

# Solid Waste Management in Johnson County

Brandon Hearn  
Environmental Health Specialist



# My background

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- Environmental Health Specialist w/ Johnson County Government
- Education & Outreach, social media, presentations
- Part of the solid waste division

# Solid Waste Division Programs

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- Commercial Assistance Program
- Education & Outreach
- Household Hazardous Waste
- Regulatory
  - Haulers
  - Disposal Facilities
- Solid waste planning
- No hauling or processing done by county



Health &  
Environment



# Commercial Assistance Program

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- Consulting, Assistance, & Recognition
- Free waste consulting
- Up to \$500 in assistance money for waste reduction efforts
- Certified Green Partners



# Household Hazardous Waste



# HHW

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- Free to Johnson County residents
- Also accept from businesses
- Reuse partners in addition to our FREE Store
- Reblended paint sold \$10-25 per 5 gallon bucket
- In 2018
  - 7,980 residential
  - 157 SQG
  - \$37,874 in paint sales
  - Habitat ReStore partnership: 116,910 lbs

# Regulatory

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# Education and Outreach

- Promoting our programs & events
- Other environmental issues: Air quality, water quality
- Disposal options
- Targeted & trackable
- Face to face
- Highlight staff & community successes



# Social Media

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- Facebook: Johnson County Recycles
- Twitter: @JoCoRecycles
- Instagram: @JoCoRecycles



# Johnson County waste

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Johnson County has over 580,000 residents & thousands of businesses

- 30% paper
- 23% food
- 18% plastic



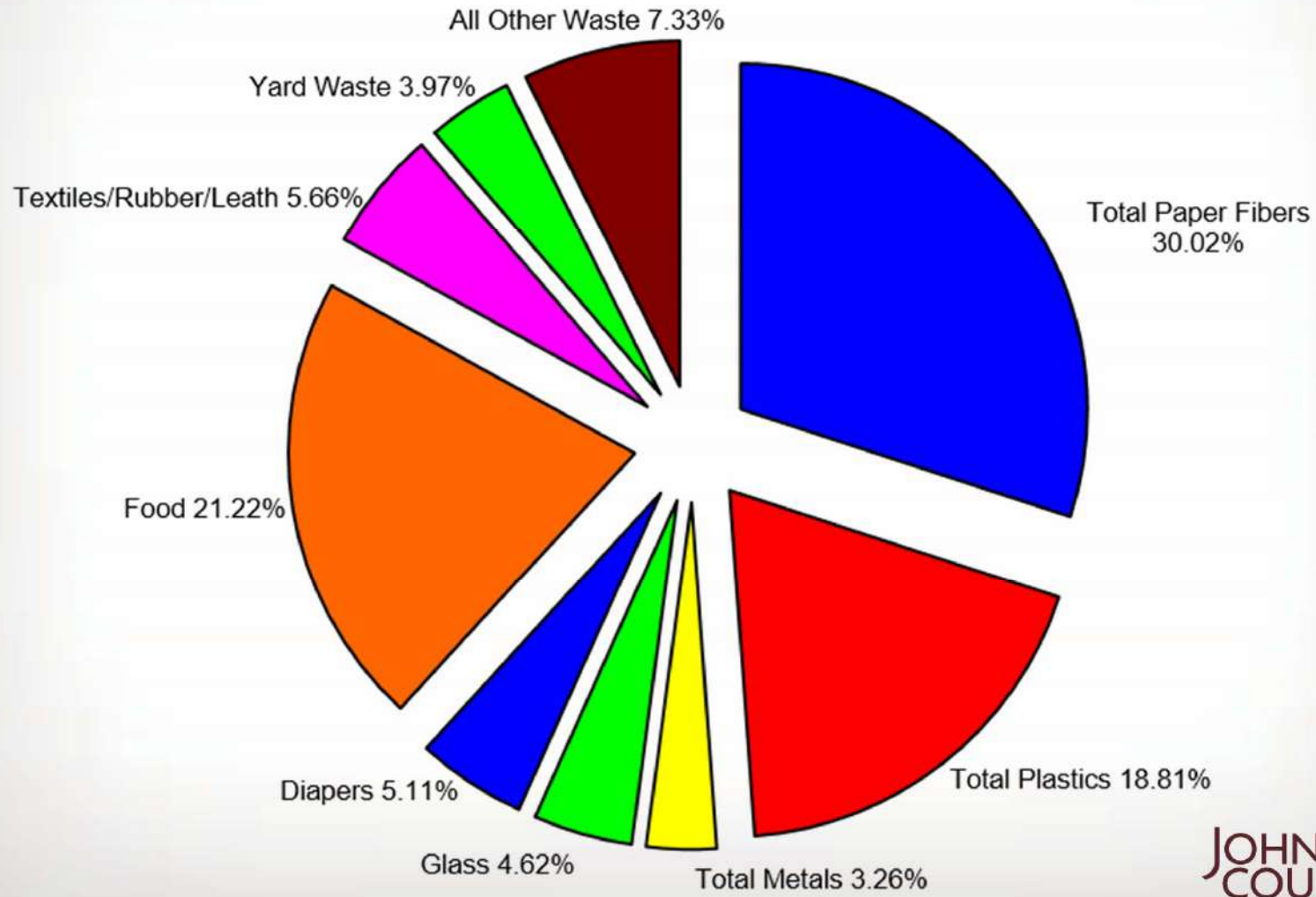
On average we produce 7 lbs of waste per person per day:

$7 \text{ lbs} \times 580,000 \text{ residents} = 4,000,000 \text{ lbs per day}$   
&

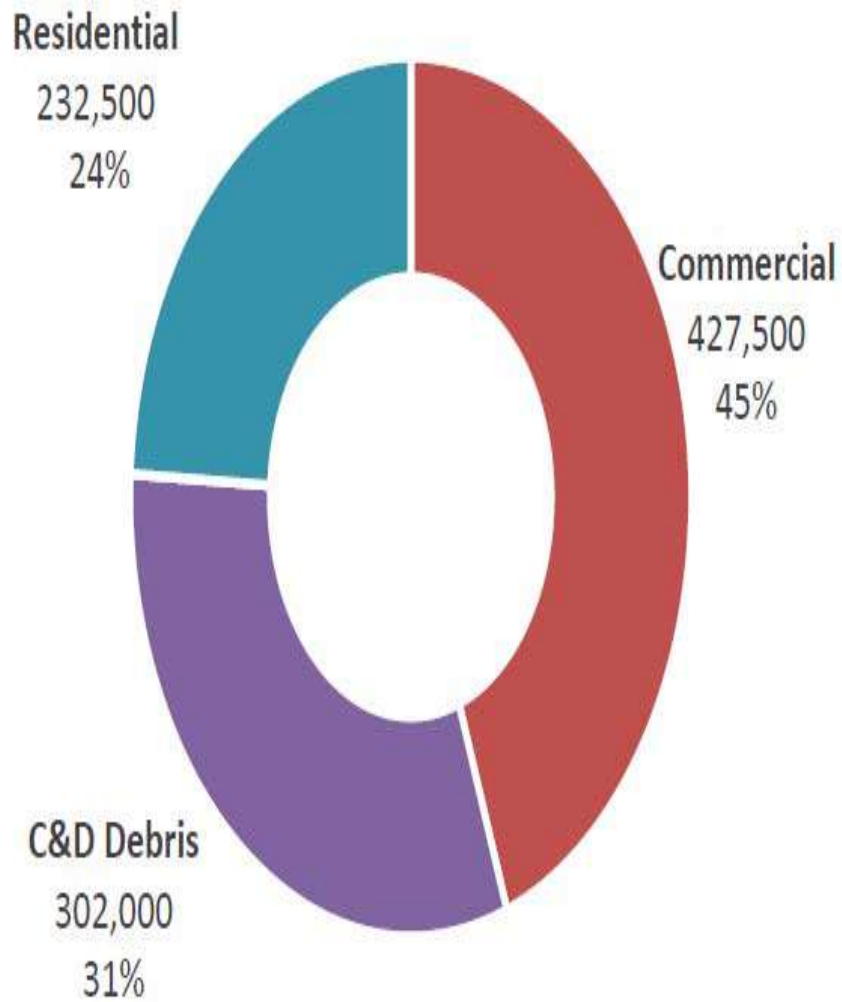
$1.48 \text{ billion lbs per year or around } 740,000 \text{ tons}$



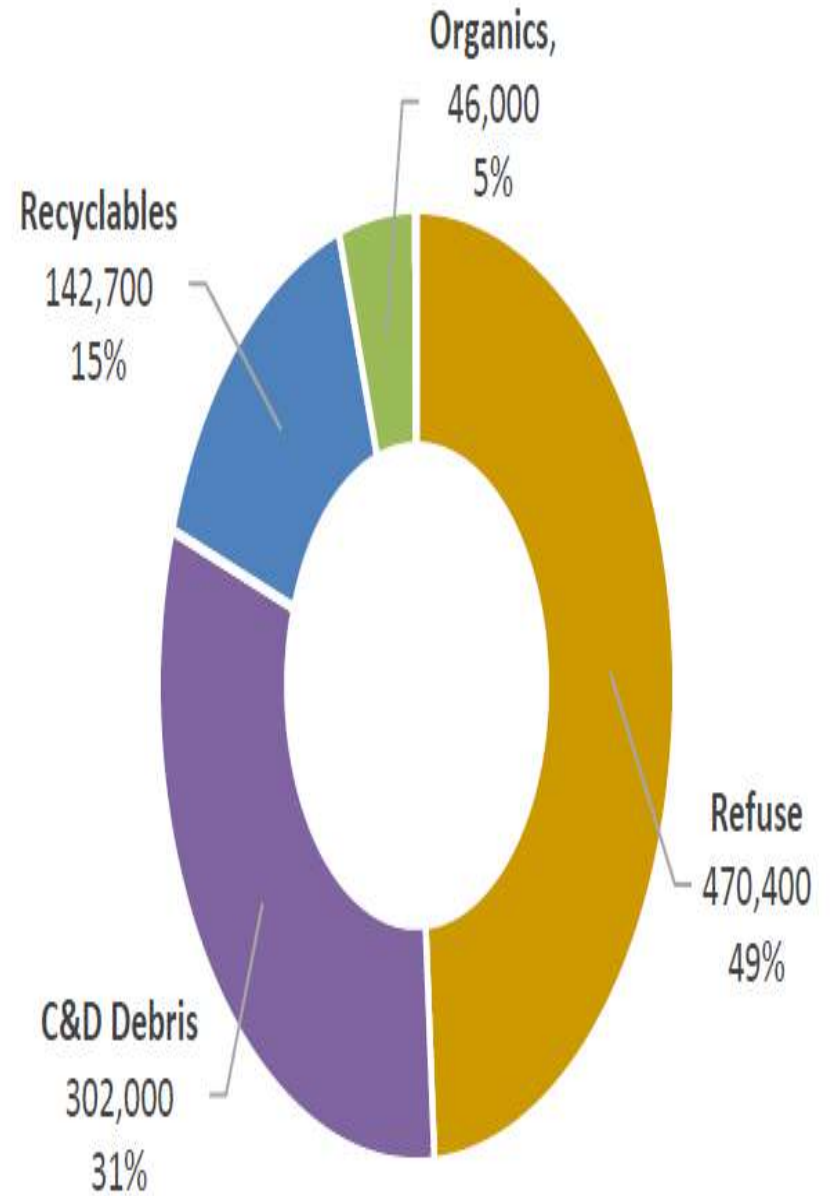
# What are we throwing away?



### 2018 Generation by Sector (Tons)



### 2018 Generation by Material Type (Tons)



# Waste Characterization Study

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- In 2006 and 2015, Johnson County conducted a waste characterization study to quantify the waste stream of Johnson County, both landfill and diversion through recycling and composting
- Allows for long term planning
- Identify waste reduction opportunities

# Waste Sort

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- Looked at 3 locations
  - JoCo Landfill
  - Olathe Transfer Station
  - APAC Construction & Demolition Landfill
- Representative samples
- Sorted into dozens of categories, even diapers



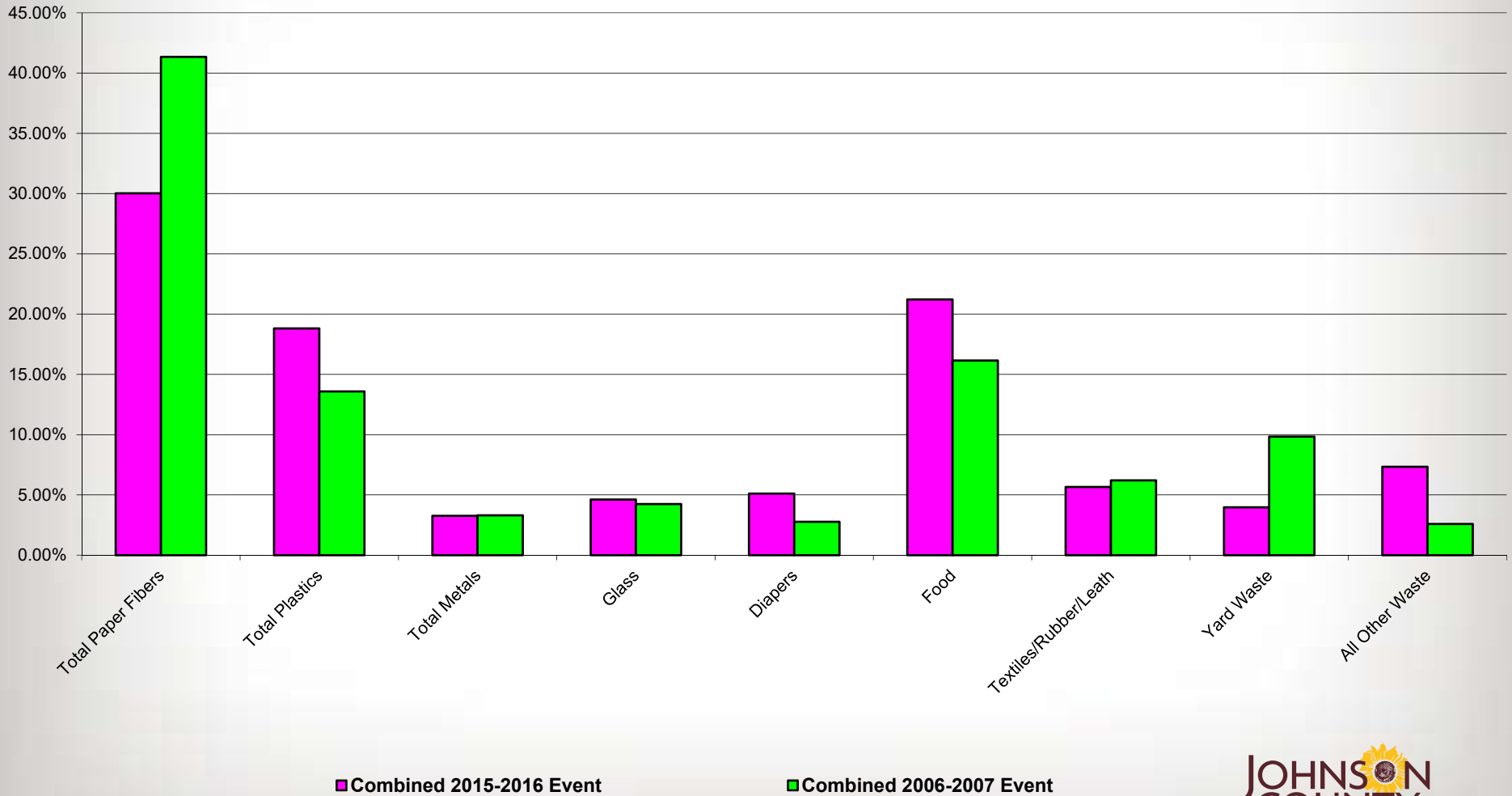


10/06/2015

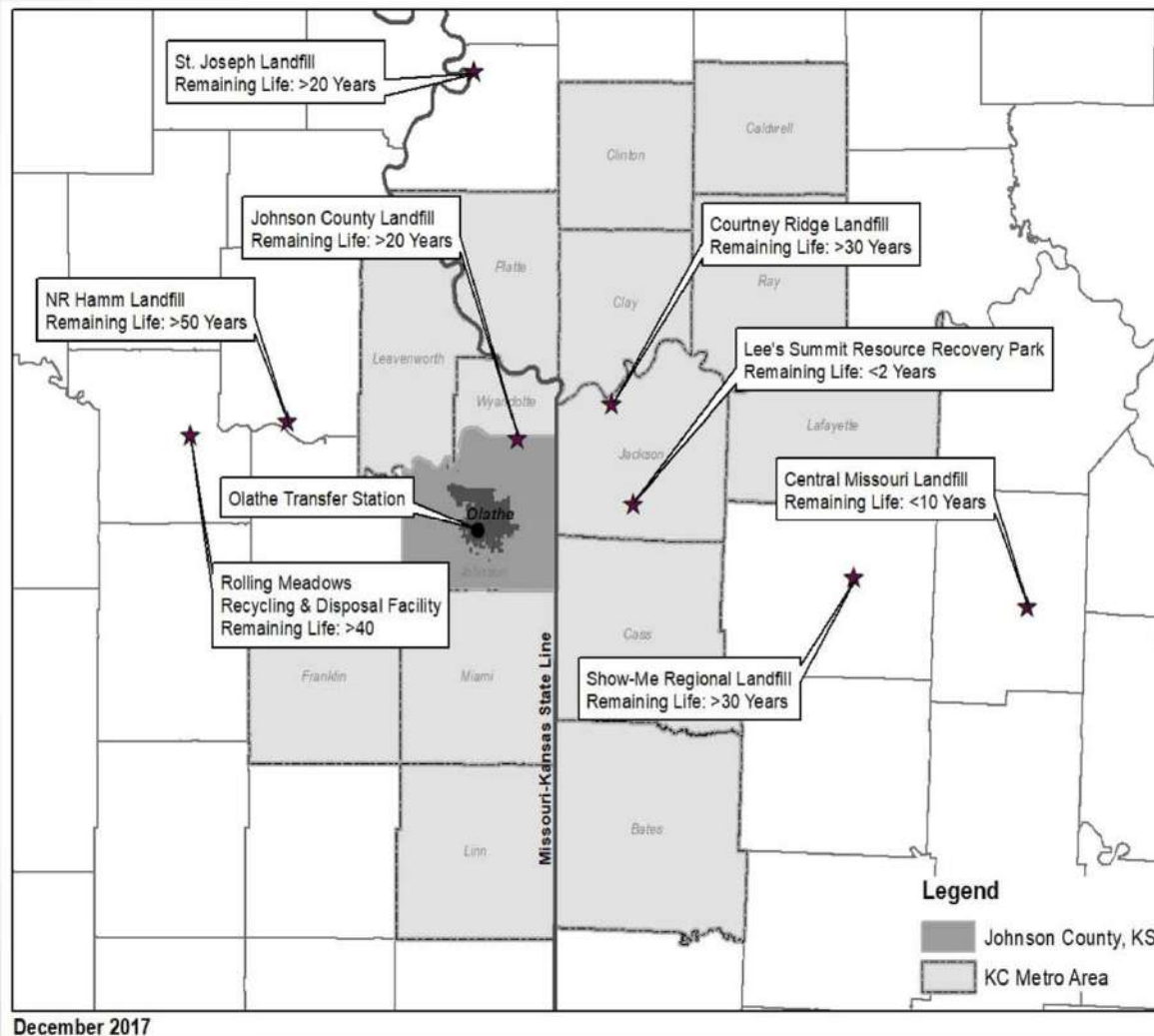


10/12/2015

# How our waste has changed?



# Solid Waste Infrastructure



# Johnson County Landfill

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- Most Johnson County trash goes here
- Receives approx. 5,000 tons a day
- Owned and Operated by Waste Management, previously Deffenbaugh Industries





- Set to close by 2043, depending on how quickly we fill it up
- 70% of waste is commercial, 30% residential
- Receives waste from 11 counties

# Future Waste Disposal in Johnson County

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1. Private sector builds infrastructure
2. County builds infrastructure
3. Transfer waste further away  
(infrastructure still needed)

## Waste Management



Household Hazardous Waste (HHW)  
Collection Facility



Materials Recovery Facility (MRF)



Composting Facility



Municipal Solid Waste (MSW) Landfill



Construction/Demolition (C&D)  
Landfills



Solid Waste Transfer Station

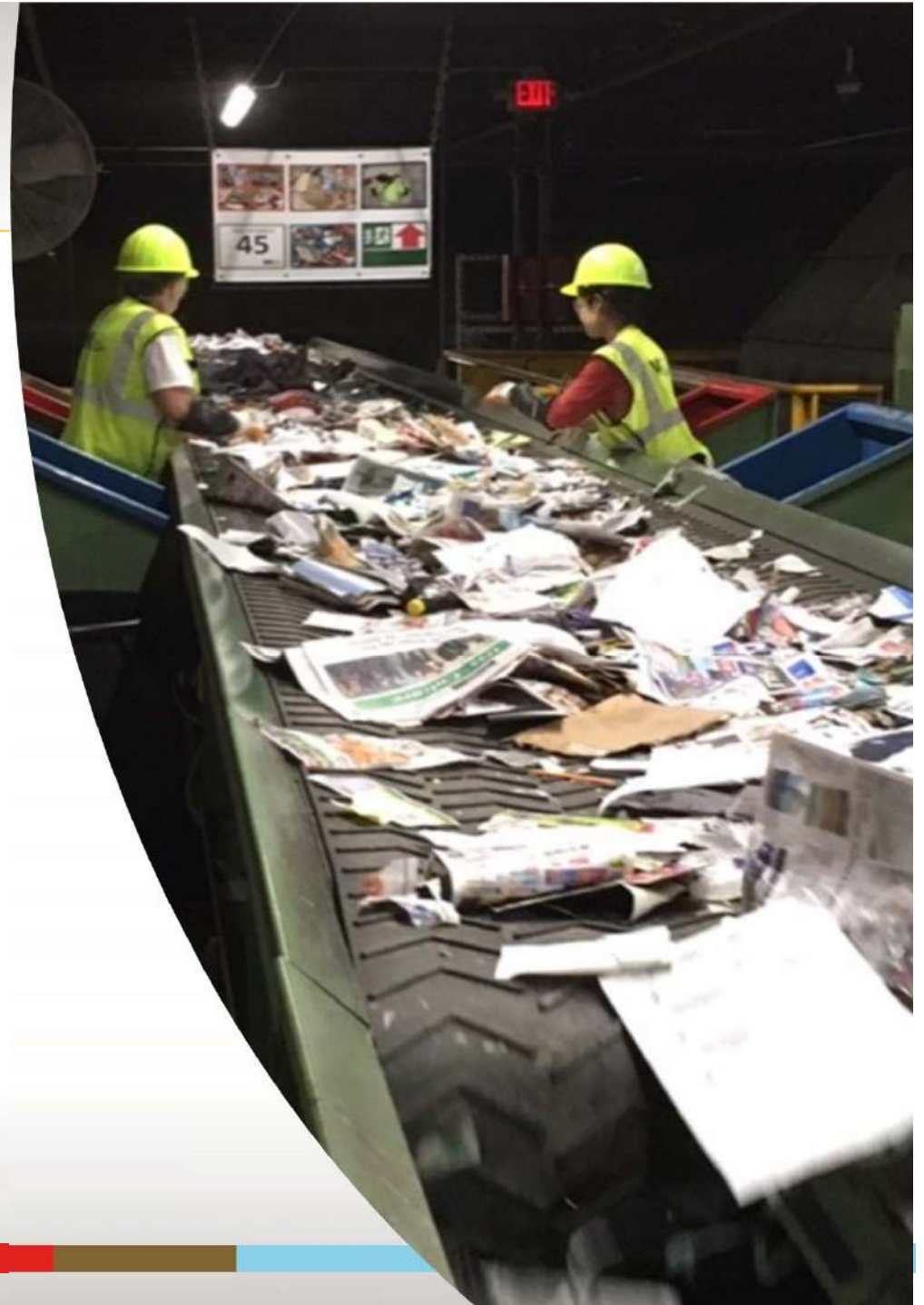
# Waste Management Material Recovery Facility



# Material Recovery Facility

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- Operated by Waste Management
- Receive recyclables from a majority of Johnson County haulers, including the City of Olathe
- WCA operates a separate recovery facility located in Sedalia
- Approx. 95% of recyclable materials stay in the US
- Impact of China restrictions
- Importance of clean material, reduce contamination



# Composting

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- City of Olathe- collects yard waste from residents & companies, makes mulch & compost
- Missouri Organic Recycling- takes food and yard waste
- Compost Collective KC
- Limited infrastructure

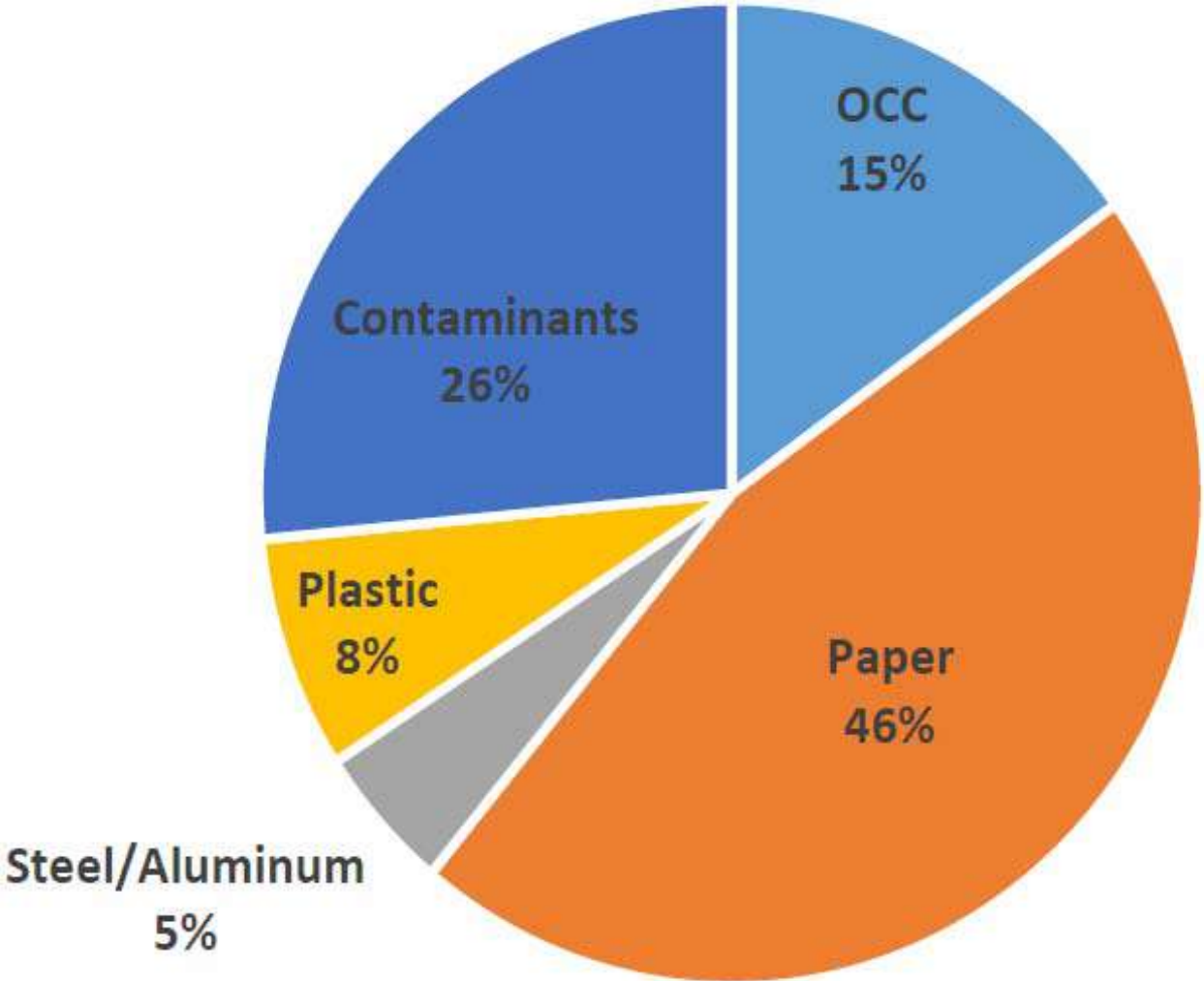
# Materials Recovery Facility Sort

Oct. 30, 2018

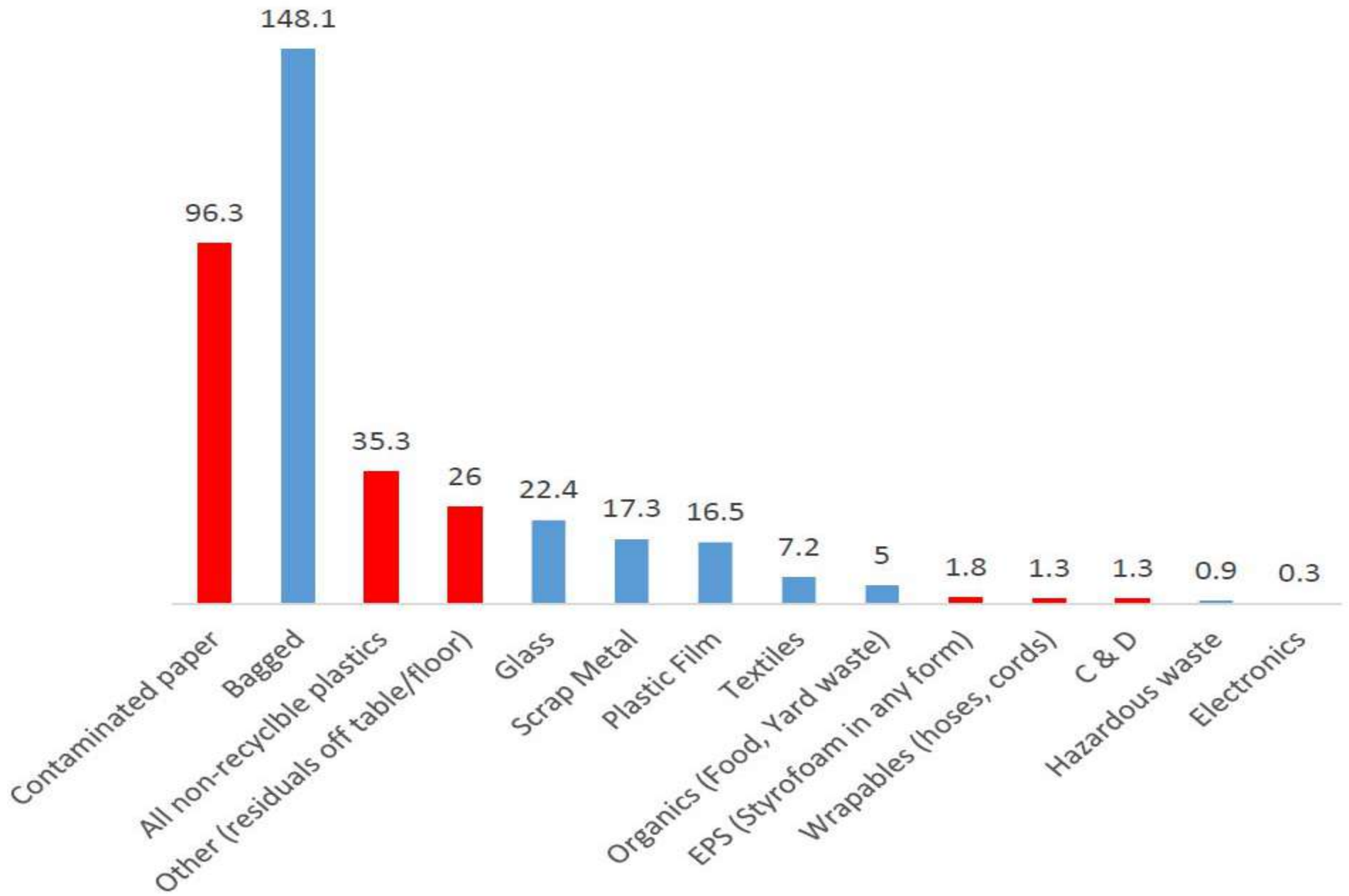


Oct. 30, 2018

# Recycling & Contamination



# Contaminants (in pounds)





# Ditch The Bag campaign

# What's in your bin?

- Door to door
- Wanted to know how big of an issue bagged recycling was
- Contamination
- How many people are participating in recycling
- Trackable
- Guided our education efforts

|  |     |       |
|--|-----|-------|
| Contaminates                                     |     |       |
| Plastic bags and film                            | 109 | 13.6% |
| Styrofoam  | 22  | 2.7%  |
| Unwanted paper                                   | 21  | 2.6%  |
| Straws   | 18  | 2.2%  |
| Wrappers   | 12  | 1.5%  |
| Bulky rigids                                     | 10  | 1.2%  |
| Yard waste                                       | 8   | 1.0%  |
| Odd objects (sprinkler, curtain rod, volleyball) | 6   | 0.7%  |
| Metal  | 4   | 0.5%  |
| C&D  | 2   | 0.2%  |
| E-waste  | 2   | 0.2%  |
| Glass  | 2   | 0.2%  |
| Trash  | 2   | 0.2%  |

| City                 | Participation Rate | Bagging rate | Other notable contaminants | Plastic rate | % of loads that contained bags or were bagged |
|----------------------|--------------------|--------------|----------------------------|--------------|---|
| Gardner              | 67.5%              | 9.3%         | Plastic bags and film- 6   | 11.1%        | 20.4%   |
| Lenexa               | 89.3%              | 6.0%         | Plastic bags and film- 3   | 4.5%         | 10.4%   |
| Merriam              | 81.3%              | 9.8%         | Plastic bags and film- 9   | 14.8%        | 24.6%   |
| Mission              | 85.3%              | 17.2%        | Plastic bags and film- 8   | 12.5%        | 29.7%   |
| Mission Hills        | 94.7%              | 11.3%        | Plastic bags and film- 10  | 14.1%        | 25.4%   |
| Olathe               | 85.3%              | 7.8%         | Plastic bags and film- 8   | 12.5%        | 20.3%   |
| Overland Park- North | 88.0%              | 6.1%         | Plastic bags and film- 9   | 13.6%        | 19.7%   |
| Overland Park- South | 89.3%              | 11.9%        | Plastic bags and film- 10  | 14.9%        | 26.9%   |
| Prairie Village      | 93.3%              | 10.0%        | Plastic bags and film- 16  | 22.9%        | 32.9%   |
| Roeland Park         | 81.3%              | 8.2%         | Plastic bags and film- 5   | 8.2%         | 16.4%   |
| Shawnee              | 93.3%              | 10.0%        | Plastic bags and film- 20  | 28.6%        | 38.6%   |
| Spring Hill          | 52.0%              | 15.4%        | Plastic bags and film- 4   | 12.1%        | 27.5%   |
| Westwood Hills       | 78.3%              | 21.3%        | Plastic bags and film- 3   | 6.4%         | 27.7%   |
| Total                | 83.0%              | 11.1%        |                            | 13.5%        | 24.6%   |

- Campaign results: Saw a reduction in both bagged recycling and plastic bags and product wrap
  - 49% reduction in bagged recycling
  - 57% reduction in plastic bags and product wrap

# Solid Waste Management Plan

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- Completed every 5 years
- Required by Kansas State Statute (KDHE)
- JoCo Staff SW Committee:
  - Prepare and implement Plan
  - Ensure adequate disposal options for all county waste
  - Sustainable resource management
- Looks at the next 25 years
- 2019 plan waiting approval from KDHE



# Johnson County Solid Waste Management Committee

- Preparation and Oversight of JoCo Solid Waste Management 5-Year Plans
  - 65-3405. Solid waste management plan required; solid waste management committee; process for adoption and revision of plan; contents of plan.  
(a) Each county of this state, or a designated city, shall submit to the secretary a workable plan for the management of solid waste in such county.

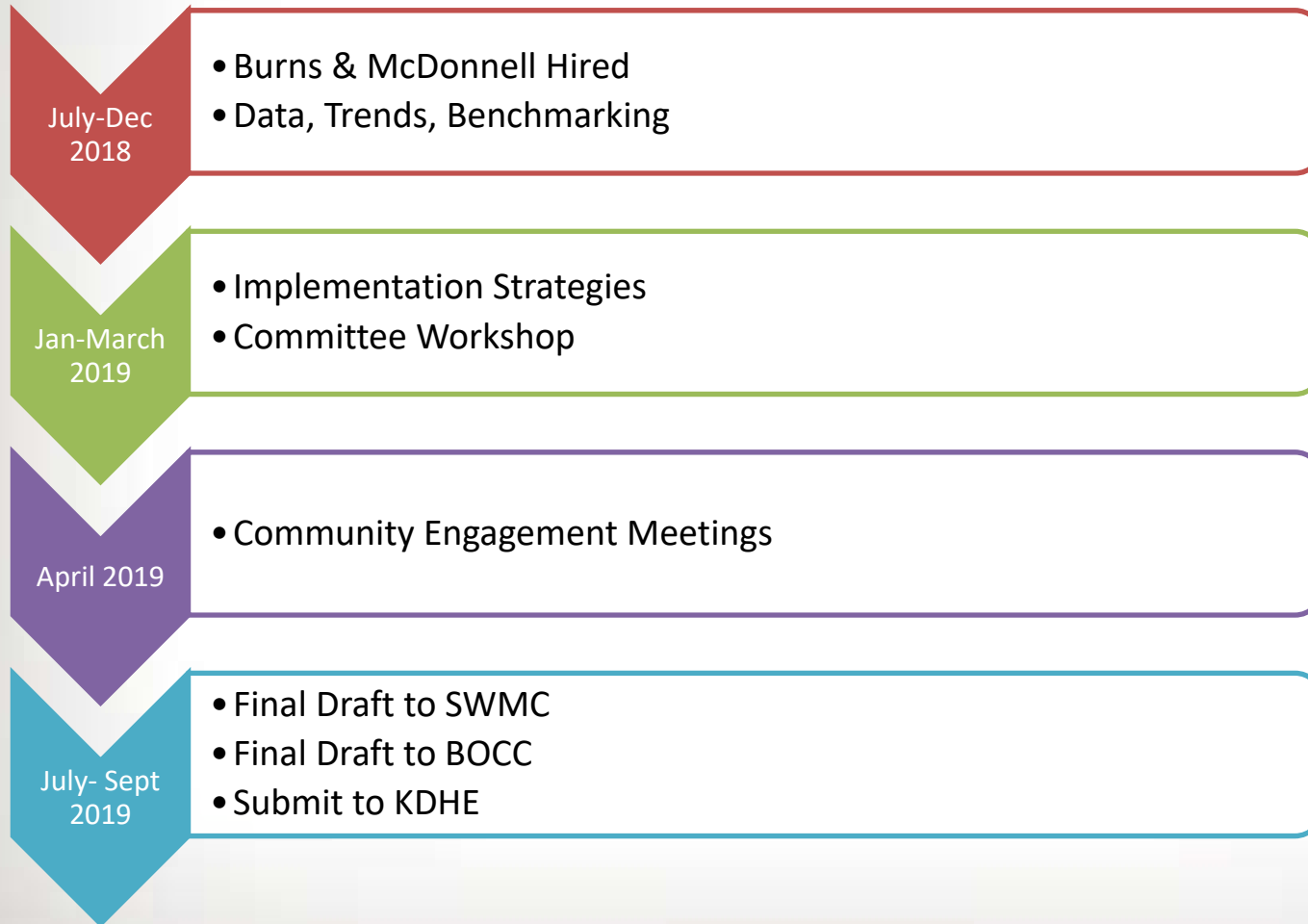
Attached Documents: Full state statute, 2013 SWMC Plan



# Johnson County 2019 Solid Waste Plan



# Project Schedule



# Historical Plan Success

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- Increased access to recycling- single family homes
- Yard waste restrictions- reduced yard waste to landfill from 13% to 3%
- Increased education efforts
- Commercial Assistance Program
- Recycling/Composting Diversion Rate:
  - 2007 - 21%
  - 2012 - 29%
  - 2018 - 38%

# Preview of Strategies for 2019 Plan

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- Residential
  - Continue education and outreach efforts to reduce contamination
- Multi-family
  - Sample ordinances for Cities to require more recycling at Multi-family
  - Possible requirement to provide recycling as a basic service, similar to single family homes
- Food Waste/Organics
  - Consider a public/private partnership for Johnson County composting facility

# Preview of Strategies for 2019 Plan

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- Commercial
  - Expand Green Business Program
  - Consider regulating commercial haulers to require more recycling
- Construction & Demolition
  - Consider regulations to divert specific materials (i.e. cardboard)

# Preview of Strategies for 2019 Plan

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- Household Hazardous Waste
  - Consider a new collection facility
  - Expand collection to include more materials
- County Operations
  - Lead by example
  - Expand County sustainability efforts
  - Work with city governments to increase sustainability efforts

# Contact info

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