ARE LANDFILLS AN ENDANGERED SPECIES?

Frank R. Caponi
LMOP
January 2014
Mark Landsbaum: Beliefs shape how we interpret reality

Media’s preconceptions reflected in how they report news.

By MARK LANDSBAUM / Register columnist
Published: Jan. 10, 2014 Updated: 3:07 p.m.

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Q: WHAT DO YOU CALL DOING THE SAME THING OVER AND OVER AGAIN AND EXPECTING DIFFERENT RESULTS?

A: INSANITY CALIFORNIA
Welcome to the City’s Zero Waste Programs & Services

Berkeley has a longstanding commitment to reducing and ultimately eliminating/diverting the waste that goes to landfills, and established one of the first municipal recycling programs in the nation.

NEW! Berkeley Expands Recycling Program to Include All Plastic Containers

Effective July 2013 the City of Berkeley’s residential and commercial curbside recycling programs now accept any clean, rigid plastic containers. This includes the Ecology Center’s residential curbside collection, the City’s commercial recycling collection, and drop-off of recyclables at the City-owned Materials Recovery Facility (MRF) operated by the Community Conservation Center (CCC).

For complete details on plastics that are acceptable and are not acceptable for recycling - go to the Berkeley Recycling Services page.
San Francisco Recycling Rate Reaches 80 Percent

Allan Gerlat | Waste Age

Oct. 5, 2012

San Francisco has increased its recycling rate to 80-percent landfill diversion.

The city said in a news release it reached the milestone through source reduction, reuse, and recycling and composting programs. The city has partnered with San Francisco-based Recology Inc. to be designated the Greenest City in North America on the 2011 Siemens Green City Index.

The city’s landfill disposal has been reduced by half over the past decade and is at the lowest level on record.

SF Goal is 90% by 2020;
California Goal is 75% by 2020
USE AN AGENDA TO DRIVE BELIEFS
Schwarzenegger Signs Global Warming Bill

Arnold Schwarzenegger Signs Global Warming Initiative That Caps Greenhouse Gas Emissions

By SAMANTHA Y O

SAN FRANCISCO Sep 27, 2006 (AP) – Gov. Arnold Schwarzenegger on Wednesday signed into law a sweeping global warming initiative that imposes the nation's first cap on greenhouse gas emissions, saying the effort kicks off "a bold new era of environmental protection."

Standing on picturesque Treasure Island with San Francisco's skyline in the background, Schwarzenegger called the fight against global warming important issues of modern times.
Take ownership of waste generated in California – “cradle to grave”

Maximize recycling and diversion from landfills (achieve 75% diversion by 2020 – AB 341)

Reduce volume of waste generated

2035: Net-Zero GHG emissions from waste sector

2050: Reduce direct emissions by 25%
Waste Sector: Potential Actions

- AB 341 75% diversion plan (mandated goal) = primary foundation for reducing emissions
- To achieve 75% diversion, need to move 22 million tons from landfills! Organics must be addressed
- This will result in 20 – 30 MMTCO2e GHG reduction!!

AB 32 NEEDS AN 80 MMTCO2e REDUCTION BY 2020 TO MEET GOALS
Waste Sector: Potential Actions

- Consider:
  - Landfills in cap and trade program
  - Ban on organics from landfills
  - Mandatory organic waste recycling
  - Additional landfill methane reduction
AB 32 Waste Sector Plan Takeaway

- **Cost:**
  - Estimates of $2 to $3 Billion in infrastructure cost to achieve waste management objectives

- **Reality:**
  - LANDFILLS ARE LIKELY A DYING BREED IN CALIFORNIA!? But when?
Figure 1. San Francisco Waste Legislation and Diversion Rates

2001: SF adopts city-wide compost collection

2002: SF Board of Supervisors adopt 75% waste diversion goal by 2012

2006: Construction and Demolition Debris Recovery Ordinance Passed

2007: Food Service Waste Reduction Ordinance Passed

2009: SF adopts mandatory recycling and composting

2010: Plastic Bag Reduction Ordinance Passed

Source: Adapted from San Francisco Planning and Urban Research Association, 2010.
MSW Recycling Rates, 1960-2010

Total MSW recycling (million tons)

Per cent of generation recycled


0.56%/YR

- Total MSW recycling
- Percent recycling
HOW DO YOU GET TO 80% RECYCLING NATIONALLY?
To get to 80% from national 34.1% (2010), at an increase in annual recycling of 0.56% per year, it would take approximately 82 years.

California experience: at about 60% diversion, “low hanging fruit” is gone.
HOW DO YOU GET TO 80% DIVERSION

- Regulations (e.g., organics diversion)
- $$$$$$ – investment in recycling infrastructure, diversion programs, and waste management alternatives such as composting and anaerobic digestion
Figure 4. Management of MSW in the United States, 2010

- Discarded: 54.2%
- Recovery: 34.1%
- Combustion with Energy Recovery: 11.7%

Source: EPA
Figure 5 California MSW Management (2005)

Total Recycling 39%

Waste To Energy 1%

Landfilling 60%

California's Estimated Statewide Diversion Rates Since 1989

Source: Columbia Univ. – Detailed Examination of the Flows of MSW Through Three EPA Region 9 States
WASTE MANAGEMENT COSTS

- Landfilling - $18 to $106/ton – avg. $44/ton
- Waste to Energy – avg. $68/ton (large capital cost for new facilities)
- Composting
  - Windrow – approx. $50 to $55/ton
  - ASP – approx. $75+/ton
  - In-vessel/Anaerobic Digestion. - $80 to 100+/ton
- Recycling - $50 to $150/ton? (imbedded cost by regulation – does not matter?)
FUTURE WASTE MANAGEMENT (Nationally)

- Plenty of Landfill Capacity (20 yrs +)
- Regulations driving composting past windrows to more advanced (= ++$$)
- Waste to Energy not popular and expensive
- Nationally, recycling appears to be increasing slowly
FUTURE WASTE MANAGEMENT (Nationally)

- Likely more demand on producer responsibility (likely to impact significantly?)

- Wild card is regulations
  - National GHG regulations could drive more alternative waste management policies (e.g., California), and/or energy policies could have more emphasis on bioenergy which could generate price incentives (e.g., for food waste digestion)
FUTURE WASTE MANAGEMENT (Nationally)

- I do not see the reliance on landfills decreasing until price of landfilling reaches and exceeds that of recycling, composting, AD and waste to energy.

- Regionally, landfill reliance may decrease, but not nationally for 20 to 30 years ---- my opinion!

- Landfill gas generation will remain stable for many years to come.
This will change very slowly!