One Less Truck Project Report

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Seattle Public Utilities

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EXECUTIVE SUMMARY – ONE LESS TRUCK PILOT PROJECT

Project Overview

The Seattle City Council directed Seattle Public Utilities (SPU) to complete this pilot study of every-other-week (EOW) garbage collection for single-family residences to evaluate the potential financial, recycling, operational, customer and neighborhood impacts of a citywide service change.

This report presents the results of the pilot and the implications for a possible citywide program, but does <u>not</u> make recommendations for or against citywide implementation. City policy makers expect to decide by February 2014 on whether to implement citywide in April 2015 or later.

Approximately 800 single-family households participated in this "One Less Truck Project" from July 1 through December 31, 2012. Seattle's Race and Social Justice Initiative informed the design, route selection, outreach, and evaluation. Test routes were selected in four sectors of the city, each with approximately 200 contiguous single-family households that were required to participate. SPU also tested two different potential customer garbage rate structures.

Findings which Inform a Decision *Whether to Implement* Citywide

- **Satisfaction with EOW was higher than previous surveys** but far below that of weekly service:
  - 63 percent of survey respondents were satisfied after the pilot, as compared to 33 percent before the pilot in a 2011 citywide survey.
  - Satisfaction was below the 89 percent customer satisfaction rating with <u>weekly</u> garbage service as reported in a 2011 citywide survey.

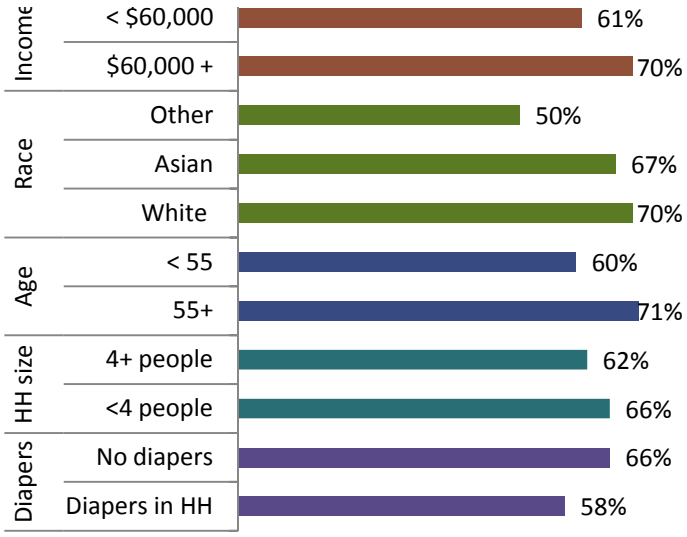
- **Satisfaction was lower for some key demographics,** including respondents with lower incomes, larger households, diapers, or larger can sizes, as well as respondents that were non-white and non-Asian. Many of these demographics were represented in responses from the Dunlap and Highland Park test routes, where an overall satisfaction level of 52 percent was reported.

- **53% of survey respondents recommended citywide implementation while 30% opposed.** For less satisfied participants, 88 percent opposed city-wide implementation, while 80 percent of satisfied participants favored citywide implementation.

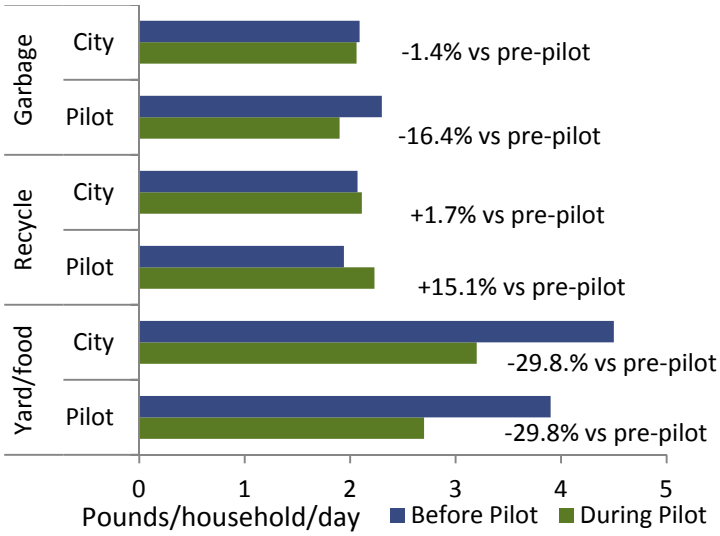
- **Results indicated potential for citywide diversion of 9,000 tons per year of recyclables and food waste, adding approximately 1.3% points to the citywide recycling rate.** During the pilot, participants' garbage generation dropped by approximately 15 percent more than non-participants' garbage, while recycling increased by approximately 13 percent more than non-participants' recycling. Food waste diversion was difficult to measure due to seasonal yard waste variations.

- **60% of respondents noticed differences in their neighborhood** due to the pilot, ranging from less truck traffic to more overflowing containers and litter. Participants from the Dunlap and Highland Park test routes were more likely to notice overflowing containers. SPU staff and route drivers did not observe persistent neighborhood impacts. The August service interruption due to labor dispute raised additional customer concerns.

Satisfaction by Key Demographics (Ratings of 5+ on 1-7 scale)



Waste Changes for Pilot vs. City (pounds/household/day)



Findings Related to *How One Should Implement*, if Delivered Citywide

- Pilot survey respondents recommended **every-other-week garbage on the same week as their every-other-week recycling** (as opposed to the opposite week).

- Survey respondents found **messages of efficiency, cutting costs, fewer trucks and less pollution appealing**. Based on survey results, program materials were effective and outreach via mail and phone was successful.

- **Field observations noted potential for increased contamination in recycling and composting services,** suggesting a need for additional outreach and field monitoring during implementation.

- **Can size changes are expected for 10-30% of customer base with citywide implementation** depending on SPU pilot rate structure, current can sizes and household incomes of customers.

- **Satisfaction ratings were not impacted by the two different rate structures tested.** SPU tested a 'steep' garbage rate structure (which is shallower than SPU's current rates) that would provide a larger discount to the 70 to 90 percent of customers that keep their can size, produce fewer can changes during transition, and maintain some recycling incentive. SPU also tested a 'shallow' rate structure that would reduce the bill impact for those that increase their can size, encourage for more can changes during transition, and eliminate most of the financial recycling incentive.

- **SPU would face significant customer service challenges in a citywide transition**. However, operational and billing system changes appear to be manageable. Any citywide garbage transition would be planned to not overlap with SPU's billing system conversion tentatively scheduled for late 2015 or early 2016. A citywide garbage service change could be planned to coincide with the SPU-proposed initiative to eliminate advance billing for waste services. That transition will provide all customers a billing period without solid waste service charges.

Opportunities and Considerations for Citywide Implementation

Pilot survey respondents were asked to select three options from a list of potential implementation measures that would improve their satisfaction. Many of these options could impose a cost on all solid waste rate payers that would reduce or eliminate the $5-6 million per year savings associated with implementation of every-other-week collection.

Suggested Improvement	City Considerations
Occasional free extra garbage (56% of respondents selected)	Forgiving extra garbage twice per year could reduce SPU revenue by $0.75 million per year if 25% of residents took advantage.
Bigger price break (35%)	SPU does not have additional savings to pass on the customer.
Double customer garbage can sizes without a bill increase (33%)	Purchasing and delivering new garbage carts would represent an estimated $8 million one-time expense. SPU would need to restrict customers from opting out of larger carts so revenues are maintained. SPU could adopt a new 'shallow' rate path to soften the customer cost for can increases, but this would reduce recycling incentives and reduce the discount for those keeping their can size.
Occasional free dump trips (29%)	Free dump trips would reduce SPU revenue by an estimated $0.5 million per year, if 10% of households took advantage. These additional trips would during a period when SPU's north transfer station is closed for rebuilding.
Weekly recycling (15%)	Weekly recycling would likely cost more than $6M per year. SPU could also provide all customers with the largest recycling carts for a one-time cost of $4.5 million. (Approximately half of SPU's customers have medium carts.)
Diaper/pet waste service (13% plus most adult day home residences)	SPU could continue a premium weekly garbage service. Subscribers would pay substantially more for this service unless subsidized by all ratepayers. Long-term, SPU will consider diaper and pet waste recycling options.
Add wheels to cans (11%) More can sizes (6%)	Replacing all 12-35 gallons cans with carts represents a one-time expense of $6 million. Adding a 45-gallon cart has not been popular in other jurisdictions and adds complexity to billing and inventory.

Next Steps: Key Policy Considerations

Guidance from stakeholders and policy makers over the next eight months will inform a decision in early 2014 for or against potential service implementation in 2015:

- **SPU Solid Waste Advisory Committee** will review this report and consider possible recommendations by September 2013
- **SPU Customer Panel** will review and consider possible recommendations by November 2013
- **Mayor and Council** will consider and make final decision by February 2014
- SPU would notify **collection companies by March 2014** of any changes planned for April 2015

This report and project findings raise several important policy questions for advisory groups and decisions makers:

1. *Is projected **EOW customer satisfaction of 63 percent,** based on survey respondents with 5+ rating on a 1-7 scale, enough support to overcome the reduction from the current 89 percent satisfaction with weekly garbage service?*

2. *Are projected **lower satisfaction ratings for traditionally underserved** (such as 50 percent satisfaction for respondents that are neither white nor Asian) or the lower projected satisfaction for impacted customers (such as 58 percent satisfaction for families with diapers) compelling reasons to not pursue the program, or could these challenges be addressed through outreach and mitigation?*

3. *Is every-other-week garbage a **preferred path to achieve a 1.3 percent boost to Seattle's recycling rate** as compared to other new recycling initiatives, such as a potential ban on food waste in the garbage?*

4. *If EOW service is implemented, should **SPU continue with a somewhat steep rate path** that maintains some recycling incentives and provides a higher discount for the 70 to 90 percent of customers that might keep their current container sizes, or should SPU adopt a much shallower rate path that provides little long-term recycling incentives but reduces the financial impact for the 10 to 30 percent of customers that might increase their can sizes?*

5. *If EOW service is implemented, what **approach should the City of Seattle take for potential customer mitigation**:*
    a. *Provide widely available mitigation subsidies that reduce all or much of potentials savings, such as discounted price for premium weekly service or occasional free set-outs of extra garbage?*
    b. *Narrowly tailored mitigation, with minimal costs, such as a short-term waiver on extra garbage set-out charges?*
    c. *Provide no mitigation subsidies so that all potential savings are maintained?*

6. *Bottom line - **Do the benefits from every-other-week garbage collection,** including reducing truck impacts, saving approximately $6M per year, and increasing recycling, **justify the reduction** in service frequency?*

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1. PILOT DESIGN

A. Pilot Structure

Seattle single-family residential customers currently have their garbage collected weekly. Food and yard waste has been collected weekly since 2009, and recycling has been collected bi-weekly since 1989.

Seattle Public Utilities (SPU) has considered implementation of every-other-week (EOW) garbage collection since its 1998 Comprehensive Solid Waste Plan. Citywide EOW implementation would save the city approximately $5-6 million per year, reduce truck impacts, and encourage waste reduction and increased participation in curbside recycling and food/yard collection, while potentially reducing customer garbage rates.

A change in garbage collection frequency could present significant challenges to customers. In 2011, the Seattle City Council directed SPU to undertake a pilot of EOW garbage collection for single-family residences to evaluate the financial, operational, customer and route impacts of EOW residential garbage pick-up in four selected routes. The pilot was conducted from July 1 through December 31, 2012.

The City Council proposed the pilot name "One Less Truck Project" to emphasize the benefits of reduced route truck traffic on residential streets.

Selected EOW routes were located in four sectors in the city, which, based on analysis of data from their tracts in the U.S. Census' American Community Survey, together reflected a slightly more diverse representation of Seattle's population as a whole. Each route consisted of approximately 200 single-family households in an eight-block contiguous area.

Households were required to participate for the 26-week duration of the pilot, during which their garbage was collected 13 less times than weekly garbage customers. There was no change to participants' bi-weekly recycling and weekly food/yard collection. Some routes had their garbage and recycling collected on the same week, and others had recycling and garbage collected on opposite weeks. Multifamily and commercial properties not on dumpster service did not participate in EOW.

EOW participants paid one of two sets of garbage rates tested during the pilot. Like all SPU single-family garbage can customers, EOW households had their choice of several sizes of garbage cans to subscribe from, and could request a different-sized can from which to subscribe at anytime during the pilot. It should be noted that some EOW participants were renters, and some landlords may have not passed on these rate changes to their EOW tenants.

EOW participants who were SPU account holders (typically homeowners or landlords) were compensated with a $100 payment for providing their opinion to the city and to offset any inconveniences the pilot may have caused. The stipend covered the most likely bill impact (a doubling of can size). The payment check was processed separately from the customer bill for garbage service to reduce the potential influence on customers' subscription level selections.

B. Garbage Rates

If EOW is implemented citywide, SPU expects to reduce annual payments to its collection contractors from approximately $19 million to $13-14 million, saving ratepayers $5-6 million per year. These savings reflect variable collection expenses, such as labor and fleet fuel and maintenance, which contractors could reduce. Most fixed infrastructure, fleet and administrative costs will remain.

Total solid waste expenses for Seattle households represent approximately $50-60 million per year, and also include waste transfer and disposal, recycling collection and processing, food and yard waste collection and processing, customer service and billing, customer education, clean city services, utility taxes and administration. The potential savings of $5-6 million per year for EOW citywide would reduce total household solid waste bills by 10-11 percent, minus inflation adjustments.

SPU established two different sets of EOW garbage rates that each reflected 11 percent savings above weekly service. The two rate paths represented different approaches to can size pricing that would provide participants with different potential bill impacts. SPU has historically used variable garbage can rates that encourage recycling and composting. These rates increase the garbage rate proportional to the customer's garbage can size, independent of cost of service.

The pilot's steep rate and shallow rate paths are compared in Tables 1-3 and Figure 1.

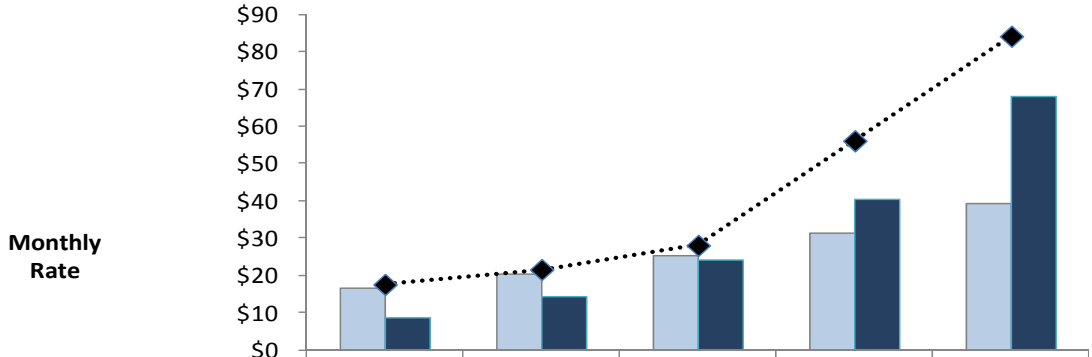
To reduce impacts on customers that need to increase can sizes to accommodate the additional week between garbage collections, both pilot rate paths were less steep than current SPU rates. The pilot routes were divided so that two routes experienced the steep rate path and the other two experienced the shallow rate path.

In general, the steep rate structure would likely produce fewer long-term customer garbage can changes, would maintain some incentive for customers to recycle more, and would provide a larger discount to the 70-90 percent of customers that might remain on their weekly garbage can size. Conversely, a shallow rate structure would encourage more garbage can changes, would eliminate most of recycling incentive, and would reduce the bill impact for the 10-30 percent of customers that increase their can size

Table 1: **SPU garbage service rate paths**

Rate Structure	Description	Strength	Weakness
Shallow	Starts with higher 12-gallon can rate and smaller incremental rate increase: +25% with each can size.	Smaller bill increase when customers increasing their can size for EOW.	Smaller savings when customers keep their can size. Less incentive for reduction & recycling.
Steep	Starts with lower 12-gallon can rate and larger incremental rate increase: +68% with each can size.	Bigger bills savings for customers that keep their can. More incentive for reduction & recycling.	Bigger bill increase for customer s that increase their can size

Figure 1: **Comparison of pilot garbage rates to the 2012 rates for weekly garbage service**



	Micro (12-gallon)	Mini (20 gallon)	32-gallon	64-gallon	96-gallon
Shallow Rate Path	$16.40	$20.40	$25.10	$31.25	$39.30
Steep Rate Path	$8.60	$14.40	$24.20	$40.50	$68.00
Standard Rates	$17.55	$21.55	$28.05	$56.10	$84.15

Table 2: **Customer bill choices with EOW steep rate path** ($/month)

Starting Garbage Can Size	Weekly Service Bill	EOW Service Bill	Monthly Cost to Keep Current Can Size with EOW	Monthly Cost to Increase to the Next Can Size with EOW
Micro (12-gallon)	$17.55	$8.60	$8.95 savings	$3.15 savings
Mini (20 gallon)	$21.55	$14.40	$7.15 savings	$2.65 extra
32-gallon	$28.05	$24.20	$3.85 savings	$12.45 extra
64-gallon	$56.10	$40.50	$15.60 savings	$11.90 extra
96-gallon	$84.15	$68.00	$16.15 savings	n/a
Extra garbage	$8.60	$8.60	n/a	n/a

Table 3: **Customer bill choices with EOW shallow rate path** ($/month)

Starting Garbage Can Size	Weekly Service Bill	EOW Service Bill	Monthly Cost to Keep Current Can Size with EOW	Monthly Cost to Increase to the Next Can Size with EOW
Micro (12-gallon)	$17.55	$16.40	$1.15 savings	$2.85 extra
Mini (20 gallon)	$21.55	$20.40	$1.15 savings	$3.55 extra
32-gallon	$28.05	$25.10	$2.95 savings	$3.20 extra
64-gallon	$56.10	$31.25	$24.85 savings	$16.80 savings
96-gallon	$84.15	$39.30	$44.85 savings	n/a
Extra garbage	$8.60	$8.60	n/a	n/a

C. Routes and Demographics

793 single-family households along four collection routes throughout Seattle took part in the One Less Truck Project. Each EOW route consisted of approximately 200 contiguous single-family households that were required to participate from July 1 to December 31, 2012.

Map: **Locations of One Less Truck Project Pilot Routes**

SPU selected the four route areas based on recent census data, to capture the range of demographics represented by Seattle's single-family households. As a whole, the demographic responses obtained in EOW pilot customer survey data represented a reasonable match to citywide 2010 U.S. Census data and demographics obtained in past SPU citywide surveys. There was a higher overall rate of EOW participants that qualify for Low-Income Rate Assistance (LIRA) than qualify citywide. Individual EOW routes' demographics varied significantly from each other and from Seattle's overall citywide demographics.

Tables 4 through 7 summarize the demographics of the 260 EOW households who completed the January 2013 survey. In addition, pilot survey data was weighted to better match the City of Seattle demographics, specifically to adjust for the underrepresentation of renter-occupied homes in survey responses. Citywide, Seattle households are 20 percent renter-occupied, and approximately half of these pay their own utility bill.

Table 4: **Comparison of weighted EOW survey demographics to Seattle census survey data**

		Post EOW survey (weighted)	City of Seattle[1]
Race	White	77%	79%
	Black	7%	6%
	Asian	13%	11%
	Other	3%	4%
Hispanic, Latino Origin	Yes	2%	3%
	No	98%	97%
Ownership	Own	80%	80%
	Rent	20%	20%

Table 5: **Comparison of additional weighted EOW survey demographics to 2011 survey data**

		Post EOW survey[2]	2011 customer survey[3]
Age	18 to 34 years	10%	20%
	35 to 54 years	42%	45%
	55 to 64 years	25%	17%
	65 years or older	20%	18%
Income	< $50,000	24%	50%
	$50 - $75,000	12%	15%
	$75,000 +	37%	34%

[1] 2007-11 American census survey for single-family households in Seattle.

[2] Percentages may not sum to 100 due to respondents not answering or acceptance of multiple responses.

[3] Weighted sample data for single family customers from 2011 Seattle Public Utilities Residential Customer Survey.

Table 6: **Additional EOW survey demographics with no citywide single-family comparison** [4]

		Post EOW survey
Primary Language	English	84%
	Vietnamese	7%
	Chinese (etc.)	1%
	Spanish	1%
	Other	1%
Route	Wedgwood	30%
	Leschi	22%
	Highland Park	26%
	Dunlap	22%
Number in household	1	16%
	2	45%
	3	11%
	4	17%
	5 or more	7%
Diapers in household		11%
Dog/Cats		48%

Table 7: **Demographics of post-pilot survey respondents by route**[5]

		Wedgwood	Leschi	Highland Park	Dunlap
Age	18-54	49%	38%	70%	50%
	55 or older	47%	62%	27%	44%
Number in house	1-3	72%	78%	72%	64%
	4+	24%	20%	26%	30%
Income	< $50,000	17%	7%	35%	40%
	$50 - $75,000	10%	6%	14%	21%
	$75,000+	41%	67%	25%	1%
Race	White	83%	70%	60%	50%
	Black	0%	9%	2%	10%
	Asian	4%	12%	18%	22%
	Other	0%	0%	3%	5%
Hispanic	Yes	0%	2%	0%	8%

Table 8 below compares the initial garbage subscription levels for all 793 participants by EOW route. Table 9 compares the amount of recycling and organics set out by pilot households and compares them with overall city set out rates prior to the start of the pilot.

[4] Percentages may not sum to 100 due to respndents not answering or acceptance of multiple responses.

[5] Ibid.

Table 8: **Pre-pilot EOW customer garbage can sizes compared to citywide garbage subscription**

Size	Wedgwood	Leschi	Highland Park	Dunlap	All Pilot	All Seattle
Micro	11%	11%	14%	8%	11%	11%
Mini	30%	32%	30%	19%	27%	27%
20 gallon	54%	51%	53%	66%	56%	57%
64/96 gal	6%	7%	3%	6%	5%	5%
LIRA*	6%	3%	14%	12%	9%	4%

*Customers for all sizes on the Low Income Rate Assistance Program (LIRA), paying 50% of normal bill.

Table 9: **Pre-pilot (May/June 2012) EOW customer garbage and organic (food/yard) set out (by pounds) compared to citywide**

Size	Wedgwood	Leschi	Highland Park	Dunlap	All Pilot	All Seattle
Garbage (#/HH/Day)	2.08	2.01	2.53	2.41	2.26	2.09
Organics (#/HH/Day)	N/A	N/A	N/A	N/A	3.89	4.50

D. Customer Communications and Feedback

The SPU contact center accommodated pilot customers through the following operational changes and communication protocol for the pilot:

- A dedicated phone number and email contact was created for EOW customers
- A sub-set of SPU contact center agents was trained to respond to customer inquiries

Pilot outreach was designed to assure a high level of customer awareness of the various behavioral changes the pilot may require of participating customers. These messaging tools included:

- Public meetings
- Dedicated customer web site, email address, and a phone number
- Mailers (pilot route customers received letters with packet of materials including calendars, pilot rates, and can size choices)
- SPU account holders received mailer alerts to changes to their bills
- Notices were left on customer garbage cans alerting them about changes to their service, whether they put their can out on the wrong day, and if they put recyclables in their garbage
- Automated calls alerted customers about changes to their service
- Surveys (midpoint survey in September 2012 and a post survey in January 2013)
- Survey of adult and child day care operators in response to City Council's concern for users of disposable diapers
- Focus groups for Vietnamese customers (N=11), Spanish customers (N=2), and for those who did not redeem stipends (N=8)
- Post-pilot door-to-door visits in the Dunlap and Highland Park pilot neighborhoods to increase their survey response rates.

2. EVALUATION DESIGN

A. Evaluation Objectives

The Seattle City Council's pilot objectives were supported by SPU's pilot design elements.

Table 10: **One Less Truck project objectives and design elements**

One Less Truck Objectives	Design Elements
Measure potential customer garbage can changes to allow SPU to set appropriate garbage can rates for the city	Compare customer subscription changes between two different rate paths
Estimate potential for diversion and waste prevention	Measure increase in weight of food/yard waste set-outs Measure customer reported changes in recycling and food waste composting
Understand customer and community barriers and concerns and identify opportunities to mitigate impacts	Measure customer satisfaction Document route impacts (litter, scatter, illegal dumping, etc.) Test customer response to different garbage can pick up schedules
Test customer outreach methods	Measure customer awareness and effectiveness of communication materials and engagement practices
Test operational impacts	Record impacts to SPU contact center Test impacts on SPU billing system Record impacts on contracted haulers and SPU field staff

B. Waste Stream and Route Data

The city's waste collectors, Waste Management and CleanScapes, were instructed to collect separate loads for each pilot sub-route and weigh them at the city's transfer stations. Garbage loads from the pilot customers were weighed every two weeks for two months before the pilot (May and June) and during the pilot (July to December). Food and yard waste loads were weighed every four weeks from May to December. Recycling loads for pilot sub-routes were not weighed separate from their larger route. SPU compared pilot tonnage with data from nearby collection routes and citywide waste trends to eliminate data inconsistencies from individual truck loads.

Route drivers recorded normal non set-outs of garbage, contamination of garbage, yard waste and recycling, and scatter (litter surrounding the collected carts and cans).

SPU encountered challenges in reviewing and analyzing the pilot route weights, such as route data omitted by drivers, drivers occasionally adding houses outside of EOW route boundaries, and variations in collections due to a two-week Waste Management strike in late July. SPU compared changes in pilot

route weights to changes in adjacent routes, but inconsistencies in adjacent route data prohibited a reliable comparison.

C. Pilot Surveys

To inform pilot objectives, two customer surveys were commissioned.

- Interim pilot survey: Deployed two months after the start of the pilot (September 2012).
- Post pilot survey: Deployed in January 2013 at the conclusion of the pilot.

The data collection method employed for the surveys is a census design. That is, all participants were encouraged to respond to pilot surveys, and approximately 30 percent provided input.

Survey technique	Households were mailed a postcard asking for their participation in an online or phone survey. Participants could also request a survey by mail. Participants were asked to provide responses for the September survey by October 1, 2012 and the post survey by January 31, 2013. Focus group attendees were asked to complete surveys. Door-to-door reminders and hard copy survey self-mailers in English, Vietnamese, and Spanish were used to supplement data in the Dunlap and Highland Park routes, which had lower response rates to the September 2012 survey. The sample size for all the surveys was 800 households participating in the pilot.
Survey field dates	An interim survey was launched on September 10, 2012 and responses were collected until October 1, 2012. A final survey was launched on January 4, 2013 and responses were collected until January 31, 2013.
Survey questionnaire	SPU designed both questionnaires with the assistance of FBK Research.
Survey response rate	September 2012 interim survey: 27 percent (221 respondents); January 2013 post survey: 32 percent (260 respondents)
Survey weighting and comparison	Both surveys were weighted to compensate for the under-representation of non-Whites and renters in the raw response data. Percentages reported for the total sample (aggregated data) and for demographic subgroups are based on weighted data. Data reported for each of the four routes (disaggregated sample) are un-weighted. Where appropriate, answers are compared to results from prior to the 2011 SPU Residential Customer Survey

D. Additional Data Collection

Additional data was collected to monitor measures critical to achieving pilot objectives. This data was gathered from other sources, including the City of Seattle's Combined Utility Billing System, SPU's Customer Contact data system and the collectors' route data.

Collected data included:

- Customer garbage can service subscription levels
- Number of instances when customers put out extra garbage and yard waste for collection
- Number of pilot households subscribed to Low-income Rate Assistance (LIRA)
- Number of garbage pick-ups missed by garbage haulers
- Number of instances when customers put their garbage out for collection on the wrong week.
- Number of incidents of garbage, recycling, and yard waste overflow reported by contractors
- Number of incidents of scatter, or litter surrounding the collection containers.
- Number of service requests requested by customers
- Number, type, and duration of EOW-related phone calls to SPU

E. Focus Groups, Interviews, and Field Monitoring

Several techniques were used to collect and organize qualitative input and feedback from EOW stakeholders in addition to surveys. They consist of the following:

- SPU organized four community meetings prior to the July 1, 2012 start of the pilot program. The goal was to engage with pilot participants; have conversations about their awareness, perceptions, and opinions of the pilot project; and to answer questions.
- SPU staff conducted interviews with community-based opinion leaders to learn more about the dynamics of each route and to explore ways that SPU could work together and be a good community partner.

Figure 2 **Community meeting invitation**

- SPU provided multiple channels through which pilot participants could contact SPU and ask questions or provide feedback.
- A survey was distributed to CleanScapes and Waste Management employees who were involved in the pilot project. Information about their experiences and suggestions were obtained.
- An internal survey targeting the SPU staff involved with EOW was used to collect information about the effectiveness of the process used to design and implement the pilot project.
- Focus groups were conducted with lower-responding target populations (N=11 in Vietnamese, N=2 in Spanish, and N=8 with English speakers who had not turned in their stipend cards). SPU field staff monitored route impacts, such as illegal dumping, wrong day garbage set-outs, and scatter on routes.

- SPU staff conducted a food and yard waste cart survey during the pilot where they checked the contents of food and yard waste carts of 345 Seattle households in August and September 2012 for contamination and food waste diversion.

F. Limitations and Qualifications

Several factors related to the pilot limited the ability to project full behavioral and operational impacts for potential citywide every-other-week service, including:

Route demographics: While the pilot survey respondents appeared to be a reasonable match to citywide household demographics, the total universe of all pilot households do not necessarily represent the City of Seattle.

Service disruption: From July 26 to August 2, Dunlap and Highland Park route customers' solid waste services were disrupted due to a labor strike of Waste Management drivers. EOW surveys showed this disruption had an impact on customers in those routes.

Study length: The six-month duration of the EOW pilot limited a customer's full experience with every-other-week garbage collection. The full impacts of winter and spring solid waste generation, or other cyclical solid waste behaviors, may not have been fully factored in by respondents of EOW surveys.

Effects of stipend, extra solid waste amnesty, rates: Several financial anomalies associated with the One Less Truck pilot may have influenced customers in ways that citywide EOW service might not, including the participation stipend provided to participants and the waiving of extra garbage and yard waste fees during the first two weeks of the pilot.

Tonnage data limitations: As discussed earlier, inconsistencies in pilot route weights constrained the accuracy of citywide tonnage projections.

Adjacent households: Approximately 25 percent of pilot households were on outside boundaries of the pilot areas. In many cases, these households are across the street from households that continued on normal weekly services. These adjacent pilot household might not have experienced full reduced truck traffic or full potential neighborhood nuisance impacts. In addition, these households could have access to neighbors weekly garbage services (19 percent of pilot survey respondents reported 'using someone else's can' for occasional disposal).

Given these factors, care was taken in analyzing, interpreting, and summarizing the EOW findings. Conservative estimates have been extrapolated from those findings when making predictions about the impacts of citywide implementation of EOW garbage service.

3. EOW CUSTOMER CAN CHANGE FINDINGS

"What types of subscriptions do customers select and what are the implications for citywide implementation?"

A. 8 – 10% of participants increased their can size, below projections

For the EOW participants faced with the steeper rate path, subscription data showed 8 percent of customers chose to increase their can size during the pilot period. The upsize rate for 32-gallon customers was similar to what both the 2011 SPU Customer Service Residential Survey and January 2013 EOW survey respondents indicated they would do if EOW garbage service were to become a permanent change. However, as described in Table 11, the survey respondents with smaller and larger cans indicated a higher rate of permanent change than exhibited in the pilot.

Table 11: **Customers choosing to increase their can size with the steep rates**

Data Source	12/20 gal Customers	32 gal Customers	64/96 gal Customers	All size Customers
Actual EOW subscriptions 2012	10%	7%	8%	8%
EOW subscriptions reported by customers in the Jan 2013 post survey	>30%	9%	>10%	Appx. 20%
Projected EOW subscriptions by 2011 citywide survey respondents	>30%	6%	>10%	Appx. 20%

Nearly 12 percent of Wedgwood (steep) route households upsized their cans, while just less than 6 percent of Dunlap (steep) households upsized their cans. The Dunlap route had a larger share of households with a 32- or 64-gallon can before the pilot compared to Wedgwood and the city as a whole. In addition to having an apparent increased garbage can capacity prior the EOW pilot, Dunlap route households had lower income levels, more non-native English speakers and a lower rate of pilot stipend redemption compared to the Wedgwood and Leschi (shallow) routes.

10 percent of EOW customers with the shallow rate structure increased their can size during the pilot. As described in Table 12, this temporary change was less than half the permanent upsize rate predicted by both post-pilot and citywide survey respondents, if given a similar financial choice for a permanent change.

Table 12: **Customers choosing to increase their can size with the shallow rates**

Data Source	12/20 gal Customers	32 gal Customers	64/96 gal Customers	All size Customers
EOW subscriptions 2012	11%	10%	5%	10%
EOW post survey 2013	>30%	32%	>30%	Appx. 30%
Citywide survey 2011	>30%	25%	>30%	Appx. 30%

More than 30 percent of the pilot survey respondents that did not change their can size indicated that they didn't change can sizes due to the short duration of the pilot. The expected can change rate for citywide implementation is likely higher than the pilot customer changes, especially for the shallow rate path.

EOW subscription changes and customer survey data provide different indications of potential citywide can changes, with accompanying strengths and weaknesses for each source as described in Table 13.

SPU also reviewed subscription data from other cities that have already implemented every-other-week collection to provide benchmarks for customer can distribution. These results are presented in Chapter 8 and indicate that other cities' EOW programs have more customers subscribing to larger can sizes compared with Seattle's weekly garbage can subscribers.

Table 13: **Major data sources for evaluating potential customer subscription changes**

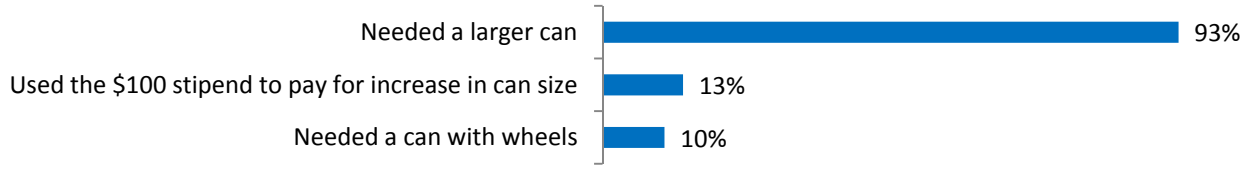
Data source	Description	Data Considerations
EOW subscriptions 2012	Participants changes **during EOW**	33% of pilot survey respondents reported that they did not change during the pilot because six months was too short or they did not know they could change sizes. 2% of survey respondents reported using their pilot stipend to pay for a larger can The increases represented in this analysis were net of the eight participants that downsized to a smaller garbage can during the pilot
Citywide survey 2011	Respondents **expected** future change if there were a permanent service change	Citywide survey Represents expected future decision
EOW post survey 2013	Respondents **expected** future change if there were a permanent service change	Survey respondents only. Represents expected future decision
EOW subscriptions in other cities	Actual can subscription in Portland, Renton and Olympia	Represents real customer choices made under every-other-week collection Customer behaviors and choices could differ from Seattle. Garbage rates in Seattle are steeper than other cities

As noted above, 33 percent of EOW pilot survey respondents indicated that it was not worth the effort to change the can for a six-month period or that they did not know they could change their can size. These non-changers, facing a long-term change, would likely give more consideration to changing their garbage service level. Seventeen (17) percent (N=41) of EOW pilot respondents reported changing their can size. Not surprisingly, among these respondents who did change their can size, more than 90 percent indicated that it was because they needed a bigger can.

There were higher reported can size changes among:

- Households with four or more people (22 percent said they changed can sizes); and
- Households with diaper usage (34 percent said they changed can sizes).

Figure 3: **Why did you change your garbage can size?**



EOW routes with higher stipend redemption rates (Wedgwood and Leschi) were more likely to upsize their garbage container than customers in the Dunlap or Highland Park. It is unclear whether this correlation would exist without a stipend offered. Many factors likely play a role including income, renting, household size, and presence of diapers and pets in the household.

70 percent of Leschi and Wedgwood route households redeemed their stipend, and approximately 11 percent of households upsized their can size during the pilot (11.2 percent in Leschi and 11.8 percent in Wedgwood). On the Dunlap and Highland Park routes, stipend redemption was around 60 percent and upsizing was 6 percent and 10 percent, respectively.

B. Fewer garbage can increases resulted in lower revenues

The EOW rates were modeled to recover 11 percent less revenue than the normal 2012 weekly garbage rates. This reduction represented SPU's potential garbage cost savings with a transition to citywide EOW garbage collection.

Both pilot rate paths produced lower can size increases than expected, but upsizing under the shallow rate path was closer to revenue expectations. Customers with both rate paths also generated a boost in revenues from extra garbage and extra yard waste charges. Actual revenue losses were 12 percent and 18 percent for the shallow and steep rates, respectively. Though both missed the revenue targets, the shallow rates were closer to meeting revenue expectations.

For citywide implementation, SPU will review the revenue requirements for the relevant future rate period, the expected implementation costs for EOW garbage service, the savings in collection and disposal contract payments, and the expected change to customer subscriptions relevant to the future rate path selected (steep versus shallow).

4. EOW WASTE DIVERSION FINDINGS

"How does the pilot contribute to recycling and composting and help forecast citywide impact on waste diversion and reduction?"

A. EOW decreased curbside garbage disposal

EOW households decreased their curbside garbage disposal by more than 16 percent compared to the two months before the pilot. Across the four routes there was a garbage reduction range from approximately 12 percent (Leschi) to nearly 20 percent (Wedgwood) compared to the pre-pilot period.

Citywide data indicate that some of this decline was likely due to broader impacts, as citywide households reduced their garbage by 1.4 percent during the same period. This results in net impact attributable to the pilot of 15 percent less garbage per household.

SPU also monitored garbage changes in neighboring routes as a potential control data source. However, the results from these nearby collections were not consistent enough to use as a reliable control.

Table 14: **EOW garbage compared to citywide routes (Pounds/household/day)**

	Citywide Households	All EOW Routes	Wedgwood	Leschi	Highland Park	Dunlap
Before pilot (May-Jun)	2.09	2.3	2.1	2.0	2.5	2.4
During pilot (Jul-Dec)	2.06	1.9	1.7	1.8	2.1	2.0
Change	-1.4%	-16.4 %	-19.8%	-12.5%	-17.9%	-16.7%
Net of citywide change		**-14.9%**				

A 15 percent reduction in Seattle's single-family garbage could represent approximately 9,000 tons of new diversion per year, boosting the single-family recycling rate by up to 4.3 percentage points and the citywide rate by up to 1.3 percentage points.

B. Change in organics and recycling diversion uncertain, while composting recycling behaviors increased

Food and yard waste collected from the pilot households dropped by 30 percent compared to the two-month period before the pilot, which mostly reflects the seasonal change from the heavy grass disposal volumes in May and June (see Table 15). Citywide food and yard waste from all household customers also dropped by 30 percent during this period, making it difficult to identify increases in food waste composting for pilot participants.

SPU estimated a 15 percent recycling increase from pilot households relative to the period before the pilot and net increases due to the pilot of 13 percent when compared to a 1.7 percent increase for all Seattle households. Recycling set-outs during the pilot were collected and weighed as part of their regular, larger routes. Unlike the garbage and food/yard pilot routes, each pilot group of approximately 200 households was weighed with approximately 600 non-participating neighbors.

Comparisons of food and yard waste and recycling data for individual EOW routes were inconclusive.

Table 15: **Pilot food/yard and recycle diversion compared to citywide (pounds/household/day)**

	EOW Food/Yard	Citywide Food/Yard	EOW Recycle	Citywide Recycle
Before pilot (May-Jun)	3.9	4.5	1.94	2.07
During pilot (Jul-Dec)	2.7	3.2	2.23	2.11
Change	-29.8%	-29.8%	15.1%	1.7%
Net of citywide change	**0%**		**13.4%**	

January 2013 survey responses indicate that 30 percent of EOW customers put more food waste in their yard waste carts during the pilot. Twenty (20) percent said they recycled more often. Households with at least four people, customers in the Dunlap and Highland Park routes, non-Whites, and households where diapers were used all reported higher rates of diversion to food/yard waste and recycling carts.

Table 16: **EOW survey respondents reported changes in behavior when dealing with waste**

	More Often
Put food waste in yard waste cart	30%
Recycle more	20%
Use someone else's can	19%
Avoid excess packaging	14%
Use dump/transfer station	11%
Use grinder/garbage disposal	8%
Backyard compost	6%

EOW customers putting food in their yard waste cart more often were:

- Non-White households (34 percent versus 26 percent of White households)
- Living in Highland Park (39 percent) and Dunlap (36 percent) routes (compared to 23 percent on Wedgwood and 26 percent on Leschi routes)
- Living in households with four or more people (38 percent versus 27 percent living in households with four or less)
- Households with children in diapers (41 percent versus 28 percent of households not using diapers)
- Those with household incomes below $60,000 (38 percent versus 26 percent of households with $60,000 or greater household income)

EOW customers recycling more often were:

- Non-White households (38 percent versus 15 percent of White households)
- Those living on Dunlap (30 percent) and Highland Park (23 percent) routes (compared to 15 percent on Wedgwood and 17 percent on Leschi routes)
- Living in households with four or more people (29 percent versus 17 percent)
- Households with diaper usage (31 percent versus 18 percent of households not using diapers)

The following table presents the percentage of January 2013 survey respondents who engaged in each of these behaviors more often by route. The data show more behavior changes on the Dunlap and Highland Park routes compared to the Wedgwood and Leschi routes.

19 percent of all respondents indicated they had used someone else's garbage can to manage waste disposal during EOW. Diversion to someone else's can was most pronounced on the Highland Park route, where 26 percent of respondents engaged in this behavior.

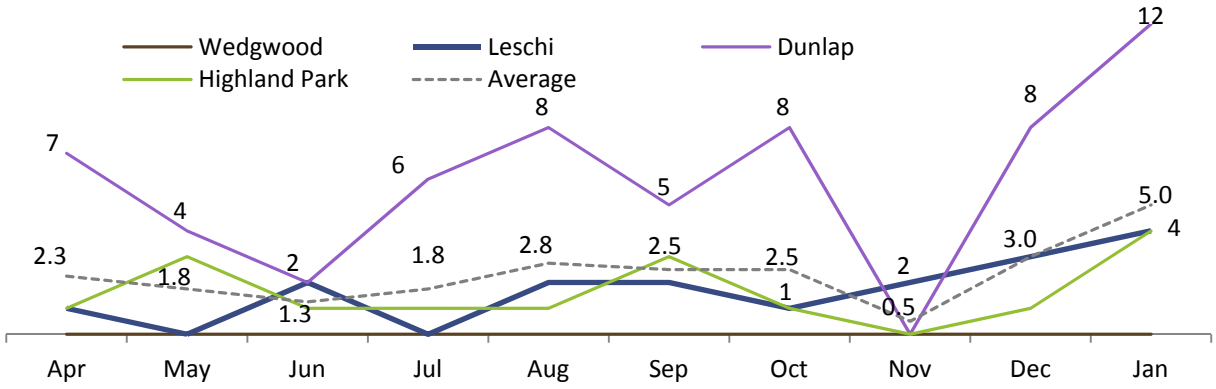
Table 17: **Reported diversion behaviors for EOW survey respondents by route**

	Wedgwood	Leschi	Highland Park	Dunlap
Put food waste in yard waste cart	23%	26%	39%	36%
Recycle more	15%	17%	23%	30%
Use someone else's can	14%	18%	26%	13%
Avoid excess packaging	10%	10%	21%	21%
Use dump/transfer station	10%	6%	17%	13%
Use grinder/garbage disposal	4%	8%	9%	6%
Backyard compost	1%	2%	12%	9%

C. Potential increase in food and yard waste cart contamination

Waste Management and CleanScapes solid waste collectors recorded whether yard waste and recycling carts had been contaminated with garbage. Figure 4 shows contaminated carts per month on EOW routes, before, during and after the pilot. The data represents a small amount of contamination of the 3200 food/yard total pickups per month, with month-to-month variations, and no significant increase for the July-December pilot months compared to the period before and after.

Figure 4: **Food/yard waste contamination reported by haulers (houses/month)**



Notable variances were in November, when there were only two reports of contamination (called "exceptions") across all four routes, and in December, when there were 20 exceptions (12 on the Dunlap route). Dunlap had the highest number of exceptions during this time (60), which accounted for over 64 percent of the total. In contrast, there were no yard waste exceptions recorded on the Wedgwood route during this same period.

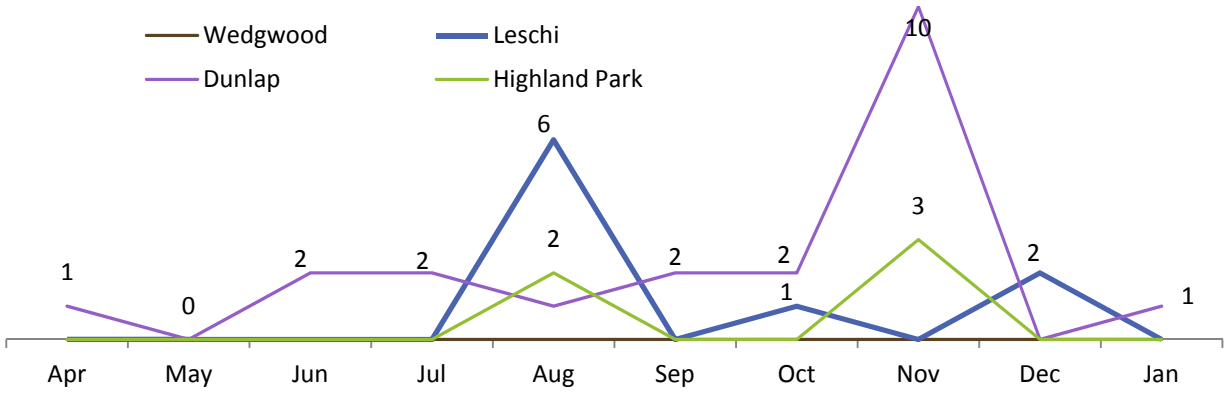
Contamination of food/yard waste was also measured using food and yard waste cart lid lift surveys. In August and September 2012, a sampling of the four EOW routes (N=60 households) were surveyed for food and yard waste cart contamination by SPU staff. In addition, comparable non-EOW households

(N=285) were surveyed. In total, 345 households were examined for contamination in 2012. The 2012 lid lift survey results were compared to 2011 lid lift survey results. The summary findings are as follows:

- Food and yard waste cart contamination was higher in the EOW routes (27 percent of EOW carts versus 16 percent of carts in non-EOW routes).
- EOW households had the same types of contaminants in their food and yard waste carts as non-EOW households, typically a single plastic bag, an ice cream carton, or a non-compostable disposable coffee cup.

Reported recycling container contamination was minor on EOW routes during the pilot, compared to the 1600 total recycling pickups per month. As seen in Figure 5, routes collectors recorded few contaminated recycling carts before, during or after the July-December pilot period. The Dunlap route again had the most (21) exceptions of any route, making up 60 percent of the total. Wedgwood again had no exceptions recorded during the same period.

Figure 5: **Recycling contamination reported by haulers (houses/month)**



5. EOW CUSTOMER OPINION FINDINGS

"What is the customer satisfaction level with service?"
"What were the neighborhood impacts of the pilot?"

A. Customer satisfaction higher than anticipated, but remained lower than with weekly garbage.

Sixty-three (63) percent of respondents to January 2013 post survey indicated they were satisfied with EOW garbage service at the end the pilot. This compares with 89 percent citywide satisfaction with weekly garbage service as recorded in the 2011 SPU Residential Customer Survey. Satisfaction with EOW increased over time, from 55 percent satisfied in the September 2012 interim survey to the 63 percent in the January 2013 post-pilot survey.

Three surveys were used to measure satisfaction with garbage collection between 2011 and 2013. Customers rated their garbage service on 1-7 with ratings of 5-7 representing satisfied respondents.

Figure 6: **Customer satisfaction with EOW service compared to weekly service**

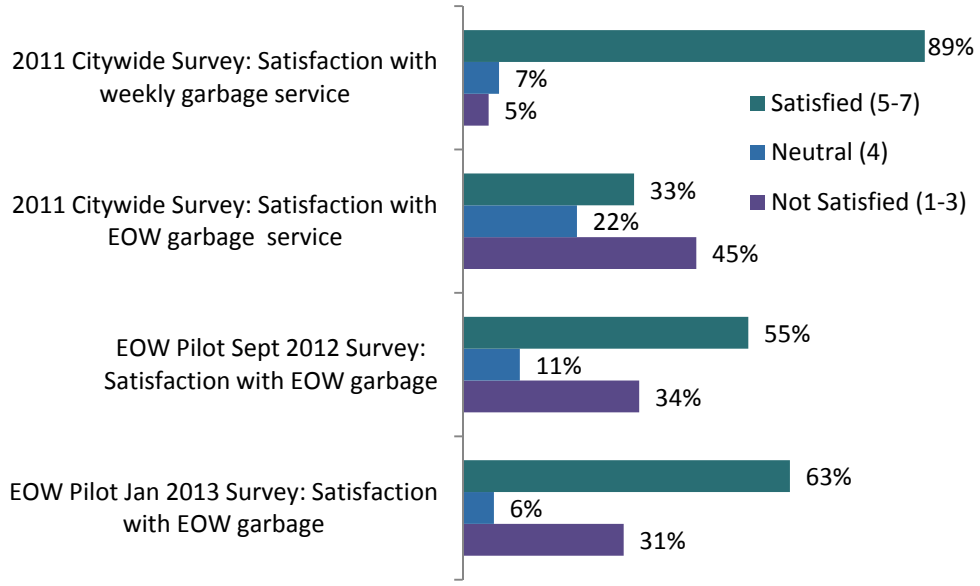
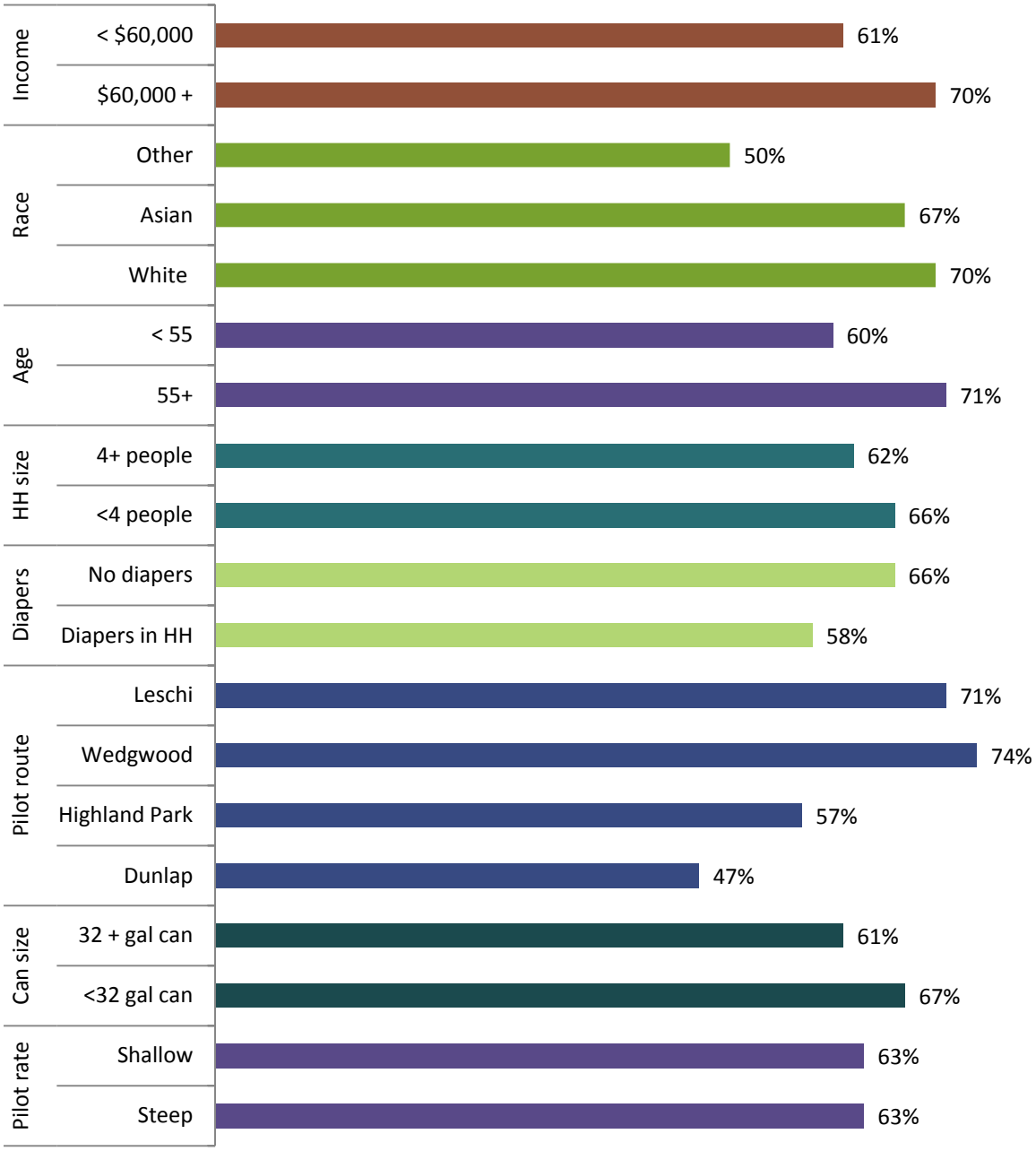


Figure 7 displays several demographic segments that were more satisfied with EOW collection, as reported on the January 2013 post survey, including Whites and Asians and those 55 years of age or older, those living in households with fewer than four people, those who do not have any household members using diapers, or those with a household income of $60,000 or more. The combined demographics of those living in the Wedgwood and Leschi pilot routes were more satisfied than those in the Dunlap and Highland Park routes.

Figure 7: **Every-other-week collection satisfaction by key demographics** (percent with 5+ ratings on 7 point scale)



Questions in the surveys asked respondents to provide their general assessment of EOW (positive or negative). This question was open-ended; any and all input was collected and coded.

There were more positive comments from:

- Households with less than four people (64 percent positive comments)
- Wedgwood and Leschi pilot routes (69 percent positive comments)

There were more negative comments from:

- Pet owners (68 percent negative)
- Households using diapers (75 percent negative)
- Dunlap and Highland Park routes (54 percent negative)

Of the 220 negative comments, the following themes emerged:

- 19 percent were connected to price sensitivity
- 19 percent said EOW was just a bad idea in general and not workable
- 10 percent said they had too much garbage to make EOW workable for them; they did not mention increasing can size
- 8 percent said they were concerned about pests
- 8 percent mentioned they were concerned about smells and odors
- 7 percent mentioned a concern about litter
- 7 percent said EOW was an inconvenience for their household

12-gal and 20-gal garbage can customers were more satisfied than their counterparts using higher capacity cans. However, there was no difference in satisfaction for those with the steep garbage rate structure in the pilot as compared to those with shallow garbage rate structure. On both the Wedgwood (78 percent satisfied) and Leschi (70 percent satisfied) routes, satisfaction rates were the highest in spite of having different garbage rate plans. Similarly, households on Highland Park and Dunlap offered lower satisfaction scores (53 percent and 51 percent, respectively) and were not on the same rate plans during the pilot.

While they did not participate in the EOW pilot, a mailed survey was distributed to adult day home businesses and day care providers in the same zip codes as the EOW routes to better understand how EOW might impact those unique businesses.

More than 90 percent of survey respondents said they expected to be dissatisfied with EOW (almost equally split between “very unsatisfied” and “unsatisfied”). The remaining business owners thought they would be satisfied with the change (9 percent).

B. Customer satisfaction with food/yard and recycling remained high

There was a high level of satisfaction with Seattle’s yard and food service among pilot households who responded to the January 2013 survey (87 percent satisfaction) which nearly matches the 89 percent satisfaction rating for the same service in the citywide from the 2011 SPU Residential Customer Survey results.

The satisfaction ratings from both the EOW respondents and the 2011 customer survey were also almost identical for Seattle’s recycling services, 89 percent and 88 percent respectively.

These similar results suggest that pilot participant support for food/yard waste and recycling services remained high during the pilot and that the response and attitudes of pilot customers are quite similar to citywide ratings.

C. Participants split regarding citywide EOW garbage implementation

In the January 2013 survey, pilot participants were asked whether Seattle should implement EOW collection citywide. Overall, 53 percent of respondents supported citywide rollout, 30 percent opposed it, and 18 percent were undecided. The research found that citywide EOW supporters were:

- More likely to be 55 years of age or older (60 percent favor citywide implementation compared to 50 percent of those under 55)
- More likely to be White and Asian (64 percent and 48 percent respectively, compared to 31 percent of other races)
- Less likely to live in a household in which someone uses disposable diapers (56 percent versus 44 percent of those have diaper usage in the household)
- More likely to have incomes of $60,000 or more (63 percent versus 51 percent of those who have household incomes below $60,000)
- More likely to live in a household with 32-gallon cans or smaller (60 percent support versus 48 percent support among large can households)

Table 18: **Degree of EOW household support for citywide implementation of EOW**

`	Wedgwood	Leschi	Highland Park	Dunlap	All Routes
Favor citywide implementation	69%	56%	44%	41%	53%
Oppose citywide implementation	19%	22%	38%	41%	30%
Don't know	12%	22%	18%	19%	18%

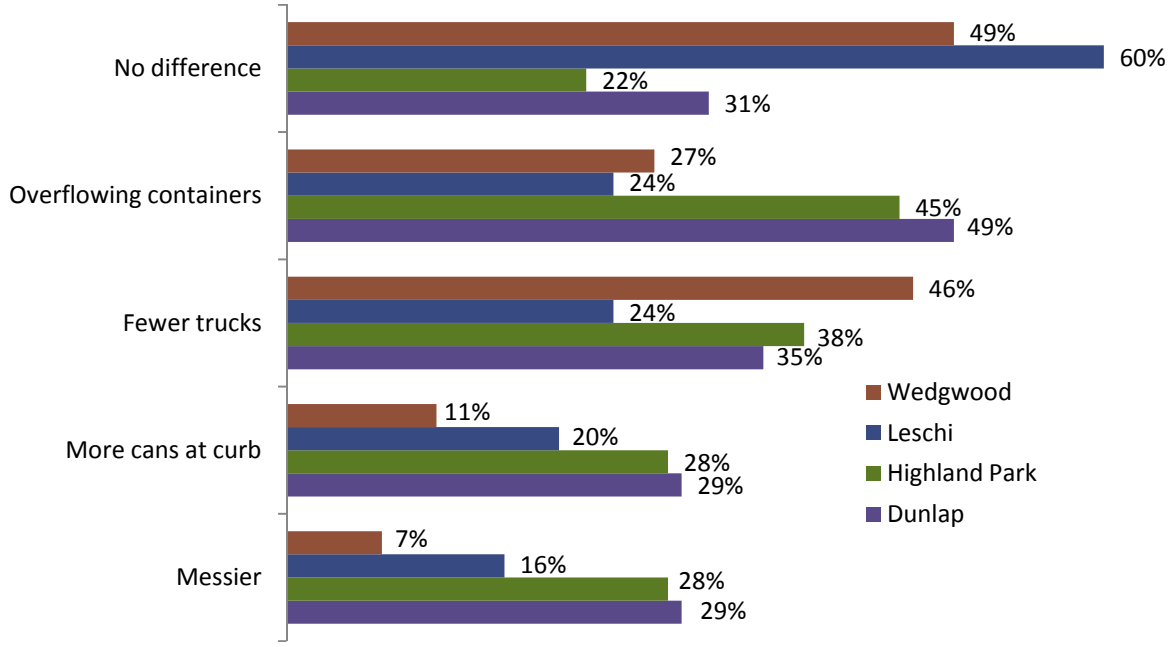
Eighty (80) percent of those who were satisfied toward the pilot agreed that EOW should be implemented citywide, while 88 percent of those dissatisfied with the pilot were pilot opposed EOW citywide implementation.

D. Customer perceptions of neighborhood impacts varied

When asked to compare how their neighborhood looked during the EOW pilot compared to how it looked prior to the pilot, respondent's viewpoints varied.

- 39 percent reported that they did not notice any difference in their route during the project.
- 36 percent said there were more overflowing garbage and recycling containers.
- 34 percent noticed there was less truck traffic.

Figure 8: **Comparisons of route appearance before and during EOW**



Another question in the EOW survey asked about the degree to which four potential problems were impacting each route: litter, overflow, pests, and odors. In every case, routes in the Dunlap and Highland Park were much more likely to define the four potential problems as moderate or major.

Table 19: **Percentage of customers saying problem is major or moderate**

	Wedgwood	Leschi	Highland Park	Dunlap	All Routes
Litter	11%	15%	45%	56%	33%
Overflow	24%	27%	53%	51%	41%
Pests	16%	21%	31%	30%	29%
Odors	10%	21%	31%	30%	25%

In order to determine if EOW garbage collection created more litter specifically, SPU looked at reported cases of litter within the target route boundaries during the pilot and during the same period of time in 2011. Customer responses to the January 2013 survey were also reviewed to find if there was a correspondence between reported cases of illegal dumping and customer perceptions of the problem.

The following table shows the comparison of reported cases of illegal dumping during July through December 2011 and July through December 2012. The bottom row shows the customer perception of litter as a problem in the four routes.

Table 20: **Cases of illegal dumping compared to rating of litter as a problem**

	Wedgwood	Leschi	Highland Park	Dunlap
July-Dec. 2011 cases of illegal dumping	0	7	15	15
July-Dec. 2012 (EOW) cases of illegal dumping	0	5	2	22
% rating litter a major or moderate problem	11%	15%	45%	56%

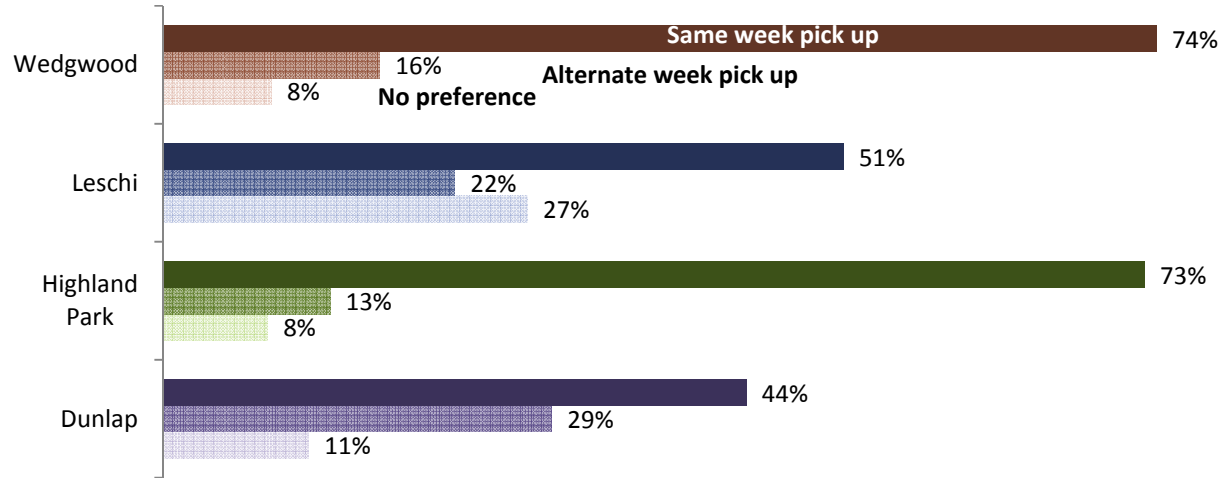
The only route that showed a correlation between EOW and increased illegal dumping was Dunlap. The Dunlap route also showed the greatest perception of litter as a problem. The other three routes showed no correlation.

F. Customers prefer same week pick up of garbage and recycling

The January 2013 post survey asked pilot participants to think about EOW garbage as a permanent initiative and whether their preference was for recycling and garbage collection on the same week, with weekly food and yard waste service OR alternating weeks for garbage and recycling with weekly food and yard waste service.

Two-thirds of all customers who responded prefer that garbage and recycling are collected the same week during EOW. Eighteen (18) percent of customers said they do not have a preference. This subpopulation without a strong opinion on the schedule includes a higher number of households using 12-gallon cans. During the pilot, two routes (Highland Park routes and Wedgwood) were on the same week collection schedule, while the other two routes (Dunlap and Leschi) experienced an alternate schedule where garbage was collected on opposite weeks of recycling.

Figure 9: **Garbage/Recycling pickup preferences by route**



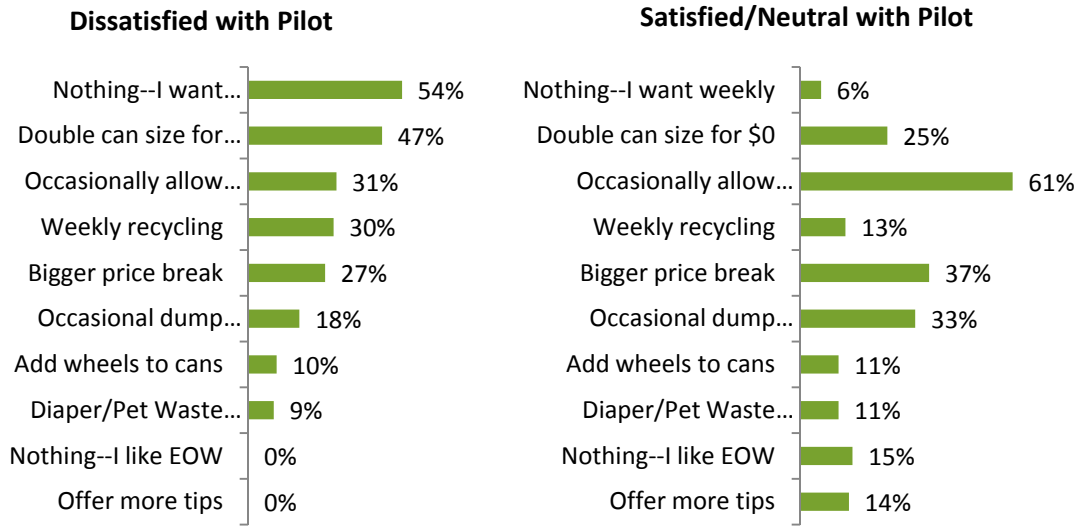
G. Customers like free extra garbage or free larger cans

Survey respondents were asked to select three options from a list of potential mitigations that SPU could provide to improve their satisfaction if EOW was implemented citywide. The most common selection was to allow extra garbage a few times a year without being charged. Surveyed adult home

service providers suggested a related option of free special collections. Customers also suggested bigger price breaks in the garbage rates and the ability to use the transfer station a few times a year for free.

These responses offer potential enhancements that could add customer support for citywide EOW garbage service. However, they all require additional costs that could offset the potential savings associated with reduced garbage collection.

Figure 10: **Suggested improvements to increase satisfaction with EOW garbage collection**



H. Pilot stipend did not appear to influence satisfaction

From May 2012 to March 2013, SPU account holders in the EOW pilot were provided several opportunities to redeem a one-time $100 stipend for their feedback in the program and to offset any inconveniences the pilot may have caused. The $100 offset all likely can upsizing billing scenarios so that participants would not be unduly financially burdened by the pilot.

Pilot participants who responded to the survey reported that they were satisfied with the level of garbage collection service were asked which of several provided reasons might contribute to their satisfaction. Multiple responses were accepted. The second most common response from satisfied participants was "Receiving the $100 stipend for participating" (80 percent checked this option). The stipend was most important to:

- Seniors over 55;
- Households with diaper usage;
- Households with incomes below $60,000; and
- White and Asian households.

Only 10 percent of survey participants (N=24) reported that they did not receive a stipend, and these respondents were evenly divided between satisfied and dissatisfied participants.

This pattern of responses indicates that lack of a stipend did not influence satisfaction with the EOW pilot.

6. EOW CUSTOMER OUTREACH FINDINGS

"What are the messages that resonate with customers regarding EOW?"
"Which methods best raised customer awareness and understanding of EOW?"

A. Customers were satisfied with SPU's outreach

One Less Truck survey results indicate that 86 percent of respondents said the amount of information they received about EOW was just right, 3 percent said it was too much, and 8 percent said it was too little. This compares favorably with SPU's 2009 citywide rollout of solid waste services, where 80 percent of surveyed customers were satisfied with the utilities' education efforts.

The communication strategy to inform participants about the pilot project included several methods, including a mailed information packet and stipend request card, a separate One Less Truck website, four community meetings, stakeholder interviews with community leaders, informal route "walk-throughs" to chat with customers, mailed letters to customers that described changes to their bi-monthly bill, reminder notices on cans, reminder tags placed on cans that were set out on the wrong day during the first month of the pilot, outreach telephone calls during the week prior to the start of EOW and at the end of the project, survey invitations to participate in surveys and monthly email updates. All the communications materials were provided in English, with translation and interpretation offered in Chinese, Vietnamese, Spanish and four other languages.

The majority of SPU outreach was conducted between May 15 and July 15, 2012. Satisfaction with these various outreach methods was measured using several pieces of research during the One Less Truck Project.

Figure 11: **Reaction to how much information they received prior to EOW pilot**

Four community meetings were organized in May and June 2012 to listen to customer questions and concerns about EOW. Only 10 customers participated in these meetings, with zero Wedgwood attendees. Five community meeting attendees expressed a preference to better understand how the EOW rates were designed.

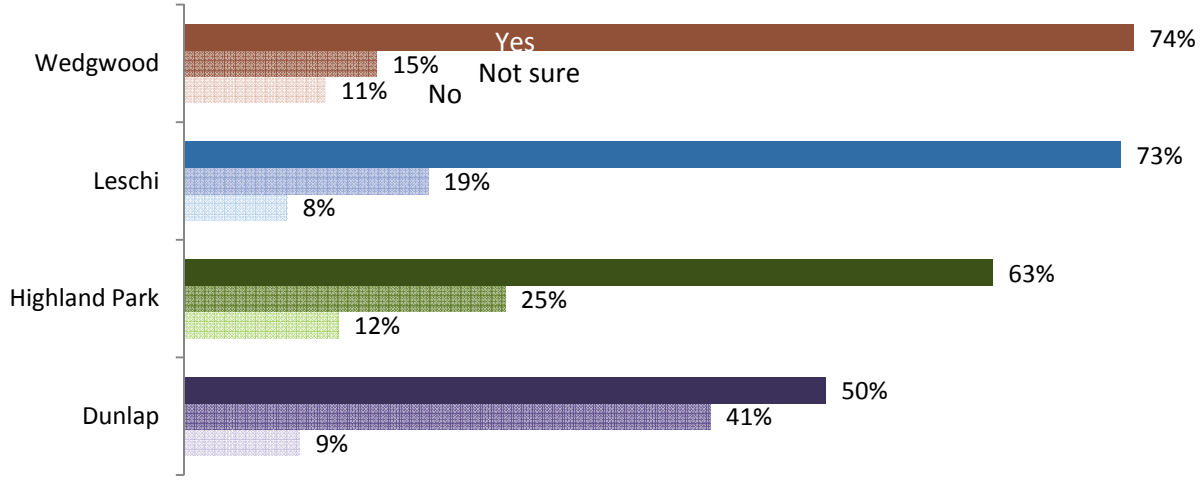
In general, the reaction from customers in advance of the pilot was that a reduction in service should result in much lower costs to customers than offered in the EOW pilot. One meeting participant said, "It should be accompanied by a reduction in rates. It's a wild scheme for the city to keep money and reduce services."

B. Customers understood education materials

Eight-seven (87) percent of survey respondents said information they received was clear, while 13 percent were either neutral (8 percent) or said the information was not clear (5 percent). There were minor differences between White (92 percent) and Non-White households (86 percent) with regard to information clarity. Household income also does not appear to influence perceptions of clarity. Households on the Dunlap and Highland Park routes were less likely to say the materials they received were clear (77 percent and 82 percent, respectively).

Respondents were also satisfied the "One Less Truck Project" title, with 70 percent responding that the name made sense. Customers on the Dunlap and Highland Park routes were less sure of the meaning behind "One Less Truck," as outlined in the figure below. Feedback from some customers noted that the title does not translate well into other languages and is grammatically incorrect.

Figure 12: **Route responses to the question: 'Does the title "One Less Truck" make sense?'**



C. Information packet was the most informative outreach

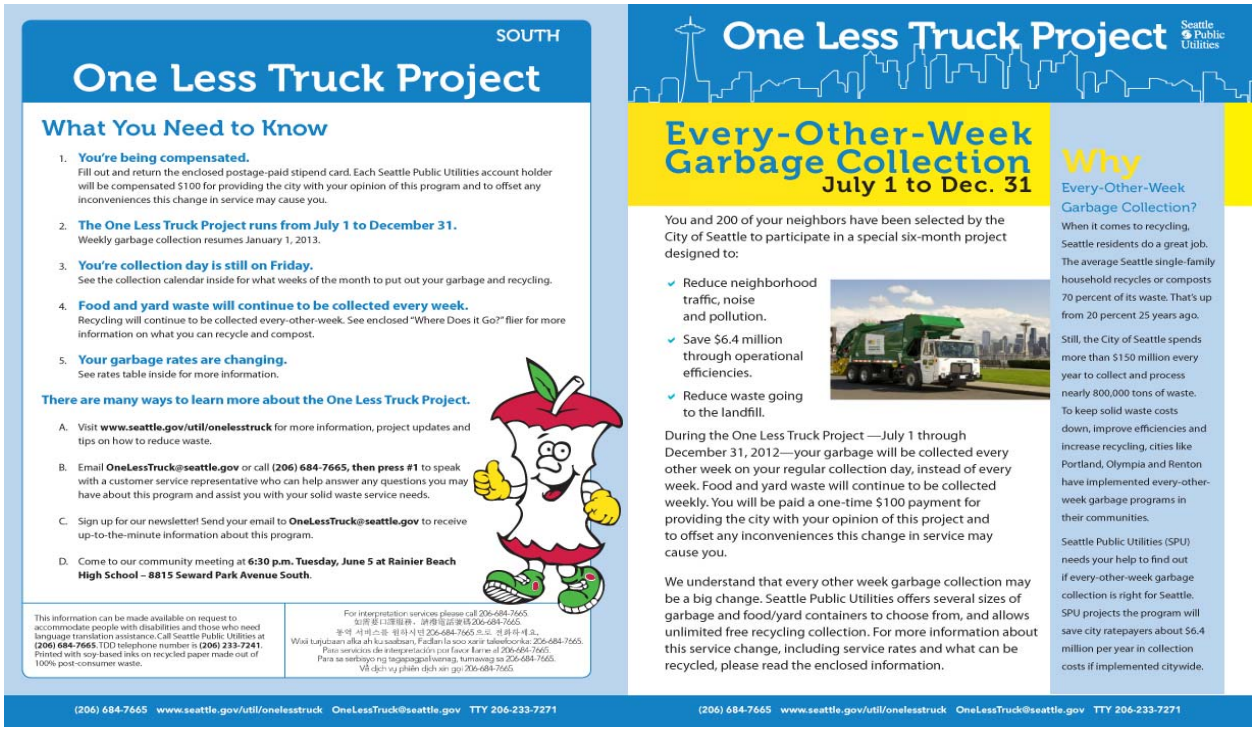
The information packet was identified as the "most appreciated" type of communication received by customers (86 percent), followed by the mailed letter describing the changes to their bill (23 percent). Emails were a popular method of communication for 20 percent of surveyed customers. The information packet was particularly useful in reaching households with incomes under $60,000 (98 percent recall) and Non-White households (94 percent recall).

EOW customers were asked if they received the packet of information in the mail explaining EOW. Almost everyone participating in the September 2012 survey indicated they had received the packet (96 percent). Almost 90 percent of customers said the mailed information packet was what they most appreciated from SPU, followed by the mailed letter describing the changes to their bill (23 percent).

Table 21: **Customers recall how they first heard about EOW**

	<55 years	>55 years	White	Non-White	Household Income <$60K	Household Income >$60K
Information packet	87%	88%	85%	94%	98%	82%
Newspaper	8%	7%	8%	3%	0%	10%
Postcard meeting invitation	3%	0%	2%	3%	0%	3%
Other	2%	5%	5%	0%	2%	5%

Figure 13: **Brochure from EOW information packet**



SOUTH

One Less Truck Project

What You Need to Know

1. **You're being compensated.** Fill out and return the enclosed postage-paid stipend card. Each Seattle Public Utilities account holder will be compensated $100 for providing the city with your opinion of this program and to offset any inconveniences this change in service may cause you.
2. **The One Less Truck Project runs from July 1 to December 31.** Weekly garbage collection resumes January 1, 2013.
3. **You're collection day is still on Friday.** See the collection calendar inside for what weeks of the month to put out your garbage and recycling.
4. **Food and yard waste will continue to be collected every week.** Recycling will continue to be collected every-other-week. See enclosed "Where Does it Go?" flier for more information on what you can recycle and compost.
5. **Your garbage rates are changing.** See rates table inside for more information.

There are many ways to learn more about the One Less Truck Project.

A. Visit **www.seattle.gov/util/onelesstruck** for more information, project updates and tips on how to reduce waste.

B. Email **OneLessTruck@seattle.gov** or call **(206) 684-7665, then press #1** to speak with a customer service representative who can help answer any questions you may have about this program and assist you with your solid waste service needs.

C. Sign up for our newsletter! Send your email to **OneLessTruck@seattle.gov** to receive up-to-the-minute information about this program.

D. Come to our community meeting at **6:30 p.m. Tuesday, June 5 at Rainier Beach High School – 8815 Seward Park Avenue South.**

This information can be made available on request to accommodate people with disabilities and those who need language translation assistance. Call Seattle Public Utilities at **(206) 684-7665**. TDD telephone number is **(206) 233-7241**. Printed with soy-based inks on recycled paper made out of 100% post-consumer waste.

For interpretation services please call 206-684-7665.
如需翻譯服務，請撥電話號碼206-684-7665。
통역 서비스를 원하시면 206-684-7665으로 전화하세요.
Waxii turjubaan afka ah ku saabsan, Fadlan la soo xariir taleefoonka: 206-684-7665.
Para servicios de interpretación por favor llame al 206-684-7665.
Para sa serbisyo ng tagapagpaliwanag, tumawag sa 206-684-7665.
Vì dịch vụ phiên dịch xin gọi 206-684-7665.

(206) 684-7665 www.seattle.gov/util/onelesstruck OneLessTruck@seattle.gov TTY 206-233-7271

One Less Truck Project — Seattle Public Utilities

Every-Other-Week Garbage Collection
July 1 to Dec. 31

You and 200 of your neighbors have been selected by the City of Seattle to participate in a special six-month project designed to:

- Reduce neighborhood traffic, noise and pollution.
- Save $6.4 million through operational efficiencies.
- Reduce waste going to the landfill.

During the One Less Truck Project —July 1 through December 31, 2012—your garbage will be collected every other week on your regular collection day, instead of every week. Food and yard waste will continue to be collected weekly. You will be paid a one-time $100 payment for providing the city with your opinion of this project and to offset any inconveniences this change in service may cause you.

We understand that every other week garbage collection may be a big change. Seattle Public Utilities offers several sizes of garbage and food/yard containers to choose from, and allows unlimited free recycling collection. For more information about this service change, including service rates and what can be recycled, please read the enclosed information.

Why Every-Other-Week Garbage Collection?

When it comes to recycling, Seattle residents do a great job. The average Seattle single-family household recycles or composts 70 percent of its waste. That's up from 20 percent 25 years ago.

Still, the City of Seattle spends more than $150 million every year to collect and process nearly 800,000 tons of waste. To keep solid waste costs down, improve efficiencies and increase recycling, cities like Portland, Olympia and Renton have implemented every-other-week garbage programs in their communities.

Seattle Public Utilities (SPU) needs your help to find out if every-other-week garbage collection is right for Seattle. SPU projects the program will save city ratepayers about $6.4 million per year in collection costs if implemented citywide.

(206) 684-7665 www.seattle.gov/util/onelesstruck OneLessTruck@seattle.gov TTY 206-233-7271

Table 22: **Methods of communication appreciated most**

	<55 years	>55 years	White	Non-White	Household Income <$60K	Household Income >$60K
Information packet	86%	92%	91%	80%	91%	88%
Letter describing changes to your bill	23%	22%	20%	35%	20%	24%
Emails from SPU regarding service changes	24%	15%	16%	30%	15%	20%
Note on garbage can	12%	11%	9%	23%	14%	10%
Phone calls from SPU regarding service changes	9%	10%	7%	23%	11%	9%

D. Stipend response and redemption varied by pilot route

To redeem the $100 pilot stipend payment, participating SPU account holders were required to fill out and sign a postage-paid postcard and mail it back to SPU. Postcards were mailed to all EOW participants (SPU account holders and renters) in May and November 2012. Reminders to fill out the card were included in other education materials, including letters and phone calls, for a total of six stipend-related collateral pieces.

Approximately 70 percent of all EOW /SPU account customers submitted their request to redeem the $100 stipend from SPU during the course of the pilot. The remaining 30 percent were mailed the stipend after the pilot. Redemption requests during the pilot varied across routes as shown in Table 23.

Table 23: **Participant stipend redemptions by Jan. 31, 2013**

	Wedgwood	Leschi	Highland Park	Dunlap	Total
Stipend Redeemers	145	148	127	132	552
Non Stipend Redeemers	32	59	61	89	241
Total EOW Households	177	207	188	221	793
% requesting stipend by January 31, 2013	**82%**	**72%**	**68%**	**60%**	**70%**

A focus group of non-stipend redeemers was conducted in February 2013 to explore whether there were any disparities between stipend redeemers and non-stipend redeemers. Focus group participants cited a variety of reasons for not redeeming their stipends, including procrastination, losing their paperwork, being too busy and missing the deadlines, being unaware there was a stipend available, and belief that they did not qualify for the stipend. A significant number of potential focus group attendees from the Highland Park and Dunlap routes had moved away from the area and/or changed their contact information.

E. Cutting costs, reducing pollution were messages that resonated

In the January 2013 survey, customers who were satisfied with the EOW (63 percent) were asked a follow-up question to further explain their response. When offered several statements from which to choose, several customers provided multiple reasons. At least half of respondents to this question mentioned these top answers:

- 89 percent liked that the city is improving efficiencies and cutting costs;
- 80 percent were satisfied because they received a $100 payment;
- 73 percent felt there was less truck pollution in the route;
- 65 percent said there were fewer trucks on the road; and
- 55 percent reported that the can they use for garbage works very well.

Strong majorities of satisfied customers indicated their satisfaction was based, at least in part, on not experiencing problems with rats or other pests (73 percent), and not experiencing smells or other odors (71 percent).

It is notable how a slightly different emphasis and wording (i.e., "less truck pollution" and "fewer trucks on the road") results in significantly different results from customers. In three of the four routes, emphasizing "pollution" over "fewer trucks" was more compelling.

Table 24: **Customer assessment explaining their satisfaction with EOW pilot**

	Wedgwood N=74	Leschi N=55	Highland Park N=64	Dunlap N=55
The city is improving efficiencies and cutting costs	92%	84%	89%	88%
They received a $100 payment for participating	84%	69%	84%	81%
Not experiencing problems with rats or other pests	81%	67%	71%	69%
Not experiencing smells or other odors	70%	79%	63%	73%
There was less truck pollution in the route	64%	68%	83%	85%
There were fewer trucks on the road	68%	59%	61%	77%
The can they use for garbage works very well	48%	47%	66%	69%

Messages regarding "pollution" or "fewer trucks" were more effective with certain subpopulations than others. For example, households with diaper usage and non-White households were less motivated by the benefit of fewer trucks on the road (65 percent overall, but 56 percent among non-White households and 53 percent among diaper households).

At various points in the January 2013 survey, customers were asked to provide open-ended input. Their comments provide insight into the effectiveness of some of the messages used in the pilot and potential future messages and outreach strategies. Customers said:

- "(The pilot) made me think a lot more about what waste my household creates."
- "I already recycle/compost, but this confirmed that I can fit two weeks of other garbage in my can."
- "I like it because it cuts cost for City. As a citizen, we need to help city out."
- "It was nice to not have to move the can every week."

In the adult day home business owner and day care provider survey (N=20) not everyone answered the question about the program's benefit to the community (N=10). Seven respondents said they did not see any benefit to EOW. Of those that did see potential benefits, two identified the top benefit as "one less garbage truck being driven in my community." One person viewed the top benefit as "not having to put out the garbage can on the curb every other week." Finally, one person said the most important benefit was, "our business would improve food composting habits."

Focus groups were organized with EOW Spanish-speaking and Vietnamese-speaking participants. Overall, Vietnamese-speaking focus group participants were less satisfied with EOW garbage collection than non-Vietnamese participants, citing preference for every week garbage collection, and voicing frustrations with litter and odors. However, Vietnamese focus group participants who were satisfied felt that EOW was a worthwhile initiative to help the city save money. One of them said, "What we are doing is supporting the city. If we can save the city's budget from trash and recycling services, the city can use that money for other things such as security matters. The city can hire police. It would be made up by us having more safety, so we should volunteer to do this."

7. EOW OPERATIONAL FINDINGS

"How can EOW operational impacts inform potential citywide implementation?"

A. Customer requests peaked at the start and then tapered off

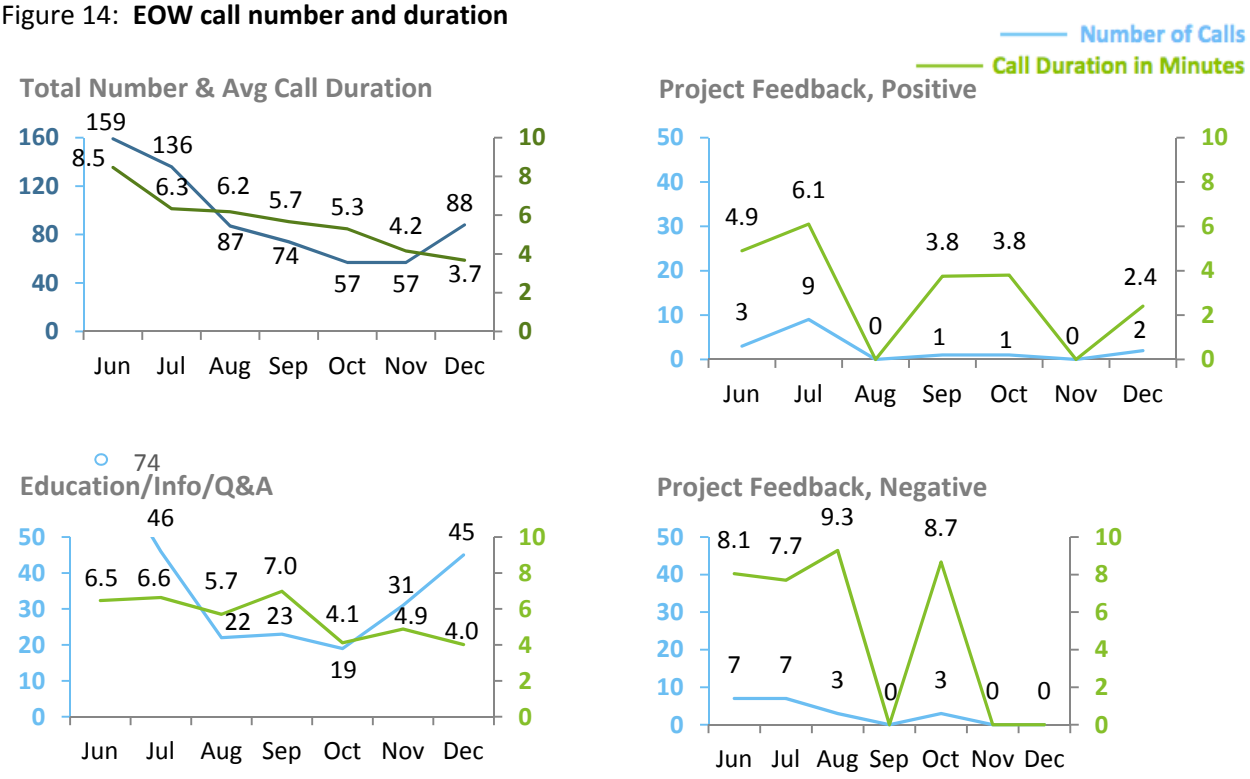
Implementing the pilot had no significant impacts to SPU's billing, customer service and operational processes. Call volumes and service requests to SPU peaked at the start of the pilot and slowed down as the program matured.

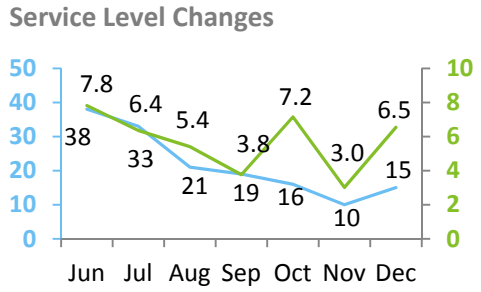
Garbage service requests were the most common type of request, averaging 18 per month across the four EOW routes. The total number of requests peaked at 60 in July. Yard waste requests, in contrast, averaged 7 per month and recycling service requests averaged 4.2 per month. Recycling service requests were made at on average of 4.2 times per month.

Call volume from the 800 EOW households dropped each month over the course of the pilot until December, when calls picked back up for end of pilot transition. Nevertheless, calls in December were nearly half that of June calls. The most common call type was for requesting information about EOW. There were slight more negative project feedback (20) calls than positive feedback calls (16). However, no negative feedback was received in the last two months of the pilot. Calls regarding service level changes averaged 25 per month.

For context, SPU serves 150,000 single-family garbage households and receives more than 6,000 solid waste calls per month.

Figure 14: **EOW call number and duration**





B. Citywide implementation would produce significant customer service impacts

Based on surveys conducted in November and December 2012 with SPU field inspectors, contact center staff, project managers and Waste Management and CleanScapes drivers who participated in the EOW pilot, SPU expects to experience significant short-term operational impacts associated with rolling out citywide EOW garbage collection.

SPU is likely to experience multi-month spike in customer contacts during implementation, including requests to switch garbage cans, as well as customer complaints about garbage rates, extra garbage charges, litter/illegal dumping, and requests for more information.

Staff surveys indicate that renters, tenants in multi-family buildings on single can service, larger families, low-income customers, English as a second language residents and customers that utilize diapers are the most likely to have additional service needs.

Responding to customer needs during solid waste collection interruptions, such as snow, labor or holiday disruptions, will likely have an amplified effect on SPU contact center and field staff, due to the nature of extended non-collection.

SPU would likely require nine to 12 months of planning time to properly train staff, develop customer policies, as well as a develop and implement a significant customer education campaign. Citywide implementation will also require expanded purchasing, storage and delivery waste containers.

C. Implementation timing would need to consider other major SPU customer service projects

SPU will be replacing its outdated customer billing software with the transition tentatively scheduled for late 2015 or early 2016. This transition will be a major customer service undertaking involving months of preparation and stabilization. Implementation of any other service changes, such as citywide EOW garbage, will need to be completed well in advance of this major project or postponed until after conversion is completed and stabilized.

SPU is also considering transitioning all customers from the current practice of advance billing for waste services, to retrospective billing after service completion. This will be a significant project, requiring billing system programming, customer education, and a billing period that features no solid waste payments or revenues. SPU is considering this change for 2015 and it could be implemented simultaneously or separate from citywide EOW garbage collection.

8. EVERY OTHER WEEK GARBAGE IN OTHER CITIES

A number of cities in the region have recently switched to EOW garbage pickup.

Table 25: **Other cities with EOW programs**

City	Service Provider	Households	EOW Garbage Began
Olympia	City crews	14,000	1998
Renton	Waste Mgmt.	17,000	2009
Portland	Many franchises	145,000	2011
Tacoma	City crews	54,000	Phased in during 2013
Vancouver, BC	Split City/Contract	80,000	Phased in during 2013

Bellingham and many rural areas in the Puget Sound region allow customers to choose how often they want garbage collection.

A. Can size distribution in EOW programs reflects 20% shift to larger cans

The table below shows significantly more customers with larger cans in the other cities' EOW programs as compared to the current distribution in Seattle.

Olympia and Renton have customer prices similar to SPU's One Less Truck steep rate path, while Portland has prices closer to the One Less Truck shallow rate path. A 20 percent shift up by Seattle customers would produce a distribution similar to Renton and Portland.

Table 26: **Other cities' EOW can sizes compared with Seattle's weekly can sizes**

Size	Olympia EOW	Renton EOW	Portland EOW	Seattle Weekly
12 gallon				11%
20 gallon	14%	12%	14%	27%
32 gallon	29%	55%	63%	57%
45 gallon		7%		
65 gallon	53%	20%	18%	4%
95 gallon	4%	6%	5%	1%

B. Customer satisfaction maintained with EOW garbage supported by other program enhancements

In Olympia, satisfaction with garbage and recycling services held steady at 85 percent from 1998 (during EOW implementation) to 2001 and then steadily increased to 91 percent by 2004.

Portland reported 87 percent satisfaction for their combined residential garbage and recycling services in 2012, a year after implementation. They also reported that during implementation their service quality rating declined 12 percent and their cost of service satisfaction rating dropped 11 percent.

Most cities implemented every-other-week garbage without significant bill savings to their customers. Instead, most introduced or improved food waste collection. Many cities simultaneously increased organics pickup from every other week to weekly.

Other implementation elements included:

- Renton continues to provide weekly garbage service to customers who pay a premium – now less than one (1) percent of total residential accounts.
- During the first five months of EOW service, Portland added four new customer service staff, including two fluent Spanish speakers, and extended call center hours to include evening and weekend hours.
- Tacoma plans to provide a larger garbage cart to all customers and charge the same rate as weekly garbage collection, unless customers request otherwise.

C. Diversion increased with EOW garbage and new food waste services

The cities that implemented EOW garbage all reported increased waste diversion. However, reduced garbage collections were often accompanied by improved recycling or composting services:

- Renton reported an 18 percent decrease in tons of garbage disposed, a 27 percent increase in tons recycled and a 44 percent increase in tons composted within a year of moving to weekly yard waste, adding food scraps, expanding recycling items, and decreasing garbage collection to every other week.
- Portland reported a 37 percent decrease in garbage tonnage and a near tripling of composting tonnage with a similar service transition as Renton. However, Portland's recycling processer reported increased contamination of recycling with dirty diapers. Contamination grew to 180 pounds of dirty diapers a day when the city rolled out EOW, and has dropped to 120 pounds per day 18 months later. 40 percent of the contaminating diapers are adult-sized.