



URBANA WASTE MANAGEMENT REPORT

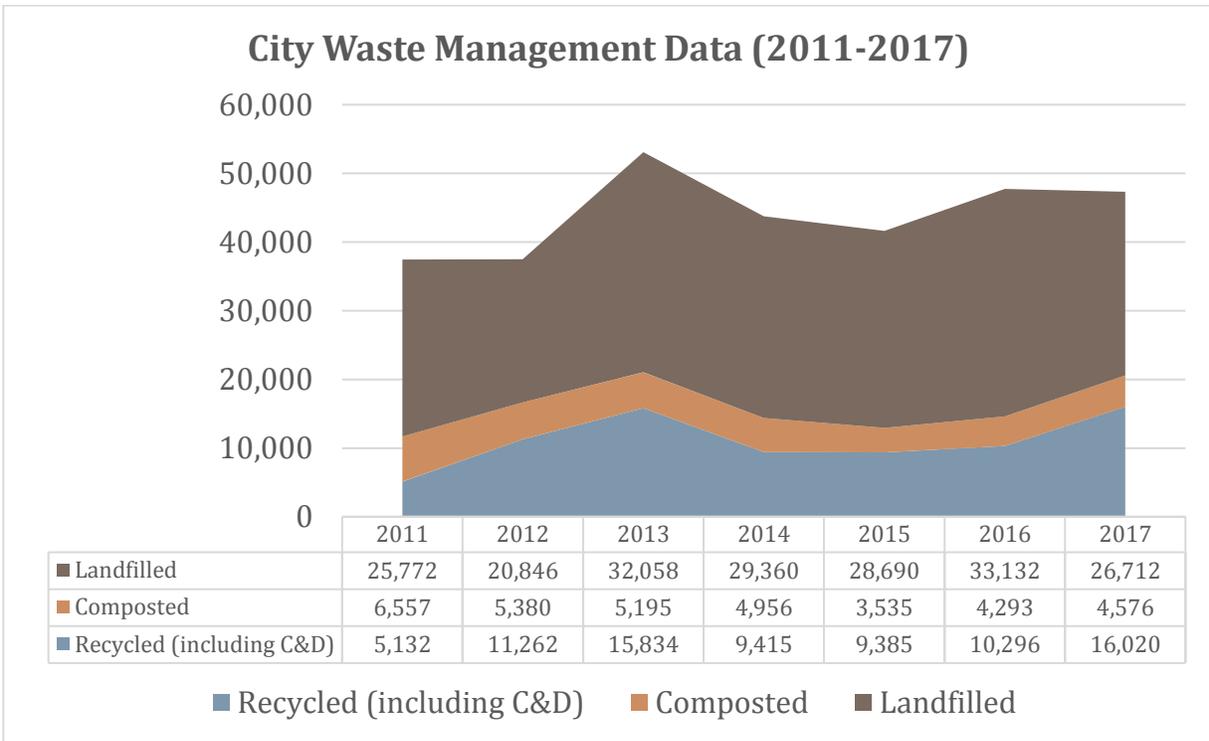
CY 2017

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

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Diversions Rate

In 2017, there was a total of 47,308 tons of waste *generated* in Urbana. This includes garbage, C&D and commodity recycling, and landscape materials composted. Data was compiled using the totals that haulers provide for an annual survey. Of the total waste generated, 26,712 tons was landfilled; 16,020 tons was recycled, including C&D; and 4,576 tons was composted. Urbana’s waste diversion rate in 2017 was 44%. Below is a look at landfill, composting and recycling tonnages for the past seven years.

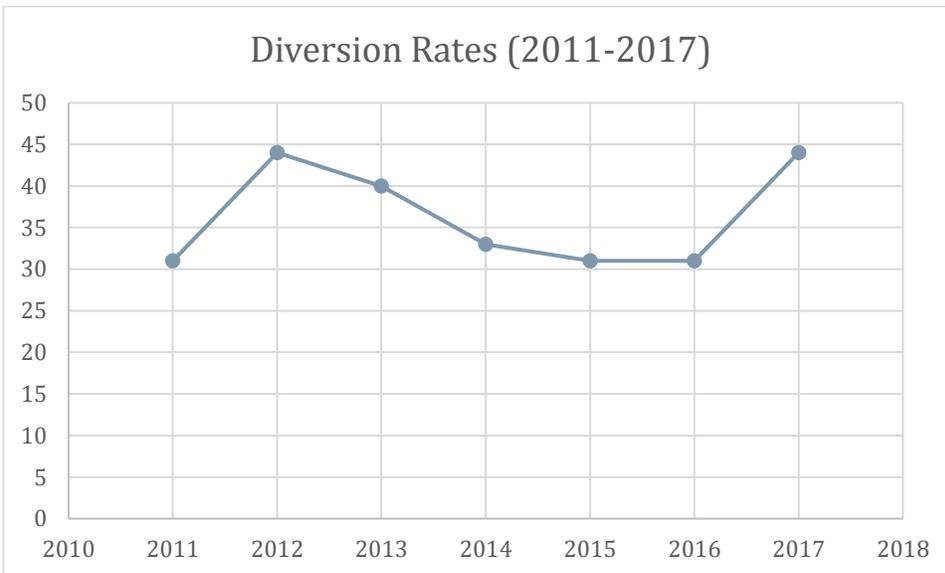


Data has been tracked since 2011 when licensed garbage haulers in Urbana were required to provide the quantity of garbage, recycling and landscape debris collected on an annual basis. Comparing 2017 data to 2011 data, Urbana has seen a 212% increase in recyclables collected (including C&D); a 43% decrease in landscape materials composted; and a 4% increase in garbage landfilled, based on data provided by Urbana’s licensed garbage haulers. Overall, the average diversion rate for the past seven

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years is 36%. Accuracy of data has improved over the past seven years as haulers, and Urbana Public Works divisions, have become accustomed to tracking data.

Here are the diversion rates by year:



Participation Rate: U-Cycle Program

Participation in the U-Cycle program rose 1% in 2017, from 76% in 2016 to 77% in 2017. Staff will be sending postcards to the 23% of residents not participating in the U-Cycle program in 2018. Participation rate is based upon households that have requested a U-Cart.

Environmental Impacts

The U-Cycle programs recycled 3,006 tons of materials in 2017, averaging 251 tons of recyclables per month. According to a greenhouse gas reduction calculator developed by stopwaste.org¹, 865 metric tons of CO2 emissions are avoided every month by recycling 251 tons of materials; with the equivalent of 2,242 vehicles taken off the road monthly.

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Method 2 - Using Monthly Total Tonnage

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3.45 Tons CO2E saved per Ton of Material Recycled/Composted

GHGs/month avoided by recycling/composting rather than landfilling using EPA's WARM model

251 ton x 3.44796 ton CO2e = 865.44 Metric tons/month of avoided CO2E emissions
mo ton recycled

Equivalent number of cars taken off the road: = 2242.07

That means that in 2017 Urbana residents saved 10,380 metric tons of CO2 emissions from releasing into the atmosphere.

Green House Gas (GHG) Equivalencies

The following Green House Gas (GHG) equivalencies were calculated through Re-Trac Connect² using the U-Cycle data of 3,006 tons recycled in 2017.

In 2017, the GHG equivalencies in Urbana were the same as

- conserving 19,749 barrels of oil
- conserving 957,369 gallons of gasoline
- saving 774 homes worth of energy use
- switching 222,300 incandescent lightbulbs to CFL
- removing 1,788 passenger vehicles from the road
- planting 217,740 tree seedlings
- installing 2 wind turbines

See charts in appendix.

Economic Impacts

In 2017, the average annual household garbage collection cost in Urbana was \$171.60 (or \$14.30/month)³. The average recycling collection cost in Urbana was \$37.84 (or \$3.15/month).

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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 = 8,500

4,009 lbs./HH/year * 8,500 HH = 34,076,500 lbs./year (17,038 tons/year)

8,500 HH * \$14.30/household/month (avg.) * 12 months = \$1,458,600/year

Cost per ton:

\$1,458,600 / 17,038 tons = \$86/ton

Cost per pound:

\$86/2000 = \$0.04/lb.

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

**U.S. Census Data (2002)

Recycling Costs:

Curbside U-Cycle

Cost per ton:

\$196,889*/2,293 tons = \$85.87/ton

Cost per pound:

\$85.87/2000 = \$0.04/lb.

*Contractual cost (2017)

Multifamily U-Cycle

Cost per ton:

$$\$225,750^*/713 \text{ tons} = \$316.62/\text{ton}$$

Cost per pound:

$$\$316.62/2000 = \$0.16/\text{lb.}$$

*Contractual cost (2017)

Conclusion

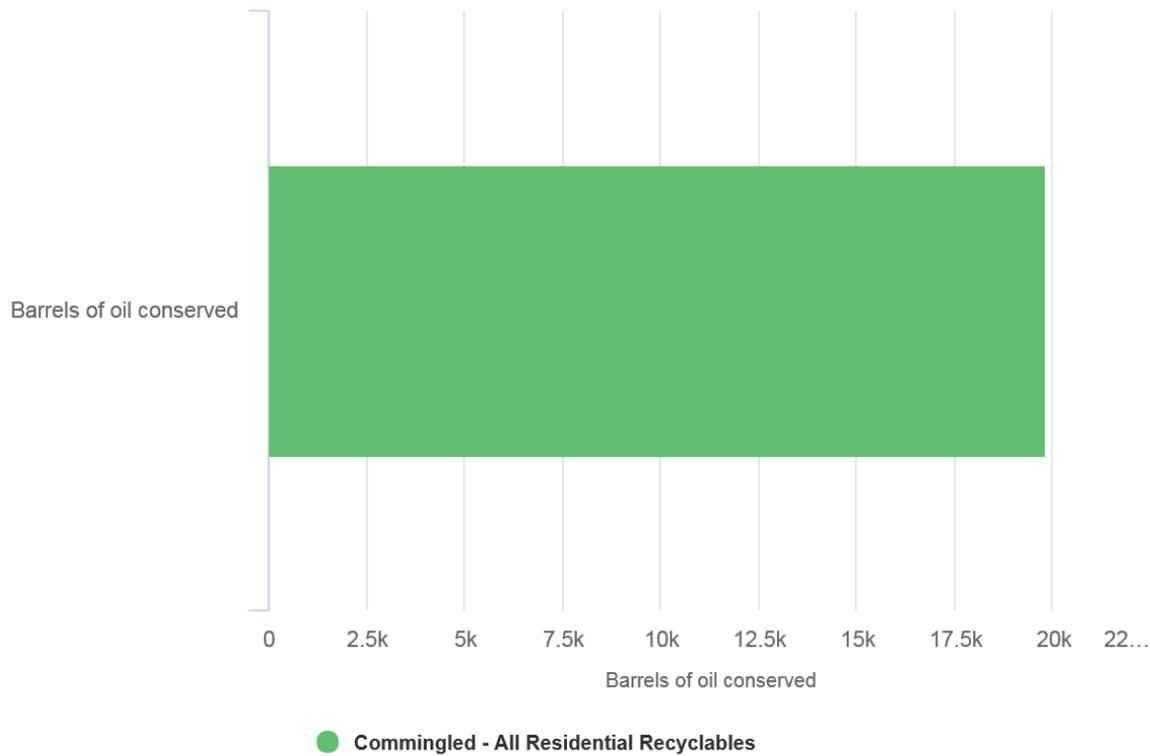
Comparing curbside to multifamily recycling costs per pound, it shows that it cost four times more to recycle multifamily materials than curbside due to less material collected in the multifamily program. Staff will continue efforts to increase diversion rates at multifamily properties through outreach & education, advertising and social media campaigns.

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Appendix

GHG Equivalencies Report - Barrels of oil conserved

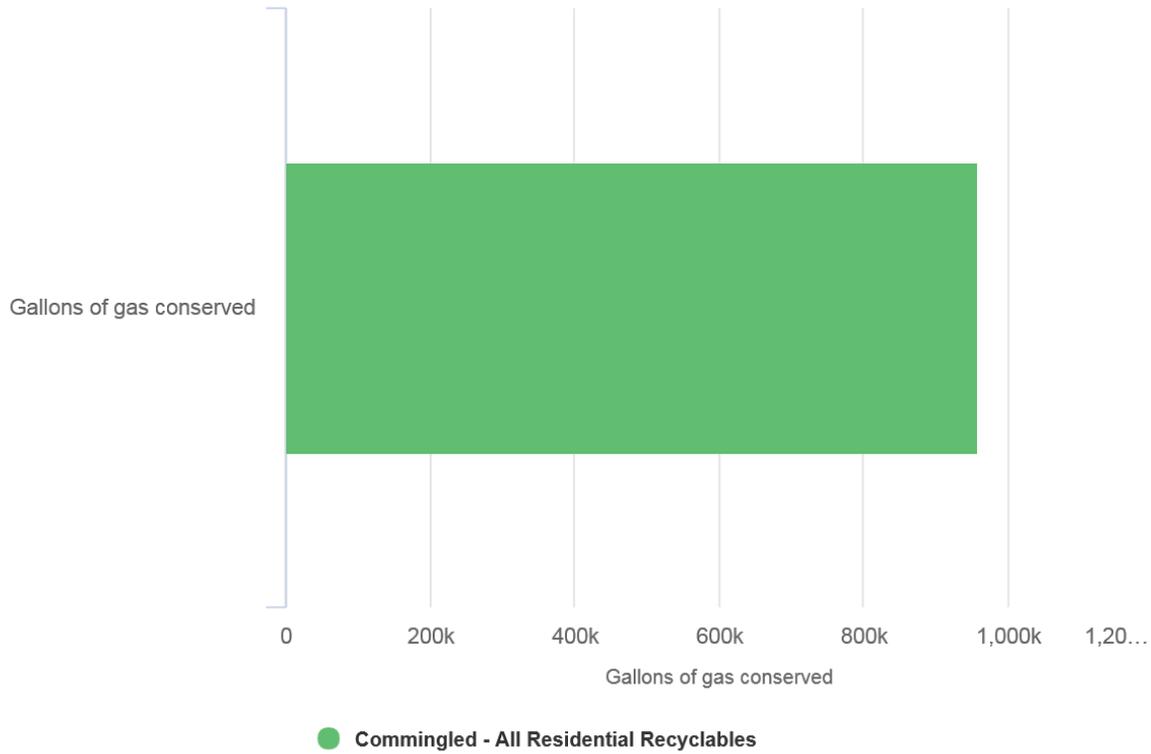
Jan 1, 2017 - Dec 31, 2017



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GHG Equivalencies Report - Gallons of gas conserved

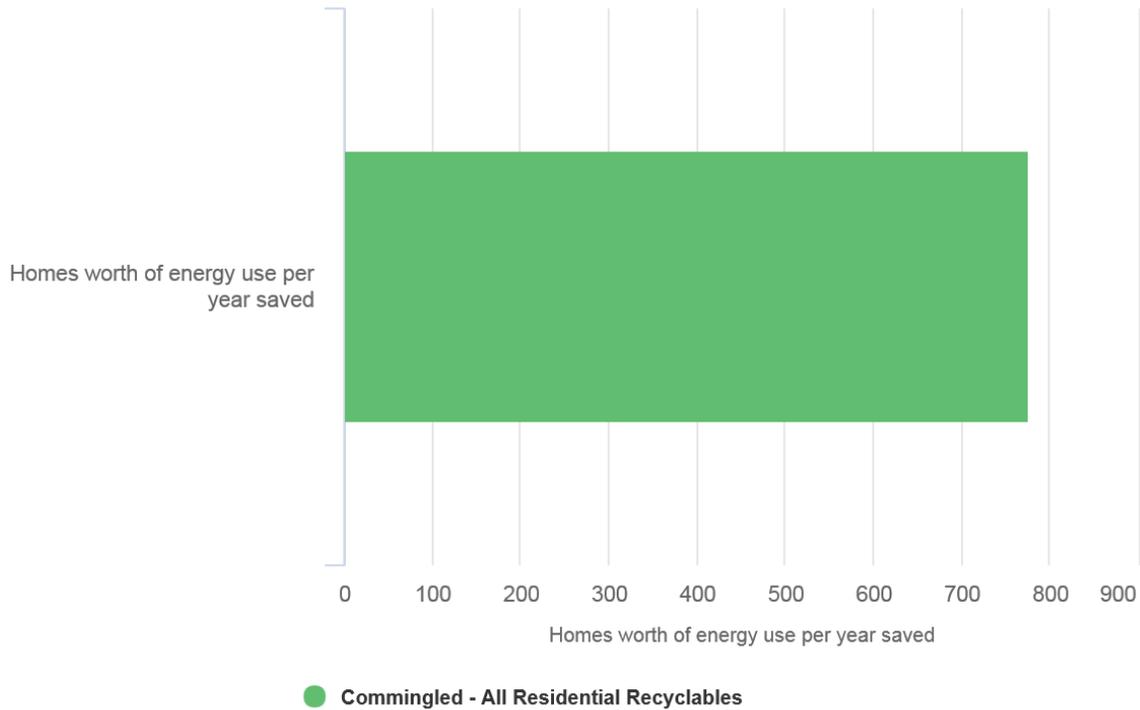
Jan 1, 2017 - Dec 31, 2017



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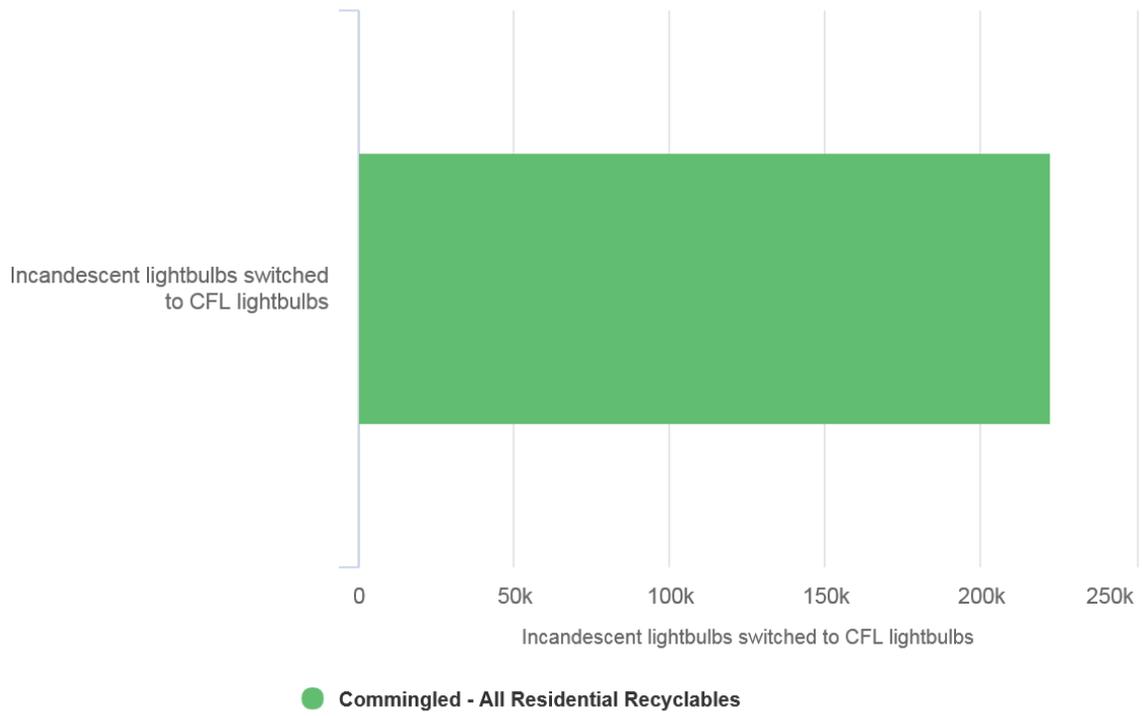
GHG Equivalencies Report - Homes worth of energy use per year saved

Jan 1, 2017 - Dec 31, 2017



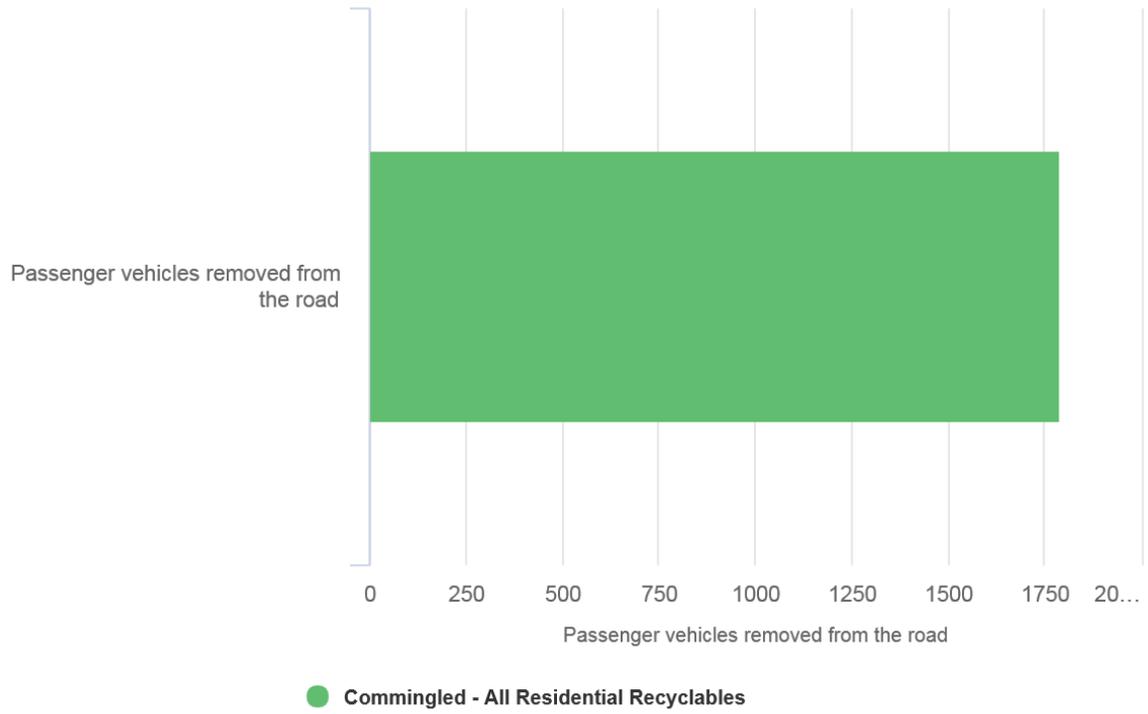
GHG Equivalencies Report - Incandescent lightbulbs switched to CFL lightbulbs

Jan 1, 2017 - Dec 31, 2017



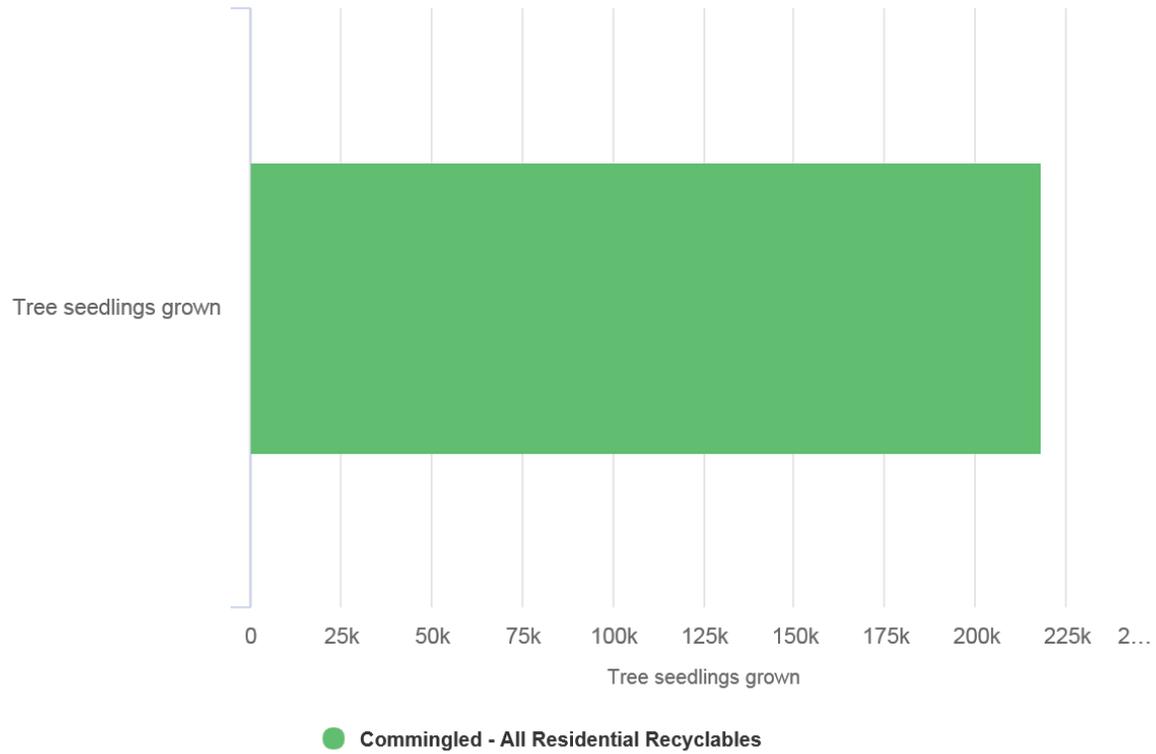
GHG Equivalencies Report - Passenger vehicles removed from the road

Jan 1, 2017 - Dec 31, 2017



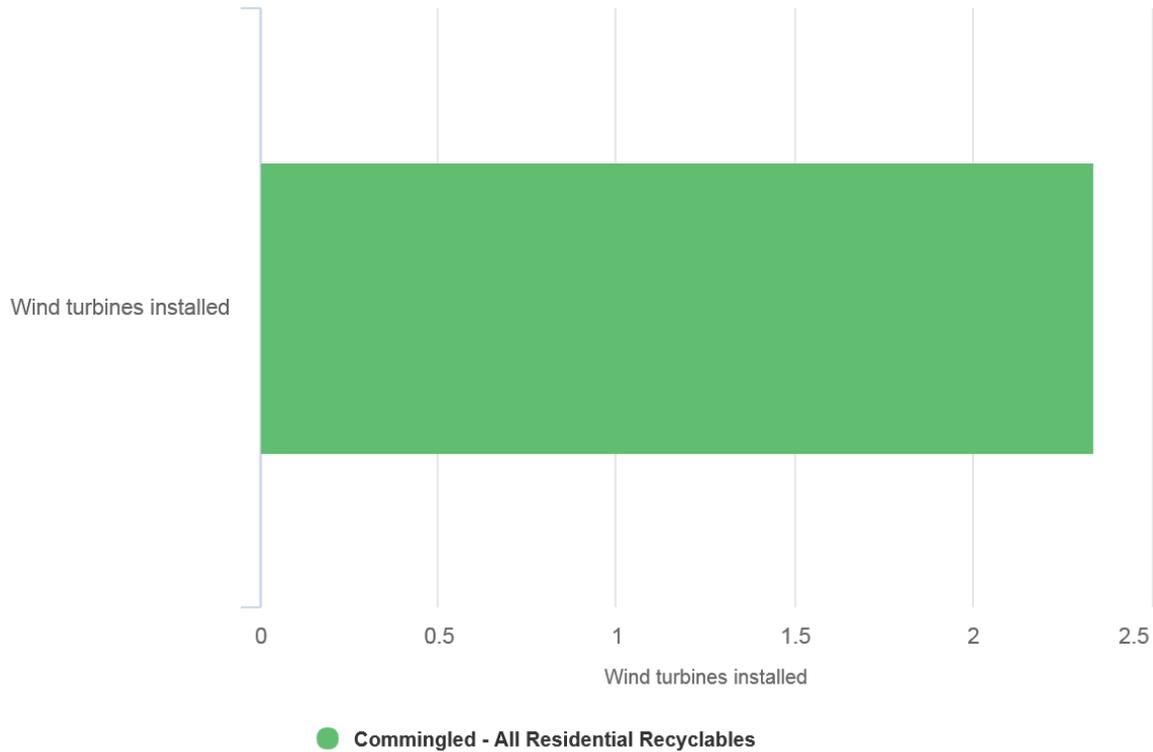
GHG Equivalencies Report - Tree seedlings grown

Jan 1, 2017 - Dec 31, 2017



GHG Equivalencies Report - Wind turbines installed

Jan 1, 2017 - Dec 31, 2017



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

²<http://www.re-trac.com/>

³Based on average monthly costs for household garbage collection in Urbana in 2017 (eight licensed haulers)