

Trip Assessment for Drop-Off Recycling in the Puget Sound Area of Washington State

April 2016

Zero Waste Washington

Eva Dale



There is a need for additional information on the habits of people participating in drop-off recycling programs, and producer responsibility programs more specifically, in order to inform program design and to improve data for use in life-cycle analyses for these programs. With a producer responsibility approach, manufacturers provide and pay for programs to recycle the products they make. While producer responsibility programs typically have the flexibility to use a range of collection options, many include drop-off locations.

More research is necessary to determine to what extent individuals recycle their special items in isolation or in conjunction with carrying out other “tasks” that also require a car trip. To begin to address information gaps, Zero Waste Washington carried out field research to gather quantitative data. Through this research, answers to two primary questions were sought:

1. When Washington residents drop off their hard to handle products for recycling, are they also performing other tasks during that trip?
2. How much traveling do residents do on average to recycle at producer responsibility drop-off locations?

METHODS

Data was collected by surveying residents who utilized the E-Cycle Washington program. E-Cycle Washington is a producer-financed and producer-managed program for the collection and recycling of computers, TVs, portable DVD players and e-readers. 187 residents were surveyed at 13 drop-off locations between December 2014 and March 2015 in King, Snohomish, and Kitsap Counties. The E-Cycle Washington program was selected for data collection because it is a well-established producer responsibility program and presumed to provide a good representation of producer responsibility drop-off behavior.

Sites. Sites were randomly selected and recruited to participate initially through self-administered surveys managed by on-site staff. Secondly, sites that could not offer on-site staff managed surveys were asked to allow researchers to visit and recruit residents to participate in the survey. One site participated using staff managed surveying and 12 sites participated using researcher managed surveying. The staff managed survey was administered for one month. The researcher managed survey was carried out for 12 hours at each site in 4 hour intervals using an electronic tablet. Sites that participated in the study included thrift/reuse retail stores, thrift/reuse drop-off trucks in parking lots, and an electronics recycling company. 12 of the 13 sites in this study were thrift/reuse drop-off sites, either retail stores or trucks in parking lots.

Surveys. The same survey was administered at all sites. An incentive was offered of entry into a drawing for a \$50 gift card. The surveys were comprised of the following nine questions:

1. What are you dropping off here today? (multiple choice)
2. Did any items you dropped off require two people to carry or a special vehicle due to its size? (yes/no) If yes, what were the items?
3. Are you doing another errand or task at this location on this trip? (yes/no)
4. Have you or are you planning on purchasing something at this location on this trip? (yes/no)
5. In addition to what you are doing at this location, how many other tasks or errands are you doing during this outing?
6. What method of transportation did you use to get here today? (multiple choice)
7. How many miles do you estimate you will travel for this, round-trip?
8. Is this the first time that you've dropped off a product at this location? (yes/no)
9. What is your zip code?

RESULTS AND DISCUSSION

Response rates. A total of 187 surveys were collected for this study. The participation rate in this study was 86.3%. This rate was calculated based on data from sites that were surveyed by researchers where it was possible to identify the number of recyclers who chose not to participate (182 were surveyed of the 211 who were invited to participate at researcher managed sites). For the one site where the survey was self-administered and managed by site staff, no data was collected regarding non-participation.

Additional tasks during trip. Most survey participants completed or expected to complete at least one other task, in addition to drop-off recycling using the E-Cycle Washington program. Analysis determined that 71.8% (95% CI 64.5% – 78.1%) of respondents reported either completing or expecting to complete one or more other tasks, in addition to drop-off recycling, during this trip. The average (mean) number of tasks that respondents reported completing or expecting to complete, including drop-off recycling was 2.71 (95% CI 2.43 – 2.98) .

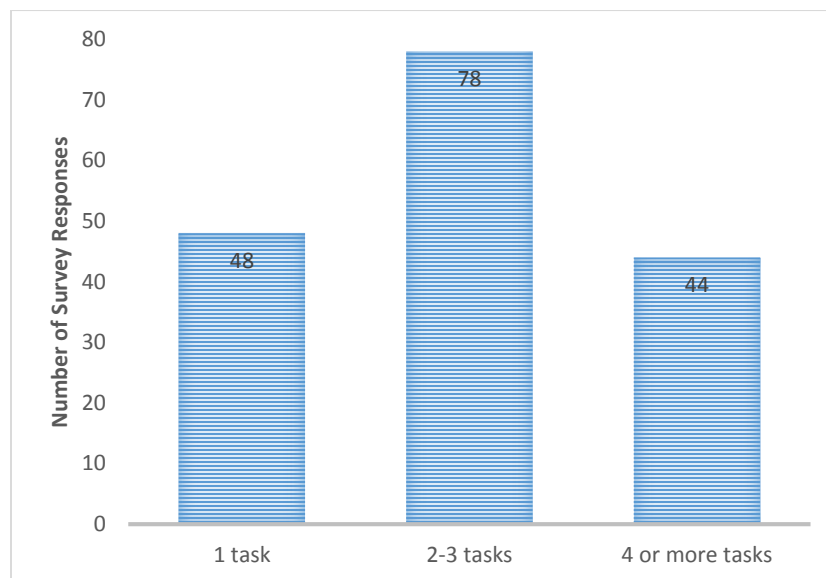


Figure 1. Respondents surveyed by total number of tasks expected to complete, including drop-off recycling.

Distance traveled. Respondents reported an estimate of the number of miles traveled to complete tasks for their trip. The result was a median of 7.5 miles in total for round trip travel reported. The ratio of miles per tasks came to a median of 3.0 miles per task. Median was used rather than the mean to determine the midpoint for distance commonly traveled by respondents because the distribution of the data was not normal but was skewed. The sites surveyed represent a range of population densities and serve urban, suburban, and semi-rural communities in Puget Sound.



Figure 2. Map of Surveyed Sites

Discussion: Researchers for this study report that respondents were commonly unsure of the distance they traveled in order to participate in drop-off recycling and complete all tasks. While it has been shown in other studies that individuals self-reporting of distance traveled can correlate well with actual distance traveledⁱ, many of the responses (58%) in this survey reflected multiples of five or ten miles, which indicates rounding. This is likely an indication that the distance data collected for this survey may be different than the actual distances traveled.

Items requiring special handling. There were 24 people of the 187 surveyed who were recycling items that required special handling for large or heavy items. The intent of this question was to determine if there is a condition that would be unique to the E-Cycle Washington program that may result in different trip behavior for recyclers. The results indicate similar responses regarding total number of tasks whether or not the item(s) required special handling. 58% of the recyclers with items requiring special handling indicated that they had at least one other task to carry out. When the “special handling” responses were

excluded from the dataset, the number of respondents with additional tasks increased from 71.8% to 74.7%.

Repeat users. Most of those surveyed were repeat users of the drop-off recycling location. 84.1% of respondents indicated that this was not their first time using that location for drop-off of a product accepted there.

Method of transportation utilized. Respondents travelled almost exclusively using a private passenger vehicle. 99.5% (186 of 187) of participants arrived at the drop-off location by way of a car or light truck. One participant arrived by way of a bus.

Making a purchase at drop-off location. We attempted to gather data to better assess how frequently drop-off recycling participants also patronize the businesses of locations where they are recycling. 12.9% of respondents indicated that they were planning to make or already made a purchase at the location of the drop-off recycling site. In our sample, 12 of 13 sites were at thrift/reuse retail stores or thrift/reuse truck drop-off locations.

CONCLUSION

The results of this research study contribute to the data regarding drop-off recycling behavior in Washington state, and specifically respond to the question of “When people utilize drop-off recycling, how often is that the sole task they are completing as compared to multiple tasks being undertaken?” Most (about 72%) of the time it is not the sole task with an average of 2.71 tasks carried out per trip. More detailed research is needed to identify the distance traveled to carry out the drop-off recycling task.

ACKNOWLEDGEMENTS

This study was made possible with the support of many people. I would particularly like to acknowledge Samantha DeMars-Hanson and Whitney Rose who collected data for this research for many days, often in the rain.

ⁱ Sidique SF, Lupi F, & Joshi SV (2009) The Effects of Behavior and Attitudes on Drop-off Recycling Activities. *Resources, Conservation and Recycling*. 54(2010), 163 – 170.

*FOR QUESTIONS AND COMMENTS, CONTACT:
Eva Dale, Zero Waste Washington
eva@zerowastewashington.org
(206) 441-1790*
