



Our Waste Data is Garbage

The Benefits of Standardizing Waste Industry Data &
Reporting through SWEEP

Jim Thompson, Waste Business Journal

Rob Watson, SWEEP Standard



Jim Thompson

***Founder and President, Waste Business Journal;
SWEEP Steering Committee***

Jim Thompson heads Waste Business Journal, a research and consulting firm dedicated to the waste management industry. With over twenty-five years of experience in the industry, he is a leading expert on waste industry economics.

Waste Business Journal publishes a journal and a variety of research products that address the ever-changing more vertically integrated waste business.

Mr. Thompson regularly consults with clients on issues of strategic, economic, regulatory, and policy issues related to waste management. His clients include corporations, governments, and agencies of the federal government.

www.wasteinfo.com



What We Do

- WBJ regularly surveys waste processing and disposal operations across the country and in Canada.
- We ask what types of waste they accept, how much, and what they charge.
- What do they do with it? What kinds of equipment are employed?
- What is the market area?
- What is the operating capacity and long-term capacity?
- This data goes into a large database that includes that drawn from many other sources such as from state regulatory agencies and such that also get reports directly from the facilities.

Discrepancy With EPA Numbers

- In its most recent report, EPA estimates 267 million tons of waste generated each year in the US, or 4.5 lbs. per person per day.
- WBJ estimates that the US generated 450 million tons of waste that year or just over 7.5 lbs. per person per day.

Why The Huge Discrepancy?

- Primarily due to differences of market definition and methodology
- WBJ uses a bottom-up approach by gathering data directly from recycling and disposal facilities
- EPA uses a top-down model that estimates waste from production reports along with small samples of data extrapolated out for the whole country
- EPA also uses a narrower definition of MSW that tends to leave out commercial and light industrial wastes that enter the municipal waste stream.

Waste Generation Recovery and Disposal in the US in 2018

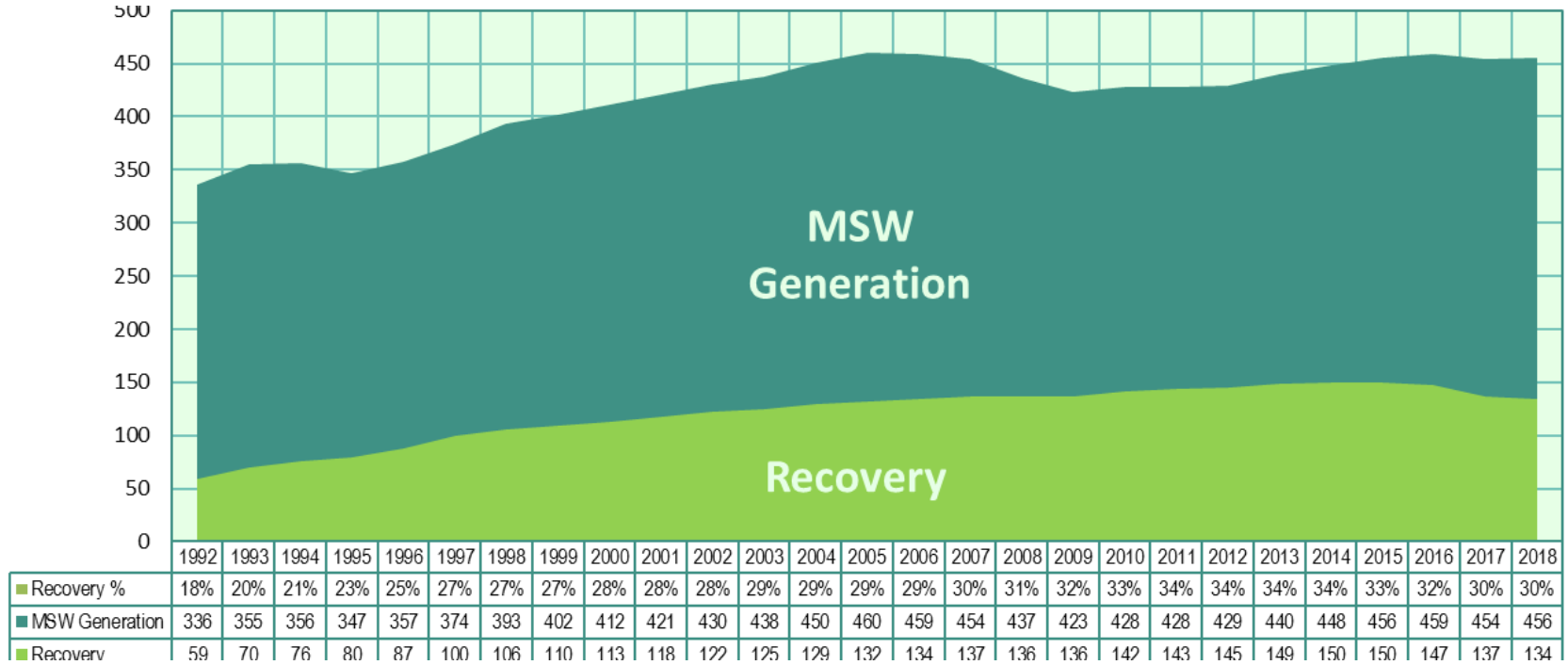
(millions of tons)

	Tonnage	%
Total MSW Generation	455.7	
Recovery	134.3	29%
Post-Recovery	321.4	
Net Exports	(8.1)	
Total Disposal	327.2	
Landfilled	301.4	92%
Processed by W-T-E*	25.9	8%

7.6 lbs/person

Waste Generation Recovery and Disposal by Year

(millions of tons)

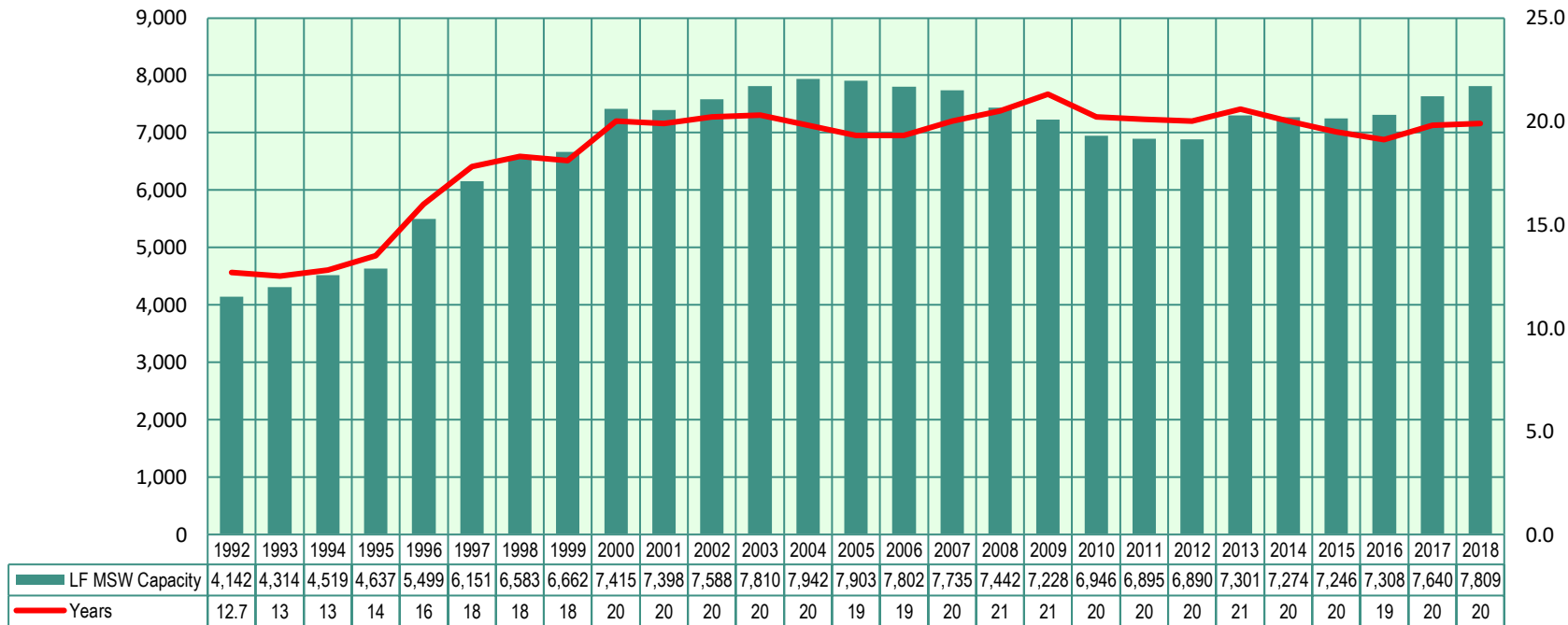


Why Are These Measurements Important?

- Because we are running low on landfill space in critical regions, especially the northeast.
- Because we cannot make sensible economic or environmentally conscious decisions without good data
- Because recycling matters for the environment, for conserving natural resources, for our economy and our way of life on this planet
- Because the price of disposal is increasing and therefore the need (and incentive) to divert materials through reduced use, reuse or recovery.

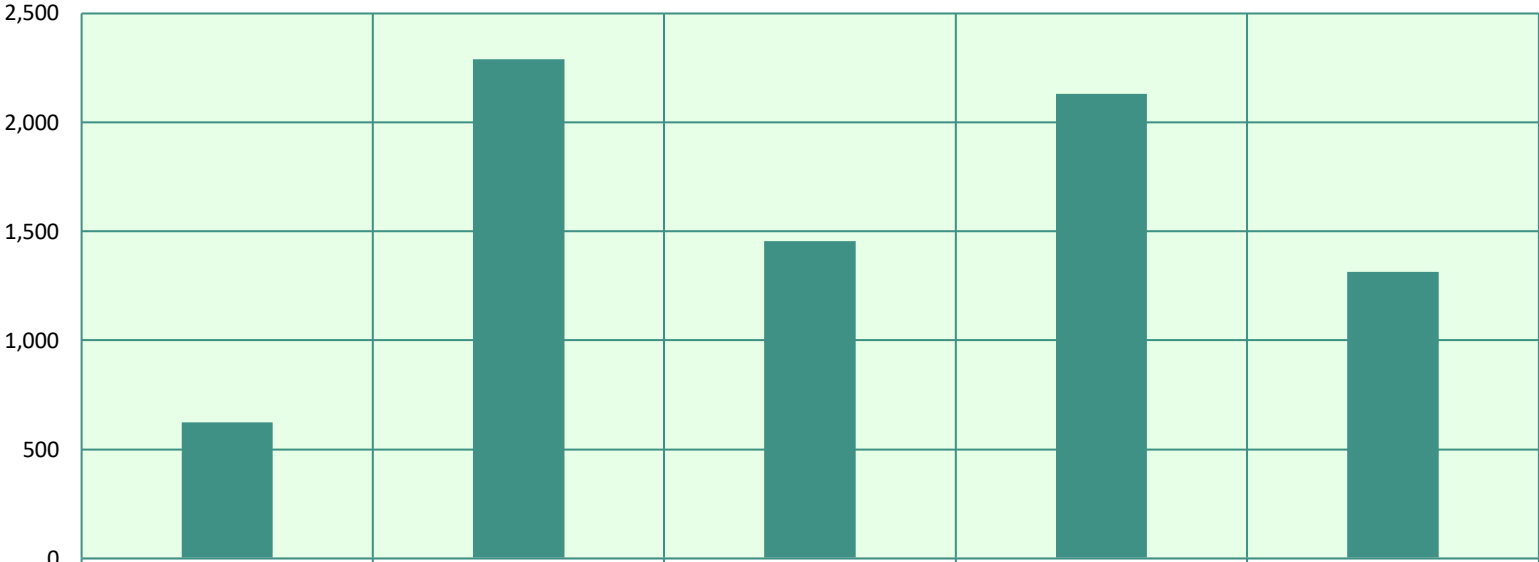
Remaining Landfill Capacity by Year

(millions of tons and years remaining)



Remaining Landfill Capacity by Region

(millions of tons)



	Northeast	Southern	Midwest	Western	Pacific
Tons (millions)	623	2,288	1,455	2,129	1,313
Years Remaining	12.5	19.1	15.1	29.6	24.6

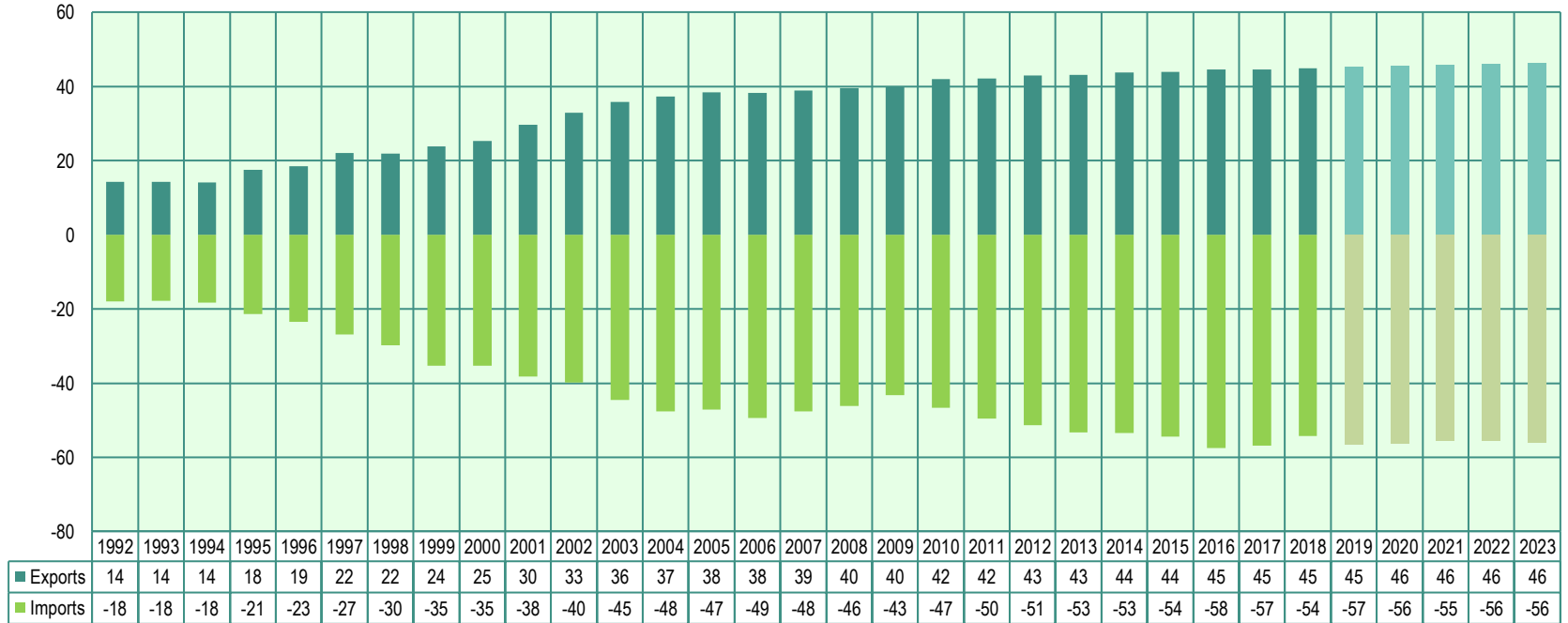
Landfill Pricing (Tipping Fees) by Year

(in \$ per ton)



Increasing Movement of Wastes Among Regions by Year

(millions of tons)





[sweepstandard.org](https://www.sweepstandard.org)



Rob Watson

Founder and President, SWEEP

Co-Chair SWEEP Steering Committee

An international leader in market transformation and green buildings, Watson is known as the “Founding Father of LEED.” Under Rob’s direction, LEED became the largest and fastest-growing international green building standard.

Rob is also the Founder and President of the SWEEP (Solid Waste Environmental Excellence Performance) Standard, a system of market transformation standards geared to move the waste industry toward sustainability.

Author Thomas Friedman called Rob "one of the best environmental minds in America." Dartmouth Alumni Magazine just recognized Mr. Watson as one of the "25 Most Influential Alumni" in the College's 250-year history.

Mr. Watson received his MBA from Columbia University in 2006, a MS in Energy and Resources from UC Berkeley in 1990 and his AB from Dartmouth in 1984. He is married to Green Schools Alliance Founder Margaret Howard Watson and has a 21-year-old son, Max.

What is the Size of the Problem?

- EPA says 267 million tons
- Everyone else says >400 million tons
 - WBJ
 - Biocycle
 - EREF
 - Yale
- Models are no substitute for surveys
- Can't solve a 400+ million ton problem with 260 ton solutions

What's in the Problem?

- Inconsistent Waste Characterization
- Expensive and difficult
 - SF's is from 2006-15 years old!!
- Inconsistent recycling characterization

Waste Characterizations: All Over the Map

General				Plastic		
Paper	Paper	Paper	Paper & Paperboard	Plastic #1	PET Bottles	PETE Containers CRV/Non-CRV
Plastic	Plastic	Plastic	Glass	Plastic #2	HDPE #2 Bottles	HDPE Containers CRV/Non-CRV
Glass	Glass	Metal	Metals	Plastic clamshells	Other Bottles/Jugs	Miscellaneous Plastic Containers CRV/Non-CRV
Metal	Metal	Glass	Plastics	Plastic Blister packing	Trays and Tubs	Plastic Trash Bags
Food Waste	Electronics	Organic	Rubber & Leather	Plastic #1-#7 & unmarked non bev. Cont. <2gal	Rigid Plastics	Plastic Grocery and Other Merchandise Bags
Yard Trimmings	Other Organic	Construction & Demolition	Textiles	Plastic containers > 2 gal.	Other Plastics	Non-Bag Commercial & Industrial Packaging Film
Rubber/Leather	Inerts and Other	Durable	Wood	Bulky Plastic > 2gal	Film	Film products
Textiles	HHW	HHW	Other Materials	Retail Bags & Film	Grocery Bags	Other Film-Flexible Plastic Pouches/Other
Wood	Special Waste	Mixed Residue	Yard Trimmings	Contaminated film bags		Durable Plastic Items-#2 & #5 Bulky Rigid
Misc. Inorganics	Mixed Residue		Miscellaneous Inorganic Wastes	Styrofoam		Durable Plastic Items-Other
Other Wastes				Remainder/composite plastic		Remainder/Composite Plastic



The Impacts of a Level Playing Field

- Montgomery County MD benchmarking study
- Undertaken by HDR
- Compared and normalized multiple recycling programs

Jurisdiction	Reported Diversion	Calculated Diversion
King County	59.6%	59.6%
Minneapolis	37.4%	45.4%
San Francisco	>80%	47.5%
Toronto	53%	48.1%

From the Same Zero Waste Report

2.2 million tons generated
 Metal = 66,000 tons (3%)

Paper	14.7%
Plastic	10.1%
Glass	2.0%
Metal	3.0%
Food Waste	10.8%
Yard Trimmings	11.4%
Rubber/Leather	1.3%
Textiles	6.2%
Wood ⁽²⁾	7.4%
Misc. Inorganics ⁽³⁾	5.9%
Other Wastes ⁽⁴⁾	26.8%

Material	Quantity Recycled (Total Tons)
White Goods ⁽¹⁾	285,989
Rubber Tires	6,650
Wood Waste	19,130
Yard and Leaf Waste	2,155
Aluminum Scrap	277
Aluminum Cans	10
Antifreeze	24
Asphalt	5,303
Cardboard	107,686
Construction and Demolition	393,424
Consumer Electronics	646
Ferrous Metals	83,023
Fluorescent Tubes and CFLs	5,503
Food Waste	345
Furniture and Furnishings	0
Batteries: Lead Acid	67
Mixed Glass	31
Mixed Metals	732
Mixed Papers	12,963
Mixed Plastic	1,514
Commingled Materials	390
Oil Filters	0
Newsprint	1,568
Batteries: Other Household Batteries	20
Non Ferrous Metals ⁽¹⁾	227,780
Office Papers	10,762
Single Stream	144,204
Steel and Bimetallic Tin Cans	40
Clothing and Textiles	10
Other: Paints, Varnishes, Pesticides	54
Misc. Other Consumer	694
Used Oil	688
Wire/Cable	0
Total Quantity Recycled	1,311,772

White Goods + Ferrous + Non-Ferrous
 + Misc. Metals = **597,900 tons ~27%**

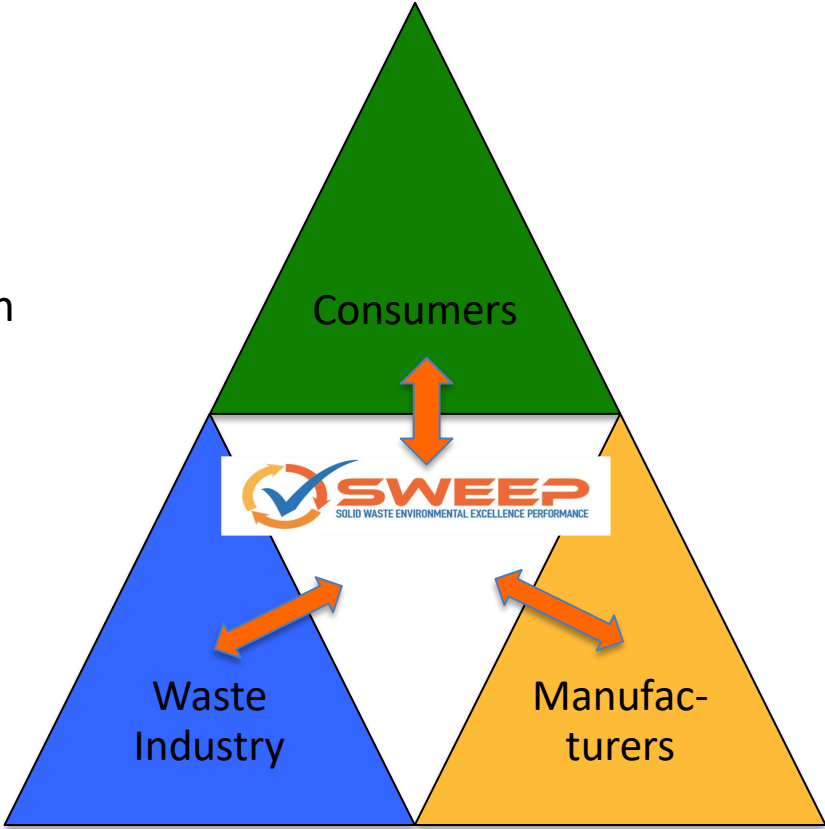
Inside the Same Report

- 2 Inconsistencies:
 - Internally inconsistent
 - Waste generation and recovery figures are an order of magnitude off
 - External inconsistency: Metal share >2x US average
- What's going on?

Fixing the Problem

- Develop a uniform system of material classification for waste characterization/composition studies
- Develop a consistent methodology for assessing diversion vs. disposal activities
- SWEEP is working on both these things
 - Contact us if you'd like to be involved.

Standardizing
Material
Characterization



What is SWEEP?

- A system of triple-bottom-line sustainable materials management standards, each designed to certify leaders in the market
 - Nonprofit; developed by volunteer professionals
- SWEEP Standards identify and reward local governments and materials management companies leading in social, economic, and environmental aspects of materials management within different segments of the market
- Point-based standards
 - 0 to 110 points available; 4 tiers for SWEEP & SWEEP+
 - SWEEP-Zero is “pass/fail”

Benefits of SWEEP

Everyone is affected by how effectively waste is handled

- National Standard
- Educating the industry on best practices for:
 - **Social performance** - Ensuring worker safety and good neighbor practices to protect people from hazards
 - **Environmental Performance** - Minimizing greenhouse gas emissions released through fleet, equipment, and landfills
 - **Economic Performance** - Maximizing efficiency of program operations to free dollars for other municipal programs
- Roadmap that drives innovation
 - Current, consistent data and best practices creates virtuous cycle of responsible & cost-effective programs

Committee & SWEEP Members



Who is Eligible for SWEEP Certification?

- The SWEEP Standard certifies the comprehensive sustainable materials management operations of local governments and the industry service providers with whom they contract
- SWEEP also certifies private entities operating in any one or combination of the five Performance Categories of SWEEP
- SWEEP Performance Categories

Policy (SMMP)

- *Local Governments*
- *Corporate Offices*

Analysis (WGP)

- *Local Governments*
- *Corporate Offices*

Collection (SWC)

- *Haulers*
- *Transfer station operators*

Recovery (PCR)

- *MRFs*
- *Organics processing*
- *eWaste processing*

Disposal (PCD)

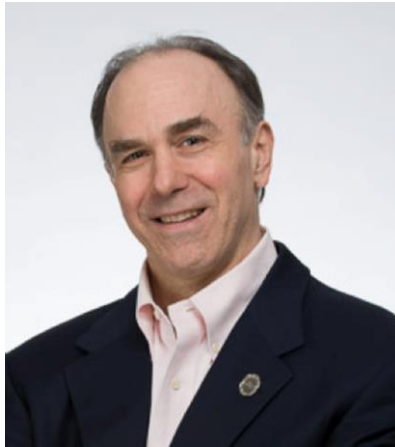
- *Landfills*
- *Waste to Energy Facilities*

Future Opportunities and Potential Collaboration

- SWEEP is currently seeking:
 - New members
 - SWEEP
 - Pilot Program participants
 - Grant funding for Pilot Program and standard development activities
- Shared goals:
 - Provide a standardized basis for incentive programs
 - Consistency, not ‘one size fits all’
 - Identify and reward leadership in sustainable materials management

Contact Info

We look forward to hearing from you!



Contact Rob Watson:

rob.watson@sweepstandard.org



Contact Jim Thompson:

jim@wasteinfo.com

Please join us for our next webinar:

ReTRAC X SWEEP: Simplified Reporting Through the Municipal Measurement Program

Presentation + Q&A

Date: Tuesday, October 6th at 10am PT, 1pm ET

Come learn about the importance of consistent definitions and reporting at an industry level and what the MMP is doing and how it dovetails with SWEEP. Get a preview of the SWEEP project certification platform that is under development.

Learn from ReTRAC Connect Senior Manager, Chris Ronson and Rob Watson, SWEEP Founder and President

How to get involved...

Visit sweepstandard.org to find the full standard and learn how to get involved in SWEEP through:

- **MEMBERSHIP**. SWEEP seeks leading local governments and materials management service providers (haulers, MRFs, landfills, organics processing facilities, etc) to become SWEEP Members
- **COMMITTEES**. SWEEP seeks professionals from local governments and the waste industry to serve on various technical committees, ranging from policy implementation to recovery and disposal alternatives. Committee members must come from SWEEP Member organizations.
- **PILOT PARTICIPANTS**. SWEEP seeks local governments and their industry service providers to join its existing pilot participants and be among the first to become SWEEP Certified.

Q&A

Thank you for your time

We look forward to hearing any questions about our presentation. We thank you for sharing our goal of guiding the waste industry toward sustainable materials management.

If you cannot stay for Q+A, please submit questions to info@sweepstandard.org