

ARE LANDFILLS AN ENDANGERED SPECIES?

Frank R. Caponi

LMOP

January 2014



ORANGE COUNTY REGISTER



Political Cartoons

Columns

Editorials

Letters to the Editor

About Us



SPORTS

Miller: Lakers are left decimated



LIFE

Health roundup: How safe is the chicken in your fridge?



SPORTS

Will O.C.'s Wagner be skating's star?

HOME

Mark Landsbaum: Beliefs shape how we interpret reality

Media's preconceptions reflected in how they report news.



+1



Like



Share



Tweet



3



Email



Share

By **MARK LANDSBAUM** / Register columnist

Published: Jan. 10, 2014 Updated: 3:07 p.m.



Anyone paying attention had to notice that 2013 saw another 12 months of upside-down thinking. This column has described the phenomenon as resembling the Bizarro world of the character from Superman comics, in which normal was abnormal and abnormal normal.

ORANGE COUNTY REGISTER

[Political Cartoons](#) | [Columns](#) | [Editorials](#) | [Letters to the Editor](#) | [About Us](#)



SPORTS

Miller: Lakers are left decimated



LIFE

Health roundup: How safe is the chicken in your fridge?



SPORTS

Will O.C. Wagner skating star?

HOME

Mark Landsbaum: Beliefs shape how we interpret reality

Media's preconceptions reflected in how they report news.

[g+1](#) [Like](#) [Share](#) [Tweet](#) 3

[Email](#) [Share](#)

By **MARK LANDSBAUM** / Register columnist

Published: Jan. 10, 2014 Updated: 3:07 p.m.

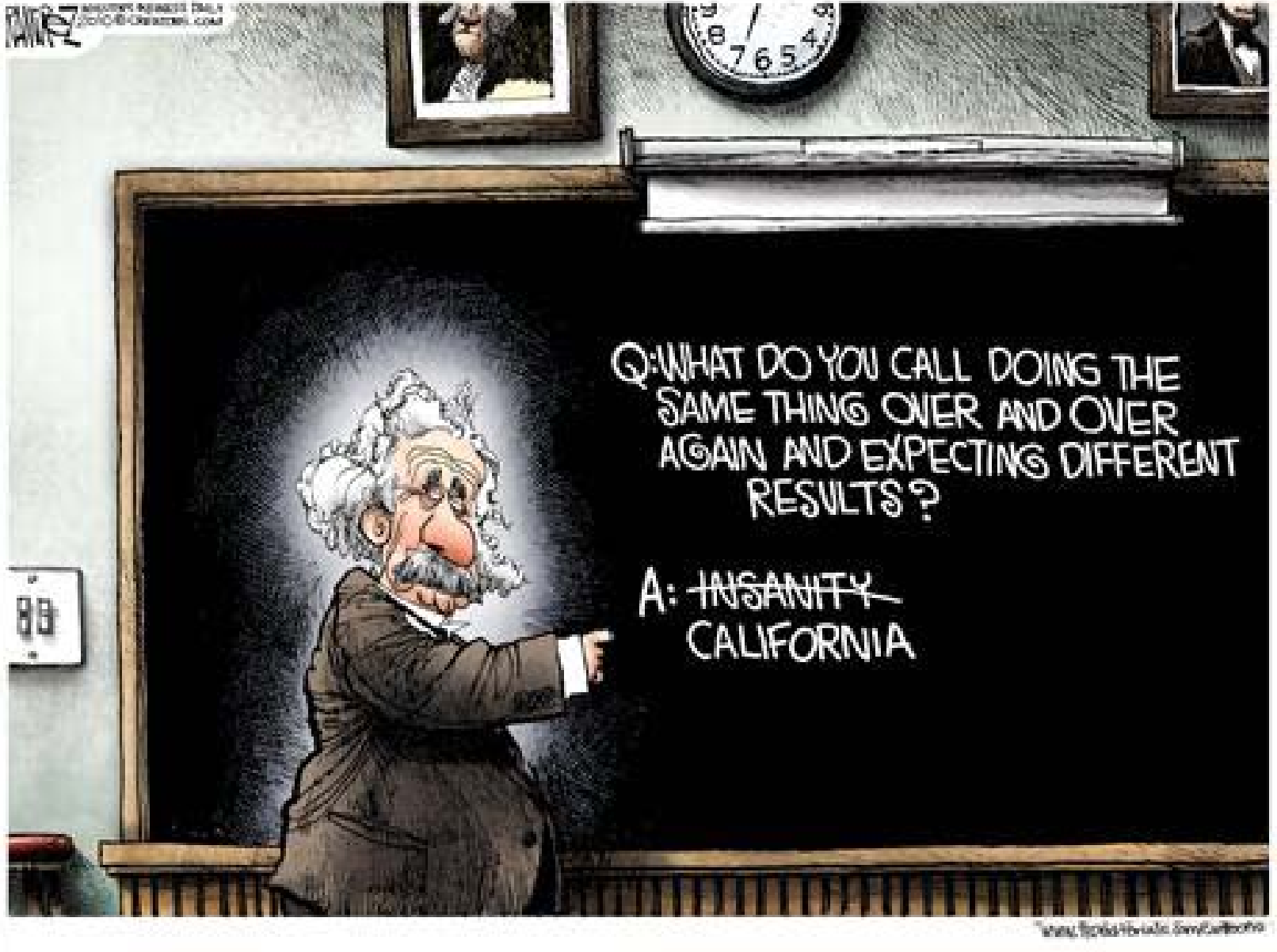


Anyone paying attention had to notice that 2013 saw another 12 months of upside-down thinking. This column has described the phenomenon as resembling the Bizarro world of the character from Superman comics, in which normal was abnormal and abnormal normal.



GENERATION ZERO

Leaders of a WASTE-FREE AUSTIN



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

A: ~~INSANITY~~
CALIFORNIA



- Home
- Residents
- Businesses
- Visitors
- Services
- Elected Officials


search:

- WELCOME**
- Public Works Home
 - About Us
 - Contact Us
 - FAQ
- POPULAR TOPICS**
- Bicycle Boulevard Information
 - Bulky Waste Pickup
 - Parking Information
 - Plant Debris & Food Waste
 - Private Sewer Lateral Compliance Policy
 - Recycling Services
 - Street Sweeping
- QUICK LINKS**

PUBLIC WORKS

Department of Public Works



 [printable version](#)

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



EMAIL



SHARE



Tweet



+1



Recommend

33

COMMENTS

2

More About: [Zero Waste](#), [Recycling](#)

Advertisement

**Need
Equipment?**

Get It For Less

 **Penton
EquipmentAuctions.com**

Selling? Get in our no-fee listing option.

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 YOUNG

AB 32

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 an important issue of modern times.

AB32 SCOPING PLAN UPDATE

Waste Management Sector Plan: Vision for 2020 and Beyond

- 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

**AB 32 NEEDS AN 80
MMTCO₂e REDUCTION
BY 2020 TO MEET
GOALS**

- AB 341 (75% diversion goal) = primary 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!!

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?

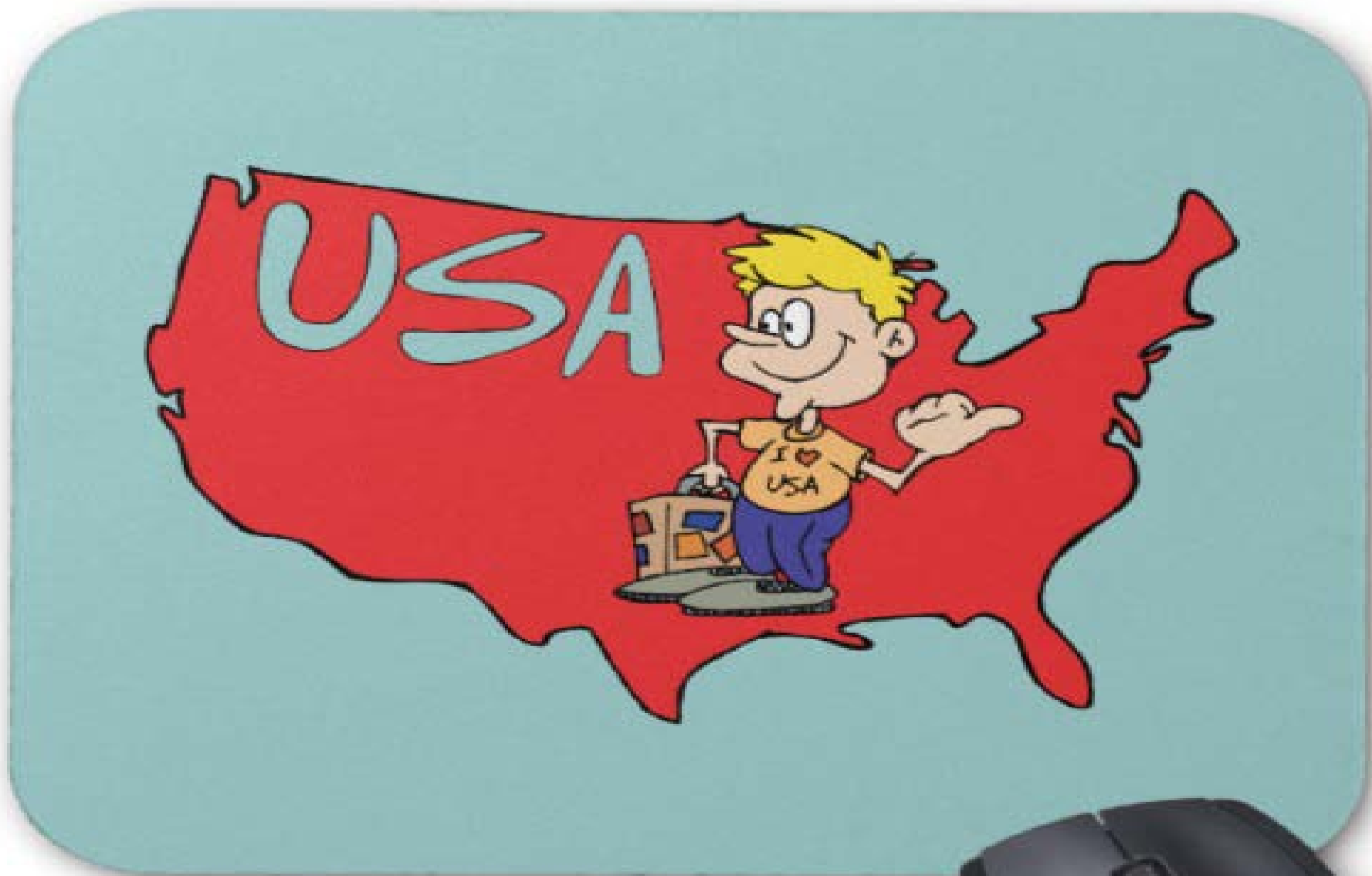
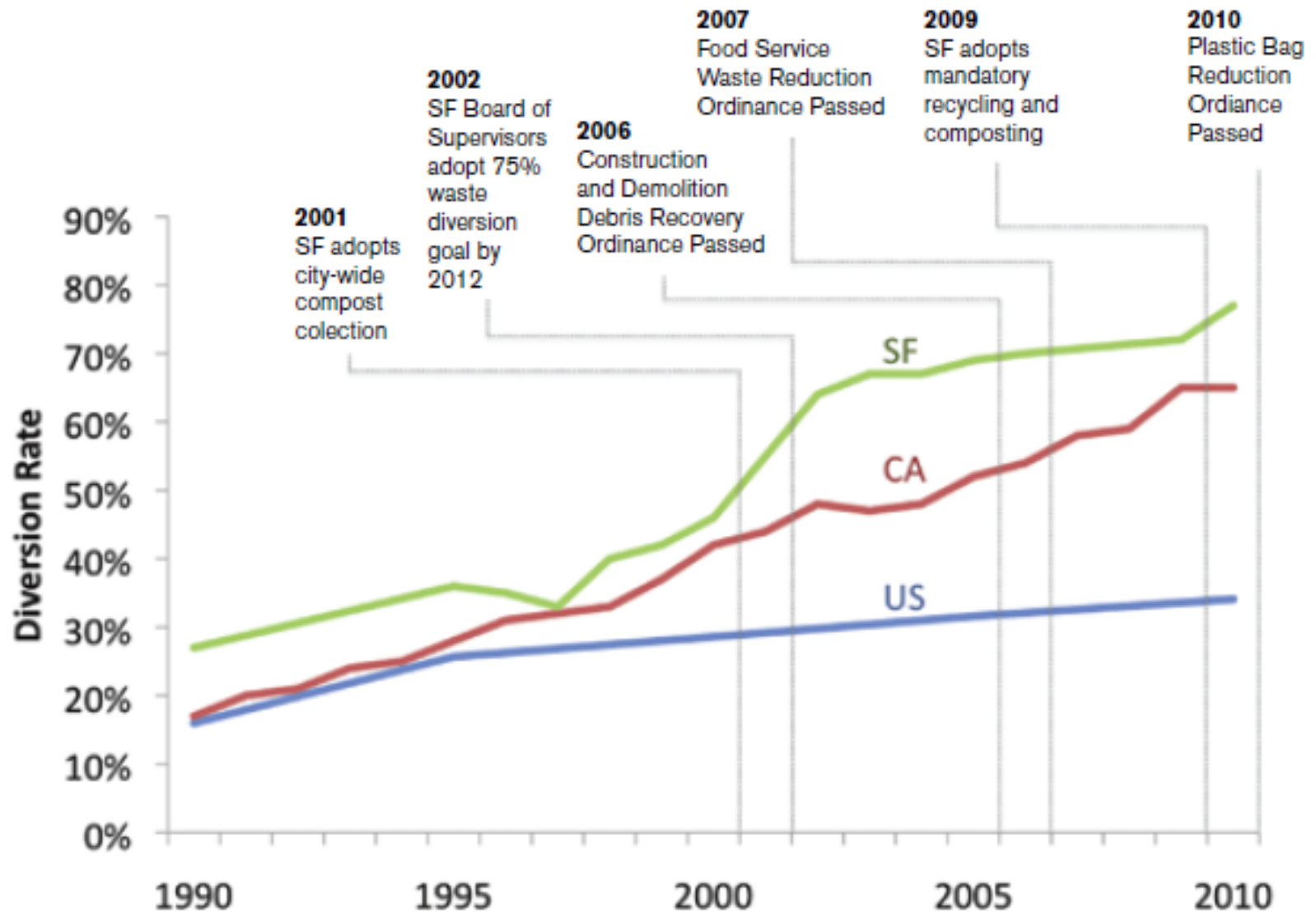
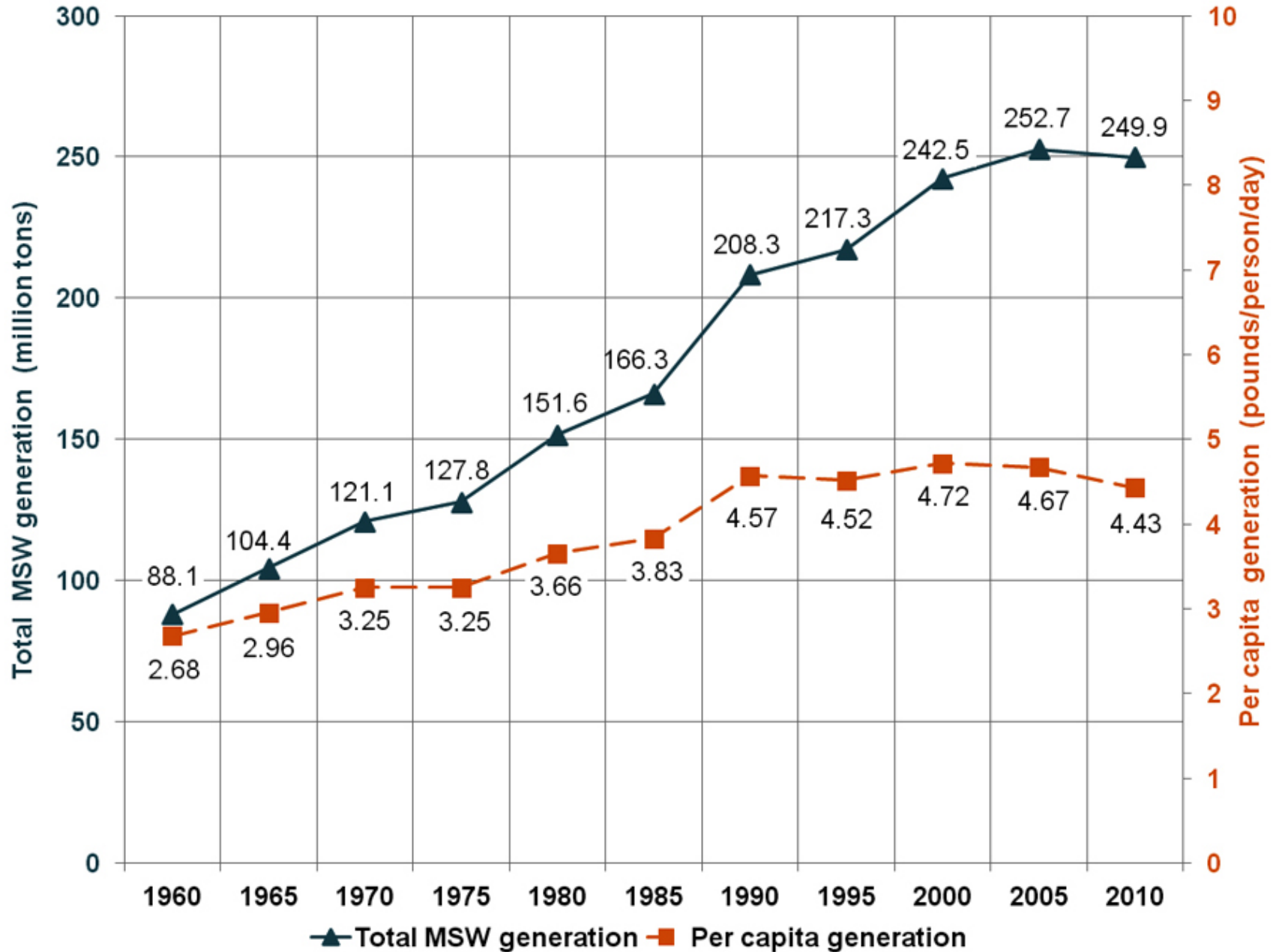


Figure 1. San Francisco Waste Legislation and Diversion Rates

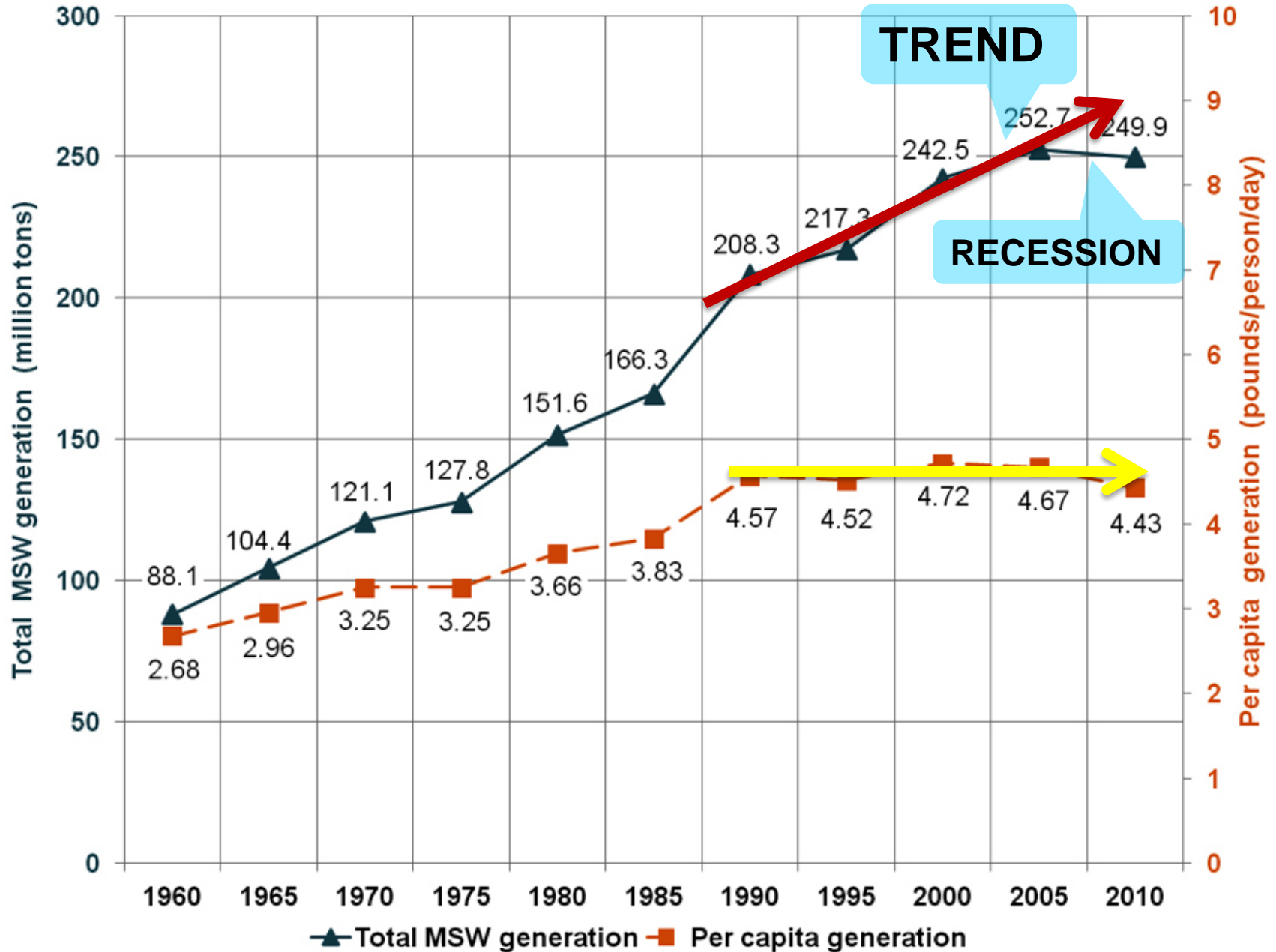


Source: Adapted from San Francisco Planning and Urban Research Association, 2010.

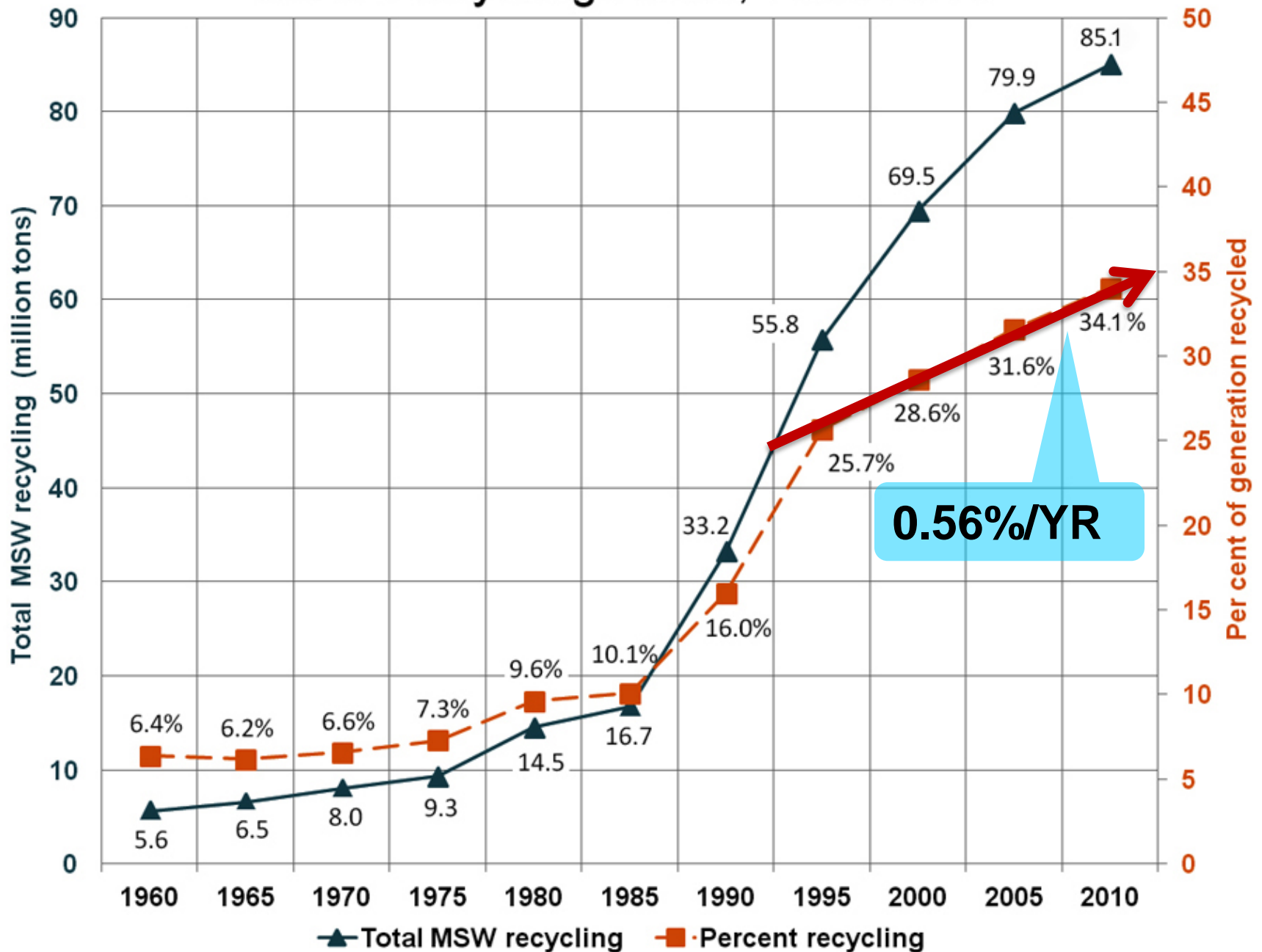
MSW Generation Rates, 1960-2010



MSW Generation Rates, 1960-2010



MSW Recycling Rates, 1960-2010



**HOW DO YOU GET
TO 80% RECYCLING
NATIONALLY?**

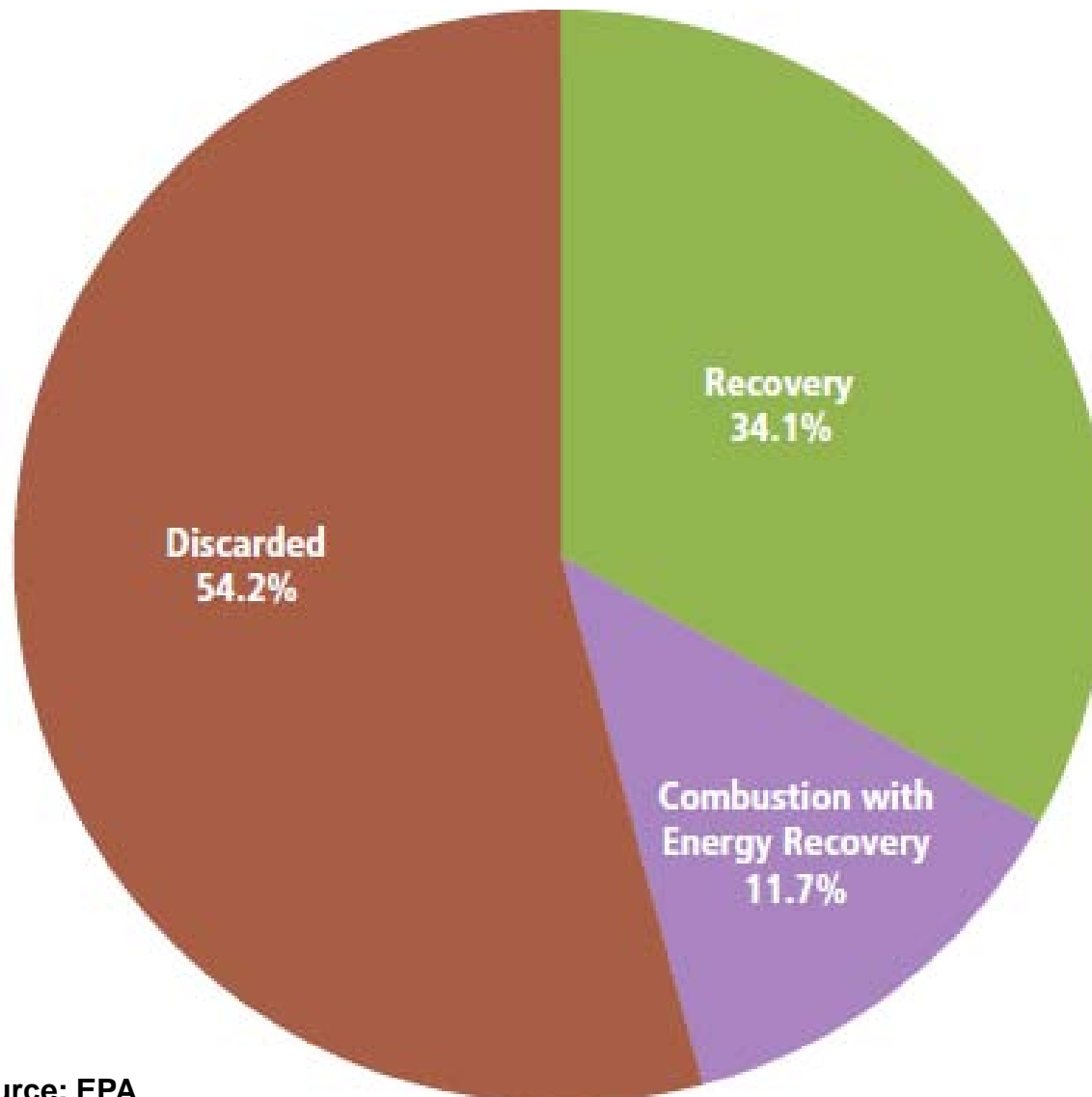
APPLY SAN FRANCISCO NATIONALLY

- 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

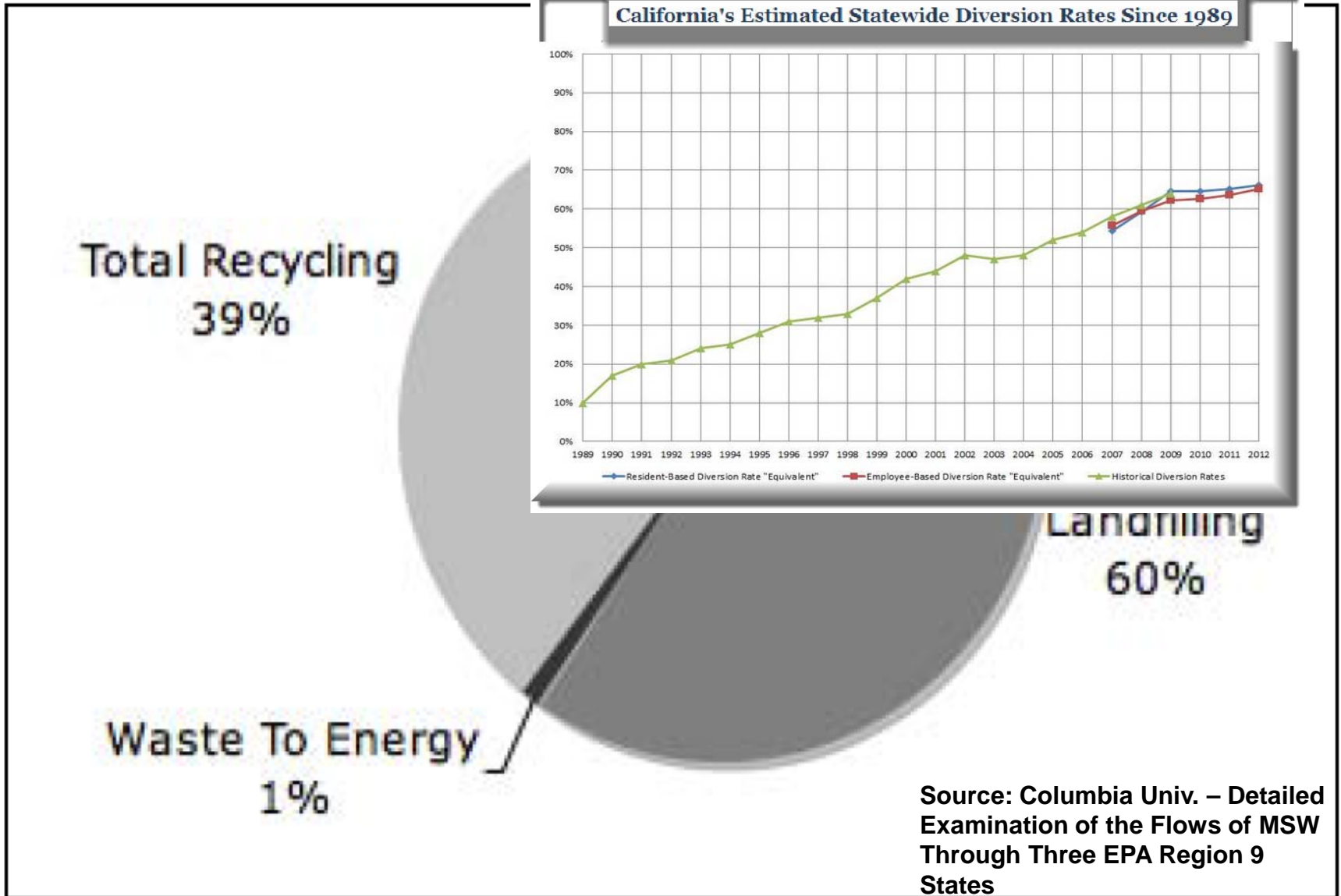
- Regulations (e.g., organics diversion)
- \$\$\$\$\$\$ – investment in recycling infrastructure, diversion programs, and waste management alternatives such as composting and anaerobic digestion

Figure 4. Management of MSW in the United States, 2010



Source: EPA

Figure 5 California MSW Management (2005)



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

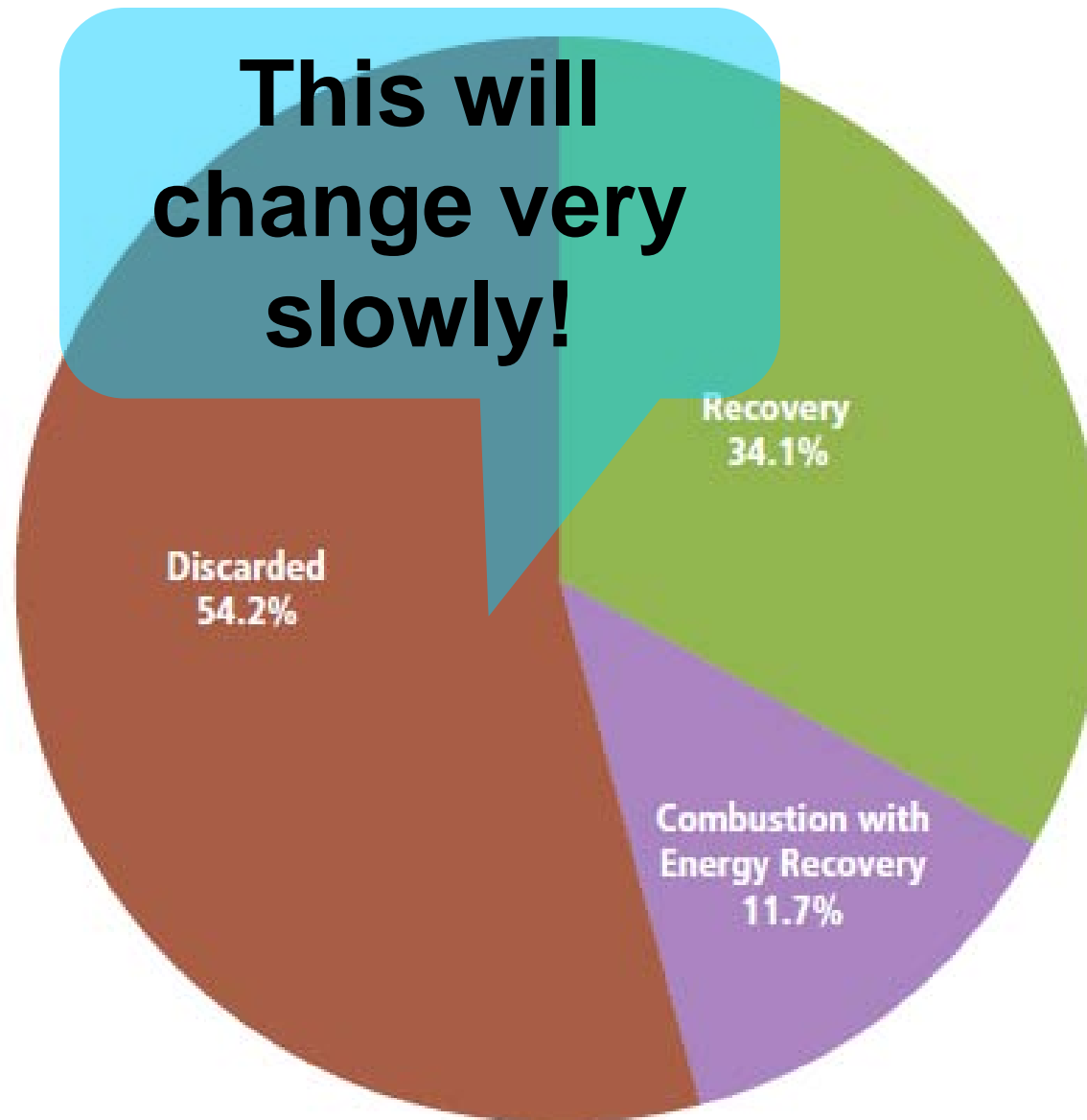
(Nationally)

- **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

Figure 4. Management of MSW in the United States, 2010



**This will
change very
slowly!**

Discarded
54.2%

Recovery
34.1%

Combustion with
Energy Recovery
11.7%