

Communal Collection Diversion Rate Calculation Methodology

Background

In Edmonton, Waste Services offers both collection programs and drop-off services. Waste drop-off services include programs such as Eco Stations and Community Recycling Depots. Waste collection programs can be divided into the curbside collection program (also known as single unit waste collection) and the communal collection program (also known as multi-unit waste collection). The curbside collection program transitioned to a four stream approach (garbage, recycling, food scraps and yard waste) over the spring and summer of 2021. The communal collection program currently offers two streams of collection (garbage and recycling) and is anticipated to transition to a three stream approach starting in 2023, when mandatory sorting of waste into food scraps, recycling and garbage will begin.

Waste collected through both programs is transported to the Edmonton Waste Management Centre (EWMC) for processing. Processing facilities at the EWMC include a Materials Recovery Facility (MRF), an Integrated Processing and Transfer Facility (IPTF), a Refuse Derived Fuel (RDF) facility, a High Solids Anaerobic Digestion Facility (HSADF), a Cure Site and a waste-to-biofuels facility that uses the RDF. Waste Services augments its processing capacity through off site contractors, namely for organic waste and blue bag material processing. The residual fraction is transported to a remote landfill for disposal.

The goal of diverting 90 percent of waste from landfill across all sectors was established in 2019 through Edmonton's 25-year Comprehensive Waste Management Strategy. The 90 percent target drives Waste Services' planning and program development.

Waste Services developed a calculation methodology for the single unit diversion rate in 2018. The methodology was presented in CR_5824 and approved by Utility Committee. This diversion rate has since been reported annually. That number specifically reflects the performance of the units served by the curbside collection program, which includes some multi-unit residences. At the time of CR_5824, Waste Services committed to returning to Utility Committee with a diversion methodology for the communal collection program.

Communal Collection Program Diversion Methodology

This report outlines the approach for calculating the diversion rate for the communal collection program. The calculation methodology is based on the previously approved methodology for the curbside collection program, which in turn is based on the Residential GAP - Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste System Flow (2003).

Definitions

The following terms are used in the calculation methodology. Definitions are based on definitions in the GAP, with some variations that are consistent with the approved curbside collection methodology.

- Diversion = allowance for grasscycling (going bagless) + allowance for home composting + municipally sponsored reuse + recycling (net of residuals) + municipal organics processing (net of residuals) + RDF production
- Disposal = processing residuals that go to landfill
- Generation = total waste diverted + total waste disposed

The notable differences between the definitions used by Waste Services' and Residential GAP are:

- Recycling and reuse that happens through the beverage container deposit return system is not included in Waste Services' calculation, as this program is not operated by the City.
- Diversion through RDF production is not referenced in the residential GAP definitions, however, it is included as diversion in Waste Services' calculation.

Allocations

There are two factors that must be accounted for when calculating the communal and curbside collection program diversion rates:

- Some food scraps and garbage will be collected from communal collection customers using carts; these carts will be serviced by vehicles that also collect food scraps or garbage from curbside collection customers to increase efficiency.
- Drop-off facilities, such as the Eco Stations and Community Recycling Depots, are used by customers of both the curbside and communal programs, and since facility users are not currently required to indicate their collection service, there is no data available to establish how much of the waste dropped off comes from each customer type. Estimates and assumptions regarding the allocation of diversion from waste prevention and waste drop-off activities will be developed leveraging methodologies defined in the Waste Services Waste Diversion Rate Procedure.

Diversion Rate Calculation

Waste Services calculates the communal collection program waste diversion rate as follows:

$$\begin{array}{l} \text{\% Communal Collection} \\ \text{Program Waste Diverted} \end{array} = \frac{\begin{array}{l} \text{Tonnes of waste managed by} \\ \text{the City from residents} \\ \text{receiving communal} \\ \text{collection service} \end{array} - \begin{array}{l} \text{Tonnes of communal} \\ \text{collection waste} \\ \text{disposed} \end{array}}{\begin{array}{l} \text{Tonnes of waste managed by} \\ \text{the City from residents} \\ \text{receiving communal} \\ \text{collection service} \end{array}}$$

Next Steps

If this methodology is approved, Waste Services will begin reporting the Communal Diversion Rate based on this methodology as of 2023.