



# San Francisco: On the road to Zero Waste



**SF Environment**

**Our home. Our city. Our planet.**

A Department of the City and County of San Francisco





# San Francisco, California

**Size: 47 square miles**

**Population: 825,111**

**Demographic: Multicultural & Multilingual**





# San Francisco Department of the Environment



Energy Conservation



Water Conservation

Zero Waste



Toxics Reduction

Clean Air & Transit



Environmental Justice

Outreach/School Ed/Environment Now



Urban Forestry

Green Building



Climate Change



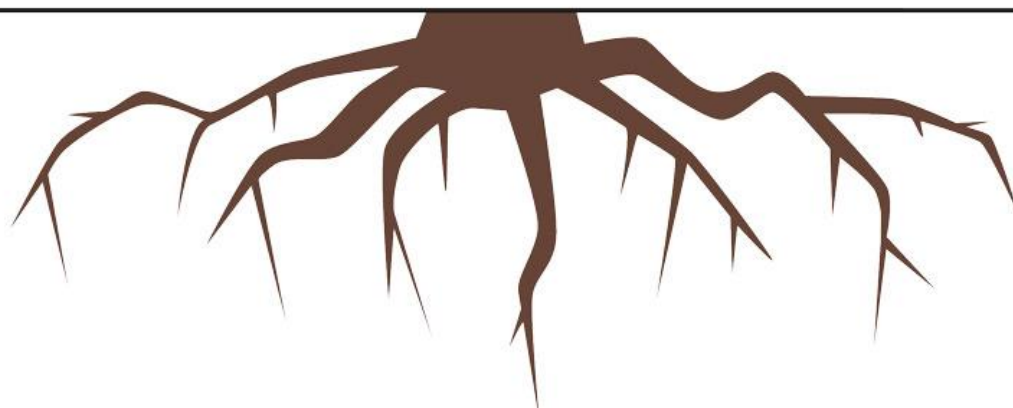


# San Francisco Climate Action Strategy



SAN FRANCISCO CLIMATE ACTION

0 50 100







# Zero Waste



SAN FRANCISCO  
CLIMATE ACTION

0 50 100 ROOTS



# Long History of Resource Recovery

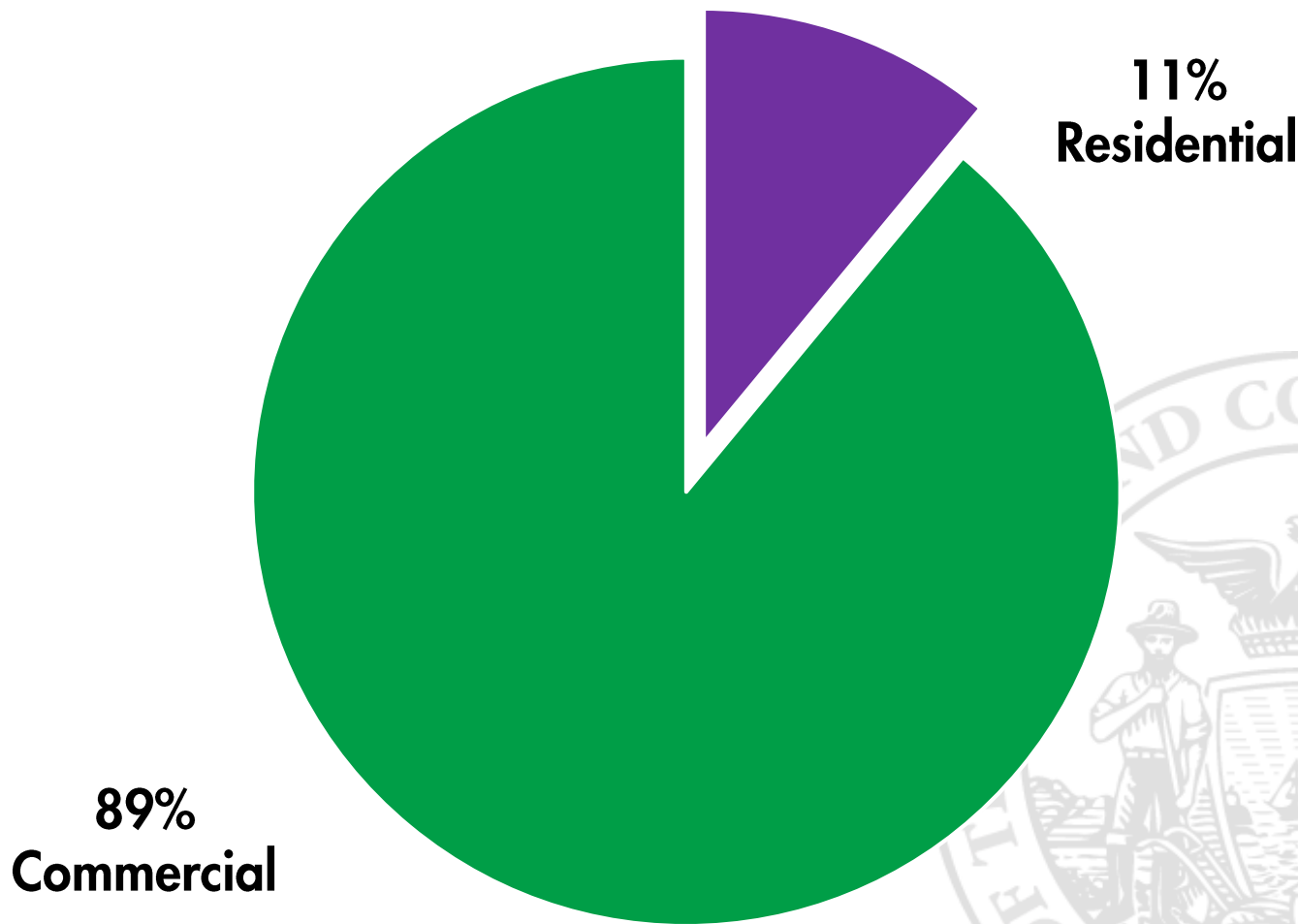


Photo courtesy of Ines Belli



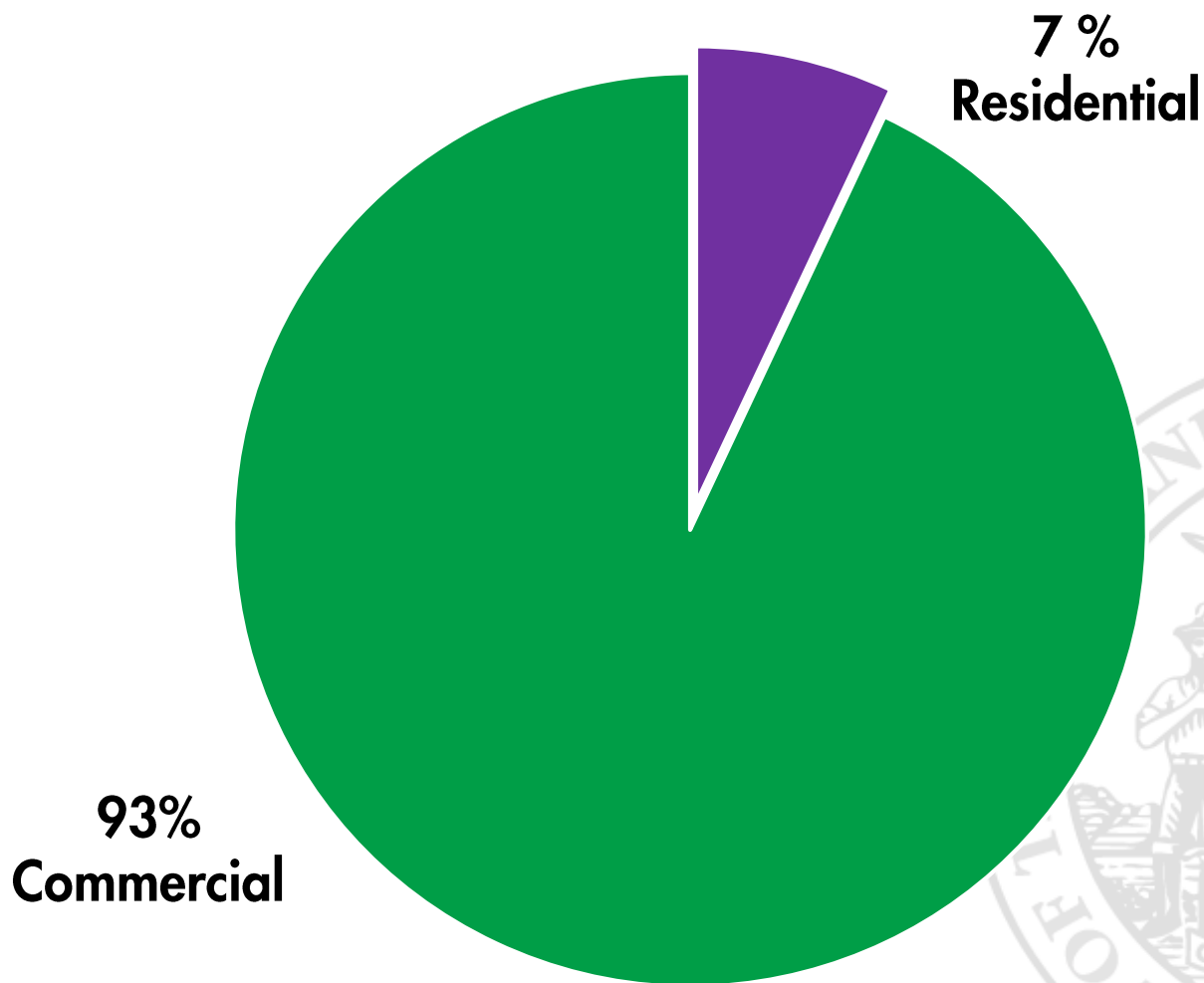


# San Francisco Generation per Sector





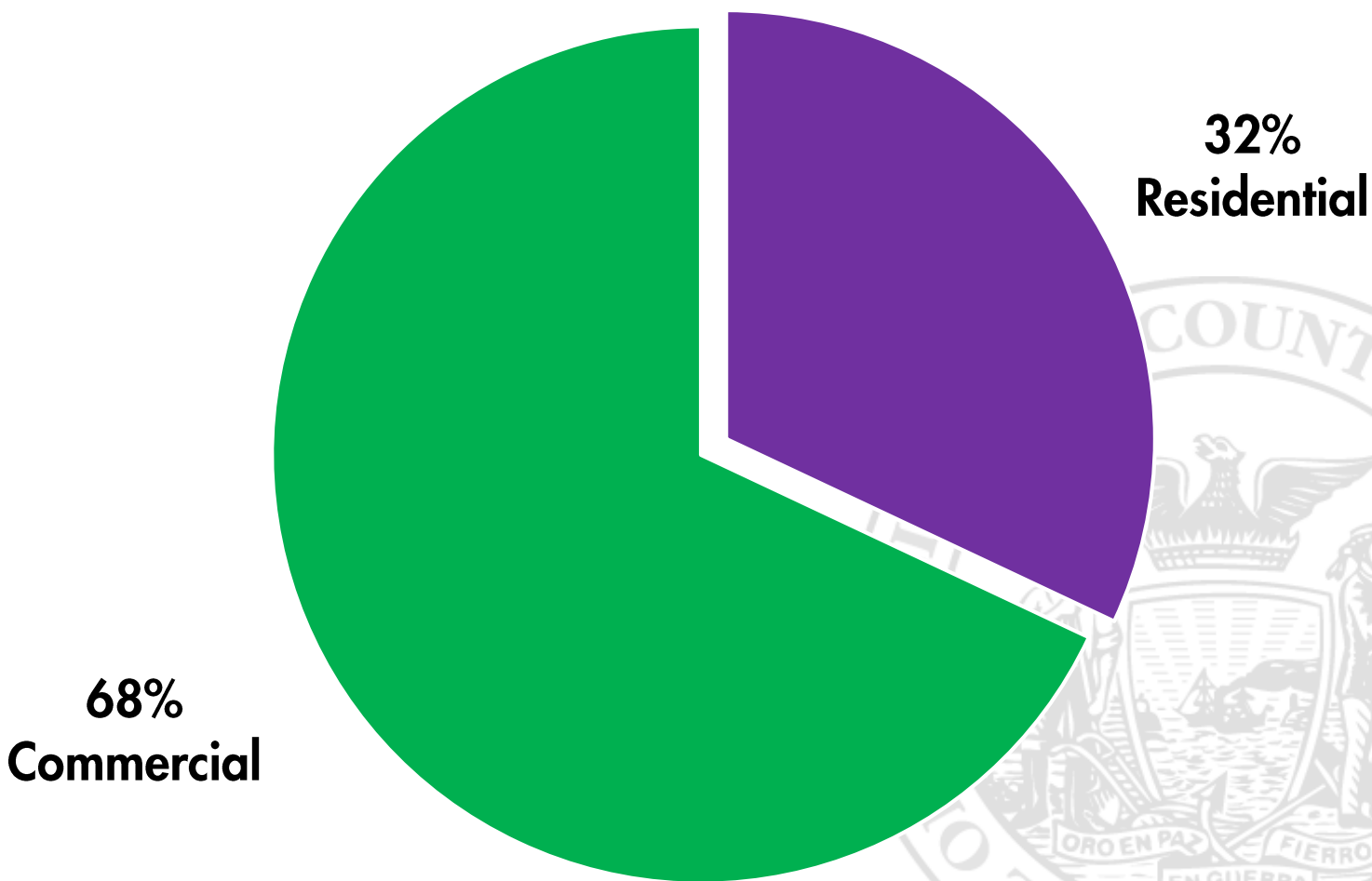
# San Francisco Diversion Per Sector







# San Francisco Disposal per Sector





# Residential Refuse Breakdown

- **Generation = 2.1 lbs/day**
- **Diversion = 1.1 lbs/day**
- **Disposal = 1.0 lbs/day**







# PAYT based on Volume

32gal/wk = \$25.90/mo



64gal/wk = \$51.80/mo



96gal/wk = \$103.60/mo





# Zero Waste Policies

**California Law: 50% diversion - 2000**

**75% diversion -2010**

**Zero Waste -2020**







# Waste Reduction Hierarchy

REDUCE.  
REFUSE.  
RECYCLE  
AND COMPOST.





# San Francisco's Zero Waste Program







# Dual Compartment Trucks







# Dedicated truck to collect compostables







# What's Recyclable in San Francisco?





# Recycle Central: Pier 96



Photo courtesy of Recology





# Materials Ready to be Sold







# What's Trash in San Francisco?





# Landfill



Photo courtesy of Recology





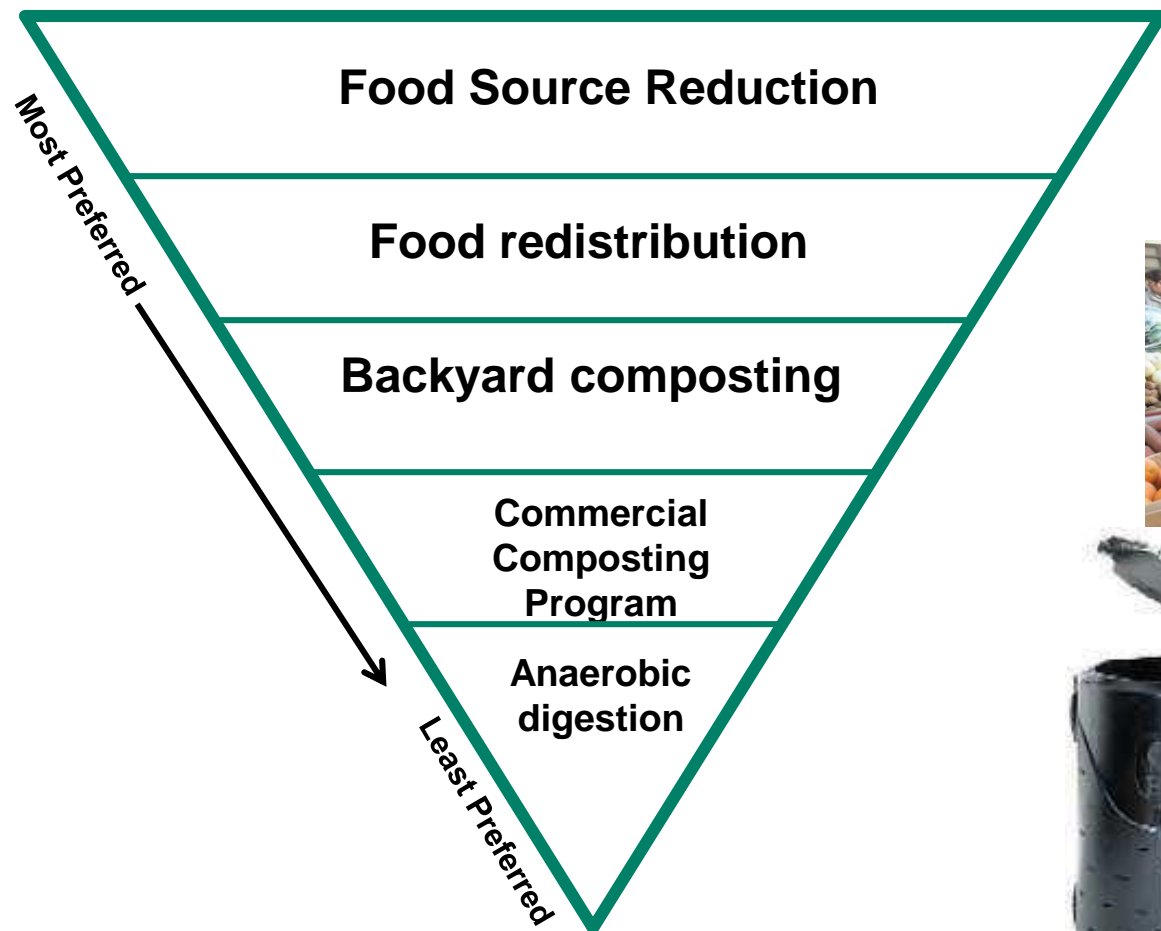
# San Francisco's Composting Program







# Highest and Best Use for Food





# What's Compostable in San Francisco?





# City Government Collection







# Example of collection bins for City Agencies





# Commercial Business Collection





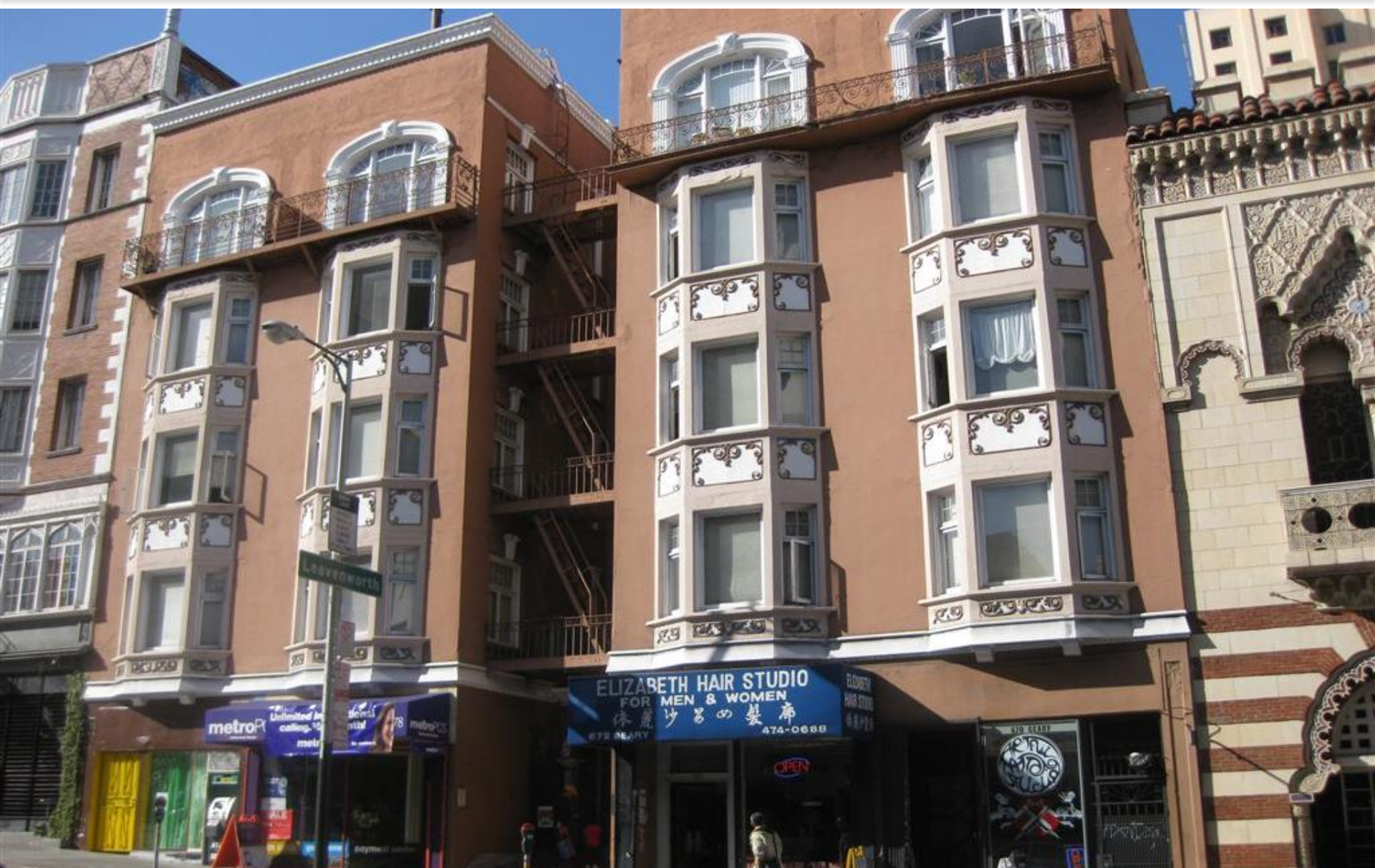


# Example of collection bins for Businesses





# Residential Collection Program







# Example of collection in Residential Buildings

## Food Scrap Collection is Easy.



"Compostable" Bag  
自然化解的膠袋  
Bolsa "Compostable"





# Options for collecting compostable material







# Composting Facility



Photo courtesy of Recology





# Composting Piles Forced Aerated







# Air From Piles Through Hardwood Biofilters





# Turned Windrow Curing







# Finished Product



Photo courtesy of Recology





# Compost applied on vineyards







# Compost applied on crops







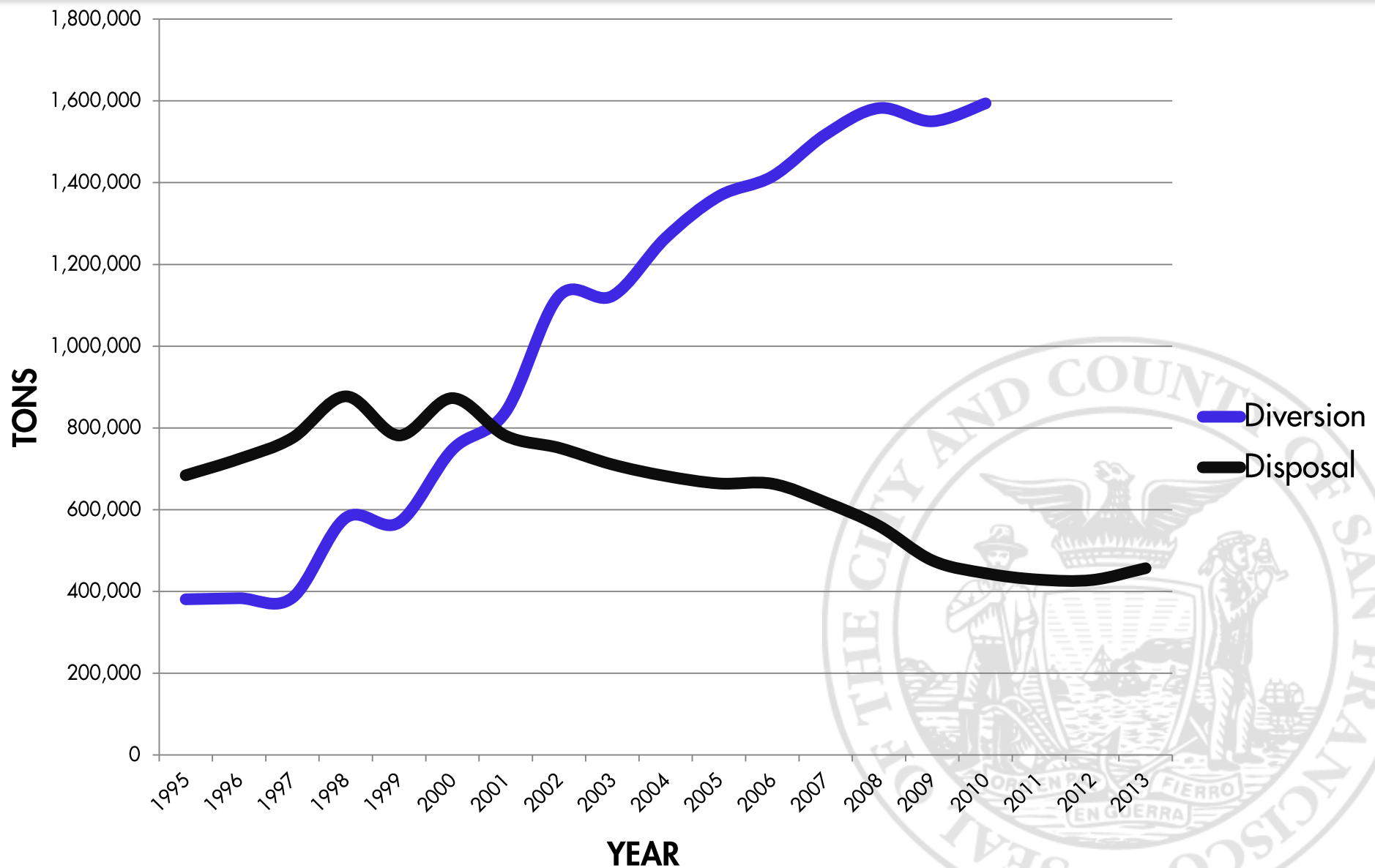
# The Composting Cycle







# Where are we?





# Five Keys to Success







# Convenience





# Three Simple Streams







# Partnerships









# Incentives





# Financial Incentives – Cost Savings







# Environmental Incentives – Protecting Nature





# Education







# Door-to-door Outreach





# In-Person an In-Language







# School Education







# Signage

Clear Channel

We compost in the Richmond  
because we want to be  
better than the Sunset.\*



\*Toss in the leftover broccoli.  
Healthy competition can be good for the planet.

**USE THE  
GREEN  
BIN.**



SFEnvironment.org (415) 355-3700

\*The views expressed in this advertisement do not necessarily reflect the views of the San Francisco Municipal Transportation Agency.

When you're  
through with  
that apple,  
we'd love  
the core.

By putting food scraps in your green cart, you  
help San Francisco reach its goal of zero waste  
and fight global warming.



SFEnvironment.org  
Our Name. Our city. Our planet.  
Department of the City and County of San Francisco

High quality compost  
improves soil health and  
reduces the need for  
fertilizers and pesticides

Where you toss food scraps makes a world of difference.

**SFEnvironment.org**





# Campaigns





# Policy







# Construction & Demolition Debris Ordinance





# Bans on Styrofoam, Bottled Water and Bags







# Mandatory Recycling & Composting

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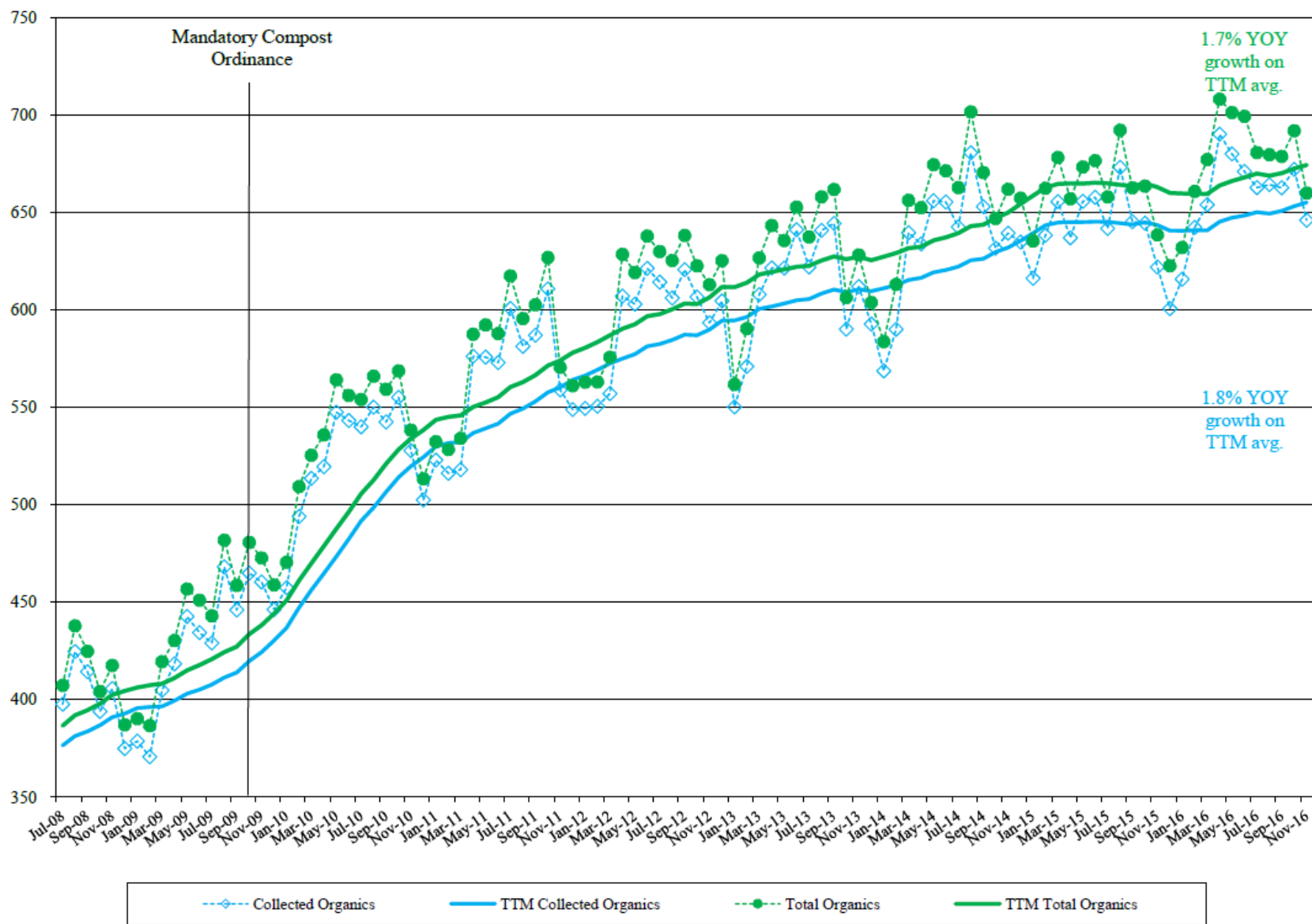
# Mandatory Recycling & Composting Ordinance







# Composting tons per day collected





# Monitoring Compliance







# Audits



Photo courtesy of Mark Boyer



# Direct Feedback Outreach







# Penalties

- \$100 per violation
- Contamination charge on recycling or composting - Up to 50%
- Loss of diversion credit





# The Future?







# Shift From Linear to Circular Economy

'Linear economy'

Take - Make - Dispose

Technical and biological  
nutrients all mixed up



something useful



toxic  
waste

'Circular economy'

Technical nutrients

Biological nutrients



Living systems

after W. McDonough and M. Braungart





# Producer and Consumer Responsibility



Photo courtesy of Edgar Crook





# Anaerobic Food Digestion





# Compost on Rangeland Demonstration







# Reducing Trash Service





# Trash Processing







# Update Existing Facilities



Photo courtesy of Recology





# Lessons Learned

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- Establish convenient source separation programs
- Provide incentives
- Conduct extensive outreach
- Adopt policies and enforce
- Develop advanced processing and new markets







# San Francisco, California





**Soko Made**  
**City Government Zero Waste Assistant Coordinator**  
[Soko.Made@sfgov.org](mailto:Soko.Made@sfgov.org)



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