

# City of Durham Solid Waste Management

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Waste Characterization Study



# Purpose of the Study



- Determine composition of waste delivered to the transfer station from City of Durham sources
- Included single-family, multi-family and commercial sources
- Determine the approximate quantity of waste currently being diverted from disposal

# Methodology

Generator Sector	Hauler	% of Sector	Total
Single-Family	City	100.0%	12
Multi-Family	All	n/a	5
Commercial	City	3.1%	3
Commercial	Waste Industries	37.8%	5
Commercial	Waste Management	36.5%	6
Commercial	Republic Services	11.9%	1
Commercial	Duke University	10.7%	3
Convenience Centers	Durham County	18.6%	3
<b>Total Samples for WCS</b>			<b>38</b>

Note: Percent of Sector indicates the percentage of waste for the single-family, multi-family and commercial sectors that is collected by the haulers listed.

- Sampling and analysis performed Sept/Oct 2015
- Included samples from:
  - Residential trash routes (City)
  - Residential recycling routes (City)
  - Multi-family collections (private)
  - Commercial collections (private)
  - Convenience Center Drop-offs (County)
- Final report received by Solid Waste January 2016

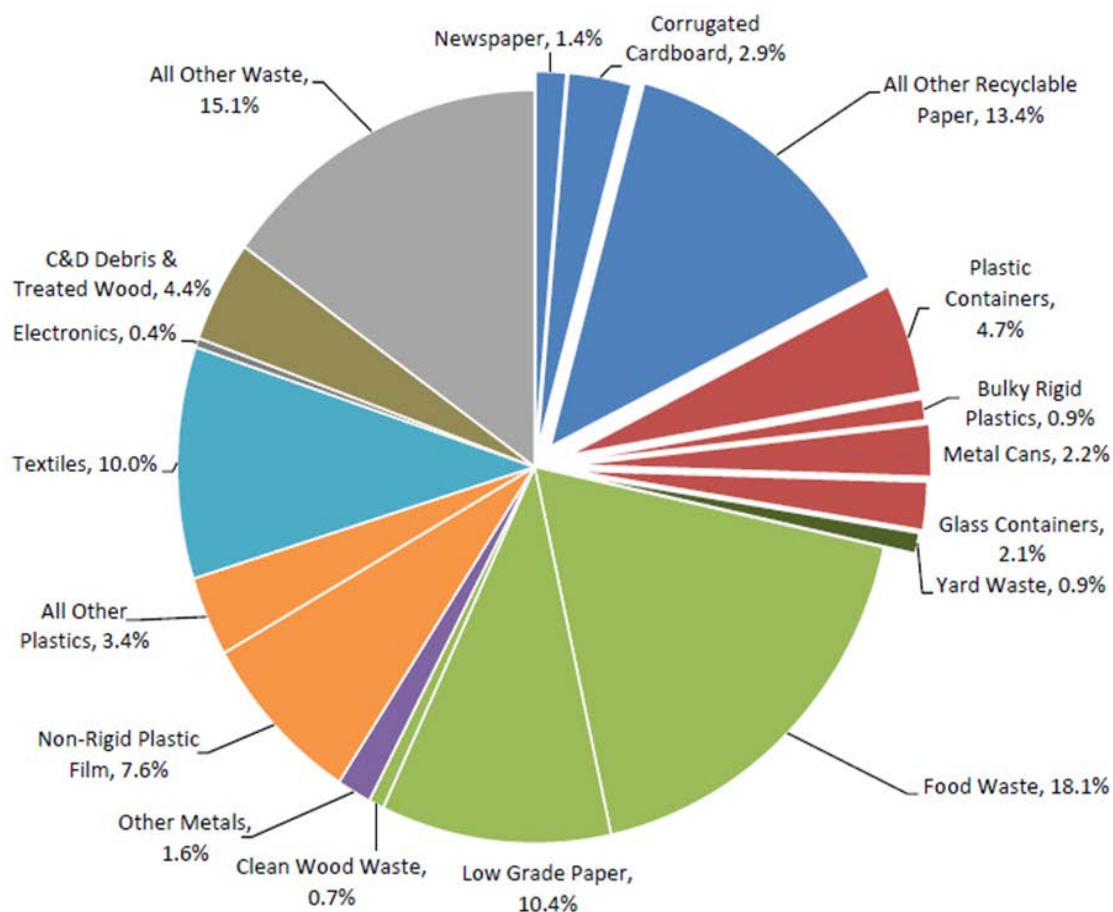
# City Collection Services

- **City population of ~ 252,000**
- ~ 103,220 total housing units
- ~ 61.4% single-family (SF)
- ~ 38.6% multi-family (MF)
- Weekly curbside collection of trash and bulky items from all SF units & MF up to and including 4 units
- Bi-weekly collection of recyclable materials from all SF units & MF up to and including 4 units
- Subscriber based (~ 19,500) weekly collection of yard waste from SF units
- Small generator commercial from carts (up to four carts)
- Downtown loop collection of front-end containers (“dumpsters”)



# Key Findings – Single Family

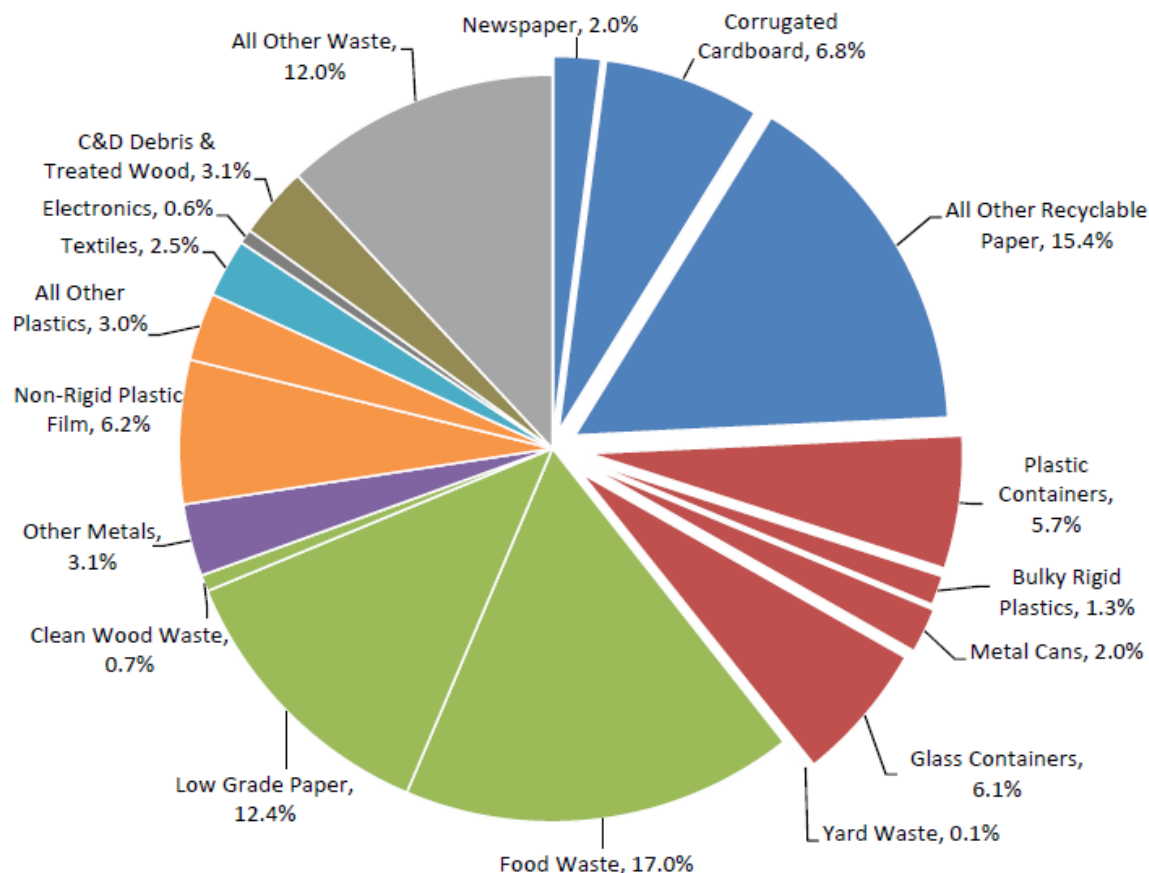
Figure 3.1: Composition of Single-Family Residential Waste Disposed (% by weight)



- Approximately **28%** of single-family residential waste consists of fiber products (17.7%) and containers (10.0%) that are currently accepted in the City's existing recycling program
- Food waste and low-grade paper at **29%** offer the greatest opportunity to divert additional types of waste from single-family sources
- Textiles (used clothing, etc.) offer a significant diversion opportunity at **10%** of single family waste

# Key Findings – Multi-Family

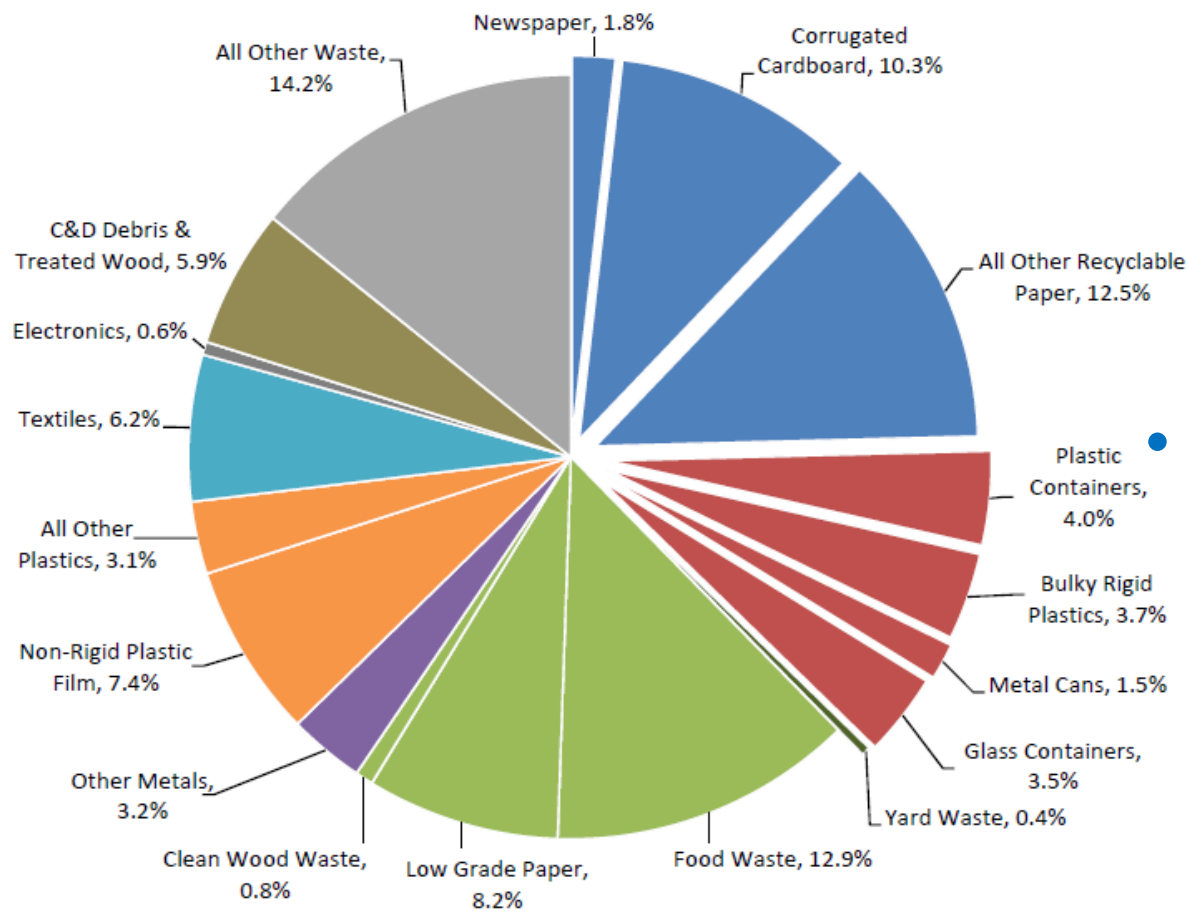
Figure 3.2: Composition of Multi-Family Residential Waste Disposed (% by weight)



- Approximately **40%** of multi-family residential waste consists of fiber products (24.2%) and containers (15%) that are currently accepted in the City's existing recycling program
- Food waste (17.0%) and low-grade paper (12.4%) comprise approximately **30%** of the waste and provide opportunity to divert additional types of waste from multi-family sources

# Key Findings – Commercial

Figure 3.3: Composition of Commercial Waste Disposed (% by weight)



- Approximately **37%** of commercial waste consists of fiber products (24.6%) and containers (12.8%) that are currently accepted in the City's existing recycling program
- Food waste (12.9%) and low-grade paper (8.2%) comprise approximately **21%** of the waste and provide opportunity to divert additional types of waste from commercial sources

# Key Findings – Bulky Waste

Figure 3.6: Composition of Bulky Waste (% by volume)

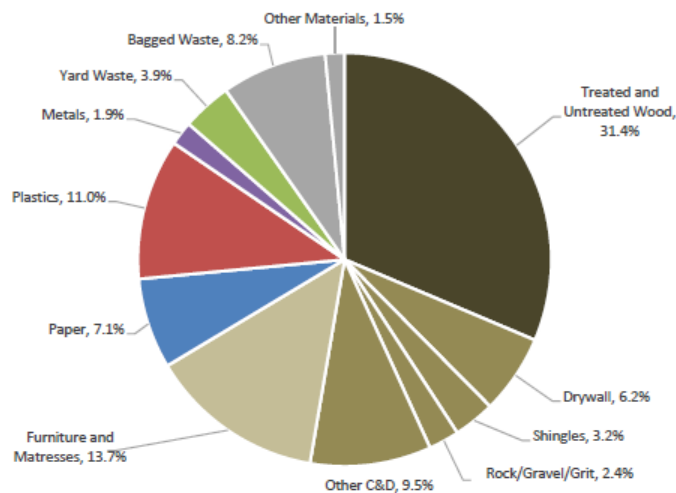
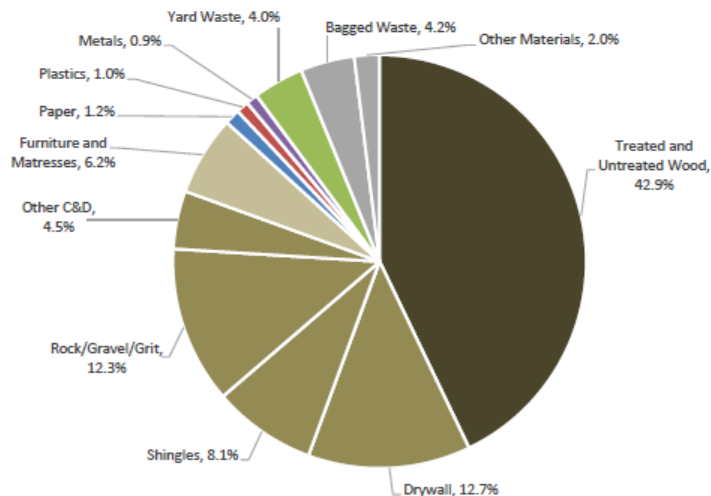


Figure 3.7: Composition of Bulky Waste (% by weight)

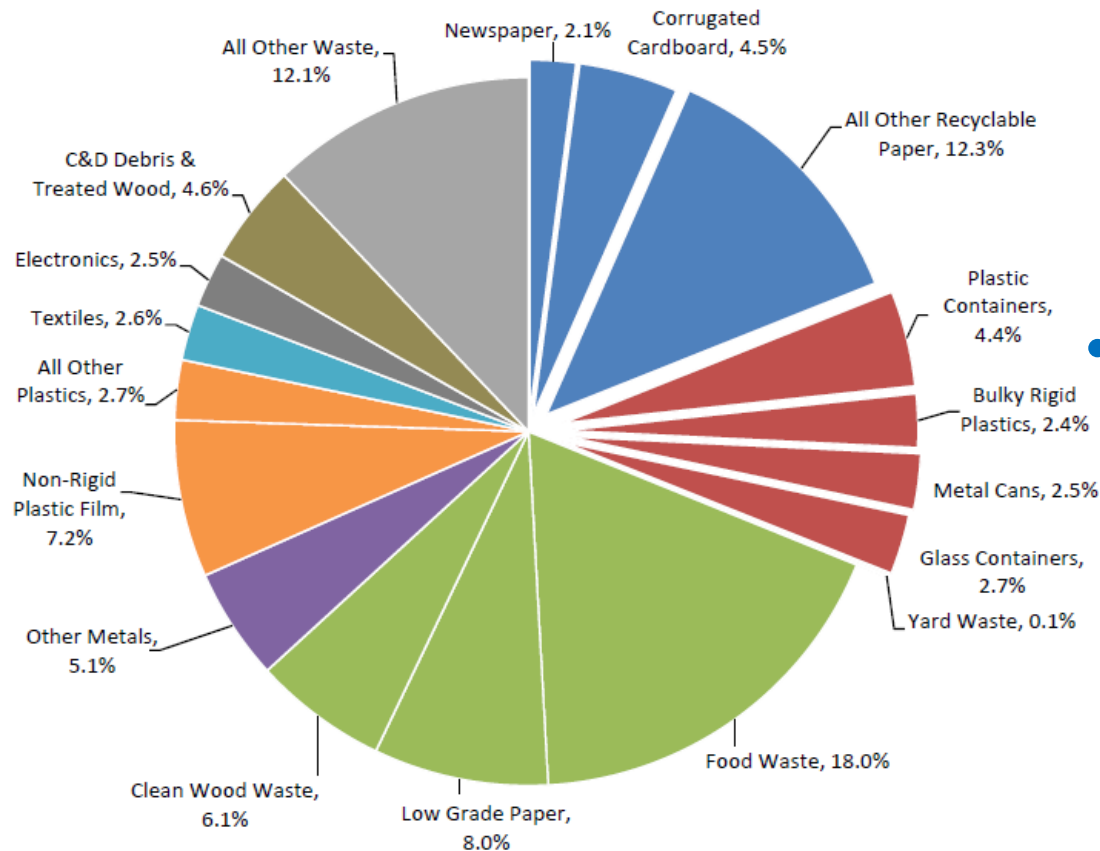


- Approximately **43%** (by weight) of bulky waste consists of treated and untreated wood, which provides opportunity to divert additional types of waste from bulky sources
- Other materials include in the Bulky waste stream include construction & demolition (“C&D”) waste of approximately **38%** (by weight) shingles and concrete and masonry products provide additional opportunity to divert waste from bulky sources
- Furniture comprised approximately **6%** by weight, some of which has potential to be reused or recycled



# Key Findings – Durham County Convenience Centers

Figure 3.4: Composition of Convenience Center Waste Disposed (% by weight)



- Approximately **31%** of convenience center waste consists of fiber products (19.0%) and containers (12.1%) that are currently accepted in the City's existing recycling program
- Food waste (18.0%) and low-grade paper (8.0%) comprise approximately **26%** of the waste and provide opportunity to divert additional types of waste from materials delivered to the Convenience Center

# Recommendations – Single Family

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- Get more out of the **Green** cart and into the **Blue** Cart.
  - **Increase Community Outreach and Education:** Advertising and mailer campaigns
  - **Overlooked Recyclable Materials:** Educate the public about materials that are easily recyclable, but overlooked, in their bathroom, kitchen, and other areas of the household.
  - **Reduce Residents Trash Cart Size:** “Put your Trash on a Diet” campaign. New and replacement trash carts will be 65 gallon rather than current 96 gallon. Recycling and yard waste cart size will remain at 96 gallon.
  - **Promote Existing Facilities:** Promote existing drop off and donation opportunities with non-profits for textiles, household items, film plastics, etc.

# Recommendations – Single Family

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- Working with a consultant in regards to composting.
  - **Pilot Organics Collection Program:** Establish pilot areas for curbside collection of compostable materials (food waste, yard waste, clean wood waste, low-grade paper)
  - **Pilot Organics Composting Program:** Establish a small scale trial program for composting of collected materials.
  - **Full Scale Organics Program:** Implement City wide collection and processing of organics.

# Recommendations – Commercial and Multi Family

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- Promote greater awareness and use of existing recycling opportunities for multi-family and commercial locations.
  - **Landlord Education:** Provide technical assistance and training to landlords and staff. Educate and promote current recycling programs to multi-family dwellings.
  - **Awareness:** Promote greater awareness of existing waste diversion services to business owners/managers and staff to encourage greater diversion from disposal.
  - **Enforcement:** Enforce existing bans on disposal of recyclable materials. Consider ordinances to help reduce the amount of recyclables in the waste stream.

# Summary – What's Next?

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- Explore Organics and Composting Opportunities.
  - Establish pilot areas for curbside collection of compostable materials (food waste, yard waste, clean wood waste, low-grade paper)
  - Work directly with a consultant to establish a robust organics composting program.
- Residential Initiatives.
  - Communication and education to increase capture of currently recyclable materials and reduction in residential trash cart size from 95 gallons to 65 gallons (30% reduction in cart volume).
  - Establish drop-off opportunities for textiles and work to raise awareness
- Multi-family and Commercial Enforcement and Education.
  - Educate multi-family and commercial owners/managers to promote recycling at their facilities.