



2017 PROJECT SUMMARY

Multifamily Recycling Services in the WUTC-Regulated King County

SEPTEMBER 2016 - DECEMBER 2017

Prepared for

Waste Management and King County Solid Waste Division

Prepared by

Cascadia Consulting Group, Inc.



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Introduction

This summary report describes implementation of multifamily recycling services throughout WM's Washington Utilities and Transportation Commission (WUTC)-regulated service area as part of the 2016-17 Revenue Sharing Agreement (RSA) with King County. Multifamily recycling services under this agreement focused on implementing the "Best Practice Basics" identified by King County through pilot projects conducted under previous RSAs. The summary report includes a description of the project background, goals and objectives, activities, outcomes, evaluation results and recommendations.

BACKGROUND AND GOALS

Since 2012, Cascadia has been working with WM and King County on the identification and implementation of best practices for increasing and sustaining multifamily recycling. Through this work, it has been determined that effectively increasing multifamily recycling requires a combination of **property management engagement, infrastructure improvements, and resident education**. Key features of each of these elements include:

Property Management Engagement

- Assess properties regularly for whether infrastructure improvements or other assistance is needed.
- Coordinate service changes with property decision makers to ensure service is appropriate for property needs.
- Provide property managers resources, tools, and incentives to maintain infrastructure and educate residents.

Infrastructure Improvements - Four C's of Multifamily Recycling

- **Convenience** - Recycling and garbage containers should be equally convenient for residents to access. This generally requires co-location of containers wherever possible.
- **Clarity** - It must be clear to residents which container is for garbage and which container is for recycling. Containers should have large, identifying labels and image-based signs posted at every point of collection.
- **Capacity** - There must be sufficient room in the recycling container for residents to place their recyclables. For most properties, recycling service should be approximately 50 percent of its total service volume, with per unit recycling capacity in the range of 20 to 30 gallons (0.10 to 0.15 cubic yards).
- **Color** - Color coding of containers improves clarity around which container is intended for recyclables. Blue is generally associated with recycling.

Resident Education - Once the 4Cs of infrastructure are in place

- **Conduct door-to-door outreach to residents** using community-based social marketing approaches, cultural competency outreach principles, and a multilingual staff

whenever possible. Prioritize outreach to properties with adequate infrastructure and recycling capacity in place.

- **Distribute recycling tote bags and educational materials** tailored for a multifamily audience, including transcreated materials for major cultural groups in the community.

The goal for this project was to **initiate property management engagement** through the distribution of a durable mailer promoting resources and assistance offerings **to all eligible customer properties** (est. 200 properties) and to proactively offer assistance to select priority properties in order to **implement infrastructure improvements and resident education at approximately 25 percent of properties** (est. 50 properties) by the end of the 2016-17 RSA period.

BUDGET

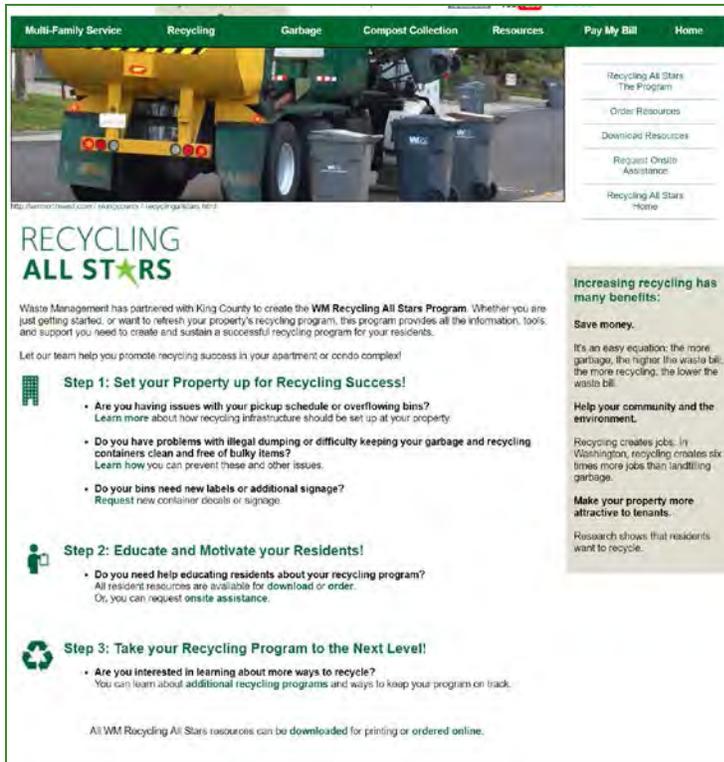
Table 1. 2016-17 Project Budget

Task	Description	Labor	Expenses	Total
1	Material Production & Resource Web Portal Development	\$9,330	\$19,135	\$28,465
2	Property Screening & Property Management Engagement	\$19,660	\$1,200	\$20,860
3	Infrastructure Improvements & Service Change Assistance	\$41,590	\$870	\$42,460
4	Resident Education and Outreach	\$46,920	\$4,330	\$51,250
5	Project Evaluation and Reporting	\$12,895	\$40	\$12,935
6	Project Management	\$14,020	\$5	\$14,025
	Total Budget	\$144,415	\$25,550	\$169,965

SCOPE

RESOURCE WEB PORTAL DEVELOPMENT

To make the tools and resources developed through previous RSA tasks accessible to all WUTC-area customer properties on an ongoing basis, Cascadia adapted the Recycling All Stars toolkit into a web-based tool that property managers can access by visiting the Waste Management website. The online toolkit was promoted to property managers through distribution of a durable promotional mailer.



Screenshots 1 & 2. Landing and Download pages on the North King County Waste Management Recycling All Stars website: <http://wmnorthwest.com/nkingcounty/recyclingallstars.com>¹

SELECTION OF PROPERTIES FOR INFRASTRUCTURE IMPROVEMENTS AND RESIDENT OUTREACH

Cascadia selected properties for assistance through an initial screening, conducted via calls, emails, and drop-by visits. Staff attempted initial screening calls/emails to 120 of the 198 customer properties in the King County WUTC service area.² In all cases during the screening process, when Cascadia staff reached an appropriate property representative, they introduced the program and asked a set of brief screening questions to determine the need for technical assistance and infrastructure improvements. Of the properties contacted, outreach staff spoke with 77 property decision makers (property managers, facilities staff, board members, etc.) and could not reach a decision maker at 43 properties. Eight properties declined assistance during the initial screening phase.

¹ The same webpage is setup for multifamily properties located in Unincorporated South King County: <http://wmnorthwest.com/skingcounty/recyclingallstars.com>

² This number excludes all properties that were identified as not multifamily during the screening call.

Based on information gathered through the screening process, properties were assigned to one of two categories of assistance:

1. **Infrastructure improvements and technical assistance** - for properties without convenient recycling access or sufficient recycling capacity.
2. **Resident outreach** - for properties with adequate recycling infrastructure.

Any property screened where a property decision maker could not be reached via phone or email was classified using the benchmark recycling standard: properties above the benchmark weekly recycling collection capacity of 0.125 cubic yard per unit were assigned resident outreach only; properties below the benchmark were assigned technical assistance.

INFRASTRUCTURE IMPROVEMENTS AND SERVICE CHANGE TECHNICAL ASSISTANCE

The goals of this task were to make contact with the screened properties, determine whether additional recycling capacity or other infrastructure improvements were needed and, if so, provide the property decision makers with technical assistance to make the necessary service changes and improvements.

Once a property was assigned into the technical assistance category, Cascadia scheduled an initial onsite meeting and site assessment with property staff. For the properties where property staff could not be reached during the property screening phase, Cascadia staff would visit the property and attempt to make connect with property staff.

Cascadia conducted onsite meetings and/or site assessments at 80 properties and identified 60 properties (75% of those assessed) that would benefit from a service change. Recommendations were developed with the help of a cloud-based tool that calculated per-unit recycling capacity and allowed field staff to try out different recommendations for container quantities and sizes needed to meet benchmark standards for recycling in different ways.

Cascadia staff presented recommended service changes and, if the property decision maker agreed to the changes, the team walked the property to confirm operational feasibility of recommended container placement. The Waste Management team reviewed and approved the recommendations and coordinated delivery of the containers with the Waste Management operations team, and Cascadia staff communicated the timeline for container delivery and outreach to the property managers. The coordination and communication across critical stakeholders ensured that proper infrastructure was in place prior to the start of resident education and outreach.

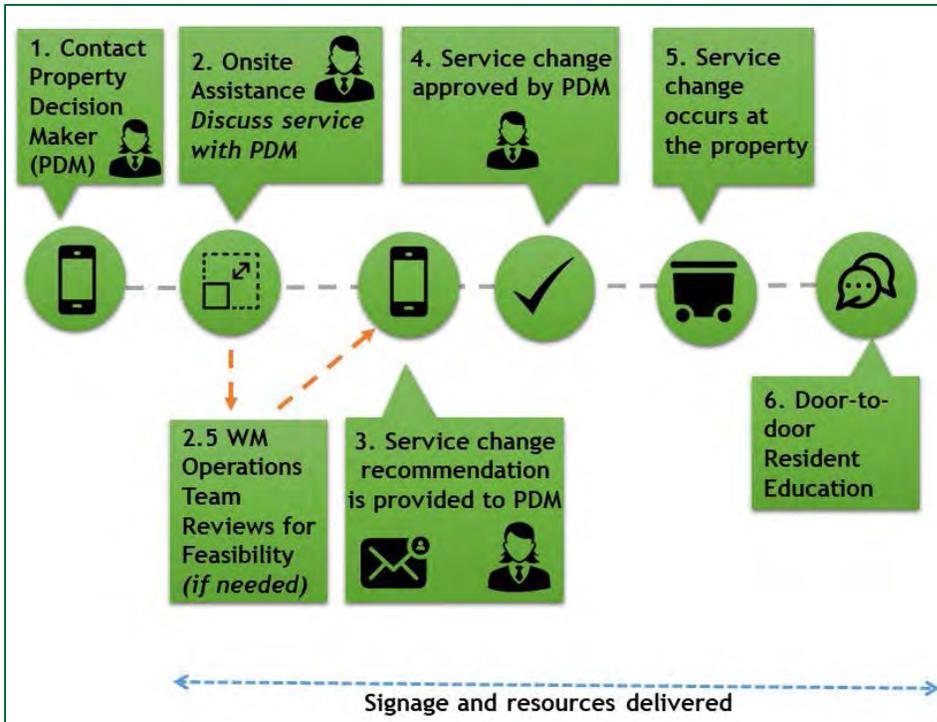


Figure 1. Multifamily service change process

Of the 60 properties where service change recommendations were made, 28 properties (47%) moved forward with service changes to add recycling capacity or make other infrastructure improvements. Of the remainder, 14 properties (23%) decided not to make any changes, and at 18 properties (30%), no property decision maker could be reached for approval of the service change.

In total, service changes resulted in 107 cubic yards of additional recycling capacity per week, a 42 percent increase in average per unit capacity.

Service changes resulted in a total of 107 cubic yards of additional recycling capacity per week at multifamily customer properties.

The resulting changes in weekly recycling capacity are shown by city in the table below.

Table 2. Properties that completed recycling service changes by property location (site address)

Property Location*	# of Properties	Units	Weekly Recycling Capacity		
			Total Added	CY per unit	
			Capacity (cy/wk)	Pre	Post
Bothell	2	250	19	0.125	0.202
Federal Way	1	216	4	0.056	0.074
Newcastle	1	150	2	0.111	0.124
Redmond	1	90	2	0.112	0.139
Renton	4	347	17	0.091	0.140
White Center	13	641	37	0.065	0.118
Woodinville	6**	829	26	0.098	0.119
TOTAL	28**	2,507	107.4	0.089	0.126

* No properties with Auburn, Burien, Enumclaw, Fife, Issaquah, or Kirkland addresses made service changes.

** One property in Woodinville has approved service changes but is awaiting service change implementation.

BIN IDENTIFICATION

All properties were also offered large, color-coded and image-based posters for enclosures and collection areas. Staff delivered these signs during the initial site visit or during resident outreach.

Dumpsters were also labeled with multilingual container decals to provide residents with another point of reference to distinguish recycling and garbage containers. (This was in addition to the guidelines decals added to each dumpster by WM operations team.)

New recycling dumpsters delivered to properties as a result of a service change were painted blue to help residents place materials in the correct container.

RESIDENT EDUCATION AND OUTREACH

Cascadia staff conducted door-to-door outreach and distributed tote bags to residents at technical assistance properties following completion of service changes to encourage use of the expanded service. Outreach was also conducted at properties identified during the screening and site assessment process as having sufficient recycling capacity. A total of 28 properties representing 2,782 units were reached through outreach. Of those, Waste Management interns assisted with outreach at 15 properties, representing 955 units. At five properties (40 units), managers chose to distribute tote bags directly to residents. No properties were interested in on-site presentations or workshops.

Door-to-door outreach was conducted during weekday afternoons (typically 1pm-6pm) by a multilingual outreach team capable of communicating with residents in English, Spanish,

Vietnamese, and Chinese Russian. (Top languages were identified by property managers as spoken among residents at their buildings). Outreach staff visited each residential unit once.

When residents were reached at home, outreach staff followed a script using community-based social marketing principles to engage and educate residents, including walking the resident through a web-based interactive recycling “quiz”. At properties with new or additional recycling service, outreach staff alerted residents to the changes and confirmed that residents were aware of recycling container locations onsite. Outreach staff completed quizzes with a total of 585 residents in King County in 2017.

At the end of the outreach interaction, residents were given a reusable tote bag, accompanying instructional tag and multifamily recycling guidelines presented double-sided in English and Spanish. (Copies in Chinese, Vietnamese, Korean and Russian were available for distribution as needed.) Residents were asked to provide a verbal commitment that they would use the tote bag to carry separated recyclables to the central recycling container.

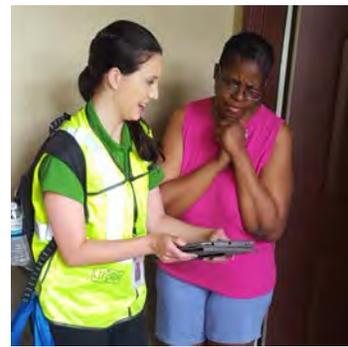
At units where no resident was home, outreach staff left a tote bag at the door or with the property manager (per the manager’s instructions).

Outreach staff achieved an average interaction rate of 31 percent at units reached directly, meaning that staff spoke with a resident at approximately 1 in every 3 units visited.

The **resident recycling quiz** facilitated conversations with residents about recycling during door-to-door outreach and provided insight into what materials residents continue to find challenging and residents may be placing in the wrong containers.

Top four **incorrect** answers:

- 1) Plastic Utensils (60%)
- 2) Foam (30%)
- 3) Milk or Juice Cartons (23%)
- 4) Take-out Containers (22%)



Outreach staff spoke face-to-face about recycling with a resident at approximately 1 in every 3 units visited.

Table 3. Door-to-door resident interactions by property location

Property Location*	# of Properties	Units Reached	Resident Interactions	
Bothell	1	169	67	40%
Federal Way	1	219	76	35%
Newcastle	1	31	7	23%
Renton	5	479	144	30%
White Center	15	838	285	35%
Woodinville	5	1,046	275	26%
TOTAL	28	2,782	854	31%

* No door-to-door outreach was performed in Auburn, Burien, Enumclaw, Fife, Issaquah, Kirkland, or Redmond.

PROGRAM RESULTS

BEST PRACTICE BASICS IMPLEMENTATION

In 2016-17, Cascadia provided assistance, tools, and support of varying degrees—from basic enclosure signage to comprehensive technical assistance—to 52 multifamily customer properties in Waste Management’s King County WUTC-regulated service area not yet assisted (26.5 percent of the 196 eligible customer properties identified). By the end of 2017, service changes and/or door-to-door outreach have been implemented at 48 properties, representing 24 percent of the eligible properties in King County.

PRE/POST BIN AUDITS

To evaluate the effectiveness of the program, pre- and post-assistance bin audits were completed at 18 properties assisted in King County. Initial bin audits occurred during the onsite assessment. Final bin audits were completed after final assistance was provided, either a service change (2) or door-to-door outreach (4) or both (12).

Data collected during the audits were analyzed to assess trends in recycling volumes and contamination. As Table 4 shows, audits found that contamination rates decreased at properties assisted, from 16 percent to 8 percent (by volume) on average.

As Table 5 shows, most properties that received service changes also had increased recycling volumes observed in recycling containers during post-assistance audits. Increased recycling volumes were observed at 9 out of 12 properties audited that received both service changes and door-to-door outreach, and at 1 of 2 properties that received service changes only (no outreach).

Infrastructure improvements combined with door-to-door outreach can measurably increase recycling volumes while reducing contamination at multifamily properties.

Table 4. Recycling contamination trends at assisted properties

Property Location	# of Properties Assisted	# of Properties Audited	Recycling Contamination (% by volume)	
	2017	2017	Pre	Post
Bothell	4	2	15%	4%
Federal Way	1	1	14%	10%
Newcastle	3	1	10%	5%
Redmond	3	0	n/a	n/a
Renton	5	3	25%	14%
White Center	25	8	22%	8%
Woodinville	11	3	6%	3%
TOTAL	52	18	16%	8%

Table 5. Recycling volume trends at assisted properties

Assistance Type	# of Properties Assisted	# of Properties Audited	Recycling Container Fullness Pre/Post Change	
	2017	2017	Increased	No Change/Decreased
Service Change Only	12	2	1 (50%)	1 (50%)
Service Change + Door-to-Door	15	12	9 (75%)	3 (25%)
Door-to-Door Only	13	4	0 (0%)	4 (100%)
Other Assistance	12	0	n/a	n/a

WEBSITE PORTAL USABILITY STUDY

The goal of the website portal is to provide access to RSA developed materials for all properties in the WUTC-area. Because the website was updated to provide better access to multifamily-specific resources in 2017, a mailer was sent out to all property managers in the King and Snohomish County WUTC-areas notifying them that tools can now be accessed online.

Cascadia completed a usability study, to understand if property managers received the mailer and evaluate how well the website portal meets property managers' needs. A total of 13 properties provided feedback for the study. (These 13 properties had all been offered assistance through the All Stars program in 2017.)

Of the 13 properties that participated, nine property staff (69%) remembered receiving the durable mailer and two property staff (15%) visited the website after receiving it, including one manager who noted that the mailer prompted them to visit the website to order

resources and request onsite assistance. The seven that did not visit the website after receiving the mailer were property managers who had participated in the All Stars Program and felt they had a direct connection (phone, email) to the assistance they needed.

When asked about how property staff preferred to communicate about service issues or resource needs with Waste Management, over 60 percent noted that they preferred calling the customer service hotline or communication with the All Stars program representative for service related issues. They felt directly connecting with a person ensured their problem was heard.

Since so many property staff members are reaching out to Waste Management for assistance through customer service, it is important that customer service staff are aware of the multifamily-specific resources available through the website and can assist property managers with order requests or direct them to the website to place orders.

Printing and mailing the durable mailer costs approximately two dollars per property. In the 2016-17 program, the cost to recruit a property to participate in the program was approximately \$120. (Phone, email, in-person visits.) Even if the mailer prompts even a few property managers to reach out for assistance, sending out a once yearly mailer will see a return on investment.

Most property managers interviewed were unaware of the free resources available to them and recycling is not top of mind unless they face an issue. The website and free assistance should be marketed to them so that when they face an issue or have a question, they know resources are available online and where to find them.

Conclusions and Recommendations

CONCLUSIONS

During this project, over 100 yards of recycling capacity were added to multifamily properties in King County. Recycling resources were delivered to over 2,700 units and face-to-face engagement occurred with 854 residents. By the end of 2017, service changes and/or resident outreach have been implemented at 48 properties, representing 24 percent of the 196 eligible multifamily properties in King County.

Bin audits before and after assistance show that **additional recycling capacity can be added without increasing contamination** and that, in fact, infrastructure improvements combined with door-to-door outreach can measurably **increase recycling volumes while reducing contamination** at multifamily properties.

RECOMMENDATIONS FOR NEXT STEPS

Recommendations for 2018 program activities include the following:

1. **Continue to promote the availability of the WM Recycling All Star Program tools and resources to all WUTC area multifamily customer properties** by sending at least a promotional mailer to property managers annually.
2. **Continue implementing the Recycling Best Practices** at multifamily customer properties that have not yet received assistance or that remain below benchmark recycling capacity.
3. **Continue recognizing properties that take action** (either independently or with technical assistance) **to improve recycling efforts as WM Recycling All Stars.**
4. **Pilot organics service** to properties that have implemented the Recycling Best Practices and where property decision makers express interest in offering the service.
5. **Identify the optimal cycle for an assistance refresh** to maintain adequate infrastructure and resident participation.