2017 DPW Annual Residential Recycling Report

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Introduction and Commentary

For the 8th consecutive year, Milwaukee residents increased recycling pounds per household with the rate having climbed 21.1% since the curbside collection program's low year of 2009. The overall landfill diversion rate showed a slight increase of 0.68 percentage points over the year prior. This was due in large part to an 8% increase in leaf and brush collection over the prior year.

The City's share of revenue from household recyclables was over $1.8 million in 2017. This revenue figure was 13.5% above the 5-year average while representing a year over year increase of 39.2% versus 2015. It was a steady recovery in pricing for the paper fiber grades that led the increase in value of the overall basket mix of curbside recyclables. Revenue share from sale of recyclables, State of Wisconsin local cost-share aid, and avoided disposal savings help offset the cost of providing household recycling collection service to around 180,000 households. While 2017 was an excellent revenue year for recyclables, changes in the global marketplace have been driving prices down in 2018 thus far.

In the spring of 2017, the City of Milwaukee and Waukesha County marked the two year anniversary of operations of the joint Materials Recovery Facility (MRF). The MRF is operated by Republic Services, who purchased the previous operator, ReCommunity Recycling, at the end of 2017. The City and County continue their intergovernmental collaboration providing joint governance of the MRF and oversight of the private operator.

-Rick Meyers, Sanitation Services Manager, DPW Operations Division

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Resource Recovery Program Report

Recycling Results and Achievements

- Citywide in 2017, DPW collected 25,340 tons of residential recyclables. The number is about the same as the three previous years. With a flattening of the tons collected, **Milwaukee residents have sustained a 14.9% increase in recycling tons and 21% increase on a pounds per household basis** compared to the program's lowest tonnage year of 2009.

- Five-year results and comparisons from 2012-2017:
  - Recycling tons ↑11%
  - Recycling pounds per household ↑7%

- Residents' participation in the household recycling program **avoided over $1,100,000 in landfill disposal costs** in 2017 and **earned nearly $1.9 million in revenue** from the sale of recyclables. Without including the cost of collection services, the City realized a savings of over $83 per ton of materials recycled instead of sent to a landfill.

40 BY 2020

40% DIVERSION OF SOLID WASTE BY 2020

- The City's residential landfill diversion rate was 25.3% in 2017, equal to the 5-year average. The major increase was due to an 8.88% increase in the brush and fall leaf tonnage.

Aggressive Resource Recovery Programs at Drop Off Centers

- **Nearly 40% of the material managed through the Drop Off Centers was diverted from landfills in 2017.** The drop-off facilities allow residents to recycle, compost, or safely dispose of over a dozen material categories. Well over 200,000 visits are made to the Drop Off Centers every year.

Recycled	Composted
• Antifreeze • Car batteries	• Brush and branches • Grass clippings

• Motor oil and filters • Tires (up to 5 passenger tires per trip) • Appliances • Scrap Metal • Asphalt Shingles • Concrete • Electronics • Cooking oil • Shoes • Curbside recyclables	• Garden debris • Leaves • Logs Landfilled • Construction and remodeling debris* • Old furniture • Garbage *This material stream is routinely sent to a private Construction & Demolition debris processing facility for recovery of a large portion of it and landfill disposal of rest.

- **Over 2.8 million pounds of electronics** were collected at Self-Help Drop Off Centers in 2017, the seventh full calendar year of the *E-Cycle Wisconsin* producer responsibility program that was created through state legislation in 2009. (See graph of e-scrap recycled 2008 – 2017, page 9.) This total represents a 4% decrease versus 2016 after experiencing a decade of annual increases. 2017 collections translate to 4.8 pounds of electronics recycled per capita in the City of Milwaukee.

- Once considered merely "City dumps," over the years DPW has diversified the Drop Off Centers to expand recycling services and to make these sites into functioning resource recovery parks.

Organics Composting

- The organics collection pilot program collected food and yard waste from 500 participating residents. Items are collected in a 65-gallon brown cart by a private hauler that was selected through a competitive RFP process. The average set out rate was 75% (percentage of people placing their cart out for collection).
- Residents pay a $12.75 fee to cover the cost of service. DPW provides a $1 per-month participant credit to, in-part, recognize the cost savings from landfill diversion. DPW also covered the cost of the carts, education, and program recruitment.

- Customer satisfaction was very high, with a **95% satisfaction rate**. There was also low turnover in the program. The largest reason for people leaving the program was moving out of the pilot zone.

- Contamination was very low. There were 23 educational reminder tags left for residents throughout the first year and 2 carts that were rejected due to contamination.
- In the first full calendar year of the program, **358,700 pounds of material were collected**, or an average of **717 pounds per household**.

Compliance Enforcement

Enforcement of local recycling ordinances is conducted by DPW and its Sanitation Inspectors and administered by the recycling office. These ordinances are required by Wisconsin state law as is maintaining and carrying out a plan to ensure compliance. Throughout the compliance enforcement process, education and guidance is offered to property owners to assist them in the implementation of recycling programs. Below is a summary of recycling enforcement activity by DPW in 2017.

Property Type	Written warnings	Citations	Fines and Late Fees
1-4 units residential	12500	1,295	$30,930
5+ units residential	8	0	$0
Non-residential (business)	0	0	$0

Education, Outreach and *Recycle For Good*

Community Education Initiatives

- Recycling education to school children remains a strong component of the recycling outreach program. An ongoing partnership between DPW and Keep Greater Milwaukee Beautiful continues to provide educational programming, tours, and activities each year. **1,073 students** from 28 different schools and **768 adults** participated in educational programs and tours of Milwaukee's recycling facilities.
- For the third year the Materials Recovery Facility was a participating location in Doors Open Milwaukee. Over 500 visitors learned about the City's recycling program and toured the facility.

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Recycling and Waste Reduction

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Are You Wish-cycling?

Recycling right & avoiding the Dirty Dozen

The Top Twelve vs. the Dirty Dozen

When it comes to recycling in Milwaukee, there is good news! Milwaukeeans are continuing to recycle right and include the Top Twelve items in the curbside cart or bin. These items include plastic bottles and jugs, juice boxes, aluminum and tin cans, paper, and cardboard. For seven straight years we have increased recycling. Increases in recycling the Top Twelve means more recycling revenue, totaling $8.5 million dollars over the past five years, which help offset City costs.

And we can do even better! In all this recycling we've seen the appearance of the Dirty Dozen. These are items that can't be recycled curbside but still end up in our carts and bins. Another

Residue – why it's a resi-don't!

Residue, or things that don't belong in your recycling cart, is bad for three key reasons.

1. The People. Residue can be dangerous. When people place hazardous wastes, needles, or propane tanks in their cart your recycling driver and the people sorting at the MRF could be injured.

2. The Planet. Residue ultimately goes to the landfill. By placing garbage in your recycling cart, you are having it hauled to the MRF, processed, and then hauled to the landfill, which wastes a lot of energy and fuel. Some kinds of residue can also hurt the value and

Styrofoam. To combat this residue make sure your plastic bags get returned to a retail location, scrap metal is taken to a scrap yard or a Drop Off Center, and paper cups and Styrofoam are avoided or placed in the garbage.

How to Help

- DPW utilized its annual Waste Reduction and Recycling fall mailer to educate residents on the City's curbside recycling program and encourage everyone to make sure they are recycling the correct items. The featured article focused on contamination and "wish-cycling". The mailer also included a copy of the new Top 12 vs. Dirty Dozen graphic and detailed information on how to properly dispose of items not accepted in the curbside recycling program, such as plastic bags and yard debris. Seasonal information included information on year-round garbage cart set out, winter recycling collection, Project Clean & Green, and fall leaf collection.DPW's annual fall mailer is available online at www.MilwaukeeRecycles.com in the "Media Room" under "Resources".

Recycle For Good – 2017 Campaign Update

The citywide *Recycle For Good (*RFG) promotional campaign was refreshed in 2017 with a renewed focus on reminding residents about the "Top 12" recyclable items that belong in the curbside recycling program as well as the "Dirty Dozen" contamination items that do not belong in the curbside program. This included new graphics, a radio campaign that ran in the Spring of 2017, signage on the sides of recycling and garbage trucks, and a dedicated page on the MilwaukeeRecycles.com website. These items in conjunction with social media posts, e-notifications, presentations to the public, display booths, and the annual fall mailer. The campaign was originally launched in 2008 and has focused resources both on targeted, underperforming recycling areas as well as the city at large.

New truck signage.

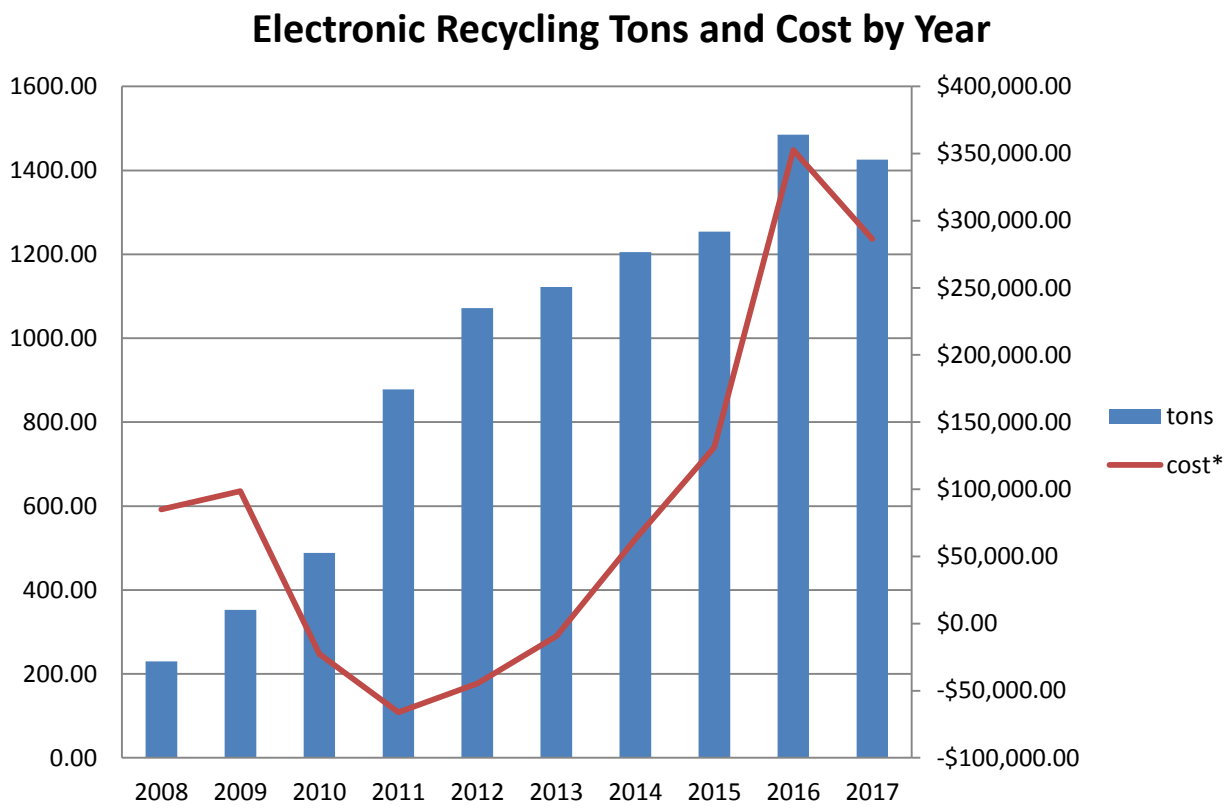
Campaign activities this past year included:

- Press releases and e-blasts highlighted various waste reduction, reuse and recycling topics.
    - Holiday waste reduction and recycling tips
    - Electronics recycling
    - Food waste reduction
    - Composting Christmas trees through the City's Drop-Off Centers
- MilwaukeeRecycles.com saw 119,358 visits to the website in 2017. This site focuses on curbside recycling for City residents. After a major change to the website in 2016, 2017 focused on refining the new website and making information more accessible. Top pages of interest included recycling schedule look-up, recycling guidelines, electronics recycling, an item disposal database, and the Dirty Dozen page on reducing contamination. There were also substantial changes made to Sanitation's website located at Milwaukee.gov/sanitation which allows the MilwaukeeRecycles.com to stay focused on curbside recycling.
- Social media updates, including seasonal campaigns. Three major campaigns occurred in 2017 with other posts several times a week. Page "Likes" increased 44% to 729 individuals.
    - February's Heart Your Hauler reminding residents how to properly prepare and set out materials
    - April's Earth Day campaign in coordination with the state-wide group Associated Recyclers of Wisconsin (AROW) showcased the environmental, economic, and social benefits of recycling. The most popular post (pictured left) was about the impact of recycling on GHG emissions and was viewed over 780 times.
    - November's America Recycles Day campaign in coordination with AROW shared information about how to "Recycle Right".

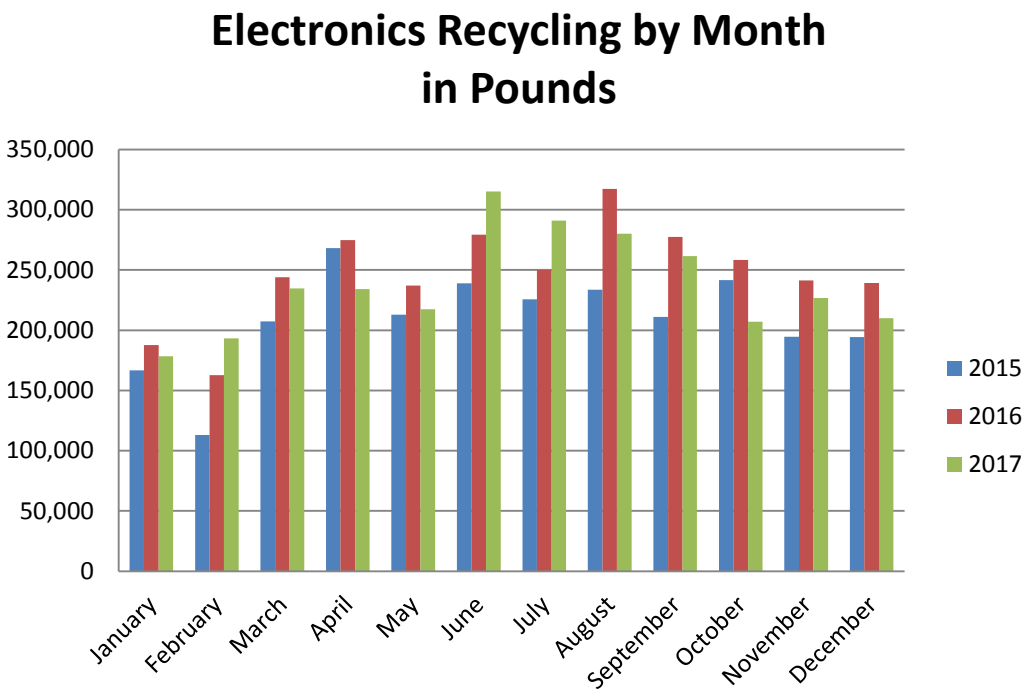
2017 Compost Bin & Rain Barrel Sale

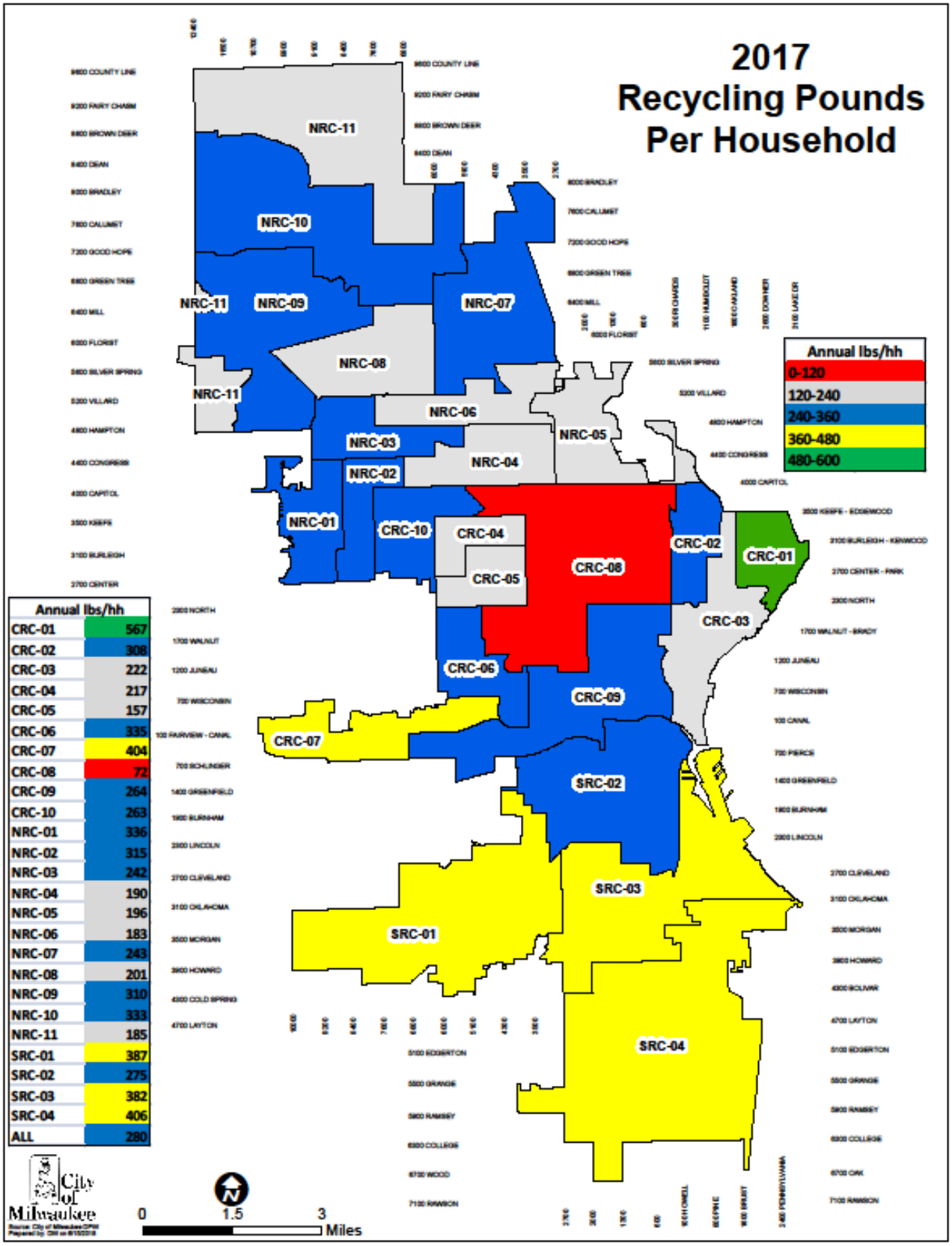
In 2017, DPW held its sixth compost bin and rain barrel truckload sale to once again promote composting and rainwater harvesting. This year the sale was located at Estabrook Park. This was the first year at this location that was chosen after having a more southern location for the past several years. This also marked the first year of online preordering being mandatory with very limited day-of purchases available. Compost bins and rain barrels were offered at significant savings from regular retail prices. 269 compost bins and rain barrels were purchased through the sale.

Electronics 2017 Program Data



*Negative numbers indicate revenues generated





Annual lbs/hh	
CRC-01	567
CRC-02	308
CRC-03	222
CRC-04	217
CRC-05	157
CRC-06	335
CRC-07	404
CRC-08	72
CRC-09	264
CRC-10	263
NRC-01	336
NRC-02	315
NRC-03	242
NRC-04	190
NRC-05	196
NRC-06	183
NRC-07	243
NRC-08	201
NRC-09	310
NRC-10	333
NRC-11	185
SRC-01	387
SRC-02	275
SRC-03	382
SRC-04	406
ALL	280

Table 1
Residential Tons Collected
2016-2017

	2016	2017	Change Tons	Change Percent
Recycling Materials - household				
Combined Paper	11,342	11,123	-219	-1.9%
Corrugated Cardboard	3,983	3,788	-195	-4.9%
Aluminum Cans	261	304	43	16.5%
Steel Cans	838	872	34	4.1%
Glass Containers	5,943	6,286	343	5.8%
Plastic Containers	2,959	3,053	94	3.2%
Subtotal	25,326	25,426	100	**0.4%**
Recycling Materials - other residential*				
Appliances with Refrigerants	184	173	-11	-6.0%
Lead Acid Batteries	16	15	-1	-6.3%
Waste Tires	740	722	-18	-2.4%
Waste Oil	135	162	27	20.0%
Electronics	1,485	1,425	-60	-4.0%
Scrap Metal	1,115	986	-129	-11.6%
Miscellaneous	55	60	5	9.1%
Subtotal	3,730	3,543	-187	**-5.0%**
Yard Waste & Organics				
Subtotal	29,416	32,249	2,833	**9.6%**
Total Diverted	58,472	61,218	2,746	**4.7%**
Household Solid Waste				
Cart collection (1-4 unit HHs)	157,787	158,697	910	0.6%
Dumpster service (>4 unit HH)	13,649	13,092	-557	-4.1%
Skid loader	4,113	4,922	809	19.7%
Clean & Green program	1,383	1,516	133	9.6%
Miscellaneous	2,474	2,939	465	18.8%
Subtotal	179,406	181,166	1,760	**1.0%**
Total Residential Solid Waste	237,878	242,384	4,506	**1.9%**

*****Does not include 1,635 T of concrete and 973 T of asphalt shingles recycled in 2017 through the Drop Off Centers. The State of Wisconsin does not include these categories as residential in annual reporting.

Table 2
Residential Program Metrics
2016-2017

Effectiveness Measures	2016	2017	Change
Household Material Recycling Rate*	10.6%	10.5%	-0.2%
Yard Waste Recycling Rate	12.4%	13.3%	0.9%
Other Materials Recycling Rate**	1.6%	1.5%	-0.1%
Total Recycling Rate	24.6%	25.3%	0.7%
Household Materials Recycling lbs. Per Household	281.21	281.27	0.06
	Percent change 2016 to 2017:		**0.0%**

Efficiency Measures - Household Recycling Only			
Residential Recycling Program Costs (State rpt. method)	**$ 9,652,356**	**$10,070,853**	**$ 418,497**
State Cost Sharing/Grant Revenue	$ 2,206,512	$ 2,312,199	$ 105,687
Recyclable Commodity Sales Revenue	$ 1,598,862	$ 1,877,256	$ 278,394
Avoided Landfill Disposal Costs	$ 1,091,251	$ 1,100,175	$ 8,924
Subtotal of offsets	**$ 4,896,625**	**$ 5,289,630**	$ 393,005
Net Costs - Residential Recycling Program	**$ 4,755,731**	**$ 4,781,223**	**$ 25,492**
Net Cost Per Ton - Res. Recycling Program	$ 187.78	$ 188.04	**$ 0.26**

*The Comptroller's Office method of computing Household Solid Waste Tons includes garbage tons from the City's >4 unit multi-family dwelling customers, a sector not serviced by the City with recycling collection. Since the City does not have recycling tonnage figures for these customers serviced with recycling by the private sector, the resulting recycling rate is artificially low.

******Does not include 1,635 T of concrete and 973 T of asphalt shingles recycled in 2017 through the Drop Off Centers. The State of Wisconsin does not include these categories as residential in annual reporting.

Table 3
Recyclables Processing Financials Comparison
2016-2017

This table relates to processing of residential recyclables after collection.
It does not include collection costs or recycling grant revenues.

	2016	2017	Change	% Change
Commodity Sales Revenue				
Revenue/Ton (Market Value)	$ 73.35	$ 90.16	$ 16.81	22.9%
City's Share (Rev/T Received from Contractor)	$ 67.65	$ 76.64	$ 8.99	13.3%
Total revenue to City	**$ 1,598,862**	**$ 1,877,256**	$ 278,394	**17.4%**
Processing Costs				
Processing per ton rate	$ 36.01	$ 36.06	$ 0.05	0.1%
Processing tons	25,348.37	25,435.19	86.82	0.3%
Processing costs	**$ 912,739**	**$ 917,088**	$ 4,349	0.5%
Net Revenue				
Net revenue (received)	$ 801,963	$ 1,031,807	$ 229,844	28.7%
Net revenue per ton	**$ 31.64**	**$ 40.57**	**$ 8.93**	**28.2%**
Avoided Disposal Costs				
Landfill costs per ton	$ 43.05	$ 43.26	$ 0.21	0.5%
Landfill costs avoided	**$ 1,091,251**	**$ 1,100,175**	**$ 8,924**	0.8%
Total Benefit				
Total Net benefit	**$ 1,893,214**	**$ 2,131,982**	**$ 238,768**	12.6%
Total Net benefit per ton	**$ 74.69**	**$ 83.82**	**$ 9.13**	**12.2%**

The net benefit figure compares total processing costs with recyclables revenue and avoided landfill disposal costs. In 2017, net benefits were higher due to the newer contract structure as well as a rebound of commodity prices.