

# THE STORY OF ZERO WASTE



**HOW DOES A CITY OF OVER 850,000 RESIDENTS GET TO THE HOLY GRAIL OF ZERO WASTE? WE LET THE DEPARTMENT IN CHARGE OF REACHING THAT LOFTY GOAL TELL THE TALE OF HOW THE TARGET CAME TO BE – AND HOW ITS PLANNING ON GETTING THERE.**

**BY JULIE BRYANT, KEVIN DREW, ROBERT HALEY AND JACK MACY**

**T**he city of San Francisco is recognized as an environmental leader, in part because of its resource conservation and solid waste reduction efforts. The city and county of San Francisco has adopted goals of 75 percent landfill diversion by 2010 and zero waste by 2020 – and it achieved 77 percent diversion citywide in 2008. The success comes through a model of creating convenient programs, conducting extensive outreach, providing financial incentives and adopting cutting-edge policies such as mandating participation and banning problem products.

## Where zero waste came from

In the late 1990s, the city's Department of the Environment (SF Environment) and Recology, San Francisco's sole permitted refuse hauler and processor, developed and started rolling out a three-stream collection system for all sectors. The system includes blue commingled recycling bins for paper, bottles, cans and all rigid plastics; green composting bins, for food scraps, soiled paper and plant trimmings; and a black landfill bins for the remainder. Small generators use wheeled 32-, 64- or 96-gallon lidded bins. Large generators use color-coded dump-

sters, roll-offs and compactors. Residential, commercial and city government customers are picked up by the same biodiesel truck on a route. Recyclables and landfill refuse from small generators are collected with a dual-chamber compacting vehicle and compostables with a separate side-loader, typically on the same day. Collection occurs weekly for small generators and up to daily for large ones.

SF Environment and Recology have long conducted multilingual, photo-rich outreach of all types, using the latest electronic means of distribution. San Francisco has had pay-as-you-throw trash since the beginning of and service provider diversion incentives for the last decade. Recycling and composting are generally free.

In April 2009, to further expand programs and participation, then-Mayor Gavin Newsom announced he would sponsor a mandatory recycling and composting ordinance. SF Environment drafted the ordinance with input from Recology, the Chamber of Commerce, Building Owners and Managers Association, restaurant and apartment associations, unions and other key stakeholders. The ordinance was passed by the Board of Supervisors, and signed by the mayor, in June, going into effect in October 2009. The ordinance requires:

- All properties subscribe and pay for adequate refuse service.
- Everyone to separate recyclables and compostables (including food scraps and soiled paper) from trash going to landfill.
- Multi-tenant properties to provide appropriate size, color-coded and -labeled containers for all tenants and employees and adequate education and training, including for janitors.
- Food service establishments providing disposable foodware to site bins within their entrance for the streams they dispense.
- Events to recycle and compost.
- Collectors to tag bins for contamination with subsequent notification letters.

The media coverage from the ordinance's announcement up until it went into effect gave recycling, and especially composting, huge boosts. SF Environment and Recology then conducted broad outreach on the ordinance, including mailing letters and fact sheets to residential and commercial accounts, with continued targeted outreach and assistance for those not yet complying. Informing people of the ordinance usually gets swift cooperation, dramatically speeding up service placement and improving participation. Persons not complying are subject to citations, fines, property liens and not having their refuse picked up.

Banning plastic checkout bags at supermarkets and chain drugstores, and expanded polystyrene foodware, in favor of recyclable or compostable ones improved collection programs and integrated well with mandatory messages. Composting tonnage quickly increased from about 400 to approximately 600 tons per day, primarily due to the change to mandatory participation.

## City government

The city government sector leads by example, diverting over 85 percent of its discards. We purchase 100-percent-postconsumer recycled paper and have accomplished substantial source reduction by promoting electronic communication and defaulting printers to double-sided. Surplus government equipment is re-used via a virtual warehouse managed by SF Environment. Nearly every city department facility recycles and composts.

San Francisco has 26,000 municipal

employees, over 1,000 city facilities and parks, and other public spaces, accounting for almost 15 percent of citywide solid waste generation. There is a wide variety of operations providing critical services with many iconic locations such as City Hall, Golden Gate Park, the Performing Arts Center, Candlestick Park, General Hospital, museums, libraries, as well as fire and police stations.

San Francisco city leadership has long shown a commitment to waste reduction. In 1999, the Board of Supervisors and mayor adopted the Resource Conservation Ordinance, requiring city departments to maximize reuse, recycling and recycled content. Since then, elected officials and employees have continued to raise the bar. City department success can be attributed to strategies that include:

- Department heads appointing and supporting zero waste coordinators at each departmental location.
- SF Environment working with zero waste coordinators to assess opportunities for increased recycling and composting by conducting waste audits, designing systems and identifying appropriate locations for bins.
- SF Environment providing free color-coded bins, stickers, signs and technical support.
- SF Environment developing comprehensive educational programs and directly training over 10,000 employees, including custodians, property managers, purchasers and administrative staff on the whys and hows of waste prevention, recycling and composting.
- Zero waste coordinators being held accountable for waste reduction programs and required to report annually on their progress.
- Mayoral executive orders, Board of Supervisors resolutions and departmental bulletins leading the way on many initiatives such as requiring city food scraps composting, employee training and proper participation, environmentally preferred purchasing and banning bottled water.

With a combination of top level, operational, educational and other support, the City and County of San Francisco has shown the private sector and other government agencies that widespread participation in waste prevention, recycling, composting and green purchasing is possible.

## Residential

San Francisco has a population of about 850,000 people in 350,000 households. Roughly 200,000 households are in single-family to five-unit buildings primarily served by curbside collection, and 150,000 are in apartment buildings with six or more units, usually having centralized service inside the structures. Our residential sector accounts for about 22 percent of citywide generation, and diverted about 60 percent of its waste stream while landfilling around 150,000 tons last year.

Curbside households and apartments have long been recycling. At the turn of the millennium, they were given new bins for commingled recycling, and curbside households also received composting collection bins. Apartments initially received composting bins upon approval by the owner or manager.

By 2005, about 500 (out of 8,500) apartment buildings had composting bins and over 95 percent had recycling bins. In preparation for mandatory compliance, and assisted by the press after announcing it, SF Environment and Recology installed composting collection at a total of 2,000 apartment buildings by the ordinance's passage. The ordinance going into effect and being implemented has now resulted in over 6,200 – or about 75 percent – of apartments having composting and nearly all having recycling service. At this pace, we will bring composting to the remaining apartment buildings within two years.

This took intensive work with apartment associations, property management companies and individual landlords. Buildings were given kitchen pails and compostable bags for food scraps and soiled paper, larger collection bins, signage, program information and direct education and assistance. Because residential buildings only pay for trash volume and frequency, increasing recycling and adding composting can decrease refuse bills significantly. Mandatory recycling and composting actually forces generators to *save* money.

In-person outreach is very helpful in gaining proper participation in food scraps composting. Our "Environment Now" program employs people from the community to tag contaminated curbside bins (especially trash bins containing recyclables or compostables) and talk directly with residents and businesses about how the program works and where items go.

## Commercial

San Francisco's population sometimes increases 50 percent due to commuters and visitors. And this is very easily illustrated by the fact that the commercial sector generates nearly two-thirds of total discards. Over 65,000 businesses are registered, which range from single-person enterprises to headquarters of *Fortune* 500 companies. Recology serves about 15,000 commercial accounts, many of which have multiple tenants such as office skyscrapers and shopping centers.

San Francisco had multi-stream high-rise and small business recycling programs in the 1980s. Food composting collection started with produce wholesalers in 1996. Food retailers and restaurants were soon added, as animal feed programs moved farther from the city. SF Environment and Recology started rolling out the three-stream program to other businesses around 2000. The program was offered to all businesses and now has office buildings composting food scraps and bathroom paper towels.

Commercial rates charged by Recology provide a strong financial incentive for customers to participate in recycling and composting and reduce their remaining trash service. Since 2006, commercial rates provide a diversion discount equal to recycling and composting volume divided by total volume generated. For example, if a business has one blue, green and black bin of equal size and frequency, it would receive a 67-percent diversion discount on its refuse bill. This incentive can result in small businesses saving hundreds, and large businesses thousands, of dollars a month.

SF Environment and Recology staff target large businesses, food establishments and multi-tenant properties lacking composting

or recycling, contact them and provide on-site implementation assistance. SF Environment, Environment Now and Recology staff also check trash bins for recyclable and compostables and assist smaller businesses. Environmental Science Associates, a city consultant firm assists with on-site assessments, logistical set-ups, multilingual training and trouble shooting. A commercial compliance tool kit, including separation requirements, template tenant memos, training, videos, custom signage and other assistance was developed and is offered to many buildings.

Commercial accounts recycling increased from 11,000 to about 13,000 – or over 85 percent of all accounts. Commercial accounts composting more than doubled from 3,500 to over 7,200, which represents about 95 percent of the 4,500 food establishments, 90 percent of office buildings and nearly half of all commercial accounts. Some businesses are already very close to zero waste.


San Francisco also adopted a construction and demolition debris recovery ordinance in 2006. Since then, SF Environment has registered nearly 400 companies to transport mixed construction and demolition debris to a dozen registered recovery facilities. This ordinance paved the way for mandatory and has diverted tens of thousands of tons on its own.

## Heading toward zero waste

San Francisco disposal tonnage for 2010 was 15 percent less than 2009 and, again, our lowest on record. Disposal is approximately half of what it was in 2000. These reductions go well beyond any accounted for by

economic indicators and demonstrate the effectiveness of our policies and programs.

Getting to zero waste requires producer and consumer responsibility. Mandating recycling and composting can be the most effective consumer responsibility tool. If everyone recycled and composted everything they can in our existing programs, San Francisco could reach 90 percent diversion.

Multi-tenant buildings, tight space, trash chutes, public places, high turnover and multiple languages all challenge source separation. Products not designed to be recyclable or compostable make it difficult to eliminate trash bins and go to a two-stream system at many locations. So SF Environment and Recology are researching and developing low temperature, mechanical/biological separation and enhanced processing such as anaerobic digestion. We plan to construct a new integrated zero waste facility before the 2020 deadline. We also plan to focus on local and state initiatives to change the products comprising the remaining 10 percent of generation to really achieve zero waste. 

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