

# Source Control through Official Bans/Prohibitions and Legislation



Source control organizations and initiatives (courtesy of stopwaste.org , Alameda County, CA (top left), King County Solid Waste Division, Seattle, WA (top right), Zero Waste, CA (bottom left), and District of Columbia Department of Public Works (bottom right)).

## Summary

Source controls involve a range of initiatives aimed at reducing waste generation and disposal. Initiatives involve local governments setting formal waste diversion goals (with associated programs for increasing the amount of municipal, residential and commercial recycling) or by officially banning products (e.g., plastic bags or polystyrene food containers) in commercial establishments. Waste diversion programs have been quite successful at decreasing the total amount of waste disposed. The programs are often very cost-effective and can offer a net economic benefit, mostly through job creation. However, it is currently not clear what effect these programs have on the accumulation of trash in waterways.

## Description/Design

Government agencies can institute legislative bans or prohibitions which discourage practices or activities that contribute to the creation of litter or illegal dumping. In addition, agencies can also institute programs or legislation which provides incentives to citizens or businesses to reduce their waste production. Source control programs work by either passing legislation with specific goals to reduce or divert waste to landfills through recycling (and composting) programs or by prohibiting items that are commonly disposed and not easily biodegradable.

## IC-7 Institutional Control

### Source Control Initiatives

- AB2020 California Beverage Container Recycling and Litter Reduction Act
- Oakland Waste Reduction Resolution
- Oakland Zero Waste Resolution
- Oakland Excess Litter Fee Program Ordinance 12727
- Oakland Green Food Service Ware
- Pay-as-you-throw (PAYT) Waste Disposal

### Implementation Point

In Street  
 Start of Pipe  
 In Pipe  
 End of Pipe  
 In Creek  
 Dispersed



## California Initiatives

### Statewide:

**AB2020 California Beverage Container Recycling and Litter Reduction Act (Act).** Initiated in 1987, the California Beverage Container Recycling and Litter Reduction Act is designed to promote the returns of bottles and cans through the payment of a redemption value. In January 2007, the cash refund consumers receive when returning California Redemption Value (CRV) bottles and cans to recycling centers increased (DOC 2007). Legislation raised the refund received from California recycling centers to a nickel for containers less than 24 ounces and a dime for containers 24 ounces and larger. For the first six months of 2007, the amount of CRV consumers pay at the store will remain four cents on smaller containers and eight cents on larger ones.

The Act has helped move beverage-container recycling into the mainstream. It also sets processing fees, which are paid to recyclers to cover their recycling costs. To facilitate the program, a network of 5,400 recycling centers was established. By law, unredeemed funds are directed towards supporting the Community Conservation Corps and grants and payments to private and public organizations for recycling-related projects. In addition, funds help container manufacturers reduce costs and save jobs, and have helped communities finance curbside recycling programs (DOR 2007).

### Bay Area Local/Municipal:

Recycled Content Procurement and Source Education Policy Waste Reduction and Recycling Act (Measure D, 1989) In November 1990, voters in Alameda County approved Measure D. This established the Alameda County Source Reduction and Recycling Board. Measure D describes countywide goals for the reduction and diversion of non-hazardous solid waste from landfills; creates a framework for comprehensive source reduction and recycling programs; imposes a surcharge (which increased to \$6.59 per ton effective January 1, 2002) on waste landfilled in the unincorporated county to fund these programs; and establishes an Alameda County Source Reduction and Recycling Board (Recycling Board) to oversee the distribution of funds and implementation of countywide programs. As a result of Measure D, the Recycling Board must establish recycling programs which meet and/or exceed recycling policy goals set forth in the initiative and those mandated by State law (Brown, Vence & Associates 2002).

**Clean Safe Creeks and Natural Flood Protection Program (Measure B).** The Santa Clara Valley Water District (SCVWD) has increased trash awareness, abatement and outreach through the implementation of Measure B (a special parcel tax which includes the Clean, Safe Creeks and Natural Flood Protection) and its "Adopt-a-Creek" program. Measure B provides resources that allow the SCVWD to conduct four major cleanup events a year (or 60 over 15 years) within three different watersheds and maintain response times of less than five days to remove litter and graffiti. Since the implementation of Measure B, the SCVWD has removed approximately 31,193 cubic yards (11,697 tons) of trash and debris. The "Adopt-a-Creek" program encourages community groups to care for a designated section of creek. Groups pick up trash at least two times a year at creek locations not included in the major creek cleanups (SCVWD 2007).

**StopWaste.Org.** StopWaste.Org consists of the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board. These organizations operate as one public agency to implement programs that achieve waste reduction and diversion goals.

**Oakland Waste Reduction Resolution (No. #77500 C.M.S., 2002).** In alliance with the Alameda countywide waste reduction goal of 75%, the City of Oakland established a 75 % waste reduction goal (by 2010) for wastes going to landfills.

**Oakland Zero Waste Resolution (No. #79774 C.M.S., 2006).** The City of Oakland adopted a zero waste goal by 2020. This resolution directs the Public Works Agency, in concert with the Mayor's Office, to develop a zero waste strategic plan to achieve the City's goal.

## Bans on Particular Products

### Green Food Service Ware (No. #12747 C.M.S., 2006)

In accordance with Green Food Service Ware (No. #12747 C.M.S., 2006), the City of Oakland prohibits the use of polystyrene foam disposable food service ware and requires, when cost neutral, the use of biodegradable or compostable disposable food service ware by food vendors and city facilities.

### City of San Francisco

The City of San Francisco has passed a similar ban. Effective June 1, 2007, San Francisco food vendors may no longer use polystyrene foam (i.e., Styrofoam™). Vendors will be required to use compostable or recyclable, disposable food service ware or to-go containers unless there are no suitable alternatives (i.e., products which are within 15% of the cost of non-compostable or non-recyclable alternatives). In addition, the San Francisco Board of Supervisors recently passed legislation that outlaws plastic bags at large grocery stores and large chain pharmacies (Goodyear 2007).

## Altering Fees Associated with Waste Disposal

### Pay-as-you-throw (PAYT) Waste Disposal

In traditional waste collection systems, residential owners are charged by taxation or through a flat fee system for collecting household waste. In PAYT systems, the amount residential owners pay is proportional to how much waste they generate. Therefore, PAYT systems create an economic incentive for households to reduce their trash and recover as much as possible. Two basic PAYT systems exist: (1) the bag and tag system in which residents pay for each bag or tagged can set out at the curb; and (2) residents who subscribe to trash service levels with containers of varying capacities pay higher fees for larger or more containers. Under the bag system, two sizes are usually available: a 15-gallon bag or a 30-gallon bag (USEPA 1999).

### Oakland Excess Litter Fee Program Ordinance 12727

On February 21, 2006, the City of Oakland adopted Ordinance 12727, enacting an Excess Litter Fee on fast food businesses, convenience markets, gasoline station markets and liquor stores. This ordinance is intended to maintain litter-free streets, sidewalks and public spaces by assessing a fee on businesses known to generate high amounts of disposable materials. The fee will be used to support the collection and disposal of trash and to help keep trash and litter from entering the City's storm drain system.

To file, businesses must submit their gross receipts. Eligible businesses that pay into a BID have their fees reduced by 50%. The annual excess litter fee is based on the gross receipts (Table 1) (City of Oakland 2007).

**Table 1. Value of excess litter fees for businesses.**

	<b>Annual Gross Receipts</b>	<b>Litter Fee</b>
Large Business	≥\$1,000,000	\$3,815
Medium Business	\$500,000 - 999,999	\$910
Small Business	\$5,000 - \$499,999	\$230

## Performance and/or Effectiveness

Through the implementation of cost-effective recycling programs, several municipalities across the United States have been successful at diverting the amount of waste products sent to landfills (USEPA 1999). USEPA recently profiled eighteen communities that achieved high diversion rates and found that they achieved waste reduction levels of 40 - 65% (USEPA 1999). One of the communities profiled was the City of San Jose. In 1993, San Jose implemented its Recycle Plus Program. Prior to the program, residents disposed of unlimited amounts of trash (for a flat monthly fee) and recycled only five material categories. The new program increased the number of recyclable material categories; offered multi-family dwellings with recycling and yard debris collection services; and paid recycling contractors per household and per ton recycled. The net result of the program showed that from 1992 to 1996, the single-family household participation increased from 66% to 83%; and the single-family waste reduction level increased from 33% to 55%. In FY 1997-1998, the City of San Jose diverted 45% of its residential waste and 42% of its commercial waste to recycling or composting. Overall diversion was 43% (34% was recycled and 9% was composted) (USEPA 1999).

Other recycling initiatives within the Bay Area have shown equal levels of success at diverting waste from its landfills. For example, through its Zero Waste campaign, the City of Oakland has increased its diversion rate from 10% in 1990 to almost 60% in 2005 (Figure 1). In Santa Clara County, total waste generated has decreased (Figure 2) and the County has achieved a 45% diversion rate (CIWB 2007).

Other examples of highly successful programs for diverting waste from landfills include AB2020, California's Beverage Container Bill (Figure 3). Since the Bill was implemented in 1987, the recycling rate for beverage containers has more than doubled (California Resource Recovery Association 2007). When beverage containers are not returned to retail outlet recycling centers, but placed in a curbside recycling bins, the deposit value is kept by the curbside recycling program. Curbside programs receive \$23 million in retained redemption values and \$9 million in processing fees, administrative fees and grants each year (California Resource Recovery Association 2007). Seven million California grocery-store based convenience recycling centers recycle the containers of seven million Californians. In fact, consumers are choosing to recycle 23% of all beverage containers at grocery-store convenience recycling centers (by comparison, curbside recycling programs collect only 7% of beverage containers).

A UC Berkeley study (Berck and Goldman 2003) found that the best way to increase participation in the beverage container redemption program was to increase the redemption value<sup>1</sup>. In January 2007, redemption values were increased.

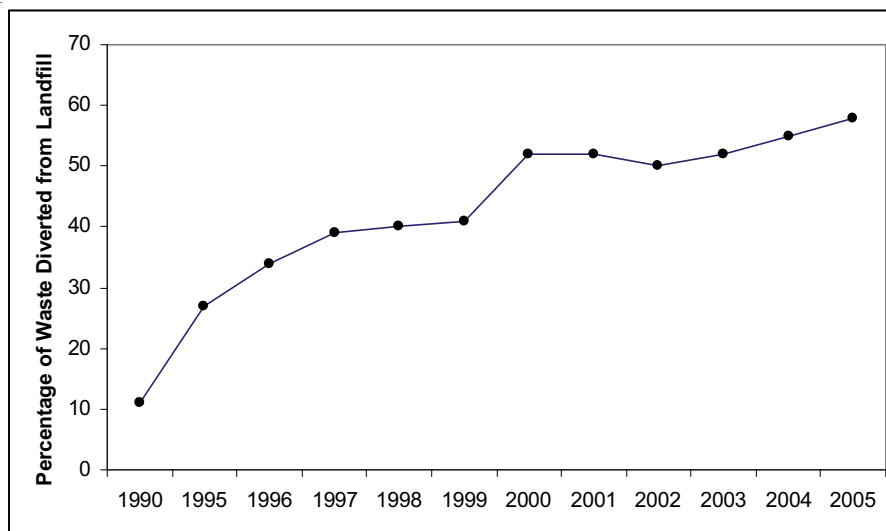


Figure 1. Waste diverted from landfills in Oakland (Swenerton 2007).

<sup>1</sup> California had the lowest redemption value in the country.

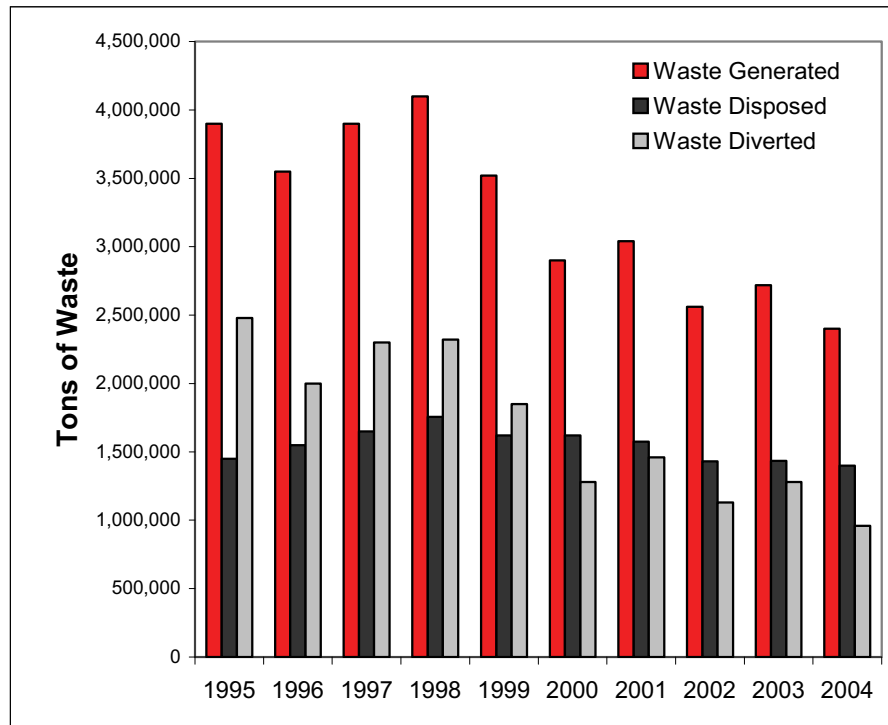


Figure 2. Santa Clara County disposal and diversion levels in tons (CIWMB 2007).

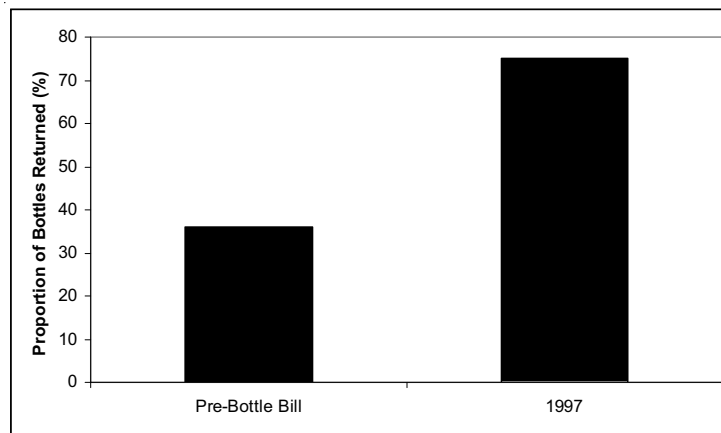


Figure 3. Statewide increase in recycling rates due to California's beverage container bill (California Resource Recovery Association 2007).

Maintaining a convenient recycling program is necessary to achieving high participation and high waste reduction. For example, in Worcester, Massachusetts residential recovery increased from 41% to 52% when collection switched from biweekly to weekly (USEPA 1999). Other ways to increase the perceived ease of programs is to allow residents to 'commingle' their recyclables. Research indicates that higher rates of recycling participation (90% vs. 77%) and additional recyclables are recovered (32.1 gallons vs. 5.5 gallons per household per week) are achieved when commingling is permitted (Oskamp et al 1996). Other factors which increase performance include supporting markets for recycled materials (USEPA 1999). This includes identifying and securing agreements with materials brokers and end users. Recycling collection programs can only be as successful as the recycling marketing program. Consequently, market analysis must be included in the planning stages and be maintained throughout the program (USEPA 1999). For programs to be ultimately successful, recycling or waste diversion must be considered an integral part of a municipalities' overall waste management plan.

**Costs**

The cost associated with implementing a waste management program within the City of San Francisco (the Fantastic Three program) requires purchasing a new fleet of dual compactor vehicles and thousands of containers (Table 2). The company contracted to collect waste, Sunset Scavengers, can provide the expanded program at a cost similar to the original system. Recycling and composting service is included in residential trash rates at no extra cost. Residents can save money by switching to a smaller trash container (for example, 20 gallons).

**Table 2. Sunset Scavenger's equipment costs (for City of San Francisco residential program) ( CIWMB 2007).**

Equipment Item/Service	Unit Cost
Dual compactor vehicle	\$192,000
Organics collection vehicle	\$142,000
32-gallon container	\$35
64-gallon container	\$41
2-gallon kitchen pail	\$3.50 to \$4
Container delivery with outreach materials (\$/cart)	\$2 to \$3

Other methods of decreasing total costs associated with waste disposal include the implementation of PAYT trash programs. In 1991, the City of Dover, New Hampshire instituted a PAYT system and curbside recycling program. Since implementation, Dover's net residential solid waste management costs dropped from \$1.1 million in 1990 to \$798,000, while adding more than 1,000 customers. Per household costs have decreased from \$122 in 1990 to \$73 in 1996 (USEPA 1999). Similarly, program costs incurred by the City of San Jose dropped as the amount of materials diverted increased (Table 3).

In addition to reducing waste management costs, it is estimated that recycling can also contribute to local economies through job creation and other benefits. According to the California Integrated Waste Management Board, meeting the state's 50 percent recycling goal will add \$2 billion to California's economy and create over 45,000 new jobs over the next seven years. In 1992, the City of San Jose projected that developing the industrial capacity to absorb its recovered materials would support 40 facilities and 775 manufacturing jobs. The City estimated \$109 million in value added, \$9.4 million in avoided landfill costs and \$88.4 million in production cost savings (CAW 2007).

**Table 3. Total amount of material diverted in San Jose and costs associated with program.**

PROGRAM SUMMARY	FY93	FY97
Tons Per Year MSW	NA	1,315,436
Tons Per Year RSW	283,000	433,576
Tons Per Year ICW	NA	881,860
Percent MSW Diverted	NA	43%
Percent RSW Diverted	33%	45%
Percent ICW Diverted	NA	42%
Average lbs./HH/day <sup>2</sup>	8.61	8.82
Net Program Costs/HH <sup>2</sup>	\$206.85	\$187.03
Disposal Services	\$142.78	\$81.95
Diversion Services	\$64.07	\$105.09

MSW = municipal solid waste RSW = residential solid waste  
ICW = institutional and commercial waste  
NA = not available  
Notes: 1992 dollars adjusted to 1996 dollars using the GDP deflator.

<sup>2</sup> Figures reflect residential sector only. FY93 tonnage data represents 180,000 single-family dwellings only; multi-family dwellings were included in commercial service at the time. In FY97, 269,340 single-family dwellings and multi-family dwellings were served.

## Pros

Reducing waste generation is a critical component of reducing the amount of trash which may accumulate in waterways. Government initiatives have been successful at increasing the amount of waste diverted from landfills. These initiatives also function to raise citizens' awareness of the environmental consequences associated with their consumption and empowers individuals to take control of their contribution to the problem. Government programs have a net positive impact on local economies.

## Cons

While recycling programs have been successful at reducing the amount of waste in landfills, it is less clear if they have reduced waste generation or if they have had any impact on the amount of trash accumulating in waterways. Some initiatives (e.g., San Francisco's plastic bag policy or Oakland's Excess Litter Fee) have been met with opposition from local businesses.

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