



URBANA MATERIALS MANAGEMENT REPORT

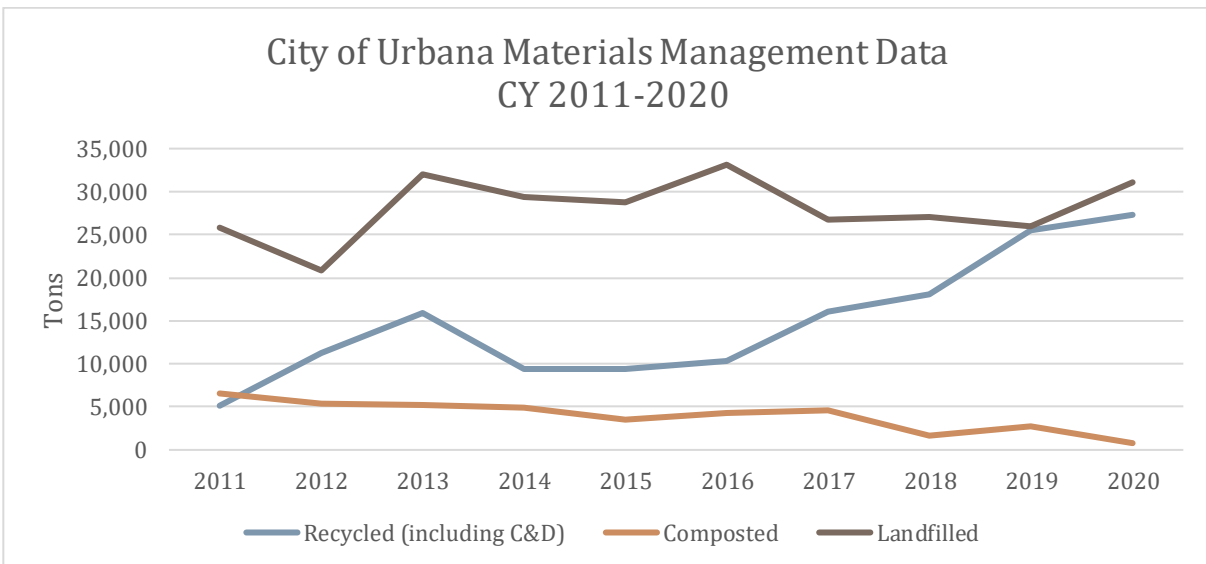
CY 2020

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

URBANA MATERIALS MANAGEMENT CY 2020

Diversion Rate

In 2020, there was a total of 59,100 tons of materials *generated* in Urbana. This includes garbage, recycled construction & demolition (C&D) debris, commodity recycling from households, and landscape materials composted. Data was compiled using the totals that haulers provide the City, along with data from divisions within the Urbana Public Works department. Of the total materials generated, 31,008 tons were landfilled; 27,308 tons were recycled, including C&D; and 784 tons were composted. Urbana's waste diversion rate in 2020 was 48%. Below is a look at recycled, composted, and landfilled tonnages for the past ten years:

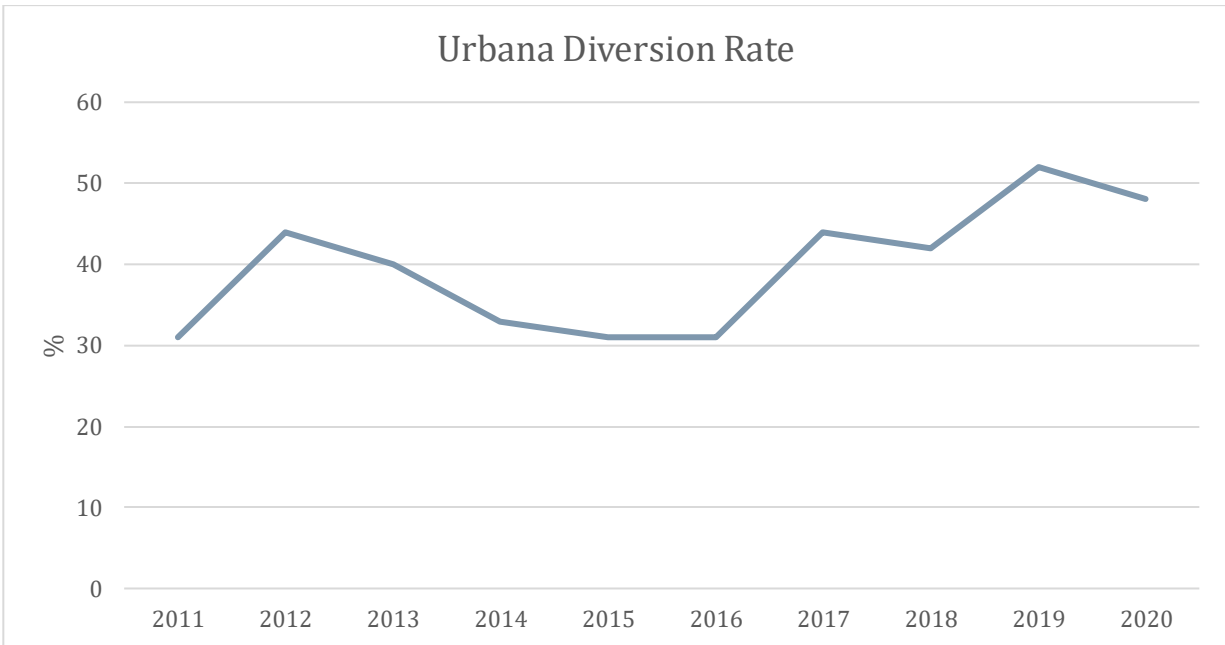


The City began tracking data in 2011 when licensed garbage haulers in Urbana were required to provide the quantity of garbage, recycling (including C&D) and landscape debris collected on an annual basis.

Since 2011 recycling (including C&D) has increased fivefold, landscape materials received for composting has decreased 88%, and garbage landfilled has remained consistent at an average annual rate of 28,000 tons.

URBANA MATERIALS MANAGEMENT CY 2020

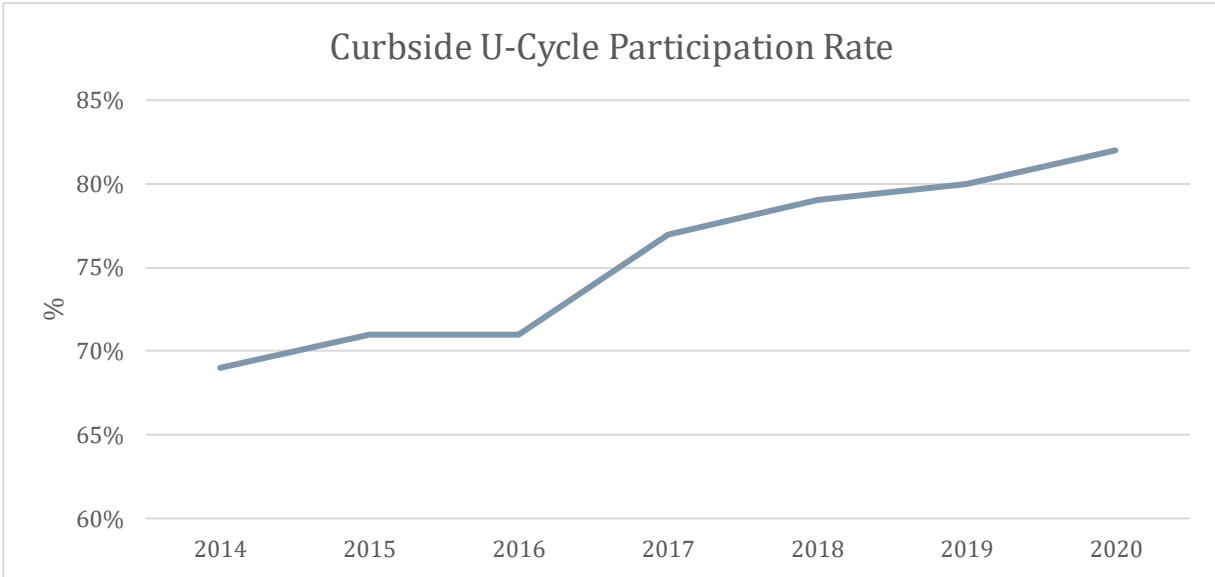
The diversion rate for the past ten years averages 40%. The chart below shows the diversion rate (%) per year.



Participation Rate: Curbside U-Cycle Program

The participation rate in the curbside U-Cycle program has been tracked since 2014. In 2014, the participation rate was 69%. In 2020 the participation rate rose to 82%, a 13% increase since 2011. Participation rate is calculated by dividing the total number of single-family through four-plex households in Urbana by the number of households that have requested a U-Card or recycling bin (historically). Participation rate assumes those households with recycling receptacles are setting out recycling semi-frequently (averaging twice per month).

URBANA MATERIALS MANAGEMENT CY 2020

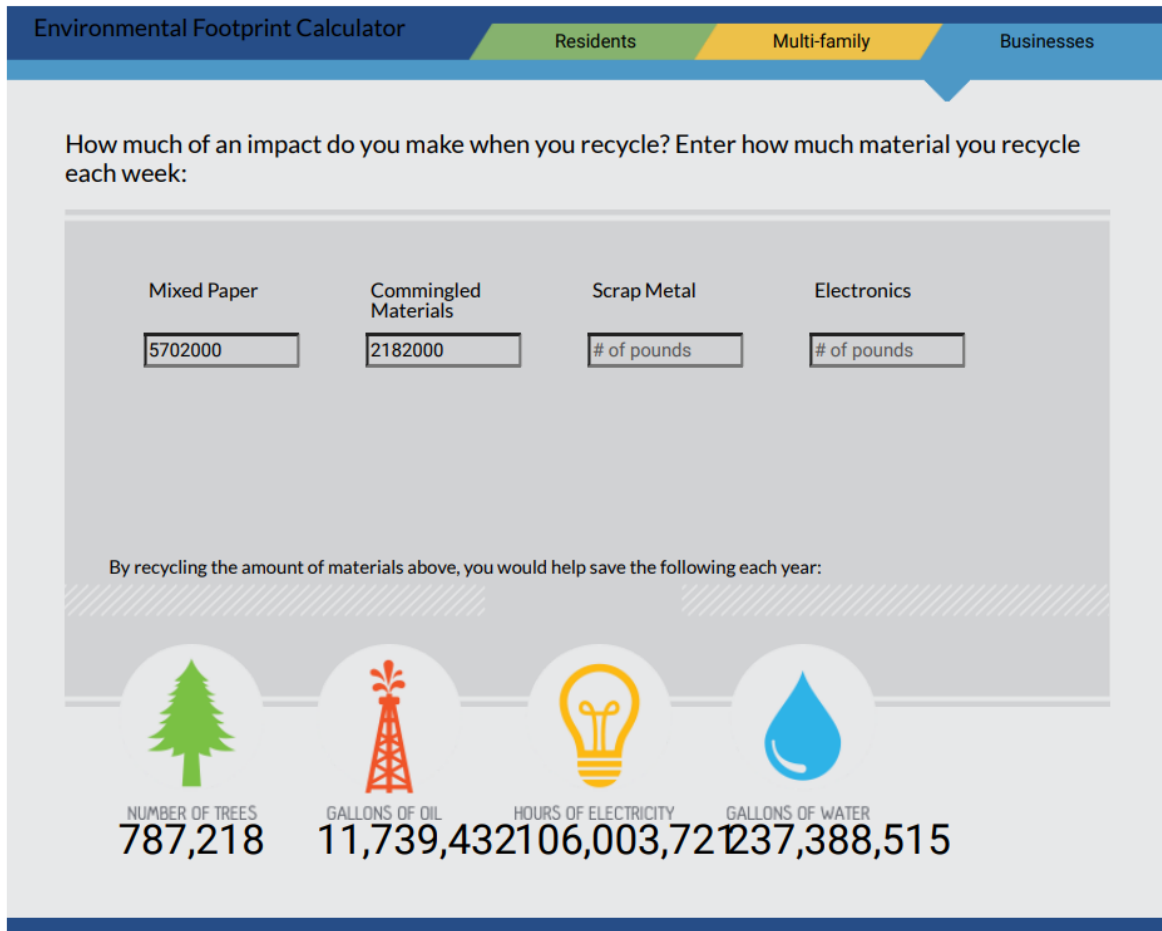


Environmental Impacts

In 2020 the curbside and multifamily U-Cycle programs recycled a combined 3,942 tons (or 7,884,000 lbs.) of commingled recycling, averaging 329 tons of recyclables collected and processed per month. Calendar year 2020 saw the highest recycling rates in the U-Cycle program for both curbside and multifamily households to date. The positive environmental impacts of recycling were assessed using an environmental impact calculator provided by Montgomery County, Maryland. Here are what the results found: By recycling more than 5.7 million pounds of paper and more than 2.1 million pounds of plastics, glass and metals in the U-Cycle program in 2020

- 787,218 trees were saved
- 11.7 million gallons (or nearly 280,00 barrels) of oil were conserved
- 106 million kWh of electricity was saved
- 237 million gallons of water was preserved

URBANA MATERIALS MANAGEMENT CY 2020



Economic Impacts

In 2020, the average annual household garbage collection cost in Urbana was \$17.40/month or \$208.80 annually. The average recycling collection cost in Urbana was \$3.25/month or \$39/annually.

Solid Waste Disposal

- Average garbage disposed in Illinois = 2,088 lbs./person/year
- Average number of people per household = 1.92
- Average annual household garbage disposed = 4,009 lbs. per household per year

URBANA MATERIALS MANAGEMENT CY 2020

$(2,088 \text{ lbs./person/year} \times 1.92/\text{HH} = 4,009 \text{ lbs./household/year})$

*https://igpa.uillinois.edu/sites/igpa.uillinois.edu/files/reports/IR10-09_Waste_&_Recycling.pdf (Institute of Government & Public Affairs Report (2010))

Curbside Solid Waste Landfilled

- Curbside housing units 8,498
- Curbside Solid Waste Landfilled/Year (Est.) = 17,034 tons
 $(8,498 \text{ HH} \times 4,009 \text{ lbs./HH/year} = 34,068,482 \text{ lbs.} / 2000 = 17,034 \text{ tons})$

Curbside Households Garbage Cost (Based on hauler prices, not tipping fees)

- Estimated at \$1,774,382 per year
 $(8,498 \text{ HH} \times \$208.80/\text{annual (avg.)} = \$1,774,382)$
- Cost per ton = \$120/ton
 $(\$1,774,382 / 17,034 \text{ tons} = \$104/\text{ton})$
- Cost per pound = \$0.05/lb.
 $(\$120/\text{ton} / 2000 = \$0.06/\text{lb.})$

Multifamily Solid Waste Landfilled

- Multifamily Housing Units = 9,911
- Multifamily Solid Waste Landfilled/Year (Est.) = 19,867 tons
 $(9,911 \text{ units} \times 4,009 \text{ lbs./HH/year} = 39,733,199 \text{ lbs.} / \text{year} / 2000 = \text{tons})$

Multifamily Households Garbage Cost (Based on hauler prices, not tipping fees)

- Estimated at \$1,228,568 per year
 $(9,911 \text{ units} \times \$10.33^*/\text{unit/month (avg.)} \times 12 \text{ months} = \$1,228,568 \text{ per year})$

URBANA MATERIALS MANAGEMENT CY 2020

- Cost per ton = \$62/ton
($\$1,228,568 / 19,867 \text{ tons} = \62)
- Cost per pound = \$0.03/lb.
($\$62 \text{ per ton} / 2000 = \$0.03/\text{lb.}$)

*<https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/documents/multifamily-waste-study-2017.pdf>

Curbside Recycling Costs

- Annual contractual cost in CY 2020 = \$153,056
- Tons of curbside recyclables collected in CY 2020 = 2,324 tons
- Cost per ton = \$66/ton
($\$153,056 / 2,324 \text{ tons} = \$66/\text{ton}$)
- Cost per pound = \$0.03/lb.
($\$66 / 2000 = \$0.03/\text{lb.}$)

Multifamily Recycling Costs

- Annual contractual cost in CY 2020 = \$172,964
- Tons of multifamily recyclables collected in CY 2020 = 1,618 tons
- Cost per ton = \$107/ton
($\$172,964 / 1,618 \text{ tons} = \$107/\text{ton}$)
- Cost per pound = \$0.05/lb.
($\$107 / 2000 = \$0.05/\text{lb.}$)

Conclusion

Materials recycled (including C&D) have steadily increased since CY 2011, a positive sign that recycling outreach and messaging are having an impact. Materials landfilled have remained relatively consistent the past 10 years, though there was a slight increase of household garbage landfilled in CY 2020 likely due to people staying at home and generating more garbage at home during the pandemic, rather than spreading it out at work, school, etc. Landscape materials collected and composted has decreased dramatically the past decade, due to less business and contractual collections.

Urbana's diversion rate in CY 2020 was 48%. The average diversion rate since CY 2011 was 40%. Additionally, curbside recycling participation has increased the past five years – CY 2020 had the highest participation rate at 82%!

Curbside garbage disposal costs per pound are higher than multifamily disposal costs due to bulk collection savings at multifamily properties. Multifamily recycling costs per pound are higher than curbside recycling costs due to lower tonnages collected, and higher contamination rates.

Overall, the past ten years has seen progress with recycling rates increasing year-to-year. Despite the pandemic, CY 2020 saw the highest rates of residential recycling in both the curbside and multifamily recycling programs to date. Some of the increase may have been due to stay-at-home orders where both garbage and recycling rates increased overall in the residential sector. However, it also indicates that Urbana households are doing their part to recycle - highlighting a positive upwards trend toward waste reduction behaviors.