CARELESSLY, EXTRAVAGANTLY, TO NO PURPOSE
    - CLOSES THE LOOP
  - KEEPS PRODUCTS & MATERIALS IN USE
    - CRADLE TO GRAVE => CRADLE TO CRADLE
  - REGENERATES NATURAL SYSTEMS
    - RATHER THAN DEPLETING
    - TECHNICAL NUTRIENTS



QUESTIONS?

SUPPORT THE IRC'S MISSION

- SPONSOR
- DONATE
- BECOME A MEMBER
  - Lg business membership - $350
- EXHIBIT
- ATTEND JUNE CONF
- ENGAGE

The CONFERENCE

Indianapolis, Indiana | June 10-12, 2019

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INDIANA FOOD SCRAP INITIATIVE

Indiana RECYCLING COALITION

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Twitter – @INRecycling
Instagram – indianarecycling

STAY CONNECTED

Indiana RECYCLING COALITION