

# Waste and Recycling Characterization Results

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Resource Conservation  
Council

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# Waste Characterization Study Methodologies

	2018	2019
Participating Cities	10	8
Trash Samples	50	49
Recycling Samples	None; used MRF audit data	44
Material Categories	31	34

- ▶ Study methodology changes between 2018 and 2019
  - Two cities unable to participate in 2019
  - Included hand-sorting of recycling in 2019
  - Added e-commerce OCC, pizza boxes, and polypropylene (#5 plastic) categories to provide additional perspective

# Participating Cities Involvement

Cities
Dallas
Fort Worth
Arlington
Garland
Grand Prairie
Irving*
Frisco
Mesquite
Allen*
Weatherford

- ▶ Collected samples and tracked pickups
- ▶ Transported and delivered samples
- ▶ Represented a range of solid waste collection programs varying by
  - Size of program
  - Set out type (e.g. cart, bags)
  - Collection frequency (e.g. weekly, every other week)

\*unavailable to participate in 2019 sorting event

# Waste Delivery



# Hand-Sorting Material



# Fines Screens



# Weight Data Collection



# Sorting Bins From Participating Cities





# Waste and Recycling Characterization Data Analysis

- ▶ Regional analysis replicated 2018 study plus hand-sorted recycling to provide
  - Waste and recycling composition
  - Contamination rate
  - Capture rate
  - Value of material disposed
- ▶ Hand-sorting recycling allowed additional analysis on participating cities including
  - Individual waste and recycling composition
  - Participating cities' capture rate

# Data Analysis Limitations

## Year over Year Comparison

- 2018 recycling data based on MRF audits
- 2019 recycling data based on hand-sort
- Cannot directly compare region-wide and participating cities capture rates

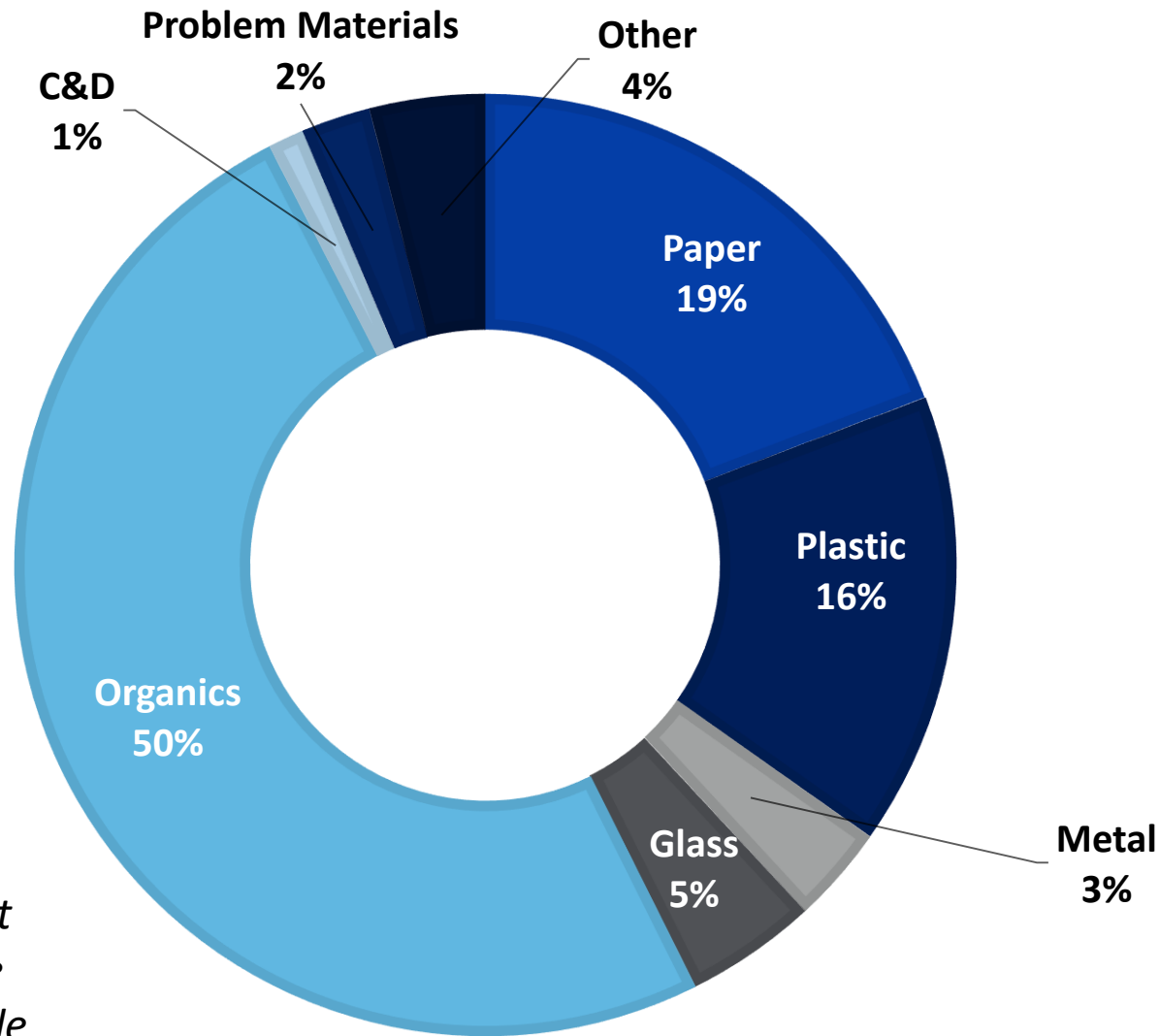
## Extrapolating Data

- Individual city composition / capture rate cannot be extrapolated due to small sample size
- Hand-sorted recycling contamination higher than MRF audits

## Effectiveness of Regional Campaign

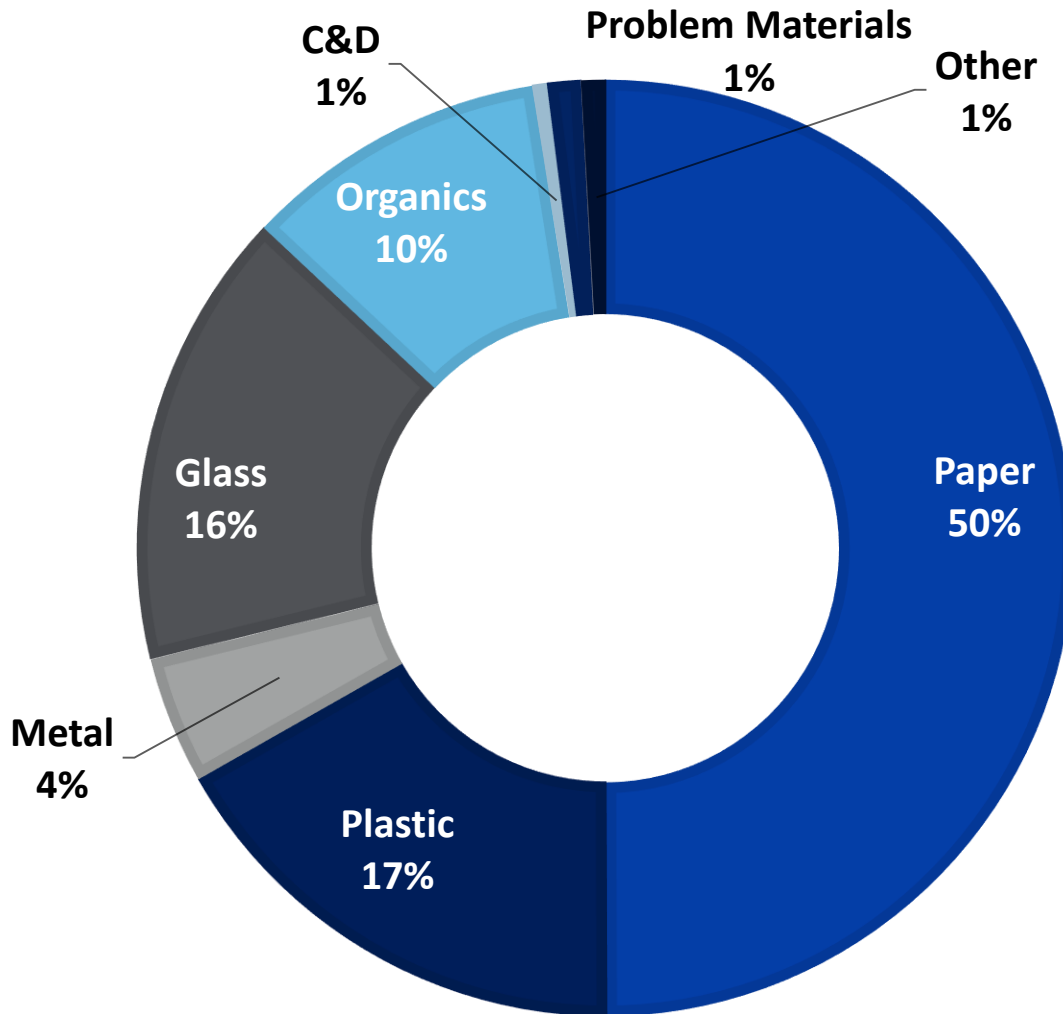
- Behavior change requires sustained campaign
- Individual cities adopting campaign critical
- Behavior change occurs at the source of recycling

# 2019 Regional Garbage Composition



*Note: see handout for detailed waste composition profile*

# 2019 Regional Recycling Composition



Regional contamination rate ***estimated at 24%***. Included material categories

- Non-recyclable OCC
- Other non-recyclable paper
- Non-recyclable plastic\*
- Non-recyclable glass
- Organics\*
- C&D
- Problem material
- Fines and other organics

\*higher percentage than typical MRF audit due to material category differences and handling

*Note: see handout for detailed waste composition profile*

# Overall Capture Rates

Capture Rate Methodology	Recycling	Garbage	Capture Rate
Participating Cities	3,526 lbs.	1,604 lbs.	69%
Regional	411,223 tons	967,176 tons	30%

- ▶ Weight of recyclables in recycling and garbage streams used to calculate overall capture rate
  - Participating cities capture rate sums material segregated during sorting event
  - Regional capture rate extrapolates garbage and recycling composition profiles across all material disposed/processed in North Central Texas
- ▶ Following slides present capture rate by material category for each methodology

# 2019 Participating Cities Capture Rate

Recyclable Material	2019 Participating Cities Capture Rate
Recyclable OCC	86%
Mixed Paper	65%
PET Containers	56%
HDPE Containers - Natural	65%
HDPE Containers - Colored	61%
#3-#7 Containers	35%
Aluminum Used Beverage Containers	63%
Ferrous Metal Food Containers	44%
Recyclable Glass	68%

Note: figures calculated by compiling total *weight of material segregated at the sorting event* – ***does not represent region-wide capture rate***

# Regional Capture Rate Comparison

Recyclable Material	2018 Regional Capture Rate	2019 Regional Capture Rate	Year-over-Year Change
Recyclable OCC	60%	59%	-1%
Mixed Paper	41%	34%	-7%
PET Containers	22%	25%	3%
HDPE Containers - Natural	28%	28%	0%
HDPE Containers - Colored	30%	26%	-4%
#3-#7 Containers	14%	11%	-3%
Aluminum Used Beverage Containers	19%	26%	7%
Ferrous Metal Food Containers	18%	14%	-4%
Recyclable Glass	25%	34%	10%

Note: figures calculated by *extrapolating composition for garbage and recycling over total disposed and processed in region. Different analysis than sample-based capture rate*

# Conclusions



## ▶ Regional composition indicates

- High levels of e-commerce packaging and clean pizza boxes in refuse stream
- #5 polypropylene (clamshell containers) significant portion of #3-#7 plastic
- High volume of organics present in refuse (50%) and recycling (10.5%)



## ▶ Regional capture rate comparison shows

- Improved capture of PET and aluminum between 2019 and 2019
- Increase focus on capture of HDPE and steel cans
- Hand-sorting recyclables provides more granular capture rate analysis



## ▶ Continued regional campaign and integration of content into individual city outreach will provide

- Improved capture rates of key materials over time
- Decreased contamination rates entering MRFs



# Questions?

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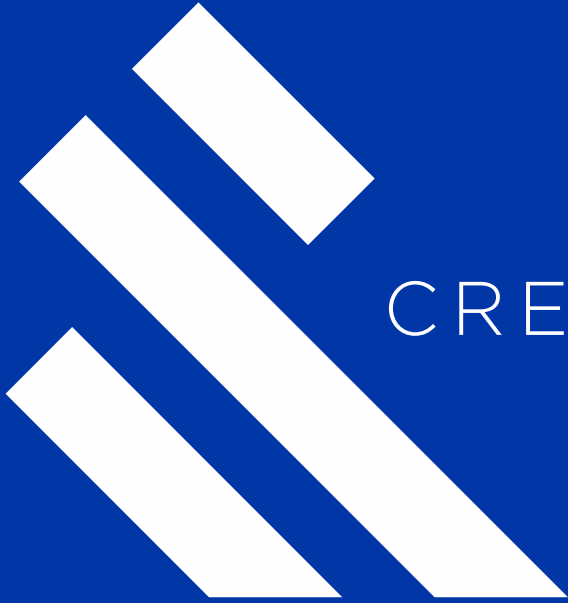
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