

Sustainable Curbside Collection Pilot

February 2008

**King County Solid Waste Division
City of Renton
Public Health – Seattle & King County
Waste Management, Inc.**



King County

Department of
Natural Resources and Parks
Solid Waste Division

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Executive Summary

The City of Renton, (City) King County Solid Waste Division, (KCSWD) Public Health – Seattle & King County and Waste Management, Inc. (WM) conducted a residential curbside collection pilot program to test customer responses, public health impacts and potential waste diversion of every-other-week (EoW) garbage, recycling and yard debris+food scrap collection. The pilot was conceived as a way to develop a more sustainable collection system that reduces truck use (and associated fuel use and emissions) and lowers collection costs. The pilot was conducted from August through December 2007, and has continued on an interim basis beyond the initial pilot period.

The pilot tested two variations from the City's existing weekly services in the Tiffany Park and Glencoe route areas and selected the Summerwind neighborhood as the control route:


Collection Area	Garbage	Recycling	Yard Debris
Summerwind Control Area + Remainder of City (Status Quo)	Weekly, customer-owned containers with small number of carts.	Weekly, 3-bin	Weekly, City provided cart, no food scraps accepted
Tiffany Park (702 households)	Every-other-week (EoW), with WM-provided garbage carts	EoW, with WM-provided recycling carts	Weekly, City provided cart, food scraps added.
Glencoe (727 households)	(EoW), with WM-provided garbage carts	EoW, with WM-provided recycling carts	EoW, with WM-provided recycling carts, food scraps added

The pilot monitoring program included intensive monitoring of container condition and setouts, customer surveys, route weight logging and a composition analysis of the collected organics stream.

Both pilots were a clear success, with high levels of customer acceptability/satisfaction, negligible or positive public health impacts, and increased recycling and organics diversion. The following conclusions are drawn from the pilots:

- Cart-based EoW garbage, organics and recycling collection are acceptable to a large majority of customers; (See Appendix E Route Data)
- No problems were noted with accepting the full range of food scraps (including meats and dairy) in either the weekly or every-other-week programs. No discernable difference was noted in cart residue levels or vectors between weekly and EoW organics collection.
- Waste generation (total monthly quantity of garbage, recycling and organics) went down in both pilot areas. (See Appendix C & D Surveys)

- Wheeled carts offer better containment of materials than either customer-provided cans or open recycling bins. No rodent infiltration of bins was noted in the pilots, while obvious signs of rodent infiltration as well as ill-fitting or no lids, cracked plastic garbage cans and other problems were noted on the control route.
- Commingled recycling is popular with customers and recycling rates went up. Comparative contamination levels between the pilot and control routes were not monitored, but no contamination problems were reported by WM related to the commingled collection program.
- The results of providing kitchen containers and biodegradable bags for food scrap recycling are inconclusive. Based on a visual comparison by consultant staff, food scrap recycling participation is higher in the Renton pilots than other cities with food scrap recycling. However, this observation is not supported by the route data, as discussed further in the report; and
- Additional education should be focused on encouraging customers to reuse shopping bags to contain loose and/or putrescible garbage. This single step will likely reduce some vectors, odors and litter at no cost to the City or customers, regardless of collection frequency.



Please read carefully and keep for future reference.

Renton Raises the Recycling Roof!


Starting August 13, 2007 your household will be part of a special pilot to evaluate new garbage, recycling and yard waste services in the City of Renton. These new services will reduce fuel use and air pollution while increasing the kinds of materials recycled.

Wheeled Garbage and Recycling Carts!

- Wheeled carts are safer – no more lifting and carrying!
- Attached lids prevent litter!

All-in-one Recycling!

- **No more sorting!** Combine all clean recyclables in one wheeled cart emptied every other week.
- **More Recyclables and more room!** Now you can recycle plastic bottles, jugs, dairy tubs and scrap metal with your paper, glass and cans!
- **Reuse your bins!** Keep your old bins for extra recycling or use them for storage around the house. If you don't want the bins, mark them "Take Away" and put them at your curb on a recycling collection day in August.



Food Scraps Now Accepted with Yard Waste!

- Attach the orange decal in your kitchen container to your

Introduction

The City of Renton (City), King County Solid Waste Division (KCSWD), Public Health – Seattle & King County (Health), and Waste Management, Inc. (WM) conducted a residential curbside collection pilot program to test customer responses, public health impacts and potential waste diversion of reduced-frequency garbage, recycling and yard debris+food scrap collection. The pilot was conducted from August through December 2007, and has continued on an interim basis beyond the initial pilot period.

This report details the pilot program design, implementation and monitoring, as well as providing conclusions. Both pilots performed well with no unacceptable public health impacts, lower solid waste generation and were acceptable to the majority of customers.

The pilot was conceived as a way to develop a more sustainable collection system that reduces truck use (and associated fuel use and emissions) and lowers collection costs. The City and WM are currently negotiating a new collection contract under which the costs of collection are expected to rise. The pilot alternatives provide an opportunity to minimize rate impacts, as well as increase waste diversion and align with City sustainability objectives. The pilot design built on the existing successful long-term reduced-frequency collection programs operated in Bellingham and Olympia. KCSWD is currently updating the region's Comprehensive Solid Waste Management Plan and this pilot provides an opportunity to analyze a more sustainable collection system that other cities and the unincorporated areas of the county could implement and realize cost reductions and reduced environmental impacts from the collection of household generated solid wastes.

The pilot tested two variations from the City's existing weekly services in the Tiffany Park and Glencoe route areas and selected the Summerwind neighborhood as the control route:

Collection Area	Garbage	Recycling	Yard Debris
Summerwind Control Area + Remainder of City (Status Quo)	Weekly, customer-owned containers with small number of carts.	Weekly, 3-bin	Weekly, City provided cart, no food scraps accepted
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Glencoe (727 households)	(EoW), with WM-provided garbage carts	EoW, with WM-provided recycling carts	EoW, with WM-provided recycling carts, food scraps added.

A demographically similar third control area (Summerwind area) with continued weekly service was monitored as well to provide a basis for comparison. All collections occurred on Mondays.

An intensive program of monitoring was conducted during the pilots including:

- tracking collection quantities;
- monitoring container set-out condition through ride-alongs on collection vehicles;
- observing can/cart residue;
- observing odor and vector levels;
- control area walk-arounds;
- evaluating the composition of collected yard debris+food scraps through a waste characterization study; and
- conducting two customer satisfaction surveys including mail and random phone surveys.

Background

Renton's existing solid waste collection system includes:

- weekly garbage collection using customer-supplied garbage cans;
- weekly recycling collection of 3-nestable bins (newspaper in one, mixed paper in another, and mixed containers in the third bin); and
- weekly yard debris collection

Food scraps are not currently accepted in the City's yard debris collection program.

Some Renton residents have expressed dissatisfaction with the City's continued use of its 3-bin recycling system. Renton is one of the last cities in King County to continue to use a 3-bin system instead of a cart-based recycling program. Many residents would prefer to have the convenience of commingling materials and using a cart for recycling. WM is using older-style (non-compacting) recycling trucks that appear from the curb to keep the materials separate. However, the internal baffles of the trucks have been removed and all

materials are actually commingled on-route and are delivered to fully commingled recycling facilities.

WM proposed a “sustainable collection” alternative in 2006 as part of contract negotiations between the City and WM. The City was interested in pursuing the alternative program, but did not actively attempt to pilot it at that time. Concurrently, the KCSWD and Health were interested in resolving on-going questions about the public health impacts of reduced frequency collection of both yard debris and food scraps including all materials (i.e. meat, cheese, bones, vegetative and soiled papers) and garbage. This pilot was developed as a means for the City to test public response to the sustainable collection concept and for the County to closely monitor and document public health impacts to support potential code revisions to allow less frequent collection of garbage, and less frequent collection of all food scraps (i.e. meat, cheese, bones in bi-weekly program) within King County.

Work on the pilot started in early 2007 and included designing the pilot, determining whether to incorporate rate incentives (this was determined to be unfeasible as well as possibly confusing for customers), choosing pilot neighborhoods and designing the monitoring program with guidance from Health.

Implementation

The City, WM and the KCSWD established a pilot team which included the County’s contracted consultant, Sound Resource Management Group, Inc. The pilot team met through the spring and early summer 2007 to design the pilot.

Key issues addressed by the pilot team included:

- ***Garbage Container Sizing*** –Over 90% of Renton single-family customers use customer-owned 32-gallon or 10-gallon cans. This is due, in part, to the City’s near-linear rate structure which encourages smaller containers. Cart rental has not been actively promoted as an option for City customers and, as a result, the number of cart customers is much lower than other King County cities and incorporated areas. As part of the pilot program, all customers were provided an appropriately-sized garbage cart to handle EoW collection.

When considering shifting to EoW garbage collection, the City faced the issue of whether to continue to offer the same overall quantity of garbage collection or to slightly reduce that capacity in light of the expanded recycling and food scrap programs introduced as part of the pilot. The pilot team decided to do both, mostly due to the sizing constraints of providing carts in standard sizes.

All garbage customers in both pilot areas were provided a garbage cart 1.5-2.0 times the size of their weekly current service:

Billed Service (weekly)	Pilot Cart Size (EoW)
10-gallon Minican	20-gallon Cart
32-gallon Can or Cart	64-gallon Cart
(2) 32-gallon Cans	96-gallon Cart
64-gallon Cart	96-gallon Cart
(3) 32-gallon Cans	96-gallon Cart + 45-gal Cart
96-gallon Cart	96-gallon Cart + 45-gal Cart

Customers at higher service levels (3 cans per week and above) were contacted individually to determine the correct garbage container sizing. Along with the increased size garbage cart, can customers were requested to retain their existing can for when the pilot ends. Existing cart customers had their garbage cart swapped with the new size. All customers were instructed to bag their garbage (in grocery bags or purchased bags) and to place only bagged putrescible garbage in their garbage carts.

- **Rate Incentives** – Renton is one of the few cities in King County that provides direct billing to customers instead of contractor billing. The City handles customer service related to billing and establishing accounts, bills customers and pays WM a contractual rate for collection services. Thus, the City has the ability to provide rate incentives or change rates without renegotiating contract rates with WM. One of the pilot options was to test rate incentive alternatives for pilot area residents. Alternatives could have included offering discounts to counter the perception of reduced service, additional incentives for food scrap recycling participation or other similar incentives. The pilot team determined that providing rate incentives would not be easily implemented due to the effort required by the City's utility billing department to identify, reclassify and then change back pilot area customers after the pilot. Any rate modification would also require Council approval, which could have potentially delayed the pilot for relatively little benefit.

All pilot customers were billed the same rate as they had previously paid for weekly service. Although some customers called the City to complain about the reduction of service, they accepted the situation after they understood that although the collection frequency was reduced, their capacity at most service levels was not reduced and they were being provided a garbage cart, a new recycling cart and enhanced organics recycling.

- **Promotional Materials** – WM (with assistance from SRMG) took the lead in producing the pilot promotional materials. Pilot communications included an initial notification letter, an introduction postcard, a pilot instruction brochure, cart and

kitchen container stickers, problem tags and follow-up communications during and after the pilot. A topical postcard was also designed, but not actually mailed during the pilot. Copies of the promotional materials are provided in Appendix A.

- ***Old Recycling Containers*** – Although the pilot was intended to be a temporary test of a new collection package, the pilot team felt it unlikely that residents would willingly shift back to a 3-bin recycling system once they became accustomed to commingled cart-based recycling. WM committed to continue the cart-based recycling program in the pilot areas after the pilot ended. Residents were instructed to either reuse their recycling bins for other purposes or set out their containers for collection by WM. Collected recycling bins were recycled by WM.
- ***Food Scrap Collection Roll-out*** – The pilot team carefully considered how to introduce food scrap collection to pilot residents. Recently implemented residential food scrap programs in King County have shifted away from universal distribution of 2-gallon kitchen containers due to low participation and the potential waste of unused containers. However, the pilot team felt that the implementation of EoW garbage collection would drive food scrap participation to relatively high levels not experienced by other programs which simply add food scraps to existing yard debris collection programs without changing garbage collection frequency. An earlier EoW garbage collection pilot in the City of Lake Forest Park experienced participation levels over 60%, so it was believed that the universal delivery of kitchen containers and an initial supply of biodegradable kitchen container liners would provide the best opportunity to get residents to try food scrap collection and use that diversion opportunity as a way to adjust to EoW garbage collection.

All customers in both pilot areas received kitchen containers, stickers for their kitchen container and yard debris cart describing how to recycle food scraps, and a supply of biodegradable bags.

- ***Biodegradable Kitchen Container Liners*** – All pilot customers received either a 10-count package of Nat-UR bags or a 20-count package of BioBag bags with their kitchen container. An initial review of area stores indicated that no local stores carried biodegradable kitchen container liner bags that were approved for use by Cedar Grove Composting. The City led an effort to get local stores to stock the bags with some success. By the end of the pilot two stores carried the bags. Arrangements were also made with Cedar Grove Composting to allow pilot area customers to purchase kitchen container liners from Cedar Grove's website (<http://www.cedar-grove.com/>). The City also had a limited supply of bags left over from the initial distribution that were provided to any requesting pilot area customer free of charge.

- ***Customer Service*** – Customer service in Renton is split between the City’s utility billing department and WM. Typically, residential account set-up, billing and mandatory collection enforcement is handled by the City, and service-related questions (misses, how to recycle, etc.) are handled by WM through its call center and website. Since the pilot was such a departure from the standard weekly collection service, the pilot team preferred to have all pilot questions, comments and issues routed through one person at the City rather than the multiple staff at WM’s call center or the City’s utility billing. The City’s program manager’s phone number was used as the contact point in all pilot communications and she routed billing and service issues to the appropriate party.
- ***Project Website*** – The pilot team discussed how to provide web-based information and decided to avoid the use of either WM or the City’s regular websites. The use of a dedicated pilot website reduced the possibility of other City residents receiving the wrong information and allowed targeted communication. The domain “RentonRecycles.org,” was established to be the pilot website. The “RentonRecycles.org” and “RentonRecycles.net” domains were also reserved and redirected to the .org site. SRMG staff designed a simple website that delineated the pilot service areas, provided copies of program materials, provided updated kitchen container bag information and made ongoing information available to the public.
- ***Which Monitoring Elements to Include*** – The pilot discussed the need for four types of monitoring: (1) public health impacts of reduced-frequency collection; (2) customer satisfaction; (3) route tonnage data; and (4) yard debris composition. The following sections describe the decisions on how monitoring was established. The actual results are presented in the next section of this report.

Health has previously expressed concerns about EoW collection of either garbage or organics, and accordingly, King County Code requires weekly collection of garbage. As a result, an important component of the pilot was to monitor the condition of pilot containers and to compare those containers with a non-pilot control area. This would identify any public health issues with EoW collection as well as determine whether carts were a potential solution to the perception that some customer-owned garbage cans were improperly maintained or used and contributed to vector (rodent, fly, bird, and raccoon) problems. The team designed a container monitoring program to observe large numbers of containers from the cab of the collection truck as well as periodic in-depth walk-around surveys where the condition of specific containers were observed on foot.

Several potential methods were available to measure public satisfaction: a mail-in survey, a phone survey and monitoring of customer questions/comments called in to

the City project manager. All three were used during the pilot, with the last method (calls to the City project manager) being informal rather than specifically categorized. The results of the mail-in and phone survey are presented in the next section.

One of the selection criteria for the pilot areas was the availability of relatively “pure” historical route data from areas which had not experienced major route changes. In the absence of route changes, prior year data were expected to be directly comparable to the 2007 data from the pilots. Monthly route data for garbage, recycling and yard debris were obtained for 2006 and then compared with 2007 on a pound-per-household basis for each collection stream. The eventual results of that monitoring were inconclusive, as discussed in the next section.

A sample of each pilot area’s yard debris+food scraps stream was sampled and sorted to determine the percentage of food scraps recovered by each pilot to determine whether the collection frequency affected the quantity of recovered food scraps. This was done once, at the end of the pilot. A similar sampling of garbage was considered but ultimately rejected as not worth the expense for the limited data sample.

- ***When to Start the Pilot*** - The pilot was originally planned to be operated the full calendar months of August - December 2007. This period was selected to provide an opportunity to observe the pilot in both hot and more moderate weather.

Synchronizing the shift to EoW collection would have meant that customers first week in one pilot area would have been skipped garbage collection. The pilot team believed that it would be better to ensure that garbage was collected during the first week of the pilot period to reduce confusion, particularly considering that customers would have new carts and would not be able to continue what they had done before the pilot during the first week that they were “catching on.” Thus, the pilot actually started the second week of August.

One of the pilot team responsibilities was to develop a pilot proposal for City administrative and Health review and approval. That proposal is attached as Appendix B. Readers should note that the proposal was developed before the pilot was fully developed and does not completely mirror what was implemented.

Pilot team meetings progressed through the introduction of the pilot, with several follow-up meetings during the pilot to address operational issues. Two operational issues arose during the pilot:

- ***Bagging Garbage*** – One of the areas on which the pilot team had mixed opinions was the topic of plastic bags for containing garbage. The program materials emphasized

the use of plastic bags for containing garbage to reduce dust and litter during collection and the potential for flies in materials that had been contained for up to two weeks. However, the need for plastic bags is highly subjective – some types of household waste don't require bagging. The pilot team did not want to overemphasize the use of plastic bags to the point where residents were compelled to buy bags to contain all waste, as this conflicted with waste reduction/sustainability objectives. On the other hand, route observations indicated that many residents just dump their household garbage container contents directly into the cart with no containment – which can cause odor, litter and vector problems. This problem was consistent in both the pilot routes and the control routes.

The pilot team discussed how to fine-tune the message to encourage people to bag their appropriate wastes in reused shopping bags to avoid the purchase of new bags. This message needs further refinement, since many used shopping bags do not properly fit kitchen waste container. This is not an irresolvable problem, but the pilot team wished to avoid overcomplicating the message, while still determining how to make people aware that they should bag problem wastes.

No easy resolution was developed to this issue and, in any event, the results of the container monitoring were favorable. However, this issue should be addressed further for both weekly and EoW garbage collection.

- ***Cart distribution and performance*** – A very high percentage of properly sized carts were delivered on time by WM's cart subcontractor. However, two minor problems arose: many of the 20-gallon carts (actually a 32-gallon cart with a capacity-reduction insert) did not have the inserts properly secured so they fell out during the initial collections. This problem was resolved quickly during the initial weeks of the pilot.

The other problem was determining the proper container size for all one, two and three can customers. A number of discrepancies were found between WM's customer list and the City's customer list. In some cases, two-can customers were delivered carts sized for one-can customers and vice versa. The City manually reviewed the status of all 1,500 pilot customers and was able to resolve the discrepancies by the third month of the pilot.

Monitoring

The pilot monitoring program includes intensive monitoring of container setout condition, customer surveys, route weight logging and a composition analysis of the collected organics stream. Each monitoring component is addressed in the following sections.

Container Set-out/Condition

Two types of container monitoring were performed during the pilots: on-route monitoring conducted from inside the route truck and in-depth container monitoring conducted on foot.

On-route Monitoring

The on-route monitoring consisted of a route ride-along three times on each of the three pilot and control garbage routes (nine days total). A consultant or City pilot observer rode along for the entire route to log the condition of container setouts. These included parameters such as whether containers were overfilled, set out without lids (in the case of the control route) or lids were open (in the case of carts), as well as the general condition around carts, presence of vectors, litter or extras materials that did not fit in the carts. The overall objective was to compare and evaluate how general set-out conditions varied between customer-supplied garbage cans and contractor- or city-provided carts, particular with respect to missing or unused garbage can lids and open cart lids.

The observer did not leave the truck, but was able to observe container contents as the materials were dumped. WM used front-load trucks equipped with Curotto can

On-Route Container Monitoring

Parameter	Tiffany Park			Glencoe			Control		
<i>Date:</i>	<i>9/10</i>	<i>11/5</i>	<i>12/17</i>	<i>9/24</i>	<i>11/19</i>	<i>12/31</i>	<i>9/17</i>	<i>11/26</i>	<i>12/24</i>
Materials Collected ¹	G/R/O	G	G	G/R	G/R	G	G/R/O	G/O	G
Garbage Route Size	702	702	None ²	786	787	788	710	711	710
Lids Open	31	27	26	37	30	74	41	38	30
Uncontained extras	4	2	1	3	1	³	5	7	6
Debris around carts	1	1	0	2	0	0	3	0	0
Evidence of Vectors	2	0	0	4	0	0	3	0	0

attachments. Garbage carts were tipped into the open container on the front of the truck (in front of the ride-along observer) and once the Curotto attachment was filled, it was dumped into the packer truck.

¹ Due to the EoW schedule, not all materials were collected on each observation day. G=garbage, R=recycling, O=organics.

² When the monitoring crew arrived on the 12/24 Tiffany Park Route almost no containers were setout due to the fact that it was Christmas Eve. The extremely low setout rate (perhaps 1-2 containers per block) made observations on foot impractical. Additionally, it would have been a poor and unrepresentative sample. Since Tiffany Park had weekly organics collection, it is likely that residents simply set out their container the following week.

The number of container observations varied by day, according to which streams were being collected that day in the particular neighborhood. For example, some observations in the pilot areas were conducted on days when only one stream was set out (either Garbage or Organics).

The on-route monitoring revealed that there were surprisingly few inappropriate setouts. A large majority of residents use their garbage and yard debris can/cart lids and take steps to ensure limited exposure of their materials to vectors. Most of the “lids open” observations were due to extra material piled in garbage carts which left the lid ajar, not completely open. The actual count of completely open or missing lids was very low. Most of the observed vectors were incidents of birds, dogs or urban wildlife accessing unprotected garbage, although a few observations were of fly maggots in poorly managed containers.

Walk-around Monitoring

Although the on-route monitoring allowed the rapid observation of a large number of setouts, the observer was required to stay in the truck cab for safety reasons. In depth observation of container residue levels, odors and container damage (holes, cracks) required a separate monitoring cycle. These walk-around monitoring sessions were conducted on three separate occasions during the pilot. Consultant and Health staff randomly chose a 25 consecutive setout area and then walked the area closely observing each container setout in that area. Observations were made to determine residue levels, container damage, conditions of area, odor, vector presence or other public health concerns. On each monitoring day, 25 setout locations were observed in each of the two pilot areas and one control area (75 potential total, if all customers set out all containers in the control area).

Very few problems were observed during the walk-around monitoring. The pilot areas had the advantage of having new garbage and recycling carts, so very few problems were expected and experienced. There was not a visible difference between the organics carts used in the two pilot areas. EoW organics collection did not appear to affect either residue or odor levels. Essentially no vector problems were observed in this limited sample and, in fact, were rare based on the large sample size observed during the on-route monitoring discussed in the previous section.



Walk-Around Container Monitoring (25 set-outs per route per day)

Parameter	Tiffany Park			Glencoe			Control		
<i>Date:</i>	<i>10/22</i>	<i>11/26</i>	<i>12/24</i>	<i>10/22</i>	<i>11/26</i>	<i>12/24</i>	<i>10/22</i>	<i>11/26</i>	<i>12/24</i>
Materials Collected ³	G/R/O	O	O	G	G	O	G/R/O	G/R/O	G/R/O
# of Container Observations	69	25	None ⁴	25	25	25	56	54	50
Can/Cart Damage	none	none		none	none	none	none	none	1
Lids Open	none	none		none	2	none	2	1	3
Container Holes	none	none		none	none	2	2	2	0
Container Cracks	none	none		none	none	1	none	1	1
Residue	3	1		none	4	4	none	none	3
Odor	none	6		none	none	none	none	none	none
Vectors	none	none		none	none	none	none	Rat chew	none

Customer Surveys

Two surveys were conducted to gauge customer satisfaction. A mailed survey was sent to all pilot customers in November 2007 and a phone survey followed in early December 2007. Carolyn Browne Associates (CBA) conducted the surveys.

Mail Survey

The mailed survey was intended to allow all pilot customers the opportunity to comment on the program, even if they were not later selected for the statistical phone survey sample. This was important as it allowed all customers to directly comment. However, the mailed survey is not necessarily a representative sample of customer opinion, since respondents are self-selected and may be likely to hold stronger views, more ambivalent customers not bothering to respond. This is a particular weakness with this type of survey, since one of the objectives was to determine the overall acceptability of EoW collection, including determining how many residents were relatively neutral about the program. Nevertheless, the mail in survey provided an initial opportunity to test survey questions and see how people responded prior to conducting the phone survey.

³ Due to the EoW schedule, not all materials were collected on each observation day. G=garbage, R=recycling, O=organics.

⁴ When the monitoring crew arrived on the 12/24 Tiffany Park Route almost no containers were set out. The extremely low setout rate (perhaps 1-2 containers per block) made observations on foot impractical. Additionally, it would have been a poor and unrepresentative sample. Since Tiffany Park had weekly organics collection, it is likely that residents simply set out their container the following week.

A total of 1,524 surveys were mailed, with 645 surveys returned by the cut-off date for the tabulation. Additional surveys were returned after that period, but were not counted. The 42% return rate is extremely good for a mail survey.

The mailed surveys indicated a high level of acceptability for the EoW program. The following table groups the survey results into two groups: “Program is acceptable” (those very satisfied, somewhat satisfied or neutral); and “Dissatisfied.” Note that percentages do not always add to 100% since not everyone responded to all questions.

Service	Tiffany Park	Glencoe
EoW Garbage Collection	Program is Acceptable: 75% Dissatisfied: 25%	Program is Acceptable: 69% Dissatisfied: 31%
EoW Recycling Collection	Program is Acceptable: 89% Dissatisfied: 11%	Program is Acceptable: 84% Dissatisfied: 16%
Yard Debris + Food Scraps Collection	<i>Note: Weekly</i> Program is Acceptable: 83% Dissatisfied: 14%	<i>Note: EoW</i> Program is Acceptable: 66% Dissatisfied: 34%

The full tabulation of the mailed survey by CBA, along with the survey questions is provided in Appendix C.

Phone Survey

A phone survey was conducted during the first two weeks of December 2007. A total of 300 interviews (150 in each pilot area) were held with the head of each household.

The overall attitudes were generally positive with 73% satisfied or neutral about EoW garbage collection; 82% satisfied or neutral about cart-based EoW recycling collection; and 79% satisfied or neutral about their yard debris+food scraps collection (EoW or weekly, in Glencoe and Tiffany Park respectively).

Major Themes included:

- Nearly half (45%) of the participants in the pilot program say that their curbside services are better under the pilot programs than they were a year ago (about the same in each community).
- Nearly two-thirds (63%) say that the new collection program has helped them reduce the overall amount of garbage being placed out for collection.
- Nearly everyone (98%) is placing some recyclables out for pickup.

- Nearly everyone (93 to 98%) is recycling a range of paper products, glass bottles, plastic bottles, jugs and dairy tubs, and aluminum or tin cans. A somewhat smaller, but still large percentage is recycling milk cartons and juice boxes (79%) and frozen food boxes (59%); 18% also recycle scrap metal.
- Those in the pilot program list “good for the environment” as the major reason they recycle, however the Glencoe residents are far more likely than those in Tiffany Park to say this (60% for Glencoe vs. 39% for Tiffany Park). Many also say it is the right thing to do (27%), they have less garbage to throw out (21%), there is less garbage going to the landfill (21%), it’s easy and convenient to do (14%), and because they are required to do so (11%).
- Tiffany Park residents in the pilot program, who receive weekly, as opposed to every-other-week yard waste and kitchen scrap pickup, are not only considerably more satisfied with that curbside service, but with the other curbside services as well.
- Nearly all (96%) recall receiving the small plastic kitchen scrap box with education materials from the City of Renton.
- Overall, residents in the two communities are much more likely to place only yard waste in their gray carts. There are many residents in both communities who appear to not feel comfortable about using the cart for kitchen waste.
- A large majority of residents of both communities (69%) say they are using the biodegradable bags for food scraps.
- Those in Tiffany Park were far more likely to have placed the kitchen container in or near their kitchen (56% compared with 39% of those in Glencoe).
- Those in Glencoe were far more likely to not want to keep the container because they didn’t want potentially odorous materials in their kitchen and they felt it was difficult to do (39% vs. 22% of those in Tiffany Park).
- Those in Glencoe, compared with Tiffany Park, are more likely to use their gray carts for yard waste (87% vs. 75% use it for yard trimmings and 68% vs. 53% place grass clippings in the cart). Tiffany Park residents are somewhat more likely to place vegetable kitchen waste in the cart (38% vs. 33% of those in Glencoe), and considerably more likely to use the cart for meat, chicken and fish scraps (37% vs. 15% of the Glencoe residents).

- Tiffany Park residents in the pilot program, who receive weekly, as opposed to every-other-week yard waste and kitchen scrap pickup, are not only considerably more likely to say they are “Very satisfied” with that curbside service, but with the other curbside services, as well.

The full survey report is provided in Appendix D.

Weights

Route drivers for both the pilot and control routes recorded daily route weights based on scale tickets for all collection streams. Weights were recorded in a monitoring spreadsheet and a monthly average weight per household (in pounds) was calculated. The original monitoring spreadsheets for the Tiffany Park pilot, Glencoe pilot and the control route are provided in Appendix E.

The monthly averages were in turn averaged across the five-month pilot period to provide overall averages to dilute variations due to the number of weeks in a particular month (i.e., some months have 4 Mondays and some have 5 Mondays).

The following table contains the results of this averaging. The term “Organics” is used to describe the food scrap and/or yard debris stream.

Pilot Results Based on August-December 2007 Averages (pounds/household/month)				
<i>Service Area</i>	<i>Garbage</i>	<i>Organics</i>	<i>Recycling</i>	<i>Total Generation</i>
Tiffany Park 2006 Prior Year	123	88	58	269
Tiffany Park 2007 Pilot	99	80	66	245
Percentage Change	-19.8%	-9.1%	14.9%	-8.8%
Glencoe 2006 Prior Year	116	99	60	275
Glencoe 2007 Pilot	93	90	62	245
Percentage Change	-19.5%	-9.4%	3.7%	-10.8%
Control Route 2006 Prior Year	108	66	76	250
Control Route 2007	111	81	61	252
Percentage Change	-2.4%	22.9%	-20.0%	1.0%

These results were surprising, including:

- Total generation (garbage, organics and recycling) for both pilot areas went down, and the control route remained roughly the same.
- Total organics went up in the control area by 22.9%, but down in both pilot areas. Annual variation in organics generation is expected, since annual yard debris

generation is specifically tied to weather patterns - particularly the interaction of rain and sun during the growing season. In this respect, the variation between 2006 and 2007 in the control area should have indicated the underlying variation between 2006 and 2007 in all service areas. This makes the reduction in pilot area organics quantities particularly perplexing and suspect. The pilots should have experienced the same increase, plus an increase in tonnage due to adding food scraps and driving participation through EoW garbage collection. This did not appear to be reflected in the route data, even though visual surveys and the composition samples indicated successful food scrap diversion.

- Garbage quantities in both pilot areas reduced significantly, by more than could be explained by increases in recycling. This diverted material is surmised to be additionally diverted food scraps, but it did not end up in the recorded organics quantities as discussed in the preceding bullet.
- The 20% decrease in recycling quantities in the control area is unexplained.

WM rechecked their route tonnages and confirmed that their weights were accurate.

Composition

One organics load from each of the two pilot areas was sampled and sorted at Cedar Grove Composting during the second week of December 2007. The sorting and analysis was conducted by Green Solutions. The full composition report is provided as Appendix F.

The composition analysis was conducted to determine the amount of food scraps collected in each of the pilot areas and to determine whether there was a difference in quantity or composition due to weekly versus EoW organics collection.

The composition did not vary and was remarkably close, with food scraps representing 5.3% of the collected organics in Tiffany Park and 5.5% of the collected organics in Glencoe.

Based on that one-time limited sample, there does not appear to be any direct difference in food scraps diversion between the two collection frequencies. Interestingly, EoW organics collection did not appear to depress inferred participation (diversion) rates.

Conclusions

Both pilots were a clear success, with high levels of customer acceptability/satisfaction, negligible or positive public health impacts, and increased recycling and organics diversion. The following conclusions are drawn from the pilots:

- Cart-based EoW garbage, organics and recycling collection are acceptable to a large majority of customers.
- No problems were noted with accepting the full range of food scraps (including meats and dairy) in either the weekly or every-other-week programs. No discernable difference was noted in cart residue levels or vectors between weekly and EoW organics collection.
- Wheeled carts offer better containment of materials than either customer-provided cans or open recycling bins. No rodent infiltration of bins was noted in the pilots, while obvious signs of rodent infiltration as well as ill-fitting or no lids, cracked plastic garbage cans are other problems were noted on the control route.
- Commingled recycling is popular with customers and recycling rates went up. Comparative contamination levels between the pilot and control routes were not monitored, but no contamination problems were reported by WM related to the commingled collection program.
- The results of providing kitchen containers and bags for food scrap recycling are inconclusive. Based on a visual comparison by consultant staff, food scrap recycling participation is higher in the Renton pilots than other cities with food scrap recycling. However, this observation is not supported by the route data, as discussed previously; and
- Additional education should be focused on encouraging customers to reuse shopping bags to contain loose and/or putrescible garbage. This single step will likely reduce some vectors, odors and litter at no cost to the City or customers, regardless of collection frequency.

Appendices

A. Promotional Materials

Introductory letter from the mayor.



Kathy Keolker, Mayor

CITY OF RENTON

Planning/Building/Public Works Department
Gregg Zimmerman P.E., Administrator

July 19, 2007

SUBJECT: Garbage and Food Waste Collection Pilot Project- A New Approach To Garbage And Food Waste Collection in Renton

Dear Renton Resident:

The City of Renton is known for its commitment to protecting the environment. We were one of the first cities in King County to launch an aggressive curbside recycling and waste reduction campaign in 1989. From **CLEAN SWEEP RENTON!** to **Earth Day** programs, we encourage our citizens to build community, create a more sustainable environment, and leave a lasting legacy for our children.

I am pleased to let you know that your household has been selected to participate in an exciting new environmentally friendly pilot collection program—the Garbage and Food Waste Collection pilot. You will receive new carts for garbage and recycling and will also have the opportunity to increase the amount you recycle while reducing litter.

The Garbage and Food Waste Collection pilot will be offered in your neighborhood from August 13 to December 31, 2007. This pilot will help us test the feasibility of providing all-in-one recycling that allows residents to combine several recyclables in one container, add food-waste to your yard waste cart, and receive every-other-week garbage and recycling collection using wheeled and lidded carts.

This pilot project is funded and coordinated by the City of Renton, King County Solid Waste Division, Public Health-Seattle & King County, and Waste Management. Your feedback will form an important part of our evaluation. City staff will seek your input through surveys, conducting on-site surveys of container conditions and contents, and analyzing the effectiveness of the program with a study at its conclusion. The information we obtain from this pilot will help shape the future of waste management programs in our city and in the county.

You will receive the new collection containers as well as more information about the pilot program the week of August 6 – 10, 2007. Please fully review the instructions included with your new collection containers. Staff is committed to making this collection pilot work for customers. Throughout the duration of the pilot, staff will be available to resolve issues, answer questions, and accept comments. You may also contact the City's Solid Waste Coordinator, Linda Knight at lknight@ci.renton.wa.us or 425-430-7397.

Thank you in advance for participating in this program. I look forward to the results of the Garbage and Food Waste Collection pilot and thank you for making Renton a place where citizens choose to live, raise families, and take pride in their community.

Sincerely,

Kathy Keolker
Mayor

cc: Renton City Councilmembers
Jay Covington, Chief Administrative Officer
Gregg Zimmerman, PBPW Administrator

Lys Hornsby, Utility Systems Director
Linda Knight, Solid Waste Coordinator

07-091/KK:aa

1055 South Grady Way - Renton, Washington 98057



This paper contains 50% recycled material, 30% post consumer

RENTON
AHEAD OF THE CURVE

Postcard mailer sent to Tiffany Park Residents before pilot start. Mailer to Glencoe was similar, but without the reference to weekly yard waste collection.

Renton Raises the Recycling Roof!

Good News! Starting August 13, 2007, specific Renton neighborhoods will be part of a five-month pilot to evaluate exciting new environmentally-friendly garbage and recycling services for the City of Renton, including:

- **All-In-One Recycling in a new blue cart**
 - ◆ No more sorting: All recyclables go in your **new blue recycling cart**.
 - ◆ More recyclables: Milk cartons, all plastic bottles, jugs, and dairy tubs, and scrap metal.
- **Food Scraps Accepted in Yard Carts**
 - ◆ Food scraps and food-soiled paper (*like pizza boxes*) accepted with yard trimmings.
 - ◆ A free kitchen food scraps container and a supply of biodegradable bags will be delivered with your recycling cart.
- **Sturdy wheeled carts for garbage and recycling**
 - ◆ Large wheels make these carts easy to use.
 - ◆ Attached lids reduce neighborhood litter.
- **Every Other Week Garbage and Recycling**
 - ◆ Garbage and recycling will be collected every other week, reducing traffic and air pollution.
 - ◆ Your food & yard waste cart will continue to be emptied weekly
 - ◆ Look for your **collection calendar** inside your food scraps container.

* If you haven't received your new carts by August 13, 2007 contact the City of Renton at (425) 430-7397

A107TiffPkwkly

 100% post consumer recycled paper



Watch for your new carts !

New garbage and recycling carts and a kitchen food scraps container will be delivered the week of August 6-10, 2007. Detailed guidelines and a collection calendar will be inside the food scraps container. Please review the guidelines carefully and keep them for future reference.



Blue Recycling Cart

No More Sorting! You can combine paper, cardboard, cans, glass and plastic bottles, plastic dairy tubs, milk cartons, juice boxes and scrap metal in your new blue recycling cart and easily roll it to the street every other Monday. (You may keep your old recycling containers for uses such as storage, packing, etc.)



Green Garbage Cart

Your new green garbage cart will be emptied every other Monday, reducing neighborhood truck traffic by 50%!



Thank you for your cooperation as we evaluate this new service in your neighborhood!

More information: Rentonrecycles.org - (425) 430-7397

Pilot summary included
with cart distribution.

RECYCLING REDUCES GARBAGE!

RECYCLING CART

- Recycling is collected **every other week** (See calendar.)
- All clean recyclables go together in **blue cart**.
- Empty bags and boxes into cart for sorting.
- (No plastic bags in recycling)

YES	NO
<p>These go in your blue recycling cart:</p>  <ul style="list-style-type: none"> Clean paper Flattened cardboard Newspaper Magazines & catalogs Phone books, paperback books Mail (including window envelopes) Paper food boxes Milk cartons, juice boxes - NEW! Frozen food boxes - NEW! Plastic bottles & jugs - NEW! No caps or lids Plastic dairy tubs - NEW! (yogurt, etc.) No lids Glass bottles & jugs - No caps or lids Aluminum cans Steel or tin cans Scrap metal - NEW (limit 2x2', 35 pounds)! 	 <ul style="list-style-type: none"> ⊗ Plastic bags ⊗ Paper towels, napkins (OK in food & yard waste cart.) ⊗ Bathroom waste (tissues, diapers) ⊗ Styrofoam containers, peanuts ⊗ Plastic trays (microwave, bakery) ⊗ Plastic cups, plates or utensils ⊗ Caps or lids ⊗ Ceramics or dishes ⊗ Windows, or mirrors ⊗ Light bulbs or fluorescent tubes ⊗ Aluminum foil or foil trays ⊗ Aerosol cans ⊗ Needles or syringes ⊗ Toxics containers (antifreeze, oil) ⊗ Household hazardous waste (paint, pesticides, etc.) ⊗ Shredded paper

FOOD SCRAPS & YARD WASTE CART

YES	NO
<p>These go in your gray cart:</p> <p>Food Scraps - NEW!</p>  <ul style="list-style-type: none"> Fruit & vegetables Bread, pasta & grains Meat, fish & chicken Dairy products Eggshells, nutshells Coffee grounds & filters Tea bags <p>Food-soiled Paper - NEW!</p>  <ul style="list-style-type: none"> Paper towels & napkins Food-soiled paper bags Greasy pizza boxes Shredded paper layered with food scraps Paper bags containing food scraps <p>Yard & Plant Waste:</p>  <ul style="list-style-type: none"> Garden vegetation Grass & leaves Weeds & prunings Branches under 4' long, 4" diam. Houseplants Undecorated holiday trees (Limit 6' long, 4" diam.) 	<p>do not put these in your food & yard waste cart:</p> <ul style="list-style-type: none"> ⊗ Plastic ⊗ Coated paper plates or cups ⊗ Milk or juice cartons ⊗ Styrofoam ⊗ Diapers ⊗ Pet waste/litter ⊗ Foil ⊗ Liquids

Increased recycling means that Renton residents could divert 4,800 tons of recyclables from our landfill.

Informational Brochure distributed with Carts

FOOD SCRAPS and YARD WASTE

Yard waste is not allowed in your garbage. Yard waste & food scraps go in your gray food and yard waste cart. (See calendar for collection schedule.)

YES

Empty these into your gray food & yard waste cart:

Food Scraps - NEW!
 Fruit & vegetables
 Bread, pasta & grains
 Meat, fish & chicken
 Dairy products
 Eggshells, nutshells
 Coffee grounds & filters
 Tea bags

Food-soiled Paper - NEW!
 Paper towels & napkins
 Food-soiled paper bags
 Greasy pizza boxes
 Shredded paper layered with food scraps
 Paper bags containing food scraps

Yard & Plant Waste:
 Garden vegetation
 Grass & leaves
 Weeds & prunings
 Branches under 4" long, 4" diam.
 Houseplants
 Undecorated holiday trees (Limit 6' long, 4" diam.)

NO

Do not put these in your food & yard waste cart:

- Plastic
- Coated paper plates or cups
- Milk or juice cartons
- Styrofoam
- Diapers
- Pet waste/litter
- Foil
- Liquids

Tips for Collecting Kitchen Scraps

Collect food scraps and food-soiled paper in the kitchen container delivered with your food & yard waste cart. You can line the kitchen container with:

- Approved biodegradable liner bags (samples in kitchen container)

Where to get approved biodegradable bags:
www.rentonrecycles.org or (425) 430-7397.

Do not put plastic in the food & yard waste cart. If you don't want your kitchen container or sample bags, please call (425) 430-7397 to have them picked up.

To avoid odor & fruit flies, you can:

- Use approved biodegradable liner bags in your kitchen container.
- Empty food scraps into the food & yard waste cart every 3-4 days.
- Rinse kitchen container & food/yard waste cart frequently.

Please do not pour rinse water into storm drains.

- Layer food scraps, food-soiled paper or shredded paper & yard waste in your cart.

Extra Yard Waste
 Put extra yard waste that doesn't fit in your cart (food waste must be placed in cart) in any of these:

- 32-gallon cans with handles & lids.
- Weight limit 60 lbs.
- Label cans "yard waste"
- Put yard waste in loosely, so that cans empty easily.
- Bundles. Bundle yard waste with fiber twine. No wire, nylon or plastic cord. (Limit 4' long by 2' diam.)
- Kraft paper yard waste bags.

Do not use plastic bags for yard waste or your cart may be refused for collection.

Where Does Your Food & Yard Waste Go?
 Collected yard waste is processed into compost and sold at home and garden stores.
 More information: www.cedar-grove.com
 Composting and grasscycling information:
www.kingcounty.gov/soils; 206 296-4466

1

2

3

4

RECYCLING

All clean recyclables go in the blue wheeled cart. Empty recyclables out of bags and boxes into the cart so that they can be easily sorted. Recycling carts will be emptied every other week. (See calendar.)

YES

These go in your blue cart:

- Clean paper
- Flattened cardboard
- Newspaper
- Magazines & catalogs
- Phone books, paperback books
- Mail (including window envelopes)
- Paper food boxes
- Milk cartons, juice boxes - NEW!
- Frozen food boxes - NEW!
- All plastic bottles & jugs - No caps or lids - NEW!
- Plastic dairy tubs (yogurt, etc.) - No lids - NEW!
- Glass bottles & jugs - No caps or lids
- Aluminum cans
- Steel or tin cans
- Scrap metal (limit 2x2', 35 pounds) - NEW!

NO

- Plastic bags
- Paper towels, napkins (OK in food & yard waste cart.)
- Bathroom waste (tissues, diapers)
- Styrofoam containers, peanuts
- Plastic trays (microwave, bakery)
- Plastic cups, plates or utensils
- Caps or lids
- Ceramics or dishes
- Windows, or mirrors
- Light bulbs or fluorescent tubes
- Aluminum foil or foil trays
- Aerosol cans
- Needles or syringes
- Toxic containers (antifreeze, oil)
- Household hazardous waste (paint, pesticides, etc.)

Collection Calendar

Please place containers with lids closed at curb by 7:00 AM.

- Two (2) feet apart with lids opening toward street
- At least three (3) feet from cars, buses, mailboxes
- Wheels as close to the curb as possible

Please take containers in as soon as possible after collection.

Recycling & garbage collected on blue shaded Mondays

Food & yard waste collected from subscribers weekly

PLEASE POST

	S	M	T	W	T	F	S	S
2007	30	31	1	2	3	4		
Aug	6	7	8	9	10	11		
	13	14	15	16	17	18		
	20	21	22	23	24	25		
	27	28	29	30	31	1		
Sep	3	4	5	6	7	8		
	10	11	12	13	14	15		
	17	18	19	20	21	22		
	24	25	26	27	28	29		
	1	2	3	4	5	6		
Oct	8	9	10	11	12	13		
	15	16	17	18	19	20		
	22	23	24	25	26	27		
	29	30	31	1	2	3		
Nov	5	6	7	8	9	10		
	12	13	14	15	16	17		
	19	20	21	22	23	24		
	26	27	28	29	30	1		
Dec	3	4	5	6	7	8		
	10	11	12	13	14	15		
	17	18	19	20	21	22		
	24	25	26	27	28	29		
	31	1	2	3	4	5		

Missed Collection -
 Report a missed collection at:
www.rentonrecycles.org or
 (425) 430-7397

Weather Delays:
 If weather conditions prevent safe collection, a double load will be collected at no extra charge the next Monday. Your collection schedule will then resume per your calendar. Updates: wmnorthwest.com/weatherboard.

Renton Recycles
www.rentonrecycles.org - (425) 430-7397
 Información en español

Benton C1070001 100% postconsumer recycled paper

1

6

Part of brochure.



Please read carefully and keep for future reference.

Renton Raises the Recycling Roof!

Starting August 13, 2007 your household will be part of a special pilot to evaluate new garbage, recycling and yard waste services in the City of Renton. These new services will reduce fuel use and air pollution while increasing the kinds of materials recycled.

Wheeled Garbage and Recycling Carts!

- Wheeled carts are safer – no more lifting and carrying!
- Attached lids prevent litter!

All-in-one Recycling!

- No more sorting! Combine all clean recyclables in one wheeled cart emptied every other week.
- More Recyclables and more room! Now you can recycle plastic bottles, jugs, dairy tubs and scrap metal with your paper, glass and cans!
- Reuse your bins! Keep your old bins for extra recycling or use them for storage around the house. If you don't want the bins, mark them "Take Away" and put them at your curb on a recycling collection day in August.



Food Scraps Now Accepted with Yard Waste!

- Attach the orange decal in your kitchen container to your food & yard waste cart.
- Put food scraps and food soiled paper (*like pizza boxes*) in the kitchen container provided. Line your kitchen container with approved biodegradable bags. (*Samples provided*)
- Empty food scraps from your kitchen container into the food & yard waste cart for collection.

Every Other Week Garbage, Food & Yard Waste and Recycling.

Garbage, food and yard waste and recycling carts will be emptied every other week. (*See calendar.*) Less frequent collection reduces truck traffic and air pollution, improving Renton's quality of life.

Your new garbage cart is larger than your current weekly garbage volume to allow for every other week service. Increased recycling and waste prevention may allow you to order a smaller garbage container and lower your garbage bill.

rentonrecycles.org ~ 425-430-7397



B. Mail-in Survey and Results (Carolyn Browne Associates)



Carolyn Browne Associates

3420 Camano Vista St. • Greenbank, WA 98253 • 360-222-6820

City of Renton Survey of Glencoe and Tiffany Park Residents Concerning Garbage, Recycling and Yard Waste Pickup Services

Survey Response Rates

A total of 1,524 surveys were mailed to residents of the Glencoe (779) and Tiffany Park (745) areas who are in the pilot programs for garbage, recycling and yard waste pickup services. Of the total mailed, 42% returned completed surveys by December ____, 2007 and their responses are reported below. The response rate was slightly higher for Glencoe (45%) than Tiffany Park residents (39%).

Total Surveys	
Mailed	1,524
Total Surveys Returned	645
Total Response Rate	42%
Glencoe Surveys Mailed	779
Glencoe Surveys Returned	352
Glencoe Response Rate	45%
Tiffany Park Surveys Mailed	745
Tiffany Park Surveys Returned	293
Tiffany Park Response Rate	39%

Attitudes toward weekly and every other week services

(Charts 1, 2 and 3)

The residents of Tiffany Park were considerably more pleased with the weekly yard waste and food scrap collection service than are the Glencoe residents who received every-other-week service: 57% of the Tiffany Park residents were “Very satisfied” with

their yard waste and food scrap collection service compared with only 35% of the Glencoe residents; and while only 14% of the Tiffany Park residents say they were

“Very” or “Somewhat dissatisfied” with these services, 34% of the Glencoe residents expressed dissatisfaction with their yard waste and food scrap pickup services.

Both neighborhoods have about the same level of satisfaction with the every-other-week garbage pickup (47% for Tiffany Park and 41% for Glencoe) and for every-other-week recycling pickup (61% for Tiffany Park and 57% for Glencoe).

Chart 1: Satisfaction with Yard Waste & Kitchen Scrap Pickup Service

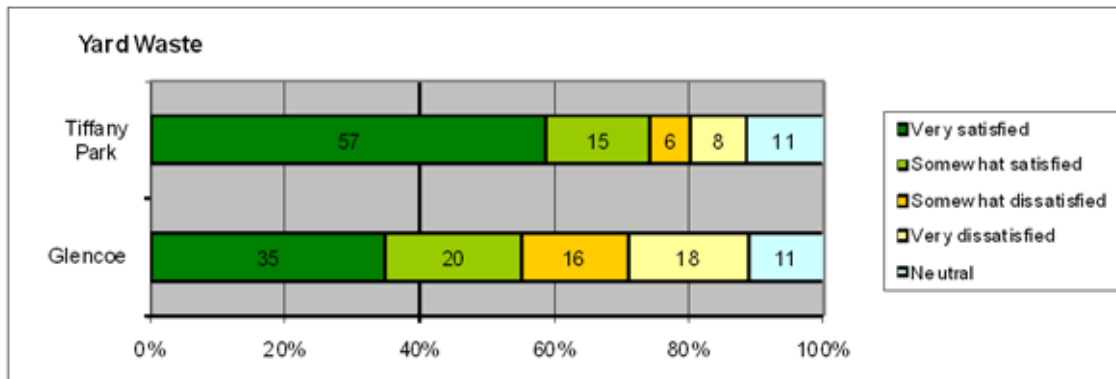


Chart 2: Satisfaction with Garbage Pickup Service

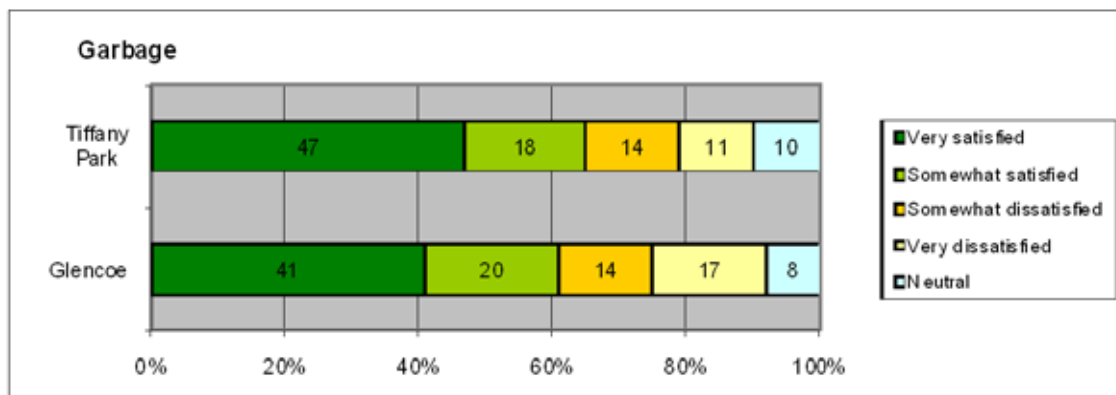
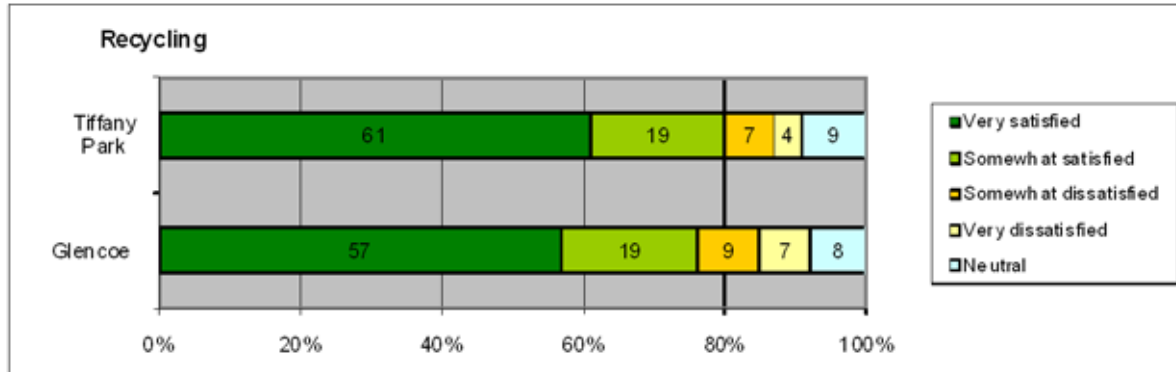


Chart 3: Satisfaction with Recycling Pickup Service



Attitudes toward services

Overall satisfaction with the pickup services

Overall, most people (78%) are “Very” or “Somewhat satisfied” with the current program; about 21% are somewhat or very dissatisfied; and 2% have no opinion. Those in Tiffany Park have a somewhat higher level of satisfaction with their services (50% vs. 43% are “Very satisfied”) and a commensurately lower level of dissatisfaction (17% are “Somewhat” or “Very dissatisfied compared with 23% of the Glencoe households who hold these opinions).

Initial responses to receiving container and materials

Nearly everyone (97%) who responded recalled receiving the materials from the City of Renton. Most did several actions in response to receiving the plastic kitchen container and educational materials: 94% reviewed what NOT to place in recycling; 93% read or looked through the letter from the City; and 81% read through the brochure. In addition, 71% placed the scrap container in or near their kitchens and 65% attached the decal about “Yard & Food Waste” on their container.

Participation in recycling and yard waste and kitchen scrap services

Materials placed in the cart for recycling pickup

Nearly every person who completed a survey places materials out for recycling pickup every other week.

City of Renton

Garbage and Recycling Survey of Glencoe and Tiffany Park – Page 4

There is little difference in the patterns of the two communities relating to what is placed out for recycling pickup, with the exceptions that Glencoe, compared with Tiffany Park, residents are more likely to place glass bottles (95% vs. 81%) and milk cartons and juice boxes (74% vs. 67%) out for pickup.

Both neighborhoods have almost universal commitments to placing clean paper (95%), plastic jugs and dairy tubs (95%), newspapers (94%), and aluminum or tin cans (93%) in their recycling carts. A smaller proportion of residents placed and frozen food boxes (56%) and scrap metal (18%) out for pickup.

Materials placed in the yard waste and food scrap cart for pickup

Most of the respondents (96%) are placing a variety of items in their yard waste and food scrap carts for regular pickup. Residents in both communities are more likely to use the carts for yard waste than for kitchen waste, especially paper products used with food and waste from animal foods.

There are no significant differences in the patterns in the two communities relating to yard waste and food scrap items placed in the cart, with the one exception that Tiffany Park residents may be slightly more likely to place meat, chicken and fish scraps and bones in their cart (63% vs. 57%).

In the two communities, the items placed out for pickup include: Yard trimmings (86%); grass clippings (85%); vegetable kitchen waste (71%); paper napkins, plates or packaging from food (61%) and meat, chicken and fish scraps and bones (60%).

About two-thirds (66%) of the total respondents say they are using the green biodegradable bags they were given for food waste. A higher proportion of Tiffany Park residents are doing this (71% compared with 62% of the Glencoe residents).

Additional responses from residents in the pilot program

A little over two-thirds (69%) of the total respondents – about the same in each community - say they were given adequate information about how to bag their garbage to prevent odors and keep away pests.

A majority of those who responded (63%), but a slightly higher proportion of Tiffany Park residents (67% vs. 60% of the Glencoe residents) say they are placing more recycling, yard waste and kitchen waste out for collection now than they were a year ago.

A little over half (53%, and the same proportion for both communities) say they have noticed a reduction in the overall amount of garbage placed out for collection.

City of Renton

Garbage and Recycling Survey of Glencoe and Tiffany Park – Page 5

Responses to the Questions			
Question	Total (Base = 645)	Glencoe (Base = 352)	Tiffany Park (Base = 293)
<i>Q1. Do you recall receiving a plastic kitchen waste container and educational materials from the City of Renton this summer?</i>			
Yes	97%	97%	97%
No/can't recall	3	3	3
<i>Q2. Did you do any of the following:</i>			
Reviewed information about what NOT to do	94%	95%	93%
Read or looked through letter from the city	93	93	94
Read through brochure	81	84	78
Placed scrap container in or near kitchen	71	70	71
Attached decal on container	65	68	61
<i>Q3. Overall, how satisfied are you with the program?</i>			
Very satisfied	46%	43%	50%
Somewhat satisfied	32	33	31
Somewhat dissatisfied	11	13	9
Very dissatisfied	9	10	8
Not sure	2	1	2
<i>Q4. Those who are Very Satisfied with specific services:</i>			
EOW Garbage	43%	41%	47%
EOW Recycling	58	57	61
EOW Yard Waste & Food Scraps		35	
Weekly Yard Waste & Food Scraps			57
<i>Q4. Those who are Very or Somewhat Dissatisfied with specific services:</i>			
EOW Garbage	28%	31%	25%
EOW Recycling	13	15	11
EOW Yard Waste & Food Scraps		34	
Weekly Yard Waste & Food Scraps			14
<i>Q5. Materials that were placed in the recycling pickup container in the last three months: (in order of highest response)</i>			
Clean paper (other than newspaper)	95%	96%	94%
Plastic bottles, jugs and dairy tubs	95	97	92
Newspaper	94	96	92
Aluminum or tin cans	93	94	91
Glass bottles	89	95	81
Milk cartons, juice boxes	71	74	67
Frozen food boxes	56	58	54
Scrap metal	18	18	19
Don't put out any recycling for pickup	<1	0	1

Responses to the Questions - continued			
Question	Total (Base = 645)	Glencoe (Base = 352)	Tiffany Park (Base = 293)
Q6. Materials placed in the yard and food scrap cart in the last three months: (in order of highest response)			
Other yard trimmings	86%	86%	85%
Grass clippings	85	86	83
Vegetable kitchen waste	71	70	71
Paper napkins, plates or packaging from food	61	61	61
Meat/chicken/fish scraps and/or bones	60	57	63
Don't put any yard or kitchen waste out	4	5	2
Q7. Do you use any of the green biodegradable bags for food waste?			
Yes	66%	62%	71%
No	28	35	22
Don't recall receiving any	6	3	7
Q8. Did you feel you were given adequate information how to bag your garbage?			
Yes	69%	67%	70%
No	14	14	13
Not sure	11	11	12
Don't recall receiving any information	6	8	5
Q9. Are you placing more recycling, yard waste and kitchen waste out for collection now?			
Yes	63%	60%	67%
No	29	33	25
Not sure	8	7	8
Q10. Have you noticed a reduction in the overall amount of garbage you put out for collection?			
Yes	53%	53%	53%
No	34	37	30
Not sure	13	10	17

C. Phone Survey and Results (Carolyn Browne Associates)



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CITY OF RENTON
SURVEY OF RESIDENTS OF GLENCOE AND TIFFANY PARK
ATTITUDES TOWARD CURRENT CURBSIDE COLLECTION SERVICES

Conducted November 2007

Prepared for

**King County Solid Waste Division
City of Renton
1055 S. Grady Way
Renton, WA 98057**

Prepared by

**Carolyn Browne Tamler, Principal
Carolyn Browne Associates**

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CITY OF RENTON
SURVEY OF RESIDENTS OF GLENCOE AND TIFFANY PARK
ATTITUDES TOWARD CURRENT CURBSIDE COLLECTION SERVICES

Introduction and Methodology

Purpose of the Study

The City of Renton, the King County Solid Waste Division and Waste Management, Inc. have conducted reduced collection frequency pilot programs in two Renton neighborhoods to test the attitudes and responses toward the various service alternatives. The pilots started in August, 2007 and continued through the end of 2007. Both pilot areas were shifted to every-other-week collection of garbage and recycling. The Tiffany Park pilot area continued with weekly collection of yard waste (with the addition of food scraps), while the Glencoe pilot area was provided every-other-week collection for all streams, including yard debris and food scraps. The remainder of the City continued to receive their existing weekly collection of garbage, recycling and yard debris.

The King County Solid Waste Division contracted with Sound Resource Management Group, Inc. to manage the study, while the City of Renton and Waste Management provided customer service/logistical support and new carts, respectively.

Survey Design & Methodology

Carolyn Browne Associates, a local community involvement and marketing research consulting firm, was contracted to conduct the survey. Addresses for each of the pilot areas were provided, and a service was used to obtain telephone numbers. Of the over 1,500 addresses provided to GMA Research, the Bellevue data collection firm responsible for making the calls, phone numbers were received for about 70% of the addresses.

Telephone interviews with randomly selected residents from the two communities were conducted from December 1 through 11, 2007. A total of 300 interviews, 150 in each pilot area, were conducted with male and female heads of households. Calling was done from 4:00 PM to 8:00 PM, Monday through Friday, and on Saturday from 10:00AM to 6:00 PM. Interviewers were instructed to ask to speak with a head of household and to target about the same proportion of men and women. If the person contacted volunteered that they are not receiving curbside collection services from the City of Renton, the call was politely terminated.

Interviews were conducted from the supervised telephone bank of GMA Research of Bellevue, WA. Calls were monitored and validated throughout the data collection process. GMA Research also was responsible for coding and tabulation. Carolyn Browne Tamler completed the questionnaire design, coordinated the data collection and coding, analyzed the data, and prepared this report.

Some questions were asked in an open-end format with no suggested responses supplied by the interviewers. Thus, the responses for many of the questions accurately reflect what was on peoples' minds at the time they were surveyed. For some of the tables, a statement in parenthesis - "Multiple, open-end responses; do not add to 100%" - indicates that people were allowed to answer the questions without any prompting or suggestions. Responses were coded based upon the patterns in the answers. The responses that did not fit into coding patterns (in other words, where few others had the same response) are listed for each question in the Appendix of this report.

The random sample of 300 provides data that is projectable to the total population from which it is drawn, with an error range of +/- 5% and a 95% confidence level. For sample sizes of 150 the responses will be accurate, at the same confidence level, with an error range of +/- 7.3 percent.

Definitions and Report Organization

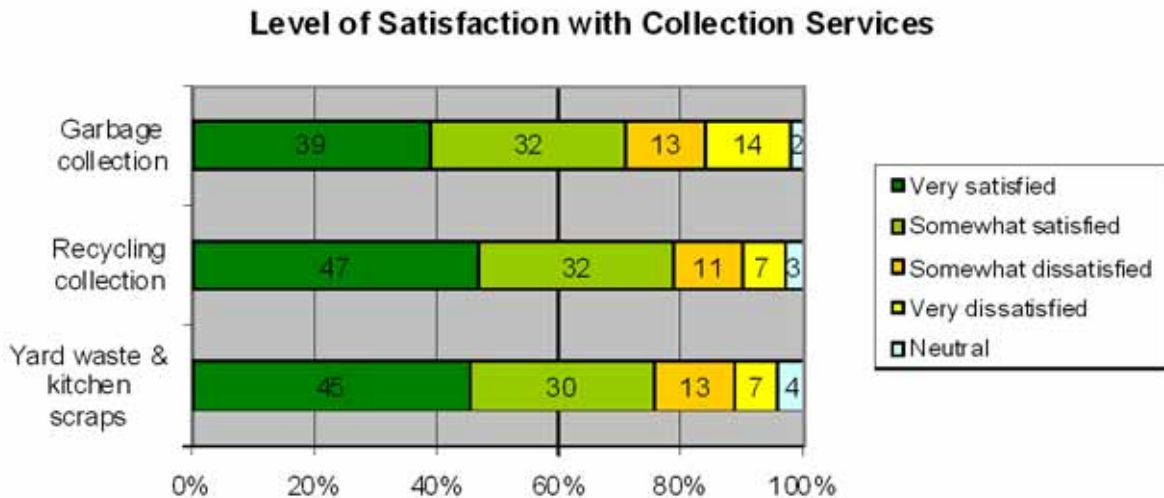
Tables in this report include data for the 300 total residents interviewed. Comparisons are also provided Glencoe and Tiffany Park households.

In many places in the report, "Every-other-week" service is abbreviated as "EOW."

Executive Summary – Major Themes

Overall Attitudes

- Overall, residents of in the Renton pilot program neighborhoods have a high level of satisfaction with all of their pilot collection services:
 - 71% are satisfied with garbage collection;
 - 79% are satisfied with recycling collection;
 - 75% are satisfied with yard waste and kitchen scrap collection.

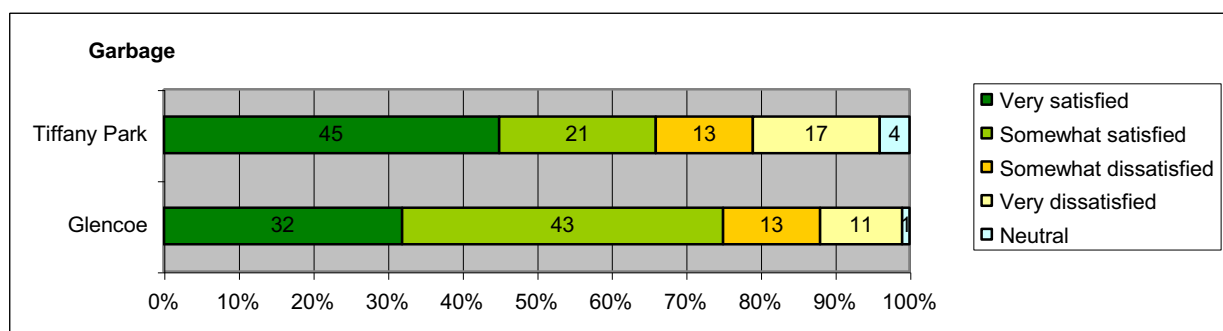
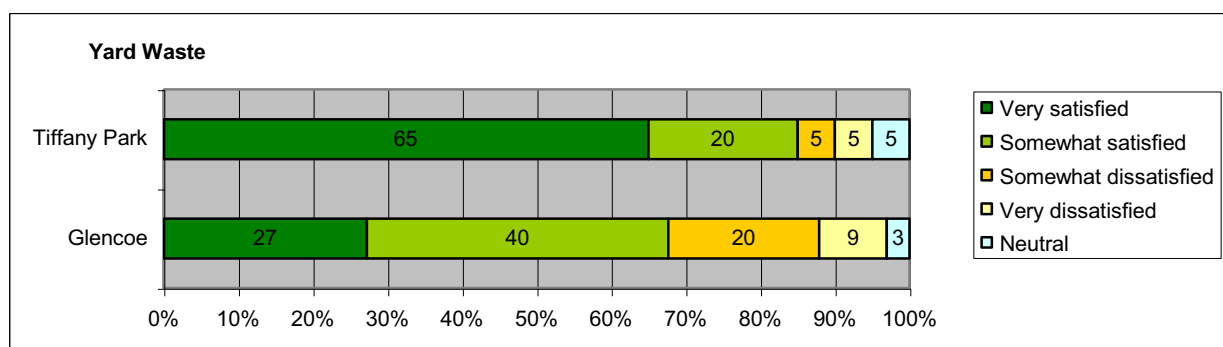


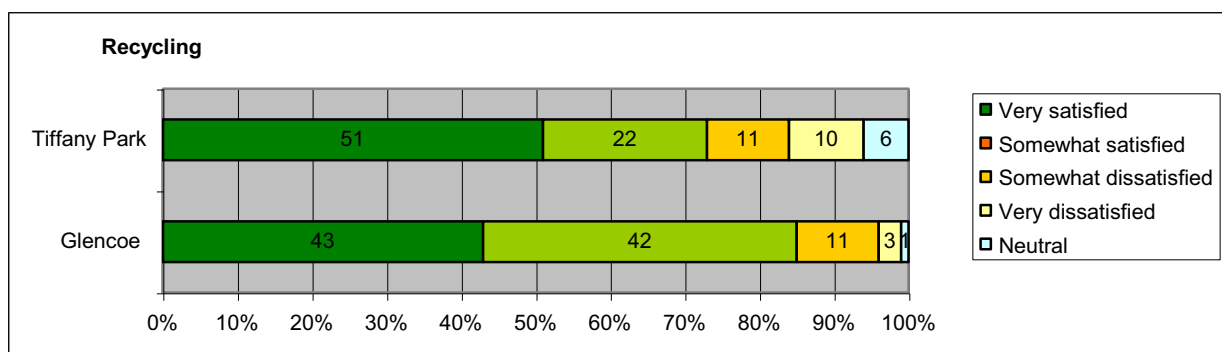
- Nearly half (45%) of the participants in the pilot program say that their curbside services are better under the pilot programs than they were a year ago (about the same in each community).
- Nearly two-thirds (63%) say that the new collection program has helped them reduce the overall amount of garbage being placed out for collection.
- Nearly everyone (98%) is placing some recyclables out for pickup.
- Nearly everyone (93 to 98%) is recycling a range of paper products, glass bottles, plastic bottles, jugs and dairy tubs, and aluminum or tin cans. A somewhat smaller, but still large percentage is recycling milk cartons and juice boxes (79%) and frozen food boxes (59%); 18% also recycle scrap metal.
- Those in the pilot program list “good for the environment” as the major reason they recycle, however the Glencoe residents are far more likely than those in Tiffany Park to say this (60% for Glencoe vs. 39% for Tiffany Park). Many also say it is the right thing to do (27%), they have less garbage to throw out (21%), there is less garbage going to the landfill (21%), it’s easy and convenient to do (14%), and because they are required to do so (11%).

- Tiffany Park residents in the pilot program, who receive weekly, as opposed to every-other-week yard waste and kitchen scrap pickup, are not only considerably more satisfied with that curbside service, but with the other curbside services as well.
- Nearly all (96%) recall receiving the small plastic kitchen scrap box with education materials from the City of Renton.
- Overall, residents in the two communities are much more likely to place only yard waste in their gray carts. There are many residents in both communities who appear to not feel comfortable about using the cart for kitchen waste. (Note: Foodwaste diversion concept is still new; need to educate on avoiding the “ick” factors.)
- A large majority of residents of both communities (69%) say they are using the biodegradable bags for food scraps.

Significant differences between the two communities

- Tiffany Park residents in the pilot program, who receive weekly, as opposed to every-other-week yard waste and kitchen scrap pickup, are not only considerably more likely to say they are “Very satisfied” with that curbside service, but with the other curbside services, as well.





Executive Summary – Major Themes - continued

- Those in Tiffany Park were far more likely to have placed the kitchen container in or near their kitchen (56% compared with 39% of those in Glencoe).
- Those in Glencoe were far more likely to not want to keep the container because they didn't want potentially odorous materials in their kitchen and they felt it was difficult to do (39% vs. 22% of those in Tiffany Park).
- Those in Glencoe, compared with Tiffany Park, are more likely to use their gray carts for yard waste (87% vs. 75% use it for yard trimmings and 68% vs. 53% place grass clippings in the cart). Tiffany Park residents are somewhat more likely to place vegetable kitchen waste in the cart (38% vs. 33% of those in Glencoe), and considerably more likely to use the cart for meat, chicken and fish scraps (37% vs. 15% of the Glencoe residents).

**DETAILED
SURVEY RESULTS
AND
SUPPORTING TABLES**

Satisfaction with Collection Services (*TABLES 1, 2A, 2B AND 2C*)

Completion of mail survey

Nearly two-thirds (63%) of the respondents said they had completed and returned the mail survey they received from the City concerning curbside collection services.

The proportion of those who completed a mail survey is somewhat higher for Glencoe, compared with Tiffany Park, residents (66% vs. 60%).

Satisfaction with collection services

Overall, residents in both of the communities are satisfied with all of the collection services they are receiving in the pilot program. Nearly three quarters (71%) are very or somewhat satisfied with every-other-week garbage collection; 79% are very or somewhat satisfied with recycling collection; and 75% are very or somewhat satisfied with yard waste and kitchen scrap collection (Tiffany Park receive every week and Glencoe residents receive every-other-week service).

Tiffany Park residents, who are receiving weekly yard waste and kitchen scrap collection, are more than twice as likely as the Glencoe residents (who receive every other weekend collection) to be “Very satisfied” with their service (65% vs. 27%). And, it appears there is a “halo effect” from this satisfaction as they are also more likely to be “Very satisfied” with all of their collection services, compared with the Glencoe households: 45% vs. 32% are “Very satisfied” with EOW garbage collection, and 51% vs. 43% are “Very satisfied” with EOW recycling collection.

Conversely, Tiffany Park residents express far less dissatisfaction with their yard waste and kitchen scrap collection service (10% say they are “Somewhat” or “Very dissatisfied” compared with 29% of the Glencoe residents). While the levels of dissatisfaction are the same in both communities relating to garbage collection services (30% are “Somewhat” or “Very dissatisfied” with this service), Tiffany Park residents are more likely to be unhappy with their EOW recycling collection (21% vs. 14% of the Glencoe residents are “Somewhat” or “Very dissatisfied” with the service).

Comparing collection services with those from a year ago

Both communities have a large proportion of residents who say their overall curbside collection services are better now than a year ago (43% for Glencoe residents and 47% for Tiffany Park residents); less than a fifth believe their services are not as good (17% for Glencoe and 21% for Tiffany Park); the remainder say service is about the same (37% and 31%); and a tiny percentage (3% and 1%, respectively) have no opinion.

Impact of the new services on reduction of garbage

The great majority (63%) of residents in both communities say that the new collection program has led to a reduction in the overall amount of garbage set out for pickup. The proportions are nearly the same for the two different communities: 61% of Glencoe and 65% of Tiffany Park say that they have noticed a decrease in garbage set out for collection.

Table 1. Attitudes toward Current Collection Services			
Question	Total (Base = 300)	Glencoe (Base = 150)	Tiffany Park (Base = 150)
<i>Q1. Did you complete and return a written questionnaire about the new garbage and recycling services?</i>			
Yes	63%	66%	60%
No/can't recall	26	24	29
Can't recall	11	10	11
<i>Q2. Proportion who are "Very satisfied" with specific collection services:</i>			
Every other week garbage collection	39%	32%	45%
Every other week recycling collection	47	43	51
Every other week yard waste/scrap collection		27	
Weekly yard and scrap collection			65
<i>Q2. Proportion who are "Somewhat" or "Very dissatisfied" with specific collection services:</i>			
Every other week garbage collection	27%	30%	30%
Every other week recycling collection	18	14	21
Every other week yard waste/scrap collection		29	
Weekly yard and scrap collection			10
<i>Q3. Compared with a year ago, would you say the services you are now receiving are better, about the same, or not as good as those you were previously receiving?</i>			
Better	45	43%	47
About the same	34	37	31
Not as good	19	17	21
Not sure/don't recall	2	3	1
<i>Q6. Has the new collection program helped you reduce the overall amount of garbage you part out in your green cart for collection each month?</i>			
Yes	63%	61%	65%
No	33	35	31
Not sure	4	4	4

Table 2a. Level of Satisfaction with Collection Services: Total Pilot Area					
Service Provided	Level of Satisfaction				
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Neutral
EOW Garbage collection	39%	32%	13%	14%	2%
EOW Recycling collection	47	32	11	7	3
Yard waste and kitchen scrap collection*	45	30	13	7	4

Table 2b. Level of Satisfaction with Collection Services: Glencoe					
Service Provided	Level of Satisfaction				
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Neutral
EOW Garbage collection	32%	43%	13%	11%	1%
EOW Recycling collection	43	42	11	3	1
EOW Yard waste and kitchen scrap collection*	27	40	21	9	3

Table 2c. Level of Satisfaction with Collection Services: Tiffany Park					
Service Provided	Level of Satisfaction				
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Neutral
EOW Garbage collection	45%	21%	13%	17%	4
EOW Recycling collection	51	22	11	10	6
Weekly Yard waste and kitchen scrap collection*	65	20	5	5	5

*Excludes 3% of Glencoe residents and 3% of Tiffany Park residents who do not use service.

Attitudes and patterns of recycling (*TABLE 3*)

Participation in recycling collection

There is nearly universal participation in recycling in both the Glencoe (99%) and Tiffany Park (97%) communities.

Materials that are recycled

Nearly everyone in the two neighborhoods say that they recycle cardboard (98%), junk mail (95%), other clean paper (95%), newspapers (94%), glass bottles (94%), plastic bottles, jugs and dairy tubs (94%) and aluminum or tin cans (93%).

A somewhat smaller percentage says they recycle milk cartons and juice boxes (79%). Frozen food boxes (59%) and scrap metal (18%) are less commonly placed out for recycling pickup.

Differences in what is recycled in the two communities are minor. Glencoe residents are slightly more likely to recycle newspapers (96% vs. 91% of the Tiffany Park residents), junk mail (97% vs. 92%), and aluminum or tin cans (95% vs. 90%). Tiffany Park households are slightly more likely to recycle milk cartons and juice boxes (82% vs. 77%).

Reasons for recycling

People are motivated to recycling for a wide variety of reasons. Half (50%) of those who recycle say they do so for the environment. A considerably smaller proportion of the respondents provide other reasons as well. These include: because it's the right thing to do (27%), there is less garbage to throw out (21%), there is less garbage going to a landfill (21%), it's easy and convenient to do (14%) and because they believe they are required to participate (11%).

Those living in the Glencoe community seem to have stronger motivations for doing recycling. (Note: Probably due to EoW garbage collection so they feel inclined to save room in the garbage container by recycling.) Residents of Glencoe, compared to those in Tiffany Park, are considerably more likely to say they do it for the environment (60% vs. 39%) and are somewhat more likely to also say so there will be less garbage to throw out (23% vs. 18%) and so there will be less garbage going to a landfill (29% vs. 13%).

Table 3. Recycling Patterns and Attitudes			
Question	Total (Base = 300)	Glencoe (Base = 150)	Tiffany Park (Base = 150)
<i>Q4a. Have you placed recyclables out for pickup in the last month?</i>			
Yes	98%	99%	97%
No/no but usually do	2	1	3
<i>Q4b. Which of the following materials have you put in your blue recycling container for pickup in the last month? (Of those doing recycling; multiple responses; do not add to 100%)</i>	<i>(Base = 295)</i>	<i>(Base = 149)</i>	<i>(Base = 146)</i>
Cardboard	98%	98%	97%
Junk mail	95	97	92
Other clean paper	95	97	94
Newspapers	94	96	91
Glass bottles	94	95	93
Plastic bottles, jugs and dairy tubs	94	95	92
Aluminum or tin cans	93	95	90
Milk cartons/juice boxes	79	77	82
Frozen food boxes	59	57	61
Scrap metal	18	16	20
<i>Q4c. What are the major reasons you currently recycle? (Open end; multiple responses; do not add to 100%)</i>	<i>(Base = 295)</i>	<i>(Base = 149)</i>	<i>(Base = 146)</i>
Good for the environment	50%	60%	39%
Right thing to do – in general	27	28	27
Less garbage to throw out	21	23	18
Less garbage going to the landfill	21	29	13
Easy, convenient to do	14	15	12
Required to do so	11	11	12
Will lower rates over time	4	5	3
Additional responses: See Appendix			

Yard waste and Kitchen Scrap Pickup Service (TABLE 4)

Recall receiving plastic kitchen scrap container

Nearly all (96%) of the residents recall receiving the plastic kitchen container for food scraps that contained information about what and how to recycle.

Use of the plastic kitchen container

Tiffany Park residents, who are receiving weekly yard waste and food scrap pickup, are considerably more likely to have saved the kitchen container and use it in their kitchens than are the Glencoe residents, who receive every other week service (56% vs. 39%).

In contrast, Glencoe residents were far more likely to discard the container because they didn't want the smells in their kitchen or they found it difficult to use (39% of the Glencoe responses compared with just 22% of those in Tiffany Park).

Small proportions of those who recalled receiving the container had other responses: 6% read the letter describing the program; 6% glanced at the materials and threw the container out; 5% saved it and said they may use it later; 5% prefer putting their food scraps directly into the large cart; and 3% keep the small kitchen scrap container elsewhere away from the kitchen.

Materials placed in the gray yard waste cart

Residents in both communities use their gray cart far more often for yard waste than for kitchen waste. Overall, 81% of the households place yard trimmings and 62% put grass clippings into their carts. However, a considerably smaller proportion of households are placing kitchen waste in their carts: 36% use it for vegetable kitchen waste, 35% for packaging from food products, and 26% for meat, chicken or fish waste products.

Glencoe residents are more likely to use their gray cart for yard materials compared with Tiffany Park residents: 87% vs. 75% place yard trimmings in the cart; 68% vs. 53% use it for grass clippings; and 27% vs. 20% use it for dead flowers and other plants.

Tiffany Park residents are more likely than Glencoe residents to use the cart for kitchen waste, although far less than half of the residents are doing so: 38% vs. 33% place vegetable kitchen scraps in the cart; 37% vs. 15% put meat, chicken and fish scraps and bones in the cart (37% vs. 15%).

Use of the biodegradable bags

Over two-thirds (69%) of the residents of Glencoe and Tiffany Park said they are using the green biodegradable bags for their foods scraps. The proportion is about the same for the two communities.

Table 4. Participation in Yard Waste and Kitchen Scrap Pickup			
Question	Total (Base = 300)	Glencoe (Base = 150)	Tiffany Park (Base = 150)
<i>Q5a. Do you recall receiving a small plastic kitchen scrap container from the City of Renton this past summer?</i>			
Yes	96%	98%	94%
No/can't recall	4	2	6
<i>Q5b. What did you do with the small plastic container and the materials in it? (Of those saying "Yes" to question 5a; multiple responses; do not add to 100%)</i>	<i>(Base = 288)</i>	<i>(Base = 147)</i>	<i>(Base = 141)</i>
Placed container in or near kitchen	47%	39%	56%
Don't want smelly scraps in kitchen/difficult to use	31	39	22
Read the letter describing the program.	6	10	3
Glanced at materials/threw container out	6	1	11
Saved it/may use it later	5	5	4
Put scraps directly into yard waste cart	5	8	1
Keep it elsewhere away from kitchen	3	3	4
Other comments: See Appendix			
<i>Q5c. What materials, if any, do you usually place in the gray cart for yard waste and kitchen scrap pickup? (Open end; multiple responses; do not add to 100%)</i>	<i>(Base = 300)</i>	<i>(Base = 150)</i>	<i>(Base = 150)</i>
Yard trimmings (other than grass)	81%	87%	75%
Grass clippings	61	68	53
Vegetable kitchen waste	36	33	38
Paper napkins, plates or packaging from food	35	37	33
Meat/chicken/fish scraps and/or bones	26	15	37
Dead flowers and other plants	23	27	20
Food scraps (unspecified)	21	27	16
Shredded paper	7	9	6
Don't put any yard or kitchen waste out	4	2	6
Other comments: See Appendix			
<i>Q5d. Did you use any of the green biodegradable bags that were provided for your food scraps?</i>	<i>(Base = 288)</i>	<i>(Base = 147)</i>	<i>(Base = 141)</i>
Yes	69%	67%	71%
No	29	32	26
Can't recall	2	1	3
<i>Q5e. Why are you not placing yard or kitchen waste in your gray cart?</i>			
See Appendix: 12 responses total			

Demographics (**TABLE 5**)

Home ownership

Ninety-three percent (93%) of those surveyed in each of the communities own their homes

Age of respondent

The mean average age of the respondents is 52 to 53 years of age. Those living in Glencoe tend to be somewhat younger than those living in Tiffany Park: 31% vs. 26% are under 45 years of age, while 44% vs. 51% are 55 and older.

Number in the household/children in the household

Those living in Glencoe are slightly more likely to have one or two-person households compared with those living in Tiffany Park (52% vs. 46%).

The two communities have about the same proportion of households with children (64% in Glencoe and 66% in Tiffany Park), and the number of children in the households is about the same, as well: (13% have one child, 15% have two children and 7% have three or more children.

Number of years residing in Renton

Glencoe residents have lived in the City an average of 21.3 years compared with Tiffany Park residents who have lived in Renton an average of 22.6 years.

Those residing in Glencoe are somewhat more likely to have resided in the City of Renton for a shorter period of time than those living in Tiffany Park (37% vs. 24% have been city residents for 10 years or less).

Sex of respondent

Interviewers were instructed to do surveys with about an equal portion of men and women. The 300 interviews were done with 54% females and 46% males, and the proportions are about the same for each of the two communities in the pilot program.

Table 5. Demographics of Respondents			
Question	Total (Base = 300)	Glencoe (Base = 150)	Tiffany Park (Base = 150)
<i>Q7. Do you rent or own your home?</i>			
Own	93%	93%	93%
Rent	7	7	7
<i>Q8. Age of respondent (excluding refusals):</i>	<i>(Base = 296)</i>	<i>(Base = 147)</i>	<i>(Base = 149)</i>
Under 35	10%	10%	9%
35 - 44	19	21	17
45 - 54	24	25	23
55 - 64	28	26	30
65 and over	19	18	21
Mean	52.9 yrs.	52.4 yrs	53.4 yrs
<i>Q9a. Number of people in the household:</i>	<i>(Base = 299)</i>	<i>(Base = 150)</i>	<i>(Base = 149)</i>
One – two	49%	52%	46%
Three	19	19	19
Four or more	32	29	35
<i>Q9b. Children under 18 in the household:</i>	<i>(Base = 299)</i>	<i>(Base = 149)</i>	<i>(Base = 150)</i>
None	65%	64%	66%
One	13	13	13
Two	15	16	13
Three or more	7	7	8
<i>Q10. Years residing in Renton:</i>	<i>(Base = 300)</i>	<i>(Base = 150)</i>	<i>(Base = 150)</i>
Less than 6 years	14%	17%	11%
6 – 10 years	17	20	13
11 – 15 years	12	11	14
16 – 20 years	14	11	17
21 – 30 years	16	15	17
31 to 40	17	15	19
Over 40 years	10	11	9
Mean number of years	22.0 yrs.	21.3 yrs.	22.6 yrs.
<i>Sex of respondent:</i>			
Female	54%	56%	53%
Male	46	44	47

Appendix:

Additional Responses to Open-End Questions Survey Questionnaire

Additional Responses from Open-End Questions

(Number of responses, beyond one, shown in parenthesis)

Q4c. What are the major reasons you currently recycle?

Like the bigger containers now (5); everything is provided by the city (4); need more frequent yard waste pickup, especially in the summer (3); have more to recycle than can fit in the cart; not sure which plastics to recycle; why not; to get rid of it; doesn't all fit in the garbage; subscribe to a lot of magazines; to get rid of things without throwing it in the garbage.

Q5b. What did you do with the small plastic container and the materials in it?

Use disposal (4); put scraps in container and then in compost (2); take to compost (2); put it out to be picked up, but it wasn't; put food in it and put it in yard waste; put used coffee grounds in it; give scraps to the crows (Note: This would not be good news for our vector nuisance program.); dog gets it if left outside; disappointed paying the same amount for half the service; hard to find biodegradable bags; don't want it near my sink; no place to put it in my kitchen; it was broken when we received it (Note: Were replacements made available?).

Q5c. What materials, if any, do you usually place in the gray cart for yard waste and food scrap service?

Dirt; cat litter; fruit from fruit trees; rocks and soil; wood scraps.

Q5e. Why are you not placing yard or kitchen waste in your gray cart?

Deal with food scraps and yard waste in other ways (6); don't have any yard waste; have yard waste taken away by a service; just throw it in with the trash; don't want to take the time.

City of Renton

Survey of Attitudes toward Curbside Collection Services

December, 2007

Neighborhood

- 1 Glencoe
- 2 Tiffany Park

Hello, I'm _____ and I'm calling from GMA Research, a marketing research firm in Bellevue, Washington. We are conducting a survey for the City of Renton concerning the new Garbage and Recycling Services that have been provided in your neighborhood. Are you the (male/female) head of your household? (IF NOT, ASK TO SPEAK WITH THE APPROPRIATE PERSON OR FIND A TIME TO CALL BACK TO TALK WITH THAT PERSON.) (NOTE; IF THE PERSON VOLUNTEERS THAT THEY DO, TERMINATE POLITELY)

1. Did you complete and return a written questionnaire about the new garbage and recycling services?

- 1 Yes – WE WILL APPRECIATE YOUR TAKING A FEW MOMENTS TO PARTICIPATE IN THIS PHONE SURVEY, AS WELL.
- 2 No
- 3 Can't recall - CONTINUE WITH SURVEY

2. I would like your responses to the specific collection services you are receiving in this new program. As I read each of the service, please tell me if you are very satisfied, somewhat satisfied, somewhat dissatisfied, very dissatisfied, or if you are neutral, in other words you don't have an opinion one way or the other.

ASK ONLY OF THE **GLENCOE RESPONDENTS:** (ROTATE LIST)

	LEVEL OF SATISFACTION					DON'T READ
Service Provided	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Neutral	Don't Use
Every other week Recycling collection	1	2	3	4	5	6
Every other week yard waste & food scrap collection	1	2	3	4	5	6
Every other week garbage collection	1	2	3	4	5	6

ASK ONLY OF THE **TIFFANY PARK RESPONDENTS**: (ROTATE LIST)

Service Provided	LEVEL OF SATISFACTION					DON'T READ
	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Neutral	Don't Use
Every other week Recycling collection	1	2	3	4	5	6
Weekly yard waste & food scrap collection	1	2	3	4	5	6
Every other week garbage collection	1	2	3	4	5	6

3. Compared to the garbage collection and recycling services you were receiving a year ago, would you say the services now are better, about the same, or not as good as those you were receiving previously?

- 1 Better
- 2 About the same
- 3 Not as good
- 4 Not sure/don't recall (DON'T READ)

4a Have you placed recyclables out for pickup in the last month?

- 1 Yes
- 2 No, but usually do (away on trip, etc.)
- 3 No
4. Did not know I could/don't know how to do it - SKIP TO QUESTION 5a

4b. Which of the following materials have you put in your blue **recycling** container for pickup in the last month? (READ THROUGH ENTIRE LIST)

- 1 Newspapers
- 2 Cardboard
- 3 Junk mail
- 4 Other clean paper
- 5 Aluminum or tin cans
- 6 Milk cartons, Juice boxes
- 7 Glass bottles
- 8 Plastic bottles, jugs and dairy tubs
- 9 Frozen food boxes
- 10 Scrap metal

4c. What are the major reasons you currently recycle?

5a. Do you recall receiving a small plastic kitchen scrap container from the City of Renton this past summer?

1. Yes
2. No - SKIP TO QUESTION 5c
3. Can't recall

5b. What did you do with the small plastic container and the materials in it?

5c. What materials, if any, do you usually place in the gray cart for yard waste and kitchen scrap pickup?

5d. *(ASK ONLY IF THEY **ARE** DOING ANY FOOD WASTE) Did you use any of the green biodegradable bags that were provided for your food scraps?

- 1 Yes
- 2 No
- 3 Can't recall

5e. (ASK ONLY OF THOSE NOT PUTTING OUT YARD OR KITCHEN WASTE)
Why are you not placing yard or kitchen waste in your gray cart?

6. Has the new collection program helped you reduce the overall amount of garbage you put out in your green cart for collection each month?

- 1 Yes
- 2 No
- 3 Not sure

Now I am going to ask a few demographic questions for classification purposes only.
Your responses will not be identified with your name.

7. Do you rent or own your home?

- 1 Rent
- 2 Own

8. What is your age? _____ (IF PERSON HESITATES, READ THE RANGES)

- 1 Under 25
- 2 25 - 34
- 3 35 - 44
- 4 45 - 54
- 5 55 - 64
- 6 65 and older

9a. How many people, including yourself, are in your household? _____

9b. How many children under 18 years of age are in your household? _____

10. How many years have you been a resident of Renton? _____

11. (Don't read) Gender of respondent:

1 Male

2 Female

Thank you for your time.

D. Route Tonnage Monitoring

Tiffany Park	MSW		ORGANICS			RECYCLE			Monthly Averages (#/household/month)				
	Tons	Homes	Tons	Homes	Stops	Tons	Homes	Stops		MSW	Organics	Recycling	Total
8/7/2006	12.1	740	7.0	872	330	4.9	886	677					
8/14/2006	12.4	740	5.2	872	295	4.9	888	747					
8/21/2006	10.5	740	5.0	873	300	4.4	889	575					
8/28/2006	12.0	741	6.9	873	335	5.9	898	737		127.0	55.2	45.2	227.4
9/4/2006	10.4	741	8.7	872	395	4.1	894	543					
9/11/2006	12.8	741	8.4	872	320	4.7	894	599					
9/18/2006	11.8	741	5.8	862	410	7.9	880	699					
9/25/2006	11.7	741	8.6	862	250	4.4	880	745		126.0	72.7	48.7	247.4
10/2/2006	10.2	741	9.3	862	340	4.7	880	742					
10/9/2006	9.9	741	7.7	862	260	4.6	880	745					
10/16/2006	9.8	742	7.3	863	270	6.3	880	532					
10/23/2006	9.9	743	9.8	863	285	6.5	881	710					
10/30/2006	9.5	743	7.1	863	285	4.0	881	709		132.9	95.5	59.3	287.7
11/6/2006	10.9	743	10.8	863	225	5.8	882	703					
11/13/2006	10.6	743	15.2	863	325	4.9	882	525					
11/20/2006	10.0	743	15.3	863	225	8.5	882	697					
11/27/2006	11.0	743	7.6	863	240	6.3	882	527		114.4	113.3	57.8	285.5
12/4/2006	10.6	743	8.9	866	255	8.6	699	704					
12/11/2006	9.6	743	7.5	863	212	9.2	882	718					
12/18/2006	11.2	743	14.6	863	345	7.1	699	667					
12/25/2006	12.1	743	7.3	863	230	4.2	882	652		117.1	103.1	78.3	298.5
									Average:	123.5	88.0	57.9	269.3
8/6/2007	10.5	698	9.0	865	592	4.3	882	624					
8/13/2007	9.4	698	9.4	865	612	10.6	835	655					
8/20/2007			5.4	865	538								
8/27/2007	14.4	702	11.1	865	345	12.0	837	716		98.1	80.7	63.1	241.9
9/3/2007			6.0	865	345								
9/10/2007	16.9	702	12.5	865	487	11.0	837	688					
9/17/2007			5.7	865	369								
9/24/2007	14.6	702	9.8	865	470	13.8	837	793		89.7	78.6	59.1	227.4
10/1/2007			5.0	865	240								
10/8/2007	15.1	702	7.3	865	375	13.1	837	713					
10/15/2007			9.0	865	395								
10/22/2007	14.9	702	11.5	865	380	13.8	837	751					
10/29/2007			14.2	865	620					85.5	108.7	64.2	258.4
11/5/2007	13.10	702	10.4	865	360	12.6	837	719					
11/12/2007			10.2	865	385								
11/19/2007	14.8	702	10.2	865	330	12.2	837	693					
11/26/2007			8.9	865	300					79.5	91.8	59.3	230.5
12/3/2007	19.8	702	3.0	865	100	13.7	837	700					
12/10/2007			4.8	865	230								
12/17/2007	14.3	702	3.5	885	350	11.4	837	600					
12/24/2007			2.5	885	120								
12/31/2007	15.9	702	3.7	885	217	11.2	837	585		142.5	39.9	86.7	269.2
									Average:	99.1	79.9	66.5	245.5

Glencoe	MSW		ORGANICS			RECYCLE				Monthly Averages (#/household/month)			
	Tons	Homes	Tons	Homes	Stops	Tons	Homes	Stops		MSW	Organics	Recycling	Total
8/7/2006	10.8	830	7.5	751	235	8.0	751	729					
8/14/2006	11.2	832	7.0	752	245	4.6	757	724					
8/21/2006	11.0	832	6.5	753	205	7.4	753	747					
8/28/2006	11.2	834	6.3	754	335	4.6	759	720		106.3	72.6	65.2	244.0
9/4/2006	9.4	835	6.7	756	235	4.1	756	634					
9/11/2006	12.0	835	8.9	756	349	4.8	764	761					
9/18/2006	11.8	836	9.9	758	308	5.2	761	760					
9/25/2006	11.5	836	9.6	757	400	8.0	765	761		107.0	92.8	58.0	257.8
10/2/2006	11.7	837	12.1	758	310	4.6	699	698					
10/9/2006	10.6	837	8.0	758	309	4.4	766	764					
10/16/2006	10.4	836	7.1	758	281	4.3	699	694					
10/23/2006	10.3	836	9.8	757	310	4.8	763	745					
10/30/2006	11.3	836	8.4	758	260	4.2	699	696		129.8	119.8	61.5	311.2
11/6/2006	13.3	837	12.9	758	200	7.6	764	762					
11/13/2006	11.9	837	13.8	759	310	5.0	699	694					
11/20/2006	10.8	838	16.8	759	460	5.0	765	762					
11/27/2006	12.5	838	9.2	760	200	5.4	763	700		115.8	138.9	61.5	316.2
12/4/2006	12.4	838	3.8	766	125	4.1	765	763					
12/11/2006	10.9	838	5.5	760	280	5.5	763	759					
12/18/2006	13.5	838	12.8	759	385	3.8	764	761					
12/25/2006	13.8	838	8.5	760	360	8.8	763	760		120.8	73.0	53.0	246.8
									Average:	115.9	99.4	59.8	275.2
8/6/2007	11.6	784	9.6	776	500	5.0	811	560					
8/13/2007	9.2	784				7.0	771	630					
8/20/2007			15.8	771	438								
8/27/2007	15.3	785				11.6	779	675		92.1	65.7	60.0	217.7
9/3/2007			20.4	776	502								
9/10/2007	17.2	785				11.5	779	607					
9/17/2007			16.1	776	307								
9/24/2007	15.6	785				10.3	781	562		83.6	94.1	56.0	233.6
10/1/2007			20.2	777	415								
10/8/2007	15.6	786				11.2	781	619					
10/15/2007			23.0	777	510								
10/22/2007	16.9	786				10.8	781	595					
10/29/2007			23.6	777	463					82.6	171.9	56.3	310.8
11/5/2007	14.1	787				10.9	781	643					
11/12/2007			20.5	777	445								
11/19/2007	15.3	787				12.7	781	737					
11/26/2007			11.7	776	349					74.7	82.9	60.4	218.1
12/3/2007	20	787				11.7	781	655					
12/10/2007			9.0	776	468								
12/17/2007	16	788				8.8	781	594					
12/24/2007			4.8	776	400								
12/31/2017	16	788				9.8	781	600		134.0	35.6	77.6	247.2
									Average:	93.4	90.0	62.1	245.5

Control	MSW		ORGANICS			RECYCLE			Monthly Averages (#/household/month)			
	Tons	Homes	Tons	Homes	Stops	Tons	Homes	Stops	MSW	Organics	Recycling	Total
8/7/2006	9.2	705	7.5	701	302	3.3	688	380				
8/14/2006	8.9	705	6.6	701	211	4.7	699	524				
8/21/2006	7.1	705	7.0	701	260	3.9	688	450				
8/28/2006	9.1	705	5.4	700	220	4.1	699	501	97.3	75.6	46.1	219.1
9/4/2006	9.3	706	5.3	701	206	6.1	695	447				
9/11/2006	9.8	706	5.4	701	380	7.3	699	480				
9/18/2006	9.3	705	5.5	700	321	6.9	694	532				
9/25/2006	9.9	705	5.2	700	317	4.9	699	499	108.6	61.1	72.3	242.0
10/2/2006	8.2	705	4.7	700	428	6.3	694	541				
10/9/2006	10.8	705	4.8	700	340	7.3	693	560				
10/16/2006	6.7	705	4.9	700	321	6.4	694	460				
10/23/2006	8.7	705	5.5	700	362	4.6	693	465				
10/30/2006	9.1	705	7.5	700	377	5.5	694	560	123.4	78.3	86.8	288.5
11/6/2006	10.1	705	6.0	700	301	7.4	693	522				
11/13/2006	9.1	705	6.1	700	275	7.3	694	478				
11/20/2006	8.8	705	6.8	700	336	4.0	693	450				
11/27/2006	9.9	705	6.9	700	381	7.0	694	310	107.5	73.7	74.1	255.3
12/4/2006	9.1	704	3.7	703	182	7.5	692	508				
12/11/2006	9.0	704	3.9	703	196	7.3	393	440				
12/18/2006	9.3	704	3.3	669	164	7.1	692	450				
12/25/2006	9.8	704	2.6	669	118	8.8	693	463	105.7	39.4	99.4	244.5
Average:									108.5	65.6	75.8	249.9
8/6/2007	9.4	710	10.6	704	627	4.5	698	330				
8/13/2007	9.1	710	8.8	704	418	3.8	697	310				
8/20/2007	7.7	710	10.7	704	512	4.0	698	327				
8/27/2007	9.5	710	7.7	704	215	4.5	697	368	100.6	106.1	48.2	254.8
9/3/2007	8.0	710	9.9	704	472	5.7	695	466				
9/10/2007	10.2	710	9.1	703	293	5.3	697	433				
9/17/2007	9.0	710	7.2	704	708	4.0	695	327				
9/24/2007	9.0	710	9.5	862	380	4.5	697	368	102.0	96.1	56.0	254.1
10/1/2007	8.8	710	8.7	704	362	4.1	695	335				
10/8/2007	9.3	710	6.2	703	257	6.2	697	506				
10/15/2007	9.1	710	9.5	704	578	4.6	695	376				
10/22/2007	9.0	710	4.5	703	423	4.5	697	368				
10/29/2007	8.9	711	6.2	705	328	4.8	696	392	127.0	99.7	69.5	296.3
11/5/2007	10.1	711	5.5	704	583	4.7	698	698				
11/12/2007	8.9	711	5.5	705	438	4.5	696	610				
11/19/2007	9.5	711	5.6	704	512	5.6	696	620				
11/26/2007	9.3	711	5.9	705	560	5.2	696	520	106.3	63.9	57.4	227.6
12/3/2007	8.7	711	3.0	704	100	5.0	698	498				
12/10/2007	6.5	710	3.2	705	367	6.9	696	630				
12/17/2007	8.8	710	2.4	705	150	5.2	699	544				
12/24/2007	8.2	710	1.1	706	70	3.4	697	420				
12/31/2007	10.2	710	3.5	705	200	4.6	699	600	119.5	37.5	71.7	228.7
Average:									111.1	80.7	60.6	252.3

Calculation of comparative citywide monthly averages for years 2004-2007				
		Annual	Number of	Avg Pounds
	2004	Tonnage	SF Customers	Per Month
	Garbage	9295	12344	125
	Recycling	4039	12344	55
	Yard Debris	4964	12344	67
			Total:	247
	Note: Customer count as of 10/29/04			
		Annual	Number of	Avg Pounds
	2005	Tonnage	SF Customers	Per Month
	Garbage	9486	12477	127
	Recycling	4075	12477	54
	Yard Debris	6435	12477	86
			Total:	267
	Note: Customer count as of 2/28//05			
		Annual	Number of	Avg Pounds
	2006	Tonnage	SF Customers	Per Month
	Garbage	7637	12712	100
	Recycling	3911	12712	51
	Yard Debris	5595	12712	73
			Total:	225
	Note: Customer count estimated as midpoint between 2005 & 2007			
		Tonnage	SF Customers	Per Month
	2007			
	Garbage	7303	12946	94
	Recycling	4117	12946	53
	Yard Debris	6152	12946	79
			Total:	226
	Note: Customer count as of 4/6/07			

Pilot Results Based on August-December Averages				
	Garbage	Organics	Recycling	Total Generation
	<i>All figures in pounds/household/month</i>			
Tiffany Park 2006	123	88	58	269
Tiffany Park 2007 Pilot	99	80	66	245
Percentage Change	-19.8%	-9.1%	14.9%	-8.8%
Glencoe 2006	116	99	60	275
Glencoe 2007 Pilot	93	90	62	245
Percentage Change	-19.5%	-9.4%	3.7%	-10.8%
Control Route 2006	108	66	76	250
Control Route 2007	111	81	61	252
Percentage Change	2.4%	22.9%	-20.0%	1.0%

E. Yard Debris+Food Scraps Composition Study (Green Solutions)

COMPOSITION ANALYSIS RENTON ORGANICS COLLECTION PROGRAM DECEMBER 2007

INTRODUCTION

The city of Renton is testing the new approach to residential yard debris collection services, where food waste and compostable paper can be placed with yard debris in the collection container. This method is being tested in two neighborhoods in Renton, and the collection schedule for the mixed organics is weekly for one of those neighborhoods and every-other-week for the other area. This report provides the results of composition tests of the mixed organics collected from the two neighborhoods.

This work was conducted under contract to Sound Resource Management Group, Inc., who has contracted with King County to manage the County's food waste pilot programs.

APPROACH

On December 10, 2007, loads of mixed organics (yard debris, food waste and compostable paper) from two pilot project areas in Renton were delivered to Cedar Grove Composting. These loads had been collected by Waste Management per normal collection procedures. At Cedar Grove, the two loads were placed inside of a storage building (what Cedar Grove Composting calls "Zone 7") and kept separate both from each other and from other materials. The two loads were stored overnight there.

On December 11, Rick Hlavka (Green Solutions) and a crew of two workers (from AllStaff, a temporary employment agency) sorted several samples from each pile of material. Eight samples were taken from the larger pile of material, which was from the Glencoe neighborhood (the area with every-other-week collection for mixed organics), and six samples were taken from the smaller pile of material, which was from the Tiffany Park neighborhood. Samples were taken from each end of the piles and also from locations evenly spaced along each side (both high and low in the pile). Sampling locations along the sides were measured off in even increments to avoid sampling biases. The target sample size was a minimum of four cans of material.

Once a sample had been procured, the trash cans containing the sample were set near the sorting box and then dumped one can at a time into the sorting box. The crew carefully sorted through the material and any materials that were not yard debris was set at one end

of the box to be sorted by Rick Hlavka into the appropriate category (see attached sorting form and definitions).

Once a sample had been completely sorted, the containers of sorted materials were weighed. Two scales were used for weighing: a larger scale (up to 100 pounds in 0.25 pound increments) for the 32-gallon trash cans and a smaller scale (up to 25 pounds in two-ounce increments) for the smaller amounts of materials that had been placed in 5-gallon pails. The tare for each scale was set to zero for the appropriate empty container (an empty 32-gallon trash can for the larger scale and an empty 5-gallon pail for the smaller scale) to allow direct reading of the weight of sorted material.

After weighing, the sorted materials were placed on a tarp and photographs taken. After that, the materials were put back onto the pile (near one end of the Glencoe pile after that area of the pile had already been sampled). Some contaminants (such as plastic film) were retained and disposed of properly later.

OBSERVATIONS AND RESULTS FOR THE COMPOSITION OF THE SAMPLES

Table 1 shows the results from sorting the samples, on a percent by weight basis, for each sample and the averages for each load. These results, and observations made at the time of sorting, include:

food waste: as shown by the figures in Table 1, the amount of food waste found was highly variable, from nearly zero to as high as 16-17%, although some type of food waste was found in every sample taken. The variability may indicate that participation varies significantly from one household to another, but this is difficult to be certain about once the load has been collected (and the individual stops mixed together). A few of the samples show some “mixed” food waste due to the difficulty in identifying the material (due to it’s state of decomposition), but the one sample with the largest amount of mixed food waste (8.5% in sample #10 from Tiffany Park) contained several bags of a mixture of rice, vegetables and meat. Unfortunately, that food waste was in plastic bags, causing this sample to also have the greatest number of plastic bags.

yard debris: the amount of yard debris in the samples was fairly consistent, with all but two of the samples falling between 83% and 98%. For some of the samples, however, the yard debris contained significant amounts of brush and bulky wood. The brush was obviously from pruning activities, and much of that was bundled with twine or other string. The bulky wood was primarily firewood (or logs that could have been used as firewood) and was roughly evenly split between logs that could have still been burned and logs that were too rotted to be usable. There were also some pieces of

manufactured wood products found, including unpainted fence boards in sample #1, which by definition were included in the garbage category but were probably not a real problem for the composting process. A few samples contained pumpkins and decorative gourds, and those items are included in the “grass and leaves” category for yard debris.

compostable paper: paper bags were separately weighed and also counted, but only a few of these were actually yard debris bags. Most of the 10.5 bags found (9 in the Glencoe samples and 1.5 in the Tiffany Park samples) were regular paper grocery bags used to contain various materials. More pizza boxes were found than paper bags, both by weight and by number (although the pizza boxes were not counted at the time of the sorting), and shredded paper was also found in as many samples as the paper bags. Recovery of the shredded paper during sorting was fairly good because it was typically found in bags or at least in clumps in the pile, but some paper was lost in the process and so the actual amount was slightly higher than the averages shown (0.6% for the Glencoe samples and 0.5% for the Tiffany Park samples). Some of the other paper products found could have been counted as recyclable, but were included in this category because they met the definition for a compostable material.

biodegradable bags: biodegradable bags were found in many of the samples, and altogether 22 biodegradable bags were found (19 in the Glencoe samples and 3 in the Tiffany Park

Table 1: Composition of Mixed Organic Samples

	Glencoe Samples										Tiffany Park Samples					
	1	2	3	4	5	6	7	8	Average	9	10	11	12	13	14	Average
Food Waste																
Fruit	1.6	10.6	2.3	9.8	15.9	0.1	2.1	1.3	5.5	1.1	17.2	3.4	1.3	3.2	5.8	5.3
Coffee, Tea	1.3	5.5	0.4	5.8	11.2	0	1.2	0.3	3.2	1.1	7.3	2.9	0.9	1.8	3.7	3.0
Bread, Grains	0.3	0.2	0	0	0.2	0.1	0	0	0.1	0	0	0	0	0.8	0	0.1
Dairy	0	3.0	1.7	3.7	0.7	0	0.8	0.7	1.3	0	0.3	0.2	0	0.4	0.2	0.2
Meat	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.1
Mixed	0.1	1.2	0.2	0.2	3.7	0	0.2	0.3	0.7	0	1.0	0.3	0	0.1	1.9	0.6
	0	0.7	0	0	0	0	0	0	0.1	0	8.5	0	0	0	0	1.4
Yard Debris																
Grass, Leaves	89.2	83.3	91.7	84.7	78.7	98.3	94.3	97.1	89.7	97.3	76.4	92.2	96.3	93.8	86.2	90.4
Brush	46.0	83.3	91.7	77.7	45.6	58.4	55.5	97.1	69.4	97.3	69.1	92.2	79.0	90.8	86.2	85.8
Bulky	0.4	0	0	0	32.1	39.9	38.8	0	13.9	0	1.5	0	17.3	0	0	3.1
	42.8	0	0	7.0	1.0	0	0	0	6.3	0	5.8	0	0	3.0	0	1.5
Compostable Paper																
Paper Bags	0.8	3.8	2.8	2.3	3.2	1.3	2.1	1.3	2.2	0.5	2.4	4.0	1.3	0.5	3.3	2.0
Pizza Boxes	0	1.0	0.3	0.2	0.1	0	0	0.5	0.3	0	0.2	0	0	0	0.2	0.1
Shredded Paper	0	0.9	0.9	1.0	0.4	0	0.9	0.2	0.5	0.2	1.4	1.2	0	0	0	0.5
Compostable Paper	0	0.7	1.2	0	1.5	1.2	0	0	0.6	0	0	1.2	0	0	1.8	0.5
	0.8	1.2	0.4	1.1	1.2	0.1	1.2	0.7	0.8	0.3	0.9	1.6	1.3	0.5	1.3	1.0
Biodegradable Bags																
	0.1	0.7	0.1	0	0.6	0	0.2	0	0.2	0	0	0.2	0	0.1	0	0.04
Recyclables																
	0	0.6	0.6	0.2	0	0.2	0.2	0	0.2	0.2	0	0.2	0.8	0.3	2.5	0.7
Garbage																
Plastic Bags	8.3	1.0	2.6	3.0	1.7	0.1	1.0	0.3	2.2	0.9	4.0	0.1	0.3	2.0	2.2	1.6
Other Garbage	0	0.1	0.1	0.3	0.5	0	0.1	0.1	0.2	0.1	0.6	0	0.3	0.2	0.3	0.3
	8.3	0.9	2.4	2.7	1.2	0.1	0.9	0.2	2.1	0.8	3.4	0.1	0	1.8	1.9	1.3

Note: All figures are percent by weight.

samples). More bags were found in the Glencoe samples in part because more material was sampled from that load (1,337 pounds versus 823 pounds from the Tiffany Park load), but the higher number for the Glencoe load is also due to one sample having nine bags in it.

recyclables: except for a plastic bottle and a few other items, most of the recyclable materials found were paper products that could have been composted without any difficulty, but were not included in the compostable paper category because the materials didn't meet the definition for that category.

garbage: plastics were the most common contaminant but not the greatest amount by weight. Wood was probably the largest contaminant by weight, due to two samples with fence boards or pieces of particleboard in them. Other contaminants found included an unopened can of food, some small pieces of metal and various other items.

Plastic bags were weighed separately and counted, and altogether 50 plastic bags were found (31 in the Glencoe samples and 19 in the Tiffany Park samples, and these figures are exactly proportional to the relative amounts of material sorted from each load). Many of these bags were used to hold food waste, indicating possibly some confusion about the participation rules.

RESULTS ON A PER HOUSEHOLD BASIS

Table 2 shows the weight of the organics collected on a pounds-per-household-per-week basis, using the weights from the scalehouse at the time the load was dropped off at Cedar Grove Composting and records on the number of households on each route. This information is combined with the average composition figures shown in Table 1 to determine the weekly pounds per household for each material. The Glencoe figures were divided by two to yield weekly figures that could be directly compared to the Tiffany Park results.

As can be seen in Table 2, the results in terms of pounds per household per week are quite close for most of the categories. Overall, the pounds per household is slightly lower for the Glencoe load than for the Tiffany Park load, and the primary reason for this appears to be a difference in the amount of yard debris. The small differences in the other categories are not large enough to be statistically significant.

Table 2: Results, Pounds per Household

Parameter	Glencoe		Tiffany Park	
Weight Collected	17,940 lb		9,580 lb	
Number of Households	787		750	
	Average	Pounds/HH/ Week	Average	Pounds/HH/W eek
Food Waste	5.5	0.62	5.3	0.68
Fruit	3.2	0.37	3.0	0.38
Coffee, Tea	0.1	0.01	0.1	0.02
Bread, Grains	1.3	0.15	0.2	0.02
Dairy	0	0	0.1	0.01
Meat	0.7	0.08	0.6	0.07
Mixed	0.1	0.01	1.4	0.18
Yard Debris	89.7	10.22	90.4	11.54
Grass, Leaves	69.4	7.91	85.8	10.95
Brush	13.9	1.58	3.1	0.40
Bulky	6.3	0.72	1.5	0.19
Compostable Paper	2.2	0.25	2.0	0.26
Paper Bags	0.3	0.03	0.1	0.01
Pizza Boxes	0.5	0.06	0.5	0.06
Shredded Paper	0.6	0.07	0.5	0.06
Compostable Paper	0.8	0.10	1.0	0.13
Biodegradable Bags	0.2	0.02	0.04	0.01
Recyclables	0.2	0.03	0.7	0.09
Garbage	2.2	0.26	1.6	0.20
Plastic Bags	0.2	0.02	0.3	0.03
Other Garbage	2.1	0.24	1.3	0.17
Totals	100.0	11.40	100.0	12.77

**ATTACHMENT A
SAMPLE DATA FORM
RENTON ORGANICS COLLECTION PILOT PROGRAM**

Sample #: _____ Load #: _____		Date: _____
Source: _____		Time: _____
Material: _____		Number Set-outs: _____
Weight: _____ (from scale ticket)		Truck Type: _____
MATERIAL	WEIGHT	NOTES
Food Waste		
Fruits, Vegetables		
Coffee, Tea		
Grains and Bread		
Dairy		
Meat, Poultry, Fish		
Mixed/Other		
Yard Debris		
Grass, etc		
Brush		
Bulky Yard Debris		
Compostable Paper		
Paper Bags *		Number of Bags:
Pizza Boxes		
Other Comp. Paper		
Biodegradable Bags *		Number of Bags:
Recyclables		
Garbage		
Plastic Bags *		Number of Bags:
Other Garbage		

Notes: Need to take pictures of incoming load and the sorted materials.

 * Need to count the number of bags.

Definitions for sorting categories:

Food Waste: for the purposes of this test, food waste was divided into:

- fruits and vegetables
- coffee and tea
- grains and bread
- dairy
- meat, poultry, fish, eggshells
- mixed and other

Food waste that was in a non-compostable bag was removed from the bag and placed in the appropriate category of food waste. Empty food containers were counted in the recyclables or garbage category as appropriate.

Yard Debris: grass clippings, leaves, houseplants, small amounts of sod, and other vegetative wastes were counted separately from brush and woody materials from two to four inches in diameter. Any natural woody materials above four inches in diameter and over four feet in length were also measured separately. Pumpkins and decorative gourds were included in the yard debris category with grass and leaves. Lumber, plywood and other “non-natural” wood products were counted as garbage.

Compostable Paper: paper that was not recyclable but was compostable, including empty coffee filters, napkins, paper plates, tissues, milk cartons, food-stained pizza boxes, waxed cardboard, paper coffee cups, take-out cartons without wire handles, and other types of food-soiled paper. Any paper bags found were weighed separately and counted. Pizza boxes were weighed separately. Shredded paper, to the extent it could be recovered, was also weighed separately.

Biodegradable Plastic Bags: plastic bags distributed for the purpose of collecting food waste in the Renton program included Nat-UR and BioBags. These were weighed separately and counted.

Recyclable Materials: per Renton’s recycling rules, this category includes cardboard, newspaper, junk mail, other types of recyclable paper, plastic bottles, aluminum and tin cans, and glass bottles and jars. Electronics, bags of rags, and bags of plastic bags would have also been included in this category and weighed separately, but none of these items were found.

Garbage: non-recyclable and non-compostable materials, including wood products and other types of construction debris, soil and rocks, contaminated metals, aluminum foil

and trays, aerosol cans, window and other non-recyclable glass, ceramics, diapers, animal waste (kitty litter), hazardous waste, toxics containers (used for hazardous materials, antifreeze and oil), plastic film and loose bags, styrofoam, and all types of plastic trays, cups, toys and other products.

For the purposes of this test, garbage will be divided into:

- plastic bags (plastic bags were counted as well as weighed)
- other

F. Health Proposal

**Proposal for
Every Other Week Solid Waste Collection Pilot**

**City of Renton
King County Solid Waste Division
Waste Management of Washington**

June, 2007

Renton Single-Family Residential Collection Pilot Design

Background

The City of Renton currently has weekly collection of garbage, recycling and yard debris for its single-family residents. The garbage collection system is based on a mix of contractor-owned and customer-owned cans collected weekly. Only 1% of Renton single-family garbage customers currently rent contractor-provided carts, a much lower percentage than in most other cities. The recycling collection system is based on 3-stacking recycling bins: one for newspaper; one for mixed paper; and one for mixed containers. The yard debris collection system is based on a city-provided cart, with extras contained in customer cans and Kraft bags.

Waste Management is the City's contractor for collection. The current collection contract is nearing the end of its term and the City is evaluating various collection scenarios as part of developing a new collection contract. This pilot is part of the City's evaluation process for collection system alternatives.

King County is engaged in an update of the 2001 Comprehensive Solid Waste Management Plan with the Cities in the region. With advances in the services and materials collected at the curb, there are questions about the most environmentally appropriate and efficient sustainable collection system for all solid wastes including recyclables, organics and the remaining fraction of garbage. It is envisioned that this pilot will document and analyze collection level of service issues for regional consideration including frequency, container size/type, materials collected and number of routes.

The residential pilots seek to gauge the customer response and public health implications of reducing collection frequency of two or more of the three collection streams. Reducing collection frequency will lower fuel usage and vehicle traffic on City streets, and will help make solid waste collection more sustainable. Less frequent collection would also offer financial savings under full scale implementation.

Two pilot areas (each testing a separate approach) will be used, along with a control area to document the impacts of the existing collection system. Both the two pilot and control areas are considered demographically "average" neighborhoods, with a mix of income and age populations. All collection streams in both pilot areas will be contained in carts. Renton has mandatory collection supported by city-billing, so 100% of residences in each pilot area will be covered by the pilots.

Study Objectives

The objectives of the pilots are to:

- Determine the public acceptability and sanitation impacts of every-other-week (EoW) garbage collection;
- Determine the sanitation impacts of universally-provided garbage carts;

- For weekly collection of organics: determine whether weekly collection of organics increases the public acceptability of EoW garbage collection;
- For EoW collection of organics: document container and handling conditions, and determine whether EoW alternating collection is acceptable to Renton residents; and
- Determine the public acceptability of cart-based commingled recycling – moving from 3 bin to single stream.

	Pilot #1	Pilot #2	Control (existing)
Neighborhood	Tiffany Park	Glencoe	Summerwind
Garbage Containerization	Contractor-provided carts	Contractor-provided carts	Mix of cans and carts
Garbage Collection Frequency	Every-other-week	Every-other-week	Weekly
Organics Collected (all in existing carts)	All including food scraps	All including Food scraps	Yard Debris Only
Organics Collection Frequency	Weekly	Every-other-week	Weekly
Recycling Containerization	96-gallon cart	96-gallon-cart	3-open bins
Recycling Collection Frequency	Every-other-week	Every-other-week	Weekly

Pilot Period

The initial pilot period will be five months, from August, 2007 through December, 2007. This period will allow a sampling of pilot impacts during both hotter Summer months as well as during periods of lower yard debris generation in the Winter when the food scraps to yard debris ratio will be higher.

Comments and/or complaints received by the City, Waste Management and the Health Department will be compiled and included in draft and final pilot reports.

If one or both of the pilots are successful, the most successful pilot area will be continued with a lower level of monitoring while the City negotiates or procures a new collection contract. If one or both pilots are unsuccessful, it (they) will be discontinued in January 2008. In any event, the use of recycling carts will be continued in the pilot areas until the current collection contract is terminated.

Pilot Design/Implementation

The County and City will use the experience of the County's previous 2001-2002 pilot in Lake Forest Park, experience in Bellingham and Olympia (both cities with less than weekly garbage collection), and recent lessons from other program roll-outs to tailor the pilots. Promotional materials will be consistent with regional messages for organics and recycling.

Garbage

Garbage customers in both pilot areas will be provided a garbage cart 1.7-2.0 times the size of their weekly current service:

Current Service (weekly)	Cart Size (EoW)
10-gallon Minican	20-gallon Cart
32-gallon Can or Cart	64-gallon Cart
(2) 32-gallon Cans	96-gallon Cart
64-gallon Cart	96-gallon Cart
(3) 32-gallon Cans	96-gallon Cart + 64-gal Cart
96-gallon Cart	96-gallon Cart + 64-gal Cart

Customers at higher service levels (3 cans per week and above) will be contacted individually to determine the correct garbage container sizing, and adjustments may be made to their garbage capacity. Along with the increased size garbage cart, can customers will be directed to retain their existing can for when the pilot ends. Existing cart customers will have their garbage cart swapped with the new size. All customers will be instructed to bag their garbage (in grocery bags or purchased bags) and to place only bagged putrescible garbage in their carts.

Weekly “special” collection will be made available to customers who are unable to use EoW garbage collection. Customers will be required to call the City project manager and provide justification and/or an application to retain weekly service. The primary acceptable reason for allowing an exemption from every-other-week garbage collection is expected to be home health care customers who generate large quantities of sanitary products..

Organics

All Renton customers already have a City-provided yard debris cart in place, and all garbage customers are provided yard debris collection as part of their service package (included in garbage rates). To introduce residents to food scrap collection, they will receive a new brochure, along with a kitchen container, 20-25 bags as well as a new cart decal to be installed by the customer.. These materials will be delivered with the new garbage cart provided as part of the pilot. If residents refuse to try food scrap recycling, provisions will be made for collecting the unused kitchen containers and bags. .

Existing promotion materials from other food scrap programs will be modified to reflect current Cedar Grove Composting material preferences. The use of milk cartons to contain food scraps will be eliminated or de-emphasized, and the use of biodegradable bags accepted by Cedar Grove will be more heavily featured in promotional materials.

Part of the pilot activities will be to work with existing food retailers in Renton to ensure that replacement biodegradable kitchen container bags are readily available. The bags are also available via mail from Cedar Grove Composting.

Recycling

New 96-gallon recycling carts will be delivered to pilot area customers. The carts will be labeled accordingly and will have a recycling brochure/refrigerator magnet included with the carts. Residents will be encouraged to directly reuse the old recycling bins or they will be collected by Waste Management for reuse or recycling.

Public Health Evaluation

The public health impacts in the pilot and control areas will be gauged in two ways: (1) monthly on-route surveys of the garbage and organics streams; and (1) on-site evaluation of container conditions of a sub-sample of pilot customers. Each is described in the following sections.

On-route Survey

Consultant staff will ride along with the garbage and organics route trucks once each month during the five month pilot period and will log the following conditions for each stop:

- Whether the cart (or can in the control area) is set out
- Whether the cart lid is closed (or whether the can lid is on in the control area)
- The presence or absence of extras and whether they are appropriately contained
- The presence or absence of any debris in the immediate area

All observations will occur from inside the truck for safety reasons. The load may also be photographed when dumped at the transfer or composting facility to provide a visual record of the degree of bagging achieved by the residents.

Container Condition Subsample

Consultant and Health staff will select a pilot and control area sub samples for more intensive monitoring. Fifty households in each of the pilot areas and the control area (150 total) will be selected for on-site monitoring. Once a month, before or after collection, consultant and Health staff will walk the sample area and log container condition for each of the customers. The following indicators will be logged for each sample:

- Is cart (or can) in good general repair
- Does the lid fit tightly?
- Are there holes of sufficient size for rodent access?
- Are there holes of sufficient size for fly access?
- What level of residue is apparent in the container (free liquid, depth of gunk)?
- What is the general condition (litter, debris) of the area around the container?
- What level of odors is observed (distance)?
- Are any vectors apparent?

Collected data will be tallied and compared between the two pilots and the control area to determine whether the pilots resulted in a increase, decrease or no change from existing sanitation conditions.

Customer Satisfaction Evaluation

The City and County will use two approaches to determine the public acceptability of the two pilot approaches: (1) phone surveys; and (2) focus groups.

Phone Survey

The City will survey approximately half (350) residents in each of the pilot areas to determine customer response to the pilots. The surveys will occur in November, after residents have experienced the pilots for three full months. The survey will request feedback on:

- The acceptability of EoW garbage
- The acceptability of EoW organics (for that pilot)
- The acceptability of EoW recycling
- Satisfaction with cart-based services
- Satisfaction with commingled recycling
- Whether the environmental savings (fuel use, sustainability, etc.) make the pilot service attractive
- Their overall view of the program
- How they view the alternative pilot (e.g. ask the EoW organics about weekly organics and vice versa)

Focus Group

The City and County may conduct a focus group for each of the pilot areas. The focus groups attempt to get at additional detail of the information collected from the phone survey's and will be used to determine how people respond to the programs, how they could be improved, what the perceived barriers were, who in each household manages "waste," how food scraps were managed, etc.

Demobilization

The intensive Pilot tracking period will end 12/31/07. Depending on the outcome of the pilot, some elements of the pilot (e.g. cart-based recycling, foodwaste collection) may be continued during the interim period between the end of the pilot and the start of the City's next collection contract cycle.

If one or more pilot elements are unsuccessful, that element or the entire pilot could be terminated prior to 12/31/07 if necessary.

The following table provides a summary of the current services provided in Renton, as well as the pilot services and the City's intentions for demobilization.

	Current Service	During Pilot Aug-Dec 07	After Pilot
Garbage	Weekly service with customer-owned cans, carts available for rent	EoW service with WM-provided cart sized at 170-200% equivalent weekly service levels	Weekly service with customer-owned cans. Carts will be removed and customers directed to use their old containers.
Recycling	Weekly service with 3-bins	EoW service with WM-provided cart	EoW service with WM-provided cart. Service may be shifted back to weekly if EoW is not favorably received.
Yard Debris	Weekly service with City-owned cart	EoW or weekly service with WM-provided cart, including foodwaste	Revert to weekly service.