

Zero Waste Collection Tests Summary Results

Presented to the San Francisco Department of the Environment
by
Recology San Francisco



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Executive Summary

In collaboration with the San Francisco Department of the Environment (SFE), Recology launched the following zero waste collection test programs to investigate new avenues to achieve zero waste in the City and County of San Francisco.

These test programs focused on changing the collection system of participants with the goal of encouraging customers to divert more material into their composting and recycling bins.

Each test program was supported with a robust outreach and education plan to help customers understand the goals of the program and correctly utilize their adjusted service.

To measure the effectiveness of each program, Recology monitored contamination levels in the composting and recycling streams and the tonnages collected in each stream. This allowed Recology to measure migration from the trash bins to the composting and recycling bins, as customers adjusted to their new trash service levels.

Zero Waste Collection Test Overviews

Test Program 1: Small Trash Bin

Customers in the Small Trash Bin test areas received a 10-gallon bin for weekly trash collection service per residential unit (pictured). Recycling and composting bins remained at their subscription level. Single-family and multi-family customers up to four units were eligible for participation.

Customers in the Small Trash Bin program were also permitted to place bagged film plastic in their recycling bins.

The test was conducted from March 2015 to June 2015, with about 400 total participants within 10 neighborhoods.

Everyone was given a smaller sized bin, and accommodations were made for those with exceptional circumstances (such as adult diapers). This represented approximately 2% of Small Trash Bin participants.

Test Program 2: Every Other Week Collection

Customers in the Every Other Week test areas had their trash collected bi-weekly (as opposed to weekly). Recycling and composting collection remained on the same weekly collection schedule. Single-family and multi-family customers up to four units were eligible for participation.



Customers in the Every Other Week program were also permitted to place bagged film plastic in their recycling bins.

The test was conducted from March 2015 to June 2015, with about 370 total participants within 10 neighborhoods.

Everyone participated in the Every Other Week test, and accommodations were made for those with exceptional circumstances (such as adult diapers). This represented less than 1% of Every Other Week participants.

Test Program 3: Pay per Setout

Two neighborhoods were selected to participate in the Pay per Setout program – two routes located in the Sunset District and two in the Excelsior District. Customers on these routes could elect to skip their trash collection service in one-week intervals, receiving a 10% discount on their monthly refuse bill each time they did not set out their trash.

A minimum of once per month trash collection was required (meaning that customers could potentially achieve a 40% reduction on their trash bill). Recycling and composting collection remained on a weekly schedule.

The test was conducted from the Fall of 2012 and is ongoing to the Fall of 2015, encompassing four routes with a total of about 8,100 possible participants.



Test Program 4: Control Group

Customers in the Control Group received the same level of outreach as customers in the Every Other Week and Small Trash Bin programs. In addition, these customers were encouraged to place bagged film plastic in their recycling bins.

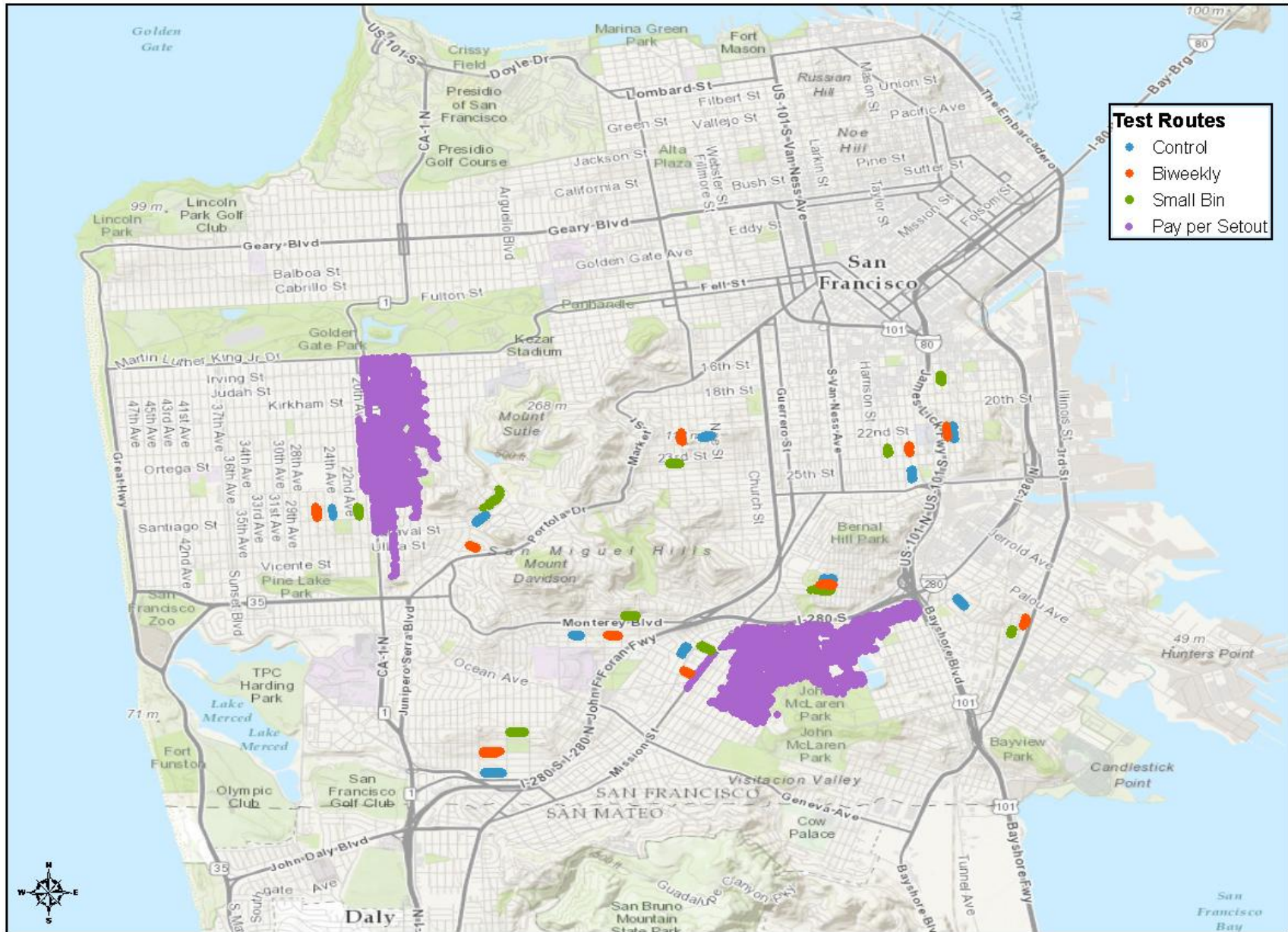
The test was conducted from March 2015 to June 2015, with approximately 370 total participants.

Selecting Routes

Routes for each collection test were designed to cover a diverse cross-section of the City, while still maintaining geographically efficient service routes.

The following page depicts the zero waste collection tests route map. Customers in the various color-coded areas were designated to participate in specific test programs.

Zero Waste Collection Tests Routes



Test Program Outreach

The following outreach material was provided to test program participants.

Test Program	Program-Specific Letter	“Heads Up” Postcard	Goodie Bag	Bin Hangers	Oops! Bin Hangers	Collection Calendar	Community Meetings
Small Trash Bin	X	X	X	X			
Every Other Week	X	X	X	X	X	X	
Pay per Setout	X			X			X
Control Group	X	X	X	X			

Program-Specific Letter

Each customer in the test areas received a program-specific letter introducing them to their collection program.

Customers in the Every Other Week and Small Trash Bin programs were also alerted to the two \$50 participation credits they could earn toward collection bills.

“Heads Up” Postcard

Customers on the Small Trash Bin, Every Other Week, and Control tests also received a multi-lingual “Heads Up” Postcard (pictured), reminding them of the upcoming programs and the assistance available.

The Postcard informed customers that they would be part of a test program in order to increase recycling and composting. Customers were also alerted to the upcoming goodie bag distributions.



Goodie Bags

Goodie bags were distributed door-to-door on Saturday, February 21, 2015. Recology staff and SFE volunteers were available to help answer any customer questions about the programs.

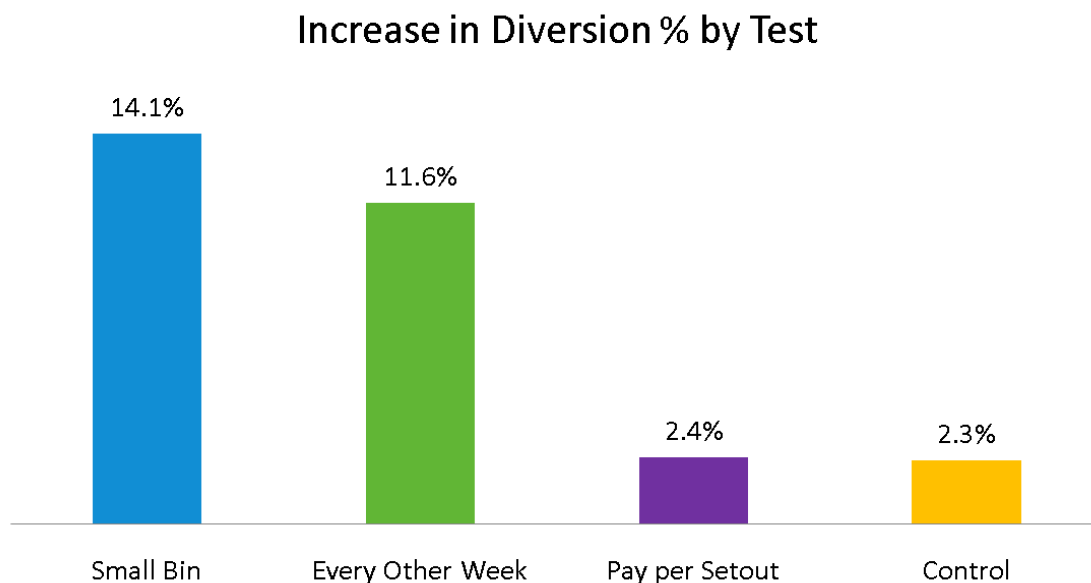
Community Meetings

Recology hosted community meetings at a local coffee shop, and invited customers in the Pay per Setout service areas to join Recology staff for a cup of coffee to answer questions about their upcoming program. In addition, Recology staff attending community meetings to tell affected residents about their options under the Pay per Setout test program.

Diversions Change

Prior to the start of each test program, Recology collected trash, composting and recycling tonnage data for each group of test participants to establish the baseline for each test. The subsequent changes after the implementation of the test programs were measured against the baseline of each test. The changes in diversion were calculated by taking the difference between the average tonnage of materials in the composting and recycling bins as a percentage of the total collected in all three bins during the test period and the baseline period.

Each test program saw an increase in the overall diversion rate. The Small Trash Bin and Every Other Week collection tests posted the largest increase in diversion while the Pay per Setout collection test posted the least.



Program Compliance

Although changes in diversion are a very important barometer to measure the success of the zero waste collection tests, customer compliance plays a key role in evaluating the long-term effectiveness of each program.

To measure program compliance, Recology looked at:

- Change in contamination
- Change in extra trash collections and overflowing bins
- Change in calls about public health issues
- Number of setout charges (Pay per Setout only)
- Number of wrong week setouts (Every Other Week only)

Changes in Contamination

Recology noted no statistically significant change in recycling or composting contamination levels for any of the test collection programs. This was measured by doing material characterizations using industry-standard methodologies both prior to and during the test to measure differences in contamination, both visually and by weight. The margin of error from these measurements was between 2% to 5%.

Extra Material

Recology drivers observed and recorded the frequency of extra bags of material and bins with lids not fully closed, to help analyze customers' ability to utilize the smaller containers or less frequent collection.

Test Program	Lid	1-2 Extra Bags	3+ Extra Bags	No Issues
Small Bin	4.3%	3.2%	1.5%	91.0%
Every Other Week	2.8%	1.8%	1.1%	94.2%
Control	2.8%	1.1%	0.3%	95.7%

Note: Data is for all three bins combined.

Changes in Public Health Calls

To track public health concerns, Recology created a special "reason code" in its Recology Customer Management System (RCMS) and trained Customer Service Representatives to use the code to track such concerns. No calls were received during the test period related to public health issues.

Recology drivers were trained to observe and record possible public health concerns related to the collection tests while servicing the routes. The following concerns were recorded by Recology drivers during the course of the tests. Drivers reported no public health concerns related to the Pay per Setout program.

Test Program	Insect or Pest Issues	Odor Issues
Small Bin	4	11
Every Other Week	4	12
Control	1	7

Recology included a survey question related to possible public health concerns; please see page 11, under "Customer Satisfaction Survey Results," for further details.

Film Plastic Participation

As a component of the Small Bin, Every Other Week, and Control Group programs, customers were encouraged to place bagged film plastic in their recycling bin.

The Small Bin and the Every Other Week programs experienced a marginal increase in film plastic in the recycling bins. However, in all test programs, the majority of film plastic remained in the trash bin.

Number of Wrong Week Setouts

Oops! Bin Hangers (described on Page 5) were applicable to the Every Other Week participants only. The hangers were attached to the trash bin of customers who errantly placed their bin on the curb during the wrong collection week.

In the first month of the Every Other Week test collection program, over 145 “Oops!” Bin Hangers were left on customer bins. This represents about 40% of participants in the program.

Collection Impacts

To analyze the impact of the test programs on collection operations, Recology looked at:

- Changes in customers’ setout habits for trash, recycling and composting
- Changes in bin subscription sizes

The most notable impact on setout habits were observed in the following programs:

- Pay per Setout: trash setouts decreased by approximately 15%
- Small Bin: composting setouts rose by 11%

Recology did not see significant changes in customers’ subscription levels for recycling or composting in either program.

Customer Service Impact

Recology analyzed the following data to measure customer satisfaction with the test programs:

- Change in call volume to Customer Service, as well as the nature of the calls
- Results of a Customer Satisfaction Survey following the conclusion of each test program

Changes in Customer Service Calls

The following types of calls were received by Recology Customer Service:

SMALL BIN			
Call Type	Before	During	Total
Complaint	29	21	50
Compliment	1	0	1
Question	12	10	22

EVERY OTHER WEEK			
Call Type	Before	During	Total
Complaint	16	21	37
Compliment	0	0	0
Question	5	3	8

PAY PER SETOUT			
Call Type	Before	During	Total
Complaint	n/a	1	1
Compliment	n/a	0	0
Question	n/a	14	14

CONTROL			
Call Type	Before	During	Total
Complaint	1	1	2
Compliment	0	0	0
Question	4	0	4

In addition to the above metrics, the Pay per Setout program caused an increase in customer billing inquiries. Calls were primarily related to disputes over Pay per Setout program credits.

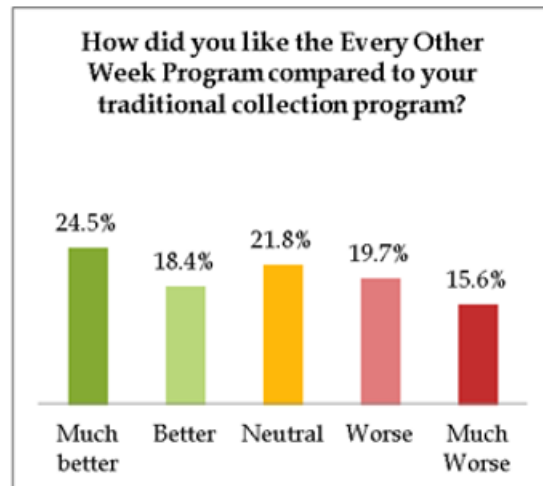
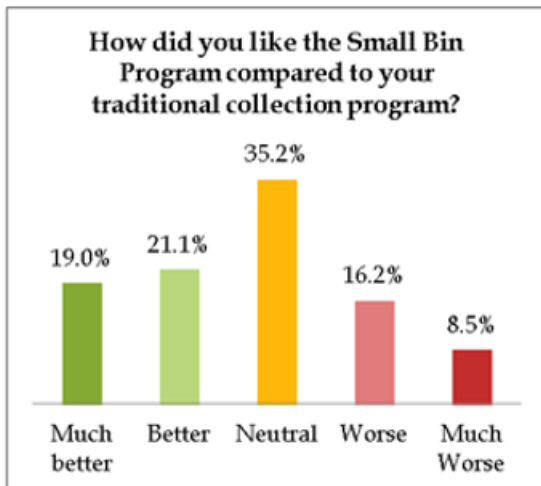
Customer Satisfaction Survey Results

To receive the full \$100 participation credit on their invoices, customers had to complete a short survey specific to their collection test program. Overall, 142 Small Bin participants (35% of total participants) and 147 Every Other Week participants (40% of total participants) completed the survey. The survey focused on four areas:

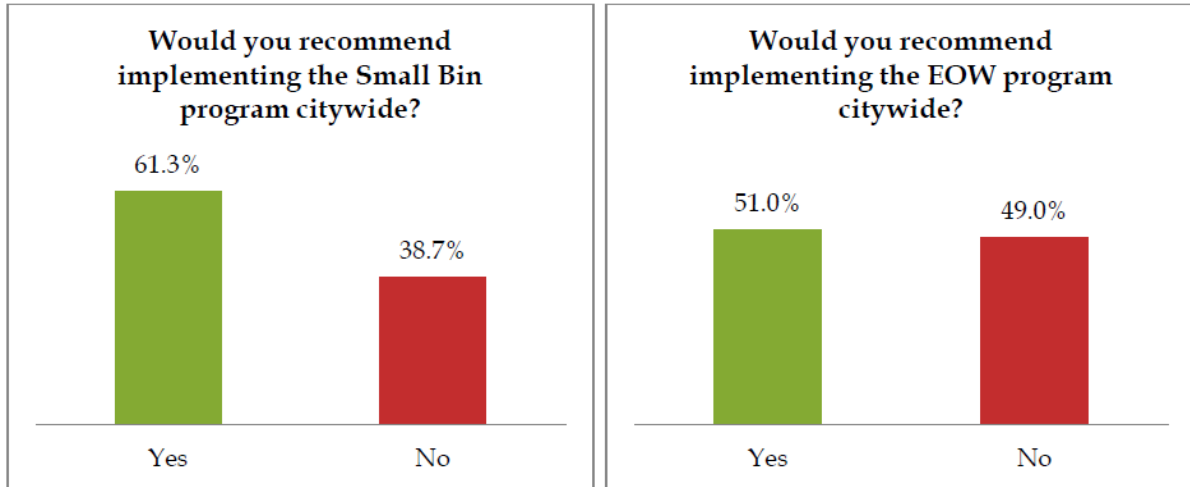
- Overall customer satisfaction
- Methods customers used to handle extra material
- Public health concerns
- Effectiveness of outreach material

Overall Customer Satisfaction

The first question measured customers' overall satisfaction with the test program. Overall, 75.6% of Small Bin respondents said they liked the program better than their traditional collection services, or were neutral. By comparison, 64.7% of Every Other Week respondents liked the program better or were neutral.



These sentiments were again reflected in the next question, which asked whether respondents would recommend implementing their test collection program citywide.



Methods to Handle Extra Material

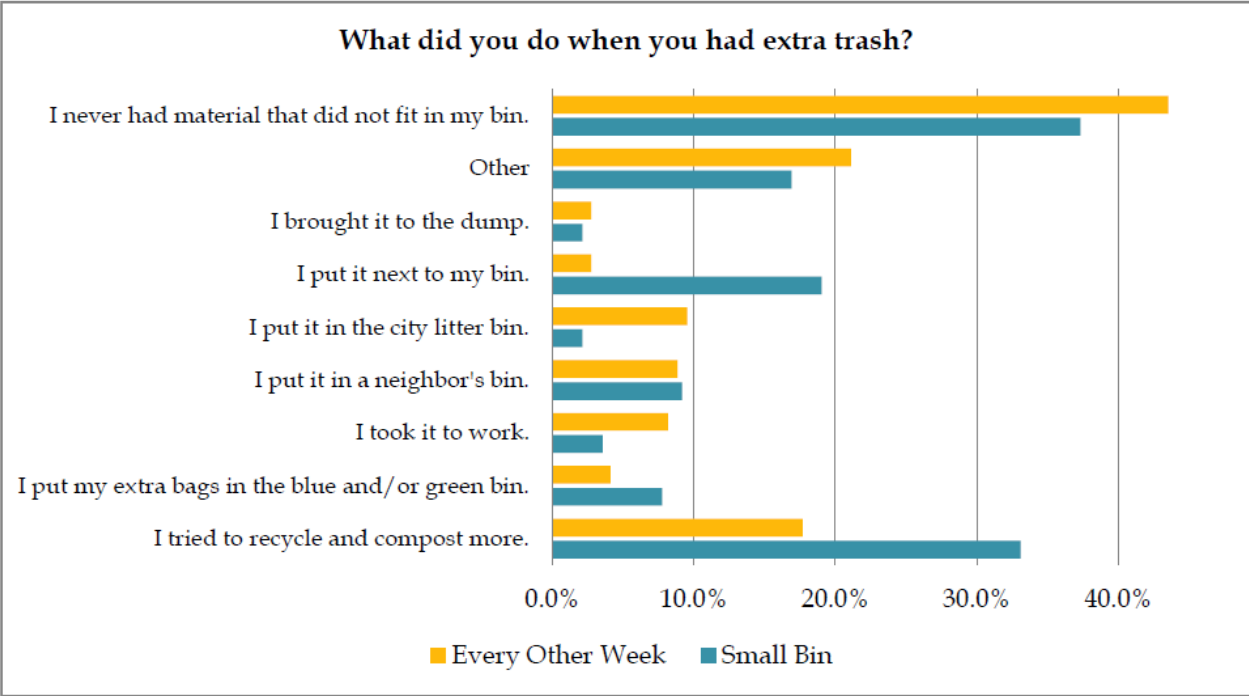
Over the course of the tests, the Small Bin program experienced a 5% decrease in total tons collected and the Every Other Week program experienced a 9% decrease in tons, when compared to baseline tonnage and the Control Group.

To help understand the shift in total tons collected and customer behavior patterns, Recology asked customers to select the methods they used to handle extra trash.

The majority of customers in the Every Other Week program stated that they never had excess material; this was closely followed by customers in the Small Bin program.

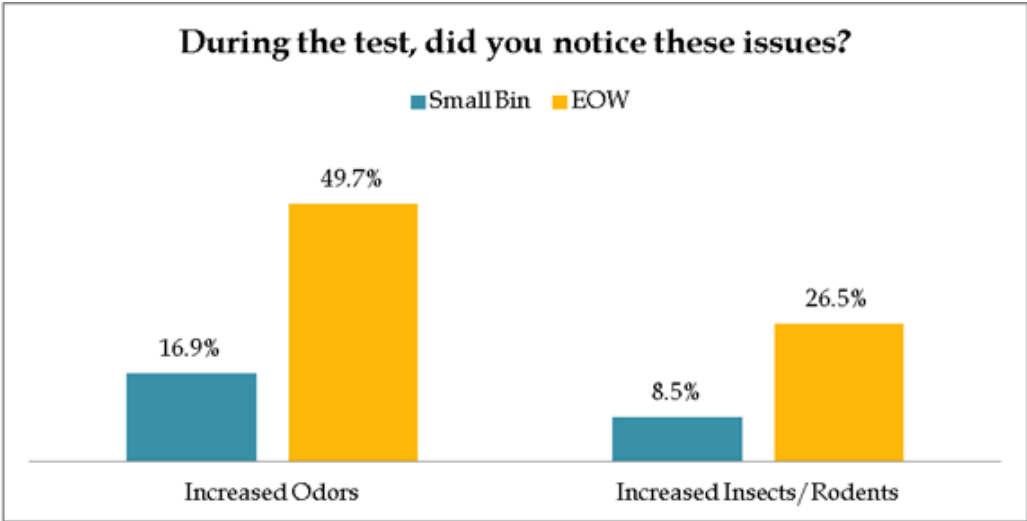
Over a third of customers in the Small Bin program stated that their smaller trash bin encouraged them to recycle and compost more. This compares to only 17% of Every Other Week participants.

Approximately 9% of both Small Bin and Every Other Week participants noted that they used their neighbor's bin to place excess trash, which may help explain the decrease in total tons collected.



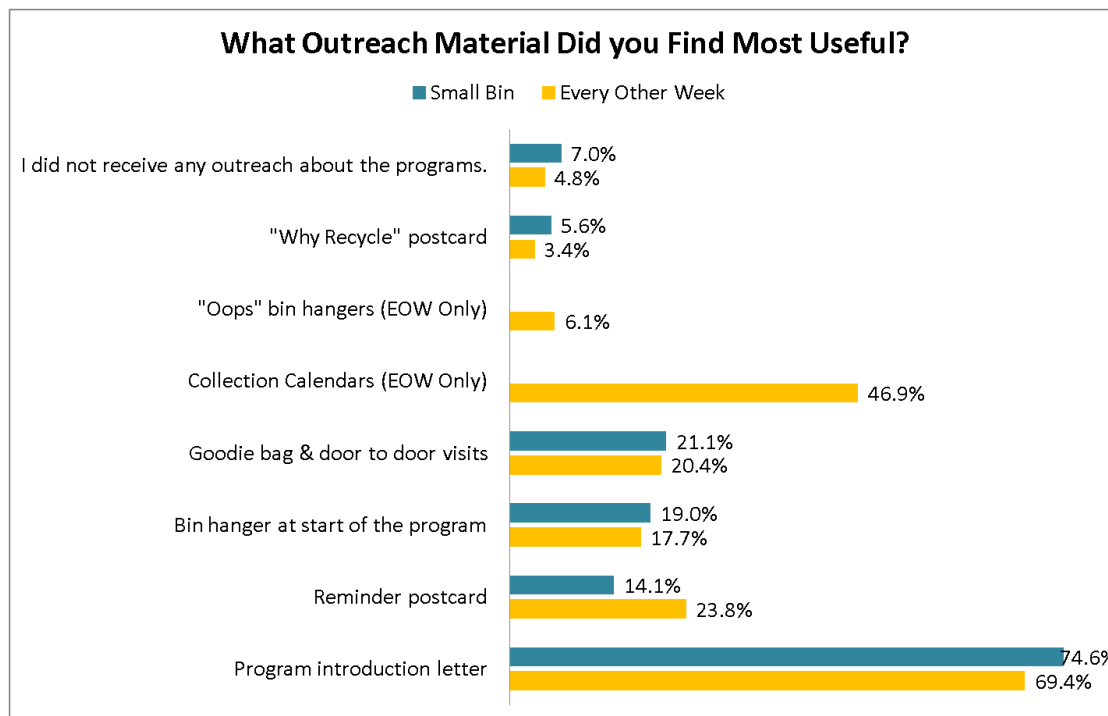
Public Health Concerns

Recology asked survey respondents to note whether they noticed an increase in odors or an increase in the presence of insects or rodents during their test programs. This question, coupled with driver reporting and call center monitoring, helped Recology evaluate possible public health concerns. Participants in the Every Other Week program reported a higher incidence of odor and insects or rodents compared to the Small Bin program.



Effectiveness of Outreach Material

As noted in the “Test Program Outreach” section on Page 4, Recology and SFE conducted extensive outreach to prepare customers for the launch of the test programs. Survey respondents largely rated the Program Introduction Letter as the most useful piece of outreach material. Furthermore, many respondents in the Every Other Week program ranked the collection calendars as useful tools.



Conclusion

San Francisco has a number of options available to pursue zero waste. The following provides an overview of the results of each zero waste collection test.

Small Bin	Every Other Week	Pay per Setout
<p>Program Strengths</p> <ul style="list-style-type: none"> • Largest diversion increase • Increase in composting setouts • High customer satisfaction and recommendation <p>Program Challenges</p> <ul style="list-style-type: none"> • Received more complaints 	<p>Program Strengths</p> <ul style="list-style-type: none"> • 2nd largest diversion increase • Largest increases in recycling & composting service capacity <p>Program Challenges</p> <ul style="list-style-type: none"> • Many wrong week setouts indicates schedule management is challenging • Greatest number of odor and pest issues reported 	<p>Program Strengths</p> <ul style="list-style-type: none"> • Large decrease in setouts for trash • Fewest complaints of all tests <p>Program Challenges</p> <ul style="list-style-type: none"> • Little diversion change • Large increase in billing questions