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MAY 23-25, 2016 | WEST PALM BEACH, FL

# Impacts Of Changes In MSW Composition On Processing Options

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[www.gbbinc.com](http://www.gbbinc.com)

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## Outline

- GBB Introduction
- MSW Disposition in the US
- MSW Composition
- Changes in MSW Composition
- Processing Options
- The Future of MSW Processing

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## GBB's Waste Consulting Services

- Economic, technical and environmental reviews
- Procurements
- Due diligence third-party reviews
- Waste characterization and sourcing
- Process planning and conceptual designs
- Independent feasibility consultant



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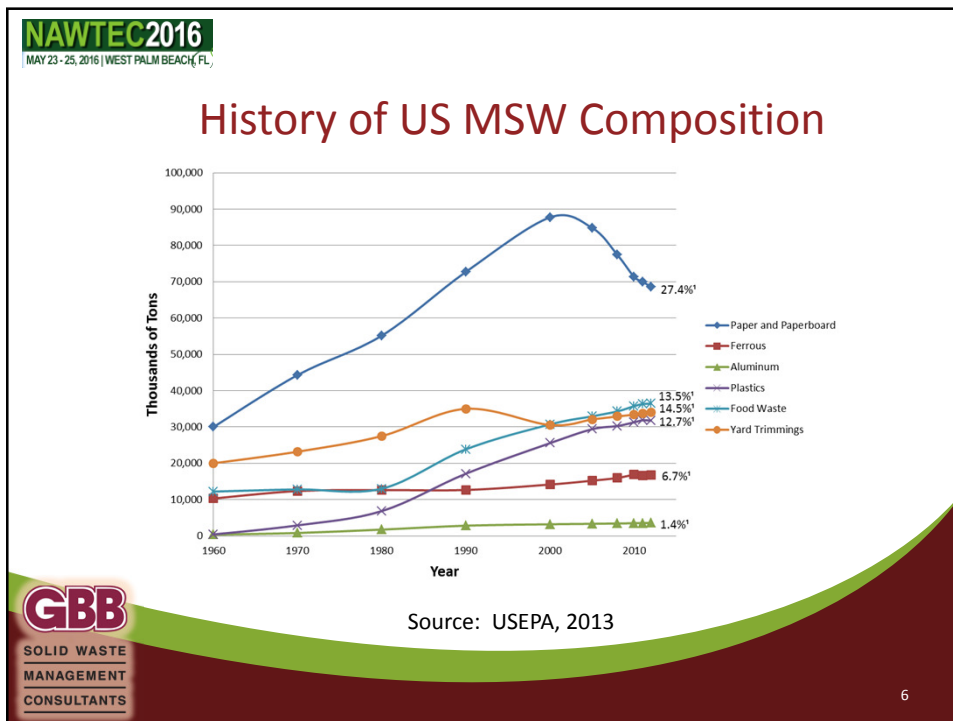
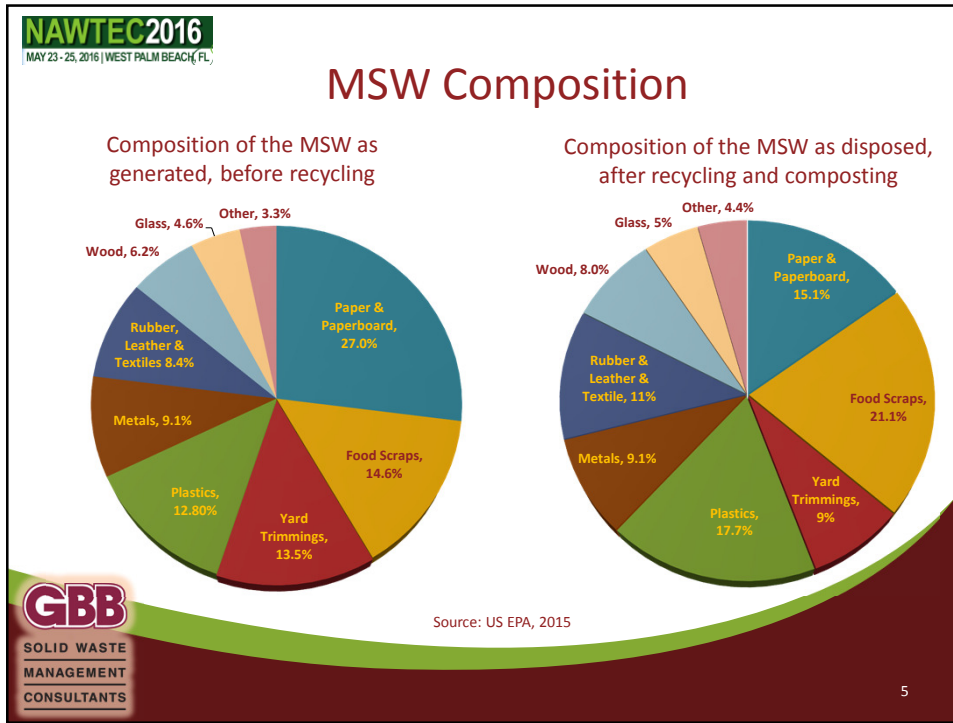
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## US MSW COMPOSITION



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## US MSW Composition Change

Material	1995	2005	2015	Difference 1995-2015
Paper	39.2%	34.2%	27%	<b>-31.1%</b>
Plastic	9.1%	11.8%	12.8%	<b>40.1%</b>
Metals	7.6 %	7.6%	9.1%	<b>19.7%</b>
Glass	6.2%	5.2%	4.6%	<b>-25.8%</b>
Organics	28.1%	30.7%	34.3%	<b>22.1%</b>

Source: USEPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States, Facts and Figures 1995, 2005 and 2015

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## US MSW Organic Waste Composition Change

Material	1995	2005	2015	Difference 1995-2015
Food Waste	6.2%	11.9%	14.6%	<u>135.5%</u>
Wood	7.6%	5.7%	6.2%	-18.4%
Yard Trimmings	14.3%	13.1%	13.5%	-5.6%
<b>Total Organics</b>	<b>28.1%</b>	<b>30.7%</b>	<b>34.3%</b>	<b>22.1%</b>

Source: USEPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States, Facts and Figures 1995, 2005 and 2015

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## COMPOSITION TALE OF TWO CITIES

**FORT WORTH** *Fayetteville*  
North Carolina

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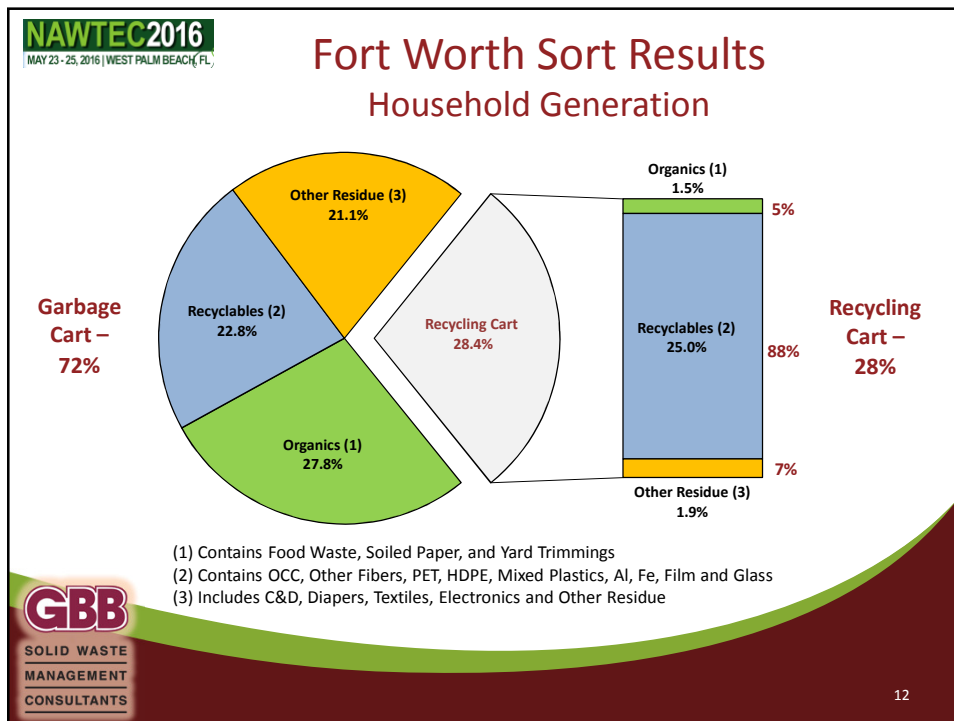
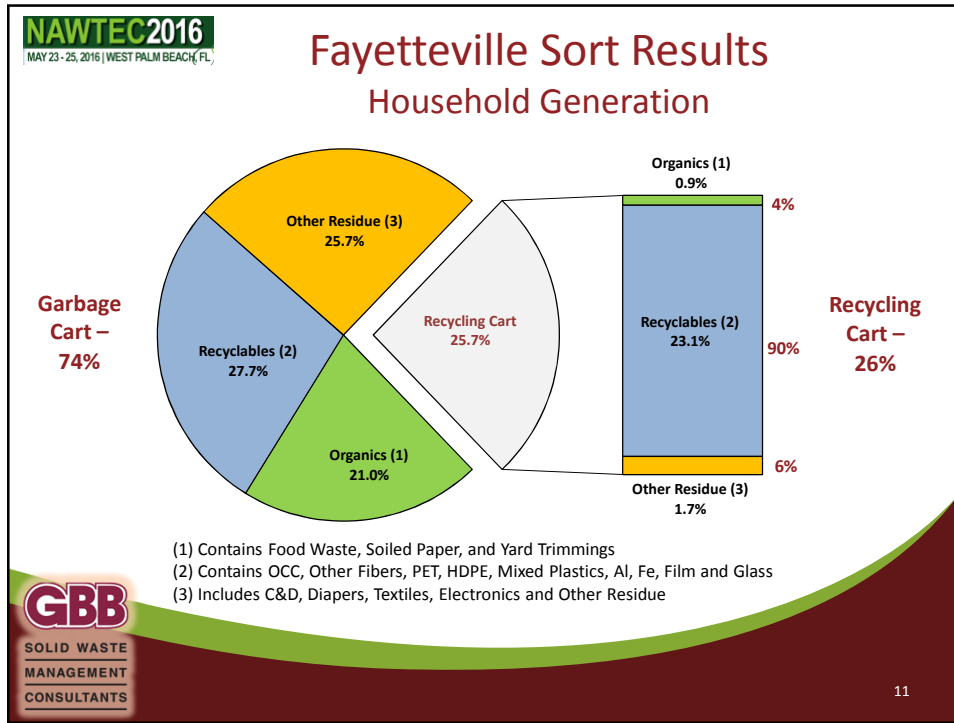
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## Waste Sort – Recycling and Garbage

- Two recent waste sorts in:
  - City of Fayetteville, NC
  - City of Fort Worth, TX
- Both cities have curbside single stream recycling with high participation
- Evaluated individual set-outs per household in both the waste and recycling carts
- 75 Houses per day for five days were randomly selected and collected prior to normal pick-up
- 30 Categories were sorted from both bins

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## PROCESSING OPTIONS



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## Evaluated Options\*

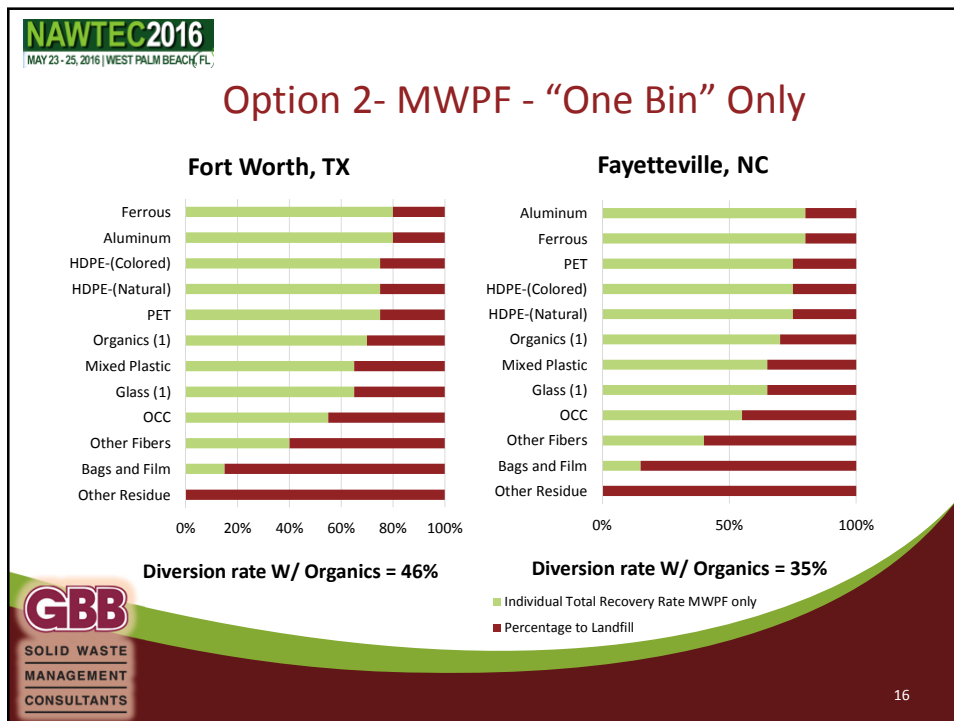
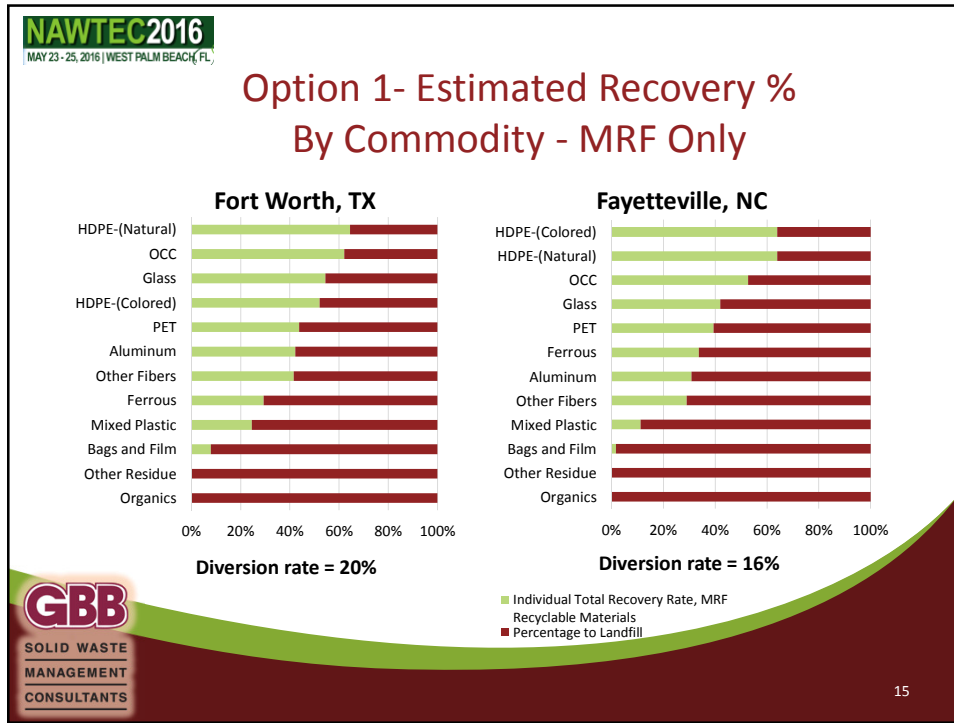
1. Single Stream Recyclables to Material Recovery Facility (MRF)- *current practice*
2. All materials to Mixed Waste Processing Facility (MWPF)
3. Single Stream Recyclables to MRF and the rest to MWPF (Tandem System)

\* Recovery of organics for processing in anaerobic digestion evaluated in option 2 and option 3

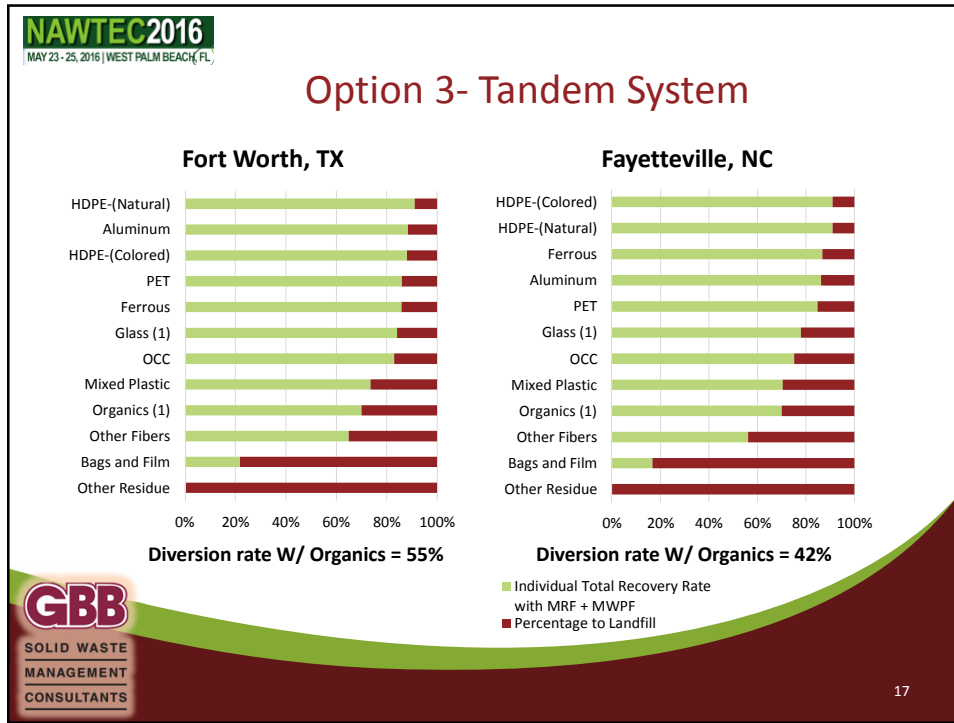


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### Recovery Rates Results

Processing Options	Fort Worth, TX	Fayetteville, NC
Recyclables to MRF	20%	16%
"One bin" to MWPF	46%	35%
Tandem System	55%	42%

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## What can we expect in the Future?

- Source separation of organics (SSOs)
  - Residential
    - Placed in green cart with yard waste
    - Set out separately
  - Commercial
    - Separate collection
- Mixed waste processing for organic waste separation
- More AD capacity for processing SSOs
- Increased heating value for materials going to WTE plants

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## Thank you! Questions?

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