

Diversion Analysis

Purpose

Evaluate the quantities of waste reduced/recycled from 2016-2020 to ensure compliance with the state-mandated waste reduction goals.

Overview

Ohio solid waste management districts are required to meet one of the two following recycling goals:

1. Ensure there is adequate infrastructure to provide residents and commercial businesses opportunities to recycle solid waste.
2. Reduce and recycle at least 25 percent of waste generated by the residential/commercial sector.

Since its inception, R3Source has opted to achieve Goal 2. To demonstrate compliance with this goal, R3Source surveys recycling facilities and receives some recycling data from Ohio EPA for retail chains, tire recyclers, and composting facilities. Responses to this survey are used to determine R3Source’s residential/commercial waste reduction rate. For the industrial waste reduction rate, R3Source conducts a survey for all manufacturing facilities. Because surveying is extremely time consuming, R3Source conducts this every 3 to 4 years. Because the recycling survey is voluntary, R3Source’s waste reduction rate is directly related to the number of useable surveys received.

Waste Reduction Rate

In 2020, the Plan Update reference year, R3Source documented a 55.78% overall waste reduction rate and a 37.25% residential/commercial rate exceeding the 25% residential/commercial waste reduction goal. Figure 1 shows Hamilton County’s overall diversion rate (both residential/commercial and industrial numbers) for a five-year period.

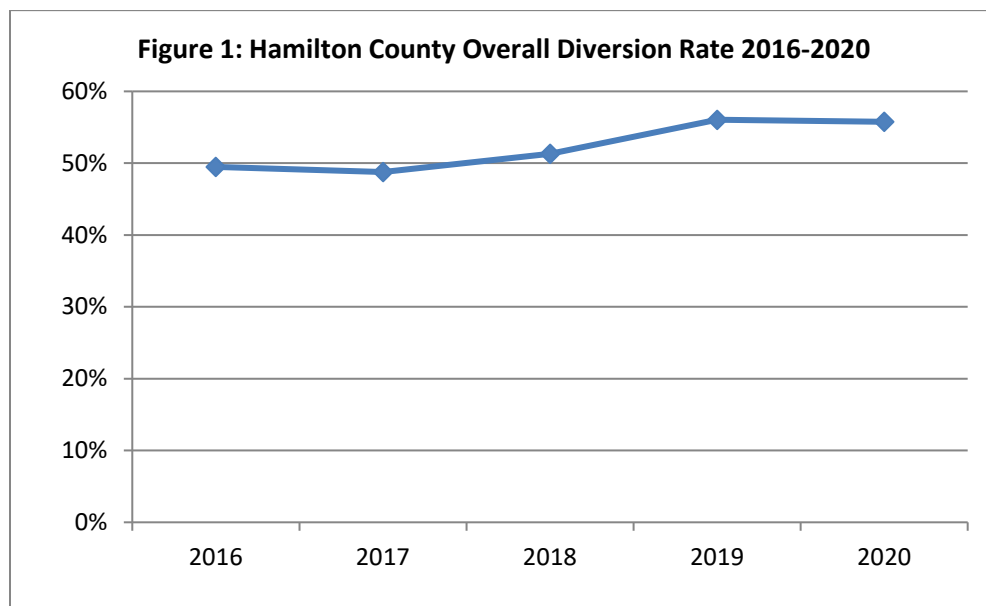
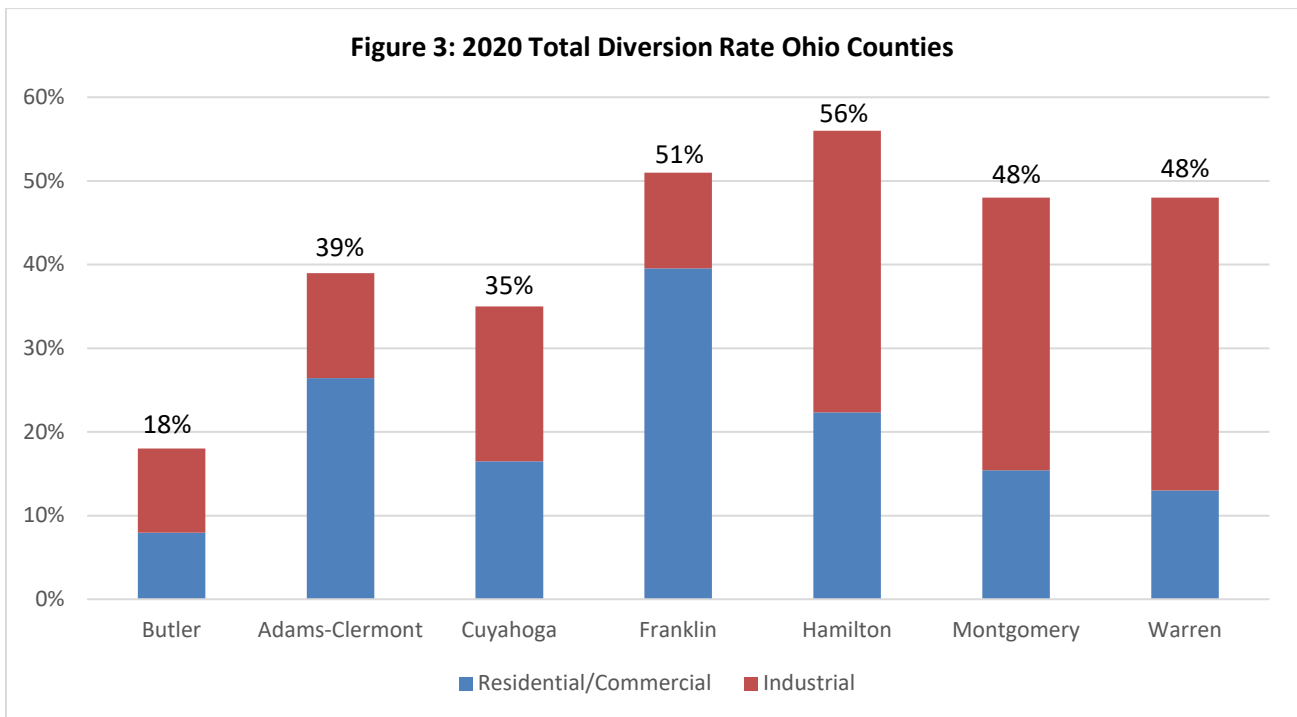
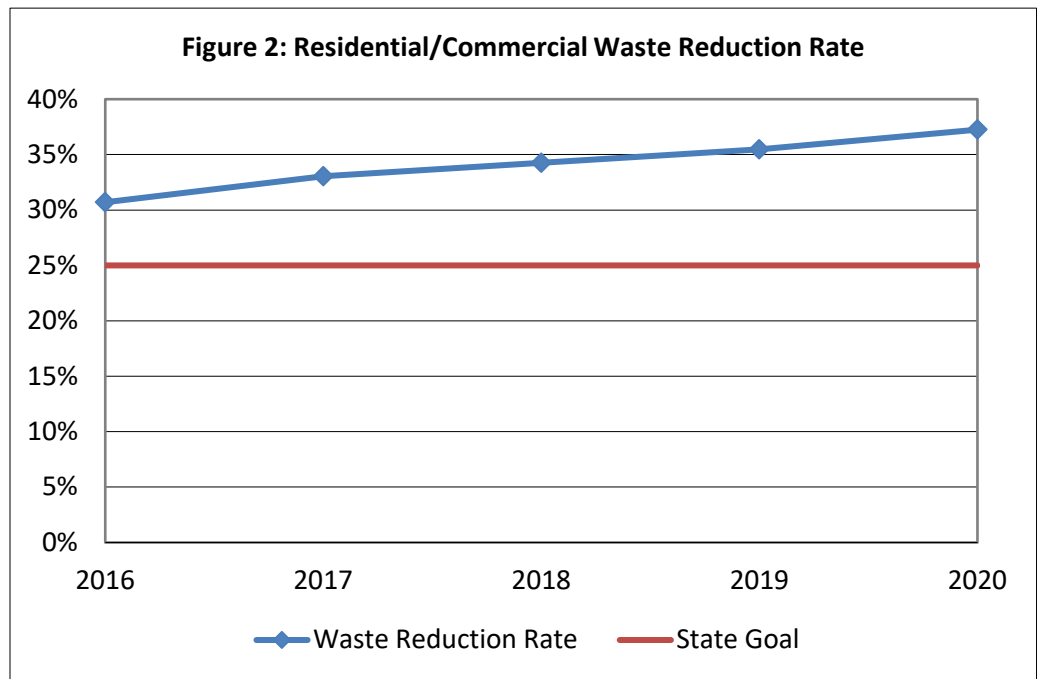


Figure 2 shows R3Source’s waste reduction rates since 2016. In 2016, R3Source’s residential/commercial waste reduction rate dipped to a low of 32 percent and then increased back up to the current rate of 37 percent.

The dip in the residential/commercial waste reduction rate can be attributed to a

lower response rate to R3Source’s survey. In particular, several metal recyclers did not respond to surveys during those years. Other contributing factors could include lightweighting of materials, such as plastics packaging replacing heavier, more easily recyclable paper and glass packaging.

R3Source’s waste diversion rate is higher than the state-wide rate of 40%. Figure 3 compares R3Source’s rate to surrounding and similar-sized districts. The blue or lower bars in Figure 3 represent the amount of the total diversion contributed by the residential/commercial sector and the red or top bars represent the amount of the diversion contributed by the industrial sector.



Residential/Commercial Recycling Tonnages

In 2020, 544,456 tons of material was recycled and composted from the residential/commercial sector. Table 1 lists the amount of material this sector diverted from landfills over the past five years. The increase over the period is likely the result of more diversion in Hamilton County and a concerted effort of R3Source staff to survey non-traditional diversion organizations such as reuse stores, small-scale composters, and food rescue operations.

Residential diversion accounted for 10% or 58,602 tons of material while the commercial sector accounted for 90% of this diversion.

R3Source programs such as Let's Stop Waste, Residential Recycling Incentive, Yard Trimmings Drop-Off, and the Reuse and Recycling Outlet search helped increase the amount diverted.

In 2020, the largest amounts of material diverted from landfill by the residential/commercial sector are:

- Cardboard (156,143 tons)
- Yard Trimmings (112,709 tons)
- Paper (66,151 tons)
- Ferrous Metals (98,109 tons)

In R3Source's current Plan, residential/commercial recycling tonnages were projected at 416,573 total tons which is a 23% lower than the 2020 actual recycling tonnages.

Industrial Recycling Tonnages

In 2020, 819,558 tons of material was recycled and composted from the industrial sector. Table 2 shows the amount of material diverted from landfills by this sector over the past five years. The change in weight reports can be explained by differences in survey response rate.

In 2020, flue gas desulfurization was the largest material diverted from landfills in the amount of 474,341 tons.

In R3Source's current Plan, industrial recycling tonnages were projected to 642,143 total tons—22% lower than actual recycling tonnages.

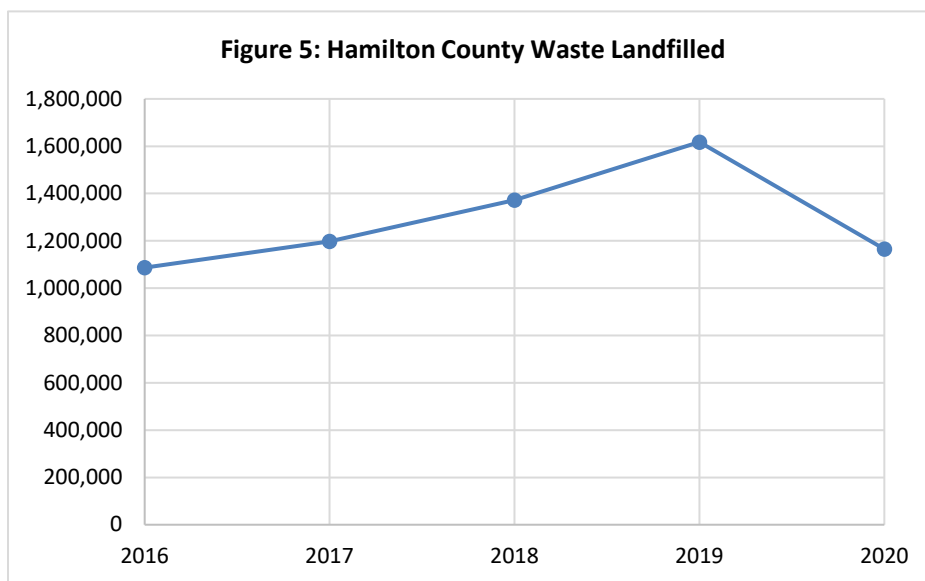
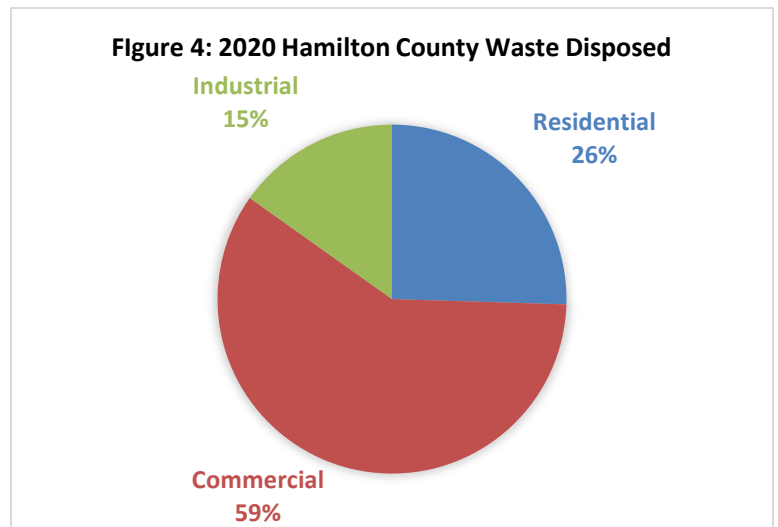
Year	Weight (tons)
2016	365,068
2017	442,991
2018	489,364
2019	453,856
2020	544,456

Year	Weight (tons)
2016	635,510
2017	632,195
2018	863,447
2019	863,078
2020	819,558

Waste Disposed

In 2020 Hamilton County disposed of 1,164,616 tons of waste. Figure 4 shows the distribution of that waste between the residential, commercial, and industrial sectors. Commercial waste makes up the largest percentage of waste disposed at 59% followed by residential at 26%, and industrial at 15%.

Figure 5 shows the waste disposed by Hamilton County businesses and residents from 2016 to 2020. The uptick in 2019 is the result of an increase in exempt waste.



Summary

R3Source has historically exceeded Ohio's state mandated waste reduction rate for the residential/commercial sector. For the year 2020, the reference year for the Plan Update, R3Source has demonstrated that it exceeds both goals. To continue to exceed the goals, R3Source should place continued emphasis on the commercial sector that represents 59% of the waste currently entering the landfill from Hamilton County. R3Source will implement ways to increase the response rate to its survey to commercial and industrial businesses as outlined in the Data Collection Analysis.