

CHAPTER 3 WASTE GENERATION

Purpose of Chapter 2 (include these instructions in the solid waste management plan)

This chapter of the solid waste management plan provides a summary of the SWMD's historical and projected solid waste generation. The SWMD's policy committee must understand the waste the SWMD will generate before the policy committee can make decisions regarding how to manage the waste. To create that understanding, the policy committee analyzed the amounts and types of waste that were generated within the SWMD's jurisdiction in the past and those that will be generated in the future.

The SWMD's policy committee calculated solid waste generation for two types, or sectors, of generators – the residential/commercial sector and the industrial sector. Residential/commercial waste is essentially municipal solid waste and is the waste that is generated by a typical community. Industrial solid waste is generated by manufacturing operations.

The policy committee calculated how much waste each sector generated by adding together the quantities of solid waste disposed of in landfills and the quantities of materials reduced/recycled. The policy committee then added the quantities generated by both sectors to arrive at total waste generated within the SWMD.

The SWMD's policy committee obtained baseline waste reduction and recycling data by surveying communities, recycling service providers, collection and processing centers, commercial and industrial businesses, owners and operators of composting facilities, and other entities that recycle. Responding to a survey is voluntary, meaning that the policy committee relies upon an entity's ability and willingness to provide data. When entities do not respond to surveys, the policy committee gets only a partial picture of recycling activity. How much data the policy committee obtains has a direct effect on the SWMD's waste reduction and recycling and generation rates.

The policy committee obtained baseline disposal data from Ohio EPA. Owners/operators of solid waste facilities are required to submit annual reports to Ohio EPA. In these reports, owners/operators summarize the types, origins, and amounts of waste that were accepted at their facilities during the report year. Ohio EPA adjusts the reported disposal data by adding in waste disposed in out-of-state landfills.

The policy committee analyzed the baseline year data and historic generation data to project future waste generation. The details of this analysis are presented in Appendix F. The policy committee used the projections to make decisions on how best to manage waste and to ensure future access to adequate waste management capacity, including recycling infrastructure and disposal facilities.

The SWMD's comprehensive waste management strategies are presented in Chapter 5 and Appendix M.

A. Solid Waste Generated in Reference Year

Instructions for Table 3-1 - Solid Waste Generated in the Reference Year (Remove these instructions for the solid waste management plan)

Completing Table 3-1:

Go to the workbook, find the tab for “3-1”, and follow the instructions below:

The quantities for this table will be automatically populated or automatically calculated. Figures for Quantity Generated will come from Appendix G, Table G-1

[**NOTE:** *If not required to account for excluded waste because it comprised less than 10 percent of total generation, then enter “N/A” in the cell for “Generation Quantity” for excluded waste.*]

- Per person generation rates are calculated using the following formula:

Tons of waste generated x 2000 ÷ 365 ÷ population.

Population is the reference year, adjusted population from Appendix C, Table C-1.

Table 3-1 – Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated tons
	Residential/ Commercial
Industrial	
Excluded	
Total	

1. Residential/Commercial Waste Generated in Reference Year

Instructions for Describing Residential/Commercial Waste Generated in the Reference Year (Remove these instructions for the solid waste management plan)

In the space reserved with “[replace with text, figures, and charts describing the reference year residential/commercial waste generated]”, provide a general overview of the amount and nature of residential/commercial waste generated in the District in the reference year. Using figures and charts helps to break up the text and provides visual interest. Label all figures and charts, refer to them in the text, and explain what they illustrate.

Examples of information to provide for the residential/commercial sector include:

- How residential/commercial waste was managed (refer to the information in Table 3-1);

- Waste characteristics that are unique to the SWMD;
- Major generators that affect waste generation. Examples include a large university or a distribution center for a large retailer, a large seasonal food and hospitality industry, or a large non-traditional population;
- A comparison of the SWMD’s residential/commercial generation rate to Ohio’s average generation rate and/or the national generation rate and an explanation for significant differences; and
- A comparison of the SWMD’s residential/commercial generation rate to the rates of SWMDs located in the region, with commensurate populations, or with similar population distribution or population characteristics.

[replace with text, figures, and charts describing the reference year residential/commercial waste generated]

2. *Industrial Waste Generated in Reference Year*

Instructions for Describing Industrial Waste Generated in Reference Year (Remove these instructions for the solid waste management plan)

In the space reserved with “[replace with text, figures, and charts describing/illustrating the reference year industrial waste generated]”, provide a general overview of the amount and nature of industrial waste generated in the District in the reference year. Using figures and charts helps to break up the text and provides visual interest. Label all figures and charts, refer to them in the text, and explain what they illustrate.

Information to provide for the industrial sector could include:

- The amount of industrial solid waste generated (refer to the information in Table III-1);
- How the industrial waste was managed in the reference year;
- Characterization of major types of industries/products manufactured;
- Waste characteristics that are unique to the District;
- Specific industrial generators that significantly affect generation, such as a large paper manufacturing industry or a coal-burning power utility;
- Distribution of industry throughout the SWMD, particularly for a multi-county SWMD (are there more industrial facilities in one county than in the others; are the largest industrial facilities in one county or one community; was more of the industrial waste generated in one county than in the others?); and
- How survey responses impacted total industrial generation.

[replace with text, figures, and charts here describing/illustrating the reference year industrial waste generated]

3. *Excluded Waste Generated in Reference Year*

Instructions for Describing Excluded Waste Generated in Reference Year (Remove these instructions for the solid waste management plan)

If excluded waste comprises 10 percent or more of the SWMD’s total waste generated in the

reference year, then, in the space reserved with “[replace with text, figures, and charts describing/illustrating the reference year excluded waste generated]” provide a general overview of the amount and nature of excluded waste generated in the District in the reference year. Using figures and charts helps to break up the text and provides visual interest. Label all figures and charts, refer to them in the text, and explain what they illustrate.

Information to provide about excluded waste could include:

- The amount of excluded waste generated (refer to the information in Table III-1);
- How the excluded waste was managed in the reference year;
- Characterization of major types of excluded wastes generated;
- Waste characteristics that are unique to the District; and
- Specific generators that significantly affect generation, such as a coal-burning power utility, or a landfill that takes large quantities of construction and demolition debris.

[replace with text, figures, and charts describing/illustrating the reference year excluded waste generated]

B. Historical Waste Generated

Instructions for Describing Historical Waste Generated (remove these instructions for the solid waste management plan)

Use data and information from Appendix G, Table G-1 to complete this section.

In this section, summarize the SWMD’s waste generation over the four years prior to the reference year. Provide separate summaries for the residential/commercial sector, the industrial sector, and excluded waste (if required). In particular, explain any past trends in waste generation that will help develop waste generation projections. Providing graphs or summary tables may help illustrate any trends. Label all graphs or tables, refer to them in the text, and explain what they illustrate.

1. Residential/Commercial Waste

In the space reserved with “[replace with text, graphs, or summary tables describing/illustrating historical residential/commercial waste generated]”. Information to address includes:

- Whether the quantities of residential/commercial waste generated and the per capita generation rate increased, decreased, or fluctuated inconsistently and the reasons for or factors that influenced the changes;
- Whether the quantities and per capita generation rate increased faster, in-line with, or slower than the state’s averages; and
- Explain the causes for any outliers in the data or changes in trends. Examples could include: a natural disaster or major storm event; a major survey that was returned in one year that had not been returned in prior years; a new, large commercial entity began generating waste during the year; etc.

2. Industrial Waste

In the space reserved with “replace with text, graphs, and summary tables describing/illustrating

historical industrial waste generated]”, provide a summary of industrial waste generated. Information to address includes:

- Whether the quantities of industrial waste generated and the per employee generation rate increased, decreased, or fluctuated and the reasons for or factors that influenced the changes; and
- Explain the causes for an anomaly/outlier in the amount of waste generated in a particular year or something that changed a trend. Examples could include: a major new industrial generator began operating or closed; an existing industrial facility completed a major addition, hired additional employees/reduced employees, increased/decreased output; a large industrial generator returned a survey in one year but not in others, etc.

3. Excluded Waste

If required to account for excluded waste because it made up 10 or more percent of total waste generated in the reference year, then In the space reserved with “[replace with text, graphs, and summary tables describing/illustrating historical excluded waste generated]”, provide a summary of the excluded waste generated. Information to address includes:

- Whether the quantities of excluded waste generated and the per capita generation rate increased, decreased, or fluctuated inconsistently and the reasons for or factors that influenced the changes;
- Any changes in the specific types of excluded waste generated; and
- Explain a anomaly/outlier in the amount of waste generated in a particular year or something that changed a trend. Examples could include: a major construction/demolition project; change in output by an electric utility (for excluded ash); and change in output by a foundry (for slag or foundry sand).

1. *Historical Residential/Commercial Waste Generated*

[replace with text, graphs, and summary tables describing/illustrating the historical residential/commercial waste generated]

2. *Historical Industrial Waste Generated*

[replace with text, graphs, and summary tables describing/illustrating the historical industrial waste generated]

3. *Historical Excluded Waste Generated*

[replace with text, graphs, and summary tables describing/illustrating the historical excluded waste generated]

C. Waste Generation Projections

Instructions for Table 3-2 – Waste Generation Projections - and supporting text (remove these instructions for the solid waste management plan)

Completing Table 3-2

Go to the workbook, find the tab for “3-2”, and follow the instructions below:

Table 3-2 will display data for the first six years of the planning period.

[**NOTE:** *Illustrating the data with a graph may also be helpful.*]

The quantities for this table will be automatically populated with data from Appendix G, Table G-2 or automatically calculated.

For excluded waste, if the policy committee did not project excluded waste because that waste comprised less than 10 percent of total waste generated in the reference year, then enter “N/A” in the columns for “Rate” and “Waste” for the first year.

In the spaces reserved after Table 3-2, for all three types of waste – residential/commercial, industrial, and excluded – provide short descriptions of the following:

- The policy committee’s methodology for projecting waste generation;
- Any assumptions the policy committed used to project waste generation;
- A description of the overall trend projected for the planning period;
- Any special factors that the policy committee considered when developing projections (i.e. knowledge of a new, large commercial business or industrial generator that will begin business during the planning period; and
- If excluded waste was less than 10 percent of total waste generated, then an explanation of that.

Table 3-2 – Waste Generation Projections

Year	Residential Commercial Waste	Industrial Waste	Excluded Waste	Total
	Waste (tons)	Waste (tons)	Waste (tons)	Waste Tons

1. *Residential/Commercial Waste Projections*

[replace with text describing the residential/commercial waste generation projections]

2. *Industrial Waste Projections*

[replace with text describing the industrial waste generation projections]

3. *Excluded Waste Projections*

[replace with text describing the excluded waste generation projections]