

La Crosse County Landfill

**Analysis of Single Stream Recycling in La Crosse and Onalaska
Communities:
2013-2014 Comparison from Dual Sort to Single Stream Recycling**

February 16, 2015



Shelby Jacobson

Internship in Environmental Studies

Faculty Advisor: Alysa Remsburg, Ph.D.

Internship Site Supervisors: Henry A. Koch PE. and Nick Nichols



Executive Summary

In February of 2014 La Crosse and Onalaska, Wisconsin implemented a residential single stream recycling cart system to dispose of its recyclable materials. A research project was conducted to determine the success of the new single stream recycling cart system and to see what ways it can be more beneficial in the future. A comparison of Janesville, Wisconsin's single stream recycling system was utilized in the study as a benchmark. Several people were interviewed to rate the success of single stream recycling in these two communities including the Director of Public Works of La Crosse Dale Hexom, City Engineer of Onalaska Jarrod Holter, CEO of Harter's Quick Clean-Up Gary Harter, manager of Harter's Quick Clean-Up Scott Evans, UW-Extension Solid and Hazardous Waste Education Center's Recycling Specialist and Director Joe Van Rossum, Recycling Coordinator of La Crosse Brandon Shea, Plant Manager of Xcel Energy Mark Paitl, Director of the Solid Waste Department in Janesville, WI, Mandy Bonneville, Financial Specialist of the Solid Waste Department of La Crosse, Wisconsin Danielle Meiners, and the Director of the Solid Waste Department in La Crosse, Wisconsin Henry A. Koch PE.

Determining the success of single stream recycling led this research to see the effects on material being diverted to the Xcel Energy French Island Generating Plant. Furthermore, two separate surveys were conducted to receive citizen input on single stream recycling and on the citizen drop-off site at the landfill. It is important to note the differences between the former dual system and the single stream system as well as to identify ways the program can be more beneficial and successful. Some of data included in the report includes: recycling tonnage comparison (2013-2014 La Crosse and Onalaska combined), Xcel MSW tonnage comparison (2013-2014), a breakdown of recyclable content in 2014 (La Crosse and Onalaska combined), recyclable tonnages diverted to Xcel from Harter's, and recyclable tonnages of contaminated and/or unqualifiable materials sent to the landfill. There is additional information regarding citizen input and notes and data regarding Janesville, Wisconsin's single stream recycling tonnage history.

Given this data, it can be concluded La Crosse and Onalaska have had a successful transition and an even more successful tonnage turn out than originally predicted. Recycling has increased by a 137% with Harter's Quick Clean-Up looking for more ways to make the program more sustainable and more efficient for the communities. Efficiency does not simply cover time for residents to participate but extends to the cart system because it almost always allows drivers to remain in their vehicle, and allows for a one pick-up rather than multiple pick-ups for sorted material like with the dual sort system. Upon receiving suggestions on improvement from Janesville, La Crosse and Onalaska hope to increase their recyclable tonnage collection while also increasing the number of participants recycling in the community. Lastly, this report gives recommendations to future communities looking to switch to a single stream automated cart collection in the future.

Introduction

A research project was completed in the La Crosse and Onalaska, Wisconsin communities to determine the level of success the newly implemented single stream recycling cart system program has had in its first eleven months. To adequately define the program as a success or disappointment, a geographical comparison was completed to assess La Crosse and Onalaska's recycling increase with Janesville, Wisconsin. Below contains information regarding the change from a dual sort system to a single stream recycling cart system. The success of the program is determined by citizen input, La Crosse and Onalaska officials: Dale Hexom, Jarrod Holter, Gary Harter, Scott Evans, Joe Van Rossum, Henry Koch, and Brandon Shea, as well as Mandy Bonneville, Director of the Solid Waste Department in Janesville, Wisconsin. Interviews with these individuals frame the notion that single stream recycling can be defined as successful in both La Crosse and Onalaska.

Background

Prior to February 2014, La Crosse and Onalaska had a dual sort recycling system using an eighteen gallon tote that required citizens to sort their recyclables by newspaper and white paper, glass, aluminum, tin, and plastics (#1 and #2). Single stream recycling, however, has made recycling more convenient. According to Gary Harter, CEO at Harter's Quick Clean-Up, the cart designated for recycling encourages people to recycle more by being easy to use. Compared to its former program, single stream recycling allows citizens to recycle more than just fibers (newspaper and white paper), glass, aluminum, and plastics (#1 and #2). With the implementation of single stream recycling, Harter's Quick Clean-Up is able to collect tin, aluminum, wire, plastics (#1-7), additional fibers (including newspaper, magazines, shiny inserts, mail, egg cartons, cardboard), for recycling without citizens having to sort their recyclables. Unlike when they first began, Harter's began recycling plastic bags near the end of September to add to the collection of plastics #1-7.

Single stream recycling was initially going to begin in January of 2014 in La Crosse and Onalaska but due to some complications with the automated trucks the program was delayed until February of 2014. The single stream cart system is applied in residential areas including apartment complexes up to eight bedrooms. Sizes included: 65 or 95 gallon carts to place their recyclables in. Residents in La Crosse were given a choice on which size their household would prefer for refuse and recycling. La Crosse residents were also given a 30-day exchange period with no service charge to the resident if they wished to switch to a different cart size. Since Onalaska distributed carts in advance a total of \$200,000 was spent to replace carts to a resident's preference. Additional recycling carts for La Crosse residents are available upon request and if approved a \$20 service charge will be billed to the resident for the extra cart. Onalaska residents, however, are billed an additional \$30/year for an additional recycling cart.

The dual sort system encouraged residents to rinse (plastics, glass, etc.) recycling and required residents to sort their recyclables for pick-ups. Single stream recycling still encourages residents to rinse recyclables to avoid having an odor in the cart. Single stream recycling requires residents to place their recycling cart facing the point of collection while also being three feet away from their refuse cart and three feet away from any building, car, etc. to ensure the automated cart can access the cart for pick-up.

Another rule associated with the cart is that the lid has to be fully shut for the city to pick-up the recycling and the cart must remain upright. During the winter, residents are expected to have their carts on a shoveled, flat surface to guarantee their recycling is picked up.

The recycling facility at Harter's Quick Clean-Up was up and running in the summer of 2014. Scott Evans explained the facility can employ a maximum of twenty-six people at a time, in addition to the amount of workers employed as haulers. The process of sorting the recycling materials is listed below (refer to Appendix D for additional pictures)

- The unsorted material is dropped off and fed into an upward-sloped conveyor belt
- As the recyclables make their way up the conveyor, a rotating metering drum helps de-clump the material to help make it more sortable later down the line
- Misplaced trash is manually separated from the recyclables along the conveyor belt
- The recyclables then fall into a ballistic separator, an upward-sloping vibrating mechanism that sorts materials by fibers, glass, and plastics and cans



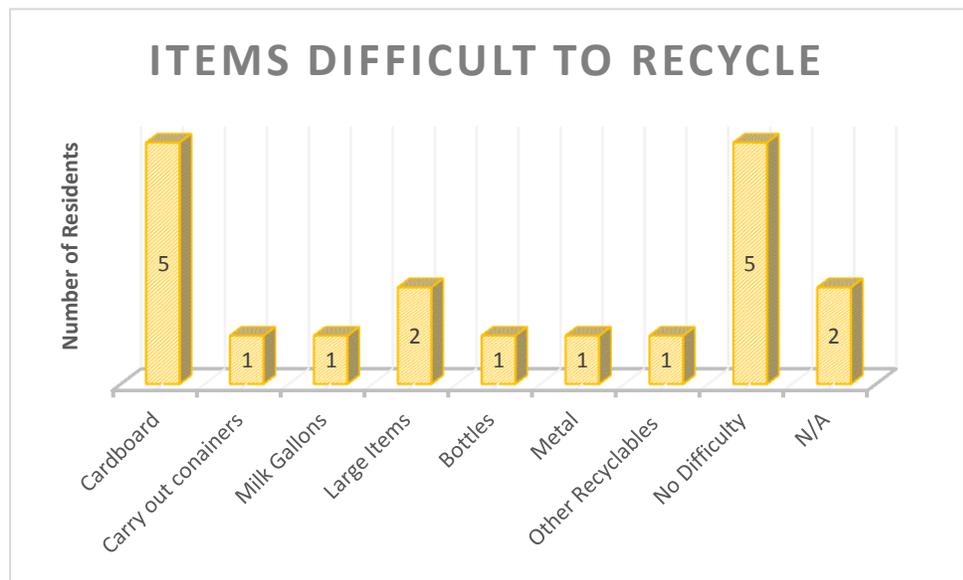
- The lighter-weight paper, also called mixed paper, then moves upward towards a paper-sorting conveyor belt. Here the newspaper is sorted from the rest of the mixed paper

- Glass is shattered by the motion and vibrations of the ballistic separator, and then falls through the holes underneath

- Plastics and cans are heavier than fibers, and fall downward into a separate area where it gets moved to the plastics and cans sorting conveyor belt
- On the plastics conveyor belt, plastics numbers 1 and 2 are sorted out separately; the rest gets sent through a magnet to collect all aluminum. Plastics 3 through 7 remain and get baled together
- The final step in the process consists of a baler. Once enough of each sorted-out material (newspaper, mixed paper, plastics, etc.) accumulates in each designated compartment, located beneath the conveyor system, a door to the compartment opens up to let the material fall onto a conveyor on the floor, which leads it to the baler mechanism

Pros and Cons

The switch to single stream recycling from the dual sort program contained several pros and a few cons which were brought to attention through a survey conducted at the Valley View Mall in regards to how citizens were liking the single stream recycling cart system (refer to Appendix A). In addition to citizen input several city officials shared insight on their observations about how the new program is working. The survey at the Valley View Mall’s primary objective was to determine if citizens were pleased with the single stream recycling. Over the course of five hours a total of thirty people completed the survey with nineteen of those participants being residents of La Crosse or Onalaska. The



survey concluded that 100% of residents were recycling more material with the new system. According to a weekly recycling comparison rate (2013-2014) there has been an approximate 137% increase in recycling after the switch from

the dual sort system (refer to tables in Geographical Comparison). Survey results also show there are minimal issues; approximately 10.5% of participants that find issues with single stream recycling. 63% of citizens expressed concern recycling at least one of the materials mentioned in the above graph (refer to Appendix C for a complete breakdown of recycled materials in 2014). Upon reviewing the data from the survey, it showed citizens were confused with what they could recycle as well as concerned about recycling larger items. *The Recycler* explains acceptable and unacceptable items to recycle with details on how to dispose of large items through donation and the landfill drop-off site. *The Recycler* is an annual community newsletter sent out by the county to inform citizens of important dates, reminders, and a recap of the previous year.

A survey at the citizen landfill drop-off site (survey B) was completed for further input on disposing large items in the community (Refer to Appendix D). During a three hour survey, forty-one participants were willing to take the survey, two people declined, and fifteen people missed the opportunity due to a heavy flow of citizens during the drop-off site’s peak hour. 54% of participants, in survey B claimed they were informed about the drop-off site through mailings or flyers (e.g. *The Recycler*). Survey B also showed only 15% of participants thought there was room for improvements at the citizen landfill drop-off site. Even after prices changed to a flat rate fee in September 2014, a consistent 15% found the flat rate fee to be unfair.

A table below was made to illuminate the pros and cons single stream recycling has to offer. The pros and cons listed were mentioned during interviews with Dale Hexom, Brandon Shea, Gary Harter, Scott Evans, Henry Koch, Jarrod Holter, and Joe Van Rossum.

Pros	Cons
Easier to recycling, no sorting	Decreased tonnage to Xcel and decreased BTU value
Higher recycling rate	Storage of bin, some inconvenience
Convenient	Holiday and family get-together’s, cannot put everything on the curb
Landfill lasts longer (only slightly)	Refuse in cart, contamination
Encourages people to recycle	Cost more
Carts under warranty	Change, big difference from dual system
Cleans up neighborhoods	Stack recycling so nothing gets stuck

Carts are durable/substantial/roll easy	Did not advertise to put shredded paper in bags, like old system
Cart system is more efficient (one pick-up, drivers rarely exit the vehicle, time for residents to participate)	
Fewer on-the-job injuries	

A breakdown of these pros and cons help show how the program has been successful. In regards to the pros, single stream recycling has proven to be easy and convenient to use by residents and through commentary sent to the public officials mentioned above. Not only is the program easy for residents to do, the carts help clean up the neighborhood by not allowing additional refuse and/or recycling to pile up next to the carts. Even though single stream recycling is more efficient in itself the carts are an added bonus to the program because they are durable, substantial and they roll easily for residents to provide proper placement for pickups. In addition to the durability of the carts, a warranty was provided on the carts for damages caused by weather, broken wheels or covers, and accidents. The warranty does not cover the cost of repair or replacement if the cart is vandalized. On a plus side, fewer on-the-job injuries have occurred since the switch to the automated cart collection. According to Scott Evans and Gary Harter, even though there were few injuries that occurred with the previous program, there are minimal injuries with the change. It is noticeable in their insurance policy as well, although data was unavailable at the time of research.

Despite the pros of the program it does come with some cons. Some residents have called the carts inconvenient due to the size of the carts as well as raised concern about recycling when get-togethers such as graduations and birthday parties happen due to the amount of materials needed to be recycled. For a simple solution to this issue, Gary Harter and Scott Evens ensured there is a drop-off location at Harter’s Quick Clean-Up for extra recycling free of charge. If recycling materials are excessive, however, residents may rent a dumpster for collecting larger volumes of material. Another con mentioned was the cost of the program. According to Jarrod Holter, the cost of single stream recycling compared to the dual sort recycling is an increase of \$0.98 per month for each household, whereas Dale Hexom states La Crosse has an increase of \$1.16 per month for each household (the La Crosse numbers were based off the original quantity bid of 16,800 households). Not only does the program cost more than its previous program, single stream recycling has more rules and regulations to follow than the dual sort system had (rules and regulations mentioned in background information). Furthermore, regardless of the amount of materials being recycled, there is still contamination of refuse in the cart that is affecting the quality of recycled materials. In some instances, Harter’s Quick Clean-Up has been unable to recycle materials forcing them to direct the materials to the La Crosse County Landfill and to Xcel Energy. Materials sent to the landfill or Xcel Energy were either too contaminated to recycle or did not qualify as acceptable recyclables. Below is a table showing the tonnage of material removed from the recycling facility and sent to either the landfill or Xcel Energy for disposal.

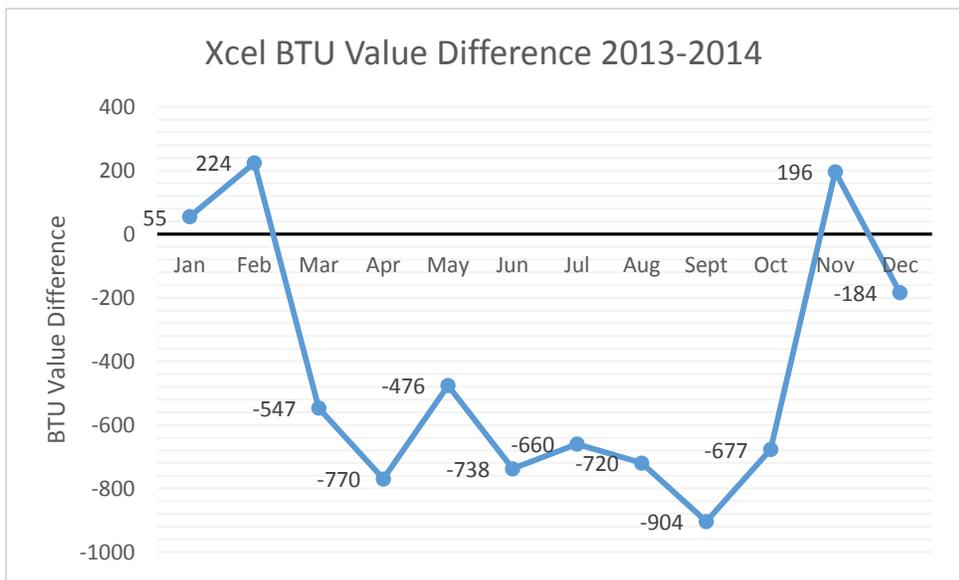
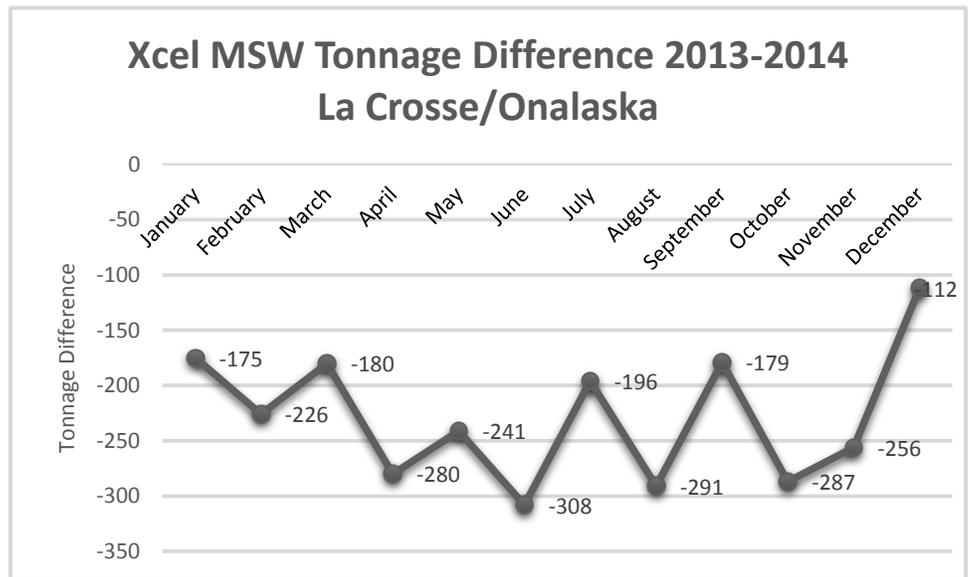
Location	June/July	August	September	October	November	December
----------	-----------	--------	-----------	---------	----------	----------

Xcel Energy	13.77 tons	6.43 tons	11.73 tons	5.93 tons	0 tons	11.16 tons
Landfill	10.15 tons	13.76 tons	4.81 tons	12.46 tons	20.17 tons	5.24 tons

Item composition taken to Xcel Energy for disposal has changed with the switch to single stream recycling. Before single stream recycling, Xcel Energy was burning more paper and plastic products whereas now, they are burning more wood waste products. This change in the content of the material has decreased the amount of material being sent to Xcel Energy in general, however, Xcel Energy continues to extract high amounts of Ferrous and slightly more Non-Ferrous tonnage. Mark Paitl, plant manager of Xcel Energy, explained they improved the magnet involved in the extraction process but that alone does not count for the levels of FE and Non-Fe material being sent to Xcel Energy through single stream recycling (refer to Appendix E). There is a decreased tonnage report from 2013-2014.

According to Mark Paitl the change in composition has affected the BTU value of the product. Workers at Xcel Energy's waste-to-energy fueling process have noticed a visual change in products claiming the material is less colorful. When asked about the

visual quality of content, Mark Paitl claims the waste looks more like residue than waste since the cardboard, plastic, and paper are recycled now. In addition to the change in composition, the material also contains a higher moisture content which lowers the BTU value (graph shown below).



One consideration that was also looked at is if the increased recycling associated with the single stream cart system has a beneficial impact on conserving landfill space. The increase of single

stream recycling is coming from residential trash. Prior to the single stream system these recyclable materials were being burned at the Xcel waste-to-energy facility to provide energy. Approximately 80% of these previously un-recycled materials would have been consumed at the waste-to-energy facility and only 20% would have gone to the landfill since they would not have been suitable for burning. Extrapolating that information, and assuming in 2014 an additional three thousand tons of materials have been recycled the waste-to-energy landfill system would have only sent six hundred tons of that material to the landfill. This volume of material would occupy somewhat less than one thousand cubic yards of air space in the landfill. The landfill consumes approximately a hundred thousand cubic yards of airspace each year. The recycling program has an impact of reducing approximately 1% of our airspace usage. While this may not be significant in any one year over a twenty-seven year life this is equivalent to extending the life of the landfill by about three months.

Geographical Comparison

Several cities in Wisconsin have already switched to single stream recycling as the benefits are proving to be worthwhile. For a geographical comparison Janesville, Wisconsin was a textbook candidate because of its population, type of recycling, and its use of an automated cart collection. The comparison between the two areas is an ideal comparison because the population of La Crosse and Onalaska combined is similar to that of Janesville's population. The comparison was completed to aid in determining if La Crosse and Onalaska's recycling has been successful and to see in what ways their recycling amount and participants could increase. Mandy Bonneville, Director of the Solid Waste Department in Janesville, was interviewed to help shed some light on Janesville's recycling statistics as well as what Janesville viewed most essential in the switch to a single stream recycling automated cart collection.

The interview with Mandy Bonneville clarified some background information regarding Janesville's switch to single stream recycling with the addition of an automated cart collection to the community. In April of 2013, Janesville switched to single stream recycling at the same time the community added an automated cart collection to help with pick-ups of refuse and recyclable materials. Similar to La Crosse and Onalaska, Janesville offers carts for recycling in two sizes: 65 or 95 gallon carts, however the 95 gallon cart was the default size for each household. Residents were encouraged to contact the city's office if they desired the smaller cart instead at no cost to the residents. A charge was issued if residents wished the cart exchange take place at their home. This varies from the cart exchange process in both La Crosse and Onalaska's system. La Crosse residents were given a thirty day trial to exchange their carts free of charge whereas Onalaska covered the cost of cart exchange since they did not ask residents their preference before cart delivery.

Upon further inspection, Mandy Bonneville discussed how much single stream recycling increased the quantity of recycled material. A prediction of 20-25% was made by city employees in regards to the amount recycling would be increased in its first year. After looking at the data, Mandy Bonneville was able to determine there was a 44% increase in recyclables the first year single stream recycling was implemented. In comparison, La Crosse and Onalaska city officials predicted a 50% increase in materials. The data, however, proved the increase to be a 137% increase. Tables comparing

the previous year with dual-stream with manual collection versus the first year of single stream recycling with automated cart collection are presented below. Janesville's tables are placed first with La Crosse and Onalaska following on the next page. For a more visual approach in the recycling comparison tonnage, refer to Appendix F.

Month	2012-2013 Janesville (tons)	2013-2014 Janesville (tons)
May	306	487
June	285	430
July	298	475
August	307	430
September	236	411
October	375	445
November	312	406
December	312	457
January	334	430
February	248	352

Month	2013 La Crosse/Onalaska	2014 La Crosse/Onalaska
January	180.46	249.66
February	151.54	294.89
March	161.12	344.32
April	171.63	435.79
May	213.22	456.27
June	178.6	434.79
July	162.99	454.95
August	161.69	406.27
September	157	432.19
October	195.38	405.46
November	181.31	407.11
December	189.99	482.7
Total	2,104.93	4,804.4
March	273	408
April	318	450
Total	3,604	5,181

These tables comparing the dual sort system to the single stream system show an increase in Furthermore, it is essential to note La Crosse and Onalaska did not begin using the single stream system until February, therefore the first month of 2013 and 2014 have been excluded, they, however, were not excluded in the comparison in Janesville.

Mandy Bonneville also mentioned some seasonality changes and patterns with single stream recycling. It has been noted that Janesville has a higher increase in recycling during December and the

Note: Single stream recycling did not begin until February 2014 in La Crosse and Onalaska. Prior to 2014 Onalaska had weekly recycling pick-up. With the switch to single stream, Onalaska began doing bi-weekly recycling pick-ups.

spring months. This seasonality change is similar to what La Crosse and Onalaska has experienced so far in its first year. Henry Koch suggested this could be due to spring cleaning or clearing things out before a large accumulation of snow or severe cold weather.

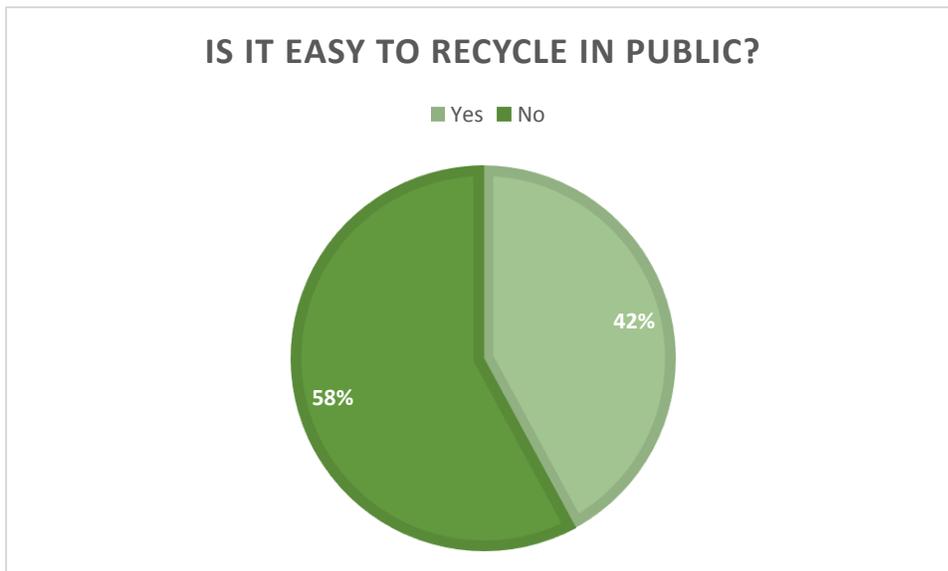
Goals/Recommendations

Even though single stream recycling has been successful in the La Crosse and Onalaska communities goals and suggestions are essential in making the program a continued success by increasing the amount of material being recycled as well as the number of participants. City engineer, Jarrod Holter, explained that education is necessary in transitioning the public to single stream recycling and continuing education to express the level of importance recycling has in these communities. A short term goal expressed by Gary Harter was to recycle more materials. When single stream recycling first began, Harter's was unable to recycle plastic bags, however, by the end of September, Harter's was able to begin recycling plastic bags. In addition to plastic bag recycling, Harter's expressed interest in including small appliances among acceptable recyclables in the future in hopes to recycle the metal material. Jarrod Holter explained that not only is the goal to recycle more but to recycle more frequently in the future. Jarrod Holter's idea of an efficient goal would be to increase recycling pick-ups weekly to encourage additional recycling.

In regards to recommendations, research includes suggestions to future single stream recycling communities as well as recommendations on making the La Crosse and Onalaska communities more sustainable. La Crosse and Onalaska officials conveyed concern about when the program was first implemented. The city delivered the carts to residents during December 2013. Due to the weather, Brandon Shea, suggested future programs not be implemented during the winter. The main issue with beginning the program in the winter was due to the rules and regulations that were associated with cart placement that were mandatory of all residents. It was suggested that a change in time of the year would have been beneficial to the communities because it would have allowed residents time to learn and understand the rules and regulations of the new cart system.

In addition to changing when the program goes into effect, it was highly recommended asking residents their preference on sizes for the carts before distributing them to residents. Dale Hexom clarified that La Crosse asked residents in advance their cart preference through mailing post cards with

pre-paid cart selection cards attached, included cart selection information on the City's website along with an automated web selection function, and flyers included in water



bills. Jarrod Holter explained that it cost Onalaska \$200,000 to switch carts out since the city did not ask residents in advance about their cart preference.

The citizen input survey at the Valley View Mall showed residents do not find it easy to recycle at public facilities. Some suggested having more recycling bins located for convenience throughout stores, etc. Below is a list of key suggestions the La Crosse and Onalaska officials put together for the next community looking to transition to single stream recycling

- Do not begin a program like this in the winter
- Educate the public
- Ask residents which size cart they want in advance
- Pick-up recycling weekly from the beginning
- Use an automated cart system
- Advertise that shredded paper should be bagged

Conclusion

La Crosse and Onalaska have had a successful first eleven months with the single stream recycling cart system with a 137% increase in recycling. Although new materials were added to the recycling stream, the types of materials were lighter weight and unusual so they did not have a significant impact on weight during the first year of the program. These communities have shown determination, convenience, and proper education can allow an environmentally friendly program like a single stream recycling cart collection to succeed as it did. Residents, among city officials have found the program to be easy and convenient to use while also doing an environmental alternative to discarding these now-acceptable recyclables.

La Crosse and Onalaska hope this program will teach residents the importance of reducing, reusing, and recycling in these communities in addition to cleaning up the neighborhood. If interested Harter's Quick Clean-Up encourages people to take a tour at their recycling facility to see the importance of the newly implemented program. These communities look forward to further expanding their resources to recycle more and to reach out to more participants in the future.

References and Acknowledgments

Thank you to those who participated in helping make this research project possible.

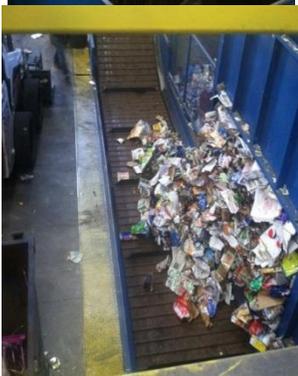
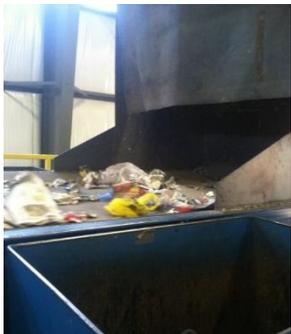
- Brandon Shea
Street Supervisor & Recycling Coordinator
Sheab@cityoflacrosse.org
608.789.7507
- Dale Hexom
Public Works Director of La Crosse
hexomd@cityoflacrosse.org

608.789.7571

- Danielle Meiners
Financial Specialist of the Solid Waste Department of La Crosse
- Gary Harter
CEO of Harter's Quick Clean-Up
- Henry A. Koch PE
Director of the Solid Waste Department of La Crosse
hkoch@lacrossecounty.org
608.785.9769
- Jarrod Holter
City Engineer of Onalaska
jholter@cityofonalaska.com
608.781.9537
- Joe Van Rossum
University of Wisconsin-Extension Solid & Hazardous Waste Education Center's
Recycling Specialist Director vanrossum@epd.engr.wisc.edu
608.262.0936
- Mandy Bonneville
Director of the Solid Waste Department of Janesville
- Mark Paitl
Plant Manager of French Island Generation Plant, Xcel Energy
mark.d.paitl@xcelenergy.com
608.789.3603
- Scott Evans
General Manager of Harter's Quick Clean-Up
608.782.2082

Appendix

A. Pictures, in sequential order, of the Harter's Quick Clean-Up Recycling Facility



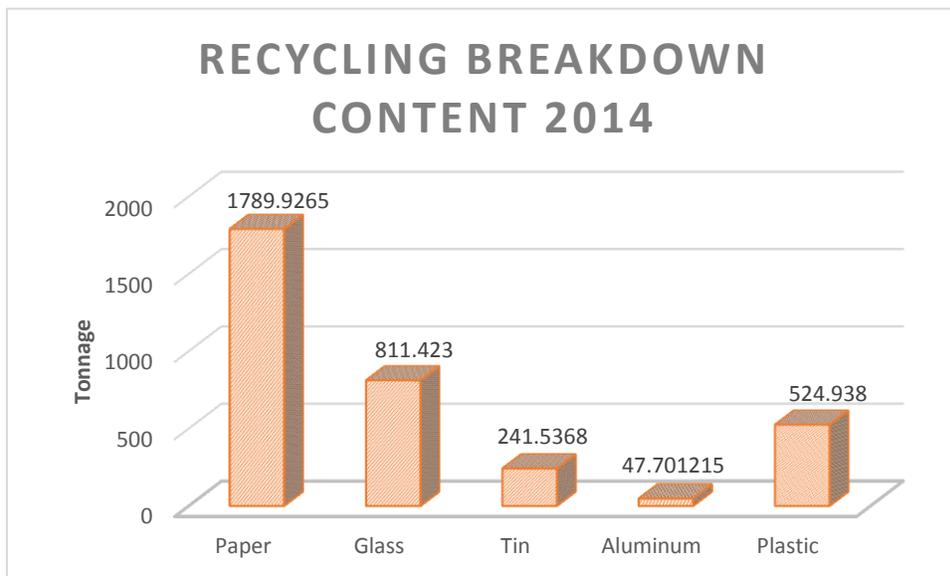
B. Citizen input mall survey questions

This survey is to gain feedback from citizens on the new recycling program in the La Crosse and Onalaska communities

- Are you a resident of the city of La Crosse or Onalaska?
 - Yes
 - No, are you aware of the single stream cart system in La Crosse/Onalaska and would you like it in your community
 - Yes
 - No
 - Not enough information
- How do you like the single stream recycling collection?
 - Very dissatisfied
 - Dissatisfied
 - Neutral
 - Satisfied
 - Very Satisfied
- Do you feel you are recycling more with this program?
 - Yes
 - No, if no, why not
 - _____
- Have you had any problems with the single stream recycling system, if so what are they?
 - _____
- What items do you find difficult to recycle or throw away?

- _____
- _____
- Are you having difficulty disposing of large items?
 - _____
 - _____
- Do you feel it is easy to recycle when you are in public places?
 - Yes
 - No, there should be more recycling bins available
- Compliments/Complaints section

C. Breakdown of recycled material in 2014 (La Crosse)



D. Citizen input landfill drop-off questions

- How often do you use this drop off facility?
 - First time
 - Weekly
 - Monthly
 - Twice a year
 - Annually
- Did you have a positive experience while using this program?
 - Yes
 - No
- Do you feel the charges are fair?
 - Yes
 - No
- Do you see any room for improvement with this program? If yes, please explain.
 - No
 - _____
 - _____
 - _____
- How did you hear about this program?
 - _____
 - _____
 - _____
- Are you aware of the HHM, reuse room? If yes, how did you hear about HHM?
 - No
 - _____
 - _____

XCEL FE TONNAGE				
MO	2013	2014	Tons +/-	Pct +/-
JAN	85.2	53.6	-31.6	-37.09%
FEB	55.7	72.0	16.3	29.26%
MAR	52.8	69.9	17.1	32.39%
APR	83.6	107.2	23.6	28.23%
MAY	87.8	107.5	20	22.44%
JUN	60.9	90.0	29	47.78%
JUL	86.9	105.0	18	20.83%
AUG	74.6	71.0	-4	-4.83%
SEP	75.6	59.0	-17	-21.96%
OCT	77.5	52.0	-26	-32.90%
NOV	62.1	87.1	25	40.26%
DEC	70.4	118.8	48	68.75%

E. Xcel FE and Non-FE Tonnage

XCEL NON-FE TONNAGE				
MO	2013	2014	Tons +/-	Pct +/-
JAN	22.0	17.8	-4.2	-19.09%
FEB	24.2	14.8	-9.4	-38.84%
MAR	21.9	21.5	-0.4	-1.83%
APR	24.2	23.5	-0.7	-2.89%
MAY	20.4	23.9	4	17.16%
JUN	22.3	25.0	3	12.11%
JUL	29.9	29.0	-1	-3.01%
AUG	24.3	23.0	-1	-5.35%
SEP	25.1	15.0	-10	-40.24%
OCT	25.3	12.0	-13	-52.57%
NOV	21.4	19.2	-2	-10.28%
DEC	20.6	29.5	9	43.20%

F. 2013-2014 Recycling Tonnage Comparison for La Crosse and Onalaska, 2012-2013
 Recycling Tonnage Comparison for Janesville

