

GreenBusiness Engagement National Network

October 19 - 20, 2016





2013 Municipal Waste Characterization Study

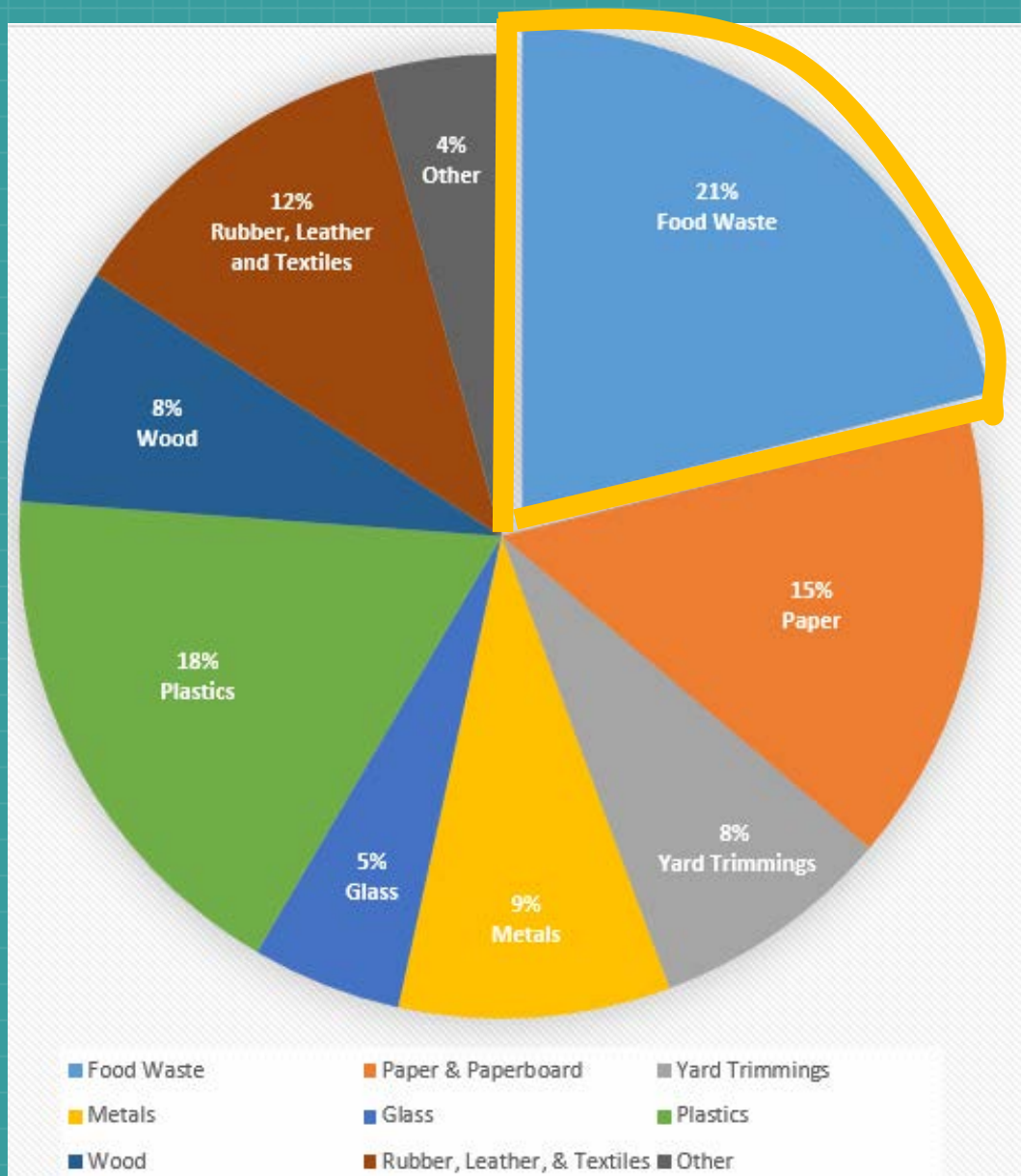
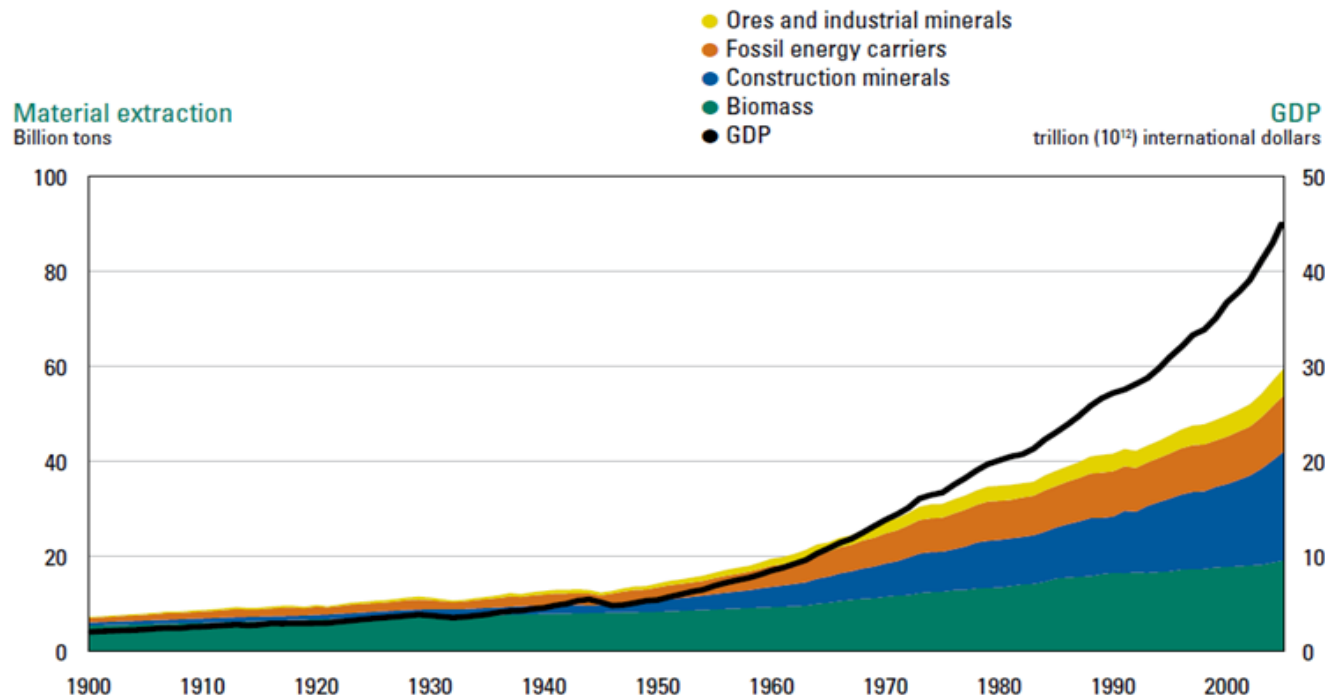




Figure 2. Global material extraction in billion tons, 1900–2005

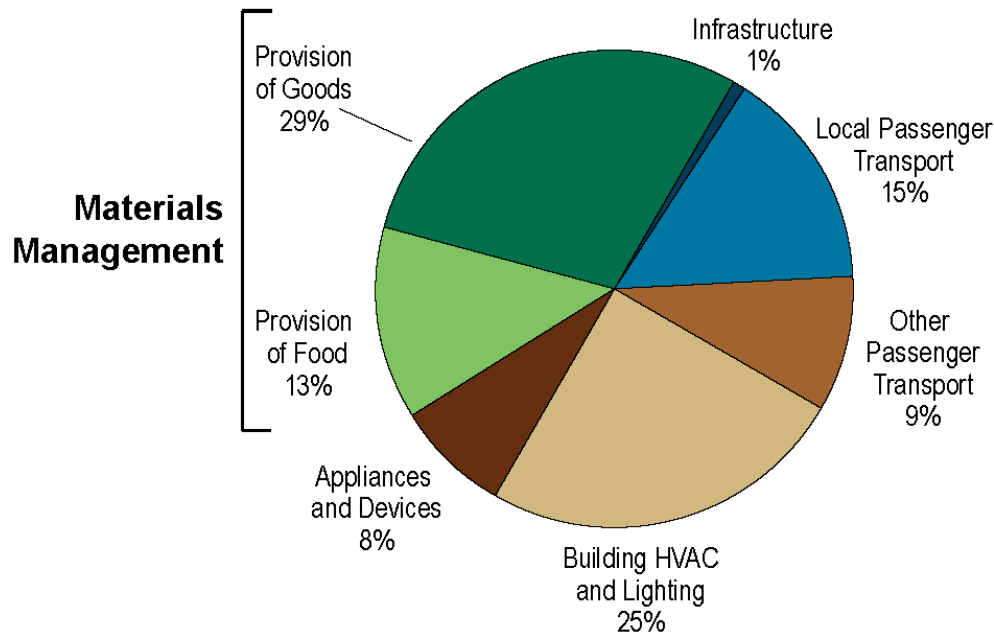


Source: Krausmann *et al.*, 2009

“One half to three quarters of annual resource inputs to industrial economies is returned to the environment as wastes within just one year.”

Weight of Nations: Material Outflows from Industrial Economies, WRI

Systems Based View: U.S. GHG Emissions



Materials Management is represented by the Provision of Food and Goods

Accounts for 42% of U.S. GHG emissions.

Source: Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices. September 2009

Reduce, Reuse, Recycle

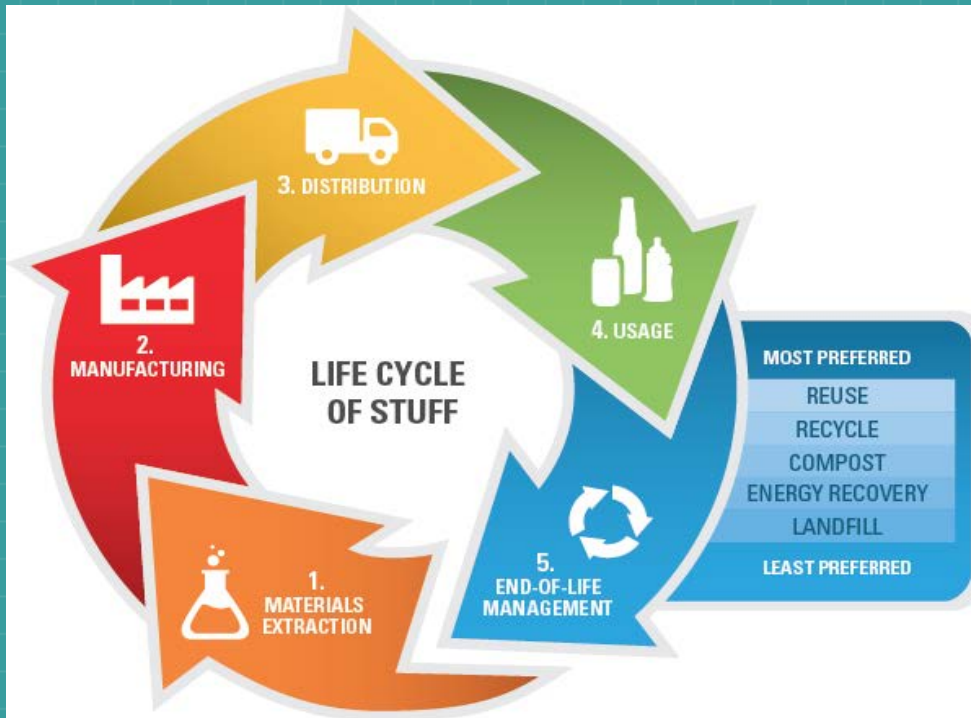
**Sustainable
Materials Management**



CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW

<https://www.epa.gov/recycle>

What is Sustainable Materials Management?



“An approach to serving human needs by using/reusing resources productively and sustainably throughout their life cycles, generally minimizing the amount of materials involved and all associated environmental impacts.”

Sustainable Materials Management: The Road Ahead, EPA



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KNOWLEDGE



WARM(Waste Reduction Model)

<https://www.epa.gov/warm>

- Helps solid waste planners & organizations track & report greenhouse gas (GHG) emission reductions from different management practices
- Can manually calculate emissions via GHG Equivalencies calculator, OR
- Use WARM Tool to calculate & total GHG emissions for baseline & alternative waste management practices, including source reduction, recycling, combustion, composting, anaerobic digestion, & landfilling
- Includes a wide range of commonly found MSW material types/units;
 - metric tons of carbon dioxide equivalent (MTCO₂E),
 - metric tons of carbon equivalent (MTCE), &
 - energy units (million British thermal unit – BTU)
- 3/16: added Anaerobic Digestion materials management pathway, including energy/emission calculations for anaerobic digestion of organic materials including food waste, yard trimmings, & mixed organics

<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

<https://www.epa.gov/warm/versions-waste-reduction-model-warm#v14>

<https://www.epa.gov/smm/wastewise>

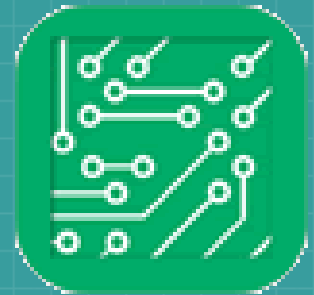




Waste



Purchasing



Electronics

www.epa.gov/fgc/

Sustainable Materials Management

Federal Green Challenge

 **Rethink**

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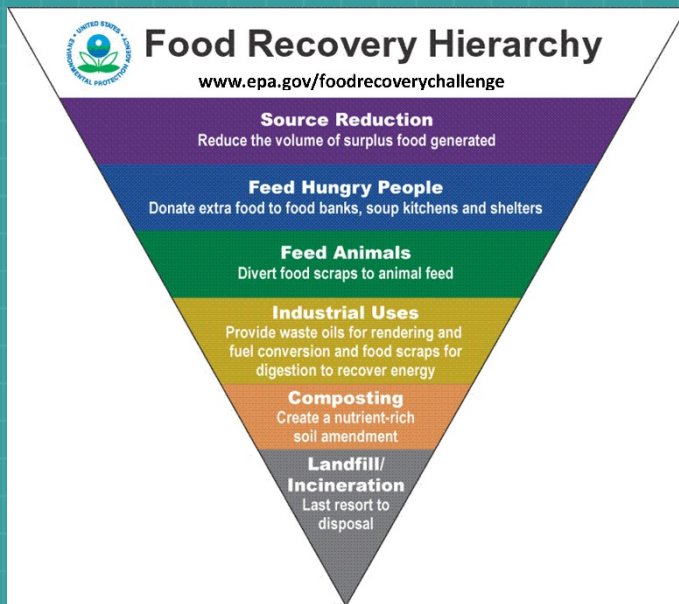
Energy



Water



Transportation



Sustainable Materials Management

www.epa.gov/foodrecoverychallenge

Food Recovery Challenge



CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW

Sustainable Materials Management

Electronics Challenge



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www.epeat.net



<http://www.epa.gov/fec>

Sustainable Materials Management

<https://www.epa.gov/smm-electronics>

Electronics Challenge



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www.stateelectronicschallenge.net



Based upon 2009 study data,
the EPA estimates that ___ % of
electronic waste
ends up primarily
in landfills.

a) 30

b) 45

c) 60

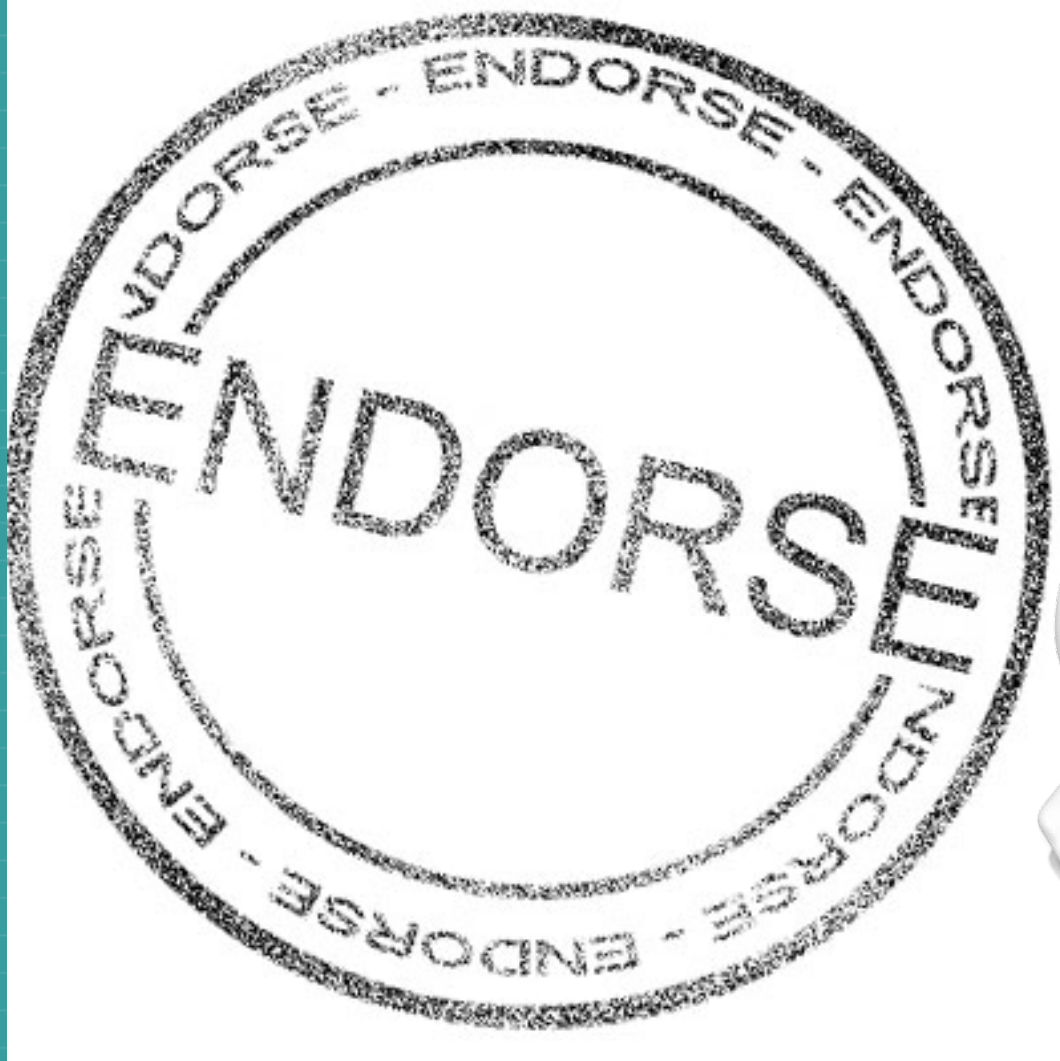
d) 75





<https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste>

<http://www.epa.gov/waste/conserve/smm/wastewise/endorser.htm>



THANK YOU



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