

Waste Collection & Disposal in the United States: Trends, Challenges and Opportunities



SWANA[®]



SWANA.org

SWANA - Background

- **SWANA is the largest waste association in North America with 9,500+ members**
 - Members/chapters in United States and Canada
 - Public sector and private sector
 - SWANA is the ISWA National Member for US/Canada
 - Our core purpose is to “advance the responsible management of solid waste as a resource.”



Background on U.S. Waste

The United States generates large quantities of waste

- US EPA -- 258 million tons/year of MSW
- EREF & Biocycle estimate 350-400 million tons/year

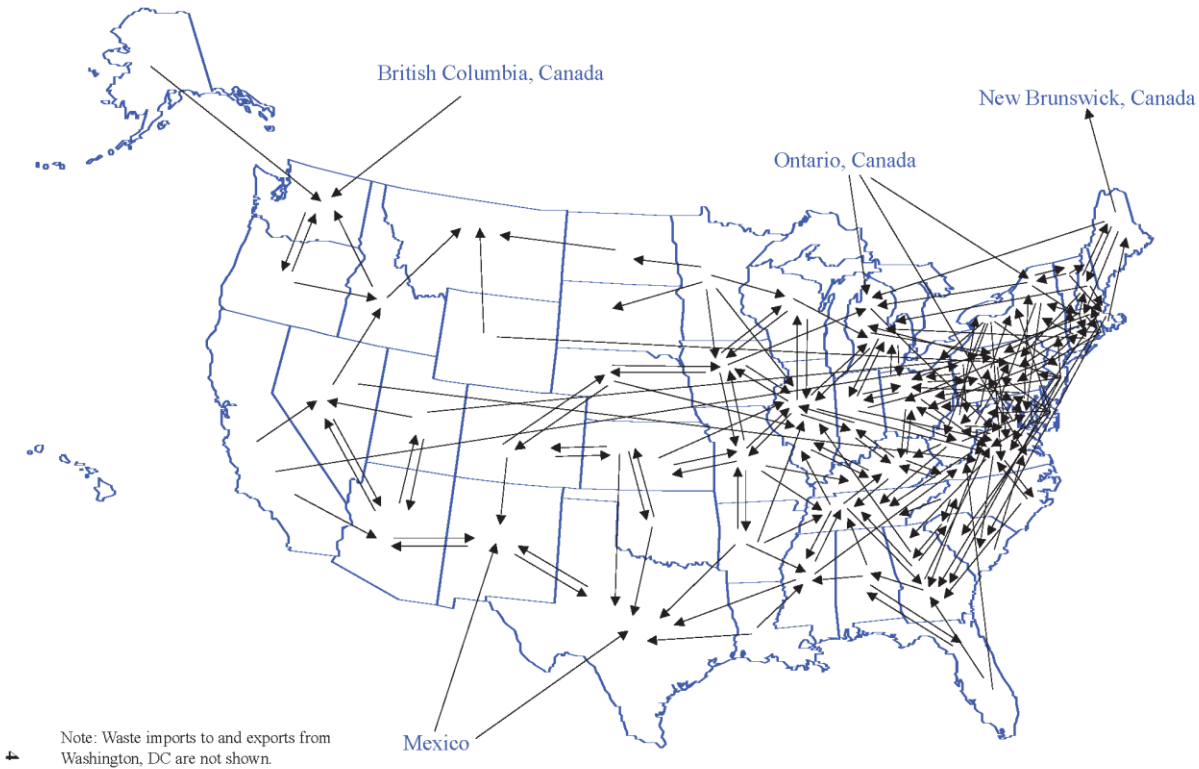
The Majority of Waste in the U.S. is Disposed in Landfills

- Landfill disposal continues to be preferred method (53-60%)
- Regulatory changes drive major changes at landfills
 - Larger, highly engineered facilities that attract waste from large geographic areas
 - Emissions controls – Greenhouse Gas/Climate Change



Interstate Waste Movements

Figure 2. Interstate Waste Movements 2003

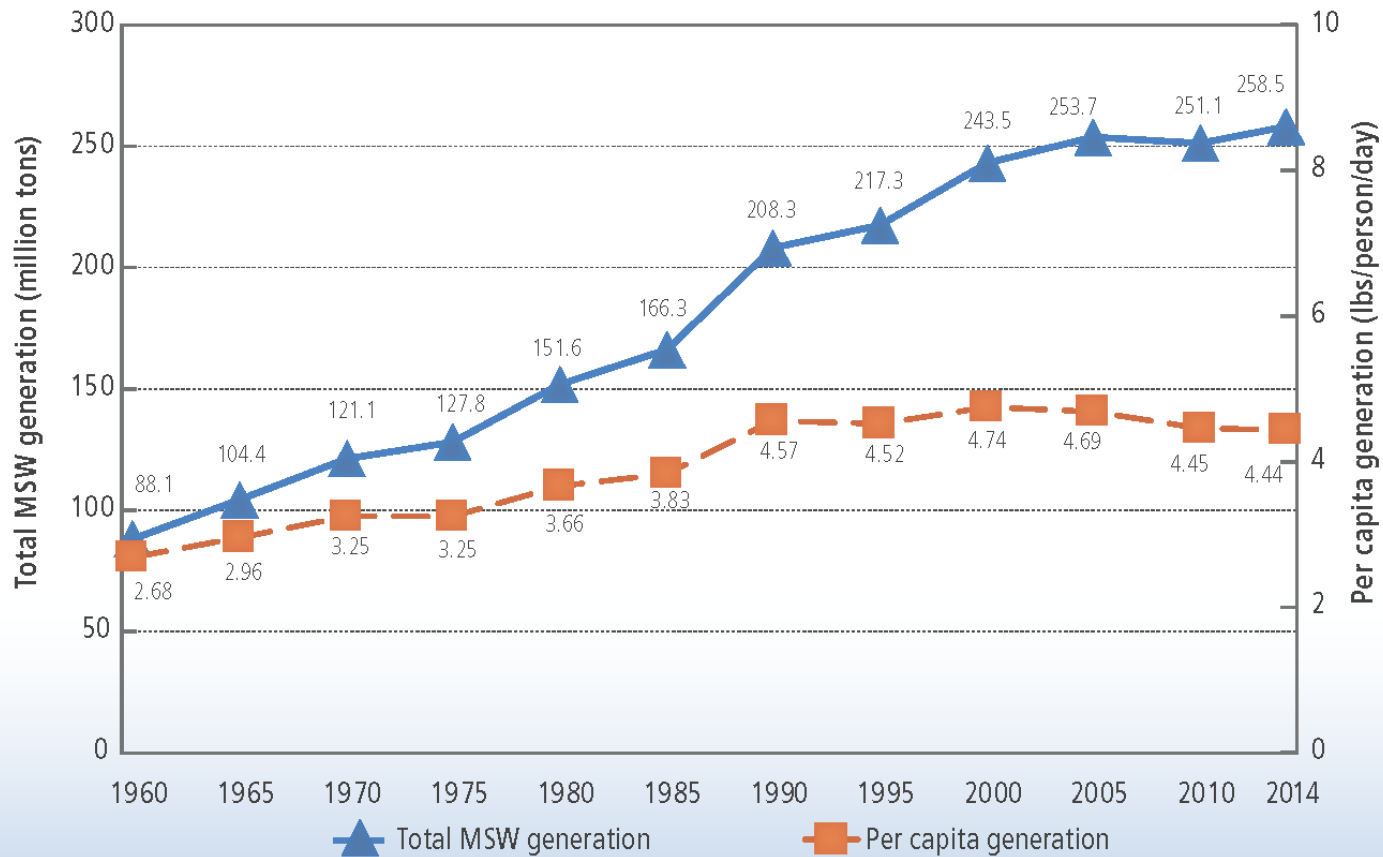


4



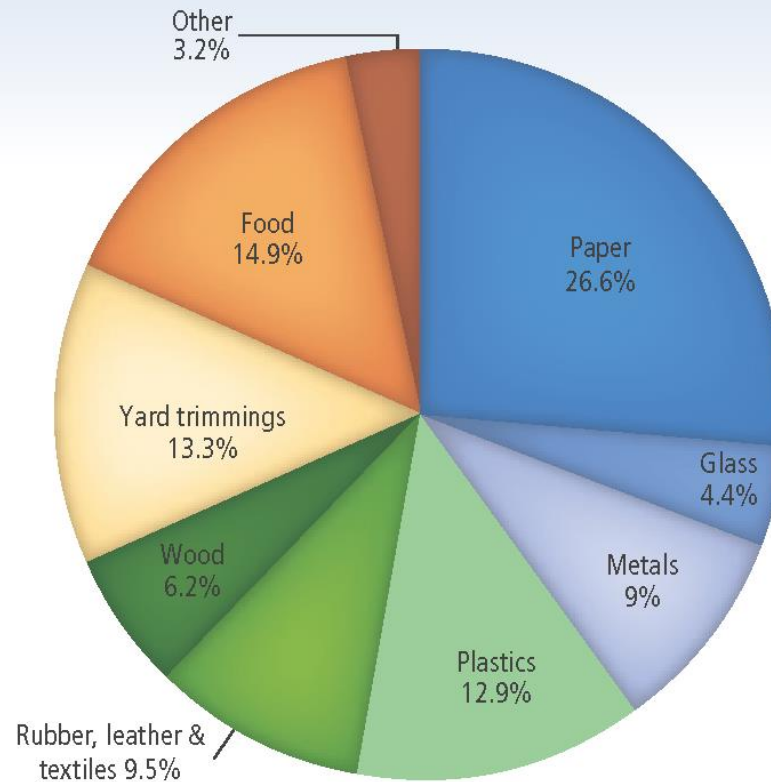
EPA's Annual SMM Report

Figure 1. MSW Generation Rates, 1960 to 2014



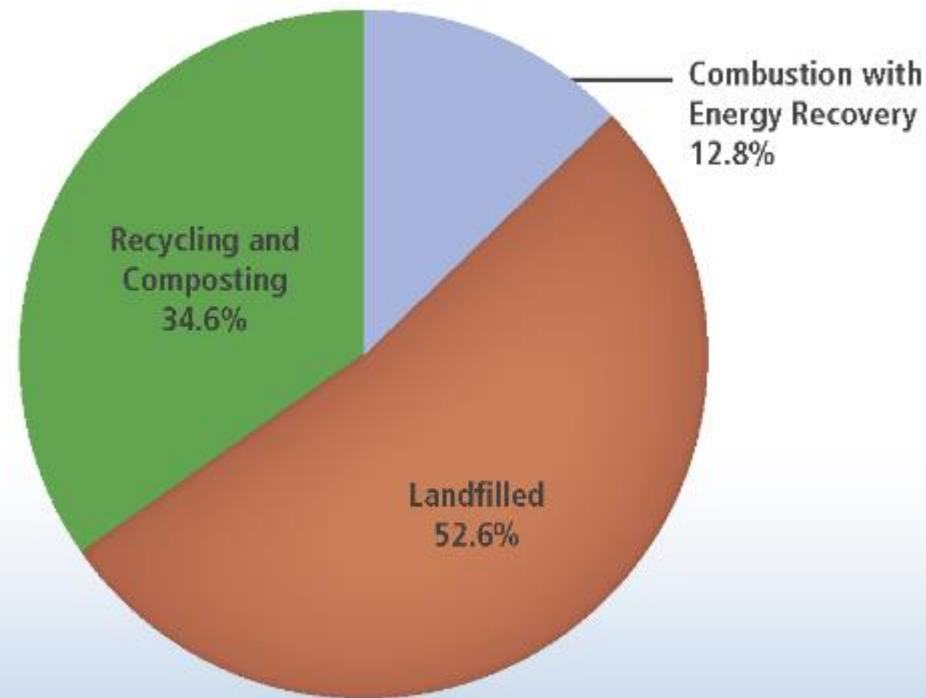
EPA's SMM Report – Types of Waste

Figure 5. Total MSW Generation (by material), 2014
258 Million Tons



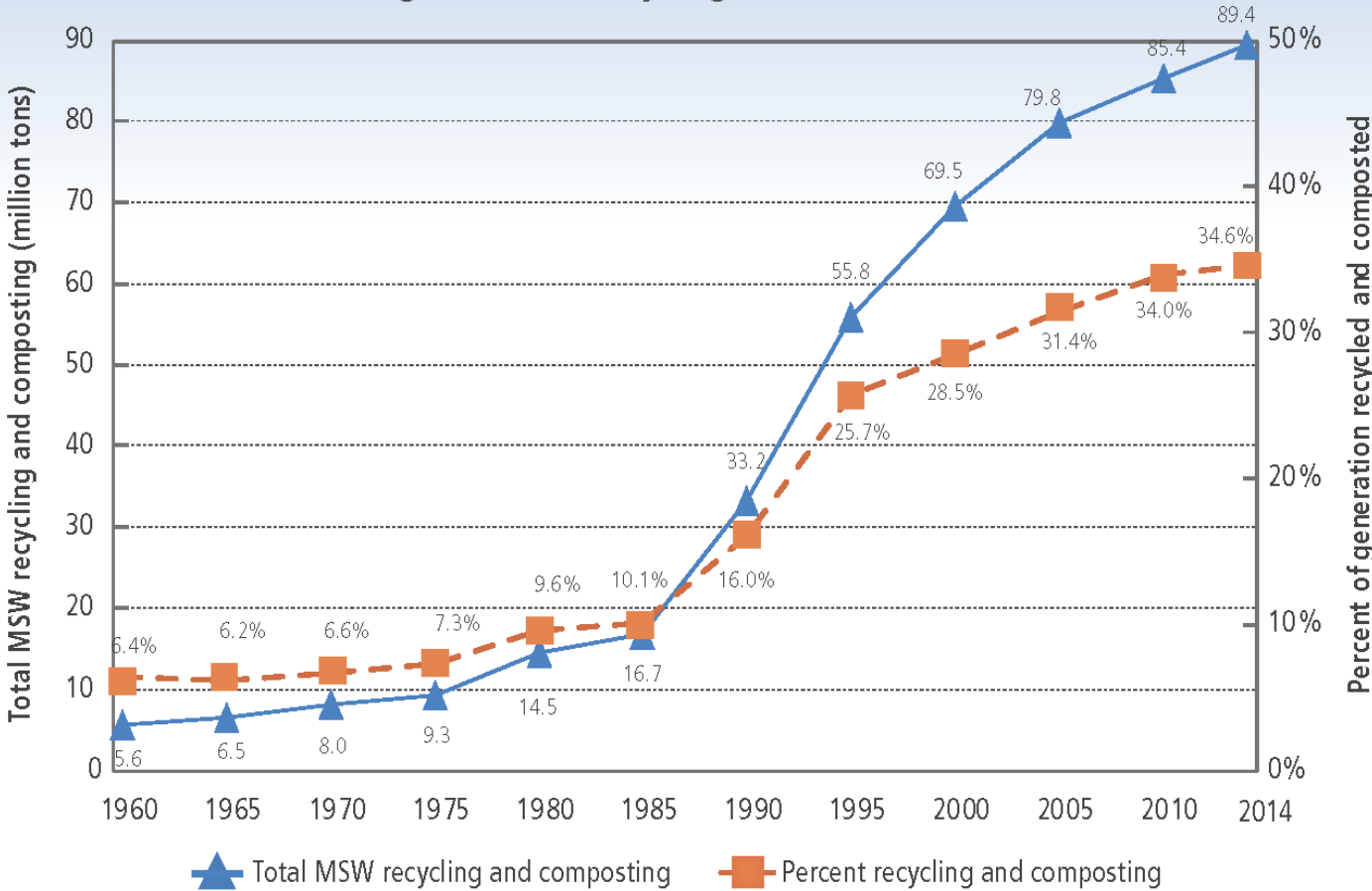
EPA SMM Report - Disposal

Figure 4. Management of MSW in the United States, 2014



EPA SMM Report - Recycling

Figure 2. MSW Recycling Rates, 1960 to 2014



Waste Collection in the U.S.

- **Local Governments Are Responsible for Waste Collection and Disposal**
 - Federal/State regulatory system
 - Traditional state/local governmental function – S. Court
 - Federal law (RCRA) confirms state/local authority
- **Different Models for Waste Collection**
 - Local government provides directly
 - Local government regulates through franchises w/ haulers
 - Open market competition between haulers
 - Some rural areas have drop off centers



Waste Disposal in the U.S.

- **Federal laws have changed location/operations of landfills**
 - Thousands of local dumps closed – RCRA Subtitle D
 - Hundreds of larger, modern, private sector landfills opened
 - Most of these landfills have sophisticated leachate collection, odor control, and landfill gas systems
 - Some states/communities don't like getting other states' waste
 - Nearly every state in the U.S. both imports and exports waste
 - Efforts to stop interstate waste have not been successful
 - Many states impose landfill fees of \$1-13 per ton to deter interstate waste and use it to fund solid waste-related programs.



Waste Disposal – New York City



Waste Disposal – New York City

- **New York City's waste disposal system**
 - Fresh Kills landfill closed in 2001 due to local politics
 - NYC exports 12,000 tpd MSW to VA, PA, NJ, SC, upstate NY
 - NYC enacted a Solid Waste Management Plan in 2007
 - Key element is 4 new City-owned Marine Transfer Stations (MTS)
 - Will use barge/rail to move waste out of NYC and reduce truck traffic
 - First MTS opened in 2015, others by 2019
 - \$600 million to build them
 - Disposal cost will increase from \$90/ton to \$??\$/ton
- **Recent developments:**
 - Food waste diversion for large generators
 - 90% reduction in waste by 2030



Waste Disposal in the U.S.

- **New York City's experience has been replicated, in various locations and ways throughout the U.S/Canada**
 - Los Angeles – Puente Hills closed in 2013 (13,000 tpd)
 - Toronto – Keele Valley closed in 2002 – exports to U.S.
 - Atlanta – City's landfill closed in 2001

Waste is being hauled longer distances, sometimes by rail or barge, to landfills in remote locations

No one wants a landfill in their backyard (NIMBY)



Recycling – A Growing Challenge

- **The Economics of Recycling is a Growing Problem**
 - U.S. landfill tip fees are low (average \$50/ton)
 - Commodity prices declined in 2014-17 with price of oil
 - Less paper as America embraces digital
 - Lightweighting of containers – less metal/plastic
 - Flexible packaging is a new challenge
 - Single stream means more material **BUT MORE CONTAMINATION**
 - Glass contaminates the other material
 - Americans are terrible at recycling
 - Plastic bags, tangles, diapers, guns



Recycling - China

- China has taken steps over the past 4 years that threaten the U.S. recycling system
- U.S. exports \$5 billion of scrap/waste to China each year – 1500 containers/day
 - Green Fence – 2013
 - Tough inspections of imported containers
 - U.S. recyclers improved quality (less garbage)
 - National Sword – Feb 2017
 - Targets illegal imports at ports
 - Increasing corruption awareness
 - Higher penalties for violations



Recycling - China

- **China has proposed banning imports of mixed paper and post-consumer plastic (1/1/18)**
- **China has proposed 0.5% contamination standard for other scrap/waste imports (e.g., plastic)**
- **China is reducing number of waste import licenses**
 - This has triggered a major global market disruption
 - Prices declined 50% in Fall 2017
 - Some material stopped moving (film/plastic bags)
 - Some material is going to other places (SE Asia)
 - Some material is going to landfills and WTE facilities



Recycling - China

- **SWANA has been a leader on this issue:**
 - Meetings with U.S. and Canadian government
 - Sending advisories to 50 state agencies
 - Speaking at industry and US EPA events
 - Coordinating with Australia and Europe
- **SWANA filed comments on December 15:**
 - Asked for delay in implementing waste import restrictions
 - A more reasonable contamination standard based on
 - Past international specifications
 - Feasibility – 0.5% is not practical
 - China's environmental protection goals



Food Waste – The Next Frontier

There is increased interest in diverting food and organics from landfills

- Food/organics is largest part of waste stream
- SF, Seattle started separate collection in 2000's
- Several states have new food waste diversion laws
- US EPA set 50% food waste reduction goal by 2030
- Diverting food/organics helps with ambitious Zero Waste goals
 - Composting/anaerobic digestion/wastewater treatment



U.S./Israel

- Our countries are very different and it is difficult to apply lessons from one to the other
- Technology/innovation in collection, in recycling and at landfills may be a good place to work together
- Safety – waste collection is 5th most dangerous job in the U.S. and we kill 100 others each year



Concluding Thoughts

- 1. Waste system in U.S. continues to evolve**
- 2. Mix of private and public sector providers**
- 3. Increased interest in diversion from landfill despite cost challenges and capacity limitations**
- 4. Recycling is becoming a big challenge and China's import restrictions pose a major threat to U.S. (and other) recycling systems**
- 5. Safety is a top priority and SWANA is here to help**



Thank you!

QUESTIONS???

David Biderman

www.swana.org

dbiderman@swana.org

240-494-2254

@biderman



SWANA[®]

