GREEN SOLUTIONS

ENVIRONMENTAL CONSULTING

CITY OF YAKIMA PILOT CURBSIDE RECYCLING PROJECT

December 2014

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EXECUTIVE SUMMARY

INTRODUCTION

In the summer of 2014, the Yakima Public Works Department conducted a pilot project to explore the potential for the Refuse Division to provide curbside recycling services to residents. The pilot program also tested a different approach for yard waste collection services. This report discusses the results of that pilot project, including:

- Data on tonnages collected and participation rates
- A cost analysis for a permanent program
- Survey data collected by the City
- The results of a focus group involving pilot program participants
- A composition test of the collected recyclables

The City Refuse Division currently provides yard waste collection on a subscription basis, while Yakima Waste Systems currently provides curbside recycling services in the city on a subscription basis. **Neither approach is effective in reaching all of the people that could be using these services and neither approach can capitalize on economies of scale that could reduce the per-household cost.** The results of this analysis show that the cost of curbside recycling service could be reduced from $8.20 to $3.00 per household per month through a bundled rate approach, and yard waste services could likewise be reduced from $13.00 or $14.00[1] to $3.62 per month.

WHAT DID WE LEARN FROM THE PILOT PROJECT?

The results of the pilot program were generally favorable:

- Pilot program participants weren't sure about the program's benefits in the beginning, but most of the participants were in favor of it afterwards.
- Over 90% of the households in the pilot program participated in it.
- A citywide curbside recycling program can be provided at a rate of only $3.00 per month.
- A citywide yard waste program can be provided at $3.62 per household per month.

[1] The current rate for yard waste collection services is actually $7.01 for a 64-gallon cart and $12.82 for a 96-gallon cart, but the actual cost of providing this service is $13.00 for a 64-gallon cart and $14.00 for a 96-gallon cart.

RECOMMENDED CHANGES

This evaluation of additional curbside recycling and yard waste collection services is being conducted at the same time that garbage rates for the city need to be increased just to maintain current services. Existing rates have not kept up with increasing costs for the current services, and reserves have now been depleted as a result. It is recommended that the rates for existing services be increased as shown in the following table.

Table E-1
Recommended Rates for Current Services

Size and Type of Cart	Current Monthly Rate	Recommended New Rate
32-Gallon Garbage Cart	$10.00	$12.00
96-Gallon Garbage Cart	$17.02	$18.00

It is further recommended that curbside recycling and yard waste services be provided to all customers and that a "bundled rate" approach be used for this. The results of the pilot recycling program show that most residents (over 90%) will use curbside recycling if it is available to them, although the participation rate for yard waste was not as high. Including (bundling) curbside recycling with the garbage rate allows this service to be provided for only $3.00 per month. If yard waste service is also bundled with garbage service, the rate for that service drops to $3.62 per month. Table E-2 shows the net effect of the recommended changes.

Table E-2
Bundled Approach for New Services

Service	32-Gallon Garbage	96-Gallon Garbage
Garbage Service	$12.00	$18.00
Curbside Recycling, 96-Gallon Cart collected every-other-week	$3.00	$3.00
Yard Waste, 96-Gallon Cart collected every-other-week	$3.62	$3.62
Total	$18.62	$24.62

The full report for this project provides additional recommendations for the implementation of the new services (see Section Four).

SECTION ONE
PILOT PROGRAM PERFORMANCE

A. INTRODUCTION

In the summer of 2014, the Yakima Public Works Department conducted a pilot project to explore the potential for the Refuse Division to provide curbside recycling services to residents. As part of that pilot program, City staff collected data on setout rates and conducted surveys of the participants before and after the collections were conducted. The consulting firm Green Solutions (South Prairie, WA), assisted by Chris Bell & Associates (Camas, WA) and EnviroIssues (Seattle, WA), analyzed the data collected by the City, conducted a composition test of the recyclables, prepared a rate analysis, and conducted a focus group to collect additional feedback from the participants. This work was funded by a Coordinated Prevention Grant from the Department of Ecology.

This section of the report discusses the data collected on the performance of the pilot project, including:

- Tonnages collected and participation (setout) rates
- A composition test of the collected recyclables

Section Two of this report provides the results of the surveys and the focus group, and Section Three provides a summary of the rate analysis. Section Four of this report provides conclusions and recommendations based on the analysis and findings of this project.

B. DESIGN OF THE PILOT PROJECT

The pilot project was designed to evaluate an approach that could potentially be more effective in diverting recyclable materials from the waste stream. The pilot program also tested a different approach for yard waste collection. The City Refuse Division currently provides yard waste collection on a subscription basis, while Yakima Waste Systems provides curbside recycling services in the city on a subscription basis. **Neither approach is effective in reaching all of the people that could be using these services, and neither approach can capitalize on economies of scale that could reduce the cost of these services.**

To implement the pilot program, City of Yakima staff reviewed their routes to choose a representative area for the pilot program, distributed carts to that area, conducted the collections, monitored the quality of the setouts, and then collected the new carts at the end of the pilot program. The choice of the route for the pilot program was considered

carefully so as to choose an area that was as representative of the city as possible. After narrowing the best choices down to a few routes, the Kissel Park Community was selected for the pilot program. This area is currently collected on a Tuesday, and is designated as Route G8. A letter was sent out to the residents of this area to explain the pilot project (see Attachment A). To kick off the pilot program and to help inform the residents about it, the Refuse Division conducted a Clean Up and Recycling Information Day on April 26th. For this event, residents were able to bring garbage and metal to Kissel Park, where City staff were available to answer questions about the pilot program. By the end of the day, over 100 people had brought 14 tons of waste and 1.32 tons of recyclable metal to this event.

The route chosen for the pilot program contained 622 residences. Some of these households were existing recycling customers for Yakima Waste Systems, and those residences were not included in the pilot program. A few additional households declined to participate for various reasons, including senior citizens who declined for health reasons. With these adjustments, a total of 537 households were included in the pilot program. Each of these homes was provided with a 96-gallon recycling cart and a 96-gallon yard waste cart. Residents with 96-gallon garbage carts were provided with a 32-gallon garbage cart to use instead. The carts were distributed during the week of April 21st. After the last collection day in August, these carts were taken back by the Refuse Division and placed into storage until needed. The customers in the pilot program area were returned to their previous service level, which consisted of either 32-gallon or 96-gallon garbage service, no recycling service, and yard waste collection only for those who chose to subscribe to it.

C. TONNAGE AND PARTICIPATION RESULTS

As described above, the pilot program included 537 households after adjustments were made for those households already subscribing to curbside recycling or who declined for other reasons. Of these 537 households, about 149 households (28%) were already subscribed to yard waste collection service. Many of these yard waste subscribers (128, or 24%) already had a 96-gallon cart for this service and so did not receive a new cart, but all of the remaining households (including those with a 64-gallon cart for yard waste service) were provided with a new 96-gallon cart to use for yard waste during the pilot program. All 537 households received a 96-gallon cart for recycling, and those households that did not already use a 32-gallon cart for garbage were provided with a new 32-gallon cart to use for garbage. Of the 537 households, about 161 households (30%) were already using a 32-gallon cart for garbage service.

Recyclables in the pilot program area were collected every-other-week on Tuesdays, beginning on May 6 and ending on August 26. Yard waste collections were conducted every-other-week on Fridays, from May 9 through August 29. Data was gathered by the collection truck drivers on which households set out their recycling and yard waste

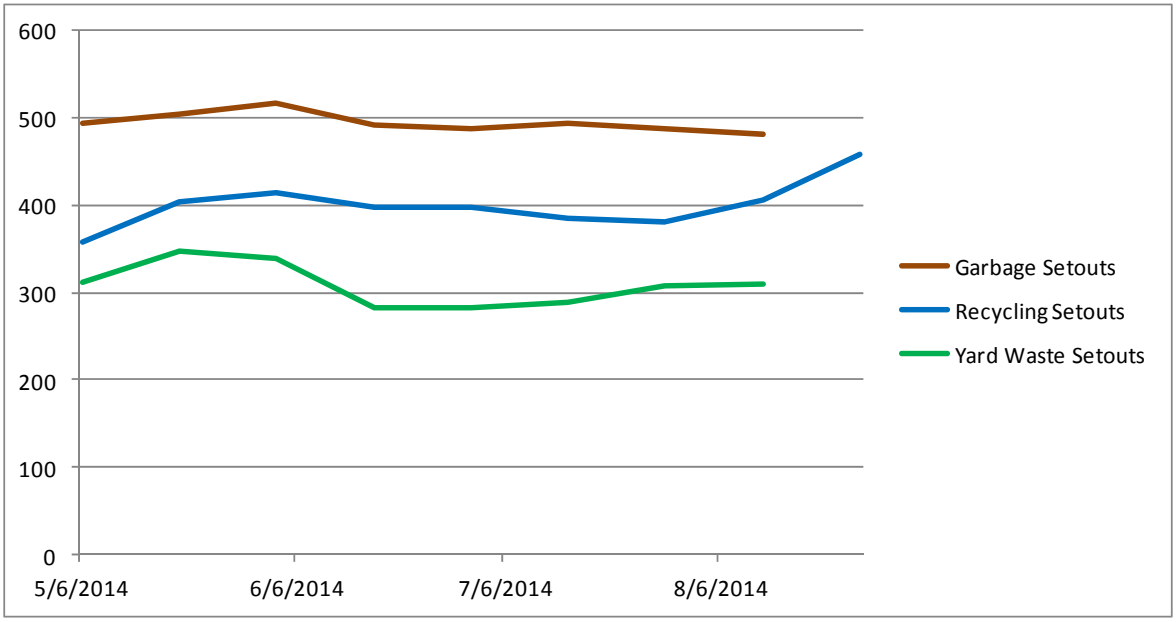
carts, and data was also recorded on the tonnages of garbage, recyclables and yard waste from the pilot project area. Table 1 shows the amount of yard waste and recyclable materials collected in the pilot program area and the setout rates for the carts, and also the amount of garbage collected in the pilot program area. Figure 1 shows the number of setouts for each type of cart during the pilot program.

Table 1
Tonnages Collected and Setout Rates for Pilot Program

Date	Tons Collected			Number of Setouts		
	Garbage	Recycling	Yard Waste	Garbage	Recycling	Yard Waste
Pre-Pilot	10.56		5.85*			
May 6	8.71	2.53	8.85	493	357	312
May 13	8.15	NA	NA	471	NA	NA
May 20	9.06	3.14	11.8	505	403	347
May 27	9.28	NA	NA	NA	NA	NA
June 3	8.32	3.04	9.84	517	415	340
June 10	8.31	NA	NA	460	NA	NA
June 17	8.48	3.05	6.52	492	398	282
June 24	8.43	NA	NA	463	NA	NA
July 1	8.66	2.65	7.52	488	398	282
July 8	8.46	NA	NA	457	NA	NA
July 15	8.89	2.26	6.73	493	385	288
July 22	8.69	NA	NA	463	NA	NA
July 29	9.08	2.75	7.22	487	382	307
August 5	8.74	NA	NA	468	NA	NA
August 12	8.43	2.78	7.77	482	406	310
August 19	7.90	NA	NA	NA	NA	NA
August 26	9.80	3.09	9.33	NA	458	NA
Total Tons	147.4	25.3	58.5			
Percent of Total Tons	59.4%	10.2%	30.4%			
Averages	8.67	2.81	8.40	481	400	309
Average Setout Rate				89.6%	74.5%	57.5%
Average Pounds per Setout				31.0	14.0	54.4

Notes: NA = material was not collected that week or the data is missing.
* The amount of yard waste collected in the pilot program area before the pilot program began is an estimate based on the citywide average for pounds of yard waste per subscriber for the last week of April (39.3) and the number of pre-existing subscribers in the pilot area (149), with the result doubled to account for the service only being every-other-week in the pilot program.

Figure 1
Number of Setouts in Pilot Program Area



Note: This graph shows the garbage setouts only for the recycling weeks.

As can be seen in Table 1, the amount of garbage collected in the pilot program area decreased during the pilot project, dropping from a pre-pilot amount of 10.56 tons per collection day to an average of 8.67 tons. It should be noted that the weekly amount of garbage shown in Table 1 includes the garbage collected from the 85 households in that area that did not participate in the pilot program. The amounts of recyclables collected during this period were fairly stable. The amount of yard waste increased and then dropped off, which is likely the result of seasonal fluctuations in rainfall and vegetative growth. Both the recycling and yard waste amounts showed a slight increase for the final collection day, which is likely the result of pilot program participants using their last opportunity to set out these materials. Outreach materials for the pilot program encouraged participants to do this so that their carts would be empty when City staff took them back.

The participation data shown in Table 1 is expressed in terms of setout rates, which is the percentage of the total households that set out that particular cart on that day. The percentage of households that set out their yard waste carts for each collection day was the lowest rate of the three carts (57.5% for the yard waste carts versus 89.6% for garbage and 74.5% for recycling), but the average yard waste cart contained more material (54.4 pounds per setout) than the other two carts (31.0 pounds per setout for garbage and 14.0 pounds per setout for recycling). The amount of recyclables set out is relatively low compared to other areas. In the City of Richland, for instance, recycling

carts contain an average of 23 pound per setout (versus the 14 pounds per setout for the pilot program in Yakima). The amount of recyclables in Yakima was potentially affected by the season, the short-term nature of the pilot program and/or other factors.

Setout data is helpful, but it is not the same as a participation rate. Since every household does not set out their carts every time there is a collection day, there are actually more households participating than indicated by setout rates. For example, garbage cans are set out at the highest setout rate (89.6%), but more than likely 100% of the households are actually participating in garbage collection services. Similarly, the number of households that participating in curbside recycling was clearly higher than the 74.5% setout rate shown in Table 1. Based on the pattern of responses seen in the post-survey and other data, the actual participation rate for curbside recycling was likely over 90%.

Finally, it is interesting to note that the setout rate for garbage carts was slightly higher in those weeks when recycling was also being collected. This is a common observation and can easily be explained by the fact that people are often bringing out their recycling cart that morning and so it is easier to also put out the garbage cart. The average setout rate for garbage carts for the weeks when recyclables were also being collected was 92% and for the non-recycling week it was 86%.

D. RECYCLING CART OBSERVATIONS

Six times during the course of the pilot program collections, City staff or a volunteer (Christine Funk) checked the contents of the recycling carts and either attached an "oops" tag noting that the wrong materials had been placed in the cart or attached a "recycling star" tag stating that that the cart's contents looked good (see Attachment B for copies of the tags). The carts were "tagged" in this manner on May 6, May 20, June 3, June 17, July 1, and July 29. All of the carts were also tagged a seventh time on August 12th to inform residents that the carts would be removed after the next collection day.

Not all carts were checked for the first six tagging events because the cart inspection and tagging process took longer than the collection truck took to empty the carts (hence, the tagging staff could not stay ahead of the truck or complete the route in one day). An average of 91 recycling carts were checked on each collection day and on the average almost one-third (31%) of the carts were found to have a notable amount of contamination in them. While this level of contamination may appear high, it should be kept in mind that the overall amount of contamination was not that large since in many cases a "contaminated" cart may have only contained a few plastic bags or other small items. This amount of contamination, in fact, compares fairly well to similar studies

conducted recently in Clark County and suburban King County, which found contamination rates of 28% and 31%, respectively, in recycling carts.

Table 2 shows the types of contaminants that were tracked for the cart observations and the number of times that these contaminants were observed. "Clamshells" are clear plastic, hinged containers often used for deli and take-out foods. "Blister" packaging is made from a layer of plastic and paper glued together, and is often used as packaging for small items such as pens.

Table 2
Contaminants found in the Recycling Carts

Type of Contamination	Number of Carts with Contaminant	Percent of Carts with Contaminant
Deli Packaging ("Clamshells")	48	10.5%
Pizza Boxes	30	6.6%
Plastic Bags	24	5.3%
Trash	20	4.4%
Styrofoam	12	2.6%
"Blister" Packaging	7	1.5%
Glass Bottles	6	1.3%
Other	58	12.7%
Totals	139*	30.5%*

Note: * The total number of contaminated carts is lower than the sum of each type of contaminant because some carts had more than one type of contamination.

A variety of materials were counted in the "other" category. Some of the materials counted in this category include (roughly in order of occurrence, from most to least):

- plant pots
- food
- paper plates
- tissues
- coated paper food packaging

Non-recyclable items that were found only once or twice in the recycling carts included a garden hose, plastic pool, floor mat, batteries and yard waste.

E. COMPOSITION OF THE COLLECTED RECYCLABLE MATERIALS

Table 3 shows the results of the composition test that was conducted on the recyclables collected on August 26, and the full report for this test is shown in Attachment C. As can be seen in Table 3, the total amount of contamination ("non-program" materials) found in this test was only 7.4%. This is fairly good compared to many other programs. Data from two other studies used for comparison purposes (Clark County and Kitsap County) shows contamination levels of 8.3% and 9.5%, respectively. It is likely that the intensive outreach during pilot project in Yakima helped to reduce common contaminants such as plastic bags. It should be noted that pizza boxes are included as a recyclable material even though program materials discouraged, because the boxes found during the composition test were generally clean enough to be recycled.

Table 3
Composition Results, Curbside Recycling Samples

Type of Material	Average, %
ACCEPTABLE MATERIALS	**92.6**
Recyclable Paper	**79.0**
Newspaper	18.8
Cardboard	18.6
Mixed Paper	39.3
Shredded Paper	0.2
Pizza Boxes	2.0
Recyclable Plastic	**8.9**
Plastic Bottles	8.5
Tubs	0.4
Buckets	0.0
Metals	**4.8**
Aluminum Cans	2.1
Tin Cans	2.0
Scrap Metal	0.7
NON-PROGRAM MATERIALS	**7.4**
Non-Program Plastic	**0.9**
Bags	0.4
Trays and Clamshells	0.4
Glass	**0.8**
Glass Bottles	0.8
Non-Recyclable Glass	0.04
Other	**5.7**
Food Scraps	0.1
Yard Debris	0.03
Other Non-Recyclables	5.5

Note: All figures are percentages by weight.

SECTION TWO
CUSTOMER SATISFACTION

A. INTRODUCTION

This section of the report discusses the information gathered on customer satisfaction for the pilot project, including:

- Survey data collected by the City
- The results of a focus group involving pilot program participants

Both of these methods were used to solicit feedback from the pilot program participants because each method has its advantages. The use of a survey provides an opportunity to all of the residents in the area to provide their input, and they can do this on their own schedule and as anonymously as they wish. The use of a focus group, on the other hand, provides an opportunity to discuss the pros and cons of the recycling program in more detail. Focus group participants are able to react to each other's ideas, and this generates additional ideas and conclusions that otherwise might not be mentioned.

B. SURVEY RESULTS

Refuse Division staff conducted two surveys of the residents in the pilot program area; one prior to the start of the pilot program and one at the end of it. The "pre-survey" was mailed to the residents of the pilot program area in late March, and they were asked to respond by mail or through an on-line survey at the City's website. Out of the 571 surveys sent out, there were 167 responses received by the deadline (May 5, 2014), for a response rate of 29%. The "post-survey" was mailed out near the end of the pilot project (mid-August) to the pilot program participants (537 households), and by the end of September there were 202 responses received from the pilot program participants, for a response rate of 38%.

The following observations can be made by comparing the results of the pre- and post-surveys:

- The percentage of households that said that they recycle went up from 39% before the pilot program to 88% afterwards.
- The percentage of households that recycled specific commodities went up significantly for cardboard, other types of paper, plastic milk and pop bottles, and yard waste. The percentage of households that recycled aluminum and tin cans decreased slightly (from 52.6% to 52.0%). The decrease is likely within the margin of error for the survey, so it could be assumed this means that about the

same number of people recycled aluminum and tin cans during the pilot as before the pilot.

- In the pre-survey, 84% of the respondents said that they would participate. In the post-survey, 88% of the respondents said that they did participate.

Most of the respondents to the post-survey thought that:

- The curbside program was good or excellent (79%), with only a minority rating it as fair (2.5%) or needing improvement (4.5%). Adjusting for the 13.9% of the people that did not answer this question increases the number of respondents that thought the program was good or excellent to 92%.
- The collection frequency of every-other-week was "just right" (63%).
- They saw a reduction in the amount of garbage that their household produced (74%, or 84% if this is adjusted for the 12.4% of the people that did not answer this question).

The results of the surveys are shown in Tables 4 and 5. The last column of Tables 4 and 5 shows the "adjusted percentage," which does not include the non-respondents for each question.

Table 4
Results of Pre-Survey in Pilot Program Area

Survey Question	Number of Responses	Percent of Responses	Adjusted Percent
1. Do you recycle?			
Yes	92	53.2%	NA
No	36	20.8%	
Sometimes	45	26.0%	
2. What items do you recycle the most?			
Cardboard	95	54.9%	NA
Yard waste	59	34.1%	
Tin, aluminum cans	91	52.6%	
Plastic milk jugs	41	23.7%	
Paper, magazines, junk mail	96	55.5%	
Plastic pop bottles	38	22.0%	
Other	7	4.0%	
3. How do you recycle?			
Curbside	26	15.0%	15.9%
Drop-off	102	59.0%	62.2%
Other	36	20.8%	22.0%
No Answer	9	5.2%	
4. What motivates you to recycle?			
Good for the environment	116	67.1%	NA
It benefits the community	73	42.2%	
Concerned about preserving landfill space	65	37.6%	
Cleaner streets	39	22.5%	
Other	27	15.6%	

Table 4, Results of Pre-Survey in Pilot Program Area, continued			
Survey Question	**Number of Responses**	**Percent of Responses**	**Adjusted Percent**
5. Would you recycle if your community had a successful recycling program?			
Yes	145	83.8%	87.9%
No	20	11.6%	12.1%
No Answer	8	4.6%	
6. Which of the following statements best describes your opinion?			
The major barrier to increased recycling in my neighborhood is the lack of programs and opportunities	98	56.6%	NA
The major barrier to increased recycling in my neighborhood is the lack of community interest and motivation	35	20.2%	
The major barrier to increased recycling in my neighborhood is low tipping fees	19	11.0%	
Other	21	12.1%	
7. How would you find out more about recycling in your area?			
Internet	42	24.3%	39.6%
Call City	39	22.5%	36.7%
Don't know or not sure	10	5.8%	9.5%
TV, radio, newspaper	9	5.2%	8.5%
Ask neighbor or friend	6	3.5%	5.7%
Call landfill or recycling center	6	3.5%	5.7%
Other	13	7.5%	12.2%
No answer	67	38.7%	
8. Do you feel there is a need for more information on recycling?			
Yes	128	74.0%	80.5%
No	31	17.9%	19.5%
No answer	14	8.1%	
9. Do you think the closure of the Terrace Heights Landfill will have an impact on solid waste management?			
Yes	151	87.3%	94.4%
No	9	5.2%	5.6%
No answer	13	7.5%	
10. What strategies should the City explore to reduce the volume of waste going to the landfill?			
Curbside recycling	141	81.5%	NA
Curbside yard waste recycling	106	61.3%	
Take-back programs	96	55.5%	
Product stewardship	22	12.7%	
Other	19	11.0%	
11. What is your gender?			
Female	110	63.6%	65.1%
Male	59	34.1%	34.9%
No answer	4	2.3%	
12. What is your age?			
19-25	5	2.9%	2.9%
26-35	20	11.6%	11.7%
36-45	16	9.2%	9.4%
46-60	39	22.5%	22.8%
Over 60	91	52.6%	53.2%
No answer	2	1.2%	

Note: The total number of responses for some questions is greater than 173, or 100%, due to multiple responses for those questions.

Table 5
Results of Post-Survey of Pilot Program Participants

Survey Question	Number of Responses	Percent of Responses	Adjusted Percent
1. Did you participate in the pilot curbside recycling program?			
Yes	178	88.1%	88.6%
No	23	11.4%	11.4%
No answer	1	0.5%	
2. What commodity did your household recycle the most?			
Cardboard	139	68.8%	
Yard waste	116	57.4%	
Tin, aluminum cans	105	52.0%	NA
Plastic milk jugs	118	58.4%	
Paper, magazines, junk mail	146	72.3%	
Plastic pop bottles	101	50.0%	
Other	16	7.9%	
3. Overall, the pilot program was:			
Excellent	102	50.5%	58.6%
Good	58	28.7%	33.3%
Fair	5	2.5%	2.9%
Needed improvement	9	4.5%	5.2%
No Answer	28	13.9%	
4. Overall, the pilot program was:			
Convenient	152	75.2%	78.8%
Took too much time	11	5.4%	5.7%
Didn't like having to sort it out	15	7.4%	7.8%
Didn't see any purpose in it	15	7.4%	7.8%
No Answer	9	4.5%	
5. Were the instructions for recycling clear and concise?			
Yes	175	86.6%	94.1%
No	11	5.4%	5.5%
No Answer	16	7.9%	
6. How often did you set out your carts?			
Once	3	1.5%	1.6%
Twice	4	2.0%	2.2%
Every time	151	74.8%	81.6%
Every other time	26	12.9%	14.1%
I forgot to set out my carts	1	0.5%	0.5%
No answer	17	8.4%	
7. The collection every other week was:			
Just right	131	63.4%	
Too often	15	7.4%	NA
Not often enough	25	12.4%	
Other	31	16.8%	
8. Did your household see a reduction in the volume of your garbage?			
Yes	149	73.8%	84.2%
No	28	13.9%	15.8%
No answer	25	12.4%	

Table 5, Results of Post-Survey of Pilot Program Participants, continued			
Survey Question	**Number of Responses**	**Percent of Responses**	**Adjusted Percent**
9. Our garbage was cut:			
By a little	24	11.9%	13.5%
In half	69	34.2%	38.8%
Went from 96-gallon cart to 32-gallon cart	64	31.7%	36.0%
No reduction/no change	21	10.4%	11.8%
No answer	24	11.9%	
10. Did this program have an effect on your household disposal habits?			
Yes	127	62.9%	70.9%
No	52	25.7%	29.1%
No answer	23	11.4%	
11. If the City offers curbside recycling after the pilot program ends, would you consider signing up for it?			
Yes	142	70.3%	82.6%
No	30	14.9%	17.4%
No answer	30	14.9%	
12. Do you think curbside recycling is a good way to reduce the volume of waste we will need to haul?			
Yes	159	78.7%	91.9%
No	14	6.9%	8.1%
No answer	29	14.4%	
13. What motivates you to recycle?			
Good for the environment	144	71.3%	NA
It benefits the community	106	52.5%	
Concerned about preserving landfill space	118	58.4%	
Cleaner streets	49	24.3%	
Other	18	8.9%	
14. Who in your household is primarily responsible for recycling?			
Male	57	28.2%	31.1%
Female	92	45.5%	50.2%
Both male and female	34	16.8%	18.5%
No answer	19	9.4%	
15. Who in your household is primarily responsible for recycling?			
19-25	4	2.0%	2.4%
26-35	14	6.9%	8.3%
36-45	14	6.9%	8.3%
46-60	34	16.8%	20.2%
Over 60	92	45.5%	54.7%
More than one age group	10	5.0%	6.0%
No answer	34	16.8%	

Note: The total number of responses for some questions is greater than 202, or 100%, due to multiple responses for those questions.

C. FOCUS GROUP

Another important opportunity for customer feedback was provided through a focus group that was conducted on September 17, 2014. This focus group was organized and facilitated by EnviroIssues, a consulting firm with a great deal of experience in these types of activities and with offices in the Tri-Cities, Tacoma, Seattle, and Boise. The focus group was held at the Harman Senior Center and was attended by eight pilot program participants. The participants were asked a series of questions and were encouraged to voice their opinions regardless of whether those were positive or negative. The goals of the focus group were to:

- Learn how participants' waste behaviors changed (or not) through their participation in the curbside recycling pilot program.
- Identify the effectiveness of the outreach materials used in the curbside recycling pilot program.
- Determine awareness of and agreement with strategic planning for the Terrace Heights Landfill closure.
- Determine if curbside recycling is a reasonable and effective tool to include in departmental strategic planning.
- Learn if there is support for a "bundled" approach to garbage, yard waste and recycling collection rates.

A full copy of the report on the focus group is shown in Attachment D, and a few highlights of the findings include:

- Many participants said they were excited about the curbside recycling program and indicated that it was generally easy after initially learning how to participate in the program. Additionally, those who participated in the yard waste collection service noted that it was easy to do so.
- Most participants were more aware of their waste during and after the pilot program and indicated that their thinking had changed during the pilot.
- Most participants were generally supportive of the City using curbside recycling as a tool to maintain rates, reduce the amount of garbage hauled to the landfill, and reduce the environmental impact the city has and felt these are the right steps to be taking to plan for the closure of the Terrace Heights Landfill.
- Some participants indicated that they would sign up for curbside recycling if it was reasonably priced and noted that convenience is a key benefit.
- Most residents felt that 50% of the citizens would sign up for the curbside recycling program based on their perceptions of their own neighborhoods during the pilot.
- Many participants were supportive of bundling services and providing a "basic service package" of recycling and garbage collection.
- All participants indicated that they would advise the City Council to proceed with curbside recycling if asked.

It's interesting to note that, when asked, focus group participants thought that only 25% to 50% of the residents of Yakima would sign up for curbside recycling, but significantly more people (over 90%) actually participated in the pilot program.

It should also be noted that after the focus group questions were finished, there was a discussion about a few questions that had come up during the focus group (about glass, incineration, and the cost of the pilot program). These questions were addressed by a City staff person (Loretta Zammarchi) and technical consultant (Rick Hlavka). In answering the question about costs, it was stated that the pilot program cost about $4.50 per household per month, and there was near-unanimous support from the focus group participants who felt that this amount was a fair price for the service.

SECTION THREE
RATE ANALYSIS

A. INTRODUCTION

This section of the report discusses the cost analysis for a citywide recycling program and universal yard waste service. This question comes at a time, however, when the City of Yakima must also consider a rate increase to adequately fund the services currently being provided. The existing rates for the current garbage collection services and the optional yard waste collection service are not adequate to cover the actual costs of providing these services.

B. CURRENT NEEDS FOR RATE INCREASE

Garbage Collection Rates

The current rates for waste collection services do not cover all of the costs of providing that service. The disparity between the rates charged to customers and the cost of providing services has been increasing in recent years. Reserves provided some buffer but have now been exhausted. As shown in the rate analysis (see Attachment E), there is a projected shortfall in 2015 of $395,549. Residential garbage service rates and the rates for bin collection will need to be increased to address this shortfall. The recommended new rates for residential service are summarized in Table 6.

Table 6
Recommended Rates for Current Services

Size and Type of Cart	Current Monthly Rate	Recommended New Rate
32-Gallon Garbage Cart	$10.00	$12.00
96-Gallon Garbage Cart	$17.02	$18.00
64-Gallon Yard Waste Cart	$7.01	$13.00
96-Gallon Yard Waste Cart	$12.82	$14.00

Yard Waste Collection Rates

The current rates for yard waste collection services also do not cover all of the costs of providing that service. Yard waste collection is currently available on a subscription basis and approximately 25% of the households (6,276 customers) in Yakima subscribe to this service. A small number of households have a 64-gallon cart for this service, but the majority of the households (84%) have a 96-gallon cart. The current rates charged for the 64-gallon and 96-gallon yard waste carts ($7.01 and $12.81) do not cover the costs of this service, and the recommended new rates for yard waste service are shown in Table 6. It should be noted that the true cost of servicing the 96-gallon carts is only $0.63 per month greater than servicing the 64-gallon carts. The rates in Table 6 show a $1.00 difference between the 64-gallon carts and 96-gallon carts, but it probably makes more sense to simply convert all of the households to a 96-gallon cart for yard waste.

C. RATES FOR POTENTIAL NEW SERVICES

Residential Curbside Recycling

Based on the results of the pilot program, a rate analysis has been prepared for every-other-week curbside collection using 96-gallon carts (see Attachment E). It is recommended that this service be provided citywide to all residential customers. The focus group, post-survey results, and pilot program participation data all point to a majority of people needing, liking and participating in this service. If the recommended approach is used, the cost for this service would only be $3.00 per household per month. If this service were to be provided on a subscription basis instead, a lower number of people would subscribe and the cost per month would increase. The City of Richland, for instance, allows households to voluntarily subscribe and in their city the cost of the service is almost twice as much ($5.70 per month) and only 23% of the households subscribe.

Citywide Yard Waste Collection

Expanding the yard waste collection service to all customers would increase the efficiencies of providing this service. The cost per household for this service would decrease significantly from the existing rates, although of course households that are not currently subscribing would see this as an increase over current waste service costs. If the yard waste collection service was universal (i.e., provided to all households in the city), then the cost for this service would only be $3.62 per month for a 96-gallon cart collected every-other-week from March to November.

A citywide approach for yard waste services would mean that people who are currently subscribing to yard waste would experience a rate decrease, while those who do not subscribe to the service would experience a rate increase for a new service.

SECTION FOUR
CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This section of the report discusses the conclusions and recommendations derived from the analysis conducted for this project, and compares the recommended rates to other areas.

B. CONCLUSIONS AND RECOMMENDATIONS

Existing Services

Several recommendations can be made for the current system:

- Current rates need to be increased to cover the actual cost of providing garbage and yard waste collection services.
- The Refuse Division should switch from the current "weekly" method of billing to a "monthly" approach.
- There is room for improvements in productivity and these options should be explored, including changing the drivers' work schedule to 4 10-hour days and using software for routing.
- If universal yard waste collection is not adopted, then all subscription yard waste customers should be converted to 96-gallon carts.

Residential Curbside Recycling

The primary recommendation for curbside recycling is that this service should be implemented citywide in 2015-2016. The actual service may not be able to start until late 2015 or 2016, as much of 2015 will be needed to purchase trucks and carts, hire drivers, and work out other details.

All households should be provided with 96-gallon carts, although smaller carts for senior citizens could be considered. The recycling collections should be conducted every-other-week on the same day as garbage collection in each neighborhood.

Implementing this program citywide will result in 3,670 to 5,880 tons of recyclables collected per year (288 to 461 pounds per household per year). A Request for Proposals (RFP) should be issued in 2015 to solicit bids for processing or transfer of the recyclables.

Yard Waste Collection

The primary recommendation for yard waste service is that it should be implemented citywide in 2015-2016. The actual service may not be able to start until late 2015 or 2016, as much of 2015 will be needed to purchase trucks and carts, hire drivers, and work out other details. The yard waste service should be conducted on an every-other-week schedule, on a schedule that alternates with the curbside recycling (i.e., recycling one week and yard waste the next week) and should be on the same day as garbage collections. If all three carts were on the same schedule, there would be space problems at the curb for many households.

Implementing this program citywide will result in approximately 8,490 tons of yard waste collected per year, compared to the 3,865 tons per year collected currently.

Bundling Rates

Including the cost (or "bundling the rates") for curbside recycling and yard waste collection services in the base rate for garbage collection provides economies of scale and reduces administrative overhead. This approach provides a standard level of service that is easier to communicate to residents and easier for them to understand. Table 7 shows the rates for a bundled approach.

Table 7
Bundled Approach for New Services

Service	32-Gallon Garbage	96-Gallon Garbage
Garbage Service	$12.00	$18.00
Curbside Recycling, 96-Gallon Cart collected every-other-week	$3.00	$3.00
Yard Waste, 96-Gallon Cart collected every-other-week	$3.62	$3.62
Total	$18.62	$24.62

If this approach is used, a significant number of residents would likely switch from 96-gallon garbage carts to 32-gallon carts. They should be able to do this by diverting a portion of their wastes to recycling and yard waste instead of placing these materials in the garbage carts. To the extent that these households can do this, a resident would only experience an increase of $1.60 per month over the existing rate of $17.02 per month for a 96-gallon garbage cart.

C. COMPARISON TO OTHER AREAS

The bundled rates compare favorably to the rates of other cities near Yakima and for similar-sized cities in eastern Washington. Table 8 shows a sampling of these rates.

Table 8
Rates for Other Areas

Size and Type of Cart	32-Gallon Garbage	96-Gallon Garbage
Yakima Waste Systems, unincorporated Yakima County;		
Garbage Only	$8.09	$14.76
Garbage with EOW Recycling and EOW YW	$27.07	$33.74
City of Selah (Basin Disposal)		
Garbage and Monthly Recycling (included)	$10.74	$14.78
Garbage and Recycling with EOW YW	$17.75	$21.29
City of Richland		
Garbage and EOW Yard Waste (included)	NA	$17.50
Garbage with EOW Recycling	NA	$23.20
City of Wenatchee (Waste Management)		
Garbage and W 64-Gallon Recycling (included)	NA	$18.75
Garbage and Recycling with EOW YW	NA	$28.27
City of Ellensburg		
Garbage and W Recycling (included)	$12.79	$27.98
Garbage with W Yard Waste	$28.18	$43.37

Notes: EOW = every-other-week, W = weekly, YW = yard waste.

ATTACHMENT A
PILOT PROGRAM ANNOUNCEMENT LETTER

The letter sent to the residents of the pilot program area is shown in the next four pages. This letter was used to explain the purpose and other details for the pilot program.

City of Yakima
DEPARTMENT OF PUBLIC WORKS
2301 Fruitvale Blvd., Yakima, Washington 98902
Phone (509) 575-6005

March 28, 2014

Dear Resident,

The City of Yakima is pleased to announce the launch of a pilot curbside recycling project in your neighborhood. Your household has been selected to participate in the pilot. The pilot is in response to the Citizens' Survey requesting that curbside recycling be a service provided and also in anticipation of major changes in the manner that the City will be disposing of its future waste.

Your City of Yakima Solid Waste and Recycling Division would like to take this time to introduce you to the project, provide you background information and request your assistance in gathering important waste disposal information by filling out the enclosed survey and actively participating in the pilot.

Enclosed you will find information that will help identify items that you can recycle and answers to questions you may have about the program. Please take a few minutes to review the following. Your input will be of great assistance as the City of Yakima plans for our future solid waste collection and disposal options.

WHY A PILOT?

You may ask why the City is conducting a pilot project. There are several reasons. The City of Yakima is responsible for providing solid waste services to all its residents. It has made a priority of ensuring fair and equitable rates while protecting public health, safety and the environment.

Currently, the City of Yakima disposes of its waste at Yakima County's owned and operated Terrace Heights Landfill located on Roza Hill Drive. We dispose of approximately 30,000 tons of residential waste a year at a cost of approximately $940,000. We have been fortunate that the landfill is relatively close (approximately 6-11 miles away) and the tipping fees associated with disposal have been affordable ($32.00/ton). However, we are presently at a cross road for handling future waste generated within our City limits.

According to County officials, Terrace Heights has a remaining capacity of approximately 11 years. It is anticipated that once the landfill is closed, solid waste generated from the City will be hauled to the County owned and operated Cheyne landfill located outside the City of Zillah. The round-trip haul to and from the new landfill location will add a significant cost to the current refuse fees and impact how the City will manage its solid waste.

The City has addressed significant changes to its program in the past. For instance, from 2001-2008, we successfully changed collection services from manual to automated and converted our fleet to automated side loaders and carts. Yard waste collection was also added. It is important to note that the City conducted these changes over a seven-year period. This allowed us to implement the program in phases while spreading the costs over a number of years. Now, faced with the closure of Terrace Heights within the next 11 years, the City of Yakima must assess its current collection and disposal practices and begin planning for its long-term solid waste management options. One option is the proposed pilot curbside project.

BACKGROUND of CURRENT SERVICES

The City of Yakima Municipal Code requires weekly collection of residential garbage. Residents can utilize a City provided 32-gallon cart or a 96-gallon cart. In addition, residents can subscribe to weekly yard waste service utilizing a 96-gallon cart. (Sixty-four gallon carts are currently available, but are being reassessed as a level of service linked to efficiencies). Residents can also subscribe to a 64-gallon, every other week recycling service provided by Yakima Waste Systems for $8.42 a month.

PURPOSE OF THE PILOT

The purpose of the pilot is to assist the City of Yakima in planning for its future long term management of the solid waste generated within the City limits. The pilot will evaluate for:

- The level of participation
- The benefits to the community through landfill avoidance
- The effectiveness of standardizing collection of three waste streams (garbage, recyclable, yard waste)
- The projected costs of running a citywide program
- Customers' responses
- Potential waste diversion and recycling tonnages
- Feasibility of Every Other Week recycling and yard waste collection
- Rate impacts
- Efficiencies in collection frequency and fuel usage

In addition, the pilot will also:

- Provide the benefit of starting small to allow for a substantial education and outreach program to improve participation rates and create a larger awareness about future disposal and diversion issues.
- Permit the gathering of important data while limiting the risks of expensive, citywide programs.
- Align the City with statewide recycling goals.
- Save valuable natural resources from being disposed of in a landfill.

THE PILOT – Overall Description

The pilot period will be four months, from May 6, 2014 through August 29, 2014. It will be offered to approximately 600 homes in the Hamilton Park/Sun crest Additions (east and north of Kissel Park). In celebration of Earth Day, the City's Solid Waste Program will begin distributing carts the week of April 21. A Community Cleanup, Pharmaceutical Turn In and Recycling Information Day are planned for Saturday, April 26th from 9:00 a.m. to 2:00 p.m. at Kissel Park. You are invited to come and learn first-hand about the pilot.

Hamilton Park/Suncrest Additions

HOW IT WORKS

The pilot will be collecting three waste streams: garbage, recyclables and yard waste. As part of the program, you will have the opportunity to recycle materials including paper, plastic, cans, cardboard and other approved items using a 96- gallon single stream recycling cart; yard waste in the 96- gallon yard waste cart and garbage in the brown 32- gallon garbage cart. Please refer to the enclosed *What to Include in Your Recycling Cart and Tip* flyer for assistance and answers to frequently asked questions. This information will also be posted on our website: www.yakimawa.gov/recycle.

During the week of April 21st you will receive three (3) carts:

- Brown 32- gallon garbage cart
- Green 96- gallon yard waste cart
- Brown Blue lid 96- gallon recycling cart. (The recycling roll-out carts feature a blue lid to distinguish them from the brown garbage and green yard waste carts.)

32 Gallon | 96 Yard Waste | 96 Gallon Recycling

If you already have a 32 gallon cart and/or a yard waste cart please utilize them for the duration of the pilot. You will receive a recycling cart. We ask that if you have a 96 gallon garbage container, please refrain from using it during the course of the pilot and utilize the 32- gallon refuse cart. We are testing to see how much you can reduce your volume of waste by utilizing the 96- gallon recycling carts. If you do utilize your 96 gallon garbage cart during the pilot, you will be billed post-pilot for those services in the September/October billing.

SET OUT AND COLLECTION DAYS

The program is planned to operate for 4 months beginning May 6th and running until August 29th. The pilot will collect recyclables and yard waste on an **Every Other Week Service**.

- **Garbage will be collected weekly on your regular Tuesday date.**
- **Recyclables will be collected on Tuesday, the same day as your garbage, but will be on an Every Other Week collection.**
- **Yard waste will be collected on Fridays, the same week as recyclables, also on an Every Other Week collection.**

COLLECTION CALENDAR

Tuesday Recycling **Friday Yard Waste** **Garbage Pickup Remains Every Tuesday**

Please have your carts out by 6:00 a.m. for all collections.

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

Kickoff Bin Distribution
Community Clean Up and Recycling Day
April 26th

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

Pilot Begins May 6th

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

Remember: Every Other Week Collection

JULY						
S	M	T	W	T	F	S
	1	2	3	H	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Assessment and Data Collection
Note: Holiday Collection on Sat July 5

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

Assessment and Data collection

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

Pilot Follow Up and Evaluation

FEE/COST OF PILOT

The collection of the recyclables and yard waste collection will be free of charge during the pilot. You will be charged a $10.00 monthly service fee for a 32-gallon refuse cart for the pilot period. Please limit your usage to refuse generated from your household only. If you currently have a 96-gallon refuse cart, we ask that you refrain from utilizing it during the pilot. You will not be billed for the 96-gallon refuse cart unless you use it or request additional service during the pilot. You will be charged post pilot for those services.

AFTER THE PILOT

AFTER THE FOUR MONTHS THE RECYCLING CARTS WILL BE COLLECTED AND YOUR REGULAR SERVICE WILL RESUME. If you choose to keep the yard service, or make any changes to your current service, please contact us prior to the end of the pilot to establish the service. The current yard waste fee will apply. The City will not be providing curbside recycling after the pilot. Once the collection has ended, the pilot will be evaluated. The evaluation will be based upon community response to the pre and post surveys, participation and set out rates, contamination and diversion levels, collection frequency and the materials collected. A final report with recommendations will be presented to City Council in late fall. The Solid Waste Program will await direction from City Council.

HOW YOU CAN HELP

The purpose of the pilot is to encourage recycling as an alternative disposal option and to collect disposal and recycling data that will assist in future long term solid waste management planning. To assist us in collecting such data we need your assistance. Enclosed you will find a questionnaire designed to receive input from you regarding your current level of recycling activity and the type of waste reduction programs you are interested in having implemented in your city. Please fill out the survey and return it in the envelope provided. You may complete an on-line survey at www.yakimawa.gov/recycle. Your response is strictly confidential and will only be reported in summary form. If you have any questions, please feel free to contact your City of Yakima Solid Waste and Recycling Division at 576-6005.

We thank you in advance for your assistance and participation.

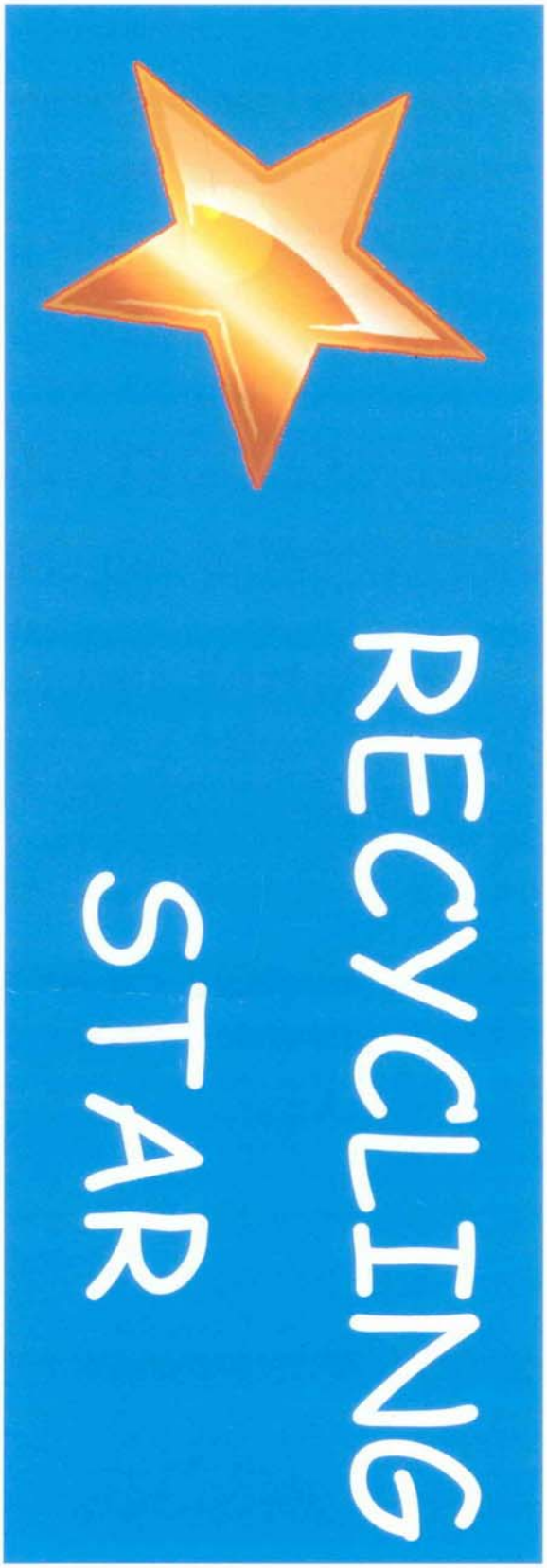
REUSE
REDUCE
RECYCLE

ATTACHMENT B
TAGS PLACED ON RECYCLING CARTS

The following tags were used to provide feedback to the pilot program participants. These tags were attached to the recycling carts with a rubber band on six occasions during the pilot program (May 6, May 20, June 3, June 17, July 1, and July 29.). The "Recycling Star" tag provided positive feedback for the participants that had put out a cart with little or no contamination. The "Oops" tag was used for carts where contamination could be observed. The type of contamination was indicated on the back of the Oops tag by circling the item that shouldn't have been in the cart. In addition to informing the participants, the tags also provide an element of peer pressure, since the tags are visibly a different color and could be observed by neighbors.

The third tag shown in this attachment is the "recycling champ" tag used to inform participants about the end of the pilot program. All of the carts were tagged on August 12th to inform residents that the carts would be removed after the next collection day.

All three of the following tags are slightly reduced in size from the actual copies used.



Way to Go!

Your Recycling set-out looks great.

You are a Recycling Star

Today we spot-checked your recycling cart for contamination and didn't find any.

Way to go!
Thanks for your efforts.

Recycling works best when materials are set out right and problem materials are avoided. Please remember to keep glass out of your recycle carts and to recycle plastic bags at your local grocery stores and not at the curb.

If you have any question about the Pilot Program, contact your City of Yakima Solid Waste and Recycling Division at 509 575-6005 or check out www.yakimawa.gov/recycle for more information.

Together our efforts won't go to waste!

OOPS!

RECYCLING

Thank you for participating in the Curbside Recycling Pilot. We appreciate your effort, but your separation requires further attention.

Please see the marked items on the other side of this flyer.

Recycling can be so easy if you just know how. This friendly message from your City of Yakima Solid Waste Division is intended to make recycling simpler for you.

Thank You for Recycling!

For more information about the Pilot Recycling Project, please contact your City of Yakima Solid Waste Division at 575-6005 or go to www.yakimawa.gov/recycle.

City of Yakima Solid Waste and Recycling
Division 2301 Fruitvale Blvd.
Yakima, WA 98902
509– 575-6005.

CONTAMINANT CATEGORY GUIDE

CATEGORY	DESCRIPTION
Styrofoam	Blocks and Meat Trays
Blister Pack	Plastic attached to a paper board or foil backing. Examples include packaging for pills, pens, and children's toys.
Deli/Clam Shell	Plastic deli containers, clam shells (often for food, toys, or electronics), and plastic berry containers.
Fiber with Plastic	Flats of bulk purchases must be free of their plastic wrap.
Paperboard	Wet-strength or wax –coated paperboard can not be recycled. It often comes from the refrigerator/freezer.
Glass/Ceramic	**Glass of any kind in not acceptable** in the pilot curbside program..
Pizza Box	Grease-stained pizza boxes cannot be recycled.
Other	Any other non-recyclable items; trash.
Please do not place garbage, food scraps, ashes, sod, dirt, building material, rocks, animal waste, large branches or tree trunks in your yard waste container.	

PILOT IS WRAPPING UP

We thank you for your participation and support. Here are a few tips to help us assist you in resuming your regular service.

1) The final pickup for the:
   - Recycling Cart is Tues. Aug.26th
   - Yard Waste Cart is Fri. Aug. 29th
2) Please have your carts on the curb ready to be emptied. Do not refill.
3) Removal of the Recycling Carts will begin: Tuesday Aug 26 until all are collected.
4) Removal of the Yard Waste Carts will begin Friday Aug.29 until all are collected.
5) Please make sure your carts are accessible and visible for final removal.
6) Due to the holiday (Labor Day) , your next garbage picked up day is Wed., Sept. 3rd. Your regular service will resume on Tuesdays for garbage and Fridays for yard waste thereafter. Please use your pre-pilot carts for regular service.
7) Data collected from the Pilot will be analyzed and presented to City Council for review in late Fall.
8) NOTE: The City will not be providing curbside recycling of household recyclables after the pilot. Your Solid Waste Program will await direction from Council on our next recycling steps.
9) If you choose to keep yard service, or make any changes to your current service, please contact us prior to the end of the pilot to establish the service. The fee for weekly yard waste collection is $12.82 month.

For more information about the Pilot Recycling Project please contact: City of Yakima Solid Waste and Recycling Division 2301 Fruitvale Blvd. Yakima, WA 98902 509- 575-6005.

THANKS FOR PARTICIPATING IN THE PILOT CURBSIDE RECYCLING PROJECT

After 4 months, the City of Yakima's Curbside Recycling Pilot Program is nearing an end.

This is a reminder that the Pilot wraps up on August 29th. With only a few weeks left, we wanted to help prepare you for the cart removals and how we plan to resume your regular service.

Please see the backside of the flyer for instructions.

ATTACHMENT C
COMPOSITION TEST RESULS

GREEN SOLUTIONS

ENVIRONMENTAL CONSULTING

COMPOSITION ANALYSIS

for the

CITY OF YAKIMA PILOT CURBSIDE RECYCLING PROJECT

SEPTEMBER 2014

RECYCLING COMPOSITION RESULTS
CITY OF YAKIMA PILOT CURBSIDE RECYCLING PROJECT

INTRODUCTION

This report provides the results of a sorting test that was conducted on the recyclables collected in Yakima on August 26. This work was performed by Green Solutions under contract to the City of Yakima, with assistance from Loretta Zammarchi (Yakima Solid Waste and Recycling Manager), Christine Funk (a volunteer), and two temporary workers from LaborReady. Overnight storage space for the recyclables and other assistance was also provided by Yakima Waste Systems.

The goals for this analysis were to determine the amount and type of contaminants (non-recyclable materials) and to determine the composition of the recyclable materials. This information will help guide public education efforts for a possible future program and help determine the market value of the collected recyclables.

APPROACH

The recyclables collected on August 26 were segregated overnight at the Yakima Waste Systems facility on Terrace Heights Road and then tested on the next day. The recyclables from the pilot project were normally delivered to this facility, but in this case the load of recyclables was placed in a separate area apart from the normal receiving area. At the time of the delivery, about half of the load was removed by heavy equipment to allow access on the next day to the center of the pile, and the rest of the load secured for overnight storage (see Figure 1). On the next morning, Rick Hlavka (Green Solutions) arrived at 6:00 a.m. to set up the sorting equipment. Two temporary laborers arrived about 7:00 a.m. and were provided with health and safety training before beginning work. The sorting crew was joined by Loretta Zammarchi and Christine Funk shortly after that.

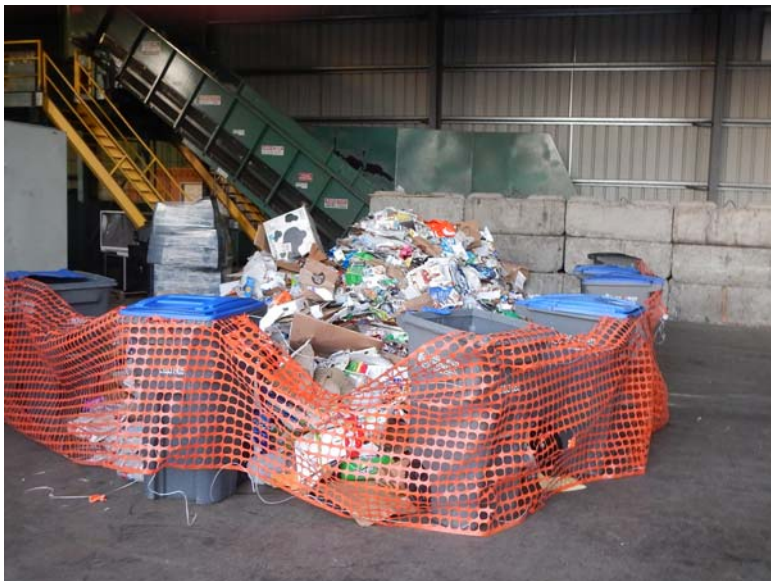


Figure 1: Recyclables stored at Yakima Waste Systems facility.

Samples of the recyclables were taken from four locations; the left and right sides, and the front and back of the pile. The sample from the right side consisted of the materials that had been in the center of the load originally (before part of the load had been removed the day before). Samples were taken from different locations in the pile to account for any segregation of materials that may have occurred in the collection truck based on the densities of the materials (heavier materials tend to sink to the bottom of a load while lighter materials float to the top, at least while the truck is only partly full). The sampled materials at each location were removed in a wedge-shaped pattern, taking all materials from the top to the bottom of the pile and extending into the center of the pile, again to account for any segregation of materials that may have occurred during collection. Samples were taken from the pile by filling up to twenty 32-gallon trash cans at each location.

Each sample was brought to a sorting table and separated into 18 categories (see Figure 2). After each sample was completely sorted, the containers of sorted materials were weighed, the weights noted on a form specific to this project (see Attachment A), and then work began on the next sample. Later, the weight data was entered into a spreadsheet, the weights were summed up, and the percentage of each material was calculated.

Figure 2: Sorting crew at work, August 27, 2014.

RESULTS AND OBSERVATIONS

Table 1 shows the results of the sorting tests. As can be seen in Table 1, the material present in the largest amount was mixed paper (recyclable grades of paper such as magazines, catalogs, office paper, junk mail, telephone books, cereal boxes, etc.). The amount of newspaper and cardboard in the samples was nearly equal, and there was also a substantial amount of plastic bottles. Additional observations for each type of material are shown below:

Paper: At 79.0%, the recyclable grades of paper make up most of the recyclable materials set out by residents in the pilot project area. Pizza boxes are included in this subtotal, even though people were asked not to set these out for recycling, because almost all of these were sufficiently clean to recycle

Table 1
COMPOSITION RESULTS, CURBSIDE RECYCLING SAMPLES

Type of Material	Average
ACCEPTABLE MATERIALS	
Recyclable Paper	**79.0**
Newspaper	18.8
Cardboard	18.6
Mixed Paper	39.3
Shredded Paper	0.2
Pizza Boxes	2.0
Recyclable Plastic	**8.9**
Plastic Bottles	8.5
Tubs	0.4
Buckets	0.0
Metals	**4.8**
Aluminum Cans	2.1
Tin Cans	2.0
Scrap Metal	0.7
Total Acceptable Materials	**92.6**
NON-PROGRAM MATERIALS	
Non-Program Plastic	**0.9**
Bags	0.4
Trays and Clamshells	0.4
Glass	**0.8**
Glass Bottles	0.8
Non-Recyclable Glass	0.04
Other	**5.7**
Food Scraps	0.1
Yard Debris	0.03
Other Non-Recyclables	5.5
Total Non-Program Materials	**7.4**

Note: All figures are percentages by weight.

(although the pizza boxes were also the source for most of the food waste found in the samples). The small amount of shredded paper found in the samples was not bagged or contained in any way.

Recyclable Plastic: 96% of the recyclable plastics found in the samples were plastic bottles and jars. Only small amount of plastic tubs were found and no buckets were found in the samples or observed in the rest of the load.

Metal: Aluminum and tin cans made up most of the metals that were found, with only a small amount of scrap metals present (scrap metal made up only 15% of the metals). Comments made at the focus group indicate that at least some residents were separately saving their aluminum cans to sell those.

Non-Program Plastic: The amount of plastic bags found was small on a weight basis (only 0.4% of the total), but this is significant given the light weight of each bag (meaning that a large number of bags were needed to add up to that much weight). The same is true for plastic trays and clamshells[1], although to a lesser extent since this type of packaging weighs more than plastic bags.

Glass: Only a small number of glass bottles were found in one of the four samples taken. The small amount of non-recyclable glass (0.04%) found consisted of broken window glass in two of the samples.

Other: Food waste and yard debris were measured separately from the other contaminants, and only small amounts of these materials were found. Much of the food waste found was the result of pizza crusts left inside of pizza boxes. Other contaminants found included styrofoam, plastic objects, non-recyclable paper, and various other non-recyclable materials (see Figure 3).

Figure 3: Contaminants found in Sample #4.

COMPARISON TO OTHER STUDIES

There is not much data available from other areas that can be used for comparison purposes, but data from a study in Kitsap County last year (May 2013) and an older study (February 2008) for Clark County provide data that can be compared to Yakima's results (see Table 2). The data for both of these studies needed to be adjusted slightly for differences in the studies' methodologies (sorting categories)

[1] "Clamshells" are the hinged clear plastic containers frequently used for deli and take-out foods.

Table 2
COMPOSITION RESULTS, CURBSIDE RECYCLING SAMPLES

Type of Material	Kitsap County	Clark County	City of Yakima Pilot Project
ACCEPTABLE MATERIALS			
Recyclable Paper	**73.8**	**78.3**	**79.0**
Newspaper	17.3	23.1	18.8
Cardboard	20.7	15.9	18.6
Mixed Paper	35.6	39.3	39.3
Shredded Paper	0.1	NA	0.2
Pizza Boxes	NA	NA	2.0
Recyclable Plastic	**7.7**	**6.4**	**8.9**
Plastic Bottles	9.4	6.0	8.5
Tubs	0.3	0.4	0.4
Buckets	NA	NA	0.0
Metals	**7.1**	**7.0**	**4.8**
Aluminum Cans	2.7	1.7	2.1
Tin Cans	3.3	3.9	2.0
Scrap Metal	1.1	1.4	0.7
Total Acceptable Materials	**90.5**	**91.7**	**92.6**
NON-PROGRAM MATERIALS			
Non-Program Plastic	**3.5**	**0.5**	**0.9**
Bags	1.0	0.5	0.4
Trays and Clamshells	2.5	NA	0.4
Glass	**0.1**	**2.7**	**0.8**
Glass Bottles	NA	2.7	0.8
Non-Recyclable Glass	0.1	NA	0.04
Other	**5.9**	**5.1**	**5.7**
Food Scraps	0.6	NA	0.1
Yard Debris	0.05	NA	0.03
Other Non-Recyclables	5.2	5.1	5.5
Total Non-Program Materials	**9.5**	**8.3**	**7.4**

Note: All figures are percentages by weight. A few materials shown as "Program Materials" are actually not acceptable materials for Kitsap County's curbside recycling program, including shredded paper and scrap metal, whereas glass bottles are acceptable for their curbside program. For Clark County, additional adjustments were also made in the figures to adjust for materials not collected by their program. NA (not available) is shown for those materials that were not measured in the Clark and Kitsap County studies.

and for differences in the materials considered acceptable for the curbside programs. In Kitsap County, for instance, glass is acceptable as part of the curbside mix, and so the results of that study were adjusted (prorated) to remove all of the glass bottles. Since the Clark County program is a dual-stream approach, with glass collected in a separate bin placed next to a 96-gallon cart that is used for much the same types of materials as in Yakima, the adjustments needed were more minor. For the Clark County figures, the amount of glass bottles shown in Table 2 are only those bottles that were mistakenly placed in the 96-gallon cart.

Compared to the other two studies, the recyclables collected in the City of Yakima had more paper and plastic and less contaminants, including fewer plastic bags.

CONCLUSIONS

A number of conclusions can be reached based on the data collected through the composition analysis and related activities:

- Intensive outreach during pilot project in Yakima helped to reduce common contaminants such as plastic bags.

- From comments made at the focus group, people's habits, and hence the types of materials set out for recycling, may have been affected by the temporary nature of the program. At the focus group, several people commented that they did not invest the time to set up systems or mechanisms to recycle as much as they might have otherwise, and that this might have affected the types of materials that were set out.

- The results of the composition analysis were also potentially influenced by:

  - Seasonal impacts (i.e., hot weather). This test was conducted during the hottest part of the year and based on observations made for this and other studies, Yakima residents were probably generating slightly more aluminum cans and plastic bottles as a result.
  - The end of the pilot project. This test was conducted on the materials collected for the last pickup day of the pilot project. This may have affected the actions of pilot program participants, such as prompting them to set out more materials or to set types of materials they might have otherwise not set out on that day.

All in all, the materials set out for the pilot program appear to relatively clean and had less contamination than other programs. Ongoing public education and feedback to future participants will of course be necessary to maintain this level of quality.

SAMPLE DATA FORM
YAKIMA PILOT RECYCLING PROGRAM

Sample #: _____ Sample Location: _____	Date: _____ Time: _____

MATERIAL	WEIGHTS	COMMENTS
Newspaper		
Cardboard		
Pizza Boxes		
Mixed Waste Paper		
Shredded Paper		
Plastic Bottles and Jars		
Tubs		
Clamshells and Trays		
Buckets		
Plastic Bags		
Aluminum Cans		
Tin Cans		
Scrap Metal		
Glass Bottles		
Non-Recyclable Glass		
Food Scraps		
Yard Debris		
Other Non-Recyclables		

Comments or problems with load, site, other special conditions: _____

_____

_____

DEFINITIONS FOR SORTING CATEGORIES:
In all cases, recyclable grades of materials shown below must be reasonably clean.

PAPER, including;

Newspaper = newspapers and similar grades of paper, including newspaper inserts if found together.

Cardboard = cardboard boxes and brown paper grocery bags.

Pizza Boxes = cardboard pizza boxes.

Mixed Paper = other grades of recyclable paper, including magazines and catalogs (unless paper is newsprint-grade), office paper, computer paper, junk mail, telephone books, paperboard boxes, egg cartons, and gift wrap without foil or excessive coatings.

Shredded Paper = shredded paper (if recoverable), whether in paper or plastic bags.

PLASTIC, including;

Plastic Bottles and Jars = plastic bottles and jars of any resin type, with a bottle or jar being defined as a container with a neck that is as wide or narrower than the body of the bottle. Does not include prescription vials or bottles that were used for motor oil or other toxic materials.

Tubs = plastic tubs (a tub is a container where the opening is equal to or larger than body of container, and generally used a lid that snapped on or peeled off) that have been used for food products (such as yogurt, butter and cool whip).

Clamshells and Trays = plastic containers generally used for take-out or frozen food.

Buckets = plastic buckets that are 4 to 5 gallons in size.

Plastic Bags = all types of plastic bags, including items such as cereal box liners but not including plastic film.

METAL, including;

Aluminum Cans = cans made solely of aluminum, not including bi-metal cans or aluminum foil.

Tin Cans = tin-coated steel cans used primarily for food, and including bi-metal cans.

Scrap Metal = all other ferrous and non-ferrous metals, including aluminum foil and trays.

GLASS, including;

Glass Bottles = all colors of glass bottles, including pieces of broken bottles.

Non-Recyclable Glass = light bulbs of all types, mirrors, windows, and cookware, but not ceramics.

OTHER, including;

Food Scraps = all types of food waste, including coffee filters and tea bags but not including liquids or large amounts of grease and oil.

Yard Debris = weeds, leaves, grass clippings, branches and other vegetation, including small amounts of soil adhering to plants' roots.

Other Non-Recyclables = non-recyclable paper, prescription vials, plastic bottles that were used for motor oil or other toxic materials, plastic film, nursery pots, other plastic objects, clothing, tires, other rubber products, carpet, wood, construction/demolition wastes, furniture, ceramics, medical waste, etc.

ATTACHMENT D
FOCUS GROUP RESULTS

Yakima Curbside Recycling Program
Focus Group

Final Report

October 2014

Prepared by EnviroIssues

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Executive Summary

The City of Yakima conducted a focus group with citizens who participated in the City's curbside recycling pilot program, held between May and August 2014. The curbside recycling pilot program was in response to a citizen survey requesting that this service be provided and also in anticipation of major changes in the manner that the City will be disposing of its future waste. The purpose of the focus group was to learn how participants' waste behaviors changed through their participation in the curbside recycling pilot; to identify effectiveness of materials used in the curbside recycling pilot; to determine awareness of and agreement with City staff strategic planning for the Terrace Heights Landfill closure; to determine if curbside recycling is a reasonable and effective tool to include in departmental strategic planning; and to learn if there is support for a "bundled" approach to garbage, yard waste, and recycling rates.

Most focus group participants knew little about the City's waste management program other than their trash was collected and sent to the Terrace Heights Landfill. A few participants knew that the landfill was quickly reaching capacity. Most participants were excited about the curbside pilot program and felt that it was generally easy to participate in the program. Several participants indicated that they previously dropped off recycling at the landfill and noted that the convenience of curbside recycling was a major benefit. Half of the participants participated in yard waste collection during the pilot and indicated that it was easy to participate in yard waste collection. The majority of participants noted that they were more conscious of their waste during the pilot program and that their thinking had changed over the course of the pilot.

Many participants remembered receiving outreach materials before, during, and after the curbside recycling pilot and felt that they were generally helpful. All participants agreed that the steps City staff are taking to manage rates, to reduce the amount of garbage hauled to the landfill, and to reduce the environmental impact the city has are the right steps to be taking to plan for the closing of the Terrace Heights Landfill. Some participants indicated that they would sign up for curbside recycling if it was permanent, reasonably priced and some participants indicated that the convenience of curbside recycling is a key benefit. Most residents believed that approximately 25 – 50% of Yakima residents would sign up for curbside recycling today. When provided with additional information about the pilot program participation rate of 73%, a majority of participants indicated that 50% of Yakima residents would sign up for the curbside recycling program. Many participants were satisfied with the idea of bundling waste services (garbage and recycling) together and offering a "basic service package." All participants agreed that curbside recycling is a good thing and is the way the City Council should act on this matter.

A list of key findings of this focus group begins on page 13.

Introduction

Background

The City of Yakima Solid Waste Management department has been planning for the future closure of the Terrace Heights landfill and conducted a curbside recycling pilot program from early May through August 29, 2014. The Solid Waste Management Department wants to ascertain whether a future curbside recycling and solid waste program would be a viable option to include in the department's strategic planning.

The curbside recycling pilot program was in response to a citizen survey requesting that this service be provided and also in anticipation of major changes in the manner that the City will be disposing of its future waste. The City of Yakima is responsible for providing solid waste services to all residents and has made a priority of ensuring fair and equitable rates while protecting public health, safety, and the environment. Additionally, County officials have indicated that the existing Terrace Heights Landfill will reach capacity in approximately 11 years. Once closed, the City will haul trash to the Cheyne Landfill, located outside the City of Zillah, which would increase the round trip travel time and increase costs to the current refuse fees. Curbside recycling is one tool to assist with solid waste reduction. The purpose of the pilot was to assist the City of Yakima in planning for its long term management of solid waste generated within city limits.

A focus group with Yakima citizens was intended to understand pilot participant's experiences and outcomes from the pilot program. Additionally, the focus group discussions would allow participants to share their thoughts about curbside recycling as a solid waste management tool.

The City conducted one focus group with Yakima citizens on September 17, 2014. EnviroIssues moderated one 2-hour session from 6:00 p.m. until 8:00 p.m. The session was held at the following location:

Harman Senior Center
101 N 65th Ave,
Yakima, WA 98908

This report summarizes the results of the focus group and captures key comments and issues.

Objectives

The purpose of the focus group was to help the City of Yakima's Solid Waste Management Department learn how participants' waste behaviors changed (or not) through their participation in the curbside recycling pilot and to identify the effectiveness of materials used in the pilot. Additionally, the City wanted to determine awareness of and agreement with City staff strategic planning for the Terrace Heights Landfill closure and determine if curbside recycling is a reasonable and effective tool to include

in departmental strategic planning. Finally, the City wanted to learn if there is support for a "bundled" approach to garbage, yard waste and recycling collection rates.

Focus groups are valuable because unlike survey or other individually-oriented methods, a focus group allows participants to react to each other's ideas and opinions. This approach often generates additional ideas and conclusions that would not be generated by individuals.

Who Participated?

Participant Demographics

Focus group participants were recruited randomly from a list of the 540 homeowners who were included in the pilot area. The pilot area included neighborhoods east and north of Kissel Park (3000 West Mead Avenue). Each house in the project area was provided with a 32-gallon garbage cart, a 96-gallon yard waste cart, and a 96-gallon recycling cart. Participants in the focus group were selected to match the demographics of the City of Yakima in terms of age and gender and included members who participated in the pilot program by placing recycling or yard waste out for collection during the pilot. The focus group included some participants who indicated that they already paid for yard waste collection service prior to the pilot. Additionally participants were not selected if they were employed by the City of Yakima or Yakima Waste Services.

A total of 8 people participated in the focus group – four men and four women. Their ages ranged from 20 to over 65 years of age. Age ranges were used to ensure a representative sample; however, to ensure enough participants would attend the focus group, more participants between 55 and 64 years of age were recruited.

What did we ask?

Background

Participants were given minimal information about the topic of the focus group before arriving at the session. At the beginning of the session, the moderator introduced herself and shared the purpose of the focus group with the participants. They were informed that the City of Yakima was sponsoring the focus group and the purpose was to learn more about how residents used the curbside recycling program and how they viewed future planning for solid waste management. Additionally, they were informed that the focus group was intended to discern if curbside recycling would be a viable option to consider for the future.

After introducing the topic and explaining the logistics of the focus group, including that a staff member from the City of Yakima Solid Waste Department and a technical consultant were observing, the moderator begin guiding the group through discussion questions.

Questions and Discussion Tools

The moderator guided the group through the following discussion format, beginning with a general question to be answered by each participant. A recorder was present in the room taking notes. The focus group was organized into three sections with questions focusing on specific aspects of the pilot program, the printed materials used to notify the public of the pilot, and questions about planning for the future. The first question was as follows:

1. How much do you know about the City's waste management program? Where does your garbage go after it is collected?

After this opening question, the moderator read aloud an overview of the City of Yakima's curbside recycling pilot program. Participants were shown typical waste collection rates and images of the collection carts used during the pilot program (See Appendix A for collection cart images). Participants were then asked to respond to the following questions regarding the curbside recycling pilot program and perceptions of their household waste.

2. Did you participate in the recycling pilot program? Generally, what did you think about it?
3. How much did you think about your trash before you got into the pilot program?
4. What did you think about, if you did think about your household's trash?

Next, participants were asked to respond to questions about the recycling part of the pilot program. The moderator asked the following questions.

5. How easy was it to separate your trash and your recyclables?
6. Did it get easier as time passed?
7. Overall, do you think it was easy or hard to participate in the recycling part of the pilot?
8. If hard, what made it so?
9. What did you especially like about the curbside recycling?

After responses were made, the moderator transitioned into questions regarding the yard waste component of the pilot. She asked the group the following questions.

10. How many of you put out yard waste at least once during the pilot?
11. Was it easy to participate in the yard waste part of the pilot program? Why or why not?
12. Was there enough room in the yard waste cart for your yard waste?
13. Were any of you already signed up for (paying for) yard waste collection before the pilot program? Which size cart – 64- or 96-gallon? Did you put your weekly yard waste container away and only use the one provided for the pilot?
14. For everyone – How did you like the every-other-week service? Was it enough?

The moderator asked participants about their waste behaviors during and after the pilot. She asked the following questions.

15. Did you think more about your waste during the pilot? And now that the pilot is done? If so what did you think about?
16. Did you change any of your thinking about waste during or since the pilot? How so?
17. Did you notice any difference in how much waste was in your garbage container during the pilot? If so, what did you notice?
18. What did you think about that?

The moderator then transitioned to asking the group about the notification materials used during the pilot program. The moderator explained that the City of Yakima distributed several different materials before and during the pilot program. She asked the following questions.

19. Do you remember receiving any materials?
20. What did you receive
21. How did you receive those materials?
22. Overall, did you find the materials you received helpful or useful?

The moderator then distributed packets of materials the City used to inform people before, during and after the pilot. She asked the group to review each piece and give it a score from 1 – 5, with 1 indicating that the material was "not helpful at all" and 5 indicating that the material was " very helpful." (A detailed summary of this ranking exercise can be found in Appendix B). The moderator continued and asked the following questions about the materials.

23. Overall, looking at the materials the City used for the pilot, did they help you successfully participate?
24. Were there questions you had that you couldn't find answers to? If so, what?
25. What suggestions do you have to change or improve any of these materials?

The final phase of the focus group included questions relating to future planning for the City of Yakima Solid Waste Department. The moderator explained that City of Yakima Solid Waste Department is responsible for day-to-day management of the solid waste system and for planning for the future. She explained that currently, solid waste (trash) is hauled from the city to the Terrace Heights Landfill, which is 6 – 16 miles away from the city depending on which end of the city the trucks leave from. An estimated 19 garbage truck trips are made to the landfill every day. The moderator explained that the Terrace Heights Landfill is getting close to capacity and it is estimated that it will likely close sometime in the next 11 years. When this landfill closes, the City will have to haul garbage to the Cheyne Landfill in the Lower Valley, which is 38 – 54 miles away; depending on where the trucks leave from and that this extra distance will increase costs to haul the city's garbage to this landfill. The moderator further explained that City staff are exploring ways now to manage rates and provide affordable services when the Terrace Heights landfill closes and waste will have to be hauled a longer distance. The moderator then asked the following question.

26. Are you aware of the Terrace Heights Landfill impending closure and the potential impacts to the cost of city waste services?

The moderator reiterated that the City staff are preparing for this change by looking for ways to manage rates, reduce the amount of garbage that has to be hauled to the landfill, and reduce the environmental impact the city has. She asked the group the following questions.

27. Are these the right steps to be taking?
28. Are there other steps the city should be taking to plan for this change?

The moderator explained that curbside recycling is one way to reduce the amount of waste to be hauled to the landfill and explained that during the pilot project; more than 22 tons of household recyclables and nearly 60 tons of yard waste were collected. Consequently, the amount of garbage normally collected in the neighborhood decreased significantly. The moderator asked the following questions.

29. What are your thoughts about using curbside recycling as a tool to manage waste in the future?

The moderator then asked the group to rank their support for curbside recycling to be part of the city's waste services on a scale of 1 – 8, with 1 indicating that the participant was not supportive and 8 indicating that the participant was very supportive. (A detailed summary of this ranking can be found in Appendix C). The moderator then asked the group the following question.

30. If the City announced a permanent curbside recycling program was starting next week for the whole city, would you sign up for it? Why or why not?

The moderator asked the group to provide a percentage of residents they thought would sign up if the City announced a permanent curbside recycling program was starting next week. (A detailed summary of this response can be found in Appendix C). The moderator then explained that during the curbside recycling pilot, about 400 homes in the pilot project participated on a regular basis or an average of 73% of the homes in the pilot area set out carts every other week. The moderator then asked the group if these statistics changed their thinking about how many residents would participate if curbside recycling was available. (A detailed summary of this response can be found in Appendix C).

The moderator then told the group that as the city staff look to the future and think about how to manage rates and keep services affordable, they are looking for innovative ideas to try. Currently, garbage and yard waste collection are paid for separately, with each service level being chosen by each resident. She explained that one idea the city is looking at is "bundling" services and offering a basic "package" of services to every household in the city and compared this to the system that cable companies and other utilities use, where they charge for a "basic level of service" that everyone pays. Customers would then be able to add more services by paying for additional services at their option. The moderator explained the benefits of such a service as follows: it would allow for the standardization of services rather than every house having a different service and so could reduce the need to maintain a

mixed cart inventory. This standardization would provide efficiencies and economies of scale when services are the same across the city and would decrease administrative or overhead costs for the city. A basic level of service would also allow for efficiencies in addressing services orders and would limit exchanges from 96-gallon to 32-gallon carts. The basic level of service would also encourage more recycling and composting (for example, moving materials from the more-expensive landfill option to less-expensive recycling and yard waste). It would also ensure that the true costs of service are covered and are fair and equitable for everyone. The moderator then asked the following question and showed a graphic illustrating current billing and bundled billing.

> 31. What would your thoughts be about the city using a "basic package of services" approach to rates, where the basic or minimum bundle would include garbage, yard waste and curbside recycling services?

The moderator concluded by explaining that a summary of the focus group would be provided to City Council to assist in future solid waste planning. City staff also addressed some questions that were raised and to thank the participants for their time. Finally, the moderator asked the following question.

32. If the City Council asked you whether the city should have a curbside recycling program, how would you reply?

What did they say?

Background Knowledge

Most participants knew little about the City's waste management program other than their trash was collected and sent to the Terrace Heights Landfill. A few participants knew that the landfill was filling fast and quickly reaching capacity and had learned this information from news articles.

General Perspectives

Below is an overview of responses from the focus group. Please note that the statements below are not verbatim, but are paraphrased to help present a general idea of the input from the participants. The bullets below highlight common themes that emerged as the group discussed the curbside recycling pilot program.

Part 1: Curbside Pilot Experience

- **Most participants were excited about the curbside pilot program and felt that it was generally easy to participate.** Some participants indicated that having the pilot start over the summer was poor timing. Many participants noted that it felt odd having to separate trash and recycling at the beginning of the program but many developed their own systems for filling the carts each

week. Many participants felt that the frequency of collection was adequate while others indicated that the volume of yard waste warranted more frequent collection based on their individual yard size. Many participants also indicated that they were surprised by how much of their trash was recyclable.

I managed to fill the recycling cart every two weeks and the trash cart never got full; most of the garbage was recycling.

I noticed we had more room in the trash can as we could recycle things we typically didn't before.

- **Several participants indicated that they previously dropped off recycling at the landfill and noted that the convenience of curbside recycling was a major benefit.** Some participants suggested creating more drop off recycling centers throughout the city. A few participants indicated that it was sometimes difficult to remember when recycling or yard waste would be picked up as some neighbors did not participate.

  I used to throw everything in the trashcan. It got easier to sort as the pilot went on.

  I liked the convenience, it was good for the planet, good for Yakima, and saves time instead of driving to the recycling center at Terrace Heights, and it felt good.

- **Half of the participants participated in yard waste collection during the pilot program and indicated that it was easy to participate in yard waste collection.** Some participants indicated that they rarely filled the yard waste container and when it was full, they would mulch or compost the rest. Most participants noted that collection frequency was adequate while some indicated that the collection frequency was not enough based on their individual yard size.

  We rarely filled the yard waste and when we did we mulched or composted the rest.

  I was concerned with the cart size but did not notice since we mulch every other week.

- **Most participants were more conscious about their waste during the pilot program and their thinking was changed during the pilot.** Some participants explained that they were very conscious of their waste during the pilot program as they did not want to make a mistake in sorting the wrong items. Many participants indicated that they noticed much less garbage in their cans during the pilot. Some participants noted that since the pilot they continue to sort recycling and drop it off at the recycling center.

  We were filling a 96-gallon trash cart before the pilot and since then we've been conscious about what's being thrown away. The stuff we can't recycle, we haul to the recycling center.

  I don't like to mix everything together, what a waste. I thought about the recycling program when it was over.

Part 2: Curbside Pilot Materials

- **Many participants remembered receiving materials before, during, and after the curbside recycling pilot and most thought they were generally helpful.** Many participants indicated that they found most of the answers in the materials. Some participants suggested that the materials were too wordy or could have been simplified by using images or bulleted lists and some participants indicated that some materials were written better than others. Some participants suggested that using fewer words, adding bullets, or adding images could improve the materials.

  The cover letter was a bit too wordy. Cartoons and pictures work better.

  The materials could be less wordy. I didn't want to spend time reading every word.

Part 3: Planning for the Future

- **Most participants were aware of the location of the Terrace Heights Landfill and all participants knew it would be closing.** All participants knew of the impending landfill closure since it had been covered in media outlets and it was mentioned in the introductory letter for the curbside recycling pilot program.
- **All participants agreed that the steps City staff are taking to manage rates, reduce the amount of garbage hauled to the landfill, and reduce the environmental impact the city has are the right steps to be taking to plan for the closing of the Terrace Heights Landfill.** A few participants were concerned with the amount of gasoline and money that the City will have to pay to pick up recycling and indicated that more citizens would recycle if there were more recycling drop-off stations. A few participants noted that citizens would be willing to pay for curbside collection based on its convenience.

  The convenience would offset the cost.

  My concern is the gas and the amount of money that the City pays for collection. It will take Yakima a while to get on board but I think more people would recycle if there more collection stations.

- **When asked how supportive each participant was for curbside recycling to be part of the City's waste services, ranking on a scale from 1 (not supportive) to 8 (very supportive), participants ranked in the following manner:**

Ranking	*Definition*	*Number of Participants in agreement*
8	Very Supportive	3 participants
7	Supportive	2 participants
5	Neutral / slightly supportive	1 participant
4	Neutral / less supportive	2 participants

- **Some participants indicated that they would sign up for curbside recycling if it was permanent and/or if it was reasonably priced and some participants indicated that they would sign up for the convenience that the program provides.** Some participants indicated that curbside recycling is the right thing to do and that the change in distance for driving to the landfill will increase costs. One participant indicated that they would not sign up for the program if it were voluntary.

  The program was convenient; I would continue to teach my kids to recycle.

  Yes, it's the right thing to do.

- **When asked what percentage of residents would sign up for a curbside recycling program if the City announced it was starting next week, participants responded in the following manner:**

Percentage of Yakima residents who would sign up for curbside recycling	Number of participants in agreement
50 % of residents would sign up	**3 participants**
35% of residents would sign up	**1 participant**
25% of residents would sign up	**4 participants**

  Some participants commented that their scoring was based on what they saw in their neighborhoods while others were optimistic that if the program was marketed correctly, more residents would sign up for it.

  Even though the pilot was free, many of my neighbors didn't participate. It was too much of a pain to sort.

  People know what's coming in the future and understand the risk. I think the increased distance is compelling.

- ***When participants were told that 400 homes or 73% of the homes in the pilot area set out carts every other week, and were asked again what percentage of residents would sign up for a curbside recycling program, they responded in the following manner:***

Percentage of Yakima residents who would sign up for curbside recycling	Number of participants in agreement
50% of residents would sign up	5 participants
25% of residents would sign up	3 participants

  A few participants were surprised by the percentage of households that participated in the pilot program.

- **Many participants were satisfied with the idea of bundling waste services (garbage and recycling) together and offering a "basic service package."** Some participants explained that there is a need for an incentive to recycle. A few participants suggested various packages allowing a resident to pick and choose based on price while other participants indicated that an "a la carte" menu of services would create administrative inefficiencies.

  I pay someone to do my yard work so I don't need yard waste as an option.

  Having an option with garbage and recycling (not yard waste) would be useful.

- **All participants agreed that curbside recycling is a good thing and would advise the City Council to institute curbside recycling.**

Key Findings

Results from the Yakima focus group will help the City identify the future of a curbside recycling program and inform other solid waste decisions. Participants' responses and suggestions will help the City make decisions about future solid waste planning.

Key Findings

The following key findings summarize the main ideas heard from the focus group participants:

- Most participants were aware of the impending closure of the Terrace Heights Landfill and were mildly aware of the City's waste management programs.
- Many participants said they were excited about the curbside recycling program and indicated that it was generally easy to participate in after initially learning how to participate in the program. Additionally, those who participated in yard waste collection noted that it was easy to do so.
- Most participants were more aware of their waste during and after the pilot and indicated that their thinking had changed during the pilot.
- Most participants indicated that the materials distributed during the pilot were generally helpful but suggested that fewer words and more images/diagrams be used.
- Most participants were generally supportive of the City using curbside recycling as a tool to maintain rates, reduce the amount of garbage hauled to the landfill, and reduce the environmental impact the city has and felt these are the right steps to be taking to plan for the closing of the Terrace Heights Landfill.

- Some participants indicated that they would sign up for curbside recycling if it was reasonably priced and noted that convenience is a key benefit.
- Most residents felt that 50% of the citizens would sign up for the curbside recycling program based on their perceptions of their own neighborhoods during the pilot.
- Many participants were supportive of bundling services and providing a “basic service package” of recycling and garbage collection.
- All participants indicated that they would advise the City Council to proceed with curbside recycling if asked.

Appendix A – Curbside Recycling Cart Images

96 Gallon Recycling Cart

96 Gallon
Yard Waste
Cart

32 Gallon Garbage Cart

Appendix B – Ranking of Materials

Participant	Welcome Letter	Recycling Reminders	Recycling Reminders (Cart Tags)	Recycling Rock Star (Cart Tag)	Oops (Cart Tag)	Recycling Hero (Cart Tag)
1	5	5	5	4	NA	5
2	5	5	5	3	3	5
3	3	5	5	3	4	4
4	3	3	2	4	5	5
5	2	5	5	5	4	1
6	5	5	5	NA	NA	5
7	4	5	5	2	NA	3
8	3	5	4	1	1	1

Participants were asked to rank effectiveness of materials on a 5 point scale with 1 being “not effective” and 5 being “very effective.”

Appendix C – Participant Responses

Participant	Supportive (1 – not supportive, 8 very supportive)	What percentage of residents would sign up for curbside recycling today?	What percentage of residents would sign up for curbside recycling today, based on pilot participation rates?
1	7	25%	50%
2	8	50%	50%
3	4	50%	50%
4	8	25%	25%
5	7	25%	50%
6	8	25%	25%
7	4	50%	50%
8	5	35%	25%

Participants were asked to rank their level of support for the curbside recycling program on a scale from 1 to 8 with 1 being "not supportive" and 8 being "very supportive."

ATTACHMENT E
RATE ANALYSIS

City of Yakima

COST OF SERVICE REPORT FOR SOLID WASTE COLLECTION SERVICES

Bell & Associates, Inc.

OCTOBER 2014

Solid Waste Collection Costs and Proposed Collection Rates

Collection Costs

The current rates for waste collection services do not cover all the cost of providing the service. In a work session in April 2014, City Council was notified of the issue when the cost for residential services were presented for discussion. Collection costs for the FY 2015 are projected to increase by approximately $396,000, or 7% over the current year budget. Table 1 below summarizes and compares the increases by cost component for the current year and next year.

Table 1: Comparison of 2014 Budget to 2015 Projected

Collection Cost Components	2014 Budget	2015 Projected	$ ▲	% ▲
Wages - Route Drivers	756,244	830,441	74,197	10%
Driver Tax & Benefit Expense	327,007	357,278	30,271	9%
Fuel	278,000	300,000	22,000	8%
Fleet M&O	375,385	420,500	45,115	12%
Operating Supplies & Materials	27,775	28,975	1,200	4%
Replacement Vehicles	630,000	630,000	-	0%
Replacement Carts / Containers	85,000	85,000	-	0%
Other Operational Expenses	268,978	320,577	51,599	19%
Disposal / Processing	940,000	1,039,715	99,715	11%
Admin Wages	268,629	255,591	(13,038)	-5%
Admin Tax& Benefit Expense	97,868	88,195	(9,673)	-10%
Administration Expenses	18,992	16,742	(2,250)	-12%
Customer Service / Invoicing	168,121	198,121	30,000	18%
General Fund / PW Transfers	364,923	372,363	7,440	2%
City Utility Tax	828,000	863,250	35,250	4%
WA State Taxes	242,400	266,124	23,724	10%
Total Department Cost	**$5,677,323**	**$6,072,872**	**$395,549**	**7%**

Residential Collection

Residential collection rates were adjusted in 2012 for the 6% increase in the City utility tax from 9% to 15%. This was a pass through and while this increase necessitated a rate increase to the customer it did not generate nor provide operational revenues to the Solid Waste Division. In 2010 the Solid Waste budget was amended due to an unanticipated increase in landfill disposal fees of 15% and higher fuel costs. Expenses ran 19% higher than expected and required a budget amendment for the SW division for $47,000 to cover the cost of the increased landfill fee

and fuel costs. When the rates were adjusted, the additional costs were added to the existing rate. The rates implemented over the previously noted years were never set at the costs of service. During the last seven years, total revenues generated more than the cost of the service. Since that time, the fund balance has been depleted because the cost of providing the service has increased at a rate higher than the assessed fees for service.

Under the current rate structure, there is a disparity between the residential rates and the cost of service. The FY 2015 cost of service for 32 gallon waste collection is $13.68 per month while the current rate is $10.00. Customers with a 96 gallon cart currently pay $17.02 per month and the cost of the service is $16.23. If the City were to adjust the rates to reflect the cost of service, customers with a 32 gallon cart would realize an increase of $3.33 per month. This is an increase of 33%. Because the variance between the cost of service and rates is very high, we recommend a phased increase of $2.00. To offset the operational deficit, we also recommend an increase of $0.98 for the 96 gallon customers. The deficit and surplus would be adjusted annually until the rates were at the cost of service. Table 2 summarizes the cost of service and the recommended rate increases for 2015.

Table 2: Collection Costs and Proposed Rates for Residential Waste Collection

Collection Cost Components	32 gallon cart	96 gallon cart
Labor Expense	$2.64	$2.64
Collection Expense	$2.72	$2.72
Admin and Customer Service Expense	$1.35	$1.35
General Fund / PW Inter Fund Transfers	$0.95	$0.95
Waste Disposal	$1.39	$3.33
Truck Replacement	$1.54	$1.54
Cart Replacement	$0.43	$0.60
Total Collection Cost	$11.02	$13.13
WA Refuse and B&O Tax (5.1% of Rate)	$0.56	$0.67
City Utility Tax (15% of Cost)	$1.74	$2.07
Cost of Service Monthly Rate	$13.33	$15.87
Current Monthly Rate	$10.00	$17.02
Proposed Rates	**$12.00**	**$18.00**
$ ▲	$2.00	$0.98
% ▲	**20%**	**6%**

Subscription Yard Debris Service

Yard debris collection is offered on a subscription basis to approximately 25% of the residential customers. Participants currently have the choice of either a 64 or 96 gallon roll cart. Of the 6,276 participants, only 1,023 or 16% utilize a 64 gallon cart whereas the balance of the customers (5,253) use a 96 gallon cart for storage and collection of yard debris. Yard debris service has a similar problem as garbage in that the lower volume container is disproportionately priced below the cost of service. However, the 96 gallon cart is also priced below the cost of service. Table 3 summarizes the cost of service and the recommended rates.

Table 3: Collection Costs and Proposed Rates for Subscription Yard Debris Service

Cost of Service	64 gallon cart	96 gallon cart
Labor Expense	$3.92	$3.92
Collection Expense	$1.99	$1.99
Admin Expense	$1.92	$1.92
General Fund / PW Inter Fund Transfers	$0.75	$0.75
Yard Debris Disposal	$0.79	$1.19
Truck Replacement	$1.34	$1.34
Cart Replacement	$0.60	$0.75
Total Collection Cost	$11.31	$11.85
WA B&O Tax (1.5% of Rate)	$0.17	$0.18
City Utility Tax (15% of Cost)	$1.70	$1.78
Cost of Service Rate	$13.18	$13.81
Current Rates	$7.01	$12.82
Proposed Rates	**$13.00**	**$14.00**
$ ▲	$6.16	$0.99
% ▲	**88%**	**8%**

To reduce the sting of the rate increase for the 64 gallon yard debris customers, the City should consider standardizing yard debris service to the 96 gallon cart. While the customer with a 64 gallon cart would still realize a rate increase, they would be provided with a larger capacity cart that could lessen the financial pain.

Residential Recycling

The proposed curbside recycling program would provide residential customers with a 96 gallon roll cart collected every-other-week. The 96 gallon cart will provide most customers adequate capacity to store the recyclable materials until the day of collection. Table 4 summarizes the cost of service and the recommended rates.

Table 4: Collection Costs and Proposed Rates for Residential Recycling

Cost Component	Cost
Wages - Route Drivers	$0.77
Driver Payroll Tax & Benefits	$0.33
Fuel	$0.29
Fleet M&O	$0.41
Operating Supplies & Materials	$0.03
Vehicle Replacement[1]	$-0
Roll Cart Cost[2]	$0.36
Other Operational Expenses	$0.13
Recycling Processing	$0.57
Disposal Savings	$(0.36)
Administration Expenses	$0.04
Customer Service / Education and Outreach	$0.25
Inter Fund Transfers	$0.10
WA B&O Taxes (1.5%)	$0.07
Total Cost / Proposed Rate	**$3.00**

The proposed recycling rate would be charged on a monthly basis and would be in addition to the current cost of waste collection.

[1] Second line trucks would be utilized for collection, thereby eliminating the need to purchase new trucks.
[2] The cost of carts are offset in anticipation of future grants awarded to the City from the Washington Department of Ecology or other sources.

Citywide Yard Debris Collection

This program would provide collection service to all residents that generate yard debris. Services would consist of a 96 gallon cart collected every-other-week from March to November. Customers that generate more than 96 gallons could subscribe for an additional cart at a nominal rate. Table 5 summarizes the cost of service and the recommended rates.

Table 5: Collection Costs and Proposed Rates for Citywide Residential Yard Debris Service

Cost Component	Cost
Wages - Route Drivers	$0.77
Driver Payroll Tax & Benefits	$0.34
Fuel	$0.23
Fleet M&O	$0.32
Operating Supplies & Materials	$0.02
Vehicle Replacement	$0.61
Roll Cart	$1.04
Other Operational Expenses	$0.27
Yard Debris Processing	$0.41
Disposal Savings	$(0.83)
Administration Expenses	$0.04
Customer Service / E&O	$0.25
Inter Fund Transfers	$0.10
WA B&O Taxes (1.5%)	$0.05
Total Cost / Proposed Rate	**$3.62**

The above cost would be in addition to the current cost of waste collection service but would be in place of yard waste subscription costs.

Another consideration for the expansion of the yard debris program would be the elimination of the fall leaf program. If the fall leaf program is eliminated, all residents would incur a $0.22 decrease per month on their garbage bill. However, if the yard debris program were implemented, all non-subscribing residents would incur an increase of $3.40 ($3.62 - $0.22) a month. Current yard debris service subscribers would realize rate decreases of $3.51 and $9.32 for the 64 gallon and 96 gallon yard debris cart respectively.

Bundled Services

Collection of waste, recycling, and yard debris would be integrated into a bundle of standard services provided by the City. The amount charged to customers would be a bundled rate depending on the level of service selected by the City Council. The following tables summarize the specific services and rate components.

Table 6: Monthly Rate for Weekly Garbage and Every-Other-Week Recycling and Yard Debris

Service	Current Rate	Proposed Rate	$ ▲	% ▲
Garbage – 96 gal. cart Weekly	$17.02	$18.00	$0.98	
Yard Debris - EOW	n/a	$3.62	$3.62	
Recycling - EOW	n/a	$3.00	$3.00	
Total Rate for 96 gal SW cart	**$17.02**	**$24.62**	**$7.60**	**45%**
Garbage – 32 gal. cart Weekly	$10.00	$12.00	$2.00	
Yard Debris - EOW	n/a	$3.62	$3.67	
Recycling - EOW	n/a	$3.00	$3.05	
Total Rate for 32 gal SW cart	**$10.00**	**$18.62**	**$8.62**	**86%**

Table 7: Monthly Rate for Weekly Garbage and Every-Other-Week Recycling

Service	Current Rate	Proposed Rate	$ ▲	% ▲
Garbage – 96 gal. cart Weekly	$17.02	$18.00	$0.98	
Recycling - EOW	n/a	$3.00	$3.00	
Total Rate for 96 gal SW cart	**$17.02**	**$21.00**	**$3.98**	**23%**
Garbage – 32 gal. cart Weekly	$10.00	$12.00	$2.00	
Recycling - EOW	n/a	$3.00	$3.00	
Total Rate for 32 gal SW cart	**$10.00**	**$15.00**	**$5.00**	**50%**

Table 8: Monthly Rate for Weekly Garbage and Every-Other-Week Yard Debris

Service	Current Rate	Proposed Rate	$ ▲	% ▲
Garbage – 96 gal. cart Weekly	$17.02	$18.00	$0.98	
Yard Debris - EOW	n/a	$3.62	$3.62	
Total Rate for 96 gal SW cart	**$17.02**	**$21.62**	**$4.60**	**27%**
Garbage – 32 gal. cart Weekly	$10.00	$12.00	$2.00	
Yard Debris - EOW	n/a	$3.62	$3.62	
Total Rate for 32 gal SW cart	**$10.00**	**$15.62**	**$5.62**	**56%**

City of Yakima

Bundled Rates Comparison to Current Rates

	Current Rate		Current Rate	Proposed 2015 Rate	$ ▲	% ▲
96 gal (City)	$ 17.02	**96 gal (City)**	$ 17.02	$ 18.00	$ 0.98	
Weekly Yd. (City)	$ 12.82	EOW Yd. (City)		$ 3.62	$ 3.62	
EOW Rec (YWS)	$ 8.20	EOW Rec (City)		$ 3.00	$ 3.00	
Total Cost	**$ 38.03**	**Total City Rate**	**$ 17.02**	**$ 24.62**	$ 7.60	45%
32 gal (City)						
Weekly Yd. (City)	$ 10.00	**32 gal (City)**	$ 10.00	$ 12.00	$ 2.00	
EOW Rec (YWS)	$ 12.82	EOW Yd. (City)		$ 3.62	$ 3.62	
Total Cost	$ 8.20	EOW Rec (City)		$ 3.00	$ 3.00	
	$ 31.02	**Total City Rate**	**$ 10.00**	**$ 18.62**	$ 8.62	86%

Note: 15.9% of the households currently subscribe to 32-gallon garbage service only
15.7% of the households currently subscribe to 32-gallon garbage plus weekly yard waste
68.4% of the households utilize a 96-gallon garbage or a 96-gallon garbage plus yard waste

Yakima Waste UTC Tariff Rates (Jan 1, 2014)
without 16% Utility Tax

32 gal Toter	$ 8.09
48 gal Toter	$ 11.54
64 gal Toter	$ 12.12
96 gal Toter	$ 14.76
EOW Rec	$ 8.20
EOW Yd.	$ 10.78

BDI Rates for Selah Contract
with 6% Utility Tax

32 gal Toter	$10.74
48 gal Toter	NA
64 gal Toter	$11.72
96 gal Toter	$14.28
EOW Rec	Included in rate
EOW Yd.	$7.01

Bin Collection

The cost of providing bin collection service is projected to increase by $24,019 from $502,107 budgeted in 2014 to $526,189 in 2015. This is an increase of 4.7% over the 2014 budget. Projected revenues associated with this service will cover only $490,000 of the cost. The combined increase in costs and deficit in revenue will require a rate increase of 7.4% for bin service. Table 9 summarizes the costs and rate calculation for bin service and Table 10 details the current and proposed rates for bin service.

Table 9: Projected 2015 Bin Collection Costs

Cost Components	Cost
Wages - Route Drivers	$90,608
Driver Payroll Tax & Benefits	$36,861
Fuel	$31,110
Fleet M&O	$43,606
Operating Supplies & Materials	$2,768
Replacement - Vehicles	$65,332
Replacement - Carts / Containers	$8,815
Other Operational Expenses	$17,896
Disposal / Processing	$96,820
Admin Wages	$13,872
Admin Tax& Benefit Expense	$4,787
Administration Expenses	$148
Customer Service / Invoicing	$2,183
Inter Fund Transfers	$29,073
City Utility Tax	$62,167
WA Refuse and B&O Taxes (5.1%)	$20,145
Total Cost	$526,189
Projected 2014 Revenue	$490,000
Projected 2015 Expenses	$526,189
Revenue Increase	$36,189
Bin Rate Increase	**7.4%**

Table 10: Proposed Bin Rates for 2015

Bin Volume	Collection Frequency	Current Rate	Proposed Rate	Increase
2 Yard	1 x week	$18.88	$20.27	$1.39
2 Yard	2 x week	$30.20	$32.43	$2.23
2 Yard	3 x week	$41.52	$44.59	$3.07
2 Yard	4 x week	$52.84	$56.74	$3.90
2 Yard	5 x week	$64.16	$68.90	$4.74
4 Yard	1 x week	$30.20	$32.43	$2.23
4 Yard	2 x week	$52.54	$56.42	$3.88
4 Yard	3 x week	$75.48	$81.05	$5.57
4 Yard	4 x week	$98.12	$105.37	$7.25
4 Yard	5 x week	$120.76	$129.68	$8.92
6 Yard	1 x week	$41.53	$44.60	$3.07
6 Yard	2 x week	$75.50	$81.08	$5.58
6 Yard	3 x week	$109.47	$117.55	$8.08
6 Yard	4 x week	$143.44	$154.03	$10.59
6 Yard	5 x week	$177.41	$190.51	$13.10