

Electronics Recycling: The Industry

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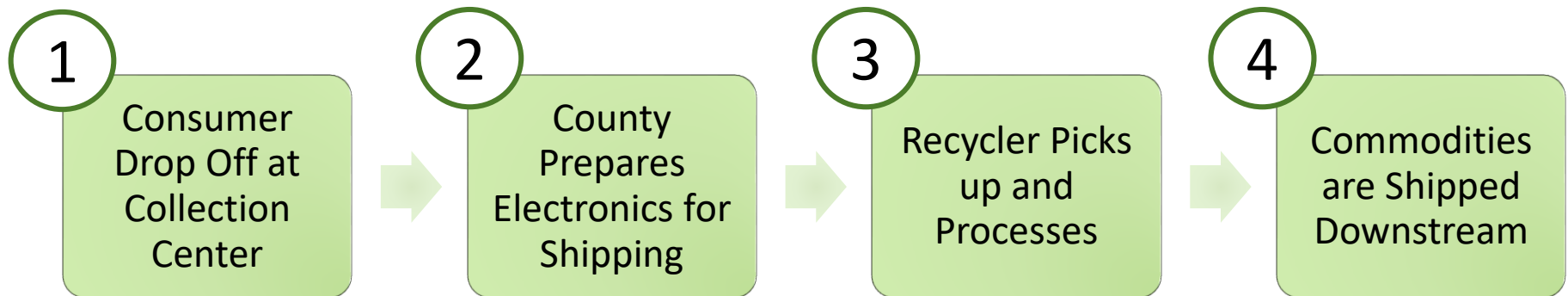


Outline

- 1 Operational Aspects
- 2 Availability of Vendors in the State
- 3 End Markets
- 4 Economics of the Industry
- 5 Dangers of Landfilling Electronics



Summary of Process





TV's/Monitors

Stacked on Pallets

Contain Leaded
Glass/Mercury

70% of County
Weight Generation



Computers

Stacked on Pallets

Contain Precious
Metals

5% of County
Weight Generation



Misc. Electronics

Placed in Boxes

Contain Mostly
Plastic

25% of County
Weight Generation



County Collection

48

The number of pallets required to fill a double-stacked van trailer

215

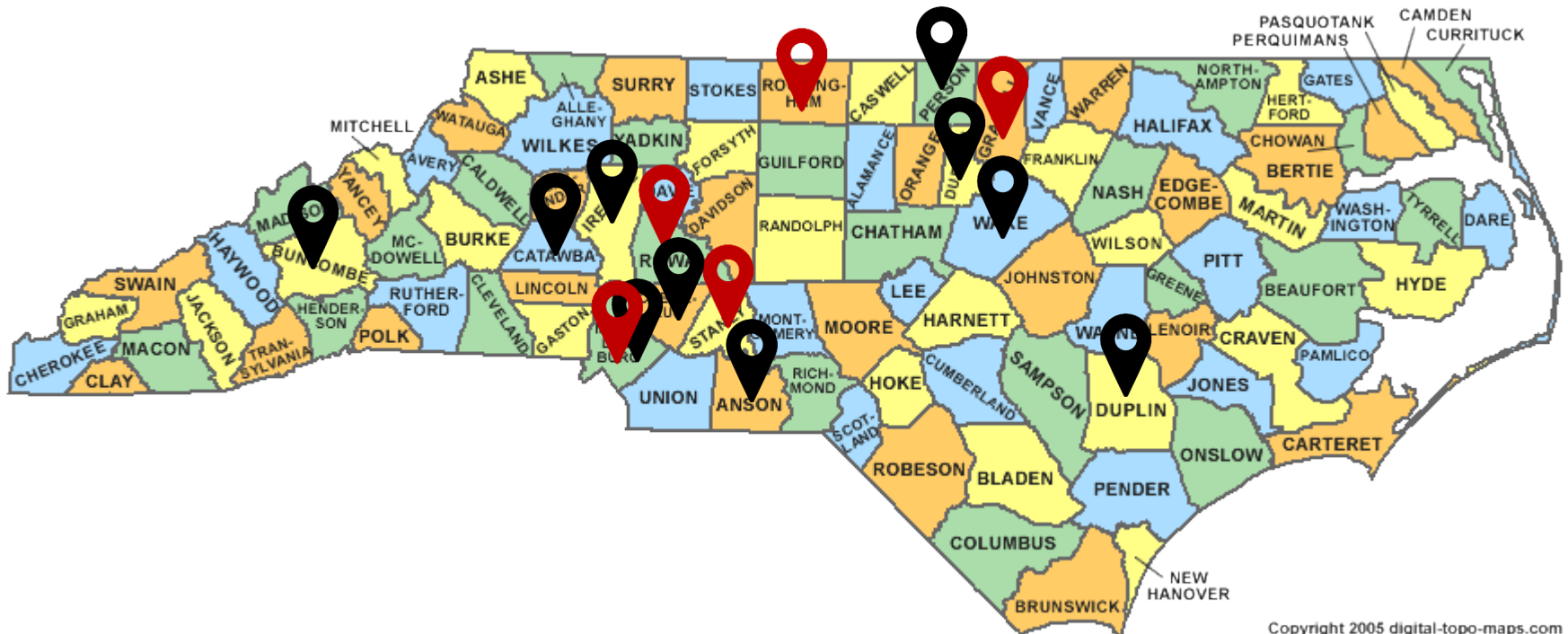
The average number of TV's on a fully-loaded van trailer

16,681

The tons of electronics collected from NC residents in FY 15-16



In-State Vendor Capacity





Automated Disassembly

- Devices are shredded and separated based on their properties: magnetics, charge, density, color
- Highly advanced technology allows for cost effective processing of “low grade” electronics





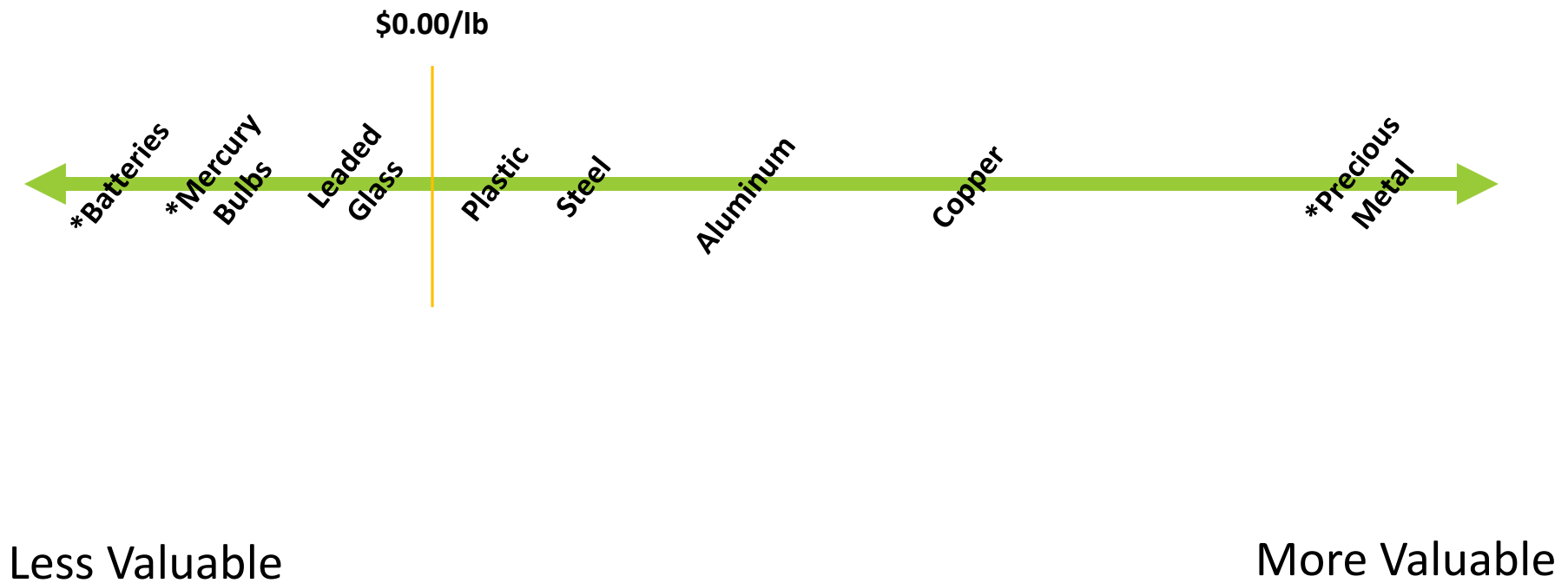
Manual Disassembly

- Devices are manually separated into their base metals, plastics and circuit boards
- Televisions/Monitors require the most teardown labor, provide the most jobs





Relative Scrap Values



Wire chopper, Copper Recovery



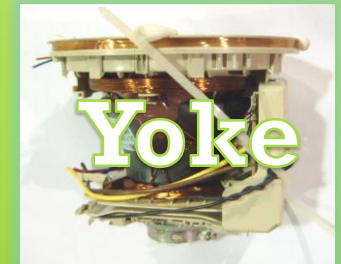
Baled, Sized



Shredded, Smelted



Copper Recovery



CRT



Glass separation, Smelter/other

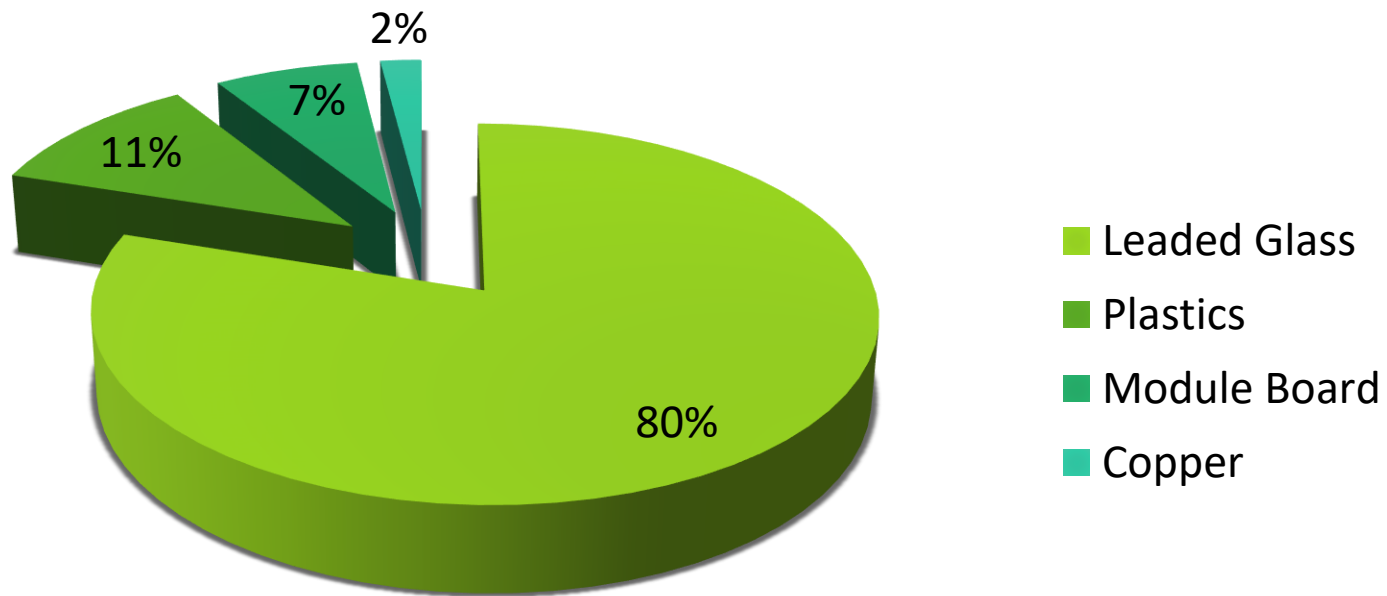
Wire



Wire chopper, Copper Recovery



Composition of a CRT TV





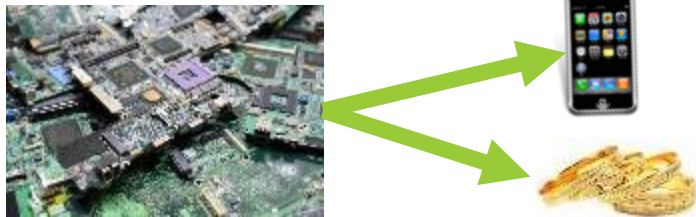
CRTs, Plasmas, LCDs and LEDS

Display Type	Average Weight	Manufacturing Began	Manufacturing Ended
CRT	65 lbs	1934	2010
Plasma	50 lbs	1997	2014
LCD	35 lbs	2004	N/A

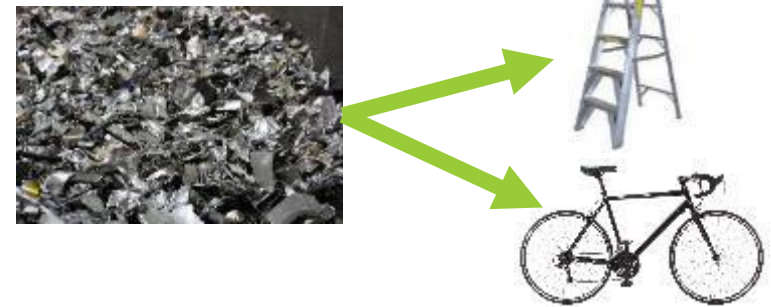


End Markets- Metals

Precious Metals



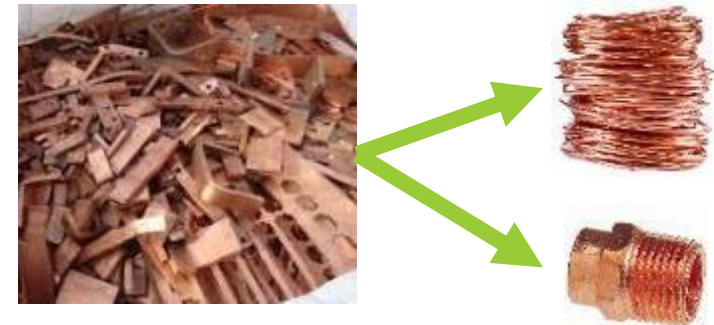
Aluminum



Steel



Copper





End Markets- CRT Glass



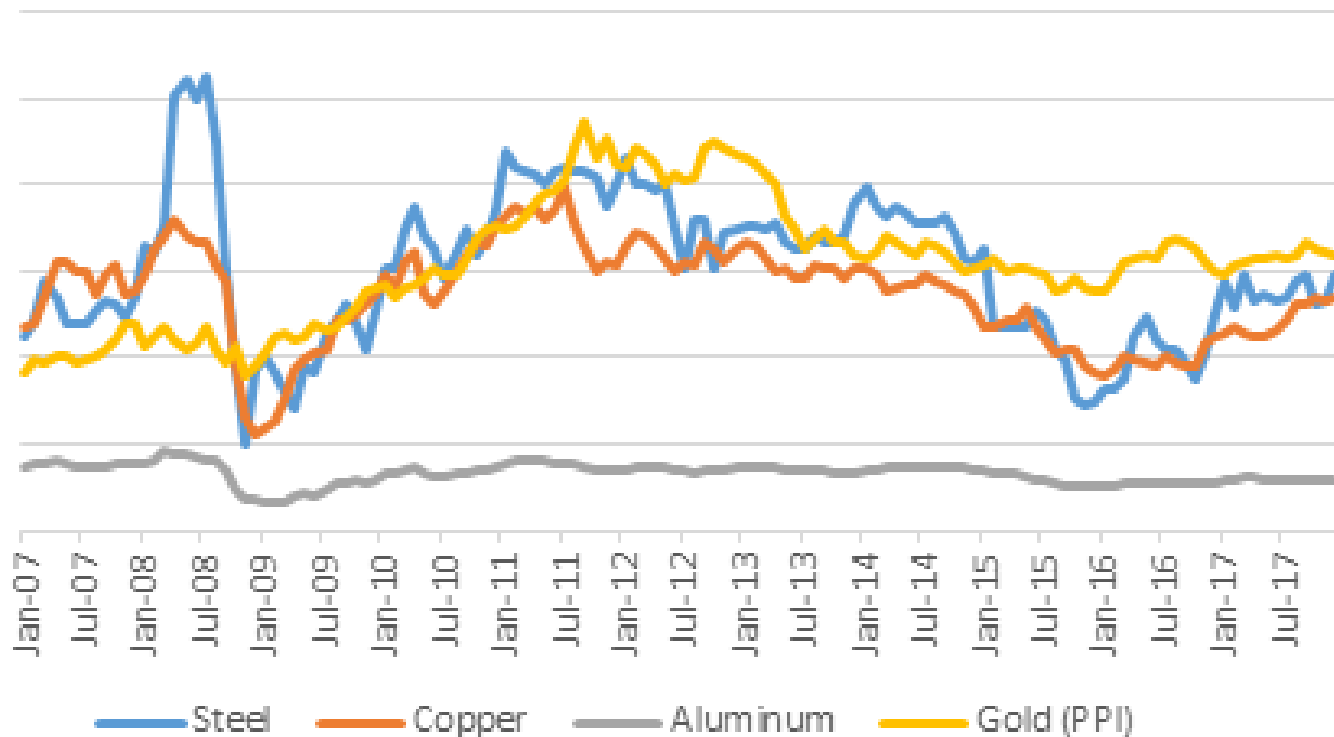


Downstream Market Capacity





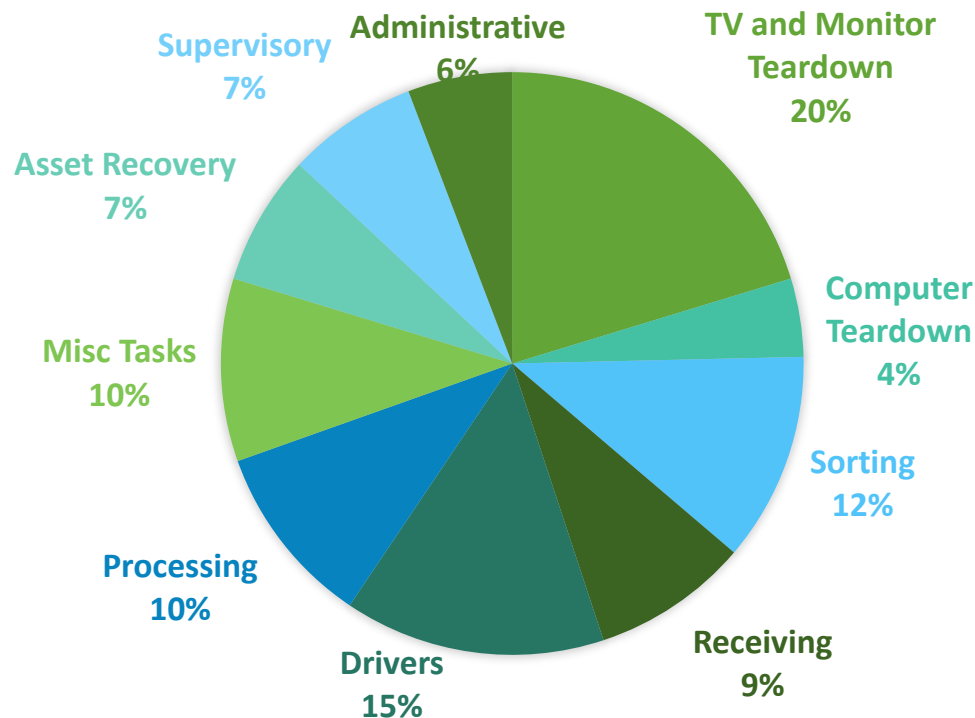
Condition of Metal Market





Economic Impact

- Industry employs over 600 individuals in North Carolina





Economic Impact

- Feeds into and supports a North Carolina Scrap Recycling Industry that has a significant economic impact

	DIRECT	SUPPLIER	INDUCED	TOTAL
Jobs	5,308	6,198	6,555	18,061
Wages	\$319,026,600	\$359,744,400	\$315,505,000	\$994,276,000
Economic Impact	\$1,377,033,200	\$1,278,450,500	\$1,086,184,900	\$3,741,668,600



Dangers of Landfilling

- Consumer Expectation
- Lost Jobs and Revenue
- EH&S Risk
- Environmental





Dangers of Landfilling

North Carolina, Fiscal Year 2015-2016

 × 401,922



Summary

- Recycling electronics generates valuable metals
- CRTs will leave the collection stream
- There are serious negative environmental and economic impacts of landfilling electronics
- North Carolina has an electronics recycling industry to be proud of

THANK YOU

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