How to Calculate the MSW (Municipal Solid Waste) Recycling Rate

What is the MSW recycling rate?

Recycling rates are a way of demonstrating the proportion of material recycled from all waste generated (‘waste generation’ is all material created, regardless of whether it is destined for landfill or recycling). It provides a simple benchmark to track performance or compare one local government to another.

The MSW recycling rate is the percentage, by weight, of material recycled from all waste services provided to residents i.e. kerbside, vergeside, drop-off locations and transfer station sites.

MSW figures may also include waste from small commercial premises or other similar activities where this is collected as part of the standard local government service.

Why calculate a recycling rate?

Recycling rates enable consistent comparisons or demonstrations of:

- Recycling efforts over time
- The effectiveness of particular recycling campaigns
- The effectiveness of particular waste education / communication initiatives
- Recycling performance against other Local Governments

MSW Recycling Rate – questions you will need to ask to calculate your recycling rate?

What is the scope of total MSW generated (MSW disposed of and recycled) to be included in recycling rate?

- Which municipal waste services are provided by the local government e.g. kerbside, vergeside, drop-off facilities, transfer stations or a combination? (All waste and recycling collection services should ideally be included)

Is relevant data available for each of the waste collection services provided?

- Is data reported in tonnages (recycling rates are calculated by weight, not volume)?
- Are conversion factors for volume to weight available ‘in-house’ or are conversion factors provided by the Waste Authority to be used? (Refer to Conversion factors spreadsheet available at http://www.wasteauthority.wa.gov.au/programs/data/tools-for-local-government-data/)
- Is data provided on MSW waste and recyclables only, or is data combined with other materials (e.g. C&I waste in the MSW waste collection round)?
- Is there a way of estimating the MSW-only proportion of the available data (even an estimation is fine, so long as it can be clearly documented and reproduced each time the recycling rate is calculated)?
- Is there any data that should be excluded from municipal solid waste materials? (e.g. contaminated recyclables sent to landfill, residual waste from recyclables collected sent to landfill)
- What is the frequency with which solid waste data and recyclables are reported e.g. monthly, quarterly? To calculate the Municipal Recycling Rate, data needs to be assessed over the same time period.

This guidance note forms part of a series of resources to assist local governments with the collection and reporting of waste and recycling data. The remaining guidance notes and case studies can be downloaded from www.wasteauthority.wa.gov.au/publications/lg-resources.
How to calculate MSW recycling rate

\[
\text{Municipal Solid Waste Recycling Rate (\%)} = \frac{\text{Total MSW Recycled (t)}}{\text{Total MSW Generated (t)}} \times 100
\]

Steps to calculating the MSW recycling rate

1. Calculate total waste disposed

   **A. Calculate MSW Disposed of**

   Category (if available, add more lines as necessary) | Amount disposed of

   **Total MSW**

   **B. Exclude materials not included in MSW**

   Category (add more lines as necessary) | Amount disposed of

   Commercial waste

   Other

   **Total excluded waste**

   **C. Total MSW Disposed of (tonnes)**

   \[ C = A - B \]

2. Calculate total recycling

   **D. Calculate Recyclables (MSW Recycled) from all sources**

   Category (if available, add more lines as necessary) | Amount disposed of

   **Total MSW Recycled**

   **E. Exclude what not considered recycled**

   Category (add more lines as necessary) | Amount disposed of

   Residual waste sent to landfill

   Contaminated recyclables sent to landfill

   **Total excluded recyclables**

   **F. Total MSW Recycled**

   \[ F = D - E \]

3. Calculate MSW Recycling Rate (%)

   \[ \frac{F}{(F + C)} \times 100 \]