



# URBANA WASTE MANAGEMENT REPORT

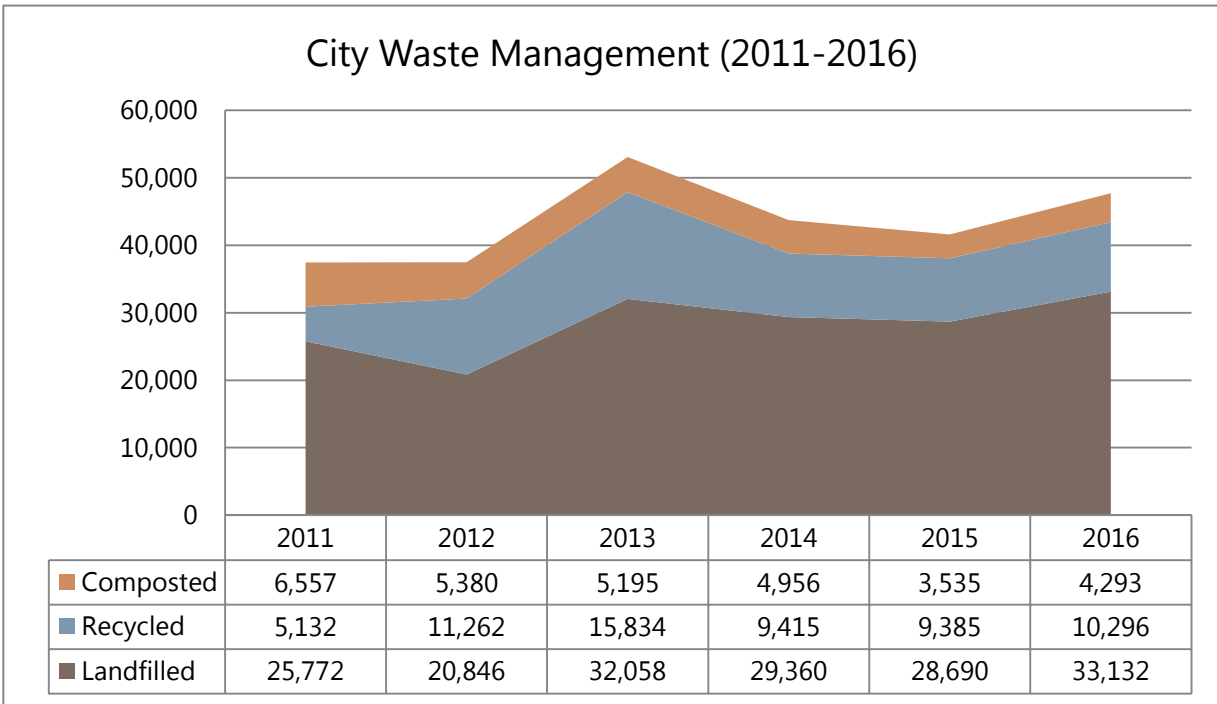
CY 2016

*A summary of waste diversion and recycling activities in the City of Urbana.*

# URBANA WASTE MANAGEMENT CY 2016

## Diversioin Rate

In 2016 there was a total of 47,721 tons of waste *generated* in Urbana. This includes garbage, C&D and commodity recycling, and landscape materials composted. Of this total, 33,132 tons (69%) was landfilled; 10,296 tons (22%) was recycled, including C&D; and 4293 tons (9%) was composted. Urbana’s waste diversion rate in 2016 was 31%. Urbana’s waste diversion rate remained the same in 2016 as 2015. Below is a look at landfill, composting and recycling tonnages for the past six years.



Data has been tracked since 2011 when licensed City haulers were required to provide Urbana the quantity of garbage, recycling and landscape debris collected on an annual basis. Comparing 2016 data to 2011 data, Urbana has seen a 101% increase in recyclables collected, and a 35% decrease in landscape composted; but has also seen

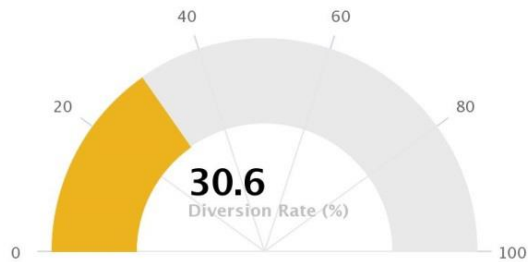
# URBANA WASTE MANAGEMENT CY 2016

an increase (29%) of garbage landfilled. Overall, the average diversion rate for the past six years is 35%. Accuracy of data has improved over the past six years as haulers, and Urbana Public Works divisions, have become accustomed to tracking data.

Here is the 2016 diversion rate:

## Aggregate Results (%)

Jan 1, 2016 – Dec 31, 2016



### Participation Rate: U-Cycle Program

Participation in the U-Cycle program rose 5% in 2016; from 71% in 2015 to 76% in 2016. Part of the increase of the participation rate stemmed from a bin audit conducted by staff. In the past only household U-Card deliveries were tracked. Staff conducted a field audit which determined that 403 households in the U-Cycle program were using bins only. This data has not previously been reported so based on the bin and U-Card data, by which we assume participation rate, participation rose 5%. In addition, outreach efforts attributed to a participation increase as well. Additionally, the convenience of requesting a U-Card online makes it easy and convenient for Urbana residents to obtain a U-Card and participate in the program.

# URBANA WASTE MANAGEMENT CY 2016

## Environmental Impacts

The U-Cycle programs recycled 3,000 tons of materials in 2016, averaging 250 tons of recyclables per month. According to a greenhouse gas reduction calculator developed by stopwaste.org<sup>1</sup>, 862 metric tons of CO<sub>2</sub> emissions are avoided per month by recycling 250 tons of materials; and the equivalent of 2,233 cars are taken off the road every month.

### Method 2 - Using Monthly Total Tonnage

Comingled R 3.45 Tons CO<sub>2</sub>E saved per Ton of Material Recycled/Composted

GHGs/month avoided by recycling/composting rather than landfilling using EPA's WARM model			
250	ton mo	x 3.44796 ton CO <sub>2</sub> e ton recycled	= 861.99 Metric tons/month of avoided CO <sub>2</sub> E emissions
Equivalent number of cars taken off the road: =			2233.14

That means that in 2016 Urbana residents saved 10,344 metric tons of CO<sub>2</sub> emissions from releasing into the atmosphere.

## Green House Gas (GHG) Equivalencies

The following Green House Gas (GHG) equivalencies were calculated through Re-trac Connect<sup>2</sup>.

In 2016 the GHG equivalencies in Urbana were the same as

- conserving 47,165 barrels of oil
- conserving 2,268,481 gallons of gasoline
- saving 1,849 homes worth of energy use
- switching 530,919 incandescent lightbulbs to CFL
- removing 4,270 passenger vehicles from the road
- planting 520,028 tree seedlings
- installing 6 wind turbines

See charts in appendix.

# URBANA WASTE MANAGEMENT CY 2016

## **Economic Impacts**

In 2016, the average annual household garbage collection cost in Urbana was \$204.60 (or \$17.05/month)<sup>3</sup>. The average recycling collection cost in Urbana was \$37.20 (or \$3.10/month).

## **Solid Waste Cost:**

### Disposal cost:

Garbage disposed Illinois (average)\* = 2,088 lbs./person/year

Average number of people per household (HH)\*\* = 1.92

2,088 lbs./person \* 1.92 = 4,009 lbs./HH

Curbside housing units = 8500

4,009 lbs./HH/year \* 8500 HH = 34,076,500 lbs./year (17,038 tons/year)

8500 HH \* \$17.05/household/month (avg.) \* 12 months = \$1,739,100/year

### Cost per ton:

\$1,739,100 / 17,038 tons = \$102/ton

### Cost per pound:

\$102/2000 = \$0.05/lb.

\* Study conducted by the Institute of Government & Public Affairs (2010); Fullerton, D., & Miller, S.

\*\*U.S. Census Data (2002)

# URBANA WASTE MANAGEMENT CY 2016

## **Recycling Costs:**

### Curbside U-Cycle

Cost per ton:

$$\$194,940^*/2,256 \text{ tons} = \$86.41/\text{ton}$$

Cost per pound:

$$\$86.41/2000 = \$0.04/\text{lb.}$$

\*Contractual cost (2016)

### Multifamily U-Cycle

Cost per ton:

$$\$215,000^*/744 \text{ tons} = \$288.98/\text{ton}$$

Cost per pound:

$$\$288.98/2000 = \$0.14/\text{lb.}$$

\*Contractual cost (2016)

## **Conclusion**

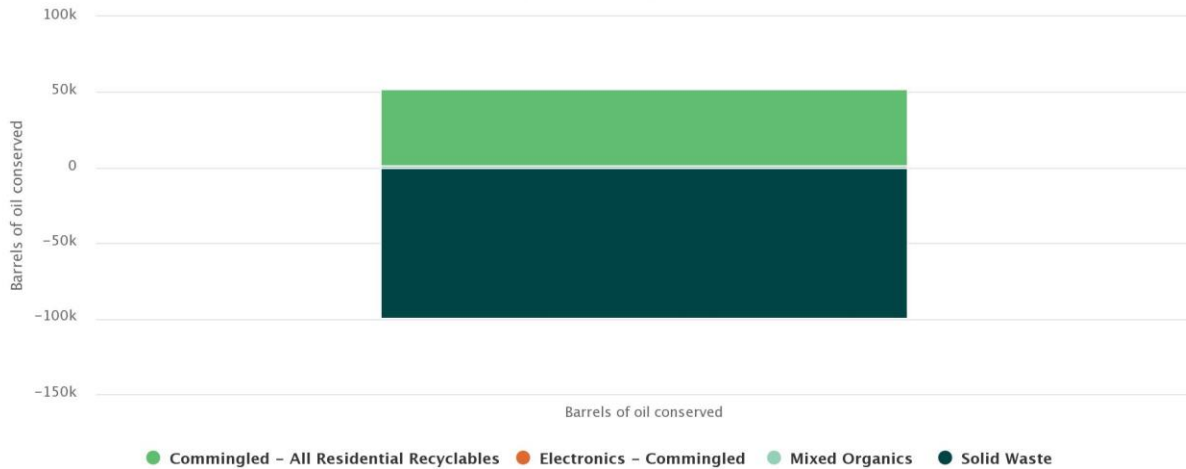
Comparing the 2016 curbside recycling and landfill costs per pound reveals that curbside recycling costs \$0.01 less per pound than landfilling materials. In addition, the GHG equivalencies indicate the positive effect that recycling has on the environment.

# URBANA WASTE MANAGEMENT CY 2016

## Appendix

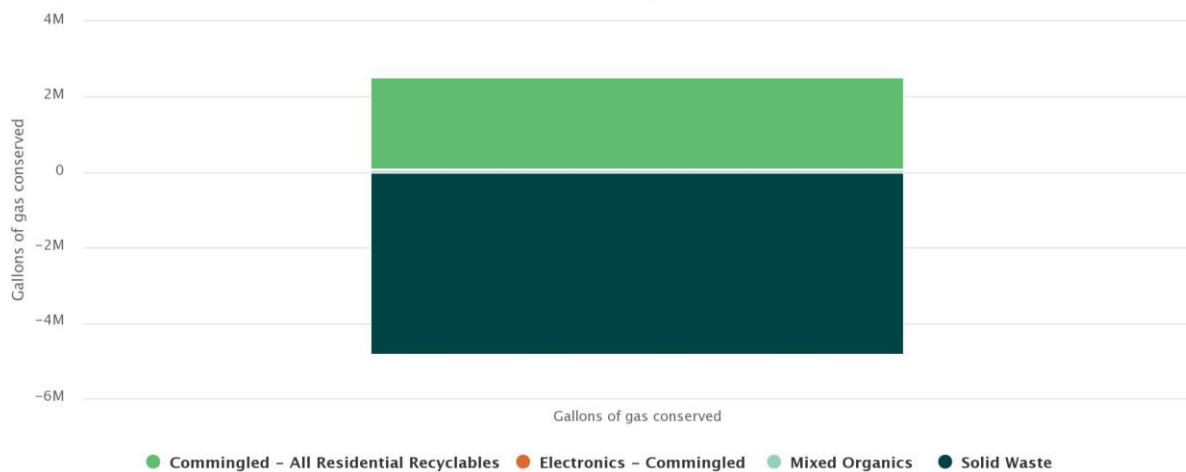
### GHG Equivalencies Report – Barrels of oil conserved

Jan 1, 2016 – Dec 31, 2016



### GHG Equivalencies Report – Gallons of gas conserved

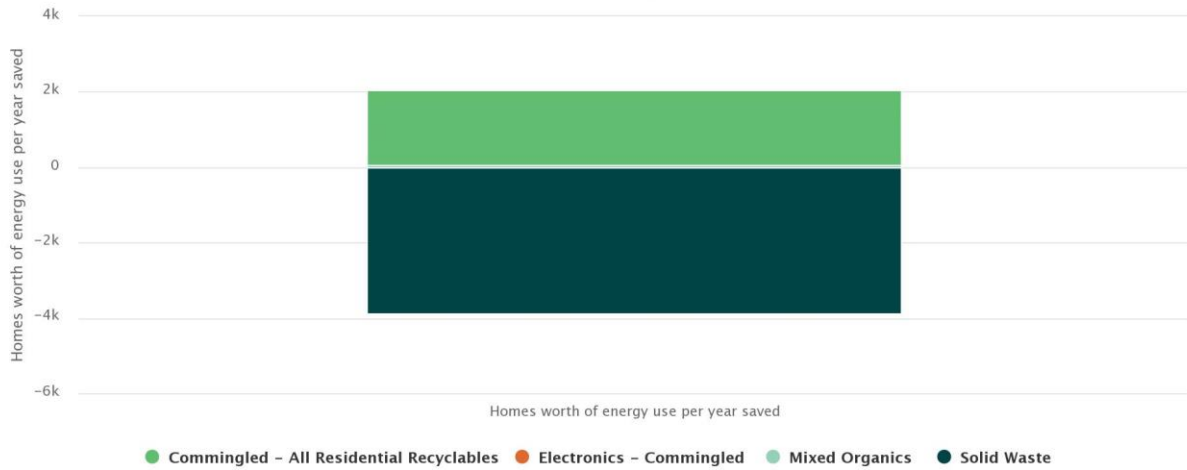
Jan 1, 2016 – Dec 31, 2016



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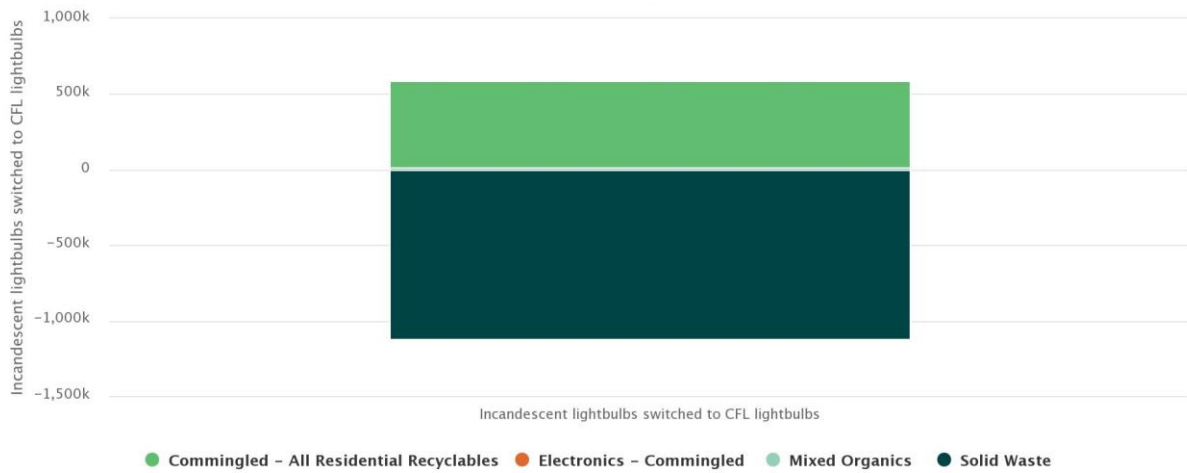
## GHG Equivalencies Report – Homes worth of energy use per year saved

Jan 1, 2016 – Dec 31, 2016



## GHG Equivalencies Report – Incandescent lightbulbs switched to CFL lightbulbs

Jan 1, 2016 – Dec 31, 2016

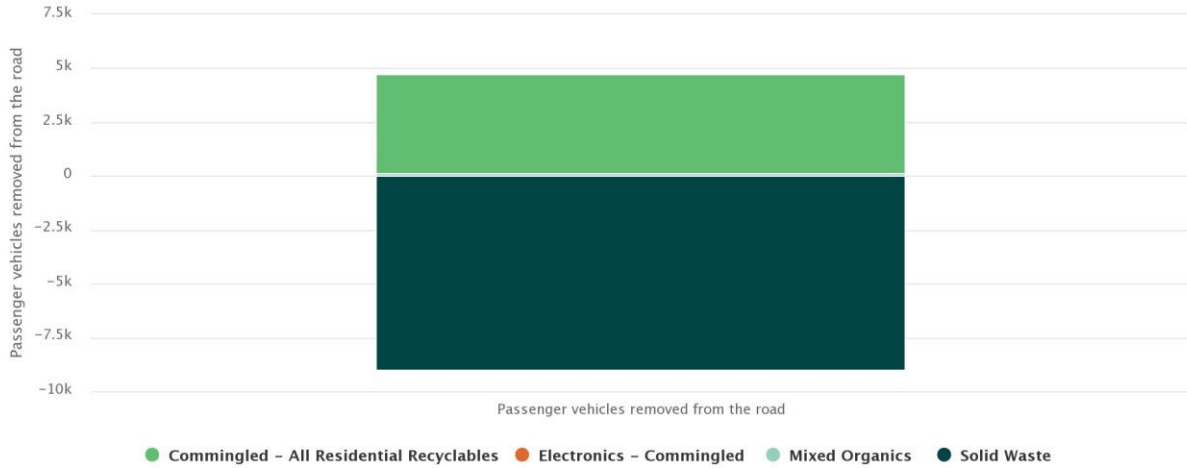




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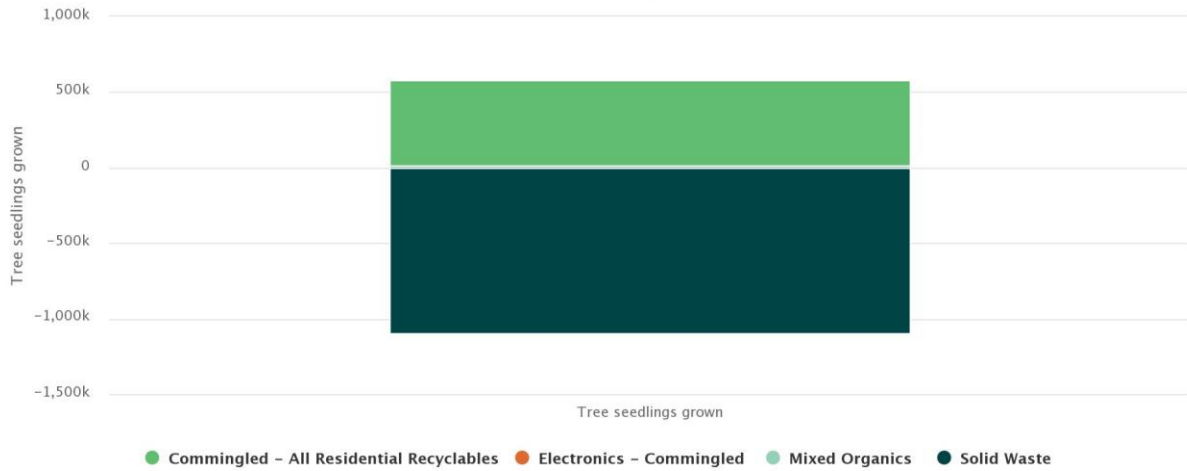
## GHG Equivalencies Report – Passenger vehicles removed from the road

Jan 1, 2016 – Dec 31, 2016

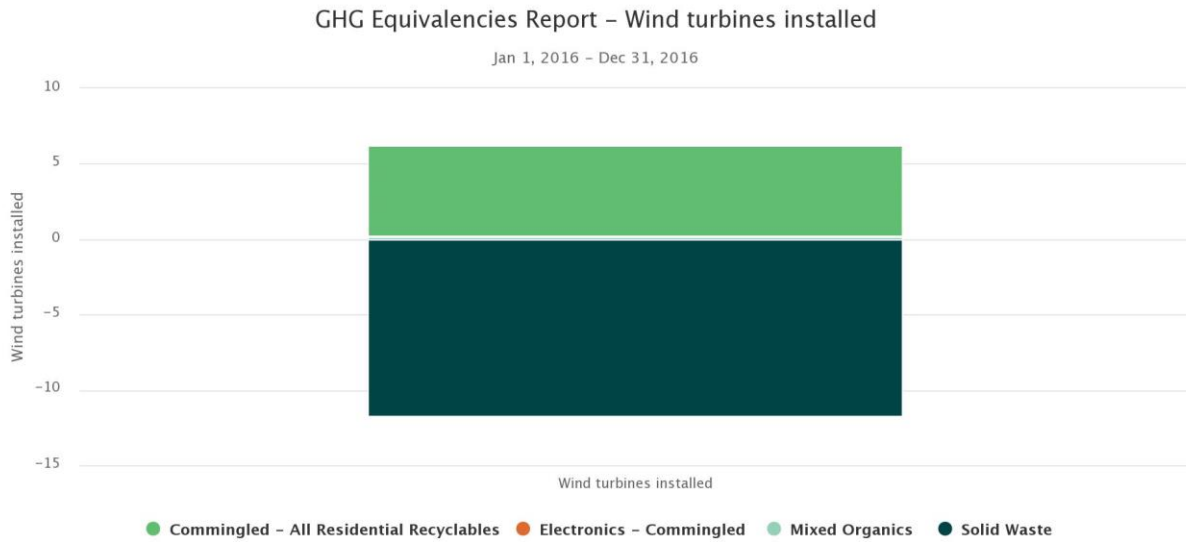


## GHG Equivalencies Report – Tree seedlings grown

Jan 1, 2016 – Dec 31, 2016



# URBANA WASTE MANAGEMENT CY 2016



<sup>1</sup><http://www.stopwaste.co/calculator/>

<sup>2</sup><http://www.re-trac.com/>

<sup>3</sup>Based on average monthly costs for household garbage collection in Urbana in 2016 (eight licensed providers)