

Waste in Our Waterways

Unveiling the Hidden Costs to Californians of Litter Clean-Up

Leila Monroe

Senior Attorney, Oceans Program

Natural Resources Defense Council

Twitter: @saveoceans

<http://switchboard.nrdc.org/blogs/lmonroe>

Litter can be a personal issue. For some, the shock of seeing sea lions munching on plastic bags spurs the urge to volunteer for beach clean-ups. For others, the importance of keeping our water clean hits home when family members get sick after a swim at a contaminated beach. But for many, soda bottles, food wrappers, and cigarette butts are just bits of muck that hit the street and wash away, forgotten. That waste doesn't just disappear, though, and it is can be costly to clean up. As revealed in a new report produced on behalf of the Natural Resources Defense Council by Kier Associates, California cities, towns, and taxpayers are shouldering \$428 million per year in costs to stop litter from becoming pollution that harms the environment, tourism and other economic activity.





WHAT CITIES ARE DOING TO CLEAN-UP LITTER

Most aquatic debris comes from land-based sources: littering, legal and illegal dumping, a lack of or poor waste management practices and recycling capacity, stormwater discharges, animal interference with garbage, and extreme natural events. Most of the responsibility for managing waste falls on local governments, so communities themselves incur direct and significant expenses in reducing and preventing aquatic debris—whether they reside near small streams or on the Pacific coast, where costs become particularly high. Coastal communities also must often bear the cost of cleaning up litter washed downstream from inland communities.

In 1975, the National Academy of Sciences determined that approximately 1.4 billion pounds of litter and other persistent solid material was being tossed into the world's oceans. In the nearly four decades since that estimate was calculated, Americans have increasingly adopted the use of non-biodegradable, single-use plastic that entangles and kills large sea mammals. The amount of plastic produced globally has increased at the steady rate of about 9 percent per year, with around 280 million tons produced in 2011 alone, yet recycling rates have not kept pace, so an increasing amount of waste ends up in landfills, incinerators, and in the environment. Plastic in the marine environment breaks into smaller and smaller pieces and it is eaten—often with fatal consequences—by fish, turtles, birds, and whales. Aquatic debris threatens sensitive ecosystems, has been documented to kill or harm nearly 700 wildlife species, interferes with navigation, degrades natural habitats, costs millions of dollars in lost revenue, and is also a threat to human health and safety. It's no wonder that cities invest considerable time, energy and resources in an effort to stop the flow of litter before it washes into our waterways.

Information reported by communities ranging in size from Los Angeles to Etna, with populations of 3.8 million to a mere 737 respectively, shows that most communities employ a range of litter management options that include waterway cleanups, street sweeping, installation of stormwater capture devices, storm drain cleaning and maintenance, manual cleanup of litter, and public education. Cost estimates for these practices came directly from the communities themselves, from city departments, watershed management programs, and city personnel. Some communities dedicate resources to these litter clean-up methods, but they were unable to break out the costs for reporting. Because so many variables influence how cities invest their funds in litter clean-up—local weather, distance from waterways and the coast, population, equipment costs—Kier Associates erred on the side of caution and did not make data extrapolations. This means actual average costs and per capita expenses are likely higher than those reported in their research, and the figures below can be viewed as baseline minimum costs for dealing with litter.

The new report shows the costs to 95 California communities of litter abatement activities such as street sweeping, storm drain maintenance, and beach cleanup. The study builds on data collected in two previous EPA studies, and synthesizes additional data solicited from dozens of California cities. Kier Associates found that regardless of their size, California communities are spending significant sums to combat and cleanup litter, and to keep it from ending up in the state's rivers, lakes, canals and ocean. For example:

- Los Angeles, population 3.8 million, spends \$9.50 per capita and a total of \$36,360,669 per year.
- San Diego, population 1.3 million, spends \$10.84 per capita and a total of \$14,108,561 per year.
- The community of Commerce in Los Angeles County, population 12,000, spends \$69 per capita and a total of \$890,000 per year.
- Long Beach, population 462,000, spends \$28 per capita and a total of \$12,972,007.

These figures exclude additional costs expended at county and state levels, and they don't include waste management or recycling costs, which are also very significant.

DIRECT COSTS OF LITTER MANAGEMENT

It can be staggering to consider just how much cities must spend to pick up litter. For example, the cash strapped City of Oakland spent a total of \$8.3 million per year, with \$4.6 million spent on street sweeping and \$2.5 million spent on storm drain catchment devices that catch litter when it washes off the streets. Chula Vista spends \$1.7 million per year cleaning and maintaining storm drains. And the Central Valley community of Merced spends \$1.3 million per year on street sweeping alone.

The 95 communities surveyed employ a combination of six litter clean-up and prevention categories, and while costs range according to the size of each community, their nearness to the shore and the size of their litter programs, this is what cities spent on average annually on litter management.



WATERWAY AND BEACH CLEAN-UP, AVERAGE COST

\$133,958

Not all communities conduct waterway and beach clean-ups—and often those on the coasts incur more costs than those inland. In fact, those farther inland often don't recognize their role in cleaning up inland streams and rivers to prevent debris downstream. (These estimates often do not include all costs for clean-up events, including disposal, material and labor.)



STREET SWEEPING, AVERAGE COST

\$529,966

Street sweeping keeps streets and communities free of litter, but also removes sediments and associated contaminants that would otherwise enter waterways via stormwater collection systems. Some communities reported decreased funding for this vital service due to budget constraints.



STORMWATER CAPTURE DEVICES, AVERAGE COST

\$219,528

The more trash enters a community's storm drains, the more complex a device that community will need to capture litter (and costs can vary accordingly, ranging from \$75,000-\$300,000). Capture devices can range from simple inserts placed in storm drains, to devices installed directly in streams.



STORM DRAIN CLEANING AND MAINTENANCE, AVERAGE COST

\$251,890

Some cities surveyed had yet to install any stormwater devices, while many others had devices in place. Among those that had invested in stormwater catchment, communities that have more rainfall must clean storm drains more often, resulting in greater costs. Storm drain cleaning and maintenance is also critical to prevent flooding during storms.



MANUAL CLEAN-UP, AVERAGE COST

\$201,240

Manual clean-up programs include complaint response, park maintenance, litter clean-up responsibilities spread across municipal departments, and in some communities, where no formal litter collection program exists, volunteers who pick up the slack.



PUBLIC EDUCATION, AVERAGE COST

\$74,714

Cities inform the public about the threats of littering and improper disposal of other waste via the internet, billboards, public transit posters, school programs and television. Many include aquatic debris and litter prevention as part of other educational programs, but cities like Benicia have programs specifically focused on ocean pollution and plastics in the ocean.

OTHER COSTS TO CALIFORNIA COMMUNITIES

Litter clean-up programs might appear as line items on some city budgets, but there are other hidden costs to removing the glut of trash that pours into California's waterways. According to the National Ocean Economics Program California's coastal and ocean hospitality and tourism sector generated \$93 Billion in economic activity in 2010: this powerful economic engine relies on a clean and healthy environment. When litter accumulates in rivers and on beaches, or when stormwater systems overflow during heavy rains and discharge untreated water and debris into waterways, California's economy suffers. Often beaches are closed entirely. The fishing industry is also increasingly affected by waste in our waters ways, as increasing numbers of fish have been found with plastic waste in their stomachs.



STOPPING LITTER AT ITS SOURCE IS THE BEST SOLUTION

Because of the ever-growing quantity of single-use plastic packaging, California communities are bearing the costs of preventing litter from becoming pollution in the State's precious waterways. To help solve this problem, we need to go to the source: the best course of action is to stop products from becoming litter in the first place, by increasing recycling rates, and reducing the use of disposable plastic items, such as bags and polystyrene cups, which easily escape into the environment.

California needs to continue to advance upstream source reduction and improved recycling. We need the producers of cheap, disposable plastic packaging—which constitutes the largest and most harmful quantity of litter—to take their share of responsibility for the end-of-life management of their products. This should include providing support to California communities with the implementation of Total Maximum Daily Load (TMDL) plans and implementation of Municipal Separate Storm Sewer System (MS4) permit requirements. Los Angeles County's TMDL, for example, requires southern Californian cities discharging into the river to reduce their trash contribution by 10 percent each year, for a period of ten years, with a goal of zero trash by 2015.

We can implement changes to more fairly share the financial and logistical burden of the ever-growing quantity of plastic trash between local governments, taxpayers and the plastic producers. This reasonable system would create incentives for producers to develop safer and less wasteful products and packaging. And increased recycling will create jobs in California, while protecting the health and beauty of California's treasured coastline and waterways.



