Municipal Solid Waste and Recycling

Maine law requires each municipality to report on its progress towards achieving the statewide recycling rate goal of 50% (see 38 M.R.S. §2132 “State goals” and 38 M.R.S. §2133 “Municipal recycling” included at the end of this document). To do this, a municipality needs to know how much MSW it generated, and how much it diverted from disposal through recycling, composting and beneficial use. The municipal reports are due at the end of May, and municipalities will be reaching out to their solid waste facility for the data needed to complete their reports. Your solid waste facility can assist the municipalities you serve in completing their annual municipal solid waste and recycling report by providing them with the best available waste management data from your facility.

You may develop municipality-specific data in one of two ways:

I. Record the amounts of waste by municipality of generation upon receipt, and/or through annual hauler reporting to you, or

II. Follow the guidance in this document to apportion the waste management data recorded by your facility to the municipalities you serve.

Your goal is to provide the towns you serve with an annual best estimate of the amounts of MSW and recyclables generated within each municipality’s borders and delivered to your solid waste facility. Make it part of your standard services to provide this data for the preceding calendar year to the municipalities utilizing your facility as early in the calendar year as possible.

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I. Record receipts by municipality of generation. If your facility is equipped with scales, the most accurate way to apportion amounts of MSW managed by your facility is to record the amount of waste at receipt by generating municipality, i.e., as each load is weighed and entered into your data system you can also record the generating municipality and whether the load is for disposal or recycling. In some cases, local ordinances require a hauler that delivers MSW to a regional solid waste facility to report the tons of MSW including recyclables by each municipality of origin.

If delivering mixed loads from multiple municipalities, the hauler should be able to provide you with the weight from each municipality or the total weight and percentage of MSW and recycling from each municipality in which they provide pick-up services. This guidance includes a sample cover letter and data form you can use to request recycling and waste tonnage information from haulers to estimate tons generated by each municipality. If necessary, you can make this annual report a requirement for haulers delivering loads mixed from multiple municipalities.
If you cannot apportion waste disposed and recycled to the towns you served with municipal-specific data in this way, use the following guidance to apportion based on population and other factors.

II. How to apportion amounts received based on population and other factors.

You can apportion the amount of MSW managed by your facility to the municipalities you serve based on the population served in each municipality, including accounting for seasonal variations. You may also want to account for:

- any significant differences between municipalities in the percentage of their MSW that is commercially generated - municipalities with significantly more commercial activity generate more tons per capita than rural towns with little commercial activity, and
- any other factor relevant to your particular facility, e.g., one town manages recyclables separately from your facility operations.

Once you determine these factors, you can apply them to the annual total amount of waste sent for disposal and the total amount of materials sent for recycling to report the estimated contribution from each town.

A. Determine municipal populations served

Determine each town’s average annual population by following these steps:

1. Find the town’s year-round population on the U.S. Census Bureau Website’s FactFinder at https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml; search by zip code or
municipality name. Take the population estimate from the most recent year. In the example shown below, Augusta had an estimated population of 18,594 in 2017.

2. Adjust the population numbers for municipalities you serve that have significant seasonal populations, by following these steps:

   a) Determine the average number of people per household using the Maine Housing Authority’s Housing Data interactive map: https://www.mainehousing.org/policy-research/housing-data/county-profiles

   ![Kennebec County Profile](image)

   - Click on the municipality’s county to get the average household size. As shown below, Kennebec County has an average of 2.31 people per household.

   b) Find the number of seasonal units in each municipality at https://www.mainehousing.org/policy-research/housing-data as follows:

   - Click on “Housing Characteristics” and click the “Download” button. This will download an Excel spreadsheet titled “Housing Characteristics of the State of Maine, Counties, and Towns” to your computer.

   - Once the download is complete (this may take several seconds), open the spreadsheet. You will see an interactive screen that looks like this:
• Select the municipality from the drop-down box (you may need to click an “Enable Content” button to activate this functionality), then click on the “Unit Characteristics” button;

• In the spreadsheet report for the municipality, look for the “Vacant Seasonal” housing units for the most recent time period of data. In this example, Augusta had 198 vacant seasonal units.

c) To estimate the municipality’s seasonal population, multiply the number of vacant seasonal” housing units by the county’s average household size (2.31 persons/household for Kennebec County, in this example).

d) Next, multiply this calculated seasonal population by 0.33 to account for the fact that seasonal residents generally spend about one-third of the year (4 months out of 12) in Maine.
e) Add the adjusted seasonal population estimate to the year-round population to determine the average year-round population.

Sample Calculation to Estimate a Municipality’s Average Annual Population

a) First, calculate the total number of seasonal residents in the municipality:
   198 (vacant seasonal units) x 2.31 (persons per household) = 457.38 seasonal residents
b) Next, adjust the number of seasonal residents based on time spent in Maine:
   457.38 (seasonal residents) x 0.33 (percent of year spent in Maine) = 150.93 seasonal residents
c) Add adjusted seasonal residents to year-round residents for total estimated population:
   150.93 (seasonal population) + 18,594 (year-round population) = 19,051.38
d) 19,051 is the population number to use for this municipality

B. Calculate the Number of Tons per Municipality

Start with the total tons of MSW received at your facility during the calendar year. Next, apportion these tons to the municipalities served by your facility based on annual average population (accounting for year-round and seasonal). Here is a sample calculation.

In this example, this regional solid waste facility serves three municipalities, and received 3,800 tons of waste and 2,700 tons of recycling during the reporting year.

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Average annual population</th>
<th>% of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3,600</td>
<td>31%</td>
</tr>
<tr>
<td>B</td>
<td>7,600</td>
<td>65%</td>
</tr>
<tr>
<td>C</td>
<td>460</td>
<td>4%</td>
</tr>
<tr>
<td>Total Population</td>
<td>11,660</td>
<td></td>
</tr>
</tbody>
</table>

Each municipality’s waste generation can be estimated using a simple calculation:

- Municipality A: 3,700 (tons waste) x 0.31 (31% of population) = 1,142 tons of waste
- Municipality B: 3,700 (tons waste) x 0.65 (65% of population) = 2,412 tons of waste
- Municipality C: 3,700 (tons waste) x 0.04 (4% of population) = 146 tons of waste

Similarly, each municipality’s recycling can be estimated using a similar calculation:

- Municipality A: 2,900 (tons recycling) x 0.31 (31% of population) = 895 tons of recycling
- Municipality B: 2,900 (tons recycling) x 0.65 (65% of population) = 1,890 tons of recycling
- Municipality C: 2,900 (tons recycling) x 0.04 (4% of population) = 114 tons of recycling
Your facility may receive other materials that cannot be directly traced to individual municipalities, such as leaf and yard waste, scrap metal, food scraps, or construction and demolition debris (CDD). As with other waste and recyclables, a similar formula can be used to apportion based on population.

C. Accounting for differences in percentages of commercial waste or other municipality-specific factors.

Optional – accounting for differences in commercial vs. residential waste generation

If your facility serves municipalities that differ significantly in the percentages of residential vs. business/commercial wastes generated (e.g., you serve several rural towns with insignificant amounts of business/commercial waste and one or two towns with significant commercial activity), you may want to apply a factor to attribute more waste per capita to the towns with the commercial activity. Your facility may have an interlocal agreement that dictates how you apportion such waste between towns. If you don’t, you may be able to work with haulers to develop estimated percentages of commercial vs. residential waste for the towns you serve. You may then apportion the total residential waste received by your facility based on the relative annual average residential populations, and the total commercial waste based on relative percentages of commercial activity.¹

Optional – Other relevant factors

Since each municipality determines how it manages its MSW for disposal and recycling, there may be circumstances particular to your facility that can affect how you apportion MSW disposal and recycling. The most common situation may be that some of the towns that manage MSW disposal through your facility may manage recycling through a separate system. Because this is a facility-specific circumstance, you may want to adjust assignment of waste generation, disposal and recycling taking the particular circumstance into account.

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¹ If your towns have significant disparities in commercial waste generation, you are welcome to contact Maine DEP recycling staff at 207-287-7688 to consult on how you may account for this disparity in estimating waste generation rates.
Background: Municipal Reporting Requirements

§2132. State goals

1. State recycling goal. It is the goal of the State to recycle or compost, by January 1, 2021, 50% of the municipal solid waste tonnage generated each year within the State.

1-B. State waste disposal reduction goal. It is the goal of the State to reduce the statewide per capita disposal rate of municipal solid waste tonnage to 0.55 tons disposed per capita by January 1, 2019 and to further reduce the statewide per capita disposal rate by an additional 5% every 5 years thereafter. The baseline for calculating this reduction is the 2014 solid waste generation and disposal capacity data gathered by the department.

§2133. Municipal recycling

1-A. Recycling progress. Municipalities are not required to meet the state recycling goal in section 2132, but they must demonstrate reasonable progress toward that goal. The department shall determine reasonable progress.

7. Recycling progress reports. Municipalities shall report annually, on forms provided by the department, on their solid waste management and recycling practices. The annual report must include how much of each type of solid waste is generated and how that solid waste is managed. The department shall assist municipal reporting by developing a municipal waste stream assessment model. The model must rely on actual waste data whenever possible, but incorporate default generation estimates when needed. Default generation estimates must incorporate factors such as commercial activity, geographical differences and municipal population.