2015 Connecticut Statewide Waste Characterization Study Draft Results

CONNECTICUT SOLID WASTE ADVISORY COMMITTEE MEETING

OCTOBER 27, 2015





Note: Preliminary findings pending acceptance of final study report by CT-DEEP

Objectives

- Identify divertible materials remaining in the disposed waste stream
- Differentiate between Residential and Industrial/Commercial/Institutional (ICI) waste
- Enable comparisons with 2010 Study results
- Focus on selected commercial generators
- Differentiate between urban/suburban/rural waste
- Characterize residentially generated single stream recyclables
- Focus on selected material categories

Project Team

MSW CONSULTANTS

- Prime contractor
- Project management
- Sampling plan development
- Field data collection and logistics
- Report & presentation

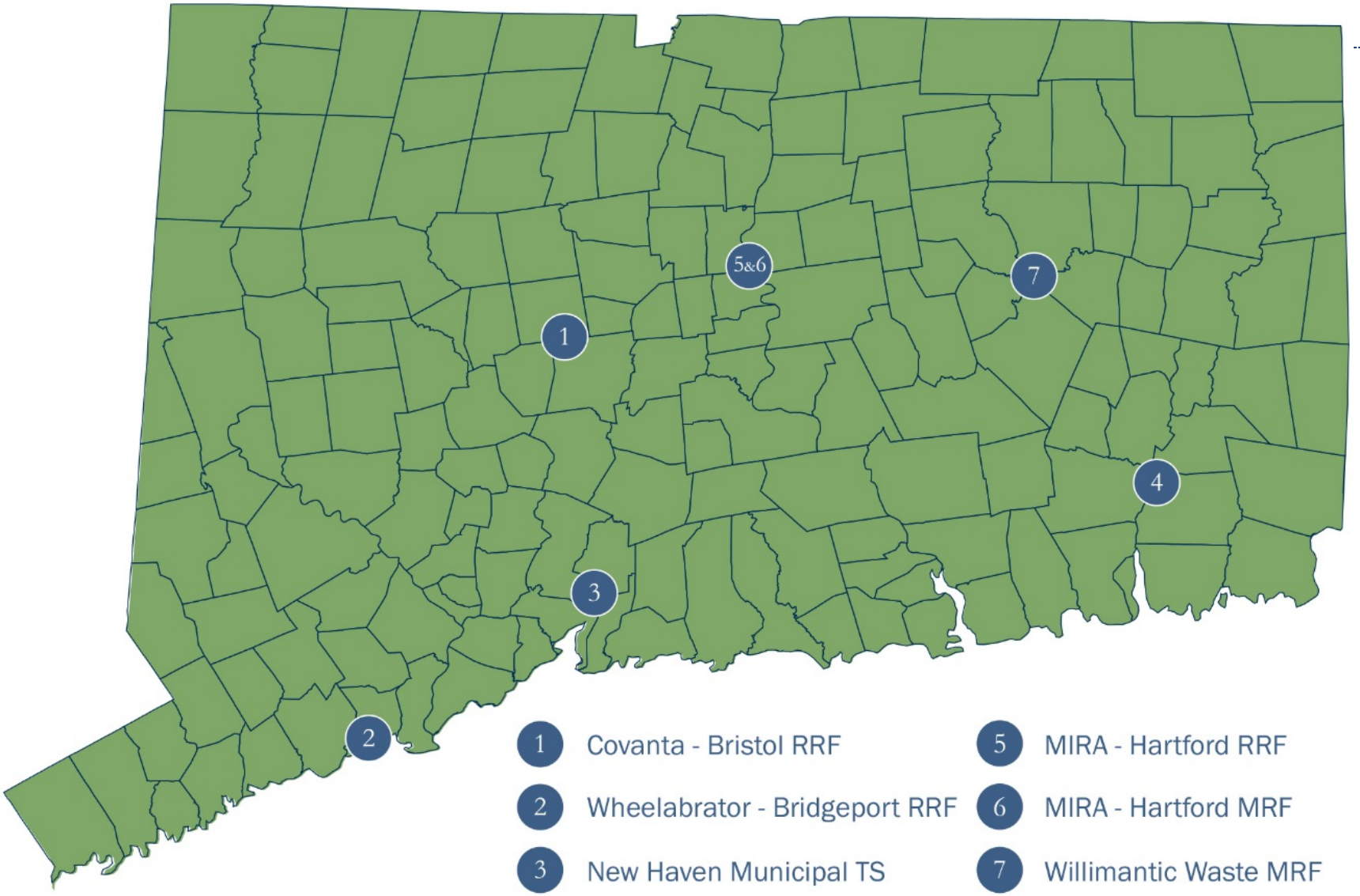
DSM ENVIRONMENTAL SERVICES, INC.
Resource Economists
Environmental Scientists

- Local liaison
- QA/QC
- Facility gate surveys
- Hauler recruiting

CASCADIA CONSULTING GROUP

- Data analysis

Acknowledgements



Background

- 2006: State SWMP completed
- 2008: Economy falters
- Recycling program ramp up under way
- 2009: First state-wide waste characterization
  - Disposed waste only
  - Study protocol developed from scratch
- 2015
  - Current waste characterization data needed to inform SWMP update
  - State has expanded access to recycling and diversion programs
    - Curbside single stream
    - EPR programs
  - Time to repeat 2010 protocol
    - Expanded focus on additional material streams

Similarities to 2009 Study

- In-state wastes only
- Waste sectors
  - Residential
  - Non-residential (ICI)
- Sample weight targets
- Material category definitions

- Host facilities
- Gate surveys for weighting factors
- Statistical methods
  - Sampling
  - Analysis

Differences from 2009 Study

- 2010 Sort Schedule
  - Winter (Feb/Mar)
  - Fall (Oct)
- 2015 Sort Schedule
  - Spring (May/Jun)
  - Summer (Aug/Sep)

- Demographic origin of samples was captured in the 2015 Study
  - Urban
  - Suburban
  - Rural

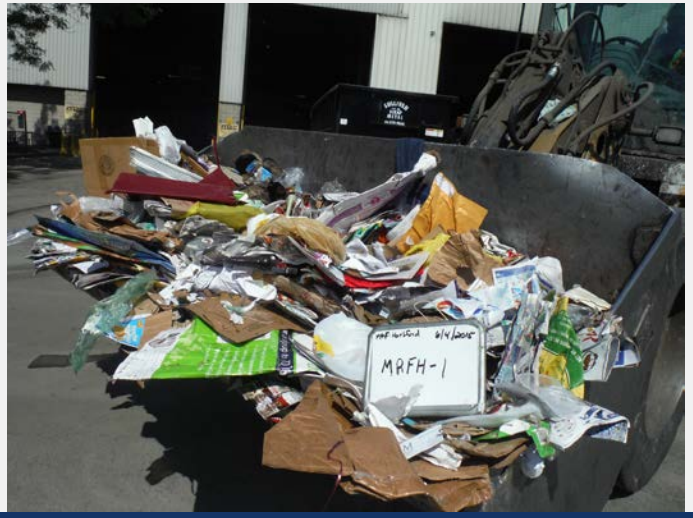
Enhancements in 2015 Study

Targeted Commercial Generator Samples

- Grocery
- Restaurant
- Hotel
- Retail – Big Box
- Retail – Small
- Offices

Residential Single Stream Recyclables

Taking Samples



Manual Sorting & Weighing

Sampling Targets – Disposed Waste

Host Facility	Targeted Samples	Actual Samples
Bristol Resource Recovery Facility (RRF)	48	48
Wheelabrator Bridgeport RRF	48	48
New Haven Municipal Transfer Station	48	48
Covanta Preston RRF	48	52
MIRA Hartford RRF	48	51
Subtotal – Disposed Wastes	**240**	**247**

Note: Preliminary findings pending acceptance of final study report by CT-DEEP

Sampling Targets – Commercial Generator

Host Facility	Targeted Samples	Actual Samples
Grocery	8	9
Restaurant	8	8
Hotel	8	2
Retail – Big Box	8	3
Retail – Small	8	13
Office	8	8
Subtotal – Generator Samples	**48**	**43**

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Sampling Targets – Single Stream

Host Facility	Targeted Samples	Actual Samples
MIRA Hartford MRF	40	37
Willimantic MRF	40	43
Subtotal – Recyclables	**80**	**80**

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MSW Generation

	2009	2015	% Change
Population (million)	3.52	3.60	+2.3%
Tons Disposed (million)	2.38	2.33	-2.1%
Residential/ICI Split	56%/44%	57%/43%	1%

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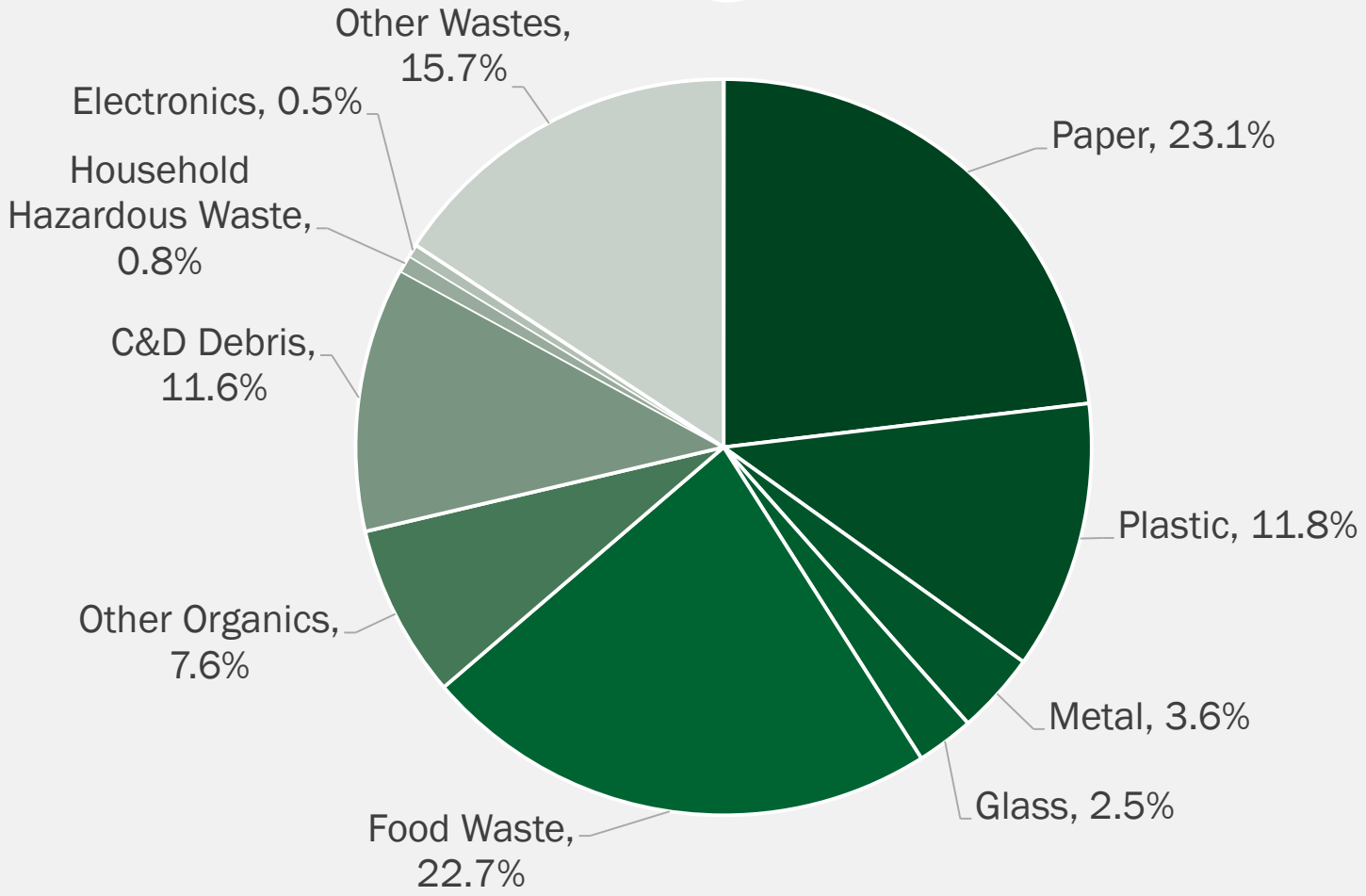
Interpreting Results

- **370 samples obtained**
- **Sample mean**: most likely estimate
- **Confidence Intervals**: reflect the upper and lower range within which the population mean can be expected to fall (to a 90% confidence level)

Material Categories	Mean	90% Conf. Interval	
		Lower	Upper
OCC/Kraft	3.8%	3.1%	4.5%
Other Paper	0.7%	0.6%	0.9%
Paper Subtotal	**4.5%**	**3.7%**	**5.3%**
PVC Pipe	0.1%	0.1%	0.2%
Plastic Film	0.3%	0.2%	0.4%
Vinyl Siding	0.1%	0.0%	0.1%
Other Plastic	0.6%	0.5%	0.7%
Plastic Subtotal	**1.1%**	**0.9%**	**1.3%**

Statewide Waste Characterization



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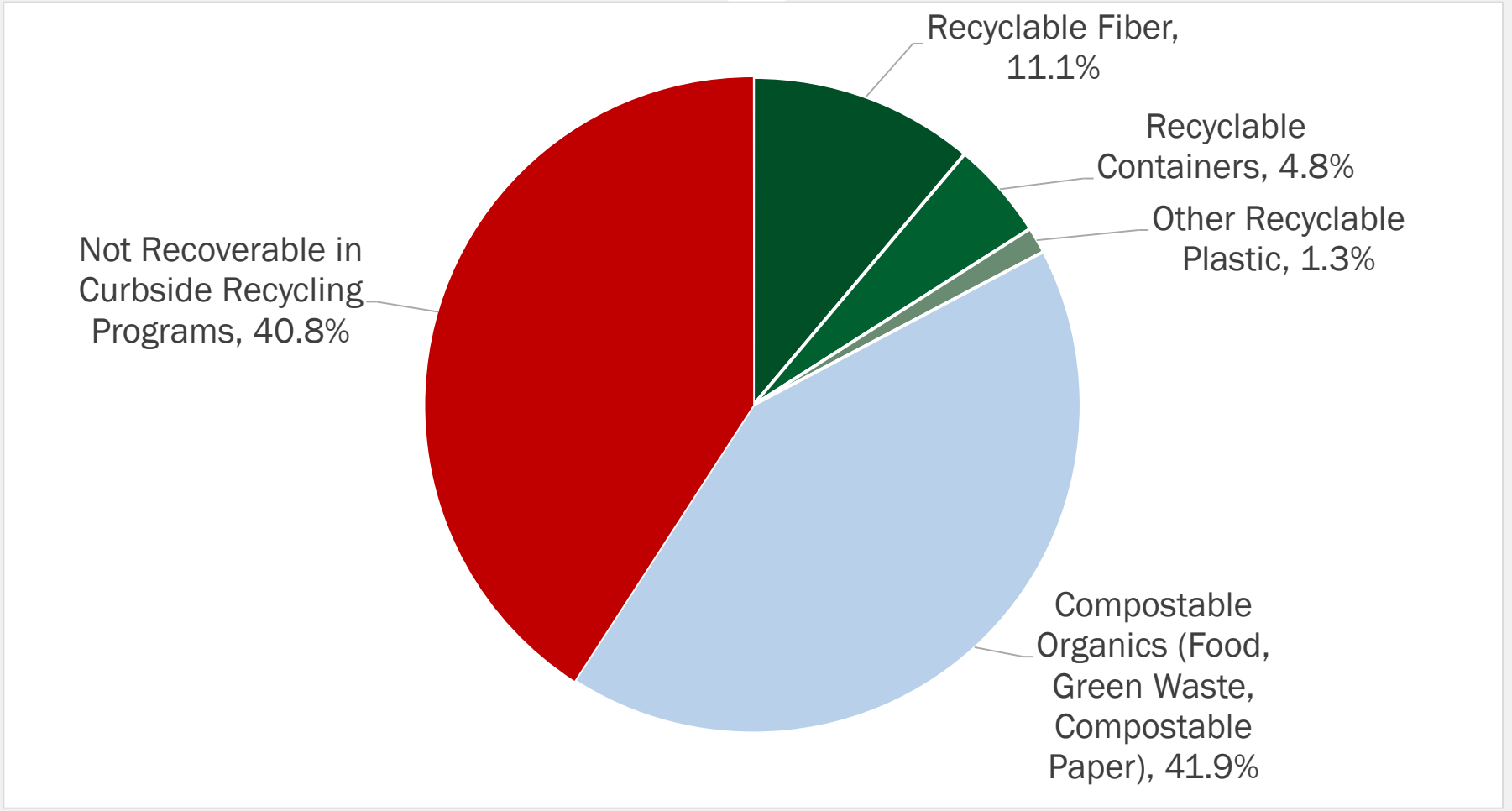
Recoverability of Disposed Waste



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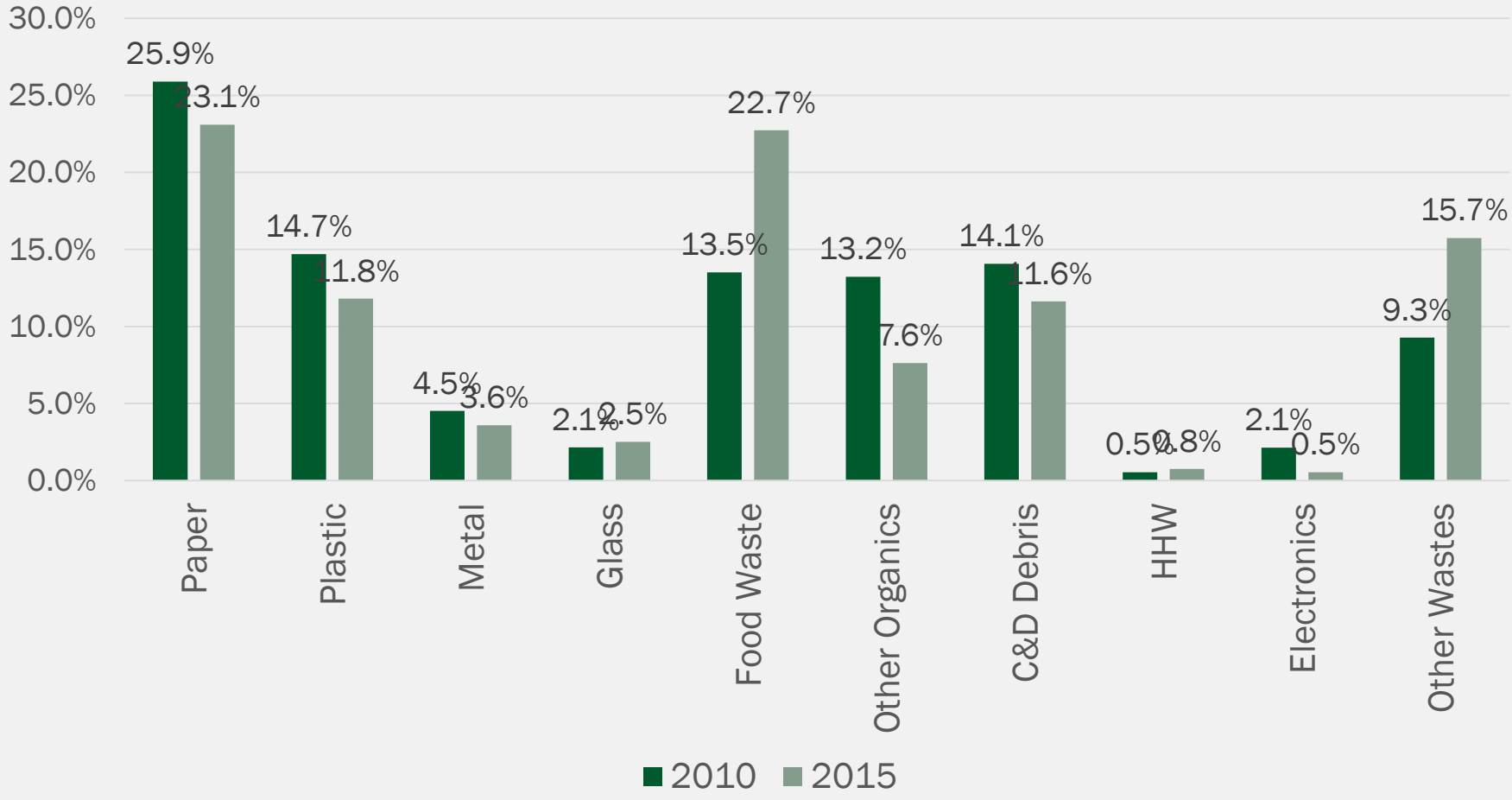
2015 v 2009 Composition



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Most Prevalent Materials (2015)

	Statewide MSW	Residential	ICI
1	Food Waste, Loose – 20%	Food Waste, Loose – 18%	Food Waste, Loose – 22%
2	Compostable Paper – 11%	Compostable Paper – 10%	Compostable Paper – 12%
3	Textiles – 6%	Textiles – 8%	Corrugated Cardboard/Kraft Paper – 8%
4	Wood – Treated - 5%	Wood – Treated – 6%	Wood – Treated – 4%
5	Corrugated Cardboard/Kraft Paper - 5%	Leaves and Grass – 6%	Other Film – 4%
6	Leaves and Grass – 4%	Diapers & Sanitary Products - 4%	Food Waste, Emptied from Packaging – 4%
7	Other Film – 4%	Other Recyclable Paper – 4%	Textiles – 3%
8	Diapers & Sanitary Products – 4%	Bottom Fines and Dirt – 3%	Diapers & Sanitary Products – 3%
9	Food Waste, Emptied from Packaging – 3%	Other Film – 3%	Wood – Untreated - 2%
10	Bottom Fines and Dirt – 3%	Prunings and Trimmings – 3%	Bottom Fines and Dirt – 2%
	Cumulative – 64%	**Cumulative - 65%**	**Cumulative - 65%**

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Top 10 Statewide MSW Materials – 2010 vs 2015

	2010 Statewide MSW	2015 Statewide MSW
1	Food Waste – 14%	Food Waste, Loose – 23%
2	Compostable Paper – 9%	Compostable Paper – 11%
3	Textiles – 4%	Textiles – 6%
4	Wood – Treated - 5%	Wood – Treated - 5%
5	Corrugated Cardboard/Kraft Paper - 6%	Corrugated Cardboard/Kraft Paper - 5%
6	Leaves and Grass – 7%	Leaves and Grass – 4%
7	Other Film – 4%	Other Film – 4%
8	Durable Plastic Items – 3.6%	Diapers & Sanitary Products – 4%
9	Other Recyclable Paper - 3.6%	Food Waste, Emptied from Packaging – 3%
10	Carpet– 3.5%	Bottom Fines and Dirt – 3%
	Cumulative – 58%	Cumulative – 64%

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Significant Changes Since 2010 Study

Materials that Increased

- Compostable Paper
- Food Waste
- Textiles
- Treated Wood
- Bottom Fines & Dirt

Materials that Decreased

- Corrugated Cardboard
- Mixed Recyclable Paper
- Durable Plastics
- Other Ferrous Metals
- Other Organics (Most notably Leaves & Grass and R/C Organics)
- Carpet
- Electronics (most notably television & computer monitors)
- Bulky Items

Note: Preliminary findings pending acceptance of final study report by CT-DEEP

Focus Materials

Material Category	Subcategory	Absolute Percentage	Relative Percentage
Food Waste	Loose	19.7%	86.7%
	Contained in Packaging	3.0%	13.3%
	Subtotal	***22.7%***	***100%***
Bottles & Cans	Deposit	0.7%	22.8%
	Non-Deposit	2.5%	77.2%
	Subtotal	***3.2%***	***100%***
Flexible Film Packaging	All Plastics	11.8%	100%
	Flexible Film	***0.2%***	***1.4%***

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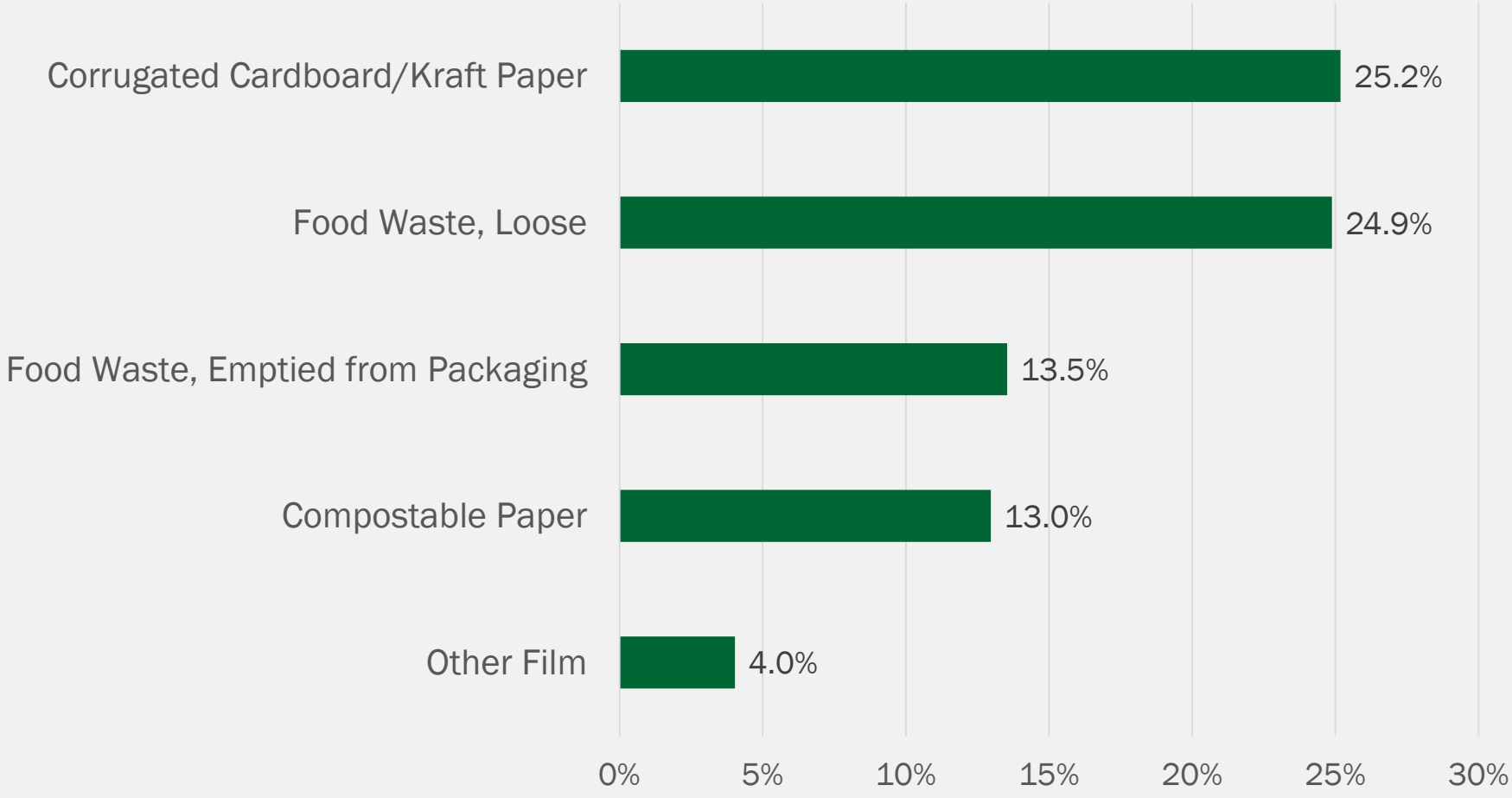
Grocery Stores: Most Prevalent



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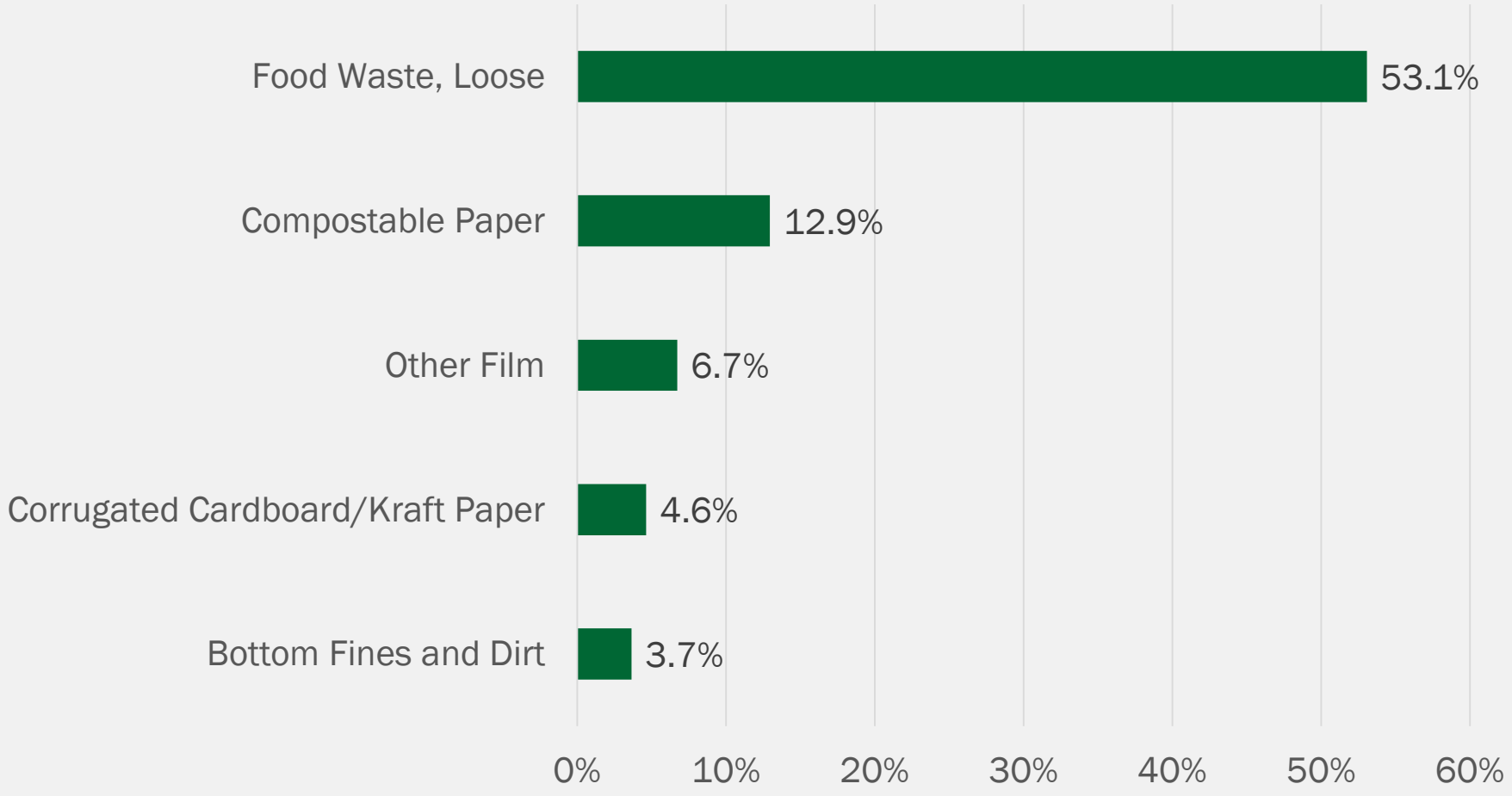
Restaurants: Most Prevalent



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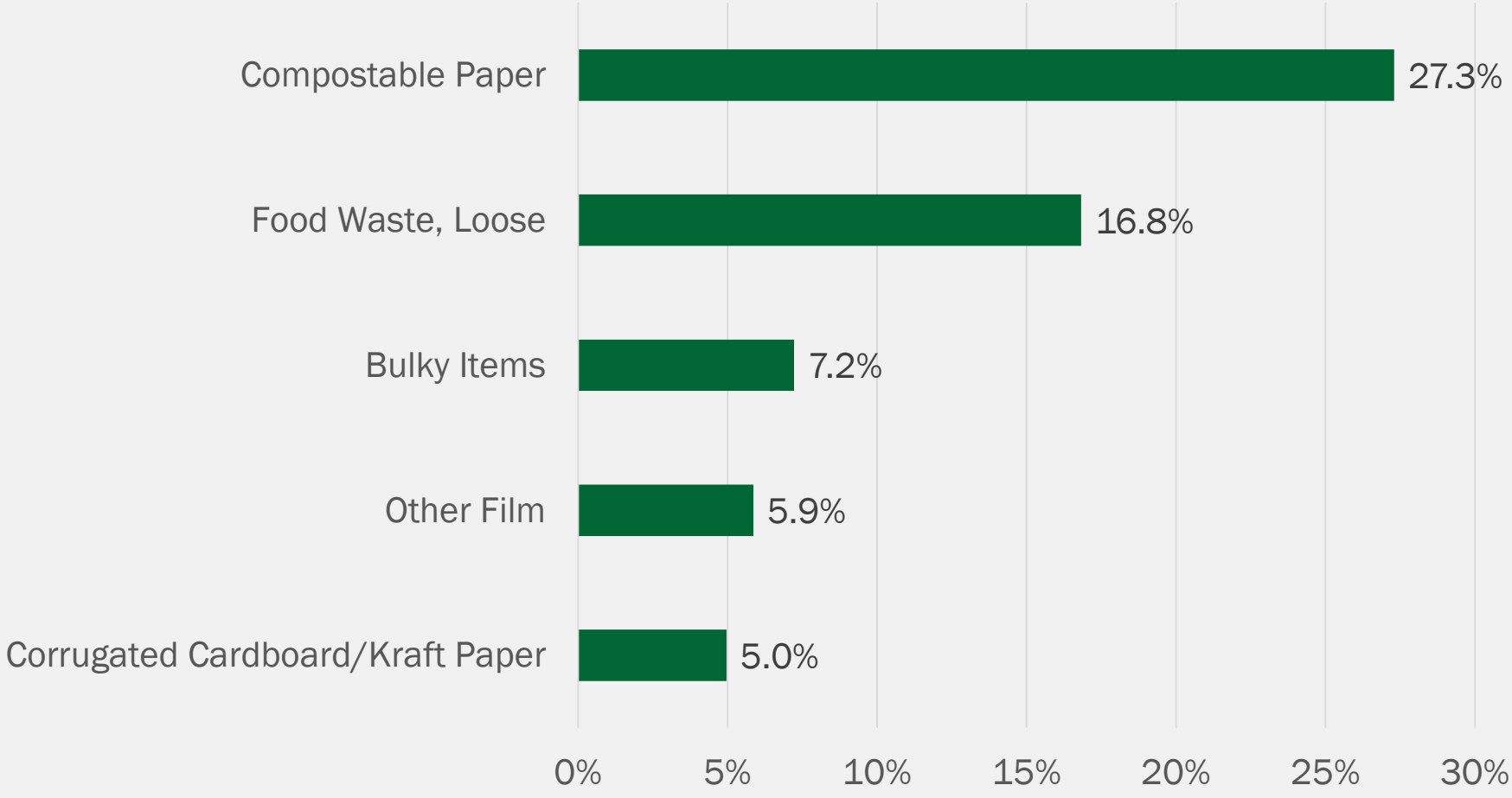
Offices: Most Prevalent



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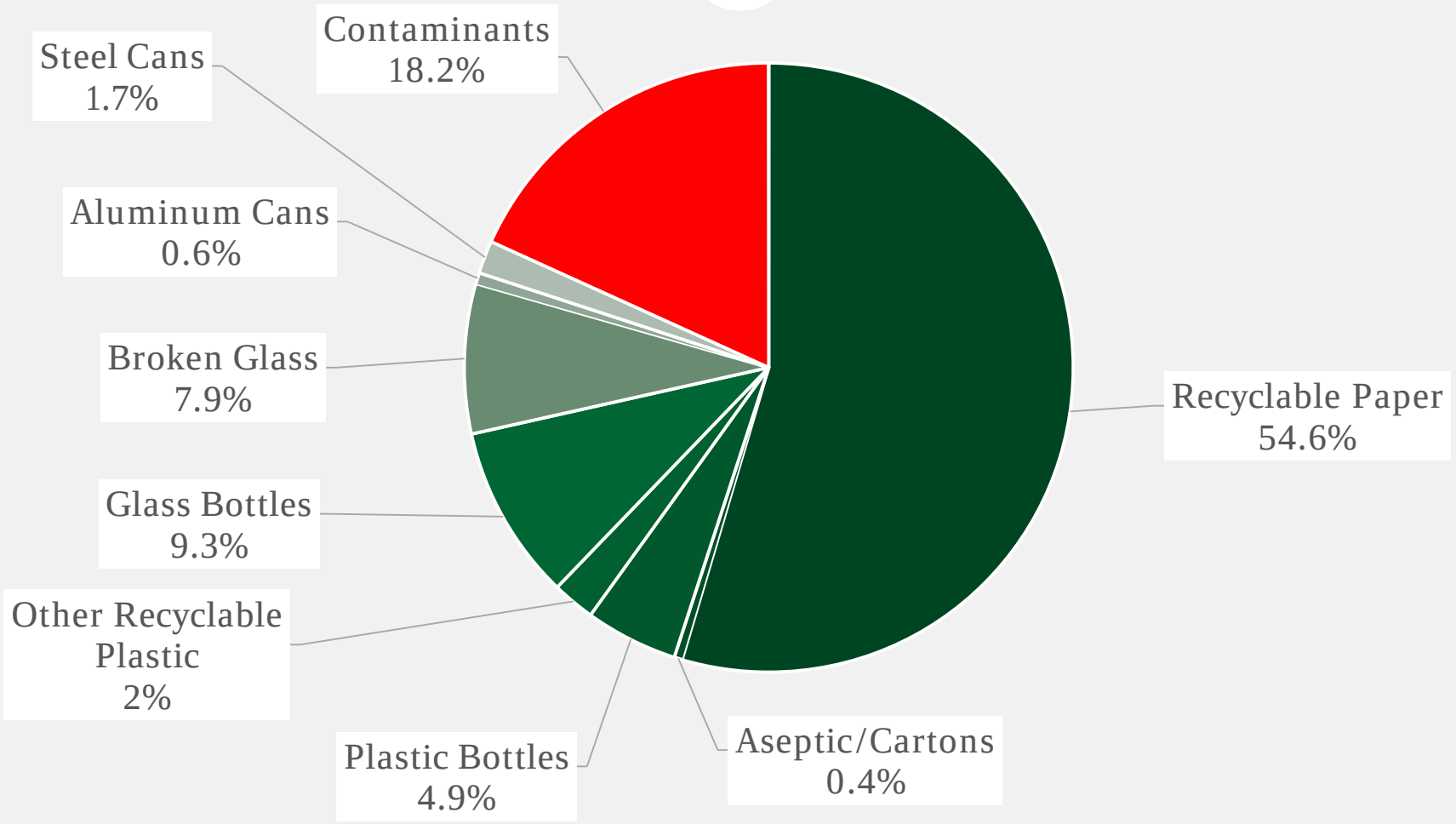
Single Stream Recycling Composition



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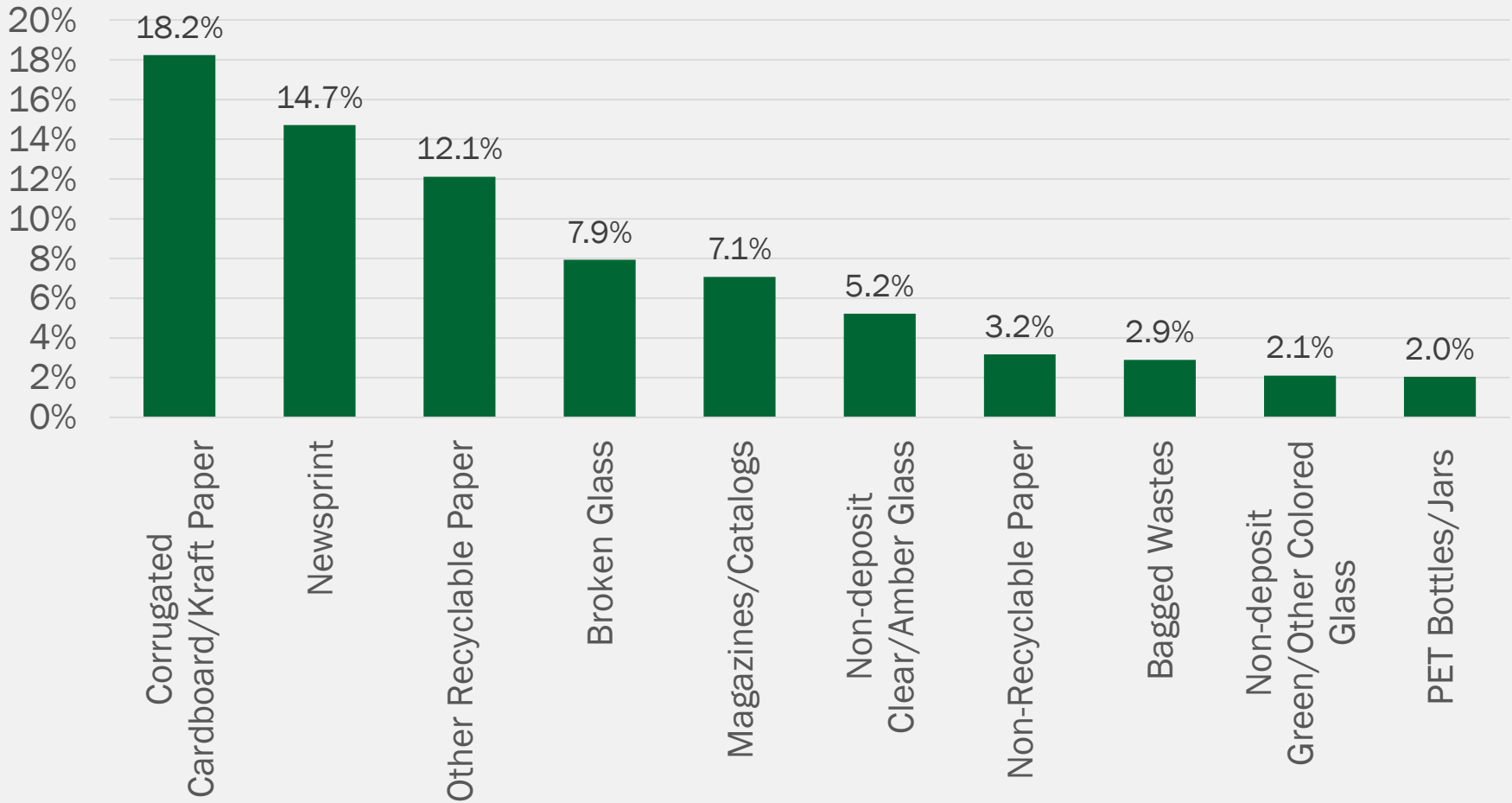
Single Stream Most Prevalent



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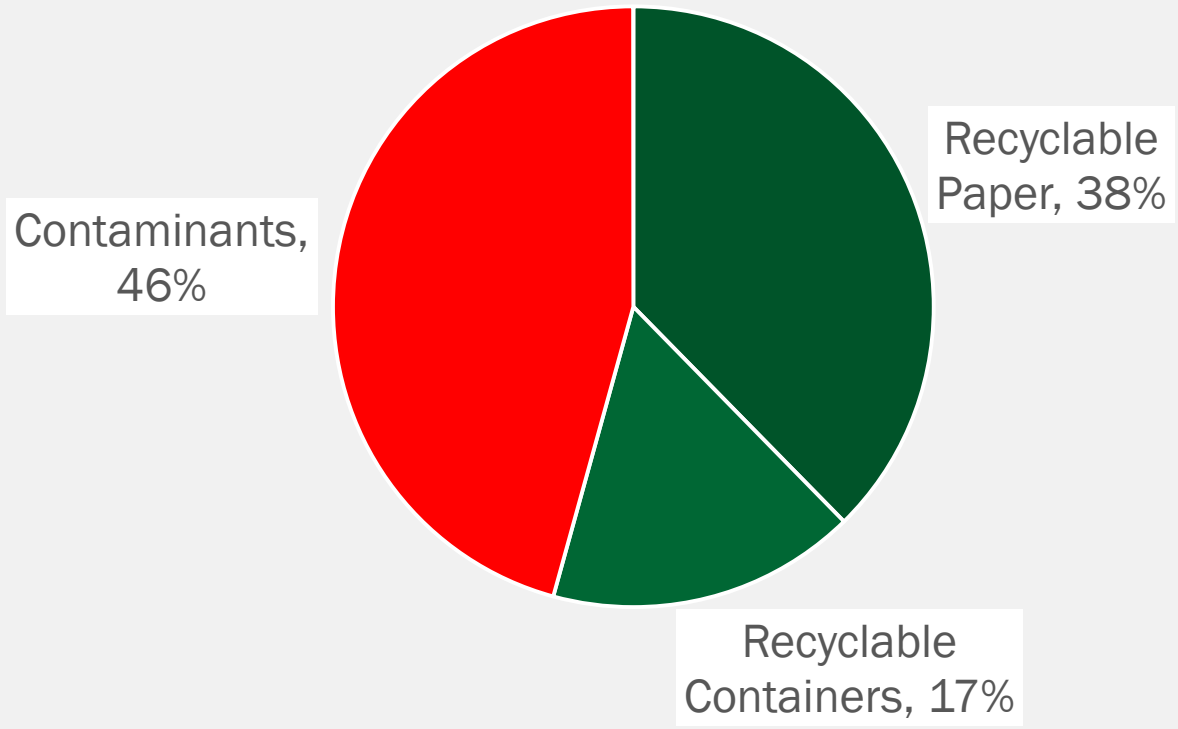
Bagged Waste in Single Stream Samples



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Closing Statements

- Waste characterization results provide extensive data on opportunities for incremental diversion
  - 2015 Study report will provide extensive tabular and graphical summary information
- Single stream recycling composition results must be vetted by suppliers and processors
  - Additional analysis may be required
- Schedule
  - Draft Report: November 1, 2015
  - Final Report: February 2016

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See You in 2021!

MSW CONSULTANTS

Thank You

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