



Solid Waste Improvements in Developing Countries – Lessons from the United States

January 19, 2022

Background

- **Largest association for the solid waste & recycling sector in the U.S. & Canada**
 - 10,700+ individual members
 - Members in public and private sectors
 - About 100 “international” members
 - 47 chapters in U.S., Canada, and the Caribbean
 - 7 Technical Divisions – landfills, collection, etc

Core programs:

Education/Advocacy/Safety/Research

- **Recognized solid waste expert by EPA, federal agencies and others**
 - I am the chair the Commerce Dept’s ETTAC Waste Management and Circular Economy Subcommittee
 - Working with IDB on reports re solid waste collection
 - SWANA provided landfill training to Colombians and Chileans under a State Dept grant (Fall 2020)

U.S. Overview

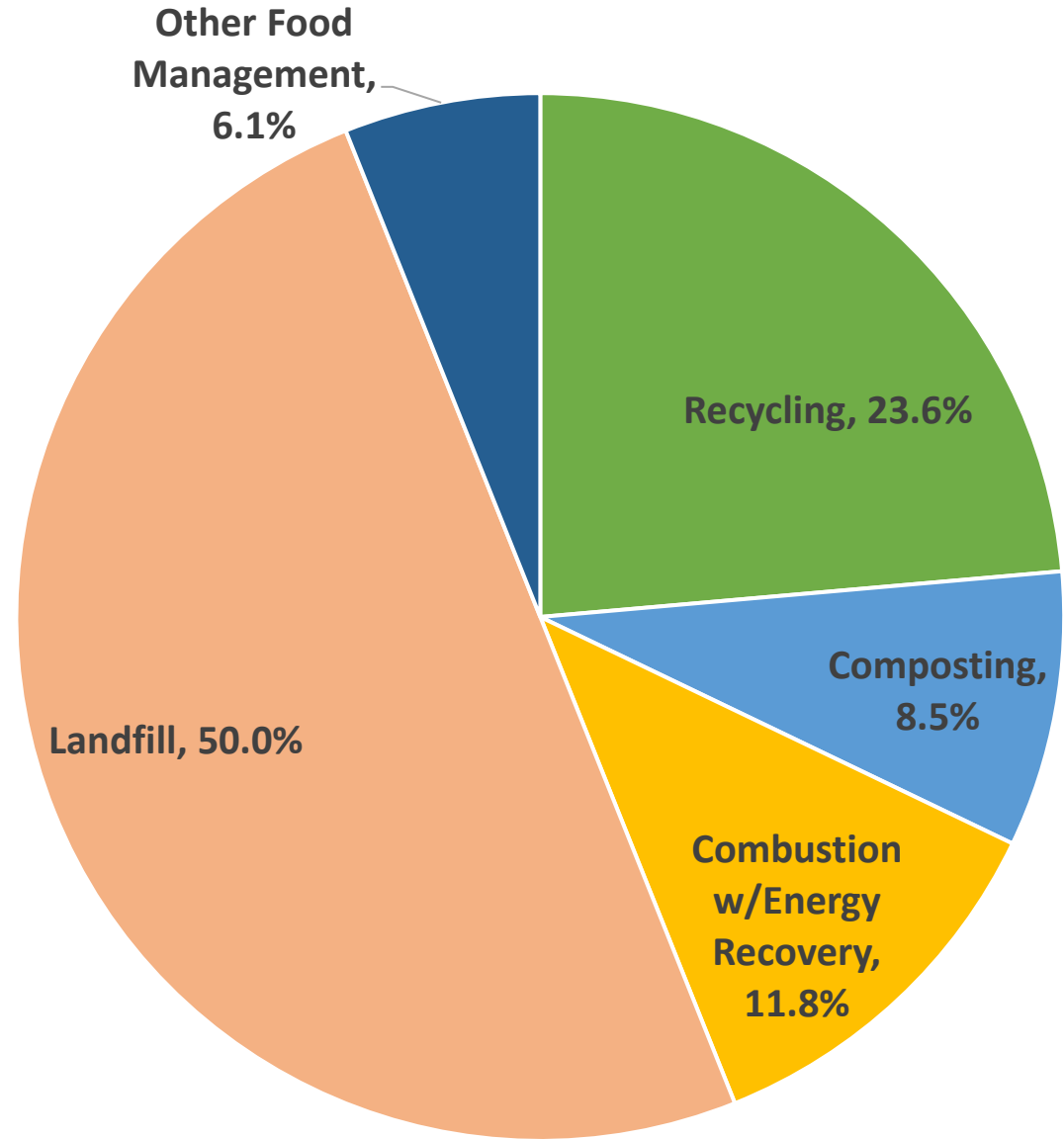
The U.S. generates very large quantities of solid waste

- EPA estimates 292 million tons/yr MSW (2018)
 - 4.9 lbs/2.2 kilos per person per day
 - Does not include construction/demolition waste
 - Need good data to plan and implement changes

About half of U.S. MSW is disposed in landfills



EPA Data on MSW Management

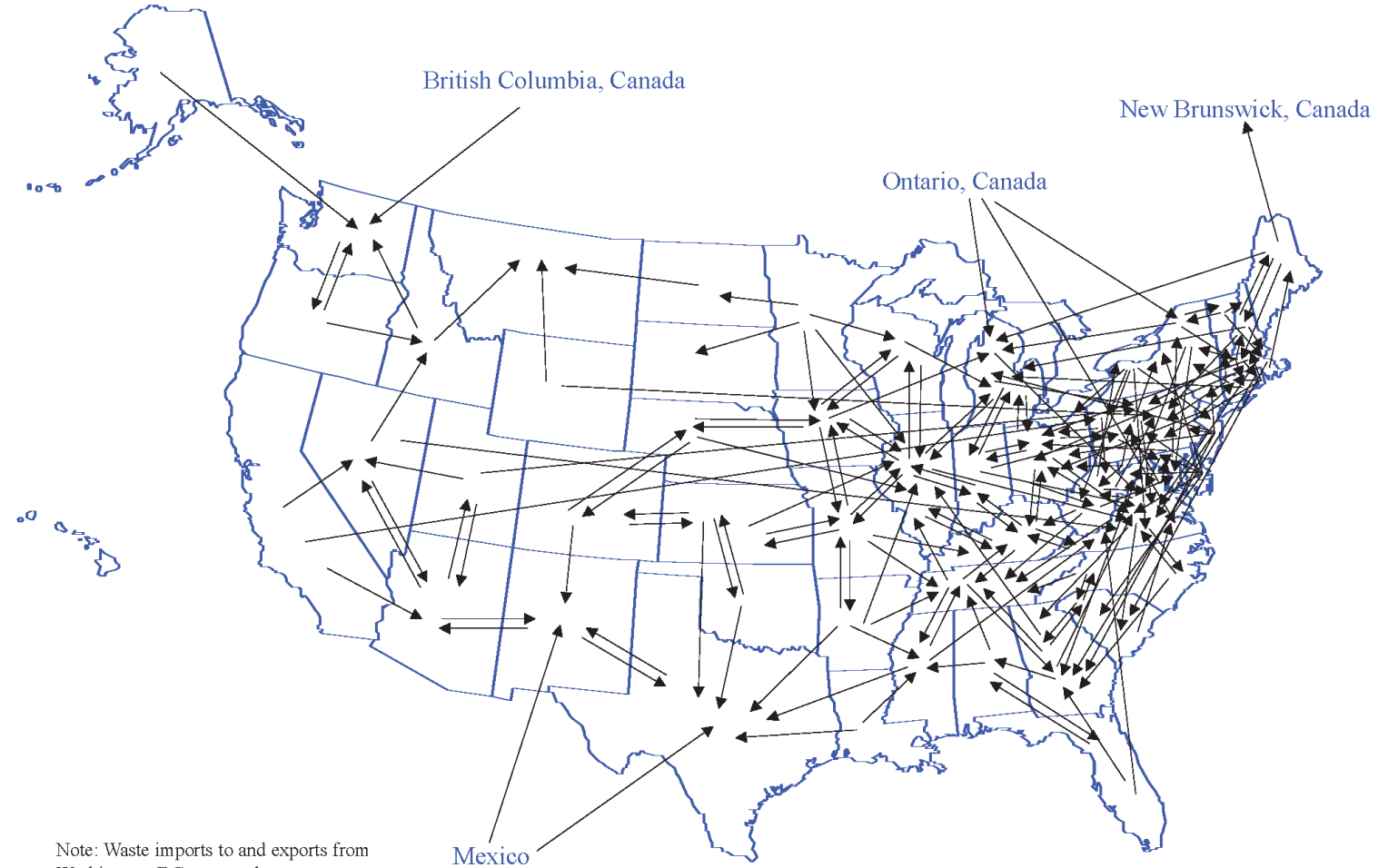


Landfills and Waste-to- Energy in the U.S.

- There are about 1800 MSW landfills and 70 WTE facilities in the United States
 - Heavily regulated, with energy recovery
- They replaced the 10,000+ dumpsites that existed before federal laws changed in the 1980's-1990's.
 - It was a gradual process to replace dumps with transfer stations/recycling centers/modern LFs
- These new & larger landfills receive waste from long distances - NYC, Boston, Los Angeles
 - No one wants a landfill near their house (NIMBY)
 - Advantages of scale – larger = reduced costs
 - Land is very expensive in northeast US/West Coast
 - Environmental Justice concerns

Waste in U.S. moves over state lines

Figure 2. Interstate Waste Movements 2003



Note: Waste imports to and exports from Washington, DC are not shown.

Critical Role for State and Local Governments

Local governments are primarily responsible for waste collection and disposal

- Federal/State regulatory system in United States
 - 50 states, often with different rules
- Solid waste is a traditional state/local governmental function – according to the courts
 - In some locations, neighboring counties have established joint “waste authorities” to manage waste
 - Delaware and RI have state-wide authorities
- Federal law (RCRA) confirms state/local authority – the landfill permit is issued by a state agency

Waste Collection in the U.S.

There are different models for waste collection in the United States

- Local government provides directly
 - Mostly residential (e.g., NYC)
- Local government regulates through a franchise/contract with a hauler (Tampa)
- Open market competition between haulers (Fairfax County, Virginia)
- Rural areas have drop off centers



Recycling

There is a new U.S. focus on recycling

- New Federal [recycling strategy](#) and 50% diversion goal by 2030 reflect a new level of interest by EPA in solid waste
 - Need strong and consistent data systems to make it work
 - Change is difficult, focus on basics first
 - SWANA and others will work closely with EPA on implementation
 - Infrastructure - MRFs
 - Contamination - education
 - Funding – federal, private
 - Markets – need them to be successful
 - Best Practices
 - Food waste diversion goal – 50% by 2030

Closing Dumpsites



US model provides pathway for LDCs to replace dumpsites with modern sanitary landfills

- Dangerous – slides, scavengers
 - 100+ deaths at Addis Abada (2017)
 - 60,000 tons – Dona Juana in Colombia (2020)
- Uncontrolled methane emissions – GHG
- Source of groundwater, stormwater, surface water contamination
- US companies eager to help – consulting/engineering, liners, equipment, LFG, leachate control, emissions



Marine Litter



Marine litter/plastic in oceans and other waterways is increasingly recognized as a major global problem

- Rapidly urbanizing low-income countries w/ growing appetite for consumer products
- Poor waste and recycling systems
- Lack of litter control
- Lack of regulation and enforcement
- Single use plastic use is growing
- 10 rivers (mostly Asian) are 80%+

UNEA expected to start process of developing global treaty next month

Resilience



There needs to be a bigger focus on making solid waste management systems more resilient

- Climate Change – storms disrupt and create large amounts of debris
 - Some waste facilities are in flood zones
 - California fires impacted LFG systems at landfills
- Pandemic – big shift where waste is generated
 - 20% increase in residential
- Labor shortage is causing collection delays

Omicron complicates trash, recycling collections across metro Atlanta

THANK YOU

