



# Calculating a Recycling Rate

*The proposed amendments to solid waste regulations of Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, require counties to calculate a recycling rate. This guidance document describes a recommended approach to measuring recycling.*



The county/regional materials management planning process is a major component of Michigan's push to grow our economy and protect our environment through managing waste in a way that reduces disposal. Per the proposed amendments, each county/regional plan will identify the area's own materials utilization goals (Section 11578(a)), as well as an implementation strategy for the goals (Section 11578(b)). In addition, each county will be required to calculate a recycling rate. (Section 11577(c)).

A Materials Utilization Goal, as defined in the proposed Section 11504(21), is a "measurable, objective, and specific goal for the planning area for solid waste diversion from disposal areas."

Proposed Section 11505(4) defines recycling rate as the amount of municipal solid waste (MSW) "recycled and composted divided by the total amount of MSW recycled, composted, landfilled, or incinerated." Material that is reused, avoided, or converted to energy is not included in the recycling rate.

Recycling rate data is intended to be a tool to guide local decision making, adding clarity to how various actions will enable the region to best manage materials generated within their planning area. Increasing the recycling rate is one example of a potential materials utilization goal.

It is recognized that each county or region may have challenges to gathering the data necessary to calculate a recycling rate and report the information in their Materials Management Plan. At the same time, in order to measure progress of materials utilization goals within the planning area, it is important to calculate the rate with the highest level of accuracy possible. Ideally, a materials management plan will identify the total amount of municipal solid waste generated in a region that is recycled, composted, landfilled, and incinerated. Collecting these data points without counting material twice and ensuring all material is accounted for is a challenging task. Suggestions for assessing and obtaining each of the data points necessary to calculate the recycling rate are as follows:

- **MSW Landfilled:** Landfill data will be the easiest to gather and most accurate component of the recycling rate, because landfills are required to report the amount and origin of the waste they dispose. The amount of MSW landfilled in your county or planning area can be determined by referring to the DEQ Annual Solid Waste Report posted on the DEQ Solid Waste webpage
- **Material Incinerated:** Michigan solid waste incinerators are required by the facility's state permit to keep daily records of the type, supplier and amount of waste incinerated, but not necessarily the county of origin. To determine the amount of waste incinerated for a county or region, it will be necessary to contact the incinerator directly or to obtain the information from reporting required by local county ordinances.
- **Material Composted:** Registered composting sites are required to report to the DEQ the quantities of material received, stored, and removed from the site on an annual basis. This data is accessible through the DEQ Waste Data System database and can be determined for each county. However, composting sites are not required to report on the origin of material accepted. Therefore, composting facilities that have a large service area will need to be contacted to request the amount of material that originated from the region. Although not required for calculating the recycling rate, it is also important to note composting facilities do not report capacity, so that information should also be requested when considering materials utilization goals.
- **Material Recycled:** A first step to determining the amount of material recycled in a county or region is to contact all facilities that are managing recyclable materials generated in the area, and request that the facility provide the total amount managed that originated from the planning area.

Since origin details may not be routinely recorded for some of the necessary figures for the calculation, it is likely that some data obtained will be an estimate. Keep in mind that the data collection process is meant to help the planning area better understand material flow, with the goals of identifying and measuring progress toward any processing capacity needs and steps to take to increase diversion.

Should a county or region choose, they may require haulers as part of their county licensing process to report amounts of material delivered to facilities. This data, too, will be a rough estimate, because haulers typically do not operate in a manner that would ensure the loads are not commingled with out-of-region materials.

Another alternative for calculating a recycling rate is to periodically perform a study that measures the amount of waste disposed, recycled, and composted from a sample of households and businesses. This data could be used to calculate an estimated recycling rate for the entire county or region.

Access to recycling opportunities and participation in the recycling programs by residents and businesses directly correlate to recycling rates. If tonnage data is not able to be gathered, a county or region could choose to measure access and participation and then calculate a recycling rate based on those factors. To use this method, a county or region would need to measure the average amount of material disposed, composted, and recycled by households and businesses. Data would need to be gathered from households/businesses that recycle/compost and those that do not, and then calculate a total recycling rate based on population of the region. In each case, upon data collection and evaluation, the Materials Management Plan should describe the method for calculating the recycling rate.

Once disposal, recycling, and composting data is gathered, the following formula should be used to calculate a recycling rate:

$$\left( \frac{\text{Total tons MSW recycled and composted}}{\text{Total tons MSW recycled, composted, landfilled, incinerated}} \right) \times 100 = \text{Recycling Rate}$$

One of the most challenging tasks when calculating a recycling rate is differentiating between Municipal Solid Waste and industrial and construction and demolition waste, both of which are not included in MSW. MSW is defined in Section 11504(25) as “waste generated by households, multifamily households, commercial businesses, retailers, institutions, hospitals, offices, restaurants, schools, and other nonindustrial type locations or waste that is of like character to that generated at a household or commercial business, such as cafeteria, packaging, or office waste. Municipal solid waste does not include municipal wastewater treatment sludges, industrial process wastes, automobile bodies, combustion ash, or construction and demolition debris.” To accurately calculate a recycling rate, non-msw will need to be eliminated from both the numerator and the denominator of the calculation.

Guidance for calculating a recycling rate can be found at [www.michigan.gov/swra](http://www.michigan.gov/swra) by clicking on the Measuring Recycling: A Guide for Local and State Governments link.

It is anticipated that the recycling rate calculation will be an iterative process, with continual improvement as additional data sources are identified and various action steps are put into practice, as the region works to meet its own materials utilization goals. The key will be for each plan to identify the level of data collection and analysis that will enable data-driven decision-making with the goal of successfully achieving waste prevention, minimization, reuse, recycling, and composting, as well environmentally protective disposal.

In addition to successfully addressing the other planning requirements, a planning area will be eligible for planning funds if a good-faith attempt is made to calculate a recycling. If you have questions or would like to discuss the various methods to calculate a recycling rate, please contact the Department of Environmental Quality, Sustainable Materials Management Unit at 517-284-6588.



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