Mountain View

Residential Food Scraps Pilot

Final Data Report

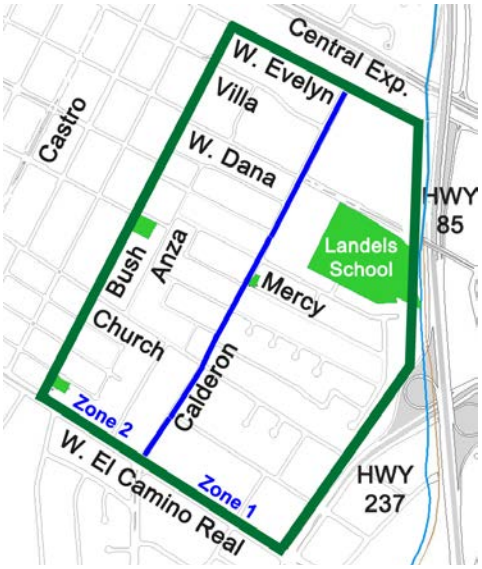
April 2016

A food scraps collection pilot was conducted in a portion of the Old Mountain View neighborhood from July 2015 through January 2016.

In both zones, participants placed food scraps and food soiled paper in their yard trimmings cart for weekly collection. Recycling carts continued to be collected every other week, as before the pilot started. However, garbage was collected at different frequencies to test whether the amount of food diverted would be affected. In Zone 1, garbage carts were collected weekly and in Zone 2 they were collected every other week (EOW).

Zone 1

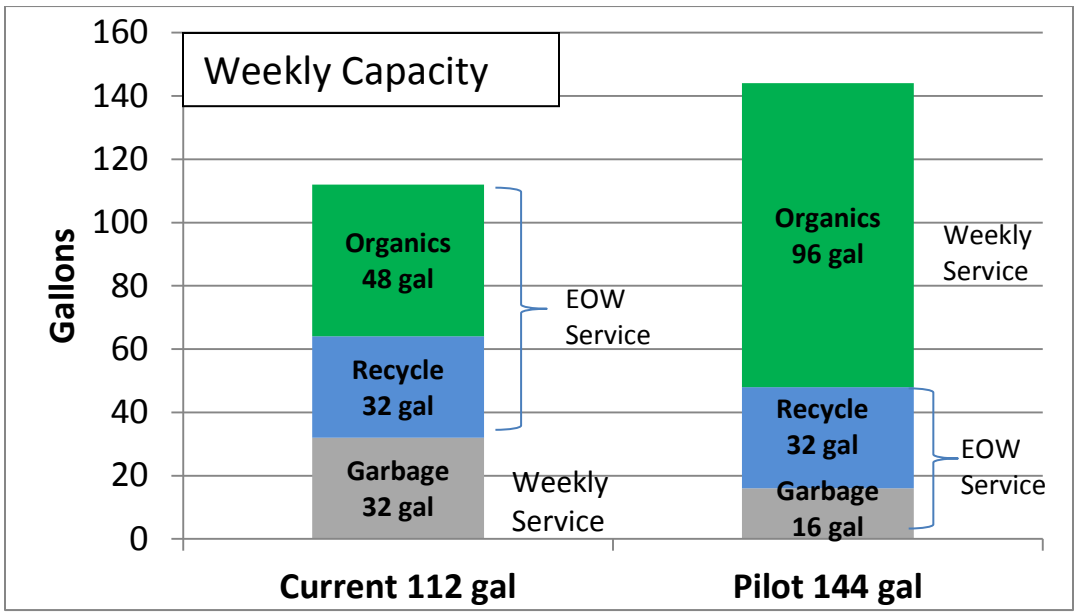
- Weekly Garbage
- Weekly Organics
- 415 homes total
- 9% rowhouses
- 4% small multi-family



The collection changes implemented in each zone are illustrated in the table below:

Current Service	Zone 1 Changes	Zone 2 Changes
Weekly Garbage		EOW Garbage
EOW Yard Trimmings	Weekly Organics	Weekly Organics
EOW Recycling		

When viewed in terms of a typical residential service of 32-gallon garbage, 64-gallon recycling and 96-gallon yard trimming cart, service capacity was actually increased, as shown below.



Recent analysis of the City's residential waste stream determined approximately 75 percent of the contents of the average single-family garbage cart are either compostable (45 percent) or recyclable (30 percent) materials. Those customers willing to shift compostables to the yard trimmings cart should have enough capacity in their current garbage cart for a 2-week collection cycle. Those unwilling to separate food scraps, the small percentage of people that truly don't produce any food scraps, and those with a large number of diapers will experience a decline in capacity. The City of Portland found that one year after the start of every other week garbage service, the number of customers with larger cart sizes had increased by only 2 percent (the number of customers in smaller carts was also up by 2 percent). The Portland report is available at https://www.portlandoregon.gov/bps/article/423510

Data Collection Methods

Data was collected in various ways by City Staff and consulting firm For Sustainability Too. The most relevant information is provided below. A customer survey was conducted near the end of the pilot in January 2016 and results are provided later in this report.

Visual Field Observations: The lids of all carts set out for service at 144 homes in Zone 1 and at 171 homes in Zone 2 were lifted. This field evaluation was conducted on four

different collection days. Each cart was observed for the presence of food, objectionable odors and the presence of vectors (obvious signs of flies or rodents).

Collected Load Tonnage: Each separate load of garbage and organics collected from both zones was weighed when delivered to the SMaRT Station®.

Cart Samples: Full garbage and organics carts were removed (and replaced with clean, empty carts) from 20 homes in each zone (over a period of 4 weeks 10 carts were removed and sampled each week). The contents of each cart were sorted and weighed separately to provide a detailed accounting of the materials placed in each cart.

In this report, the yard trimming/food scraps mix may be referred to as "organics" and "food scraps" means both food and food-soiled paper.

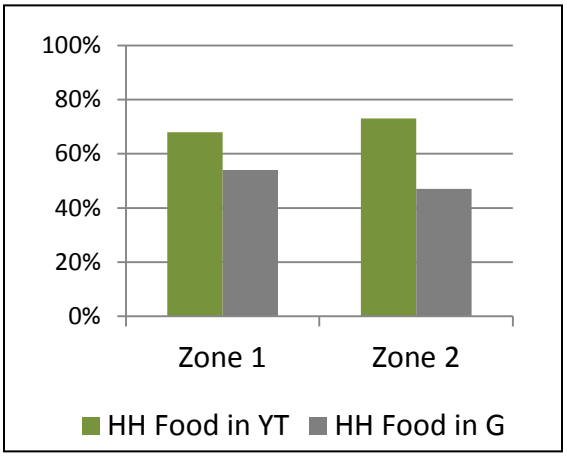
Pilot Results

Participation

Participation is evaluated using three different measures.

VISUAL FIELD OBSERVATIONS

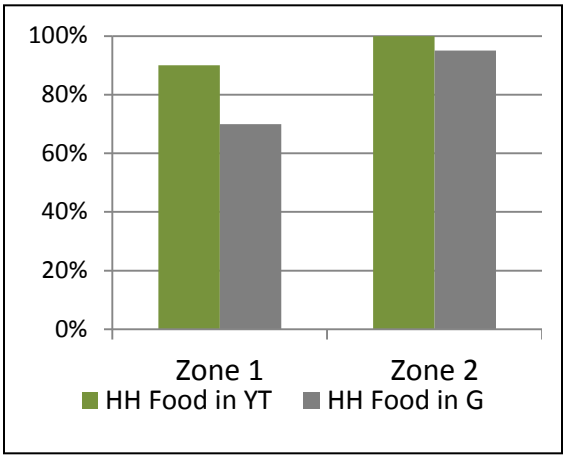
Those households with food scraps observed in the yard trimmings cart were counted as participating. This method of evaluating participation is anecdotal because only food scraps near the top of the carts can be observed, however it is still quite high. Households with food scraps observed in the garbage cart are not considered non-participating, as they may also have had food scraps in the organics cart.



	Zone 1	Zone 2
Households (HH) with Food in Yard Trimmings **Participation Rate**	**68%**	**73%**
Households (HH) with Food in Garbage	54%	47%

CART SAMPLES

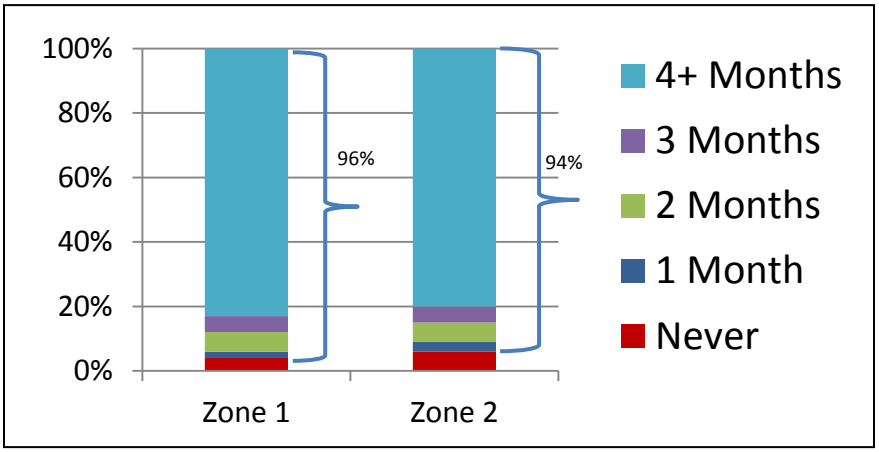
Based on the presence of food scraps in the yard trimming carts, participation was very high. However, food scraps (mostly food-soiled paper) were also present in the garbage carts of a large percentage of the sample households.



	Zone 1	Zone 2
# Households (HH) sampled	20	20
# Households (HH) w/some food in yard trimmings (YT)	18	20
Participation Rate	**90%**	**100%**
# HH w/some food in Garbage (G)	14	19

CUSTOMER SURVEY

Participation was high, as self-reported in the customer survey (full survey results are provided later in this report). Customers were asked how long they participated in the pilot by separating food scraps and placing them in the yard trimmings cart.



Performance

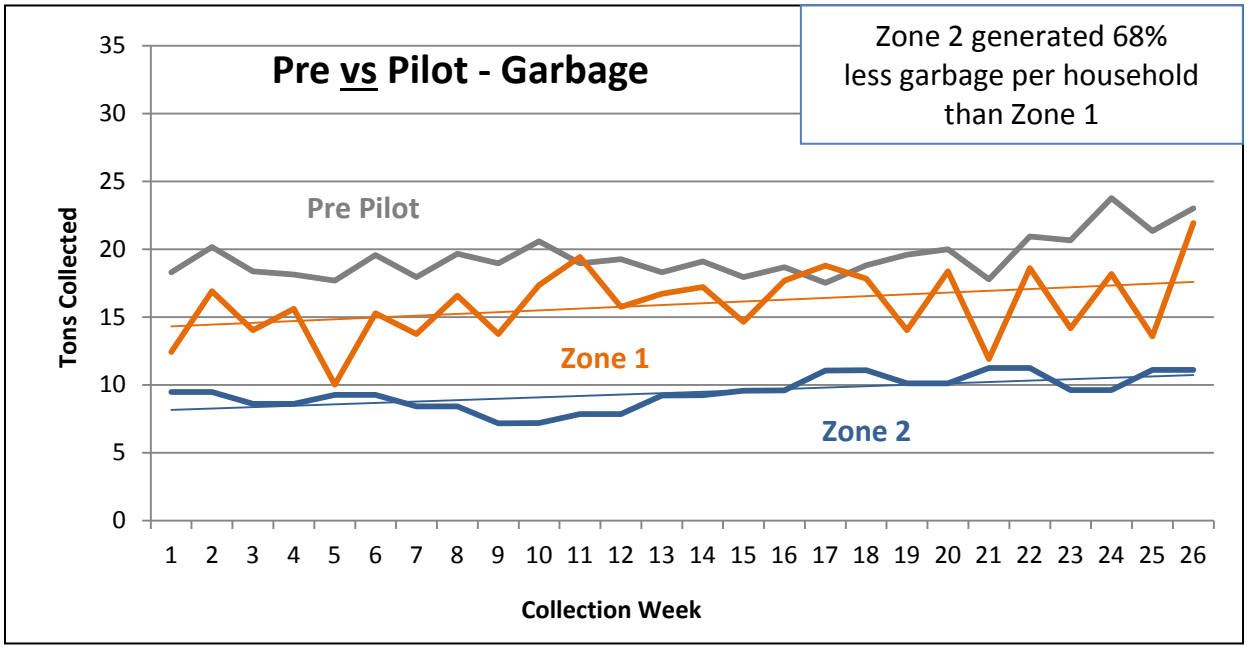
Provided below is information extracted from the overall amount of material collected each week, which provides a broad but less precise evaluation of results. This is followed by information obtained from the cart samples, which is very precise, but based on a small sample size. Data regarding the number of overfilled carts in Zone 2 and observed odors and vectors in both zones is also included.

COLLECTED LOAD TONNAGE

Garbage Findings:

- When compared against July - December 2014, the amount of garbage collected during the pilot (July – December 2015) was reduced in both zones, but was reduced more in Zone 2 (EOW garbage) than in Zone 1.

- When the amount of garbage collected during the pilot period in Zone 1 is compared against the amount collected in Zone 2, per household, Zone 2 is generating less garbage.

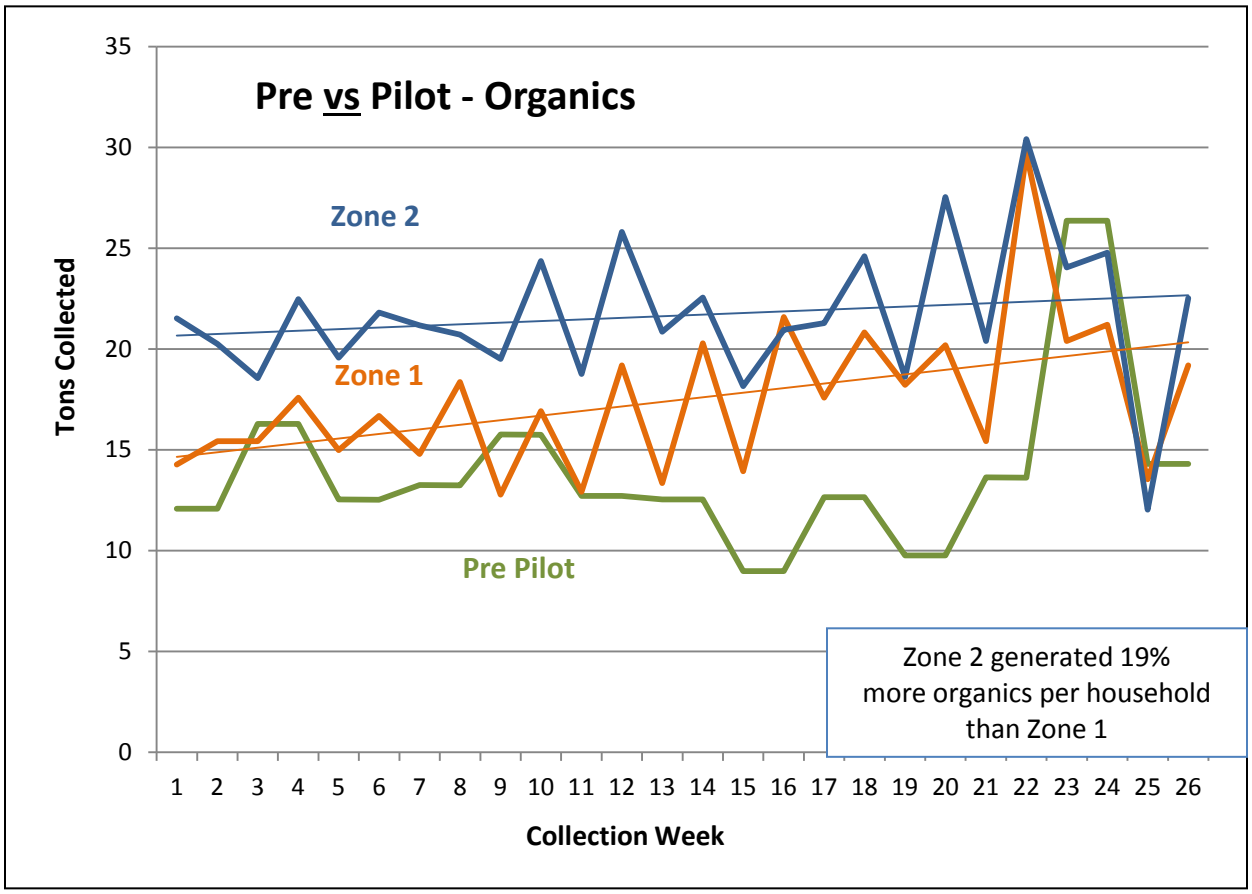


Collection Data Garbage Generation Average pounds per Household per Week			
	Pre-Pilot July – December 2014	Pilot July – December 2015	Decrease
Weekly Garbage Zone 1	19.4	14.8	24%
EOW Garbage Zone 2		8.8	55%

Organics Findings:

- When the amount of organics (yard trimmings with food scraps) collected during the pilot is compared with the same time period the year before, organics tons increased, but not exactly commensurate with the decrease in garbage.

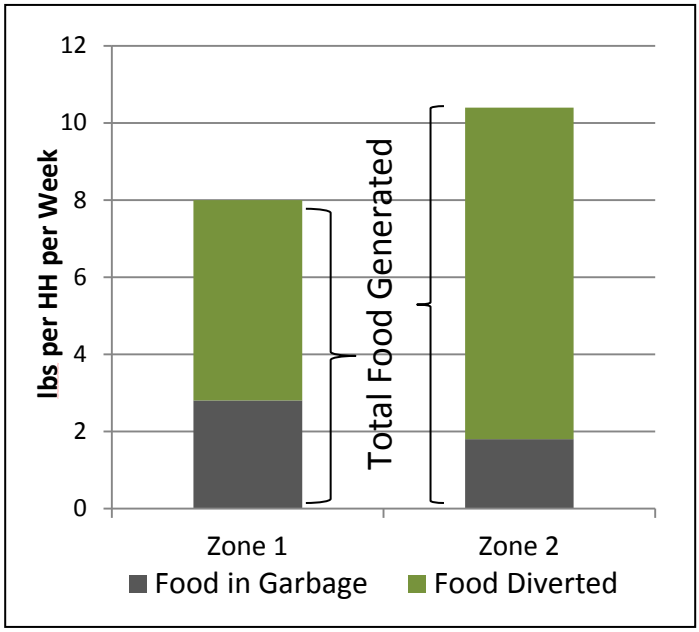
- When the amount of organics collected during the pilot in Zone 1 is compared to Zone 2, per household, Zone 2 is generating more organics.



Collection Data Organics Generation Average pounds per Household per Week			
	Pre-Pilot July – December 2014	Pilot July – December 2015	Increase
Weekly Garbage Zone 1	13.9	16.2	17%
EOW Garbage Zone 2		20.1	45%

CART SAMPLES

The collected load weights do not give an indication of how much of the material in the organics cart is food scraps versus yard trimmings. The cart samples allowed for an accounting of all materials in both the garbage and organics carts to give a more in depth look at household changes. Although the sample size is small (20 households from each zone), the results are very accurate.



Cart Samples Waste Generation and Diversion Average Pounds per Household per Week		
	Weekly Garbage Zone 1	**EOW Garbage** Zone 2
Total Waste Generated (all garbage and food scraps)	18.4	18.1
Total Food Scraps Generated	8.0	10.4
Food Scraps Diverted (in organics cart)	5.2	8.6
% of Total Waste Diverted	29%	47%
% of Total Food Diverted	66%	82%

OVERFILLED CARTS AND WRONG WEEK GARBAGE SET OUTS

In zone 2, audits were performed on five occasions to count the number of carts that were overfilled (lids open more than 6 inches) and the number of extra bags set out to evaluate if reduced garbage capacity was causing significant problems:

Audit Date	Overfilled Carts	Extra Garbage Bags
July 23	40	18
August 8	29	8
August 20	39	11
September 3	45	16
September 13	41	14
Total	194	67
Average per week	39	13
% of Total Set Outs	**7%**	na

At the beginning of the pilot, staff tagged carts that were found to be set out for collection on the wrong week in Zone 2:

	No Garbage Day			
	First Audit	Second Audit	Third Audit	Fourth Audit
Carts Out	62	23	21	23
% of Total	11%	4%	4%	4%

VECTORS AND ODORS

During the visual field observations (120 homes in each zone), auditors looked for the presence of strong odors, flies, ants and rodents in both the garbage and yard trimming carts. This was done in both zones to determine if the frequency of garbage collection had an effect on the presence of these items. The first four audits were completed at the beginning of the pilot in 2015 during the warmer months of August and September. At least one of the audits was conducted during a week when temperatures were in the high 80's. In March of 2016, staff performed an additional audit to verify the findings made in the earlier audits. Because this data is not collected by staff on a regular basis, there is no comparison to conditions before the pilot. Complaints or issues are handled on a case by case basis and are very infrequent in the residential sector.

Number of Observed Incidents of Presence				
Garbage Carts	**Vectors**		**Odors**	
	Zone 1 Weekly Garbage	Zone 2 EOW Garbage	Zone 1 Weekly Garbage	Zone 2 EOW Garbage
August 6	1	0	1	2
August 20	3	0	0	0
September 3	0	0	0	0
September 17	2	0	3	0
March 3	na	0	na	1

Number of Observed Incidents of Presence				
Organics Carts	**Vectors**		**Odors**	
	Zone 1 Weekly Garbage	Zone 2 EOW Garbage	Zone 1 Weekly Garbage	Zone 2 EOW Garbage
August 6	2	1	3	1
August 20	3	0	0	0
September 3	1	0	0	1
September 17	4	2	0	0
March 3	na	4	na	0

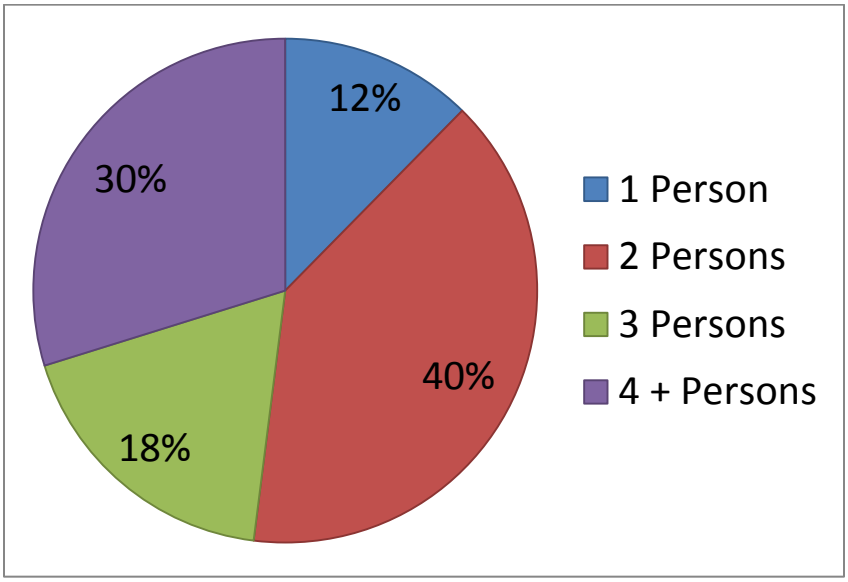
Customer Survey Results

A survey was conducted to gather feedback from the pilot participants. Postcards were sent to all households directing residents to an online survey administered through Survey Monkey. The surveys were slightly different for the two zones to account for the difference in garbage collection frequency. The response rate is shown below:

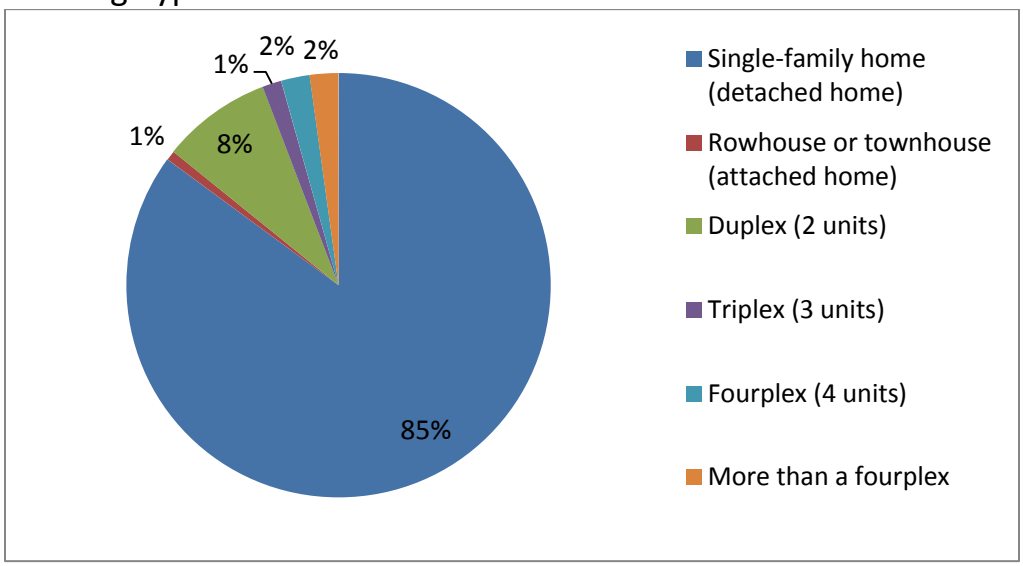
	ZONE 1 Weekly Garbage	ZONE 2 EOW Garbage
Households	415	565
Responses	94	181
Response Rate	23%	32%

When the responses to the questions varied little between the two zones, a composite result is provided. When the responses varied, the results from both zones are presented.

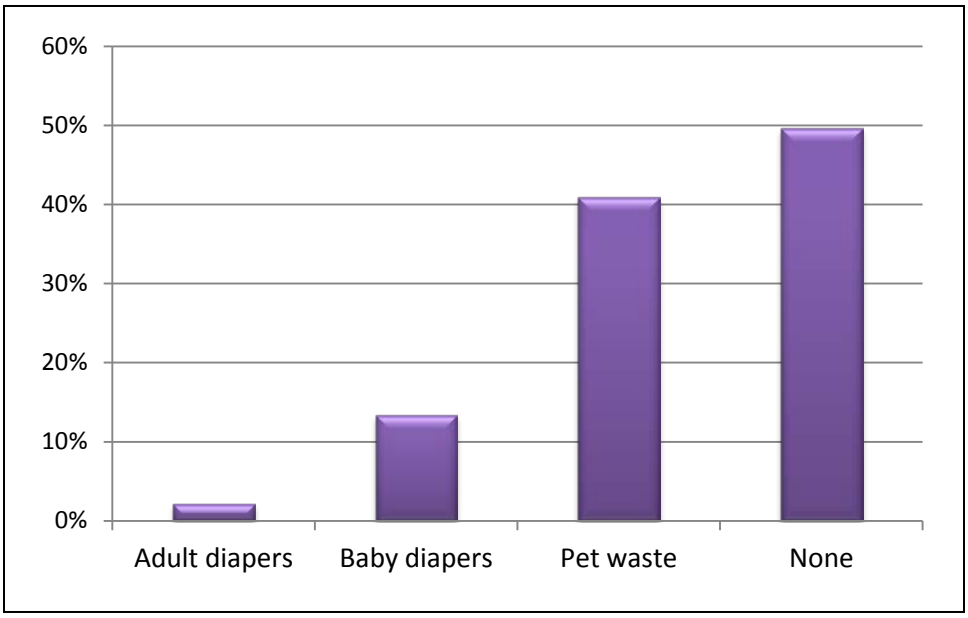
Number of Persons in Household



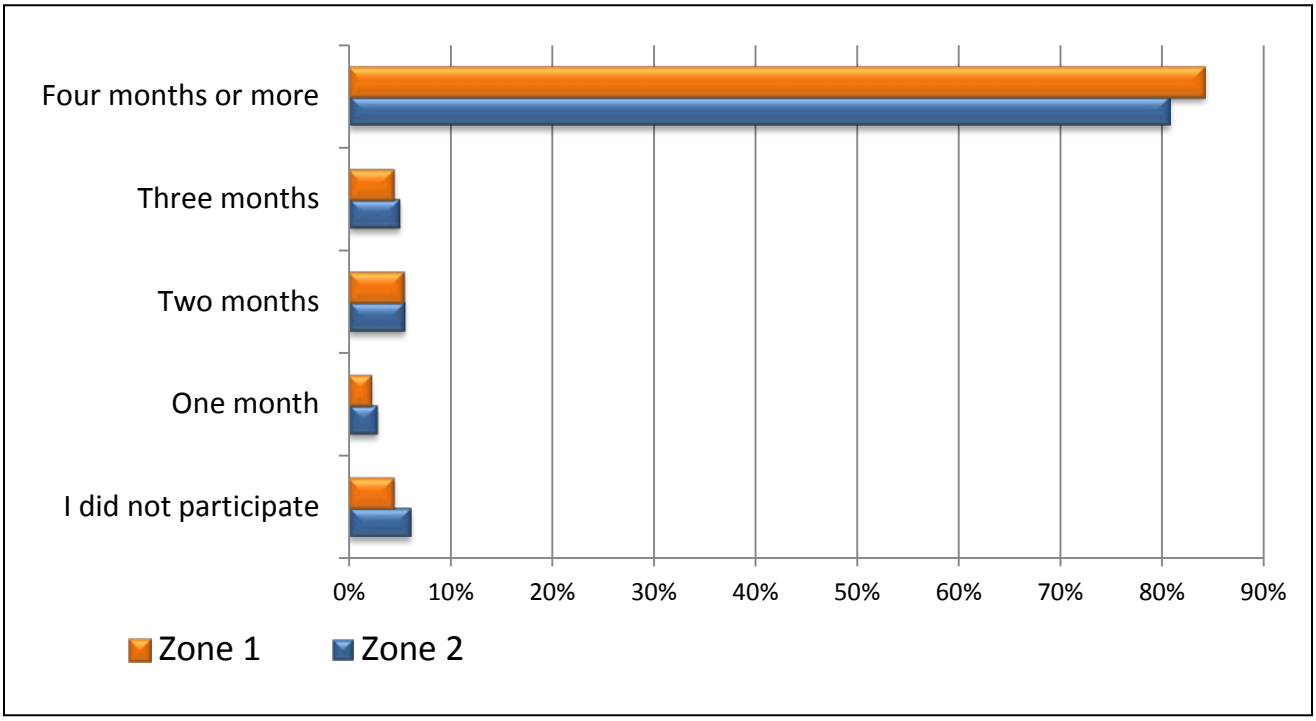
Housing Type Lived In



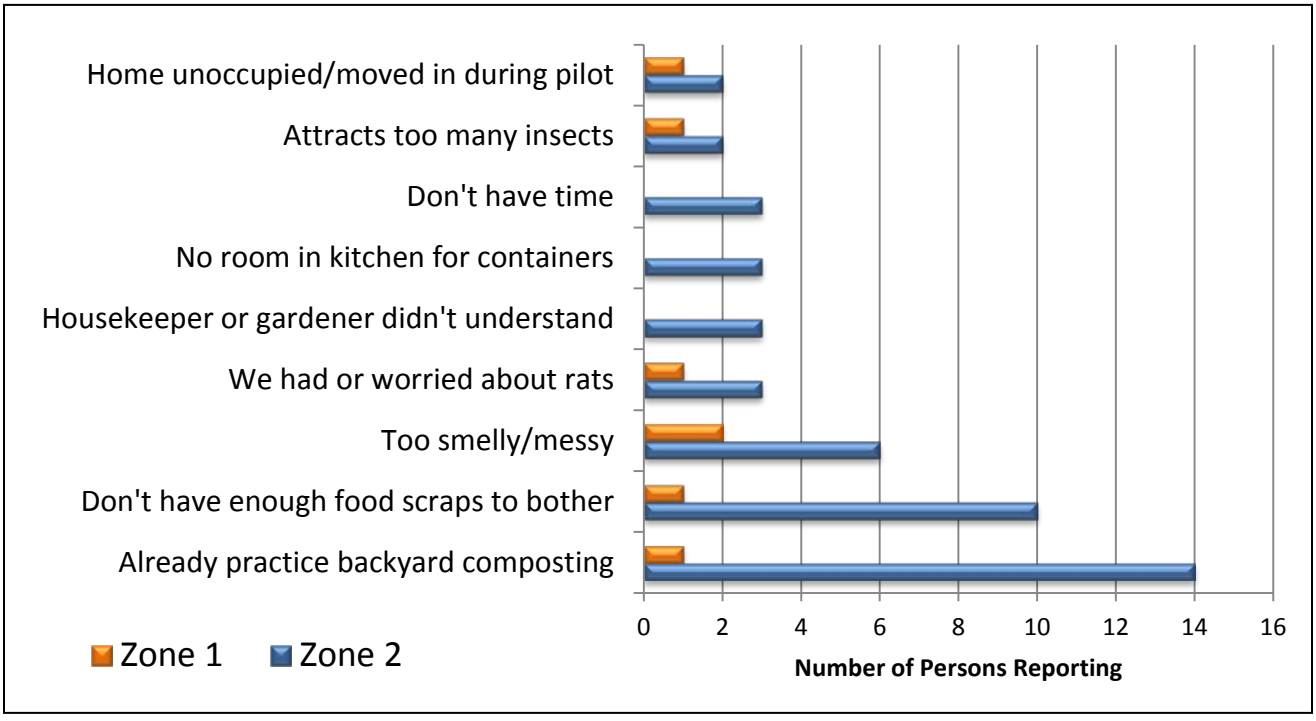
Households with these Waste Types



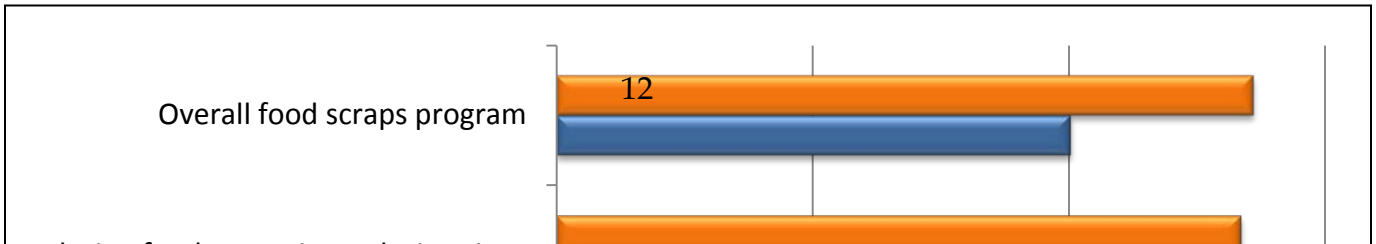
Length of Participation



Reason for Non Participation or Ending Participation



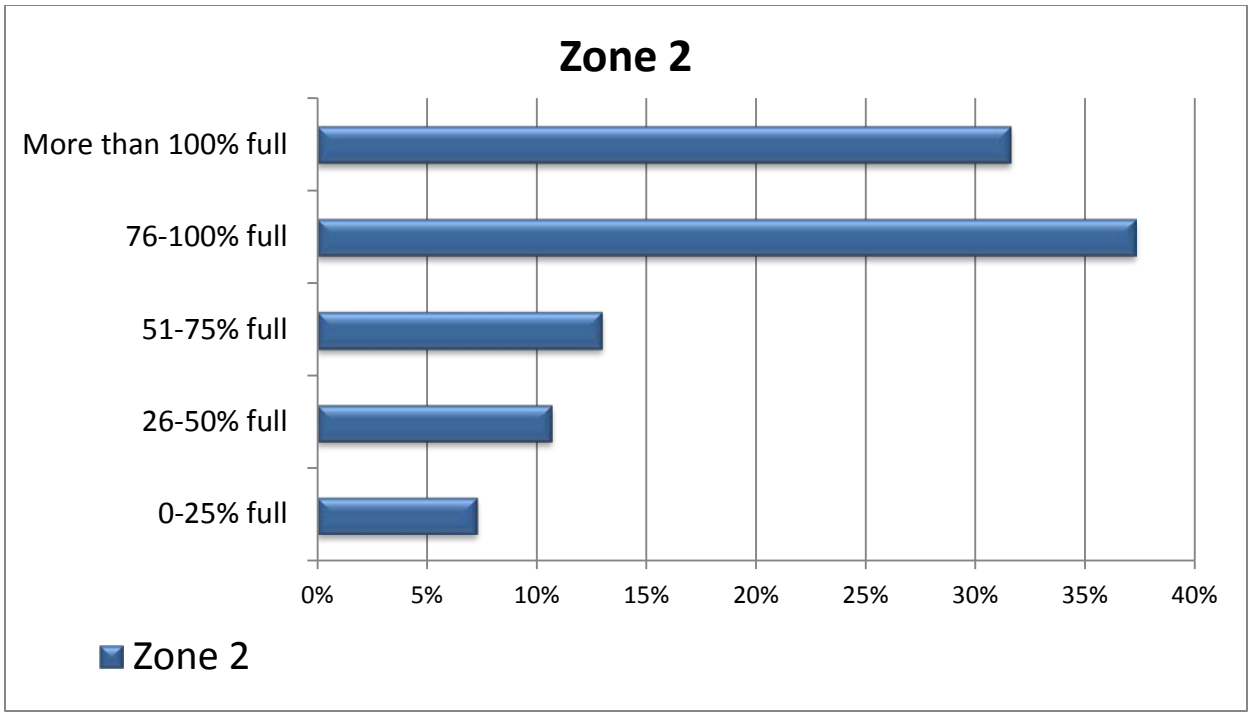
Satisfaction with Various Pilot Elements – Average Rating



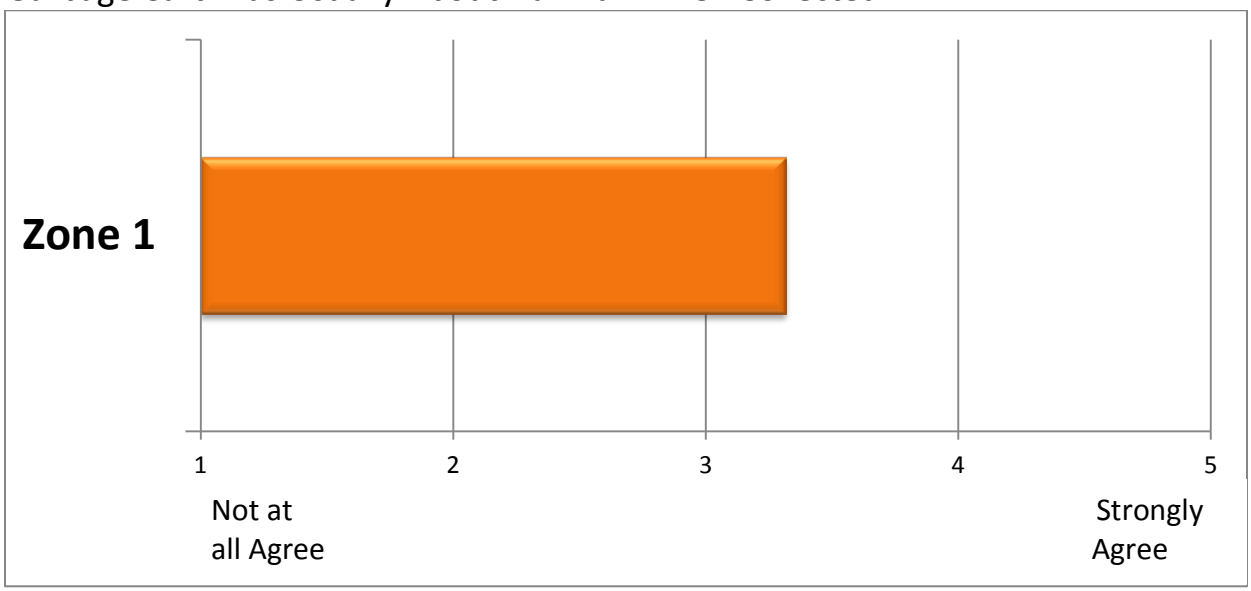
Satisfaction with Various Pilot Elements – Detailed Responses

	Satisfied		Dissatisfied	
	Very	Somewhat	Very	Somewhat
Overall program				
Zone 1	80%	14%	2%	4%
Zone 2	45%	27%	10%	18%
Food scraps in yard trimmings				
Zone 1	76%	19%	2%	3%
Zone 2	61%	19%	10%	10%
Separating food scraps from garbage				
Zone 1	81%	13%	3%	3%
Zone 2	57%	24%	12%	7%
Weekly yard trimmings collection				
Zone 1	88%	9%	1%	2%
Zone 2	74%	18%	3%	5%
Every other week garbage collection				
Zone 2	21%	24%	17%	38%

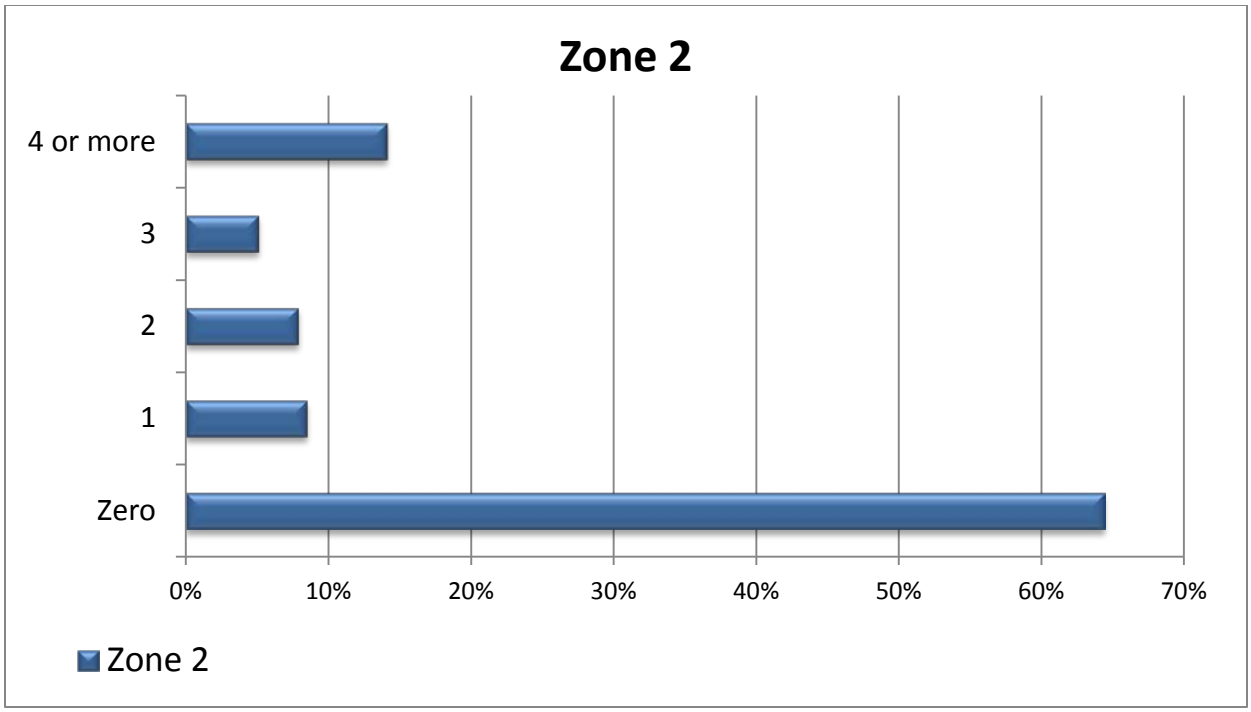
How Full Was Garbage Cart When Set Out For Collection Every Other Week



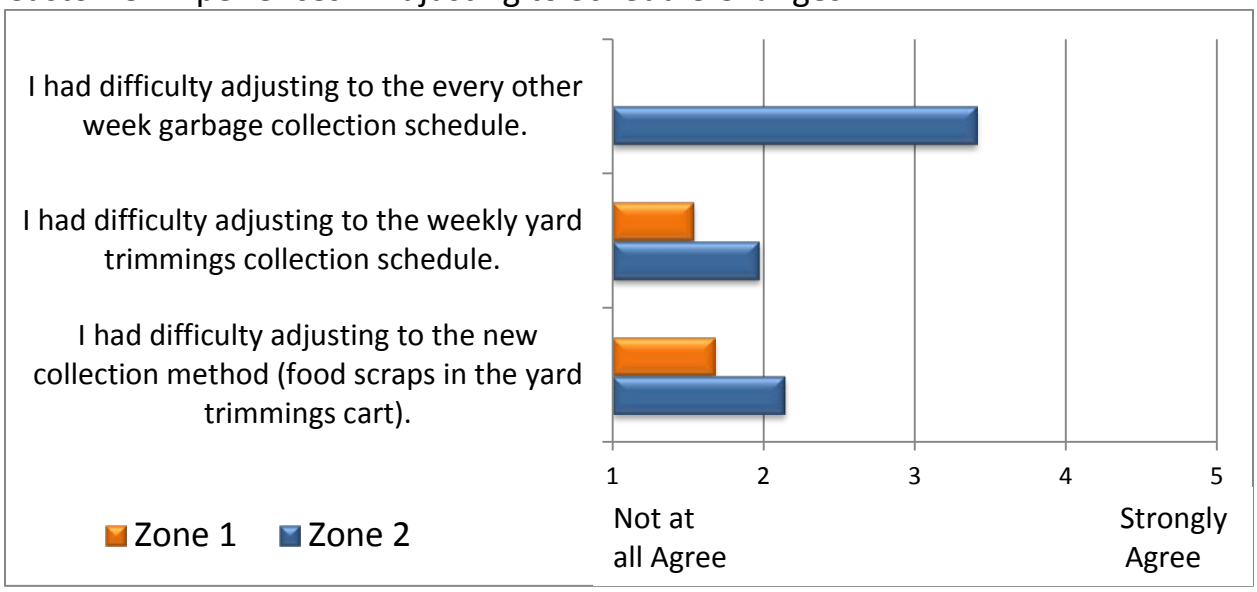
Garbage Cart Was Usually About Half Full When Collected



Number of Extra Garbage Stickers Used During Pilot

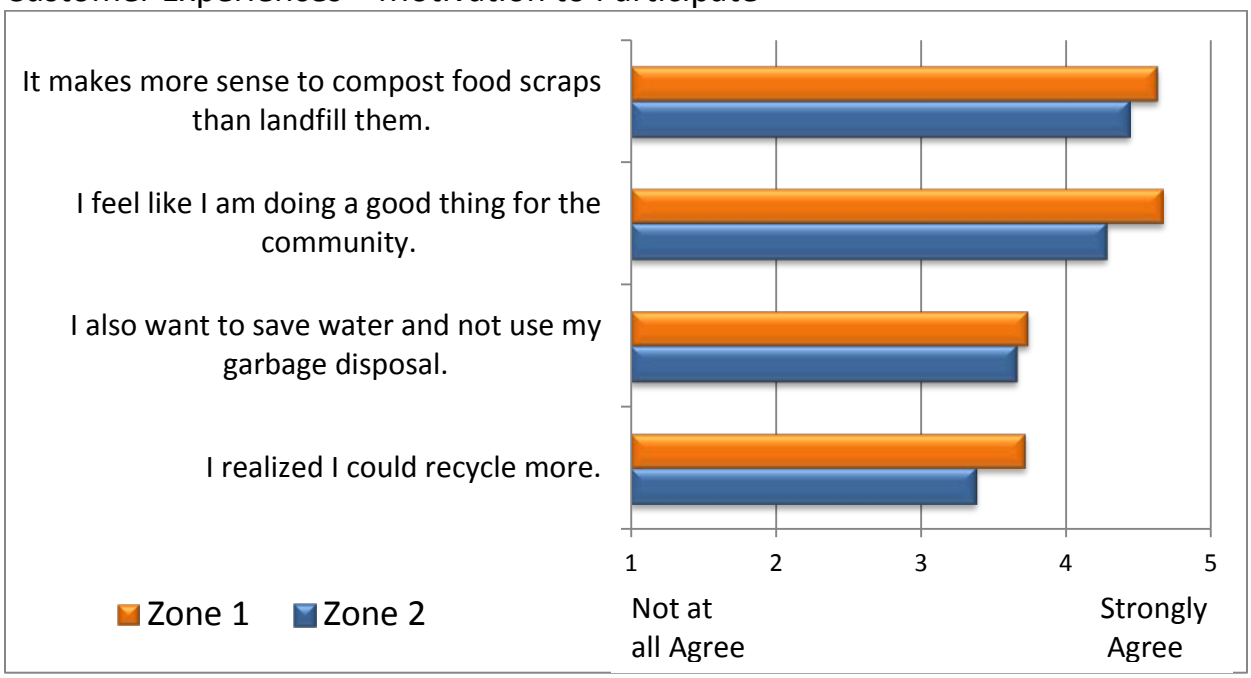


Customer Experiences – Adjusting to Schedule Changes

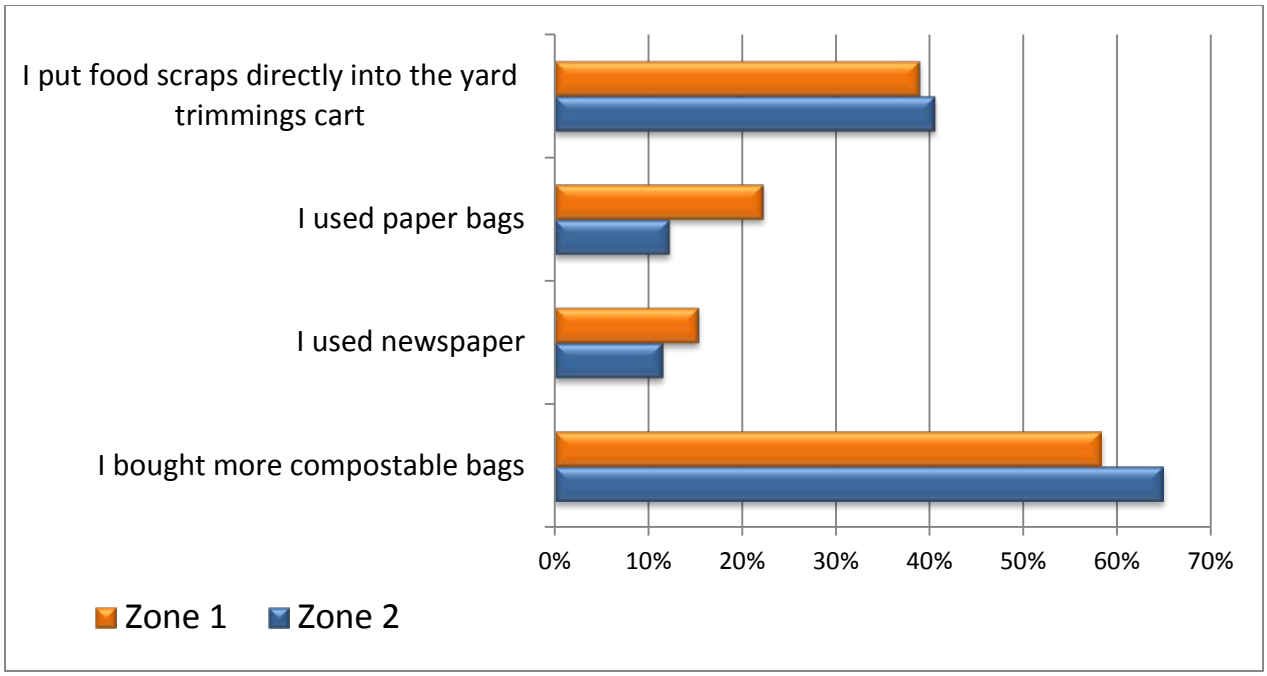


Customer Experiences – Separating Food Scraps

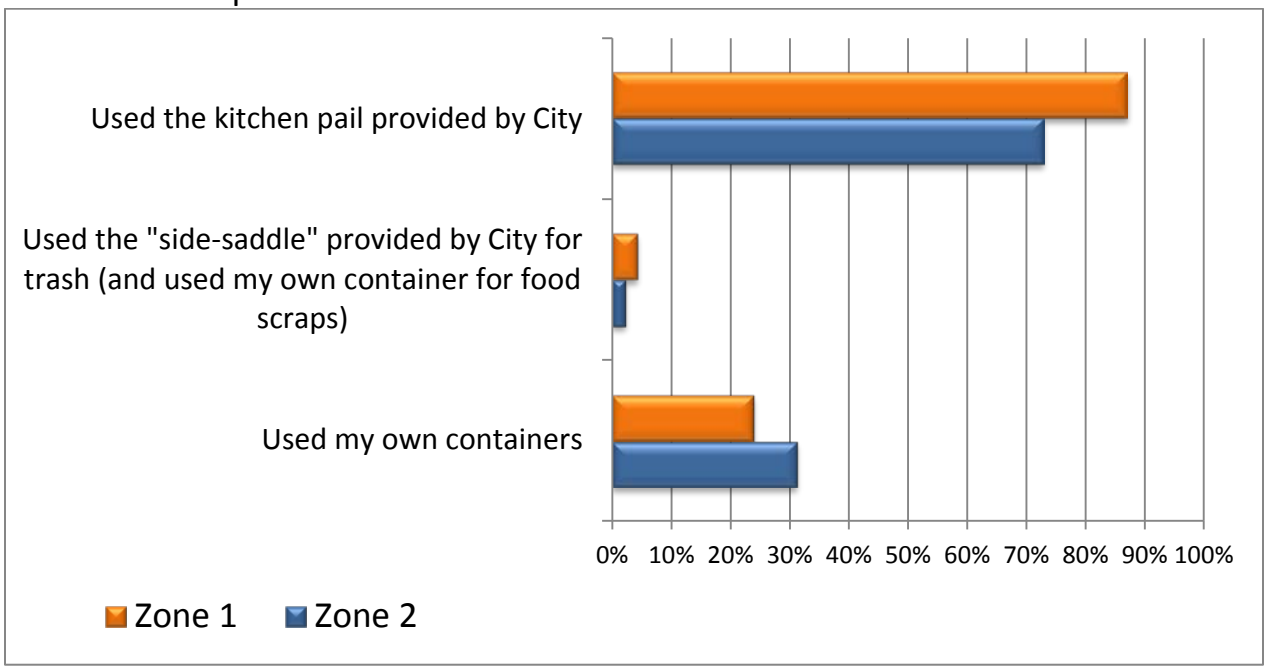
Customer Experiences – Motivation to Participate



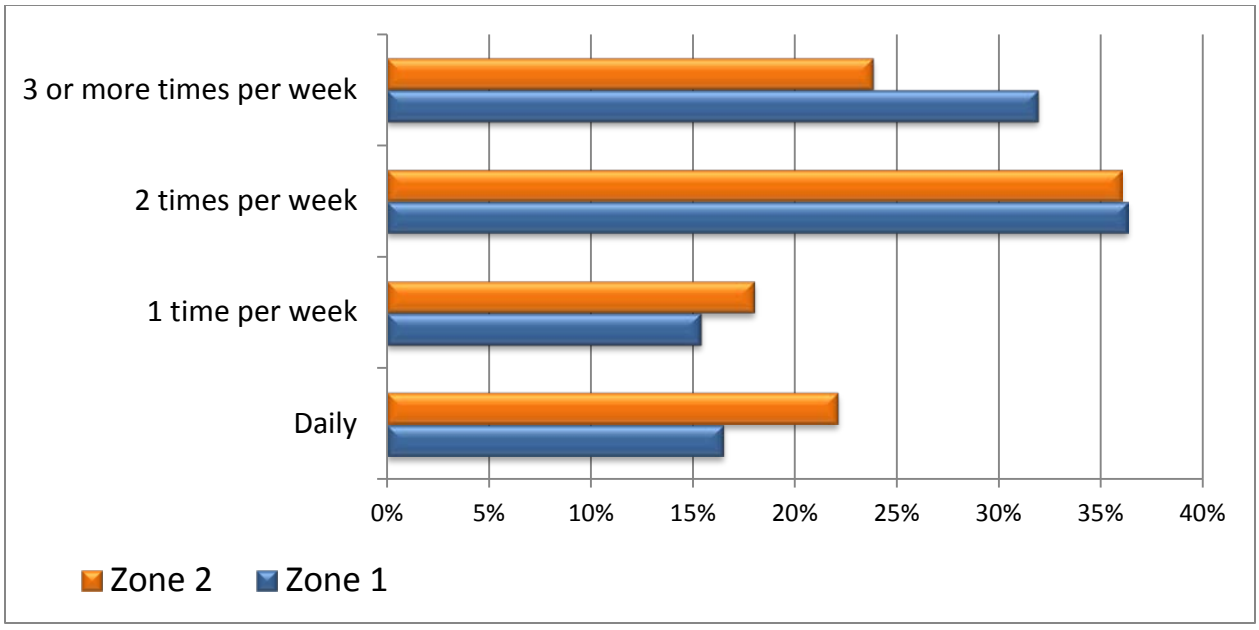
When the bags provided by the City ran out…



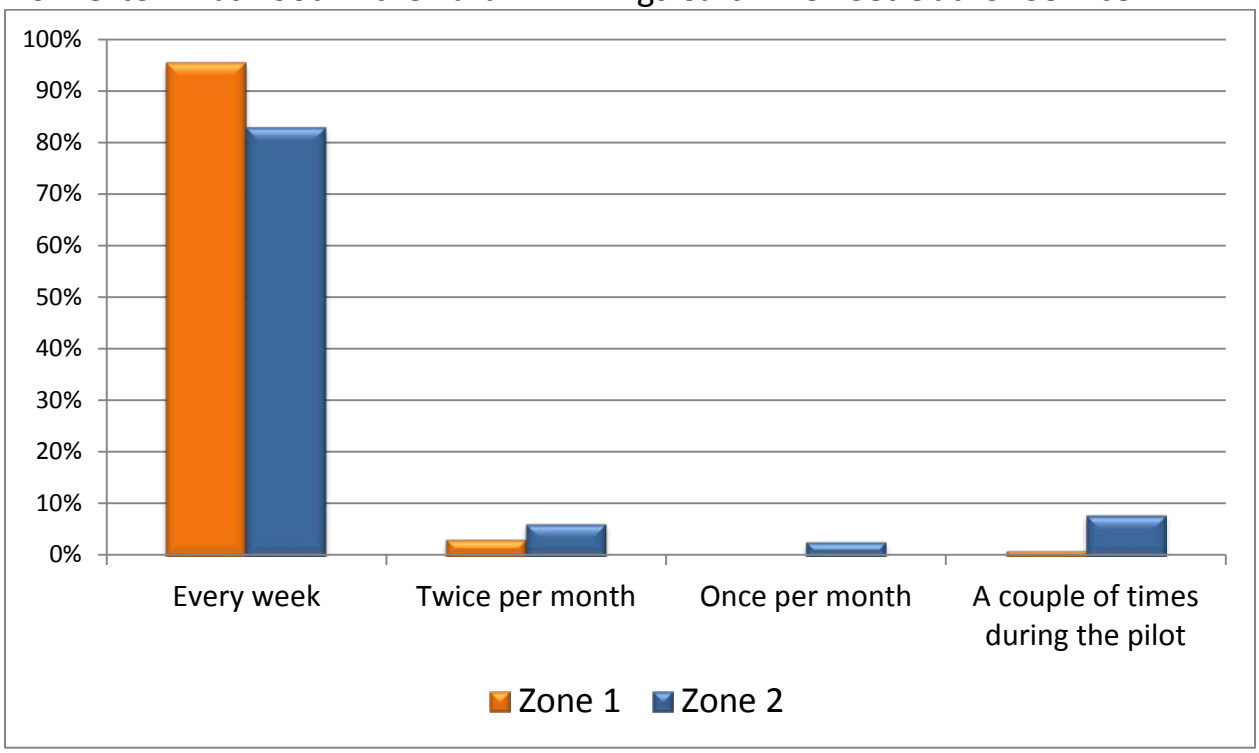
How Food Scraps Were Collected in the Home



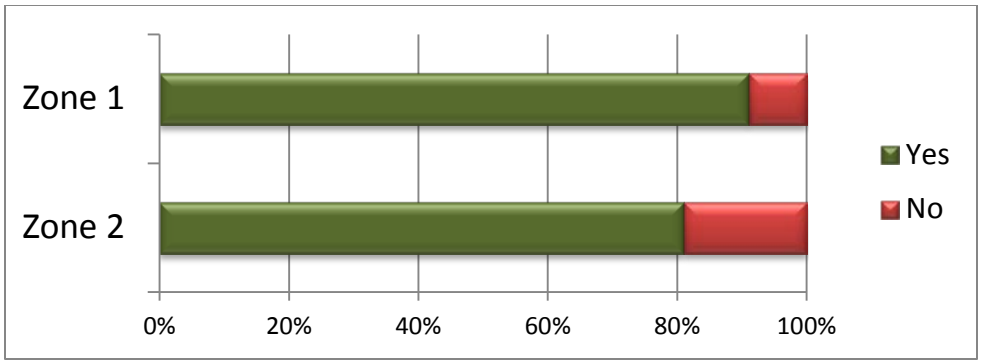
How Often Was Food Taken from Home to Yard Trimmings Cart



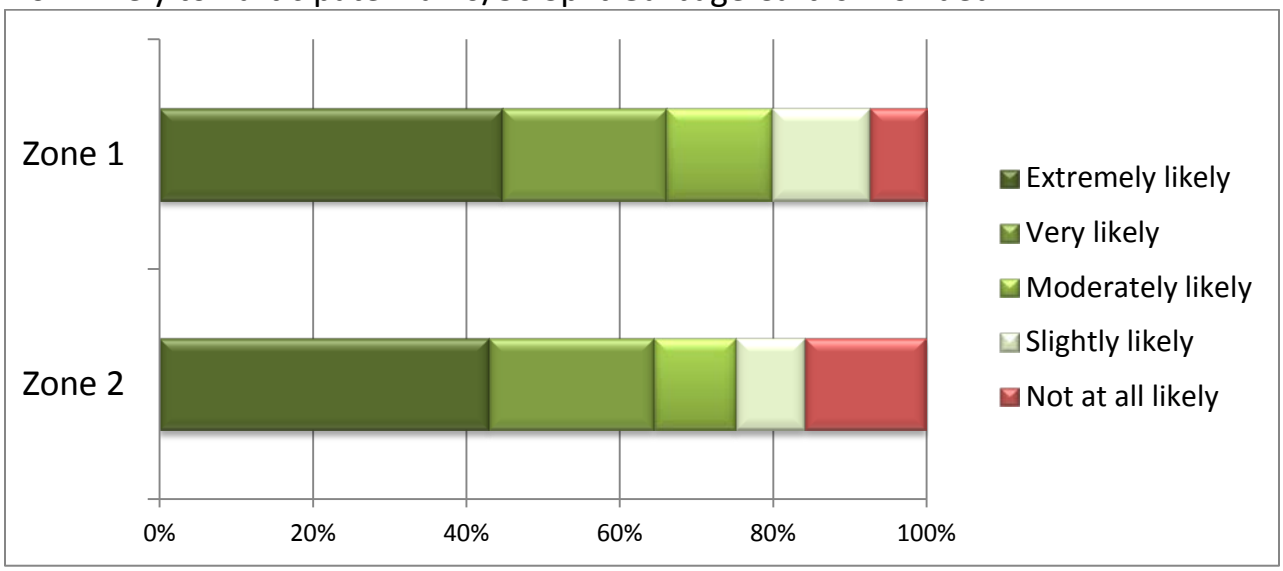
How Often Was Food in the Yard Trimmings Cart When Set Out for Service



Interest in Having Some Type of Citywide Food Scraps Program



How Likely to Participate if a 70/30 Split Garbage Cart is Provided



Most Customer is Willing to Pay for a Citywide Food Scraps Program

Per month	**Zone 1 Weekly Garbage**	**Zone 2 EOW Garbage**
$0	13%	22%
$1	4%	1%
$2	24%	25%
$3	18%	16%
$5	25%	22%
More than $5	2%	2%
Not sure	14%	12%

Shaded rows were choices, other answers were written in

Open comments received from survey respondents are summarized below by general topic and the number of respondents that mentioned that topic in their comment. More than one topic may have been mentioned in a comment. The full text of the comments can be found at http://www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=19244

	Zone 1 Weekly Garbage	Zone 2 EOW Garbage
Total Comments Received	60	138
Percent of Respondents Providing a Comment	64%	76%
TOPICS		
EOW Garbage (wants/prefers weekly)	1	48
Support Program	24	41
Don't Support Program	0	24
Recycling (wants weekly/more items accepted)	3	23
Pet Waste issues	0	11
Diaper issues	1	11
Backyard Composter (already composts)	1	11
Alternative Split Garbage Cart (wants/does not)	3	10
Compostable Bag issues (cost, tearing)	9	9
Not Enough Food Scraps (to bother participating)	5	8
Kitchen Pail (too small, hard to clean)	3	6
Traveler (makes EOW garbage difficult, must wait another 2 weeks if miss)	0	5
Messy or Odors	4	4
Rodents/Maggot concerns	2	2
Program Costs (don't want to pay more)	4	19