

Solid Waste Master Plan Update

Nashville and Davidson County

CLEAR GLASS
CLEAR GLASS

BROWN GLASS
BROWN GLASS

GREEN GLASS
GREEN GLASS



September 6, 2017

**CDM
Smith.**

Presentation Outline



- Solid Waste Master Plan Priorities
- Current Program Statistics
- Public Engagement Forums
- Online Survey
- Waste & Recycling Characterization
- Research Update
- Project Schedule

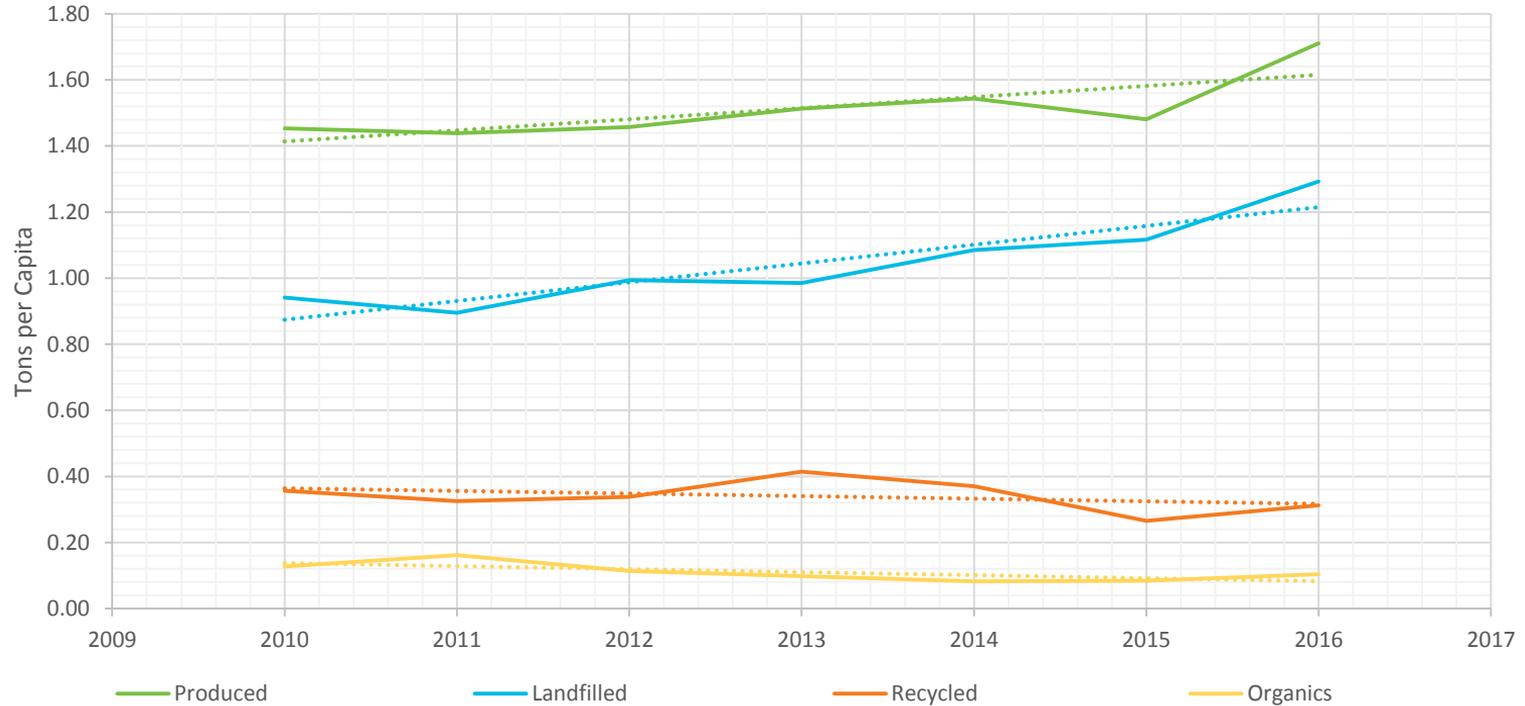
Solid Waste Master Plan Priorities



- Aggressive timeline for reaching zero waste defined as 90% diversion from disposal
- Actionable implementation plan: clear goals, metrics, and timelines
 - Prioritized recommendations
- Consider food waste management
- Evaluate community equity component
- Best approaches to education and promotion

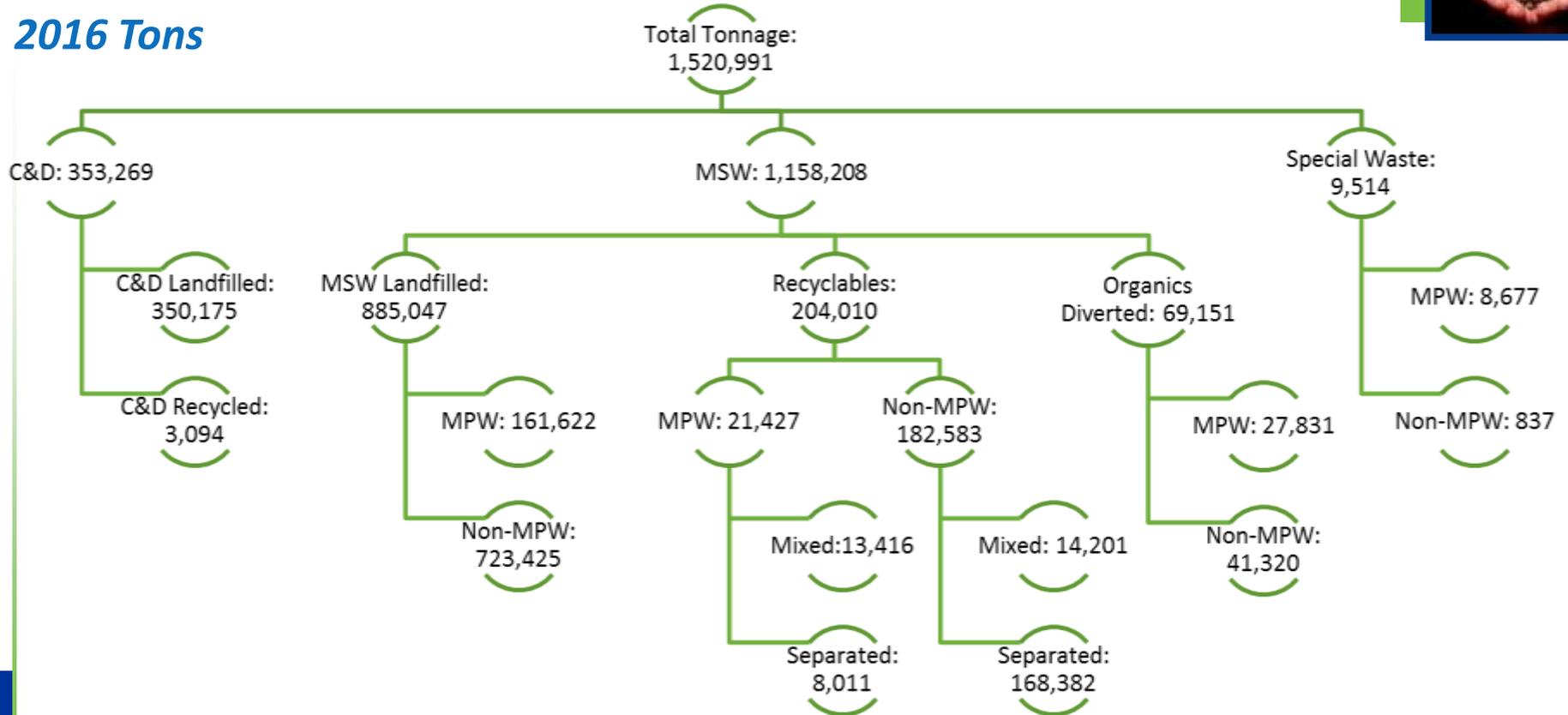


Per Capita Waste Production



Material Flow in Davidson County

2016 Tons

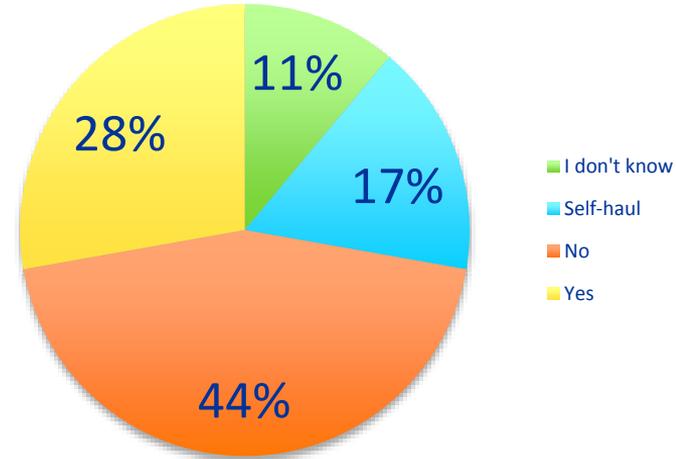




Existing System

- ~19% of waste stream controlled by Metro
- Survey of GSD residents
 - 16.5% of respondents self-hauled trash
 - Average Monthly Service SF residents: \$21.30
 - Average Monthly Recycling Premium: \$5.33
 - Average Monthly Service HOA residents: \$10.16
 - Outreach & Enforcement
- Private Recycling Processing Facilities
 - 8 have capacity to process more material
 - 3 have plans to expand
 - Many expressed interest in expanding capacity

Does your trash hauler offer recycling?



Solid Waste Program Challenges



- Restrictions on use of General Services Funds
- Limited control over waste stream
 - Commercial and industrial generators
 - GSD residential
- Downtown Core area presents constraints on collection
- MPW personnel & equipment at operational capacity
 - New and/or expanded programs will require additional resources



Public Engagement Forums



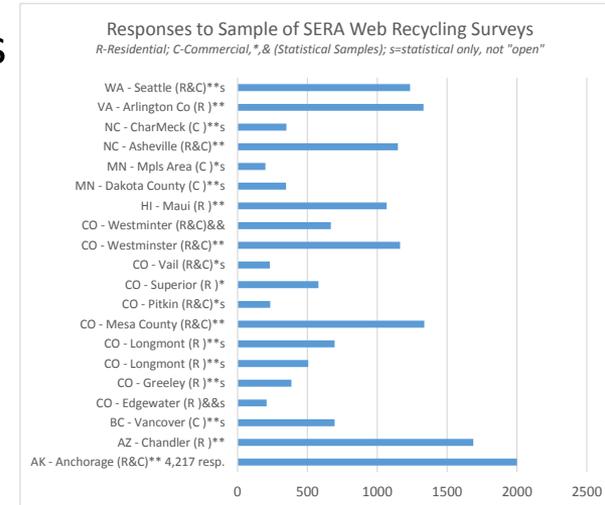
- Solid Waste Region Board Meetings
 - September, December, March 2018, and June 2018
- Task Force Meetings
 - September, December, March 2018, and June 2018
- Public Meetings
 - Discussion of potential recommendations
- Interviews with Metro Council Members
- Online Survey



Online Survey



- Statistical and Open Web Survey for HH & Business
 - Statistical for reliability
 - Open for wide public feedback, opinions, barriers
 - Phone number provided for those not computer-savvy; Spanish version
- Objectives: Gather input on current services and what is needed going forward
 - Current waste & recycling behaviors / attitudes / data
 - Preferences on options; willingness to pay
- Generated great responses in other cities
 - Even though not short – engaging subject!



Online Survey



- Survey topics:
 - Household and business characteristics
 - Use and satisfaction of available programs; perception of costs; service gaps
 - Support / interest in a few key program options
 - likely use, willingness to pay (focused on SAYT, recycling improvements)
- Outcomes →
 - Scarce business sector information (behaviors, barriers, interest, costs, etc.)
 - Programs with low satisfaction; opportunities for improvement
 - Gauging initial support for new options; funding feasibility
 - Insight into variations by geographical area and participant

Waste & Recycling Characterization Study



- Understanding of the disposal and recycling habits of the Metro Nashville area (i.e.; USD vs GSD)
- Comparison to metropolitan areas in the region and across the US
- Target waste materials that will provide the most landfill diversion
- What materials are being recycled?
- What materials are not being recycled?
- What materials are contaminating the recyclables?



Waste & Recycling Characterization Study



Study approach is tailored to match other studies to allow comparison of data

Community	Pounds of Recyclables/HH in Waste Stream/Yr.	Pounds of Recyclables/HH in Recycling Stream/Yr.	Total Pounds of Recyclables/HH/Yr.
Austin, TX	380	473	854
Cincinnati, OH	611	352	963
Fort Worth, TX	454	350	804
Minneapolis, MN	393	503	896
Tucson, AZ	487	393	880

Waste & Recycling Characterization Study



- Sampling and Sorting will be done in two seasons:
 - Summer (completed) and Fall
 - Peak Tourist Season and Schools are in Session
- Each event lasts 2 weeks (1 week for waste, 1 week for recyclables)
- Study is being performed at:
 - Waste Management Antioch Transfer Station
 - Republic Services Transfer Station
 - Waste Management River Hills Materials Recovery Facility



Waste & Recycling Characterization Study



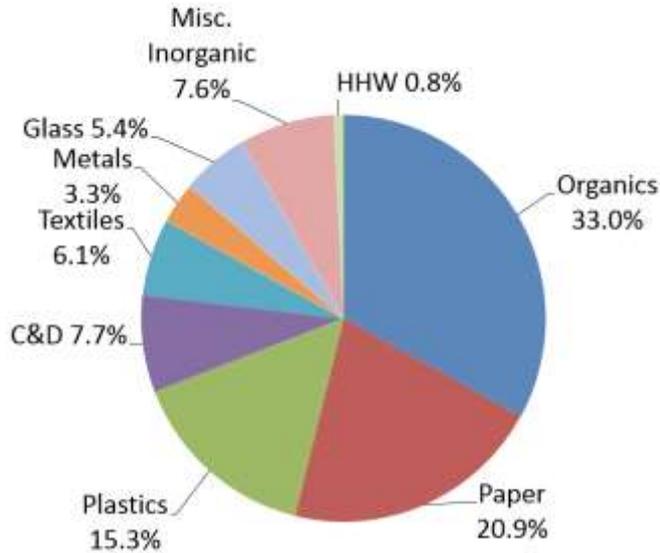
- Summer Season was performed in July



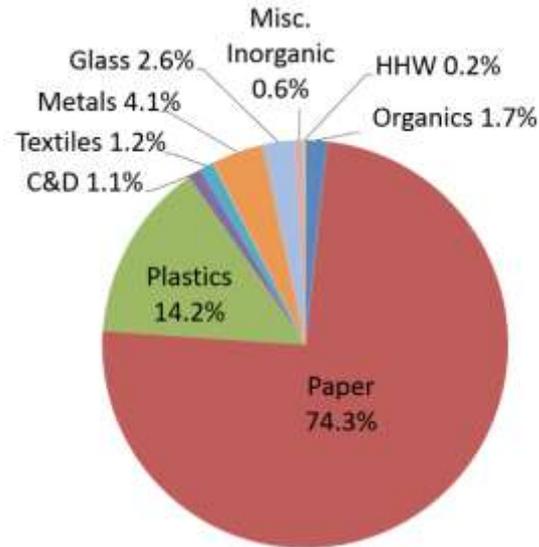
Waste & Recycling Characterization Study



- Sampling of Summer Season Results: Residential Waste and Recyclables



Landfilled Waste



Recovered Waste

Task 1 – Research Update



- Tonnage Projections for Metro Nashville
- Recycling of MSW and C&D Waste
- Organic Waste Beneficial Uses: Codigestion, Digestion, Composting
- Successful Zero Waste Diversion Programs
- Legislative/Policy
- Education
- Funding Partnerships



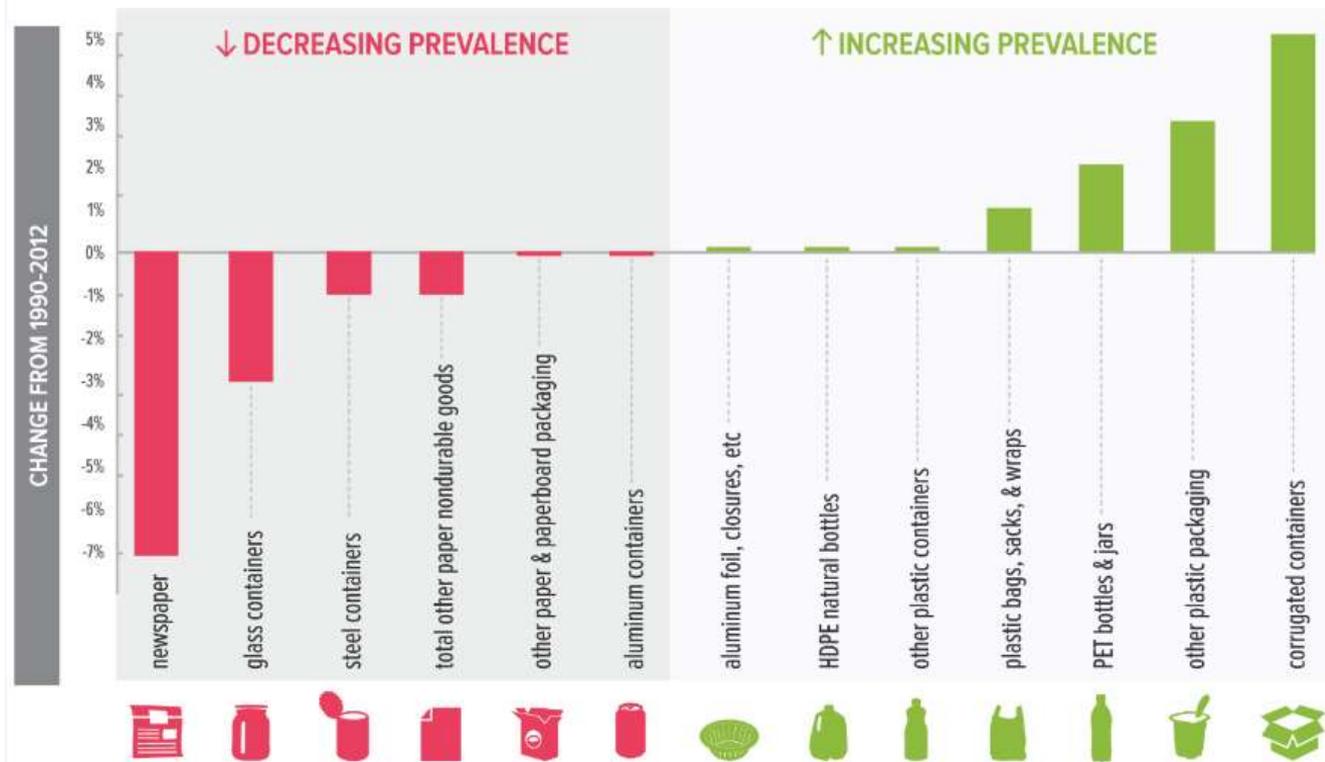
Tonnage Projections



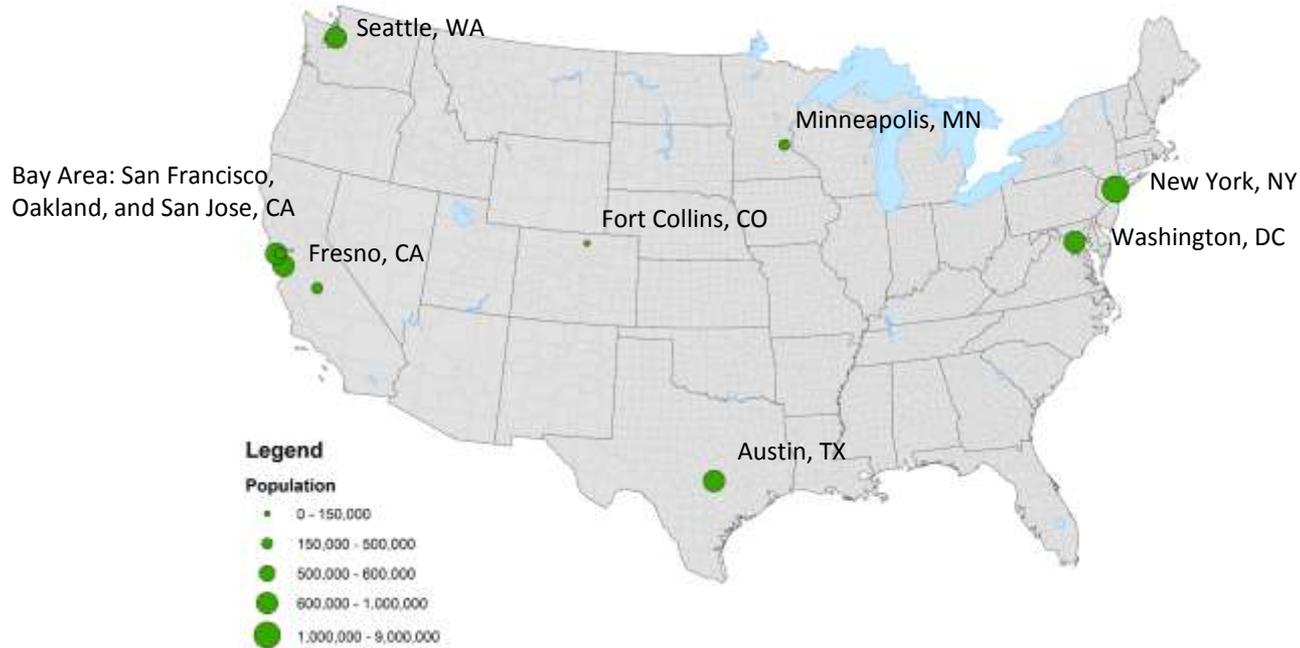
- Modeling of Metro Nashville Waste Generation
 - Existing Tonnage Data
 - Population and Economic Growth Projections
 - Waste and Recycling Characterization Study Results
 - Apply changing trends in waste composition
 - Develop quantities for various waste materials
 - Quantities of materials available for diversion
 - Identifying collection and processing needs
 - Sizing of facilities – diversion and disposal

The Recycling Stream is Evolving

2014 to 1990 Baseline



Cities with Outstanding Zero Waste Programs



What the Best Zero Waste Programs have in Common



INCREASING PRICE →



Pay-as-you-throw



Strong public education and outreach programs



Adoption of waste reduction policies and mandates that promote zero waste



State commitment towards zero waste to enlarge reach of program deployment



Establishing metrics for measuring success



Commitment expressed through budgetary approval

Policy Options Being Considered



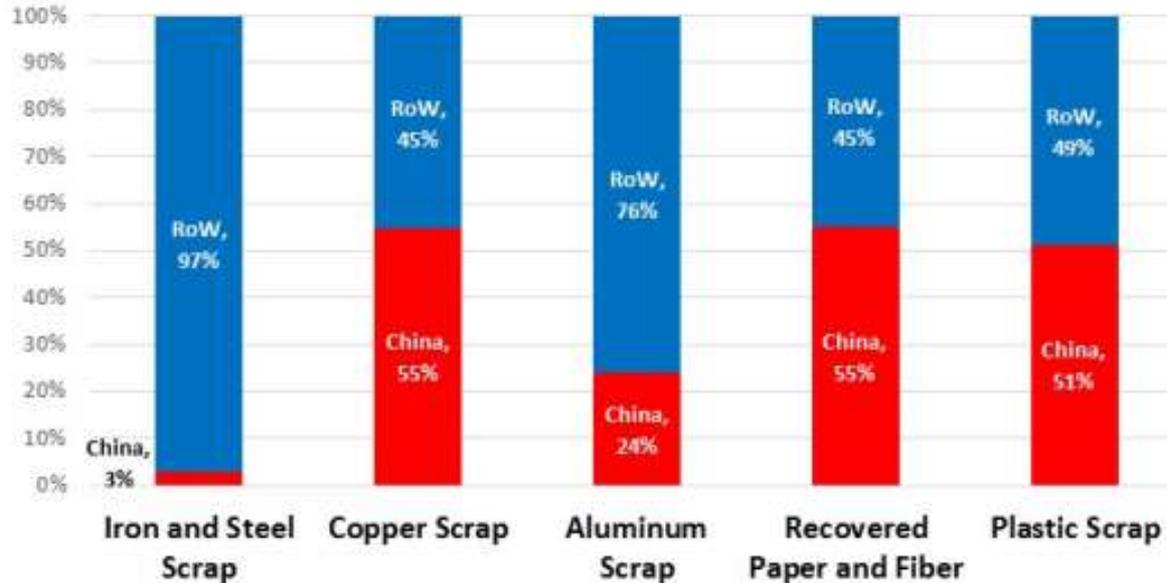
- PAYT / SAYT – high diversion / very cost-effective
 - Proven approach
 - Embeds cost of recycling in trash bill; eliminates disincentive of recycling being an extra cost
- Franchise Collection System
 - Expanding MPW control of collection county wide
 - Implementation of policy and programs
 - Ability to monitor waste and recycling tonnages
- Requiring any establishment with a beer permit to recycle beverage containers
- Targeted commercial organics program

China is the Primary Buyer of US Recyclables



Mainland China's Share of Global Imports for Selected Recycled Commodities, 2016(p)

Source: UN Comtrade Database



China Announces New Ban on Mixed Paper and Mixed Plastic

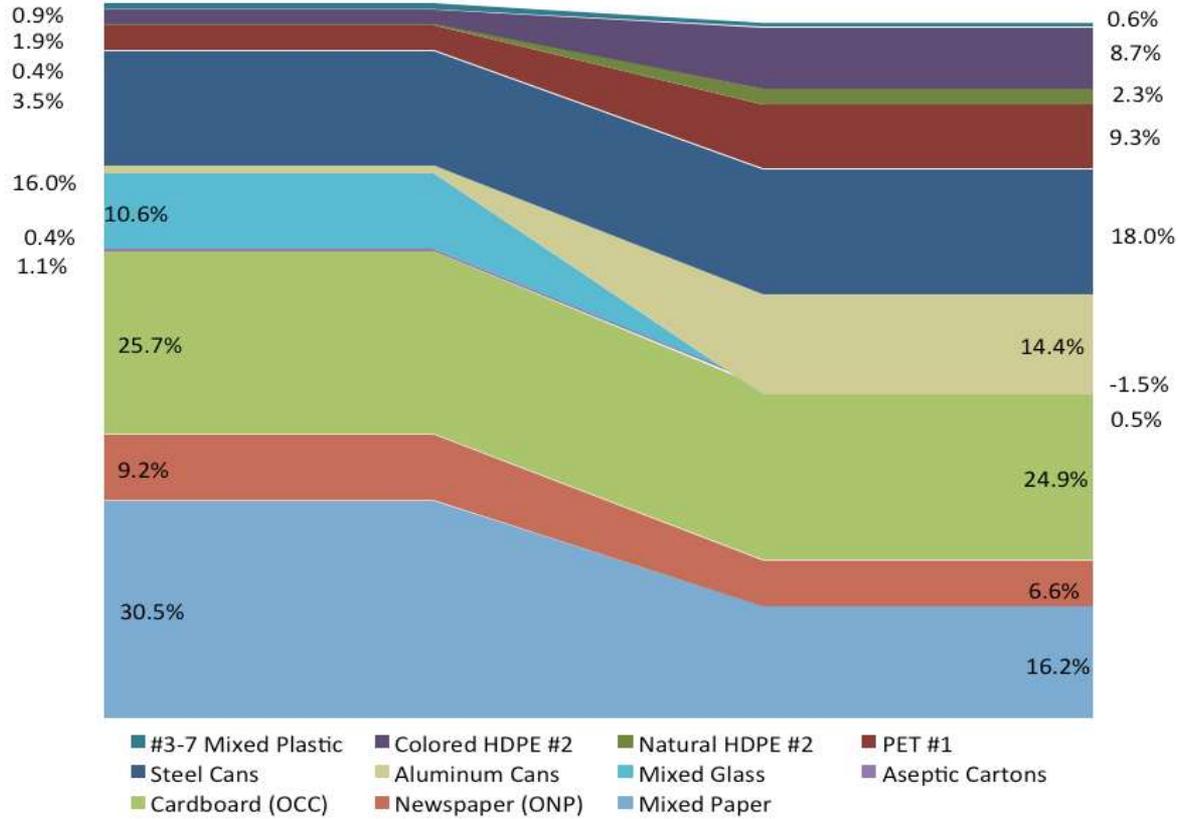


- Intend to halt imports that can be replaced domestically
- Spurs a need to consider alternatives to traditional recycling
 - SpecFuel – produces pelletized fuel from plastic and paper for use in cement kilns
 - Vadxx – converts plastic waste to various types of fuels like diesel
 - Enerkem – converts plastic and paper waste from Edmonton to ethanol

RECYCLABLES QUANTITY VS. VALUE

The quantity of material based on national data is represented on the left side of the chart and the value of the material is represented on the right side of the chart.

The impact of the proposed import ban of contaminated recycled materials to China is not reflected in material values.



Next Steps Moving Forward



- Finalize Strategy Research
- Continue Public Engagement
 - Online Survey
 - Meetings with Metro Council and TDEC
- Waste and Recycling Characterization Fall Sort
- Material Diversion Estimates
- Evaluation of Strategies





Questions?

Thank You!

