

# EXECUTIVE SUMMARY



## Background

In 2011, Clean Water Fund and local jurisdictions partnering in the Taking Out the Trash project, conducted a litter survey in four Bay Area cities: Richmond, South San Francisco, San Jose, and Oakland. The purpose of the study was to fill a gap in existing trash monitoring data for the marine environment. Since information provided by current litter audits, storm drain monitoring, and marine debris sampling fail to characterize trash and litter by source and product type, it is impossible to know what the most significant components of marine litter are when seeking to address the problem at the point of origin. CWF and its municipal partners wanted to identify sources of trash entering local waterways in order to design programs to reduce trash pollution at the source. Seventy-six (76) local jurisdictions in the San Francisco Bay region that have to comply with an MS4 municipal regional stormwater permit are required to eliminate trash discharges to the San Francisco Bay by 2022. Current efforts to control trash, such as street sweeping and installing trash capture devices in the storm drain system, require continued monitoring and maintenance and are expensive. All indications are that trash generation will continue an upward trend. To keep up, local stormwater programs will have to expand efforts to control trash over time and costs will rise. In light of tight municipal budgets, the more sustainable solution is to reduce the generation of trash at the source. To do so, the sources must first be identified.

## Study Design

Existing marine debris, beach litter, and storm drain monitoring had failed to identify the sources of trash that enter San Francisco Bay and the surrounding coastal zone. There were no previously existing studies designed to answer the questions:

- 1. What is the composition of trash?** What specific products enter impaired water-bodies surrounding the San Francisco Bay?
- 2. Where do these products originate?** What types of businesses, institutions, and operations are responsible for making choices to use the products that most frequently escape into the environment?

Without this information, it was impossible to determine how best to stop the generation of trash at the source.

Clean Water Fund and its partners first considered sampling trash in storm drains and on shorelines, but determined that degradation of products when they get wet in the environment would make it too challenging to analyze the types of products and their sources. For the best results, project partners decided to conduct a litter study in commercial districts adjacent to trash-impaired waterways in order to capture and characterize products before they enter the storm drain system or get blown off city streets.

## Results

Litter was collected at six sites around the San Francisco Bay. Volunteers and staff captured nearly 12,000 pieces of trash littered on streets in commercial districts within four cities. Due to the sheer number, and resources of the project, cigarette butts were excluded from the study because they were too numerous to count.

The data gathered indicate that, discounting cigarette butts, take-out food and beverage packaging comprises the most significant type of trash on Bay Area streets. It was 67% of all trash collected; food packaging comprised 48% and beverage packaging was 19%.

Staff and volunteers identified the sources of 19% of the litter collected, using brand identification and other unique recognizable characteristics. Of the trash for which sources were identified (i.e. known sources), fast food chains comprised 49% of the litter. Other large sources included grocery stores (11%), convenience stores (10%), retail stores (8%), and café/coffee shops (7%). Less significant sources included pharmacies, restaurants, transit stations, and banks.

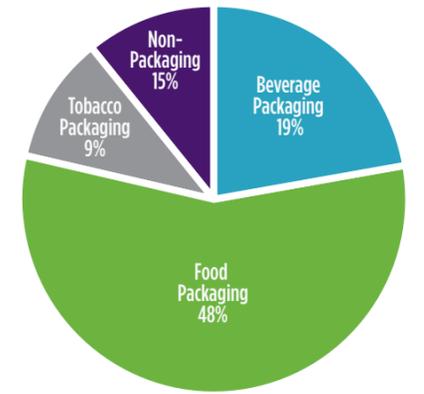
The goal of the Taking Out the Trash project is to identify opportunities to reduce trash at the source. Clean Water Fund has analyzed the study data to determine what products could be eliminated in trash using a “source reduction” approach. Source reduction is a solid waste management term of art and has been defined in the California Public Resources Code.

Food service businesses can reduce the amount of disposable food and beverage packaging both by substituting re-usable products for single-use disposable products and finding ways to use less disposable packaging in operations. Thirteen percent (13%) of beverage related litter could be eliminated by promoting re-usable beverage containers (i.e. “bring your own” cup or mug) and 27% of food packaging litter could be eliminated by replacing disposable food-ware with re-usable food containers.<sup>1</sup>

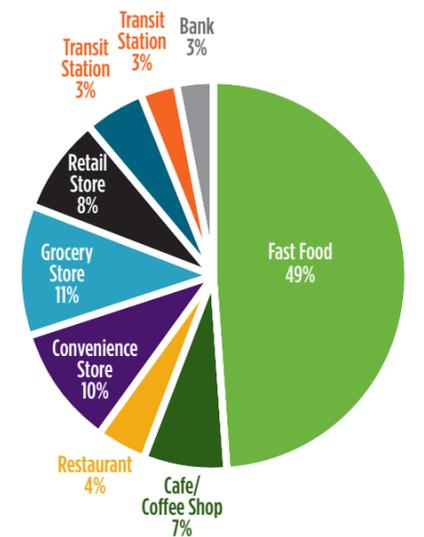
## Conclusion

Cigarette waste and food and beverage packaging litter are substantial components of trash that enters the San Francisco Bay from Bay Area streets. Clean Water Fund’s research has identified significant opportunities for reducing trash at the source by focusing on reducing single use disposables in the retail food and beverage industry. By developing strategies that promote re-usable alternatives to single use disposable products in take-out food service, local jurisdictions can reduce the overall amount of trash that needs to be managed as waste and removed from the watershed.

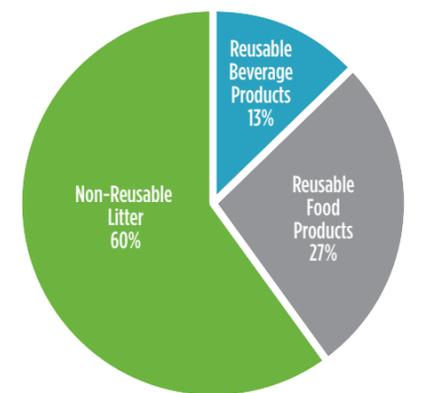
<sup>1</sup>Source Reduction — Section 40196 of the California Public Resources Code defines source reduction as any action which causes a net reduction in the generation of solid waste. “Source Reduction” includes, but is not limited to, reducing the use of non-recyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce the amount of wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials. “Source Reduction” does not include steps taken after the material becomes solid waste or actions which would impact air or water resources in lieu of land, including, but not limited to, transformation. See 40196 of the California Public Resources Code. Also see California Code of Regulations, Title 22 667100.1 (c).



Litter Characterized by Product Use



Sources of litter



Source Reduction Opportunities

## ACKNOWLEDGEMENTS



The Talking Out the Trash monitoring program was developed by Clean Water Fund in partnership with a team of advisors that included representatives from local government and local watershed groups. The Advisory Board also included experts in trash data collection and monitoring. Clean Water Fund is grateful to the following people for participating in the Taking Out the Trash Advisory Board:

- ▶ Linda Hunter, The Watershed Project
- ▶ Paula White, The Watershed Project
- ▶ Juilana Gonzalez, The Watershed Project
- ▶ Lesley Estes, City of Oakland, Department of Public Works
- ▶ Will Stockard, City of Oakland, Department of Public Works
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- ▶ Paul Ledesma, City of San Jose, Department of Environmental Services
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- ▶ San Jose State Environmental Management Program
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Taking Out the Trash Program Staff:

- ▶ Miriam Gordon, California Director, Clean Water Action and Clean Water Fund
- ▶ Jennifer Clary, Program Associate
- ▶ Eleanor Jaeger, Emily Schweitzer, Rafaela Minkowski, Clean Water Fund interns

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