

**DISTRICT SOLID WASTE MANAGEMENT PLAN
FORMAT**

(Version 4.2)



October 2024

Division of Materials and Waste Management

Planning Unit

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Introductory Instructions

Purpose of the District Solid Waste Management Plan Format

Ohio Revised Code (ORC) Section 3734.53 requires that "...the solid waste management plan of any county or joint solid waste management district shall be prepared in a format prescribed by the Director of Environmental Protection..." The *District Solid Waste Management Plan Format, version 4.2* (Format 4.2) is that prescribed format.

Format 4.2 incorporates the goals of the **2020 State Solid Waste Management Plan** into local solid waste planning efforts.

Layout of the Solid Waste Management Plan

A solid waste management plan will consist of an executive summary and appendices.

Executive Summary

The executive summary will be a one to three-page summary of the solid waste management plan. It will provide readers with a summary of the most important portions of the plan. If requested, Ohio EPA can provide examples of executive summaries used by other solid waste management districts.

The appendices will contain the technical data and information for the plan. The appendices are as follows:

- A. Reference Year, Planning Period, Goal Statement, Material Change in Circumstances, and Explanations of Differences in Data
- B. Recycling Infrastructure Inventory
- C. Population Data and Projections
- D. Waste Disposal Data and Projections
- E. Residential/Commercial Waste Recycling Data and Projections
- F. Industrial or Manufacturing Waste Recycling Data and Projections (optional)
- G. Waste Generation Data and Projections
- H. Reserved
- I. Priorities, Actions, and Programs
- J. Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1
- K. Diversion Rates and Demonstration of Achieving Goal 2
- L. Outreach and Marketing Plan and General Education Requirements
- M. Capacity Demonstration
- N. Evaluation of Greenhouse Gas Emissions
- O. Financial Plan
- P. Designation
- Q. District Rules

- R. Blank Survey Forms and Related Information
 - S. Siting Strategy (if needed)
 - T. Miscellaneous Plan Documents
 - U. Ratification Results
 - V. Inventory of Open Dumps and Other Disposal Facilities
 - W. District Map
-

Solid Waste Plan Template

SWMDs can use a template as a **working version** to complete solid waste management plans. This working version does not contain instructions, examples, or table structures. The working version has purpose statements the SWMD will include in its solid waste management plan. The working version also retains the headings and placeholders that indicate where to insert tables and text. The SWMD will delete the placeholders as it inserts information.

Data

Microsoft Excel Workbook

The SWMD will use a workbook for managing data and creating tables for its solid waste management plan. The **workbook** contains a dedicated worksheet for each table prescribed by the Format 4.2. The SWMD will insert the tables from the workbook into the solid waste management plan. Ohio EPA recommends waiting to insert tables until the entire workbook is finished in case the SWMD needs to make changes to the workbook.

The tabs for the worksheets are color coded. Each appendix has its own color and all spreadsheets associated with a specific appendix are the same color. The workbook does the following:

- Prepopulate cells with embedded formulas that will automatically complete many calculations.
- Link related worksheets. After the user enters data the first time, that data is automatically carried to each worksheet that uses that data (such as the years in the planning period).
- Generate charts and graphs that can assist with analysis and be used in the solid waste management plan.

Ohio EPA also created detailed **instructions** specific to completing each table/spreadsheet. These instructions are in a separate document.

The SWMD can submit its workbook to Ohio EPA along with the solid waste management plan. Having the workbook may help Ohio EPA understand how the SWMD derived figures and reduce the number of comments Ohio EPA provides in its non-binding advisory opinion.

Using Data from Previous Survey Efforts

For surveys from commercial businesses, **do not use data that is more than three years old to supplement for non-respondents.** Exclude any data from previous respondents that is more than three years old.

For surveys from scrap yards, buybacks, processors, MRFs, etc., **do not use data that is more than two years old to supplement for non-respondents.** Exclude any data from previous respondents that is more than two years old.

Projections

The statute requires that solid waste management plans provide projections for the entire planning period covered by the plan. To comply with the statute, the solid waste management plan needs to show data for the entire planning period. However, projections become questionable after the first few years of the planning period. Therefore, SWMDs on a five-year update schedule can hold quantities constant beginning in the sixth year of the planning period. SWMDs on a three-year update schedule can hold projections constant beginning in the fourth year.

Depending upon when the SWMD begins updating the plan, there will be up to four years between the reference year and the first year of the planning period. The SWMD will need to provide projections for those years in addition to the first three or five years of the planning period.

Supplemental Instructions

Ohio EPA included supplemental instructions for several appendices at the end of this document. These instructions provide additional considerations or recommendations about completing the appendices. To simplify navigating between the main and supplemental instructions, the main instructions have links to applicable supplemental instructions and links to return to the main instructions.

Strategic Evaluation

This document contains a voluntary, supplemental module for completing a strategic process of evaluating its reduction and recycling efforts. This module was previously included as Appendix H in versions 4.0 and 4.1 of the Format.

This module leads the SWMD through an evaluation of its programs and services in the context of factors that need to be considered when developing recycling and waste reduction programs. Using this module or portions of this module may help the SWMD evaluate the status of its reduction and recycling efforts against these factors through a

series of analyses. These analyses are intended to result in a holistic review of the SWMD.

Completing this module is voluntary. However, Ohio EPA encourages the policy committee to use this opportunity to conduct a thorough evaluation of the District's current solid waste management plan and programs to determine what worked, what didn't work, and what changes are needed. The policy committee can use Ohio EPA's recommended analyses to do this or its own method.

The recommended analyses are:

1. Residential recycling infrastructure analysis
2. Commercial sector analysis
3. Industrial sector analysis
4. Waste composition analysis
5. Economic incentive analysis
6. Restricted and difficult to manage waste analysis
7. Diversion analysis
8. Special program needs analysis
9. Financial analysis
10. Regional analysis
11. Data Collection Analysis
12. Education and Outreach Analysis
13. Processing Capacity Analysis.

SWMDs that choose to conduct a strategic analysis can refer to these [Detailed instructions for conducting analyses](#) for suggestions on conducting them. If you have any questions, please contact the Ohio EPA planner assigned to the SWMD.

Executive Summary

The plan will provide a 1-to-3-page executive summary. Each solid waste management district has flexibility to determine what to include. The executive summary can serve as a stand-alone document for purposes of ratifying the plan. Ohio EPA can provide examples of executive summaries from other solid waste management districts.

i Solid Waste Management District Information

Instructions for Tables ii-1 through ii-4

Go to the workbook instructions and complete tabs ii-1 through ii-4

Place Tables ii-1 through ii-4 into the working version of the plan where indicated.

Instructions for Technical Advisory Committee

[NOTE: *ORC Section 3734.54(F)* authorizes a SWMD to establish a technical advisory council. The council must have at least one person representing solid waste hauling and disposal companies. Other members cannot currently serve on the policy committee.]

If the SWMD convened a technical advisory committee(s) while preparing the solid waste management plan, then, under the heading “Technical Advisory Committee”, provide the following information for each committee:

- Name of the committee.
- Names and affiliations of all members.
- A description of the purpose and responsibilities.
- A summary of any recommendations.

If the SWMD did not work with a technical advisory committee, then enter “None” under the heading for Technical Advisory Committee.

Plan Prepared By

Under the heading “Plan Preparer”, describe who prepared the solid waste management plan. If a consultant prepared the plan provide the name and contact information for the consultant.

Appendix A Miscellaneous Information

(Reference Year, Planning Period, Goal Statement, Material Change in Circumstances, and Explanations of Differences in Data)

A. Reference Year

Instructions for the Reference Year

The first step in developing a plan is to establish a reference year.

The reference year is typically the year *prior* to the year the SWMD is required to begin updating its plan. A SWMD can use a different year if circumstances warrant it.

[Example: ORC Section 3734.56(A) requires the SWMD to begin its plan 15 months before the draft plan is due to Ohio EPA. If the draft plan is due to Ohio EPA in August of 2025, then the SWMD is required to begin in May of 2024 (15 months prior). In this scenario, the reference year would be 2023.]

Ohio EPA maintains a schedule of when draft plans are due and when each SWMD is required to begin updating its plan. This information is on the Planning Information tab on the Solid Waste Management Planning [website](#). To access it, click on the drop-down arrow next to Planning Information, and click on the drop-down arrow next to Plan Update Schedule.

On tab A, identify the reference year where indicated.

B. Planning Period (first and last years)

Instructions for the Planning Period

First Year of the Planning Period

In most situations, the first year of the planning period is the year the SWMD expects Ohio EPA to approve the plan. It typically is the year that occurs 18 months after the draft plan is due to Ohio EPA. [Example: For a draft plan due to Ohio EPA in October 2024, the approval deadline would be in April 2026, and 2026 would be the first year of the planning period.]

Length of Planning Period

There is no limit on the number of years the planning period can cover. However, a solid waste management plan must cover a minimum of ten years.

The length of the planning period determines how many years exist between solid waste management plan updates.

- A SWMD with a plan that covers an effective planning period of less than 15 years must submit a revised plan by the third anniversary of the date the current plan was approved.
- A SWMD with a plan that covers an effective planning period of 15 or more years submits a revised plan on the fifth anniversary of the date the current plan was approved.

There are circumstances that may cause the SWMD to choose a different first year or add additional years to the planning period to accommodate uncertainty. Review these [Instructions for exceptions to typical planning period](#) for examples of those circumstances.

On tab A, identify the first year of the planning period.

C. Goal Statement

Instructions for the Goal Statement

Each SWMD is required to demonstrate achieving either Goal 1 or Goal 2 of the 2020 State Plan. In this section, declare which of those goals the SWMD will achieve.

In Appendix A of the working version, select the goal(s) the SWMD will achieve under the solid waste management plan.

D. Explanations of differences between data and information previously reported and data used in the solid waste management plan.

Instructions for explanations of differences between data previously reported and data used in the solid waste management plan.

Under most circumstances, data and information used in the plan should match data previously reported to Ohio EPA in annual district reports, quarterly fee reports, and landfill/transfer annual operational reports. However, there are justifiable reasons why a SWMD uses different data or information for a solid waste management plan. If the SWMD uses data or information in the plan that is different from previously reported, then where indicated, provide explanations. If all data matches what was previously reported, then state 'All data matches what was previously reported'.

In Appendix A of the working version, identify any differences between previously reported data and data used in the plan.

E. Material Change in Circumstances/Contingencies

Instructions for the Material Change in Circumstances/Contingencies

Ohio Revised Code Section 3734.56(D) authorizes the board of directors to request the SWMD to begin updating a solid waste management plan prior to the required date if the board determines that circumstances materially changed from those addressed in the approved plan.

A SWMD is not required to provide a material change in circumstances procedure in its plan. However, Ohio EPA encourages each SWMD to develop and document a material change in circumstances procedure for internal use regardless of whether the SWMD includes that procedure in the plan.

If the SWMD chooses to include a material change in circumstances process, then in the working version, summarize the process where indicated with “[explain the SWMD’s material in change in circumstances procedure or contingencies]”.

Appendix B Recycling Infrastructure Inventory

Purpose

Use this appendix to inventory of the recycling infrastructure that existed in the reference year. This inventory will cover:

- residential curbside collection services (Tables B-1a and B -1b).
- drop-off recycling sites (Tables B-2a through B-2d);
- mixed waste materials recovery facilities (Table B-3).
- companies providing recycling collection and trash collection services (Table B-4).
- composting facilities and yard waste management programs (Table B-5).

The infrastructure inventory should match the inventory in the corresponding surveys for the reference year in the SWMD's Re-TRAC account. If not, then please explain differences in Appendix A.

See the [Glossary](#) for definitions.

A. Curbside Recycling Services, Drop-Off Recycling Locations, and Mixed Solid Waste Materials Recovery Facilities

Instructions for Tables B-1a and B-1b

Use Tables B-1a and B-1b to inventory the curbside recycling services that were available within the SWMD in the reference year.

After inserting tables B-1a and B-1b, provide any additional information needed to explain the listed curbside services after each table where indicated.

Complete tab B-1 in the workbook.

Instructions for Tables B-2a through B-2d

Use Tables B-2a through B-2d to inventory the drop-off recycling locations available within the SWMD in the reference year.

After inserting tables B-2a through B-2d, provide any additional information needed to explain the listed drop-off locations after each table where indicated.

Complete tab B-2 in the workbook

Instructions for Table B-3 (mixed solid waste material recovery facilities)

If residential waste is processed at a mixed solid waste material recovery facility, then refer to these [supplemental instructions](#) and complete tab B-3 in the workbook.

B. Curbside Recycling and Trash Collection Service Providers

Instructions for Table B-4

Use Table B-4 to inventory recycling and trash collection service providers that operated in the SWMD during the reference year. List only those haulers that provide traditional collection services to residents and businesses. Omit entities that do not provide regular collection services such as

- A company that transports its own waste (such as a construction company).
- A public sector entity that hauls waste from periodic events (such as a county engineer's office that transports waste from community clean-ups).
- A company that services roll off boxes and other similar non-traditional containers at residences.

After inserting Table B-4, provide any text necessary to explain the entries in Table B-4 where indicated with "[replace with information needed to describe or explain the service providers listed in Table B-4]".

Complete tab B-4 in the workbook.

C. Composting Facilities

Instructions for Table B-5

Use Table B-5 to inventory composting facilities that managed yard waste and food waste from the SWMD in the reference year. This information is available in an annual **Compost Facility Data Report** posted on the **Solid Waste Management Planning** page under the heading for Data, Reports and Studies in the drop-down for Resources (see pics. below).

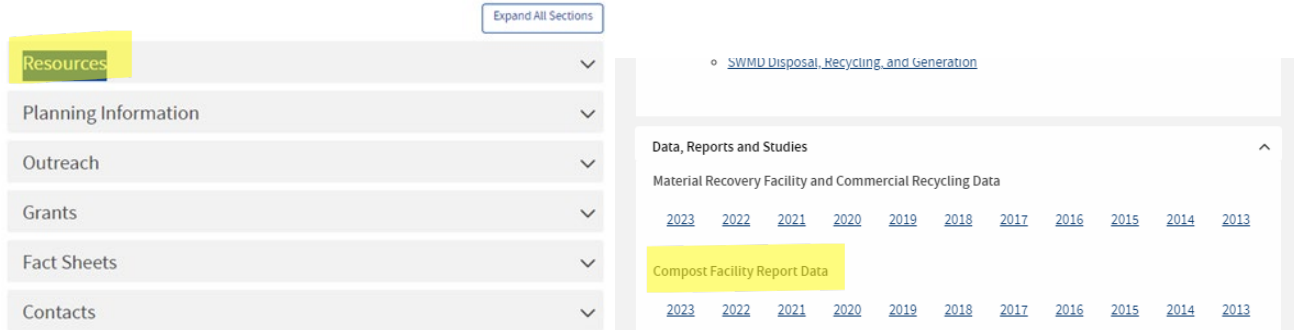
Solid Waste Management Planning

The Planning Unit oversees the 52 solid waste management districts who are tasked with ensuring that Ohioans have opportunities to reduce, reuse, and recycle their waste and that solid waste is managed properly.

This page is a clearinghouse for information and data relevant to solid waste management districts and individuals interested in solid waste planning. Information available on this page includes:

- Solid waste recycling, disposal, and generation data.
- Annual district reports.
- Solid waste management district fees.
- The district solid waste management plan format and state solid waste management plan.
- The Ohio EPA/Organization of Solid Waste Districts of Ohio Workgroup.

You can find your solid waste management district using this [interactive map](#).



After inserting Table B-5, provide any text needed to explain the entries where indicated with “[replace with information needed to describe or explain the composting facilities listed in Table B-5]”.

Complete tab B-5 in the workbook.

D. Other Food Waste and Yard Waste Management Activities

Instructions for Table B-6

Use Table B-6 to inventory miscellaneous food waste and yard waste management activities in the reference year such as:

- Community yard waste collection programs (e.g., curbside collection, drop-offs, etc.).
- Land application programs.
- Mulching operations.
- In-vessel units.
- Food waste hauler data (
- Food recovery services/food banks/animal feed.

After inserting Table B-6, provide any text needed to explain the entries where indicated with “[replace with information needed to describe or explain the activities listed in Table B-6]”.

Complete tab B-6 in the workbook.

Appendix C Population Data

A. Reference Year Population

Instructions for Table C-1 –Population Adjustments and Total Reference Year Population

Adjusting County Populations

Ohio law requires the entire population of a municipality or village located in more than one SWMD to be added to the SWMD containing the largest portion of the municipality's or village's population. To identify communities that are in more than one county, use the ODOD document titled [Population Estimates by County, City, Village & Township](#).

Use Table C-1a to adjust the SWMD's population for communities that are in more than one SWMD. Table C-1b calculates the SWMD's total population in the reference year.

After inserting tables C-1a and C-1b, provide any text needed to explain how the quantities in Table C-1 were calculated where indicated with "[replace with explanation of the entries in Table C-1]".

Complete tab C-1 in the workbook.

B. Population Projections

Instructions for Tables C-2 and C-3

Use Tables C-2 and C-3 to project the SWMDs population.

[NOTE: Complete tab C-3 first but include only Table C-2 in the plan].

Default Method: The default (and easiest) way to project population is to use the Ohio Department of Development's (ODOD) published population estimates. ODOD provides projections for county populations in five-year increments. These projections are available on the [District SW Management Plan Format 4.2](#) webpage in a Microsoft Excel workbook labeled 5-Year Population Projections. To access the workbook, click on the drop-down arrow next to Supplemental Information.

Use straight line projection to calculate populations for the years in-between the increments. This involves dividing the difference in the populations for two consecutive five-year projections by five. This will give the annual increase or decrease in the number of people for the years between the five-year projections.

Below is an example of a straight-line calculation for a county:

Projected population in 2020 = 113,000

Projected population in 2025 = 120,000

$$\begin{aligned} \text{Annual population change} &= (120,000 - 113,000) \div 5 \\ &= 1,400 \text{ people} \end{aligned}$$

$$\begin{aligned} \text{Projected population in 2021} &= 2020 \text{ population} + 1,400 \\ &= 113,000 + 1,400 \\ &= 114,400 \end{aligned}$$

The default method keeps the populations of communities added to or subtracted from the SWMD's population constant at the reference year populations.

Other Methods: The SWMD can use a different methodology or different data to project population. Doing either will require the SWMD to either manually complete the worksheets for Appendix C or change the formulas in the worksheets.

After inserting Table C-2, provide any text needed to explain how projections were calculated where indicated with "[replace with explanation of the entries in Table C-2]". If a methodology other than the default method is used or if different data are used, then explain the methodology, cite the sources of data, show all applicable sample calculations, and explain any assumptions used to develop the projections.

Appendix D Disposal Data

Purpose of Appendix D

Use Appendix D to do the following:

- Inventory where solid waste was managed in the reference year (landfills, transfer facilities, and incinerators/waste-to-energy facilities);
- Calculate total waste disposed in the reference year (residential/commercial, industrial, and excluded waste);
- Analyze historical disposal quantities; and
- Project waste to be disposed.

[NOTES:

- *Indiana reports waste for solidification facilities, medical waste processors, resource recovery systems, and solid waste incinerators. Include solidification facilities in Table D-1 and solid waste incinerators and resource recovery systems in Table D-3. Plans do not need to account for medical waste processors.*

- *If the quantity of excluded waste disposed in the reference year was less than 10 percent of total waste disposed in that year, then the solid waste management plan does not need to account for excluded waste.*

[Worksheet D-4 in the workbook will automatically account for or omit excluded waste from the solid waste management plan.]

- *If the quantity of waste managed at incinerators in the reference year was less than 10 percent of total waste disposed in that year, then the solid waste management plan does not need to account for incinerated waste.*

[Worksheet D-4 in the workbook will automatically account for or omit incinerated waste from the solid waste management plan .]

- *[Solid waste management plans do not need to account for infectious waste.]*

A. Reference Year Waste Disposed

Instructions for Tables D-1 through D-4

Use Tables D-1 through D-4 to inventory solid waste landfills, transfer facilities, and incinerators/waste-to-energy facilities where the SWMD's waste was accepted in the reference year.

Use data from the SWMD's waste flow summary for the reference year unless the SWMD has data from another source that the SWMD considers more accurate (such as data reported to the SWMD due to designation agreements and/or collecting contract fees). The

waste flow summaries are available on the [Solid Waste Management Planning webpage](#) in the drop-down menu for Annual District Reports (see pics. Below).

Annual District Reports (ADRs) ^

Each solid waste management district (SWMD) must submit a completed annual district report (ADR) no later than June 1st of each year. Starting with the 2016 ADR, SWMDs now submit their ADRs online using Ohio EPA's Re-TRAC platform. A SWMD coordinator can access the SWMD's account from the [Re-TRAC Connect log in page](#). For difficulties accessing an account or questions about completing the ADR, please contact the planner that is assigned to the SWMD. Refer to the [Planning Unit Assignments](#) by County to find the appropriate contact information.

ADR Review Forms (SWMD Recycling and Disposal Data):

- 2016
 - [SWMD Waste Flow Data](#)
 - [SWMD Disposal, Recycling and Generation](#)
- 2017
- [2015](#)
- [2014](#)
- [2013](#)
- [2012](#)

After inserting Tables D-1 through D-4, where indicated after each table, explain the information presented in the tables as needed. For data from another source, explain the source(s) of the data and how it is more accurate than Ohio EPA's data.

Complete tabs D-1 through D-3 in the workbook. The workbook will automatically create Tab D-4.

B. Historical Waste Analysis

Instructions for Table D-5 – Historical Disposal Data

Use Table D-5 to provide historical disposal information for the SWMD for the reference year and the four years prior to the reference year (a total of five years). Analyze this data and use conclusions to develop projections for how much waste will be disposed during the planning period.

Use data from waste flow summaries published by Ohio EPA unless the SWMD has data from another source (such as data reported to the SWMD due to designation agreements and/or collecting contract fees) that the SWMD believes to be more accurate.

Tab D-5 generates 5 supplemental tables (labeled D-5a through D-5e) that calculate statistics to analyze the historical data (see instructions in the next text box). Tab D-5 also creates charts that may help with the analyses.

After inserting Table D-5, explain or qualify the data in Table D-5 as necessary where indicated with “[replace with explanation of the data in Table D-5]”. For data from another source, explain the source(s) of the data and how it is more accurate than Ohio EPA’s data.

Complete tab D-5 in the workbook.

Instructions for analyzing historical disposal data

Use the statistics generated in Tables D-5a through D-5e and the graphs to evaluate historical disposal over the last five years (the reference year and the four preceding years).

Analyze residential/commercial and industrial or manufacturing waste by comparing the waste disposed in each of the five years to identify trends or inconsistencies.

The evaluation is intended to assist with:

- understanding the factors that affect the quantities of waste disposed.
- identifying any trends or other commonalities that the SWMD can use to project waste to be disposed during the planning period.
- identifying any outliers that skew the SWMD’s disposal trend.

1. Residential/Commercial Waste

Considering the data in Table D-5, the supplemental tables, and the graph, things to consider include:

- Did the quantities of residential/commercial waste disposed, the percentage change in disposal, and/or the per capita disposal rate increase, decrease, remain constant, or fluctuate inconsistently?
- Is there a correlation between population change and disposal?

- Is there a correlation between commercial activity and disposal (it is natural to see a decrease in disposal if there is declining business activity)?
- If the historical quantities do not exhibit a trend, are the quantities similar (i.e., there are no outliers)?
- If there isn't a clear trend or there is significant variation in the data, then things to consider include:
 - Do the data fluctuate inconsistently from one year to the next?
 - Is there a year that is an outlier in the data?
 - If yes, try to identify the cause. Examples:
 - a large ice storm or other natural disaster resulted in more waste disposed in one year than in other years.
 - a new or large commercial entity began or quit generating waste during the five-year period.
 - a recent change to waste flows resulted in mischaracterization. As an example, a large quantity of waste previously disposed in Ohio was sent to an out-of-state landfill for disposal and not recorded as originating from within the SWMD.

Eliminating the data for an outlier year would prevent it from skewing the projection factors

Where indicated by “[replace with explanation of the residential/commercial disposal analysis]”, explain how the data in Table D-5 was analyzed and conclusions drawn from the analysis.

For more recommendations about evaluating historical residential/commercial sector disposal, review these [supplemental instructions](#)

2. Industrial or Manufacturing Waste

Refer to the instructions for analyzing the residential/commercial waste and, except for the points below, follow the same procedure for analyzing the industrial waste.

Factors to consider when evaluating variation in industrial disposal data include:

- a major new industrial generator began operating or an existing industrial generator ceased operating during the five-year period.
- an existing industrial facility completed a major addition, hired additional employees/reduced employees, or increased/decreased output.
- a large quantity of industrial waste that was previously disposed at a landfill located within Ohio was sent to an out-of-state landfill to be used as alternative daily cover and was not reported.

Where indicated with “[replace with explanation of the industrial disposal analysis]”, explain the analysis of the data in Table D-5 and conclusions drawn from the analysis.

3. Excluded Waste

[NOTE: These instructions apply to only those SWMDs that are required to account for excluded waste.]

Refer to the instructions for analyzing the residential/commercial waste and, except for the points below, follow the same procedure for analyzing the industrial waste. Appendix D Disposal Data Page D-6 C. Projections for Waste to be Disposed and Transferred.

- Identify any factors that influence how much excluded waste is disposed such as: presence of a coal-burning utility; foundries that generate excluded foundry sand; ongoing, large construction activities, etc.
- Identify correlations between changes in the amounts of excluded waste generated and the activities that resulted in those changes. For example, if a large portion of the excluded waste is bottom or fly ash and there was a significant change in the quantities generated, then is there an identifiable cause –such as a new utility began/ceased operating, a utility upgraded its pollution control technology, a utility generated more/less electricity than usual, etc.

Where indicated by “[replace with explanation of the exclude waste disposal analysis, explain the analysis of the data in Table D-5 and any conclusions drawn from the analysis

[NOTE: To eliminate an outlier or add data for more years, make changes to the tab D-5 as necessary and insert a new version of Table D-5.]

For more recommendations about evaluating historical industrial or manufacturing waste disposal, review these [supplemental instructions](#)

C. Projections for Waste to be Disposed and Transferred

General Instructions for Projecting Waste to be Disposed and Transferred

Project quantities to be disposed and transferred for at least the first three years (for a planning period of less than 15 years) or five years (for a planning period of 15 or more years). Beginning in the fourth or sixth year of the planning period, the SWMD can either keep the quantities constant or continue the projections to the end of the planning period.

Disposal Projections - Prior to completing projections in the workbook, consider whether circumstances after the reference year changed quantities disposed or potential circumstances during the planning period might change quantities of waste that will be disposed. If there are circumstances that will affect disposal, then factor those into the projections.

Examples of potential factors to consider include:

- A new generator that began operating after the reference year or is anticipated to begin operating during the planning period (such as a regional warehouse for a

retailer, a new tourist attraction, an auto manufacturer, a natural gas extraction operation, auto shredder, power utility, etc.);

- An existing generator ceased operating after the reference year or is projected to cease operating during the planning period; and
- A new recycling program or service is expected to recover large quantities that previously were disposed.

After completing the projections, review the quantities to ensure that they make sense given the data for the past five years. For example, if the disposal projections are either higher or lower than most of the quantities from the last five years, then the SWMD may need to adjust the factor or develop another factor.

Transfer Projections - Tab D-6 will automatically project the quantities of waste to be routed through transfer facilities. Tab D-6, by default, projects waste to be transferred as a constant percentage of total waste to be disposed. The percentage used is the percentage of total waste disposed in the reference year that was routed through transfer facilities prior to being taken to a landfill. Table D-6 presents both the percentage and the weight of waste to be transferred.

After inserting Table D-6, explain how the SWMD developed its projections for waste to be disposed in landfills and routed through transfer facilities where indicated with “[replace with explanation of the methodologies for projecting waste to be disposed and transferred]”.

Complete tab D-6 in the workbook

Instructions for Table D-7: Waste Imports

Ohio Revised Code Section 3734.53(A)(6) requires a solid waste management plan to project the amounts of solid wastes originating outside the district that will be brought into the district for disposal or resource recovery. Table D-7 will account for this.

Refer to Table 7 (for landfills) and Table 10 (for transfer facilities) of the facility data report for the reference year. The report is posted on the [Solid Waste Management Planning](#) webpage under the heading for Data, Reports, and Studies in the drop-down menu for Resources.

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Scrap Tire Data

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Ohio EPA Waste and Recycling Studies

- [Drop-off Survey Tool-Kit](#)

Facility Data Reports (Waste Disposal Data)

[2023](#) [2022](#) [2021](#) [2020](#) [2019](#) [2018](#) [2017](#) [2016](#) [2015](#) [2014](#) [2013](#)

Solid Waste Imports and Exports

[2022](#) [2021](#) [2020](#) [2019](#) [2018](#) [2017](#) [2016](#) [2015](#) [2014](#) [2013](#) [2012](#)

After inserting Table D-7, where reserved with “[replace with information to support Table D-7]”, provide needed information to explain listings.

Complete tab D-7 in the workbook.

Appendix E Residential/Commercial Recovery Data

A. Reference Year Recovery Data

General Instructions Regarding Data

Use Appendix E to do all the following:

- Inventory the quantities of materials recovered from the SWMD's residential/commercial sector in the reference year.
- Adjust reported quantities for double counting.
- Calculate total adjusted quantities of material recovered in the reference year.
- Analyze historical quantities recovered.
- Project quantities to be recovered.

Tables E-1 through E-4 will account for all material being credited to the waste reduction and recycling rate for the residential/commercial sector. Enter the quantities reported into the appropriate tables as follows:

- Table E-1 – use this table to account for data reported to the SWMD by commercial businesses (through surveys).
- Table E-2 – use this table to account for data reported by scrap yards, brokers, buybacks, processors, MRFs (including those that reported to Ohio EPA), etc.
- Table E-3 - use this table to account for data reported to Ohio EPA by commercial businesses (i.e. big box stores)
- Table E-4 – use this table to account for data associated with services and programs (such as curbside services, drop-off locations, material collection programs, commercial/government office collection routes, etc.).

Surveying

Ohio EPA encourages the SWMD to survey communities with residential recycling services and commercial businesses to gather recycling data for the reference year. See the section titled “[North American Industrial Classification System and Surveying Recommendations](#)” at the end of these instructions for information on which business types to survey.

Supplementing Data

If a commercial business did not respond to the survey for the reference year but did respond to a previous survey, it may be acceptable to use data from the earlier survey.

However:

- Do not use survey data for commercial businesses that is more than three years old.
- Do not use survey data for scrap yards, buybacks, processors, MRFs, etc. that is more than two years old.

To use data from an earlier survey, verify:

- that the survey is not more than three years old (for commercial surveys) or two years old (for scrap yards, buybacks, processors/MRFs, and brokers).

- that the business operated in the reference year and still recycles.
- that the owner did not significantly change the nature of the business, the hours of operation, the number of employees, or its sales/level of service.
- that the facility still produces/accepts the types of recyclables as were reported in the earlier survey.

[NOTE: Ohio EPA encourages the SWMD to communicate with the planner assigned to the SWMD regarding the use of survey data from multiple years prior to completing Appendix E.]

Non-Creditable Materials

Do not credit quantities for the following materials for the residential/commercial sector:

- Train boxcars.
- Construction and demolition debris (C&DD), including metals from home construction or renovation.
- Metals from vehicle salvage operations, including auto bodies, auto parts, and any other vehicle bodies or parts (such as farm equipment, tractor trailers, school buses, etc.).
- Manure (unless manure was previously landfilled and is now being diverted, such as from a zoo).
- Agricultural waste (such as crop waste (e.g., crop residue) and animal bedding) that have traditionally never been disposed of in landfills.
- Waste/recovered material used as alternative daily cover or used within the limits of waste placement at a landfill (e.g., auto shredder residue used as alternative daily cover or glass used as road base material within the limits of waste placement).
- Municipal sewage sludge.

The materials listed above either were not historically disposed in landfills or are not solid waste and don't count toward the recycling and waste reduction rates.

Adjusting for Double Counting

Double counting occurs when the same material is reported by more than one survey respondent, typically both the generator of the material and the processor that receives the material from the generator. Material is "double counted" if the quantities from both respondents are credited to total recovery. This could happen if a community reported the quantity of material collected through its curbside recycling program and the processor that received the material returned a survey that also accounts for the material. If that happens, then the total quantity recovered needs to be adjusted to subtract the quantity reported by one source or the other to avoid crediting the material twice.

Tables E-1 through E-4 all have sections devoted to entering adjustments for double counted material.

Include the following in Appendix R

- Copies of all survey materials.

Appendix E Residential/Commercial Recovery Data

- A description of the survey process, such as how many companies the SWMD sent surveys to, how surveys were distributed, whether and how non-respondents were contacted.
- An explanation of how data was evaluated, including the processes and criteria used to:
 - verify that reported data is accurate/makes sense.
 - verify that quantities reported originated from within the SWMD.
 - verify that quantities reported do not contain non-creditable material.
 - verify that reported quantities were recycled in the survey year.
 - eliminate/avoid double counting.
- An explanation of how data from previous survey cycles was evaluated prior to being used.

Instructions for Table E-1: Commercial Survey Results

Use Table E-1 to account for the results of the commercial survey for the reference year. The table is organized by the NAICS codes that Ohio EPA recommends surveying for the commercial sector and material type.

Aggregate the quantities of a material from all returned surveys for a specific NAICS code.

After inserting Table E-1 into the working version of the document:

- Where indicated with “[replace with explanations for any NAICS codes added to Table E-1]”, describe any additional NAICS codes added to Table E-1
- Where indicated with, “[replace with explanations of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable.
- Where indicated with “[replace with any other necessary supporting text]” clarify or explain adjustments that were made for double counting. If data from multiple years are used, then identify the years that data represent.

Complete tab E-1 in the workbook.

Instructions for Table E-2: Data from Other Recycling Facilities

Use Table E-2 to account for data for buybacks, scrap yards, brokers, and processors/MFRs that report materials for the residential and/or commercial sectors.

Table E-2 is organized by type of facility. Use a separate row for each respondent.

Processors/MRFs – Include data for MRFs published in Ohio EPA’s MRF Annual Report (which provides data from Ohio EPA’s voluntary MRF and big box store data) which can be found on Ohio EPA’s [Solid Waste Management Planning](#) webpage. Click on the drop-down arrow next to Data, Reports, and Studies and under the heading Material Recovery Facility and Commercial Recycling Data select the report that corresponds to the reference year.

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- Compost Facility Report Data

2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
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- Scrap Tire Data

[NOTE: Prior to using data reported by scrap yards/scrap dealers, brokers, and buybacks, evaluate and correct quantities as follows:

- Remove quantities of “non-creditable” materials, such as construction and demolition debris (C&DD). Metals that result from construction and demolition projects are not solid waste and are not creditable material.
- Remove quantities of metals from vehicles, such as auto bodies, auto parts, and any other vehicle bodies or parts that have not historically been disposed in landfills (such as farm equipment, tractor trailers, school buses, trains, etc.)
- Remove quantities generated outside of the SWMD (or quantities if it isn’t clear whether materials were generated within or outside of the SWMD).
- As appropriate add or subtract materials reported for the wrong sector (or subtract altogether if it isn’t clear which sector generated the materials).
- If the SWMD received data from more than one source for the same material, ensure that material isn’t counted twice. Appliances are an example.: If the collector and the receiving processor both submit surveys, then the appliances could be counted twice – once as the weight of appliances collected and again as scrap metal.
- Remove quantities that are estimates rather than from records.]

After inserting Table E-2:

- Where indicated with “[replace with explanation of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable.
- Where indicated with “[replace with any other necessary supporting text]” explain the adjustments that were made for double counting and, if data from multiple years are used, then identify all years that data represent.

Complete tab E-2 in the workbook

Instructions for Table E-3 – Commercial Data Reported to Ohio EPA by Big Box Stores

Enter commercial (big box store) data from Ohio EPA's Material Recovery Facility and Commercial Recycling Data report. This data is available on Ohio EPA's [Solid Waste Management Planning](#) webpage. If any quantities are also counted in Table E-2, then adjust either Table E-2 or E-3 to ensure those quantities are counted just once.

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Compost Facility Report Data

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Scrap Tire Data

After inserting Table E-3, where indicated with “[replace with supporting text]” explain any adjustments that were made for double counting and further clarify or explain the data in Table E-3 as needed.

Complete tab E-3 in the workbook.

Instructions for Table E-4: Other Recycling Programs/Other Sources of Data

Use Table E-4 for quantities diverted through residential and commercial programs and services and quantities associated with sources not identified in Tables E-1, E-2, and E-3 for the reference year.

After inserting Table E-4:

- Where indicated with “[replace with explanations of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable.
- Where indicated with “[replace with supporting text]”, explain any adjustments that were made for double counting and further clarify or explain the data in Table E-4 as needed.

Complete tab E-4 in the workbook.

Instructions for Table E-5: Reference Year Residential/Commercial Material Recovered

Table E-5 will display the adjusted quantity of each material that was recovered from the residential/commercial sector in the reference year. The quantities for this table will automatically transfer from Tables E-1 through E-4. The structure of Table E-5 matches the structure of the same table from the annual district report.

After inserting Table E-5, where indicated with “[replace with explanation of the data in Table E-5]”, further qualify the quantities presented in Table E-5 as necessary.

Instructions for Table E-6: Quantities Recovered by Program/Source

Table E-6 will display the total adjusted quantity of material that is attributed to each program/source for the residential/commercial sector. The names of the programs/ sources and their associated adjusted quantities will automatically transfer from tables E-1 through E-4. This table is used to populate tab E-7. .

B. Historical Recovery

Instructions for Table E-7: Historical Residential/Commercial Recovery by Program/Source

Enter historical quantities recovered through programs, services, and third-party sources into Table E-7. Use those quantities to evaluate historical recovery through those programs, services, and third-party sources.

Tab 7 automatically creates several supplemental tables (labeled E-7a1 through E-7a6) that provide statistics based on quantities in Table E-7. These statistics are intended to help evaluate the historical data. These tables are as follows:

- Table E-7a1 – Annual Percentage Change in Tons Recovered
- Table E-7a2 – Average Percentage Change in Tons Recovered
- Table E-7a3 – Annual Change in Tons Recovered
- Table E-7a4 – Annual Per Capita Recovery Rate (pounds/person/day)
- Table E-7a5 - Average Per Capita Recovery Rate
- Table E-7a6 - Average Tons of Material Recovered

To the best extent possible, enter individual programs/services separately from other programs/services. This will result in the best understanding of recovery through that program/service. For example, evaluating recovery through curbside services and drop-off sites separately may result in more accurate projections than evaluating them together. The ability to focus on individual programs/services will likely be a function of data availability.

For more recommendations about evaluating historical recovery, review these [supplemental instructions](#).

After inserting Table E-7, where indicated with “[replace with explanation of the historical analysis]”, explain the analysis of the data on tab E-7 and conclusions drawn from the analysis.

Complete tab E-7 in the workbook.

C. Residential/Commercial Recovery Projections

Instructions for Table E-8: Residential/Commercial Recovery Projections by Program/Source

Use Table E-8 to project quantities to be recovered through the programs and services that will be available during the planning period and third-party sources. Table E-8 will account for all programs, services, and third-party sources that will result in quantities being credited to the residential/commercial sector.

Projecting recovery will involve determining how to use the historical data combined with anticipated changes to programs/services to project quantities to be recovered. Things to keep in mind:

- If the SWMD recently made a change to a program that will decrease recovery through the program, then factor that into the projections for the years between the reference year and the first year of the planning period. If recovery through the program/service has been increasing due to a recent change in the program, then it might not be realistic to assume that increase will continue every year. If there isn't historical data for a program/service, then hold the quantity recovered constant at the reference year quantity.
- If historical data does not demonstrate a trend in recovery for a data source (such as a commercial survey), then hold the quantity for that source constant at the reference year quantity unless there is adequate justification for projecting change.

Complete tab E-8 for the planning period.

After inserting Table E-8, where indicated by “[replace with explanation of the residential/commercial recovery projections]” explain how projections were developed for each program/source listed in the table. Include assumptions made, factors considered, sources consulted, sample calculations, as appropriate, and narrative to explain how any planned changes to programs/services will affect recovery.

For more recommendations about projecting residential/commercial recovery, review these [supplemental instructions](#)

Appendix F Industrial Waste Reduction and Recycling Data

[NOTE: Completing this appendix is voluntary. If you choose to complete Appendix F, go to the [detailed instructions](#) at the end of this document.

If the SWMD chooses not to complete Appendix F, in the working version, leave the title of the appendix but remove all the headings

Appendix G Waste Generation

A. Historical Waste Generated

Instructions for Table G-1: Reference Year and Historical Waste Generated

[**NOTE:** Table G-1 is automated].

Table G-1 will provide historic generation data, including the reference year and the four preceding years. By default, waste generated is calculated by adding the quantities of waste disposed from Appendix D and the quantities recycled (from Appendix E for residential/commercial waste and Appendix F for industrial waste).

The workbook automatically populates spreadsheet G-1 using data from previous spreadsheets, including data for industrial and excluded wastes. If the SWMD chooses not to complete Appendix F, then the column for industrial waste recycled will show zeroes and industrial waste generated will equal industrial waste disposed.

After inserting Table G-1, explain the entries as needed where indicated with “[replace with information needed to describe or explain Table G-1]”. If using a different method to project generation, then explain why the disposal plus recycling methodology wasn’t representative and the method that was used.

For more recommendations about evaluating generation, review these.

Complete tab G-1 in the workbook.

B. Generation Projections

Instructions for Table G2: Generation Projections

[**NOTE:** Table G-2 is automated and will be completed after projecting recovery in appendices E and F.]

This table will provide projections for the planning period. [**NOTE:** For solid waste management plans that do not account of industrial material recycled in Appendix F, generation will equal disposal.]

After inserting Table G-2, where indicated with “[replace with information needed to support Table G-2]”, explain the quantities in Table G-2 as needed.

Complete tab G-2 in the workbook.

C. Waste Composition

Instructions for Table G3: Waste Composition

[**NOTE:** *Table G-3 is automated.*]

This table will provide the estimated composition of residential/commercial waste projected to be generated.]

After inserting Table G-3, where reserved with “[replace with information needed to support Table G-3]”, explain the quantities in Table G-3 as needed.

Complete tab G-3 in the workbook.

Appendix H Strategic Evaluation

This document contains a voluntary module for strategically evaluating the SWMD's reduction and recycling efforts. The module leads the SWMD through an evaluation of its programs and services in the context of factors that need to be considered when developing recycling and waste reduction programs and running a SWMD. Using this module, the SWMD will evaluate the status of its reduction and recycling efforts against these factors through a series of analyses. These analyses are intended to result in a holistic review of the SWMD. There are 13 recommended analyses:

1. Residential recycling infrastructure analysis
2. Commercial sector analysis
3. Industrial sector analysis
4. Waste composition analysis
5. Economic incentive analysis
6. Restricted and difficult to manage waste analysis
7. Diversion analysis
8. Special program needs analysis
9. Financial analysis
10. Regional analysis
11. Data Collection Analysis
12. Education and Outreach Analysis
13. Processing Capacity Analysis.

Completing this module is voluntary. However, Ohio EPA strongly encourages each SWMD to conduct at least a couple of the recommended analyses. The instructions for each analysis provide suggestions for things to consider. SWMDs that choose to conduct analyses can use these suggestions as guidelines or develop their own review criteria.

Please review these [detailed instructions for conducting analyses](#).

If the SWMD conducts any analyses, the SWMD can choose whether to include summaries of the results in the working version. There are headings corresponding to each analysis. If the SWMD opts not to conduct analyses, leave the appendix title but remove all the headings. If the SWMD opts to conduct and summarize analyses, then remove any headings not needed.

How to use the results of the analyses

If the SWMD completes any analyses, Ohio EPA recommends the SWMD use its conclusions and findings to make decisions about the programs the SWMD will provide during the planning period. For more direction on how to use the results of the analyses, please review these [supplemental instructions](#):

Appendix I Program Descriptions

General Instructions

Use this appendix to provide all information about the SWMD's programs. Program descriptions will thoroughly describe what was available in the reference year and what will be available during the planning period.

[NOTE: for education and outreach programs, read the [instructions for identifying programs to address outreach and education priorities](#) in Appendix L]

[NOTE: Provide descriptions of education, outreach, and technical assistance programs in Appendix L.]

A. Priorities and Programs

Instructions for Priorities:

Ohio EPA encourages that SWMDs identify priorities for the upcoming planning period to guide decisions regarding the programs the SWMDs will provide. These priorities could address outstanding needs, available opportunities for growth, weaknesses, or available resources. If the SWMD does not already have programs to address all the required goals of the state plan, then a priority could be a new program to meet unfulfilled goals.

Ohio EPA further encourages SWMDs to explain how those priorities directed the SWMD's program decisions.

If the SWMD conducted any analyses from Appendix H, the SWMD can use the results to identify priorities

Where indicated with "[replace with the SWMD's the priorities and explain as necessary]", identify/describe the SWMD's priorities and explain why the SWMD has identified those priorities.

Instructions for Program Descriptions

Use this appendix to provide all information about the SWMD's programs. Program descriptions will thoroughly describe what was available in the reference year and what will be available during the planning period.

The working version of the plan provides headings corresponding to common types of programs. After the heading is two-row table and a placeholder for a program description (see example below). Provide a table and a full description for each program the SWMD will implement during the planning period.

Appendix I Conclusions, Priorities, and Program Descriptions

Ohio EPA will compile the individual, two-row tables into an implementation schedule for the SWMD's annual district report.

ID	Name	Start Date	End Date	Goal(s)

[Program Description]

Add headings as needed. If the SWMD does not have a program corresponding to a heading, then remove it from the working version of the plan.

Provide the following in descriptions of programs that existed in the reference year,:

- What the program was/what the program consisted of.
- Who the target audience was/who used the program.
- Where the program was offered/the service area.
- What materials were collected.
- Who provided/operated the program.
- Who paid for the program.

[NOTE: *Who provided or operated the program may be different than who pays for the program. For example, if a SWMD pays for drop-off locations but a private waste company services the drop-offs, then the private hauler is the provider. As another example, if a SWMD operates a curbside collection program that is paid for by the community where the service is provided, then the SWMD is the provider.*]

- When the program was available.
- How the SWMD promoted the program to the target audience.
- Statistics or other measures of activity (e.g, tons of recyclables collected).
- Any other pertinent information.

For describing changes to existing program, keep the following in mind:

If the SWMD will discontinue an existing program, explain why and when the program will end.

If the SWMD will continue an existing program unchanged, add a statement to that effect.

If the SWMD will continue a program but will be making changes, explain the changes by adding the following information in the program description as appropriate:

- What the changes are/what the changes will consist of/what the program will look like after the changes are made.
- Rationale behind the changes/why the changes are being made.
- Any barriers the SWMD may encounter when making desired changes and how the SWMD will overcome those barriers.
- When the changes will be made/when the changed program will be available to the target audience.
- How the SWMD will ensure affected parties are aware of the changes.

- How the SWMD will measure effects of the changes/evaluate success of the changes.
- Any other relevant information.

If the SWMD will implement a new program, then include the following in the program description:

- What the program is/what the program will consist of.
- Any barriers the SWMD will encounter to implement the new program.
- When the program will begin/be available to the target audience.
- Who will be able to use the program/the target audience.
- Where the program will be offered/the service area for the program.
- What materials will be collected through the program.
- Who will provide the program (for example, if it is a curbside recycling program, who provides the service?)
- Who will pay for the program.
- How the SWMD will promote availability of the program to the target audience (e.g., if the SWMD offers waste audit services, then how does the SWMD market those services to the target audience?).
- How the SWMD will keep the program and/or keep information about the program current.
- How the SWMD will measure success of the program/evaluate success of the program.
- Any other relevant information

If a new program is a feasibility study, then in the description, provide the following information:

- The purpose/goals of the study/what the SWMD hopes to achieve through the study;
- A timeline for beginning and completing the study;
- How the study will be conducted/the study methodology;
- Who will conduct the study;
- An account of the stakeholders and how they will be engaged;
- What the results will be used for;
- How results will be made available;
- When decisions will be made;
- Who will make decisions; and
- Whether the SWMD will act upon decisions during the planning period or use the results of the study for making decisions during the next plan update.

Instructions for Describing Other Programs

Provide descriptions of programs that don't fit under the preceding headings here. Examples of programs to describe here include:

- Health department support (Allowable Use 3);
- County assistance (Allowable uses 4, 5, and 8);

Appendix I Conclusions, Priorities, and Program Descriptions

- Open dumping/litter enforcement (Allowable use 7) (including health department and local law enforcement agency support);
- Open dumping/tire dump cleanup;
- Municipal corporation/township assistance (allowable use 9);
- Disaster debris/disaster assistance;
- Facility ownership and operations not previously described (MRFs, recycling centers, landfills, transfer facilities, other); and
- Waste-to-energy projects (such as waste derived fuel, pyrolysis, gasification, etc.).

Return to [instructions](#) for Outreach and Marketing Plan

Appendix J Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1

A. Residential Sector Opportunity to Recycle

Instructions for the Demonstration of Achieving Goal 1

Step 1. Creditable Infrastructure

Determine which recycling opportunities, available in the reference year, qualify for the demonstration of achieving Goal 1. See the definitions in the Glossary for the criteria that define qualified recycling opportunities. Compare those criteria to the listings in Tables B-1 through B-3 to identify the recycling opportunities from the reference year that the SWMD can use for the demonstration.

Step 2. Assign Population Credits

Limit “credit” for infrastructure in a community to the population of an entire community, up to and including the entire credit for a drop-off that would be needed to achieve providing 100 percent of the residential population with access to recycling infrastructure.

a. Curbside Recycling Programs

Non-Subscription Curbside Recycling Service (see definition in **Glossary**)– For a community that offers a qualifying non-subscription curbside program, the SWMD can credit the entire population of the community that is served by the non-subscription curbside program.

Subscription Curbside Recycling Service (see definition in **Glossary**)- By default, a SWMD can credit 25 percent of the population for a jurisdiction served by a qualifying subscription curbside service.

A SWMD can demonstrate that more than 25 percent of the population subscribes to the service. This demonstration can be based on the number of subscriptions sold by the service provider, a set-out rate study, or another method. If the SWMD credits a subscription curbside service with more than 25 percent of the population, then where reserved with “[replace with explanation of the demonstration of achieving Goal 1]”, explain how the SWMD determined the creditable population.

b. Drop-Off Recycling Locations

There are two methodologies for assigning population credits to drop-off recycling locations. These methodologies are as follows:

- Default population credits;
- Weight of material collected.

Appendix J Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1

The SWMD does not have to use the same methodology to assign population credits to all drop-offs. Choose which methodology is the most appropriate for a particular drop-off.

Default Population Credits:

Using default population credits is the simplest and the most practical method for most drop-offs. For many drop-offs, the default credits generally provide the most generous population credits.

There are four potential types of drop-offs (see the definition of drop-off recycling in the **Glossary**), and each is assigned a default population credit. The four drop-off types and associated credits are shown in Reference Table A below:

Reference Table A: Default Drop-off Population Credits

Type of Drop-off*	Population Credit
Full-Time Urban	5,000
Part-Time, Urban	2,500
Full-Time Rural	2,500
Part-Time, Rural	2,500

*Defined in Appendix S

A SWMD can use an alternative method of assigning population credits to drop-off sites. Refer to these [instructions for assigning credits](#) using a weight of material methodology.

c. If the SWMD relies on a mixed **solid waste** materials recovery facility to demonstrate achieving Goal 1, then refer to these [instructions for assigning population credits to a Mixed Municipal Solid Waste Materials Recovery Facility \(“Dirty” MRF\)](#).

Step 3. Enter Reference Year Information in Table J-1

Go to tab J-1 in the workbook and enter the reference year information. After completing the reference year information, return to these instructions and follow Step 4 below.

Step 4. Demonstration Results

[NOTES: *The SWMD must demonstrate that it will achieve the following:*

- i. *The SWMD had adequate infrastructure in the reference year to provide at least 80 percent of the residential population within each county of the SWMD the opportunity to recycle.*

OR

ii. The SWMD will implement new and/or upgraded existing recycling infrastructure to provide at least 80 percent of the residential population within each county of the SWMD the opportunity to recycle.

If the SWMD cannot implement or upgrade identified recycling opportunities within the first year of the planning period, then provide compelling justification in the solid waste management plan for a longer implementation schedule. The SWMD must implement all necessary recycling infrastructure by the third year of the planning period.

AND

iii. The SWMD will have adequate infrastructure in all remaining years of the planning period to give at least 80 percent of the residential population in each county the opportunity to recycle]

A) If the SWMD met Goal 1 in the reference year: return to the workbook instructions for tab J-1 and follow the instructions for “A.” under the heading for “Entering Planning Period Information”.

After inserting Table J-1, explain, as necessary, the demonstration where reserved with “[replace with explanation of the demonstration of achieving Goal 1]”.

The SWMD will also demonstrate that it meets other requirements for achieving Goal 1. Go to sections C and D of this appendix for instructions on meeting the remaining requirements.

B) If the SWMD did not meet Goal 1 in the reference year:

i. If the current effective plan demonstrated that the SWMD would meet Goal 1, do all the following:

- a. Identify the reason for not meeting the goal as expected (i.e., due to infrastructure or a factor other than infrastructure):
 - **Infrastructure:** Compare the infrastructure that was available in the reference year with the infrastructure the SWMD anticipated would be in place for that year in the current plan. If there are differences between what was supposed to be available and what was available, then analyze and explain the differences. Things to consider include:
 - If existing opportunities were discontinued, then identify them and explain why.
 - If planned new or changes to existing opportunities were not implemented, then identify them and explain why.
 - **Population:** Compare projected population in the reference year with the population projected for that year. Did population grow faster than projected?

b. Determine what opportunities the SWMD will provide to allow it to achieve Goal 1. After making decisions, describe new and/or changes to existing recycling opportunities in Appendix I. When making decisions, things to consider include:

Appendix J Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1

- What will the SWMD do differently to ensure that it will achieve Goal 1 under the new plan?
 - Can the SWMD upgrade a drop-off that does not meet the minimum standards for a creditable drop-off location?
 - Can the SWMD increase the number of hours part-time, urban drop-off locations are available for use?
 - Can the SWMD work with a community to implement a new curbside recycling service or upgrade an existing subscription curbside service?
- c. Determine how long it will take the SWMD to achieve Goal 1.

ii. *If this is a first-time demonstration*, then follow the instructions in b and c above.

Where reserved with “[replace with explanation of the demonstration of achieving Goal 1]”, provide information to address/explain the requirements in B.

After determining how the SWMD will achieve Goal 1, return to the workbook instructions for tab J-1 and follow the instructions for “B” under the heading for “Entering Planning Period Information”.

After inserting Table J-1, where indicated, provide any additional information needed to explain the demonstration of achieving Goal 1.

The SWMD will also demonstrate that it meets other requirements for achieving Goal 1. Go to sections C and D of this appendix for instructions on achieving the remaining requirements.

C) SWMD determines that it will cease to meet Goal 1 during the planning period:

Determine which year in the planning period the percentage falls below 80 percent and identify how the SWMD will return to achieving Goal 1. Refer to the instructions under “B” above for direction regarding achieving Goal 1.

[NOTE: *Unless the SWMD has advance knowledge that a recycling opportunity will be discontinued or changed in a way that reduces the population credit, the only reason a solid waste management plan should project not meeting Goal 1 during the planning period is population growth.*]

After determining how the SWMD will return to achieving Goal 1, return to the workbook instructions for tab J-1 and follow the instructions for “C” under the heading for “Entering Planning Period Information”.

After inserting Table J-1, where reserved with “[replace with explanation of the demonstration of achieving Goal 1]” provide information to explain what caused the SWMD to cease meeting Goal 1, when the SWMD will return to achieving Goal 1, and the recycling opportunities the SWMD will implement to return to achieving Goal 1.

The SWMD must also demonstrate that it meets other requirements for achieving Goal 1. Go to sections C and D of this appendix for instructions on achieving the remaining requirements.

NOTE: If the SWMD is unable to demonstrate achieving Goal 1, review these instructions.

Instructions for Table J-2 – Population Credit for Drop-offs Evaluated Using the Weight of Material Collected Method

[NOTE: Complete this table only if the SWMD uses the “Weight of Material Collected” method to assign population credits to drop-offs.]

Where reserved with “[replace with explanation of Table J-2], indicate the year representing the data used. Explain the entries in Table J-2 as needed and the SWMD’s analysis of its drop-offs for purposes of assigning population credits using the weight of material collected.

B. Commercial Sector Opportunity to Recycle

Instructions for completing Table J-4 – Demonstration of Commercial Opportunity to Recycle

The SWMD must demonstrate that commercial and institutional generators in each county have adequate opportunities to recycle at least five of the materials listed in Reference Table A.

If the SWMD is unable to make a successful demonstration for the reference year, then explain how the SWMD will make necessary recycling opportunities available.

Qualifying recycling opportunities for the commercial/institutional sector include:

- A recycling service provider/hauler that offers collection services to commercial/institutional generators throughout the county.
[Note: to qualify, the hauler must operate in the county].
- Drop-off locations within the county (if same as drop-offs that serve the residential sector, then the SWMD must demonstrate that it provides/will provide outreach to commercial/institutional generators about the availability of drop-offs).
- Buyback operations/scrap yards located within the county.
- Material recovery facility recovering recyclables from mixed waste (as long as commercial waste is processed at the facility).

Where reserved with “[replace with explanation of the demonstration of achieving the commercial sector component of Goal 1]”, supplement the information in Table J-4 as needed.

C. Demonstration of Other Requirements for Achieving Goal 1

Instructions for demonstrating other requirements for achieving Goal 1

1. Residential/Commercial Waste Reduction and Recycling Rate – A SWMD that opts to achieve Goal 1 must demonstrate having achieved a 25 percent residential/ commercial waste reduction and recycling rate in the reference year or achieving annual increases during the planning period.

Under the heading “Residential/Commercial Waste Reduction and Recycling Rate”, briefly explain how the SWMD will meet this component of Goal 1.

2. Encouraging Participation - Demonstrate that the SWMD will encourage residents and commercial generators to participate in available recycling infrastructure. This can be accomplished through outreach and education programs and through incentive programs. Provide text under the heading “3. Encouraging Participation” to explain how the SWMD will meet this requirement. The explanation can refer to outreach/education programs and incentive programs that are described in Appendices I and L.

Appendix K Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2

Goal 2: Waste Reduction and Recycling Rates

The SWMD shall reduce and recycle at least 25% percent of the solid waste generated by the residential/commercial sector.

Purpose of Appendix K

Use Appendix K to demonstrate the SWMD's progress toward achieving the residential/commercial reduction and recycling rate established in Goal 2 of the 2020 State Solid Waste Management Plan. Each SWMD will complete this appendix regardless of whether the SWMD is pursuing Goal 1 or Goal 2.

A SWMD that opts to achieve Goal 2 in its plan will demonstrate that the SWMD achieved or will achieve the prescribed recycling rates.

Instructions for the demonstration of achieving Goal 2

1) All SWMDs will calculate recycling and reduction rates for residential/commercial waste.

The workbook automatically generates all tables needed for Appendix K.

SWMDS opting to achieve Goal 2 must demonstrate meeting:

- Either 2a **OR** 2b;
- **AND** 3
- **AND** 4

[NOTE: SWMDs opting to achieve Goal 1 must complete 5 **AND 6 under the heading for "Requirements for SWMDs opting to Achieve Goal 1" below.]**

Requirements for SWMDs Opting to Achieve Goal 2

2a) The SWMD must demonstrate having achieved the 25 percent residential/commercial waste reduction & recycling goal in the reference year.

OR

2b) The SWMD must demonstrate achieving the 25 percent residential/commercial waste reduction & recycling goal within the first three years of the planning period.

AND

Appendix K Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2

- 3) If the SWMD demonstrated achieving Goal 2 in its current approved but did not achieve the goal during the reference year used for the draft plan, then the SWMD must explain how it will overcome the factors that prevented the SWMD from achieving Goal 2. The SWMD will also explain what it will do differently to achieve the goal under the revised plan. The SWMD cannot rely on the same programs and activities to demonstrate achieving the goal a second time.

[NOTE: If one of the reasons for not achieving the goal is lack of data, then the SWMD must demonstrate how it will improve its data collection efforts during the planning period.]

AND

- 4) The plan must demonstrate that the SWMD will continue to meet or exceed the 25 percent residential/commercial waste reduction & recycling goal in all remaining years of the planning period.

[NOTE: If the SWMD determines that its rates will fall below 25 percent during the planning period, then the SWMD will develop new and/or expand existing programs to achieve greater diversion; describe those new and/or expanded programs in Appendix I; and develop projections in Appendix E and/or Appendix F.]

Once Table K-1 demonstrates that the SWMD will achieve Goal 2, insert the table where indicated.

After inserting Table K-1 where reserved with “[replace with text to explain the SWMD’s demonstration of achieving Goal 2]”, explain when/how the SWMD will achieve Goal 2. At a minimum, identify the programs and activities that will contribute the most to achieving Goal 2.

Requirements for SWMDs opting to Achieve Goal 1

- 5 Compare the SWMD’s waste reduction and recycling rate in the reference year with the rate projected for that year in the current approved plan. Explain any differences.
- 6 If the SWMD did not meet the recycling rate prescribed by Goal 2 in the reference year, it must establish a target rate to be achieved. This rate must be higher than the rate for the reference year. The SWMD must also demonstrate achieving annual increases in its waste reduction/recycling rate. These increases must correlate to what the SWMD will do to achieve the increase.

Once Table K-1 demonstrates that the SWMD will achieve the requirements described in 6 above, insert the table where indicated.

After inserting Table K-1, where reserved with “[replace with text to explain the SWMD’s progress toward achieving Goal 2]”, identify the SWMD’s targeted waste reduction and

Appendix K Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2

recycling rate and explain how the SWMD will achieve the target rate. At a minimum, identify the programs and activities that will contribute the most to achieving the targeted rate.

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

Goal 3: Waste Reduction and Recycling Rates

The SWMD shall provide the following required programs:

- *A website;*
- *A comprehensive resource guide;*
- *An inventory of available infrastructure; and*
- *A speaker or presenter.*

Goal 4: Outreach and Education – Outreach Plan and General Requirements

The SWMD shall provide education, outreach, marketing, and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods to target audiences using best practices.

A. Minimum Required Education Programs

Instructions for the Minimum Education Programs Required by Goal 3

In accordance with Goal 3 of the 2020 State Plan, each SWMD is required to provide four minimum education programs. Requirements for each of these programs are described below:

Website - Each SWMD shall create and maintain a website that provides at least basic information.

Where indicated with “[replace with description of the website]”, explain how the SWMD will advertise the availability of the website, who hosts the website, and who will maintain/make changes to the website (a SWMD employee, a consultant/contractor, another county employee, etc.).

Comprehensive Resource Guide –The guide is intended to be a comprehensive “go-to” reference for the SWMD to answer questions from residents and businesses regarding where to recycle materials. The resource guide is meant to be a compilation of reduction and recycling outlets for specific materials (e.g. clothing and other textiles, pallets, cardboard, compact fluorescent bulbs, home renovation items, household hazardous waste, electronic waste, etc.)

Where indicated with “[replace with description of the resource guide]”, explain how the SWMD makes the guide available and keeps the guide up to date.

Infrastructure Inventory – The SWMD shall maintain and make available up-to-date information about the solid waste recycling and management infrastructure in the counties that comprise the SWMD.

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

The infrastructure inventory should consist of at least the following:

- Solid Waste Management and Disposal Infrastructure, including:
 - Landfill facilities.
 - Transfer facilities.
 - Scrap tire facilities.
 - Incinerators/waste-to-energy facilities.

- Waste Reduction and Recycling infrastructure, including:
 - Curbside recycling services.
 - PAYT trash collection services.
 - Drop-off recycling locations (both privately and publicly owned/operated);
 - Composting facilities.
 - Yard waste collection programs.
 - Recycling centers.
 - Materials recovery facilities and other facilities for processing recyclable materials.

Where indicated with “[replace with description of the infrastructure inventory]”, provide enough information to describe the SWMD’s strategy for maintaining/updating the inventory and making the inventory available.

Speaker/Presenter – The SWMD shall either employ or have readily available someone who can function as a speaker or presenter when needed.

If the SWMD already has a speaker/presenter, then, where indicated with “[replace with description of the speaker/presenter]”, describe the speaker’s relationship to SWMD (a SWMD employee, by contract, through another agency [such as soil and water conservation, OSU extension, Keep Beautiful Program, etc.]), the duties of the speaker, etc.

If the SWMD does not have a speaker/presenter, explain how the SWMD will fulfill this requirement.

B. Outreach and Education – Outreach Plan and General Education Requirements

Description of Requirements for Outreach and Education

The outreach and marketing plan will be the SWMD’s comprehensive strategy for providing reduction, recycling, and reuse education, technical assistance, and outreach to all constituents. The outreach and marketing plan will include a strategy for evolving the SWMD’s education and outreach programs away from traditional awareness education towards changing peoples’ behaviors.

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

The outreach and marketing plan will describe the education and outreach programs the SWMD will provide. SWMDs will incorporate the principles of Goal 4 into either their existing programming or by developing new programs.

*[NOTE: One place to start is with programs that are awareness based. Also, identify programs the SWMD can easily modify to incorporate social marketing principles and tools, programs where modifications will result in big payoffs, and ways to make incremental changes to existing programs. See **Example B** for ideas for aligning an existing program with behavior change principles.]*

Components of the outreach and marketing plan

To have an effective outreach and marketing plan, the district should have clear goals with tailored strategies. There are three components that all SWMDs will incorporate into their outreach and marketing plans. These components are:

1. Each SWMD will address five target audiences.
2. Each SWMD will follow basic best practices when developing and selecting outreach programs.
3. Each SWMD will select an outreach priority and provide education and outreach programs to all appropriate audiences in the context of the priority using social marketing principles and tools. A social marketing strategy involves influencing behavior through customer engagement. There are several principals of social marketing to consider: place, price, promotion, segmentation, content, feedback and listening.

Each of the three components listed above is further explained below under a heading corresponding to the component.

Target Audiences

Each SWMD's outreach and marketing plan must address, at a minimum, five target audiences. As is shown, each target audience can be broken down into multiple segments. The SWMD may need to take differences among segments into account when developing programs for a target audience. The five audiences are as follows:

1. **Residents:** This target audience includes all people living in residential dwellings. Segments include:
 - single family homes; and,
 - multi-family facilities (i.e., condominiums, apartments, and mobile home parks).
2. **Schools:** This audience encompasses primary (K-12), secondary (colleges, universities), and vocational schools and includes the following segments:
 - students.
 - teachers/professors/instructors.
 - administrators (principals, board members, superintendents), and other support staff (e.g., librarians, office staff, etc.); and,

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- other staff (e.g., janitorial, cafeteria staff).
- 3. **Industries:** This target audience consists of businesses classified as manufacturing under the North American Industry Classification System (NAICS).
- 4. **Institutions and Commercial Businesses:** This target audience includes the following segments:
 - government offices.
 - non-profit organizations.
 - commercial businesses (retail and service).
 - hospitals.
 - churches.
 - non-residential quarters (e.g., campgrounds, nursing homes, prisons, etc.);
 - special event/sports venues (arenas, stadiums, concert halls, convention centers, fairgrounds, etc.).
 - transportation centers (such as airports).
 - amusement parks and other tourist attractions.
- 5. **Communities and Elected Officials:** This target audience includes the following segments:
 - policy makers.
 - elected officials, such as:
 - county commissioners.
 - city representatives, including the mayor and city council members.
 - township trustees.
 - community leaders.
 - chambers of commerce
 - community groups such as homeowners' associations, citizen groups, grass-roots organizations, etc.

Supplemental instructions regarding target audiences

Best Practices

When selecting programs and strategies to address each audience, the SWMD will adhere to the following best practices:

1. **Be familiar with the solid waste management infrastructure.**

Understanding the available reduction and recycling infrastructure is crucial to understanding how education, outreach, and technical assistance can be the most effective. The SWMD should have compiled much of this inventory when completing Appendix B and achieving Goal 3 above.

2. **Provide outreach within the context of the infrastructure.**

Effective outreach aligns education, outreach, and technical assistance with the available recycling infrastructure. People can't recycle if they don't have access to recycling

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

infrastructure. Furthermore, educating people about the need to recycle without first providing them with a way to recycle is unproductive.

If there is adequate recycling infrastructure in place, then the SWMD will focus its efforts on getting people to use that infrastructure. If there isn't adequate infrastructure, then the SWMD will focus its efforts on establishing that infrastructure.

[**NOTE:** See [Example A](#) in the supplemental instructions for an example of providing outreach within the context of the infrastructure.]

3. **Develop and implement outreach effectively.**

The SWMD will follow the five best practice principles described below when developing the outreach and marketing plan. Following these principles will increase the likelihood that the SWMD has outreach, education, and technical assistance programs that result in more material being recovered and recycled.

- a. *Understanding the different needs of different audiences.* The five target audiences differ from one another in terms of why they do or don't recycle and what they want and need to recycle. Key factors to understanding different audiences include:
 - Why members of an audience do/do not engage in the desired behavior (often differences between recyclers and non-recyclers are key to understanding how to encourage more people to recycle);
 - What barriers, both perceived and real, keep members of the target audience from engaging in the desired behavior;
 - What do members of the target audience want and/or need to engage in the desired behavior (i.e. benefits and incentives); and,
 - What the best way is to reach members of the target audience (i.e. how/where do they obtain information, how to get their attention).
- b. *Focusing on changing behavior not just creating awareness.* Research shows that simple awareness is not effective for getting people to change their behavior. Thus, traditional information campaigns that increase the public's knowledge of recycling do not necessarily result in more people recycling. People may know that they should recycle but don't follow through or in some cases don't have access to recycling programs.

Campaigns that market desired behaviors to specific target audiences have been proven to change behavior. As was explained above, to change behavior, it is crucial to provide education and outreach based on available infrastructure, understand why people aren't doing a desired behavior, and offer them something they want in exchange for doing the behavior.

- c. *Having measurable outcomes to achieve.* It is not possible to determine whether a program is successful if the results cannot be measured and compared against pre-program conditions. Ohio EPA encourages SWMDs to follow SMART principles

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

(Specific, Measurable, Achievable, Relevant, and Time-bound) to define success factors that can be measured.

Although the specific measurements will depend upon the type of program selected and the behavior being affected, the following is a list of common measurements:

Examples of measurable outcomes are:

- Number of communities that establish new recycling programs.
- Number of new customers that sign up for a curbside recycling program.
- Number of customers that set-out containers for curbside recycling.
- Number of residents that use a drop-off location.
- Increase in the number of times a drop-off bin is emptied.
- Number of residents that use a special collection event.
- Number of schools that establish new in-school recycling programs.
- Increase in material collected for recycling.
- Decrease in waste disposed.
- Number of organizations requesting recycling containers for special events.
- Increase in number of times a company's recycling container is pulled by the waste hauler/decrease in the number of times a company's trash container is pulled.
- Decrease in contamination.

- d. *Using a consistently and frequently repeated message.* People may be willing to and want to recycle but are inconsistent about it or forget. Thus, even though people may recycle immediately following a campaign, they may quit if they are not continuously reminded. Repeating a message utilizing a variety of methods, formats and platforms assists the remembrance and importance of your message. It is crucial that the target audience be continuously reminded, or prompted, to recycle.

The message conveyed and how it is conveyed must be appropriate for the intended audience. Further, the meaning of the message and the information conveyed must be consistent each time the message is repeated. Finally, a marketing campaign that uses different media must have a unified, consistent theme among those media.

- e. *Evaluating the results to determine if the program is achieving the desired outcome.* This involves measuring the results of a marketing campaign against the measurable outcomes/factors of success that are defined for the program. This will require the SWMD to have both pre- and post-program data.

Instructions for the Outreach and Marketing Plan and describing outreach, education, awareness, and technical assistance programs

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

The outreach and marketing plan must demonstrate that the SWMD will use the best practices described in Section B when providing education and outreach. Thus, the plan needs to do all the following:

- Demonstrate that the SWMD will address all the five target audiences.
- Explain how the SWMD will align its outreach and education programs with recycling opportunities (both existing and needed).
- Explain how the SWMD will incorporate principles and tools for changing behavior into the outreach and marketing plan.

Where indicated with [replace with an explanation of incorporating best practices], explain how the SWMD incorporated the best practices prescribed by the 2020 State Plan in the outreach and marketing plan.

Describe the programs the SWMD will provide to each of the five target audiences under the heading ‘Outreach and Marketing Plan’. Follow the **instructions for program descriptions** in Section A of Appendix I when writing descriptions for the outreach and marketing plan.

If a program addresses multiple target audiences, then describe the program under the heading for the first target audience and refer to the program under the headings for subsequent target audiences.

Instructions for the Outreach Priority

In addition to the outreach and marketing plan, the SWMD will select an outreach priority and develop a strategy to provide outreach, education, and technical assistance to all appropriate audiences. The strategy will be designed to change the behaviors of the target audiences to accomplish the priority. The SWMD may incorporate social marketing principles and tools into its strategy, but the focus is on strategies for implementing behavior change.

The outreach priority can be a new program (such as establishing a bar and restaurant glass recycling program, working with a community to implement new curbside recycling service, or working with grocery stores and restaurants on donating usable food), an improvement that is needed for an existing program (such as improving participation in a curbside recycling service), a goal that the SWMD wants to achieve (such as increasing yard waste recovery), or some other priority that the SWMD identifies (such as reducing contamination in drop-offs).

[NOTE: See *Example C* on Attachment L.1 for examples of outreach priorities.]

The solid waste management plan must establish and describe the SWMD’s strategy for implementing the outreach priority. To this end, the outreach and marketing plan needs to identify:

- the behavior being targeted and the purpose/goal of the outreach priority.

Appendix L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

- the target audience(s);
[NOTE: need to consider if different audiences need to be targeted at different times. For example, political leaders might be the target audience when trying to establish a new curbside recycling service, and homeowners would be the target audience once the service is available.]
- the behavior change tools that will be used
- the steps involved in developing and implementing the strategy.
- milestones for completing the steps.
- who will implement the strategy.
- a measurable outcome for evaluating behavior change (i.e., a measure of success such as an x% increase in material recovered, an x% decrease in contamination, or an x% increase in participation).
- The tool for measuring the outcome.

Where indicated with “[replace with explanation of the outreach priority]”, describe what the SWMD hopes to accomplish through its priority, identify the target audiences the SWMD will address, and explain the strategy for addressing the priority.

Appendix M Waste Management Capacity Analysis

Purpose of Appendix M

This appendix will provide the SWMD's strategy for ensuring that it has access to solid waste management facilities. While the primary focus of this strategy is ensuring access to adequate disposal capacity, the SWMD will also ensure that it has access to processing capacity for recyclables and, if needed, access to transfer facilities.

Ohio has at least 30 years of remaining disposal capacity at municipal solid waste landfills (based on current waste acceptance rates). Consequently, there is more than adequate available capacity at landfills to accept all waste generated in the state. However, Ohio law requires the solid waste management plan to demonstrate that the SWMD will have access to adequate disposal capacity during the planning period. Therefore, the SWMD needs to provide a capacity demonstration in the solid waste management plan.

For most SWMDs, completing the demonstration of access to disposal capacity will be simple. It involves determining if the landfills that historically took waste from the SWMD can continue to take waste during the planning period.

Ohio EPA and the SWMD will collaborate to complete the demonstration of access to solid waste landfills and transfer facilities. In situations where it isn't clear if a SWMD will have access to adequate disposal capacity, the SWMD will determine what its role will be in planning for a potential capacity shortage.

A. Access to Publicly Available Landfill Facilities

Instructions for demonstrating access to publicly available landfills

Analyze remaining operating life

[NOTE: Most SWMDs will need to complete only step 1.]

Table M-1 (lists the landfills where waste from the SWMD was disposed in the reference year and the two prior years. The landfills listed include those that accepted direct-haul waste and those that accepted transferred waste. Table M-1 also shows the location and years of remaining life for each landfill.

In accordance with Ohio Revised Code 3734.53(A)(13), the plan must provide a schedule for closing and expanding existing solid waste facilities and establishing new solid waste facilities. The schedule must include the approximate dates for filing applications for appropriate permits to install or modify those facilities under section 3734.05 of the Revised Code.

For each facility listed, in the column labeled "Status", enter no change, planned expansion, pending expansion, or closing.

In the column labeled “Applicable Dates”, identify dates if a facility’s status is identified as planned expansion, pending expansion, or closing. Relevant dates include:

- estimated date for submitting permit
- date permit submitted
- date closure initiated
- estimated date for initiating closure
- estimated date for completing closure.

[NOTE: *The years of remaining capacity are based on the most recent annual report for the facility. Thus, if the owner/operator of a facility obtained a permit to expand the facility after the reference year, then the additional permitted capacity is included in the years of remaining life.]*

Evaluate the remaining life of the landfills that accepted the largest quantities of waste:

- Adequate Capacity - The SWMD can assume it has adequate access to capacity if:
 - The landfills that combined took 75% of the SWMD’s waste have adequate capacity to continue taking waste throughout the first eight years of the planning period [For some SWMDs, this could be one landfill. For others, it could be multiple landfills.] and.
 - There are no known issues with the landfills that could cause one or more to cease accepting waste, due to something like on-going, unresolved violations or notice that Ohio EPA is proposing to deny the operating license for the facility.

If the District has access to adequate disposal capacity, insert Table M-1 into the working version of the plan where indicated. Where reserved with “[replace with explanation regarding remaining capacity]”, explain that existing landfills have adequate capacity.

If step 1 results in an inadequate capacity demonstration, then refer to these [instructions for completing the demonstration](#).

Appendix N Evaluating Greenhouse Gas Emissions

The Waste Reduction Model (WARM)

WARM is a tool that US EPA developed to quantify the effects of waste management decisions on greenhouse gas emissions. The model demonstrates the benefits of alternative management technologies over traditional management methods. U. S. EPA made the most recent version of WARM (version 16) available in December 2023. A SWMD can use a different but comparable modelling program to calculate greenhouse gas emission reductions, provided the model accounts for waste management and recycling activities.

WARM is intended to compare municipal solid waste management scenarios. Therefore, use data for only the residential/commercial sector.

Each SWMD will run WARM twice and include the results in the solid waste management plan:

- For the first run, enter all quantities recycled in the reference year in the landfill column (for the baseline year) and for the alternative scenario, enter the quantities recycled in the tons recycled column.
- For the second run, enter the quantities of residential/commercial material recycled in the reference year in the tons recycled column (for the baseline scenario), and then enter the quantities projected to be recycled in the fifth year of the planning period (for plans on a five-year update schedule) or third year (for plans on a 10-year update schedule) in the alternative scenario column.

Include printouts of the results for both runs in the solid waste management plan.

[NOTE: WARM recognizes the material types in the table below. Not all of these are materials that SWMDs can credit to their waste reduction and recycling rates. In general, SWMDs cannot credit materials that are highlighted in grey (construction and demolition debris, excluded wastes, or waste that was never traditionally disposed of in landfills).

Of the list of materials below, the following should not be credited toward material recycled (those highlighted in grey in the table below):

- C&DD which includes asphalt concrete; asphalt shingles; clay bricks; copper wire; dimensional lumber; drywall; fiberglass insulation; vinyl flooring, wood flooring, and metals.
- Fly ash (from coal burning operations) - this is an excluded waste.
- Agricultural wastes, such as grains, which have traditionally never been disposed in landfills.]

Material Types Recognized by WARM		
Aluminum Cans	Food Waste	Mixed Plastics
Aluminum Ingot	Food Waste (non-meat)	Mixed Recyclables
Asphalt Concrete	Food Waste (meat only)	Newspaper
Asphalt Shingles	Fruits and Vegetables	Office Paper

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Beef	Glass	PET (polyethylene terephthalate)
Branches	Grains	Phonebooks
Bread	Grass	PLA (polylactic acid)
Carpet	Hard Copy Devices	Portable Electronic Devices
Clay Bricks	HDPE (high-density polyethylene)	Poultry
Concrete	LDPE (low-density polyethylene)	PP (polypropylene)
Copper Wire	Leaves	PS (polystyrene)
Corrugated Cardboard	LLDPE (linear low-density polyethylene)	PVC (polyvinyl chloride)
Cathode Ray Tube Displays (CRTs)	Magazines/Third-Class Mail	Steel Cans
Dairy Products	Medium Density Fiberboard	Structural Steel
Desktop Central Processing Units (CPUs)	Mixed Electronics	Textbooks
Dimensional Lumber	Mixed Metals	Tires
Drywall	Mixed MSW	Vinyl Flooring
Electronic Peripherals	Mixed Organics	Wood Flooring
Fiberglass Insulation	Mixed Paper (general)	Yard Trimmings
Flat Panel Displays	Mixed Paper (primarily from offices)	
Fly Ash	Mixed Paper (primarily residential)	

To run WARM, go to <http://epa.gov/epawaste/consERVE/tools/warm/index.html>. Instructions for running WARM and links to the calculator are on that website.

The intention of WARM is to illustrate the emission reductions that result from recycling and waste reduction activities. It is not necessary to include quantities of waste disposed in landfills in the WARM model's worksheet. Include only those quantities associated with recycling and waste reduction activities.

There are several material categories SWMDs report in Ohio's annual district report that are not categories in the current version of the WARM model. Ohio EPA has the following recommendations for accounting for (or omitting) some of those materials:

ADR Material	WARM Category
Dry Cell Batteries	Mixed Metals
Lead-Acid Batteries	Mixed Metals
Household Hazardous Waste	Omit
Appliances/White Goods	Mixed Meals

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Electronics	Personal Computers
Ash	Omit
Textiles	Carpet
Commingled Recyclables	Mixed Recyclables
Plastics	Mixed Plastics
Wood	Branches
Scrap Tires	Tires
All Other Paper	Mixed Paper (general)
Yard Waste	Yard Trimmings

Ohio EPA recommends that SWMDs use the default settings in the WARM model in order to provide equivocal comparisons between greenhouse gas emission reductions. These default settings include:

- The National Average for Step 3 - Landfill Characteristics; and
- The Default Distance in Step - Waste Transport Characteristics.

SWMDs should choose “Units of Energy (million BTU)” as the Results Output in Step 5. This will allow for the additional comparisons showing the equivalent household energy savings, barrels of oil and gallons of gasoline saved.

Appendix O Financial Plan

General instructions for completing Appendix O

Complete Section A (Funding Mechanisms and Revenue Generated) and Section B (Costs of Implementing Plan) and all associated tables as appropriate. If a particular table is not applicable, then enter “n/a” in the first row of the table.

Complete Section C (Alternative Budget) only if the SWMD needs an alternative budget to address uncertainties regarding the SWMD’s future financial position. The SWMD needs to provide an alternative budget if there are concerns about the stability of the SWMD’s funding mechanism(s), how much revenue a funding mechanism will generate, or how much programs will cost.

Completing worksheets for Appendix O

Enter reference year and historical data in all worksheets. Historical financial figures used in the plan should match figures the SWMD previously reported to Ohio EPA in quarterly fee reports. If historical figures used in the solid waste management plan are different than those previously reported, then provide an explanation for discrepancies in Appendix A.

Projecting revenue and expenses

The solid waste management plan will present projections for the years between the reference year and the first year of the planning period and all years in the planning period. For the planning period, project revenues and expenses for at least the first three or five years of the planning period. Beginning in the fourth or sixth year, the SWMD can hold revenues and expenses constant.

A. *Funding Mechanisms and Revenue Generated*

New, Amended, or Rescinded fees -

- If the policy committee is ratifying a new, a change to an existing, or a rescission of a disposal or generation fee with the plan, then the plan must provide the amount of the resulting fee and make it clear that new, change, or rescission is being ratified with the plan.
- If the policy committee intends to ratify a new, a change to an existing or a rescission of a disposal or generation fee separately from the plan, then identify the amount of the resulting fee, make it clear that the new, change, or rescission is being ratified separate from the plan, and provide a schedule for ratifying the change collecting the new fee schedule.

Supporting Text - Provide supporting text for every table as appropriate. The text should fully explain and justify the factors considered when developing projections and any assumptions used to prepare projections. Also, identify sources of information and provide sample calculations when appropriate.

Evaluating Historical Revenue

Enter revenue data for the reference year and four prior years into tables O-1 through O-5.

The worksheet for each revenue source automatically calculates:

- annual change in revenue received.
- annual percentage change in revenue received.
- average percentage change in revenue received.

Use the statistics to evaluate the historical money received. The SWMD should consider the following when evaluating the data:

- Did the revenue earned or the annual percentage change in amount earned follow a trend (such as a consistent increase or decrease)?
- Did revenue fluctuate but amounts earned were similar (i.e., there are no obvious outliers)?
- Did revenue fluctuate inconsistently from one year to the next?
- Is there a correlation between changes in waste flows and revenue earned?
- Is there an outlier? If a year(s) is an outlier, then consider eliminating data for that year(s) to avoid skewing the trend and the evaluation statistics. Is there an obvious change in the trend because of a change to the revenue source? Examples include changing the per ton amount of a disposal or generation fee, increasing/decreasing the amount of a contract fee, and increasing/decreasing the amount of a rate and charge.

After finishing the analysis of historical data and making any needed adjustments to the data on the appropriate worksheet, where indicated with “[replace with explanation of the historical analysis]” for each revenue source, explain the analysis of the historical revenue and conclusions drawn from the analysis.

Projecting Revenue

To project revenue, the SWMD should have:

- Reviewed and analyzed the revenue generated by each source over the past five years (the reference year and four years prior) to identify any trends, inconsistencies, anomalies, and other factors that the SWMD needs to consider when developing projections.
- Determined whether any changes to a fee schedule or other funding mechanisms occurred after the reference year or will occur during the planning period.
- Evaluated any future conditions that could affect waste receipts. (Examples include landfills closing/opening, new facility designations (either by the SWMD or by another solid waste management district), potential waste flow changes due to contracting, etc.).

Project revenue to be earned during the planning period for each revenue source using the methodology that makes the most sense for that source. After analyzing historical revenue for a funding source and selecting a methodology for projecting future revenue, go to workbook instructions and complete tabs O-1 through O-5 as appropriate.

Additional instructions for projecting revenue

Instructions for Table O-1 – Disposal Fee Schedule and Revenue

A SWMD that collects or intends to collect disposal fees in accordance with ORC Section 3734.57(B) will use Table O-1 to show past and project future revenue from the disposal fees.

After inserting Table O-1, where indicated with “[replace with text to support Table O-1]”, explain:

- the factors considered and method used to project revenue;
- whether the disposal fee schedule was changed after the reference year and/or will change during the planning period; and
- any other information needed to support Table O-1.

If the SWMD will change the fee schedule during the planning period, then clearly state whether the change will be ratified with or separate from the plan.

Complete tab O-1.

Instructions for Table O-2 - Generation Fee Schedule and Revenue

A SWMD that collects or intends to collect generation fees in accordance with ORC Section 3734.573 will complete Table O-2.

After inserting Table O-2, where indicated with “[replace with text to support Table O-2]”, explain:

- the factors considered and method used to project revenue;
- whether the generation fee schedule was changed after the reference year and/or will change during the planning period; and
- any other information necessary to support Table O-2.

If the SWMD will change the fee schedule during the planning period, then clearly state whether the change will be ratified with or separate from the plan.

Complete tab O-2.

Instructions for Table O-3 – Designation Fee Schedule and Revenue

If the SWMD collects or intends to collect revenue via contracts associated with designation agreements, then complete Table O-3.

After inserting Table O-3, where indicated with “[replace with text to support in Table O-3]”, explain:

- the factors considered and method used to project revenue;

- whether the designation fee schedule was changed after the reference year and /or will change during the planning period; and
- any other information necessary to support Table O-3.

If the SWMD will change the fee schedule during the planning period, then provide a schedule for making the change(s).

Complete tab O-3.

Instructions for Table O-4 – Debt/Loans

Use Table O-4 to account for outstanding debt or new debt to finance implementing the solid waste management plan.

After inserting Table O-4, where indicated with “[replace with text to support Table O-4]” provide any information necessary to explain Table O-4.

[NOTE: SWMDs intending to incur debt should review the Ohio Attorney General's Opinion on sources of financing that SWMDs can use. The AGO issued that opinion (2015-019) on June 5, 2015. The opinion is posted to the AGO's website at <http://www.ohioattorneygeneral.gov/getattachment/974eb99f-f714-45a7-b4cb-9fa4c35ef9e9/2015-019.aspx>].

Complete tab O-4.

Instructions for Table O-5 – Other Sources of Revenue

If the SWMD received or intends to receive revenue from a source(s) other than disposal fees, generation fees, designation agreements, or debt, then complete Table O-5.

Common types of other revenue sources include:

- revenue from the sale of recyclables/profit sharing.
- user fees.
- grants – If the SWMD received grants in the reference year or the four prior years, then enter the amounts of those grants. In general, the SWMD should not project receiving revenue from a grant as grants are not guaranteed sources of funding (e.g., Ohio EPA community grants). The SWMD should project revenue from grants only if it has advance knowledge that it will receive a grant.
- rates and charges.
- negotiated contractual payments not made via designation agreements.
- contributions from county general revenue funds.
- revenue from facility tipping fees (such as from a county-owned transfer or landfill facility).

After inserting Table O-5, where indicated with “[replace with text to support Table O-5]”, explain:

- what the revenue source is, the amount of the source, and how revenue is collected (if not obvious). Examples include:
 - For user fees, explain what the user fees are charged for and how much they are.
 - For rates and charges, explain whether they are collected through an improved parcel assessment or a utility bill, the schedule/amounts for the rates and charges, who administers billing for and collecting the rates and charges, and any other necessary information.
 - For a negotiated contract, explain the terms of the contract and the revenue that is earned.
- the factors considered and method used to project revenue for each source.
- If the SWMD will make changes to any of the other sources of funding presented in Table O-5 (either implement new or change existing), then describe and provide a schedule for making those changes.
- Any other information necessary to support Table O-5.

Complete tab O-5.

Instructions for Table O-6 – Total Revenue

[Note: Table O-6 is generated automatically.]

Table O-6 summarizes the revenue sources from tables O-1, O-2, O-3, and O-5 Table O-6 also automatically calculates annual total revenue from all funding mechanisms.

After inserting Table O-6, where indicated with “[replace with text to support Table O-6]”, provide any additional information necessary to support Table O-6.

Complete tab O-6.

B. Cost of Implementing Plan

Instructions for Table O-7 – Expenses

The expense line items in table O-7 are the same as those that the SWMDs will use for quarterly fee reports.

Evaluating historical expenses

After entering expense data for the reference year and four prior years into tab O-7, then evaluate that data.

After finishing the analysis of historical data and making any needed adjustments to the data on the appropriate worksheet, where indicated with “[replace with explanation of the historical analysis]” provide relevant explanations of the analysis of historical expenses and conclusions drawn from the analysis.

Projecting Expenses

Use a combination of historical data, anticipated changes to programs, and inflation to project expenditures for the planning period.

To project expenses in this appendix, do the following first:

- Review and analyze the SWMD’s expenses from the past five years (the reference year and four years prior) to identify any trends, inconsistencies, anomalies, and other factors needed to project expenses.
- Evaluate any future conditions that could affect expenses (new contracts for services, inflation, fuel costs, etc.).
- Make decisions about the programs that the SWMD will fund during the planning period. The SWMD will make decisions and document them in the process of completing Appendix I. After it has completed Appendix I, the SWMD will project expenses.

Inflation - Index expenses for inflation: Use inflation rates from an established source, such as the Federal Bureau of Labor Statistics (<http://www.bls.gov/>). Cite the source of the inflation rate(s) used.

Suggestions for including inflation are:

- Use the most current inflation rate available at the time the plan was written.
- Use an average inflation rate based on several years if the inflation rate has fluctuated over the past several years,

Complete Table O-7 for the reference year, the four prior years, and all years in the planning period.

[NOTE: Tab O-7 in the workbook does not calculate statistics for analyzing historical expenses. Refer to the instructions for analyzing historical revenues and apply those recommendations to analyzing historical expenses.]

After inserting Table O-7, under the heading *Explanations for Expenses*, explain each expense that is allocated to a line item in Table O-7. The working version has headings corresponding to each line item from Table O-7.

Examples of things these explanations should address include:

- What money allocated to a line item is used to pay for.
- How inflation was accounted for.
- How projections were calculated. If the expenses for a particular line item change regularly over time, then explain the basis for the change (e.g., inflation, regular salary increases, etc.).
- One-time expenses that cause anomalies in the projected expenses for a line item (e.g., buying a new truck to service a curbside recycling program).
- Projected expenses that are different from historical expenses.
- Decreases in expenses due to discontinuing a program or increases due to starting a new program.
- Intermittent expenses (such as paying for a consultant to prepare solid waste management plan updates).
- If the costs for a program are included in the costs for another line item, then explain that under the appropriate heading(s).
- Line items with costs that are included in expenses entered into another line item.
- Expenses listed as “other”. Make sure to provide the explanation for an “other” expense for the line number associated with the “other” row.

Supplemental instructions for describing expenses

Instructions for Table O-8 – Budget Summary

[*Note: Table O-8 is generated automatically.*]

This table presents the annual surplus or deficit and the annual carryover balance for each year in the planning period.

After inserting Table O-8, where indicated with “[replace with text to support Table O-8]”, provide any information necessary to explain the amounts in Table O-8.

C. *Alternative Budget*

[**NOTE:** *The SWMD will complete this section only if the SWMD needs an alternative budget.*]

Provide for an alternative budget under any of the following circumstances:

- There is uncertainty about the SWMD’s ability to collect revenue from a primary funding source identified in part A of this appendix or collect the projected amount of revenue.
- There is uncertainty about how much big-ticket line items will cost in the future.

- There is the potential for the SWMD to receive more money than projected. The SWMD wants to have flexibility to implement additional programs if it receives the money.

Instructions for Alternative Budget

D. Major Facility Project

Instructions for a budget for a major facility project

A SWMD that intends to construct and operate a new solid waste management facility or renovate an existing solid waste facility will provide a budget for the facility. For the purposes of this section, a solid waste management facility means a facility the SWMD owns and operates or will own and operate to manage solid waste and/or recyclable materials. Examples of these facilities are:

- municipal solid waste landfill or solid waste transfer station.
- yard waste composting facility.
- alternative organics management facility (such as an in-vessel composter)
- material recovery facility.
- recycling center.
- permanent household hazardous waste collection facility.
- center for hard to recycle materials (CHaRM).
- reuse center

Instructions for a major facility project a

E. Affected Community Compensation Agreement

Instructions for Affected Community Compensation Agreement

Ohio Revised Code 3734.53(A)(10) requires a solid waste management plan to provide an analysis of expenses that the district is liable for under [Ohio Revised Code Section 3734.35](#).

If the SWMD has an affected community compensation agreement, then review [these supplemental instructions](#) for accounting for it in the plan.

Appendix P Designation

A. Statement Authorizing/Precluding Designation

Instructions for Statement Authorizing/Precluding the Board of Directors to/from Establishing Facility Designations

ORC Section 3734.53(E)(1) requires a solid waste management plan to provide a clear statement as to whether the board of county commissioners or directors is authorized to or precluded from establishing facility designations under ORC Section 343.01.

If the policy committee decides to authorize the board of county commissioners or directors to establish facility designations, then remove the placeholder “[replace with designation statement]” and provide the following statement:

"The Board of Directors of the _____ Solid Waste Management District is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency."

For an authority, remove the placeholder “[replace with designation statement]” and provide the following statement:

"The Board of Trustees of the _____ Regional Solid Waste Authority is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency."

If the policy committee decides to preclude the board of county commissioners or directors from establishing facility designations, then remove the placeholder “[replace with designation statement]” and provide the following statement:

"The Board of Directors of the _____ Solid Waste Management District is hereby precluded from establishing facility designations in accordance with Section 343.014 of the Ohio Revised Code."

For an authority, remove the placeholder “[replace with designation statement]” and provide the following statement:

"The Board of Trustees of the _____ Regional Solid Waste Authority is hereby precluded from establishing facility designations in accordance with Section 343.014 of the Ohio Revised Code."

Where indicated with “[replace with supplemental text]”, provide text to explain the policy committee’s/board of trustees’ reason for authorizing the board to or precluding the board from establishing facility designations.

B. Designated Facilities

Instructions for Table P-1 – Designated Facilities

Use Table P-1 to identify designated facilities. Complete P-1 only if the SWMD has facilities that are currently designated.

After inserting Table P-1, where indicated with “[replace with explanation of designated facilities]” provide any information needed to support Table P-1.

If the SWMD hasn’t established facility designations, then state that in the working version.

Complete tab P-1.

Appendix Q District Rules

A. Existing Rules

Instructions for Existing Rules

Where indicated below, identify each provision in ORC Section 343.01(G) for which the SWMD is currently authorized to adopt rules

- Prohibiting or limiting the receipt of waste generated outside the SWMD.
- Governing the maintenance, protection, and use of solid waste collection, transfer, disposal, recycling, or resource recovery facilities.
- Governing a program to inspect out-of-state waste.
- Exempting an owner or operator of a solid waste facility from compliance with local zoning requirements.

After the heading for “Existing Rules”, include the actual language of each SWMD rule that is currently in effect and the date(s) when the rules were adopted.

B. Proposed Rules

Instructions for Proposed Rules

After the heading “Proposed Rules”, list all areas of ORC Section 3734.53(C) that the policy committee authorizes the SWMD to adopt rules for during the planning period covered by this solid waste management plan. Also provide a timeline for adopting those rules.

In addition, include the language of any proposed rules that will be adopted after Ohio EPA approves this solid waste management plan.

Appendix R Survey Forms and Survey Process

Insert blank copies of the SWMD's survey forms and a description of the SWMD's survey process.

Appendix S Siting Strategy

If the SWMD has a siting strategy, then provide a detailed description of it.

Appendix T Miscellaneous Plan Documents

During the process of preparing a plan, the policy committee signs three official documents certifying the plan. These documents are as follows:

1. *Certification Statement for the Draft Solid Waste Management Plan* –The Policy committee signs this statement to certify that the information presented in the draft solid waste management plan submitted to Ohio EPA is accurate and complies with the Format 4.2.
2. *Resolution Adopting the Solid Waste Management Plan* (adopted prior to distributing the draft plan for ratification) – The policy committee signs this resolution to accomplish two purposes:
 - Adopt the draft solid waste management plan
 - Certify that the information in the solid waste management plan is accurate and complies with the Format 4.2.

The policy committee signs this resolution after considering comments received during the public hearing/public comment period and prior to submitting the solid waste management plan to political jurisdictions for ratification. The policy committee should not make any changes to the solid waste management plan after signing the resolution.

3. *Resolution Certifying Ratification of the Solid Waste Management Plan* – The policy committee signs this resolution to certify that the solid waste management plan was ratified properly by the political jurisdictions within the solid waste management district. The policy committee signs this resolution after the solid waste management plan is ratified and before submitting the ratified plan to Ohio EPA)

The table below lists the three documents, describes when each document is executed, and indicates which version of the plan, the draft or the ratified version, the SWMD includes each document:

Document	When Executed	Include in Draft Plan	Include in Ratified Plan
Certification Statement for the Draft Solid Waste Management Plan	Signed and dated prior to submitting the draft plan to Ohio EPA for review	Yes	Yes
Resolution Adopting the Solid Waste Management Plan	adopted prior to distributing the draft plan for ratification	No	Yes
Resolution Certifying Ratification of the Solid Waste Management Plan	adopted following the ratification period and before submitting the ratified plan to Ohio EPA	No	Yes

Include all documents in Appendix T.

Appendix T Miscellaneous Plan Documents

Templates for all three documents are available on the Supplemental Information tab on Ohio EPA's website at

<http://www.epa.ohio.gov/dmwm/Home/SWMgmtPlanning2/SWMPFormat.aspx>

Appendix U Ratification Results

Instructions for Table U-1 – Ratification Summary

The SWMD does not need to include copies of the resolutions political jurisdictions adopt either ratifying or declining to ratify the solid waste management plan. Instead, the SWMD will summarize the ratification results in this appendix using Table U-1.

[NOTE: *Ohio EPA recommends that the SWMD retain a copy of each resolution until the SWMD obtains approval of the next solid waste management plan update.*]

Go to the workbook and complete tab U-1.

Appendix V Inventory of Open Dumps and Other Disposal Facilities

In accordance with Ohio Revised Code 3734.53(A)(2) and (A)(6) provide an inventory of the following in the District:

- Solid waste open dumping sites, including scrap tires.
- Disposal facilities for fly ash and bottom ash, foundry sand, and slag.

Go to the working version and complete tables V-1 and V-2.

Appendix W District Map

In accordance with Ohio Revised Code 3734.53(A)(2) and (A)(6) provide a map that shows the locations of the following in the District:

- All existing facilities where solid wastes are being disposed of.
- All resource recovery facilities.
- All recycling activities within the district.
- Solid waste open dumping sites, including scrap tires.
- Disposal facilities for fly ash and bottom ash, foundry sand, and slag.

Reference Information

North American Industrial Classification System and Surveying Recommendations

The North American Industry Classification System (NAICS) classifies establishments to collect, analyze, and publish statistical data related to the business economy. It is designed to allow for a high level of comparability in business statistics among the North American countries.

NAICS was adopted in 1997 to replace the Standard Industrial Classification (SIC) system. One of the primary differences between the two systems is that SIC categorizes establishments based on the goods produced or services provided, while NAICS categorizes establishments based on production function and activities. Establishments typically have one NAICS code which is determined by the establishment's primary activity (generally the activity that generates the most revenue for the establishment). However, an establishment can have more than one NAICS code.

There is no central government agency that assigns, monitors, or approves NAICS codes for establishments. Various agencies assign NAICS codes to individual establishments for a variety of purposes using a variety of methods. More importantly, NAICS codes are typically self-assigned by the individual establishments. Therefore, there may be times when the SWMD and/or Ohio EPA will need to gather additional information about an establishment in order to properly characterize the recyclables generated by the establishment.

As mentioned earlier, NAICS was designed for use by North American countries. Based on information Ohio EPA found on the US Census Bureau's webpage, the United States uses 20 of the NAICS sectors. Of these 20 sectors, NAICS places all of the various types of manufacturing activities under sectors 31-33. Ohio EPA evaluated NAICS' assignment of the various activities as either manufacturing or non-manufacturing to try and recommend which sectors should be surveyed as commercial activity.

In general, the NAICS groupings for non-manufacturing and manufacturing align with Ohio's classifications of commercial and industrial, respectfully. However, the NAICS classification system was not designed to account for Ohio EPA's regulatory programs. As a result, Ohio EPA identified areas for which the criteria established under NAICS do not categorize activities as manufacturing or non-manufacturing the way Ohio's solid waste regulations and definitions would categorize those establishments. Consequently, Ohio EPA identified some activities as industrial that are not classified as manufacturing in NAICS and vice versa.

Ohio EPA spent time identifying activities where differences in criteria may be an issue. However, as mentioned earlier, situations may arise that will require Ohio EPA and the SWMD to determine the correct sector for a business independent of the NAICS assigned to the business.

The following are notable points to aid in understanding NAICS numbering:

- NAICS integers that have from two to five digits do not use zeroes (there are no NAICS codes for 20, 30, etc.). The only NAICS integers that use zeroes are those with six digits.
- As was mentioned earlier, NAICS was designed to standardize how establishments are classified by all of the North American countries. However, not all countries use all of the NAICS sectors, and some codes are country-specific. The United States uses 20 of the sectors.

Other countries may use some of the two-digit sector codes that the United States doesn't use, and some codes may serve as place holders for future work. Examples of codes other countries use include:

- NAICS 41 is Canada's wholesale trade code
- NAICS 43 is Mexico's wholesale trade code
- NAICS 91 is Canada's Public Administration code
- NAICS 93 is Mexico's Public Administration code

For more information about NAICS, visit the US Census Bureau's NAICS webpage at www.census.gov/eos/www/naics or contact the Bureau's help desk at 1.888.756.2427.

Table R-1 below presents the 20 NAICS sectors the United States currently uses and descriptions of the establishments that are characterized by those sectors.

Table R-1 NAICS Sectors and Descriptions

NAICS Sector Code	Description
11	Agriculture, Forestry, Fishing and Hunting
21	Mining, Quarrying, and Oil and Gas Extraction
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing
51	Information
52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services

55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)
92	Public Administration

For each of the 20 economic sectors, Ohio EPA has recommended whether the sector should be surveyed as commercial or as industrial for planning purposes. Table R-2 below identifies the NAICS sectors that are non-manufacturing classifications (i.e. commercial). Table R-3 identifies the NAICS sectors that are manufacturing classifications (i.e., industrial). Note that these are the classifications as defined under NAICS, not Ohio’s regulations. The tables indicate those sectors Ohio EPA does not recommend surveying.

While Ohio EPA has dedicated a lot of time to assigning the NAICS sectors to either the commercial or industrial sector for surveying purposes, these recommendations are not definitive. **Therefore, these recommendations are not intended to define the commercial and industrial sectors.**

Table R-2 NAICS Sectors Recommended to Survey for the Commercial Sector

NAICS Sector Code	Description of Economic Sector	Surveying Priority*	Comments
11	Agriculture, Forestry, Fishing and Hunting	Not recommended	May contain a significant amount of non-creditable material
21	Mining, Quarrying, and Oil and Gas Extraction	Not recommended	May contain a significant amount of non-creditable material. Exception is “Natural Gas Liquid Extraction – NAICS code 211112”. Contact Ohio EPA for guidance.
23	Construction	Not recommended	
42	Wholesale Trade		Do not survey NAICS code 425
44-45	Retail Trade		

48-49	Transportation and Warehousing		NAICS 493 includes warehousing and storage; check for double-counting
51	Information		When surveying, determine if publisher produces hardbacks. If yes, then the business would fall under a manufacturing category and the activity would be considered industrial.
52	Finance and Insurance		
53	Real Estate and Rental and Leasing		
54	Professional, Scientific, and Technical Services		
55	Management of Companies and Enterprises		
56	Administrative and Support and Waste Management and Remediation Services		NAICS 562 is a priority since it includes waste haulers and MRFs
61	Educational Services		
62	Health Care and Social Assistance		NAICS code 622 would be a priority
71	Arts, Entertainment, and Recreation		NAICS codes 7112, 7113, 712 and 713 should be targeted
72	Accommodation and Food Services		
81	Other Services (except Public Administration)		Some activities may be commercial, but some of the generated waste may be hazardous, non-creditable and/or generate low volumes; contact Ohio EPA if considering surveying an industry from this category
92	Public Administration		

* as more information becomes available, Ohio EPA will work with SWMDs to help them prioritize which of the 20 NAICS sectors they should survey

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Glossary

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Access – The availability of waste reduction and recycling services to waste generators within a solid waste management district. In most cases, access is used to refer to the presence or absence of waste reduction and recycling opportunities for measuring compliance with Goal 1 of the 2020 State Solid Waste Management Plan.

Annual District Report – This is a report that Ohio Administrative Code Rule 3745-27-90, requires each solid waste management district to submit to Ohio EPA by June 1 each year. Ohio EPA prescribes the form. Information in the report shall be based on the previous calendar year. This report will evaluate the solid waste management district's implementation of the strategies, programs, and activities listed in the implementation schedule of its approved solid waste management plan and the progress made toward the waste reduction and recycling requirements established in paragraphs (E)(1) and (E)(2) of this rule.

Annual District Report Review Form – A document published by Ohio EPA. The document combines the data reported by a solid waste management district in its annual district report, data reported to Ohio EPA by owners/operators of solid waste facilities in their facility annual reports, and data from adjacent states regarding imports of waste from Ohio. The document provides disposal, recycling, and generation data. Ohio EPA publishes a separate form for each of the 52 solid waste management districts.

Board of County Commissioners – Consists of the county commissioners for a single county solid waste management district. The board of county commissioners is responsible for implementing the solid waste management district's solid waste management plan (as prepared and ratified by the policy committee).

Board of Directors – Consists of the county commissioners from all of the counties that comprise a joint solid waste management district. The board of directors is responsible for implementing the solid waste management district's solid waste management plan (as prepared and ratified by the policy committee).

Board of Trustees – The governing body for a regional solid waste management authority. The board of trustees consists of the same members as a policy committee. The board of trustees performs all of the functions assigned to a policy committee and board of county commissioners/board of directors for a solid waste management district. Thus, the board of trustees is responsible for preparing, ratifying, and implementing the solid waste management plan.

Broker/Recycling Broker – A business that accepts recyclable materials from collection or processing activities, may or may not pay a fee for the materials, and finds an end-user or another processor to purchase the materials. A broker can also be a processor of recyclable materials that also finds end-users for the processed materials.

Captive Landfill Facility refers to a privately-owned industrial or residual solid waste landfill that is used to dispose of solid waste generated exclusively by the owner of the landfill facility.

Clean Materials Recovery Facility (MRF) – A facility where source separated, recyclables are processed.

Commercial Solid Waste refers to solid waste generated at non-residential buildings, non-industrial businesses, and institutions. This category includes businesses such as shopping centers, retail stores, grocery stores, theaters, gas stations, business offices, hotels, restaurants, and similar service establishments. Institutions include government and non-profit offices, schools, prisons, churches, parks, and similar organizations.

Composting – As defined in Ohio Administrative Code Rule 3734-27-01(C)(2), the process of biological decomposition of solid wastes under controlled conditions resulting in compost. Controlled conditions include but are not limited to grinding, shredding, piling, physical turning, aerating, adding moisture, or other processing of solid wastes.

Composting Facility – As defined in Ohio Administrative Code Rule 3734-27-01(C)(3), a site, location, tract of land, installation, or building used for composting of solid waste.

There are four types of regulated compost facilities:

- **Class I Compost Facilities** - These facilities can be used to compost the greatest variety of solid wastes including yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, food scraps, mixed solid waste, bulking agents, additives, and authorized alternative materials. Class I facilities must have a permit, license and financial assurance.
- **Class II Compost Facilities** - These facilities can be used to compost yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, food scraps, bulking agents, additives, and authorized alternative materials. Alternative materials (feed stocks, bulking agents and additives) may be used in the compost process only if prior approval is obtained from the Director. Except in limited circumstances, Class II facilities must have a license, financial assurance and registration.
- **Class III Compost Facilities** - These facilities can be used to compost yard waste, agricultural plant materials, dead animals, raw rendering material, animal waste, bulking agents, additives, and authorized alternative materials. The material placement area is limited to a maximum of one hundred thirty-five thousand square feet. Class III facilities must be registered with Ohio EPA.
- **Class IV Compost Facilities** - These facilities can be used to compost yard waste, agricultural plant materials, bulking agents, additives limited to source-separated spent coffee and tea grounds, urea, and bacterial or fungal inoculum, and

authorized alternative materials. Class IV facilities must be registered with Ohio EPA.

Construction and Demolition Debris (C&DD) is defined in Ohio Administrative Code Rule 3745-400-01(F) as those materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure, including, without limitation, houses, buildings, industrial or commercial facilities, or roadways.

"Construction and demolition debris" does not include materials identified or listed as solid wastes, infectious wastes, or hazardous wastes pursuant to Chapter 3734. of the Revised Code and rules adopted under it; or materials from mining operations, nontoxic fly ash, spent nontoxic foundry sand, and slag; or reinforced or non-reinforced concrete, asphalt, building or paving brick, or building or paving stone that is stored for a period of less than two years for recycling into a usable construction material.

Current approved plan – Used when referring to a solid waste management district’s effective solid waste plan. The current approved plan is the solid waste management plan being updated using this format.

Curbside Recycling Service – A type of recycling opportunity through which source-separated, residential recyclables are collected at the place of residence. Curbside collection typically involves collecting recyclables in designated containers or in “blue bags” that are collected with regular trash and separated from the trash later.

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

Curbside recycling services can be either “Non-Subscription” or “Subscription”.

- **Non-Subscription Curbside Recycling service** – A curbside recycling service provided to residents automatically within a defined area. To qualify as a non-subscription curbside recycling service for Goal 1 of the 2020 State Plan, the curbside recycling service must meet all the following criteria:
 - All residents living in at least single-family homes within a jurisdiction (i.e., a city, village, or township) receive the service;
 - Homeowners don’t decide whether they receive curbside recycling – they receive the service whether they want it or not;
 - Homeowners may or may not be billed for the service;

- A homeowner can choose not to participate in the curbside service but cannot opt out of paying for the service.
- To be a creditable for purposes of achieving Goal 1, the curbside service must also:
 - be available on a regular basis, at least once every two weeks;
 - collect at least five of the materials designated as highly amendable to recycling in the 2020 State Plan. Those materials are listed in the following table:

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- **Subscription Curbside Recycling Program** – A curbside recycling service that residents voluntarily sign up for and agree to pay for. To qualify as a subscription curbside recycling service for Goal 1 of the 2020 State Plan, the curbside recycling service must meet all the following criteria:
 - The service is offered to all residents living in at least single-family homes within the jurisdiction (i.e., a city, village, or township);
 - To all residents that have trash collection service due to an ordinance, franchise agreement, or another mechanism established by the political subdivision.
 - Homeowners decide whether to receive curbside recycling service. The only homeowners that can use a curbside program are those that contact a service provider to sign-up for the curbside program.
 - The only homeowners that can participate in the service are those that pay for the service.
 - The curbside recycling service must be available on a regular basis, at least once every two weeks.

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Direct Haul – Waste that is transported from the point of collection to a landfill facility (ie. the waste is not delivered to a transfer facility).

Dirty Materials Recovery Facility (Dirty MRF) (also known as a mixed solid waste materials recovery facility) – A type of facility where the owner/operator of the facility recovers recyclables from mixed solid waste. Residents are not required to separate recyclable materials from trash because the separation is done at the MRF.

District –The term used in examples in this document to indicate that the text is for a specific solid waste management district (instead of SWMD which is used to refer to solid waste management districts in general).

Diversion – The term used in this document when referring to waste that is reused, recycled, or reduced instead of being disposed in a landfill. Ohio’s waste reduction and recycling rates measure diversion from landfills, not just recycling and reuse. So, volume reduction due to composting or incinerating waste is included in the reduction and recycling rate.

Drop-Off Recycling – Refers to a type of recycling opportunity that serves as a collection location for recyclable materials. Drop-off recycling locations are typically used by the residential population but may also be used by businesses and institutions. People who use drop-offs voluntarily transport recyclable materials to the host site. A drop-off site typically consists of trailers, roll-off containers, or other types of collection containers where people place their recyclable materials. Drop-offs can be manned or unmanned, can collect recyclables as single or multiple streams, can be available on public or private property, can be available to the general public or serve a specific population, and can be provided by public entities, private companies, non-profit organizations or other providers. The drop-off does not have to be provided by the SWMD to be considered part of the recycling infrastructure.

A drop-off is categorized by the number of hours the drop-off is available for use and the population of the jurisdiction in which the drop-off is located. Accordingly, drop-offs are defined as being in either urban or rural areas and as being available either full-time or part-time.

- An urban, full-time drop-off is in a political jurisdiction with a residential population of 5,000 or more and is available at least 40 hours per week.
- A rural, full-time drop-off is in a political jurisdiction with a residential population of less than 5,000 and is available at least 40 hours per week.
- An urban, part-time drop-off is in a political jurisdiction with a residential population of 5,000 or more and is available for use less than 40 hours per week but is available at a regularly scheduled time at least once a month.
- A part-time, rural drop-off is in a political jurisdiction with a residential population of less than 5,000 and is available for use less than 40 hours per week but is available at a regularly scheduled time at least once a month.

To be creditable recycling opportunity for achieving Goal 1, a drop-off must meet the criteria for one of the four types of drop-offs above and the general criteria below:

1. The drop-off must collect at least five of the materials designated as highly amenable to recycling in the 2020 State Plan. Those materials are listed in the following table:

Materials Designated to Demonstrate Compliance with Goal #1

Residential Sector	Commercial Sector
Corrugated cardboard	Corrugated cardboard
Newspaper	Office paper
Mixed paper	Mixed paper
Glass containers	Glass containers
Steel containers	Steel containers
Aluminum containers	Plastic containers
Plastic containers	Wood pallets and packaging
	Food waste

2. The drop-off is available to the public and the public can easily find and access the site.
3. The drop-off meets the following minimum standards (unless the SWMD can demonstrate that smaller capacity is adequate):
 - Rural drop-offs must provide a minimum of six cubic yards of capacity, and
 - Urban drop-offs must provide a minimum of 10 cubic yards of capacity.
4. There are signs that are adequate to, at a minimum:
 - Direct the public to the site or provide the location of the site,
 - List the materials that are accepted, and
 - Provide days and hours of operation (particularly important if the site is available less than 24 hours per day, seven days per week).
5. The drop-off meets the demand of the population for use of the drop-off site (e.g., provides collection containers with adequate capacity to handle the use of the site, is serviced frequently enough given the use of the site, etc.).

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Dual stream collection – A recycling system in which fiber (paper and cardboard) is collected in one receptacle and all containers (glass, plastic, metal) are collected in another receptacle.

Electronic waste or e-waste – Refers to discarded end-of-life and obsolete electrical devices or their parts. Televisions, computers, and cell phones are all common examples of electronic waste.

Excluded Waste - Refers to those wastes that the definition of solid waste [see Ohio Administrative Code Rule 3734-27-01(S)(23)] specifically calls out (i.e. excludes) as not being solid waste. These wastes include slag, uncontaminated earth, non-toxic fly ash, spent, non-toxic foundry sand, material from mining, and construction and demolition debris.

Facility Data Report – A report published by Ohio EPA annually. The report summarizes data reported to Ohio EPA by owners/operators of solid waste landfills and transfer facilities in facility annual reports.

Fee Exempt Waste – Refers to those wastes that Ohio Revised Code Section 3734.57 specifically excludes from being subject to solid waste fees. The fee exempt wastes are listed in ORC Section 3734.57 paragraphs (D)(1) through (D)(7).

Ferrous Metals – Metals that contain iron. Examples include steel, stainless steel, cast iron, and wrought iron.

Flue Gas Desulfurization (FGD) Waste – Waste generated as a result removing sulfur dioxide (SO₂) from combustion gases generated at coal-fired power plants. As used in

this document, the term usually refers to waste generated by wet scrubbers that remove sulfur dioxide (SO₂) emissions using lime.

Household Hazardous Waste – Refers to hazardous waste that is generated in households. Ohio's regulations define household as including all the following:

1. Single and multiple unit residences
2. Hotels and motels
3. Bunkhouses
4. Ranger stations
5. Crew Quarters
6. Dormitories
7. Campgrounds
8. Picnic grounds
9. Day-use recreation areas

In Ohio, hazardous waste generated at a household is not regulated under the hazardous waste regulations. Thus, homeowners can dispose of HHW in their garbage.

Incineration – Burning solid waste to ash.

Industrial Solid Waste – Defined in OAC Rule 3745-29-01 as a type of solid waste generated by manufacturing or industrial operations and includes, but is not limited to, solid waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and food-related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay and concrete products; textile manufacturing; and transportation equipment.

Materials Recovery Facility (MRF) – A type of facility used for separating, sorting, or processing waste in order to segregate materials with value (e.g. aluminum, glass, plastics) from trash. The type of processing conducted at a MRF can range widely from buildings in which recyclables are sorted primarily by hand to mechanical facilities that recover recyclables from mixed solid waste. There are two types of MRFs – clean MRFs and dirty MRFs. See the definitions of those terms.

Mixed solid waste materials recovery facility – see definition for Dirty MRF.

Municipal Solid Waste (also referred to as Residential/Commercial Waste) – is defined in Ohio Administrative Code Rule 3745-27-01(M)(5) as a type of solid waste generated from community, commercial, and agricultural operations, including, but not limited to, the following:

- (1) Solid waste generated by community operations, i.e., wastes derived from households (including single and multiple household residences, hotels, motels,

bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

- (2) Solid waste generated by commercial operations (including stores, offices, restaurants, warehouses, and other non-manufacturing activities).
- (3) Solid waste generated from agricultural operations (including single-family and commercial farms, greenhouses, and nurseries).
- (4) Sludge from municipal, commercial or industrial wastewater treatment plants, water treatment plants, and air pollution control facilities that is co-disposed with wastes specified in 1, 2, 3, and 5 in a sanitary landfill facility.
- (5) Fly and bottom ashes generated from the incineration of municipal solid waste provided the fly ash and bottom ash are not regulated as hazardous wastes.

North American Industrial Classification System (NAICS) – NAICS was developed and adopted in 1997 to replace the Standard Industrial Classification (SIC) system. The NAICS is the standard used to classify business establishments in the United States, Canada, and Mexico to facilitate collecting, analyzing, and publishing data related to the business economy.

For a listing of NAICS codes and information about the classification system, see **North American Industrial Classification System and Surveying Recommendations**. For more information about NAICS, visit the U.S. Census Bureau's website at <http://www.census.gov/eos/www/naics/>

Non-ferrous Metals – Metals that do not contain iron. Non-ferrous metals include aluminum, brass, copper, nickel, tin, lead, and zinc, as well as precious metals like gold and silver. Non-ferrous metals exhibit properties such as low weight, higher conductivity non-magnetic and resistance to corrosion

Ohio Administrative Code (OAC) – The compilation of rules governing the actions of all state agencies. The OAC is based upon authorities granted in the Ohio Revised Code.

Ohio Revised Code (ORC) – Contains all current statutes of the Ohio General Assembly consolidated into provisions, titles, chapters and sections.

Open Dumping – Depositing solid waste into a body of water or onto the ground at a site that is not licensed as a solid waste facility under section 3734.05 of the Ohio Revised Code. For a solid waste management plan, open dumps are areas off the road or adjacent to the road or right-of-way on where solid waste is dumped. Road rights-of-way with occasional litter or debris are not considered to be open dumps.

Pay-As-You-Throw (also referred to as variable rate pricing, volume-based billing, and unit pricing). A trash collection service where the amount a household pays for trash collection depends on how much trash the household disposes of. The more waste the

household throws away, the more the household pays for trash service and vice versa. PAYT treats trash collection like a utility, such as electricity or natural gas.

Plan – A term used to refer to a solid waste management district’s solid waste management plan.

PPD – The acronym for pounds per person per day.

Policy committee – The group that is responsible for preparing and ratifying a solid waste management plan for a solid waste management district. As prescribed in Ohio Revised Code Section 3734.54(B), a policy committee consists of the following members, one from each of the counties in the solid waste management:

- The president of the board of county commissioners or their designee
- The chief executive officer (or their designee) of the municipal corporation with the largest population in the county
- A member representing townships
- The health commissioner (or their designee) of the health district with the largest territory within the county
- A member representing industrial, commercial, or institutional generators
- A member representing the general interest of citizens
- One member representing the public.

If there is an even number of counties in the solid waste management district, then the policy committee must have an additional member representing the public.

Example: The policy committee for a single county solid waste management has seven members. The policy committee for a four-county solid waste management has 29 members (seven per county plus one additional public representative).

Quarterly Fee Report – The report solid waste management districts submit to Ohio EPA to account for revenues and expenditures during the previous three months. A solid waste management districts submits four reports annually using a form prescribed by Ohio EPA (see Ohio Revised Code Section 3734.575).

Recycling –The systematic process of converting solid waste that would otherwise be disposed and returning the converted material to commerce as a commodity for use or exchange in an established and legitimate market.

Reference Year – The calendar year selected by the policy committee/board of trustees as the year for collecting data that will serve as baseline data for a solid waste management plan. The reference year is usually the calendar year prior to the calendar year the policy committee is required to begin updating a solid waste management plan. For example, if the policy committee is required to begin preparing its update in 2015, then the policy committee would select 2014 as the reference year.

Regional Solid Waste Management Authority - One of two structures a county/group of counties can form for purposes of complying with Ohio Revised Code Section 3734.52. The other structure is a solid waste management district. A regional solid waste management authority is governed by one group – the board of trustees.

Residential Solid Waste – Solid wastes generated at residential dwellings, such as single-family homes, apartment complexes, condominiums, mobile homes. Domiciles such as nursing homes, campgrounds, and other types of group quarters and institutions are considered to generate commercial waste.

Residential/Commercial Solid Waste – Refers to the combination of waste generated by the residential and commercial sectors. Also, referred to as municipal solid waste.

Reuse – Taking an object or material that would otherwise be disposed and using it for its original purpose or a different purpose, without converting the object or material. "Reuse" does not include using an object or material as fill. Reuse differs from recycling which is the breaking down of the material into raw materials which are used to make a new item.

Salvage dealer/motor vehicle salvage dealer – Any person whose primary business is selling recovered motor vehicle parts.

Scrap dealer – The owner or operator of a business that purchases or receives scrap metal for the purpose of sorting, grading, and shipping metals to third parties for direct or indirect melting into new products.

Single stream – Refers to a recycling system in which all recyclable materials are collected in one container (i.e. commingled) instead of separated into individual commodities (such as newspaper, corrugated cardboard, plastics, glass, etc.).

Source separated recyclables - Materials that have been separated from trash at either the point of generation or the point of collection for the purpose of recycling the materials.

Standard Industrial Classification (SIC) Codes - Refers to the system established by the U.S. government to classify business establishments. A SIC code consists of four-digit numerical code that the government assigned to a business establishment to identify the primary business of the establishment. In 1997, the SIC system was replaced with the NAICS system.

Solid waste management district, SWMD, or District – One of two structures a county/group of counties can form for purposes of complying with Ohio Revised Code Section 3734.52. The other structure is a regional solid waste management authority.

A SWMD's main purpose is to prepare, adopting, submit, and implement a solid waste management plan. In addition, a SWMD is responsible for providing safe and sanitary

management of solid waste generated within the SWMD in compliance with Chapters 343 and 3734 of the Ohio Revised Code.

A SWMD is governed by two groups – a policy committee and a board of county commissioners/board of directors

State Solid Waste Management Plan (also referred to as State Plan) – Ohio Revised Code Section 3750 requires the Ohio Environmental Protection Agency, with the advice of the Materials Management Advisory Council, to prepare the State Plan. The law prescribes eight purposes for the State Plan. The main purpose of the State Plan is to reduce Ohio’s reliance on using solid waste landfill facilities to manage solid waste. To do this, the State Plan establishes the waste reduction and recycling goals for both the State and Ohio’s 52 solid waste management districts (SWMDs).

SWMD – The acronym for solid waste management district. In this document, SWMD is used to refer to solid waste management districts and regional solid waste management authorities in general.

Transfer Facility/Transfer Station – As defined in Ohio Administrative Code Rule 3745-27-01(T)(28), any site, location, tract of land, installation, or building that is used or intended to be used primarily for the purpose of transferring solid wastes that are generated off the premises of the facility from vehicles or containers into other vehicles or containers for transportation to a solid waste disposal facility. The term does not include any facility that consists solely of portable containers that have an aggregate volume of fifty cubic yards or less nor any facility where legitimate recycling activities are conducted. The term does not include any facility that accepts scrap tires other than scrap tires which are accepted incidental to a mixed solid waste shipment.

Volume-Based Billing (see definition for Pay-As-You-Throw)

Volume Reduction – Refers to decreasing the amount of waste that is disposed in landfills through treatment, such as composting and incineration. For purposes of the waste reduction and recycling rate, SWMDs can credit the difference between the waste that was composted or incinerated, and the final compost product or ash produced.

Waste Reduction – Refers to activities that decrease the quantities of waste disposed in landfills and includes recycling, volume reduction due to composting waste and volume reduction due to incinerating waste.

White Goods – Discarded large appliances (such as refrigerators, ovens, dish washers, washing machines, clothes driers, hot water heaters, etc.).

Acronyms Used in this Document

2020 State Plan is used when referring to the *2020 State Solid Waste Management Plan*

ADR – Annual district report

Authority – Regional solid waste management authority

C&DD - Construction and demolition debris

DO – Drop-off

FGD – Flue gas desulfurization waste

FTR – Full-time, rural drop-off

FTU – Full-time, urban drop-off

Format 4.2 – Used when referring to this document, the *District Solid Waste Management Plan Format*, version 4.2

HHW – Household hazardous waste

HB – House Bill

MRF – Material Recovery Facility

MSW – Municipal Solid Waste

NAICS - North American Industry Classification System

NSC – Non-subscription curbside recycling

PAYT – Pay-As-You-Throw trash collection

OAC – Ohio Administrative Code

Ohio EPA – Ohio Environmental Protection Agency

ORC – Ohio Revised Code

PA – Publicly available

PPD – Pounds per person per day

PTR – Part-time, rural drop-off

PTU – Part-time, urban drop-off

SIC – Standard Industrial Classification

SC – Subscription curbside recycling

State Plan – Used when referring to the state solid waste management plan in general.

SWMD – Solid waste management district

Supplemental Instructions

Appendix A

Exceptions for first year of planning period:

The SWMD may choose a different first year or add additional years to the planning period to accommodate uncertainty.

Example: There is uncertainty over what year Ohio EPA will approve the solid waste management plan.

The SWMD's ratified plan must be approved by February 2025. The SWMD is ahead of schedule and anticipates receiving approval in November 2024. The SWMD makes 2024 the first year of the planning period and 2038 the last year to be on a five-year update schedule.

The SWMD encounters unforeseen difficulties and submits the ratified version in December 2024. Ohio EPA approves the plan in February 2025. The plan now has an effective planning period of just 14 years (2025 to 2038). The SWMD is now required to submit the next update in three years, not the intended five years.

To avoid that situation, adding a sixteenth year to the planning period would leave an effective planning period of 15 years (2025 to 2039). There is no downside to having a 16-year planning period.

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Appendix B

Instructions for Table B-3 (mixed solid waste recovery facilities)

Use Table B-3 to inventory mixed solid waste material recovery facilities (i.e., dirty MRFs) used to separate recyclables from trash. Table B-3 will also show the recovery rate for the facility.

The recovery rate is calculated with the following formula:

Recovery Rate = material recovered ÷ (processed waste + bypass waste) x 100

- The **material recovered** means material removed from trash via the sort line and does not include any of the following:
 - Yard waste composted if the yard waste was not removed from mixed solid waste via the sort line.

- Source separated recyclables (recyclables collected through a curbside service, a blue bag recycling program, or a drop-off, regardless of whether the drop-off is located at the MRF or at another location). Source separated recyclables cannot be added to material recovered regardless of whether the recyclables are processed via the sort line.
- Recyclables collected through a drop-off located at the MRF.
- **Processed waste** is waste that was loaded onto the sort line to remove recyclables.
- **Bypass waste** means residential/commercial waste that was direct hauled to a landfill without being processed via the sort line.

[NOTE: Residents have with access to recycling opportunities because the owner/operator removes recyclables from trash for the residents at the MRF. If residential waste is hauled to a landfill directly (i.e., is not processed at the dirty MRF), then the residents that generated that waste do not have access to the dirty MRF. The percent of the population that has access to the MRF is determined by the MRF's recovery rate. Therefore, any residential waste that bypasses the MRF needs to be added to the weight of material processed to accurately calculate the recovery rate and the number of people with access to the MRF.

If the owner/operator of the dirty MRF can demonstrate that there are procedures for determining that bypass waste is industrial waste and that no residential waste bypasses the sort line, then the SWMD does not need to account for bypass waste.]

After inserting Table B-3, where indicated with “[replace with description/explanation of the mixed solid waste material recovery facilities listed in Table B-3]”, provide any information needed to describe or explain the listed facilities after the table where indicated. Describe any procedures for ensuring that residential waste does not bypass the dirty MRF.

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Appendix D

Supplemental instructions for analyzing historical disposal data

1. Residential/Commercial Waste

Compare the quantity of waste disposed in the reference year to the quantity the current approved solid waste management plan projected would be disposed in that year. If the quantities are significantly different, then try to determine the cause of the difference. Things to consider include:

- Population that increased/decreased faster/slower than projected.
- Quantities of material recovered were less than/more than projected (i.e., less waste generated was recycled and more was disposed than projected or vice versa).
- Commercial activity was less than/more than projected.

Compare the SWMD's per capita disposal rate to those for other similar SWMDs and the statewide average. Is the SWMD's rate in line with other SWMDs? With Ohio as a whole? If no, why? Factors to consider include:

- For higher rates, consider factors such as:
 - the presence of a large operation that disposes of large quantities of waste.
 - seasonal populations such as tourists.
 - presence of a large university – while the university's waste would be included in the SWMD's disposal quantity its population likely is not included in the SWMD's population. This would inflate the generation rate.
 - the presence of a regional destination hub for residents from other counties (such as a shopping center, a mall, a major festival, or event).
 - mischaracterization of waste (such as industrial waste mischaracterized as residential/commercial waste or waste from other SWMDs being attributed to the SWMD).
- For lower rates, consider factors such as:
 - size of the commercial sector (a smaller commercial sector may result in lower generation rate); and
 - mischaracterization of waste (such as waste from the SWMD being attributed to other SWMDs).

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2. Industrial Waste

Refer to the instructions for analyzing the residential/commercial waste and, except for the points below, follow the same procedure for analyzing the industrial waste.

Are there correlations among disposal, employment, and manufacturing output. Is the industrial sector projected to grow or shrink (in terms of output, employment, etc.)? Sources to consult include:

- Information from the **Bureau of Labor Market Information**.
- **Ohio Job Outlook** published by the Ohio Department of Job and Family Services
- [Ohio County Indicators](#) published by the Ohio Department of Development (for employment trends by county)
- Information from local chambers of commerce
- [Ohio Industry Series](#) published by the Ohio Department of Development (provides overviews of specific industries including projected growth, employment trends, number of establishments by county).
- Information from local trade associations
- [Economic Overview of Ohio](#) published by the Ohio Development Services Agency.
- The Ohio Manufacturer's Association

Are there factors that affect the SWMD's disposal quantities, the composition of industrial waste disposed, or disposal rates? Examples of potential factors include:

- hosting a large generator, such as automotive plant or foundry.
- hosting industrial generators that are strongly affected by the economy.
- hosting an electric utility.

[NOTE: To eliminate an outlier or add data for more years, make changes to the tab D-5 as necessary and insert a new version of Table D-5.]

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Appendix E

Supplemental instructions for Evaluating Historical Residential/Commercial Recovery

Considering the statistics generated in Tables E-7a1 through E-7a6:

- Did the quantities recovered or the percentage change in amount recovered follow a trend (such as a consistent increase or decrease)?
- Did the quantities recovered fluctuate but were similar (i.e., there are no outliers)?
- Did the quantities recovered fluctuate inconsistently from one year to the next?
- Is there a correlation between changes made to a program and the quantities recovered?

If there isn't a clear trend or is inconsistent variation in the data, then analyze the data further. Things to consider include:

- If the quantities recovered fluctuated inconsistently from one year to the next, then identify causes for the fluctuation, such as:
 - Recovery is dependent upon uncontrollable factors such as yard waste which is dependent upon weather. A particularly wet or dry year could result in more/less yard waste composted than in other years.
 - The SWMD receives data for the program/service inconsistently.

To minimize the effects of variation, add data for more years to the analysis for the program/service (i.e., more than four years prior to the reference year).

- Is there an outlier? An outlier could be caused by unusual circumstances. For example, a natural disaster, like a flood or tornado, resulted in more yard waste composted in one year than in other years.

If a year(s) is an outlier, then consider eliminating data for that year(s) to avoid skewing the recovery trend and the evaluation statistics.

- Is there an obvious change in the trend due to a change to the program/service that increased/decreased quantities recovered? Examples include:
 - Two years prior to the reference year, the largest community upgraded its curbside recycling service from subscription to non-subscription service. As a result, the quantities of material recovered in the years after the change was made were higher than the years prior to the change.
 - In the year prior to the reference year, the SWMD quit collecting glass at its drop-off locations. The SWMD saw a decrease in the weight of material recovered through drop-off locations.

- Three years prior to the reference year, the SWMD ceased accepting latex paint at its household hazardous waste collection event. As a result, there were substantial decreases in the amount of HHW collected and the number of customers that participated in the event.

If there is an obvious change in the trend, then factor that change into the statistics calculated on tab E-7a.

After finishing the analysis of historical data, where indicated with “[replace with explanation of the historical analysis]”, explain the analysis of the data on tab 7 and conclusions drawn from the analysis.

Return to main instructions

Supplemental Instructions for Projecting Residential/Commercial Recovery

Projections for years between reference year and first year of the planning period:

Depending upon when the SWMD begins updating the plan, there will be up to four years between the reference year and the first year of the planning period. The SWMD will likely not have data for all those years. Therefore, the SWMD will need to make projections for those years.

Complete Table E-8 in two phases:

Phase 1 – Years between the reference year and the first year of the planning period.

In the first phase, project quantities for the years between the reference year and the first year of the planning period. Use the results of analyzing the historical data to make the projections.

Phase 2 - Quantities to be recovered during the planning period.

Do phase 2 after completing Appendix I. Use a combination of the results from analyzing the historical data and anticipated effects of changes to existing programs and new programs on recovery to make projections. Project quantities to be recovered for at least the first three or five years of the planning period. Beginning in the fourth or sixth year, either hold quantities to be recovered constant or continue projections throughout the planning period.

To project change in recovery for programs/services between the reference year and the first year of the planning period, use one of the following (or another methodology developed by the SWMD):

[NOTE: *These recommendations assume that the statistics from tab E-7a are representative because:*

- *The historical data demonstrate a discernable trend.*

- *The historical doesn't show any obvious outliers or outliers have been removed or adjusted.*
- *Any recent changes in a trend have been accounted for.]*

1) Average percentage change in tons recovered (from Table E-7a2).

For example, recovery through drop-off locations increased annually over the five years evaluated. From 2010 to 2014, recovery grew, on average, by 2% over the five years analyzed. In 2012, the reference year, 2,350 tons were collected through drop-off locations. For 2013, the SWMD projects recovery through the drop-offs to be 2,397 tons [=2,350*1.02]; for 2014, 2,445 tons [=2,397*1.02]; and for 2015, 2,494 tons [=2,445*1.005].

2) Average per capita recovery rate (from Table E-7a5).

For example, recovery through drop-off locations averaged .64 pounds per person per day for the five years analyzed. For 2013, the SWMD projects recovery through drop-offs as 2,359 tons (.64 ppd for population of 20,200), for 2014 at 2,382 tons (.64 ppd for population of 20,400) and for 2015 as 2,406 tons (.64 ppd for population of 20,600).

Things to keep in mind:

- If the SWMD recently made a change to a program that will decrease recovery through the program, then factor that into the projections for the years between the reference year and the first year of the planning period.

For example, eliminating five drop-offs in the reference year will have a noticeable impact on recovery through drop-offs. In that circumstance, the historical data will not accurately represent future recovery through the remaining drop-offs.

- If recovery through the program/service has been increasing due to a recent change in the program, then it might not be realistic to assume that increase will continue every year.

For example, a community adds corrugated cardboard to the materials collected through the curbside service in the year prior to the reference year. As would be expected, in the two following years, the community saw large increases in the quantities recovered. However, beginning in the third year, the quantity collected leveled off. Any future increases will be incremental. Therefore, projecting recovery for the remaining years between the reference year and the first year of the planning period based on the large increases in the first two years after adding cardboard will overestimate future recovery.

In either example above, modify the projection factors so that they are representative of current conditions and expected changes to recovery.

3) Lack of historical data:

If there isn't historical data for a program/service, then hold the quantity recovered constant at the reference year quantity.

4) Third Party Sources/Non-program sources:

- *Buybacks, scrap yards, brokers, processors/material recovery facilities, etc.:*
 - If the quantities attributed to those sources in the reference year are similar to the historical quantities, then hold the quantities for the planning period constant at the reference year quantity.
 - If the quantities attributed to those sources in the reference year are noticeably different than historical quantities, then use an average of the years that are the most similar (i.e. eliminate the reference year quantity, and any other atypical quantities, if significantly different).

- *Recovery by Commercial businesses (as quantified through surveys):*
 - If the quantity identified through surveys in the reference year is similar to quantities identified historically, then hold the quantity attributed to surveys constant at the reference year quantity.
 - If the quantities identified through surveys are noticeably different, then use an average of the years that are the most similar.
 - If the SWMD recently changed its survey process which changed the quantities identified, then use data for only those years in which the new survey process was used.

Projections for planning period

Projecting Recovery through Programs and Services:

For primary recycling opportunities, such as curbside recycling services and drop-off locations, material-specific collection programs, such as HHW, scrap tires, electronics, and yard wastes and other programs quantities can be associated with, provide projections for quantities to be recovered for the first three or five years of the planning period. Beginning in the fourth or sixth year of the planning period, either hold quantities constant or continue projections through the planning period.

How recovery through a specific program/service is projected will depend upon what will happen to the program/service during the planning period. Thus, how recovery is projected for an existing program being continued unchanged will differ from how recovery is projected for a new program. Furthermore, how recovery is projected will depend upon how mature a program is. Thus, projecting recovery through an electronics collection program that has been available for 10 years may be different than projecting recovery through a program that has been in place for two years.

- To the extent possible, base recovery projections on the effects of planned new or changes to existing programs. Some hypothetical examples are described below:

Example 1: The solid waste management plan shows increases in the quantities of material recycled as the result of adding corrugated cardboard to the mix of materials accepted at all drop-off sites. Projections for recovery through drop-offs are based on per capita recovery at drop-offs in other SWMDs that collect the same mix of materials. Projections could also be based on results in other SWMDs that made similar changes to the mix of materials accepted or even available national data on recovery that can be expected from drop-offs that collect the same mix of materials.

Example 2: The solid waste management plan projects increases in recovery through the largest community's curbside recycling service as the result of distributing larger collection containers. Quantities to be recovered are based on the average results for five communities in Ohio where similar changes were made.

Example 3: A community will implement a new curbside collection service in the second year of the planning period. The SWMD will discontinue providing three drop-offs in that community in the third year of the planning period.

- For the second year of the planning period, the SWMD projects a large increase in recovery for the new curbside service. The SWMD also projects that the quantity to be recovered through drop-offs will be the same as the previous year.
- For the third year, the SWMD projects a decrease in the quantity of material recovered to account for discontinuing the three drop-offs. The SWMD also projects another, smaller increase in recovery for the new curbside service.
- In the fourth year, the SWMD projects a much smaller increase in the amount of material recovered through the curbside program to account for plateauing recovery. The SWMD also projects that recovery through the drop-offs will be the same as in the previous year.

- Consider both initial effects on recovery and effects after a couple of years after implementing changes.

Example 1 - A community implements a new curbside recycling program. It is appropriate to project high initial increases because the program is new, and many people will begin recycling at the same time. However, after a couple of years, recovery will likely plateau or even decrease unless the community does something to keep encouraging people to participate. Projections should reflect this.

Example 2: Literature demonstrates that education and outreach efforts generally result in the largest increase in recovery immediately after launching new education and outreach. Over time, however, recovery will plateau and, in the case of outreach, if continuous or even new outreach isn't provided after a couple of years, recovery may decrease.

- If the SWMD will continue a program unchanged, then project future recovery using the same methodology used to project recovery between the reference year and the first year of the planning period. See the instructions provided earlier for suggestions on using the historical data.
- If using average percentage change or average per capita recovery rate, then ensure the projections make sense when compared to the historical quantities recovered. For example, if using the average results in recovery projections that are either higher or lower than most of the quantities from the last five years, then using the average may not be appropriate to project recovery. In that situation, the SWMD may need to adjust the factor used or develop another factor.

Projecting Recovery through third party/non-program sources

- Hold quantities attributed through buybacks, scrap yards, brokers, processors/material recovery facilities, etc. constant at the quantity used for the years between the reference year and the first year of the planning period, unless another quantity or other projections can be justified.
- Hold quantities recovered by commercial businesses (as quantified through surveys) constant at the quantity used for the years between the reference year and the first year of the planning period. Exceptions include:
 - Implementing a new program to increase quantities recovered by commercial businesses (such as outreach to businesses). In that situation, base projections on expected results from the new program.
 - Improving surveying efforts. If the SWMD doesn't currently conduct a survey or has received low response rates in the past, then improving data collection efforts may be a way to justify increases in documented recovery. One way to do this is to adopt a methodology used by a SWMD that is successful at obtaining data.

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Appendix F

General Instructions Regarding Recovery Data

Use Appendix F to do the following:

- Inventory the quantities of materials recovered from the SWMD's industrial sector in the reference year.
- Adjust reported quantities for double counting.
- Calculate total adjusted quantities of material recovered in the reference year.
- Analyze historical quantities recovered.
- Project quantities to be recovered.

Tables F-1 through F-3 will account for all material being credited for the industrial sector. Enter the quantities reported into the appropriate tables as follows:

- Table F-1 –data reported by industrial businesses.
- Table F-2 –data reported by scrap yards, brokers, buybacks, processors, MRFs, etc.
- Table F-3 - data associated with services and programs (such as industrial collection routes).

Surveying

See the section titled “**North American Industrial Classification System and Surveying Recommendations**” for information on which business types to survey.

Supplementing Data

If an industrial business did not respond to the survey for the reference year but did respond to a previous survey, it may be acceptable to use data from the earlier survey.

To ensure that the data from an earlier survey is still representative, verify:

- that the survey isn’t more than three years old.
- that the industrial facility was operating in the reference year.
- that the owner did not significantly change the nature of the business, the hours of operation, the number of employees, or its sales/level of service.
- that the facility still produces the types of recyclables as were reported in the earlier survey.

Non-Creditable Materials:

Do not credit quantities associated with any of the following materials for the industrial sector:

- Train boxcars.
- Construction and demolition debris (C&DD).
- Metals from vehicles, including auto bodies, auto parts, and any other vehicle bodies or parts that have not historically been disposed in landfills (such as farm equipment, tractor trailers, school buses, etc.).
- Liquid industrial wastes.
- Waste/recovered material used as alternative daily cover.
- Hazardous waste.

Adjusting for Double Counting

Double counting occurs when the same material is reported by more than one survey respondent, typically both the generator of the material and the processor that receives the material from the generator. Material is “double counted” if the quantities from both respondents are credited to total recovery. This could happen if an industrial business reported the quantity of material recycled and the processor that received the material from the business returned a survey that also accounts for the material. If that happens, then the total quantity recovered needs to be adjusted to subtract the quantity reported by one source or the other to avoid counting the material twice.

Tables F-1 through F-3 have sections devoted to entering adjustments for double counted material.

A. Reference Year Recovery Data

Instructions for Table F-1- Industrial Survey Results

Use Table F-1 to account for the results of the industrial survey for the reference year. The table is organized by the NAICS codes that Ohio EPA recommends surveying for the industrial sector and material type. For more information about the NAICS codes, see Appendix V.

Aggregate the quantities of a material from all returned surveys for a specific NAICS code.

After inserting Table F-1:

- Where indicated with “[replace with explanations for any NAICS codes added to Table F-1]”, describe any additional NAICS codes added to Table F-1
- Where indicated with, “[replace with explanations of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable.
- Where indicated with “[replace with any other necessary supporting text]” clarify or explain adjustments that were made for double counting. If data from multiple years are used, then identify the years that data represent.

Go to the workbook and complete tab F-1.

Instructions for Table F-2: Data from Other Recycling Facilities

Use Table F-2 to account for data for buybacks, scrap yards, brokers, and processor/MRFs that reported materials for the industrial sector. Table F-2 is organized by type of facility and does not aggregate survey results. Use a separate row for each respondent.

After inserting Table F-2:

- Where indicated with “[replace with explanations of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable
- Where indicated with “[replace with any other necessary supporting text]” further clarify or explain the adjustments that were made for double counting and, if data from multiple years are used, then identify all of the years that data represent.

Go to the workbook and complete tab F-2.

Instructions for Table F-3: Other Recycling Programs/Other Sources of Data

Use Table F-3 for quantities diverted through other programs and services and quantities associated with sources not identified in Tables F-1, F-2, and F-3 for the reference year. The table will include all industrial programs and services through which materials being credited to total diversion were recovered.

After inserting Table F-3:

- Where indicated with “[replace with explanations of materials/quantities entered as “Other”]”, describe materials entered as other and how the SWMD evaluated the materials to ensure they are creditable
- Where indicated with “[replace with supporting text]”, explain any adjustments that were made for double counting and further clarify or explain the data in Table F-3 as needed.

Go to the workbook and complete tab F-3.

Instructions for Table F-4: Reference Year Industrial Material Recovered

Table F-4 will display the adjusted quantity of each material that was recovered from the industrial sector in the reference year. The structure of Table F-4 matches the structure of the same table from the annual district report.

After inserting Table F-4, where indicated with “[replace with explanation of the data in Table F-4]”, further qualify the quantities presented in Table F-4 as needed.

Go to tab F-4 in the workbook.

Instructions for Table F-5: Quantities Recovered by Program/Source

Table F-5 will display the total adjusted quantity of material that is attributed to each program/source for the industrial sector. The names of the programs/sources and their associated adjusted quantities will be automatically transferred from tables F-1 through F-3. This table is used to populate working spreadsheets on tabs F-5a, F-5b and, F-6.

Go to tab F-5 in the workbook.

B. Historical Recovery

Instructions for Table F-6: Historical Industrial Recovery by Program/Source

Enter historical quantities recovered through programs, services, and third-party sources into Table F-6. Use those quantities to evaluate historical recovery through those programs, services, and third-party sources.

Tab F-6a automatically creates several supplemental tables (labeled F-6a1 through F-6a5) that provide statistics based on quantities entered in Table F-6. These statistics are intended to help evaluate the historical data. These tables are as follows:

- Table F-6a1 – Annual Percentage Change in Tons Recovered
- Table F-6a2 – Average Percentage Change in Tons Recovered
- Table F-6a3 – Annual Change in Tons Recovered
- Table F-6a4 – Average Annual Change in Tons Recovered
- Table F-6a5 – Average Tons of Material Recovered

After inserting Table F-6, where indicated with “[replace with explanation of the historical analysis]”, explain the analysis of the data on tab F-6 and the conclusions drawn from this analysis.

Go to the workbook and complete tab F-6

Instructions for Evaluating Historical Industrial Recovery

Compare the quantity of material recovered through each program/service and third-party source in the reference year to the quantity the currently approved solid waste management plan projected would be recovered in that year. If the quantities are different, then try to determine the cause(s).

Compare the quantity of material recovered through the program/service to the quantities recovered through similar programs in other SWMDs. If recovery through the program/service is different than through another SMWD’s program, then investigate why.

Considering the statistics generated in Tables F-6a1 through F-6a5:

- Do the quantities recovered or the percentage change in amount recovered follow a trend (such as a consistent increase or decrease)?
- Did the quantities recovered fluctuate but were similar (i.e., there are no outliers)?
- Did the quantities recovered fluctuate inconsistently from one year to the next?
- Is there a correlation between changes made to a program and the quantities recovered?

If there isn’t a clear trend or there is inconsistent variation in the data, then analyze the data further. Things to consider include:

- If the quantities recovered fluctuated inconsistently from one year to the next, then identify causes for the fluctuation, such as:
 - Recovery is dependent upon uncontrollable factors.

- The SWMD receives data for the program/service inconsistently.

To minimize the effects of variation, add data for more years to the analysis for the program/service (i.e., more than four years prior to the reference year).

- Is there an outlier?

If a year(s) is an outlier, then consider eliminating data for that year(s) to avoid skewing the recovery trend.

- Is there an obvious change in the trend as a result of a change to the program/service that increased/decreased quantities recovered?

If there is an obvious change in the trend, then factor that change into the statistics calculated on tab F-6a.

After finishing the analysis of the historical data, where indicated with “[replace with explanation of the historical analysis]”, explain the analysis of the data in Table F-6a and conclusions drawn from the analysis.

C. *Industrial Recovery Projections*

Instructions for Projecting Industrial Recovery

Projecting recovery will involve determining how to use the historical data combined with anticipated changes to programs/services to project quantities to be recovered.

Projections for years between reference year and first year of the planning period

Depending upon when the SWMD begins updating the plan, there will be up to four years between the reference year and the first year of the planning period. The SWMD will likely not have data for all years. Therefore, the SWMD will need to make projections for those years.

To project change in recovery for programs/services between the reference year and the first year of the planning period, use one of the following (or another method developed by the SWMD):

[NOTE: These recommendations assume that the statistics from tab F-6a are representative because:

- *The historical data demonstrate a discernable trend.*
- *The historical data doesn't show any obvious outliers or outliers have been removed or adjusted.*
- *Any recent changes in a trend have been accounted for.]*

1) Average percentage change in tons recovered (from Table F-6a2)

Things to keep in mind:

- If recovery through the program/service has been increasing due to a recent change in the program, then it might not be realistic to assume that increase will continue every year.
- If the SWMD recently made a change that will result in decreased recovery through the program, then factor that into the projections for the years between the reference year and the first year of the planning period.

2) Lack of Historical Data

If there isn't historical data for a program/service, then hold the quantity recovered constant at the reference year quantity.

3) Third Party Sources/Non-program sources:

- *Buybacks, scrap yards, brokers, processors/MRFs, etc.:*
 - If the quantities attributed to those sources in the reference year are similar to the historical quantities, then hold the quantities associated with those sources constant at the reference year quantity unless another quantity can be justified.
 - If the quantities attributed to those sources are noticeably different than historical quantities, then use an average of the years that are the most similar (e.g. eliminate the reference year quantity and any other atypical quantities, if significantly different).
- *Recovery by Industrial Businesses (as quantified through surveys):*
 - If the quantity identified through surveys in the reference year is like quantities identified historically, then hold the quantity attributed to surveys constant at the reference year quantity.
 - If the quantities identified through surveys are noticeably different, then use an average of the years that are the most similar.
 - If the SWMD recently changed its survey process which changed the quantities identified, then use data for only those years in which the new survey process was used.

Projections for planning period

Projecting Recovery through Programs and Services

Sources of information for projections include:

- Ohio-specific data.
- Other similar programs within the SWMD.
- Similar programs in other SWMDs.

For primary recycling services, project quantities to be recovered for the first three or five years of the planning period. Beginning in the fourth or sixth year of the planning period, either hold quantities constant or continue the projections through the planning period.

Recovery projections for a specific program/service depend upon what will happen to the program/service during the planning period. Thus, how recovery is projected for an existing program being continued unchanged will differ from how recovery is projected for a new program. Furthermore, how recovery is projected will depend upon how mature a program is. Thus, projecting recovery through a program that has been available for 10 years will be different than projecting recovery through a program that has been in place for two years.

Things to keep in mind when developing projections for a program/service:

- Develop projections based on what will happen to the program during the planning period (e.g., base projected increases in quantities to be recovered to the effects of planned new or changes to existing programs on recovery)
- Consider both initial effects on recovery and effects after a couple of years after implementing changes.

For example, literature demonstrates that education and outreach efforts generally result in the largest increase in recovery immediately after launching new education and outreach. Over time recovery will plateau or even decrease without continued outreach.

- If the SWMD will continue a program unchanged, then project future recovery using the same projection methodology used to project recovery between the reference year and the first year of the planning period. See the instructions provided earlier for suggestions on using the historical data.
- If using average percentage change, then ensure the projections make sense compared to historical quantities recovered. For example, if the average results in recovery projections are either higher or lower than most quantities from the last five years, then using average percentage change may not be appropriate.

Instructions for Table F-7: Industrial Recovery Projections by Program/Source

Use Table F-7 to account for all programs, services, and third-party sources.

Complete Table F-7 in two phases:

Phase 1 – Years between the reference year and the first year of the planning period.

In the first phase, project quantities for the years between the reference year and the first year of the planning period. Use the results of analyzing the historical data to make the projections.

Go to the workbook and complete tab F-7 for the years between the reference year and the first year of the planning period.

Phase 2 - Quantities to be recovered during the planning period.

Do phase 2 after completing Appendix I. Use anticipated effects of changes to existing programs and new programs on recovery to make projections. Project recovery for at least the first three or five years of the planning period. Beginning in the fourth or sixth year, either hold quantities to be recovered constant or continue projections throughout the planning period.

Go to the workbook instructions and complete tab F-7 for the planning period.

After inserting Table F-7, where indicated by “[replace with explanation of the industrial recovery projections]” explain how projections were developed for each program/source listed in the table. Include assumptions made, factors considered, sources consulted, sample calculations, and narrative to explain how any planned changes will affect recovery.

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Appendix G

Instructions for evaluating historical generation data

The SWMD evaluated historical disposal and recycling data in previous appendices. Table G-1 provides another opportunity to evaluate the SWMD’s historical data to ensure that the data is as accurate as possible. The information associated with the analyses of the disposal and recycling information in Appendices D, E, and F will be helpful.

The purpose of reviewing the SWMD’s generation data is to ensure that it makes sense in the context of other available generation information (e.g., statewide, national generation, and rates for other SWMDs). Reviewing the generation data may also help identify other factors to consider or potential errors with the disposal or recycling data that were not identified by the analyses of that data.

Analyses and discussion points are identified below:

1. Historical Residential/Commercial Waste Generated
 - Look for trends – Did the quantities of residential/commercial waste generated and the per capita generation rate increase, decrease, or fluctuate inconsistently?
 - Look at disposal and recycling portions of the generation calculation. Did increases, decreases or other variations in the quantities of residential/commercial waste generated result more from quantities disposed or from quantities recycled?
 - Compare the SWMD’s residential/commercial per capita generation rate to the national average (see Reference Table G-1 in the workbook) and statewide average

(see Reference Table G-2 in the workbook) per capita generation rates. Also, compare the per capita generation rate to per capita rates of other SWMDs.

- Did the SWMD’s generation rate increase more rapidly, comparable, or slower than the statewide or national averages? Compared to other local SWMDs? Is the SWMD’s generation rate significantly different than the other rates (if yes, then evaluate further). Try to identify reasons why the SWMD’s rate is above/below those rates. Factors to consider include:
 - Are there specific factors that influence the SWMD’s generation rate? Examples are (*some of these factors may be the same as those that influence the disposal rate*):
 - A large operation that generates large amounts of material.
 - Seasonal populations such as a university or tourists.
 - A large number of people who work in the SWMD but live in other counties.
 - The SWMD or a county in the SWMD is a destination hub for residents from other counties (such as a shopping center or mall).
- Is there a correlation between population change and generation?
- Is there a correlation between generation and commercial activity?
- Explain any outliers.

For example: A large ice storm or other natural disaster resulted in more yard waste or other waste in one year than in other years; a large generator or processing facility returned a survey in one year but not in others; a new, large commercial entity began generating or quit generating waste during the year).

- Compare the quantity of residential/commercial waste generated in the reference year to the quantity the currently approved solid waste management plan projected would be generated in that year. If the quantities are significantly different, then try to determine why.

Based on evaluation of the historical generation data, is it necessary to revisit the disposal projections in Appendix D and/or the recycling projections in Appendix E?

Where indicated with “[replace with explanation of the residential/commercial generation analysis here]”, explain the analyses and any conclusions.

2. *Historical Industrial Waste Generated*

[NOTE: This analysis is voluntary]

- Identify trends – did quantities of industrial waste generated increase, decrease, or fluctuate inconsistently?
- Look at disposal and recycling portions of the generation calculation. Did variations in the quantities of industrial waste generated result more from variations in quantities disposed or more from quantities recycled?
- Identify any correlations among generation, employment, and manufacturing output. Sources to consult include:

- Information from the Bureau of Labor Market Information
- Ohio Job Outlook published by the Ohio Department of Job and Family Services
- **Ohio County Indicators** published by the Ohio Development Services Agency (for employment trends by county)
- County Profiles (lists the largest employers in the county)
- Information from local chambers of commerce
- **Ohio Industry Series** published by the Ohio Development Services Agency (provides overviews of specific industries including projected growth, employment trends, number of establishments by county).
- Information from local trade associations
- **Economic Overview of Ohio** published by the Ohio Development Services Agency.
- The Ohio Manufacturers' Association
- Compare growth or reduction in industrial generation activity within the SWMD to activity or trends in the SWMD's region of the state and/or to Ohio.
- Identify factors that influence the quantities, composition of industrial waste generated and the generation rate (such as hosting large generators, like automotive plants or foundries affected by the economy; hosting an electric utility). Some of these factors may be the same as those that influence the disposal rate).
- Explain any outliers.

For example: A major 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.

- Compare the quantity of industrial waste generated in the reference year to the quantity the currently approved solid waste management plan projected would be generated in that year. If the quantities are significantly different, then try to determine why.

Ohio Revised Code Section 3734.53(A)10) requires a solid waste management plan to evaluate the effect of newly regulated waste streams on the SWMD's generation rates. If the SWMD knows of a new industry that will begin or recently did begin operating or an existing industry making changes to its operations, then the SWMD should incorporate an explanation of those into the plan. The Ohio Manufacturers' Association and the Ohio Chamber of Commerce may be able to provide insight.

Based on the evaluation of the historical generation data or any new wastes streams, is it necessary to revisit the disposal projections in Appendix D and/or the recycling projections in Appendix F?

Where indicated with "[replace with explanation of the industrial generation analysis]", explain the analyses and any conclusions.

3. Historical Excluded Waste Generated

- Identify trends – did the quantities of excluded waste generated increase, decrease, or fluctuate inconsistently?
- Identify any factors that influence how much excluded waste is generated, such as the presence of a coal-burning utility, foundries that generate excluded foundry sand, ongoing construction activities, etc.
- Identify correlations between the types of excluded waste and the activities that generate them.

For example: If a large portion of the excluded waste is bottom or fly ash and there was a significant change in the quantities generated, then is there an identifiable cause – a new utility began/ceased operating, a utility upgraded its pollution control technology, a utility generated more/less electricity than usual, etc..

- Compare the quantity of excluded waste generated in the reference year to the quantity the currently approved solid waste management plan projected would be generated in that year. If the quantities are significantly different, is it necessary to factor that into the projections?

Where indicated with “[replace with explanation of the excluded waste generation analysis]”, explain the analysis and any conclusions.

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Appendix H Strategic Evaluation

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These instructions describe a strategic process for SWMDs to evaluate their reduction and recycling efforts. The instructions outline 13 analyses intended to result in a holistic review of the SWMD.

The combined results of the analyses will help the SWMD answer questions such as:

- is the SWMD adequately serving all waste generating sectors?
- is the SWMD recovering high volume wastes such as yard waste and cardboard?
- how well is the SWMD’s recycling infrastructure being used/how well is it performing/being used?
- what is the SWMD’s financial situation and ability to fund programs?
- how effective is the SWMD’s data collection system?
- how did the SWMD’s situation in the reference year compare to where the current plan anticipated the SWMD would be?

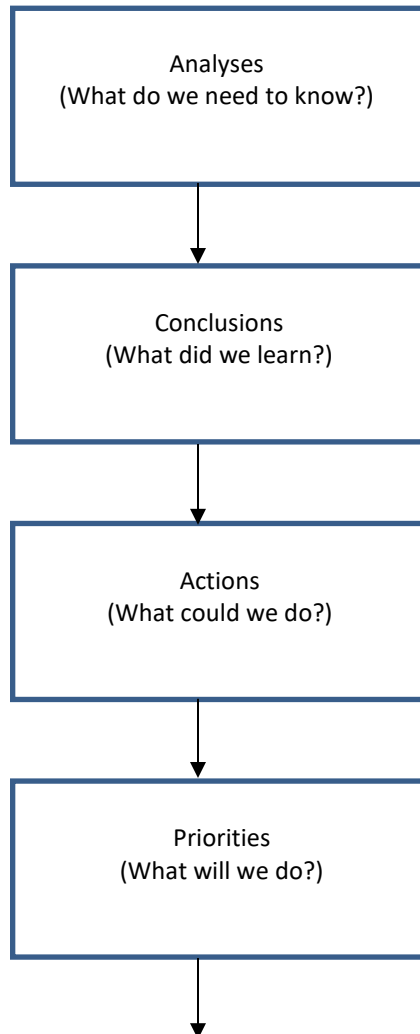
The analyses will help the SWMD develop conclusions that represent what the SWMD learned about its structure, abilities, strengths and weaknesses, operation, existing programs, outstanding needs, and available resources. Having comprehensive conclusions

that draw from all the analyses will help the SWMD make decisions about how to operate during the upcoming planning period.

Using those conclusions, the SWMD will identify possible actions to address its conclusions/findings. The idea is to develop a list of things the SWMD **could** do during the planning period. The list is intended help the SWMD establish priorities for the solid waste management plan. From the list, the SWMD will decide which actions it wants to prioritize during the planning period. Those priorities will direct the SWMD's decisions regarding the programs that it will provide during the planning period.

The diagram below illustrates the process.

Strategic Evaluation Process



Programs
(How will we do it?)

Conducting that analyses will involve referring to historical data and information provided in other appendices.

Several of the analyses recommend benchmarking the performance of the SWMD's programs with programs in other solid waste management districts. This is not meant to be a comparison of success or failure or viewed as competition. It is meant to be a means of understanding how other solid waste management districts manage their programs and a chance to apply lessons learned to the SWMD's programs. It is also an opportunity to collaborate with other SWMDs on making programs as successful as possible.

The analyses described in this appendix incorporate comparing the current approved plan to the reference year situation. This will allow the SWMD to compare where it projected the SWMD would be to where the SWMD is. The purpose is for the SWMD to evaluate its projections and expectations for program performance against the reference year information.

Ohio EPA provided suggestions for things the SWMD can consider for each analysis. What is appropriate and doable will likely differ from one SWMD to another. Ohio EPA's suggestions are ideas. The SWMD should evaluate factors that it believes to be relevant. However, Ohio EPA strongly encourages the SWMD to do as in-depth analyses as possible to obtain information necessary to make decisions.]

Ohio EPA's recommended analyses are as follows:

1. **Residential recycling infrastructure analysis**
2. **Commercial sector analysis**
3. **Industrial sector analysis**
4. **Waste composition analysis**
5. **Economic incentive analysis**
6. **Restricted and difficult to manage waste analysis**
7. **Diversion analysis**
8. **Special program needs analysis**
9. **Financial analysis**
10. **Regional analysis**
11. **Data Collection Analysis**
12. **Education and Outreach Analysis**
13. **Processing Capacity Analysis**

Each analysis is described in more detail in a section devoted to that analysis.

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Residential Recycling Infrastructure Analysis

Considerations for the Residential Recycling Infrastructure Analysis

Evaluate the existing residential recycling infrastructure (completed in Appendix B) to determine if it meets the needs of the residential sector and how the infrastructure is performing. The analysis will provide the SWMD with information that can be used to make decisions regarding the recycling infrastructure (i.e. new infrastructure or changes to existing infrastructure).

The SWMD could consider the following factors during this evaluation:

Geographical:

- Are recycling opportunities clustered in parts of the county, such as urban areas, or are recycling opportunities distributed evenly throughout the county?
- Do residents in both rural and urban areas have convenient access to recycling options?
- Are there recycling opportunities in all communities where it makes sense or are there communities that are not served (e.g. are residents in all major population centers able to recycle?)?

Functionality

- Are recycling opportunities in a community adequate for that community (i.e. adequately sized (too little or too much capacity), serviced often enough/too often, accessible)?
- Do residents in multi-family housing have access to recycling opportunities?
 - If no, how can the SWMD work with property managers to make recycling opportunities available?
 - If yes:
 - Are the available recycling opportunities convenient?
 - Does the SWMD or the property manager market recycling opportunities to residents in multi-family housing units?
 - If no, can the SWMD work with the property manager to provide outreach to residents?
 - If yes, do the outreach materials need to be updated, distributed more often?
- If the community is served by a curbside recycling service, is there a drop-off(s) to serve residents that can't use the curbside program (such as residents in multi-family housing)?
- Is the type of recycling program available in a community the best option for that community (i.e. curbside vs. drop-off in the largest communities)? If not, can the SWMD work with political leaders of the community to upgrade service. This strategy should include a process for evaluating the impacts of any changes.
- Do all recycling opportunities collect a comprehensive mix of materials, particularly high-volume materials such as paper and cardboard? If no, can the SWMD upgrade the collection mix to include new materials?

- Effectiveness vs. cost: How well is the recycling opportunity performing in relation to the resources used to provide it and in relation to other similar programs within the SWMD and in other SWMDs. Potential measures include:
 - cost per quantity collected (e.g. cost per pound or cost per cubic yard);
 - quantity collected per person who/per household that had the opportunity to use the opportunity; and
 - cost per person/per household served.
- Do all drop-offs being used to achieve Goal 1 meet the **minimum standards**? If not, what needs to be done to upgrade a drop-off to meet the standards?
- Is the SWMD experiencing problems (other than low participation)?
 - For drop-offs, potential problems include contamination, dumping outside of drop-offs, not enough capacity, not serviced often enough, traffic issues, lack of signs, not easily accessible, no/confusing instructions for using, inconsistent schedule, collect limited materials, multiple sorts, etc.
 - For curbsides, potential problems include: contamination, blowing litter, container size, missing customers on collection day, inconsistent schedule, wet materials, limited materials collected, infrequent collection, etc.
- Do residents have access to information about available recycling opportunities?
 - If yes, how is that information made available? Does the information need to be updated? Is the information comprehensive? Is there additional information that the SWMD can provide? Is information distributed often enough? Is information provided to new homeowners timely?
 - If no, how can the SWMD make information available and assist making information available?
- Is there a county or community that has experienced or is projected to experience significant population change? Will that change the infrastructure the SWMD needs to provide to the county or the community?

Comparison of reference year to currently approved plan

- Compare the recycling infrastructure expected to be available in the reference year according to the current approved plan to the infrastructure available in the reference year:
 - Are there recycling opportunities that were in place under the current plan that were no longer available in the reference year for the plan update?
 - Why were those opportunities discontinued?
 - Did the SWMD realize a noticeable decrease in material recovered because the opportunities were discontinued?
 - Were there new recycling opportunities that were planned but didn't get implemented? Why?
 - Were there new recycling opportunities that weren't planned but were implemented?
 - If yes, were the new recycling opportunities the result of the SWMD's outreach efforts?
 - Did the SWMD realize a noticeable increase in material recovered?
 - Did the SWMD discontinue other recycling opportunities as a result?

- What were the effects of changes in recycling opportunities on the SWMD's ability to achieve the goals of the state plan?

Participation/Performance:

Evaluate the existing recycling opportunities to determine how well they are being used/how well they are performing. These instructions describe some factors the SWMD could consider when conducting the participation/performance analysis.

The SWMD will likely use different methods for measuring the performance of drop-offs and curbside programs.

Drop-off locations

There are at least three ways to evaluate the performance of drop-off programs:

- Evaluate performance of an individual drop-off over time.
- Evaluate relative performance by comparing drop-offs to one another.
- Surveys.

To evaluate performance of drop-off sites, it is helpful to obtain the following information for each drop-off for the reference year and the four prior years:

- Quantity of material recovered. [**NOTE:** *Using the per capita quantities of material collected at drop-offs may provide a more useful comparison than using just pure weights. This requires defining the population served by the drop-off. Default populations would be 2,500 for a rural drop-off and 5,000 for an urban drop-off*];
- Types of materials collected [**NOTE:** *Include only materials typically collected through a drop-off (not materials like yard waste or appliances).*]; and
- Type of drop-off (full or part time, rural vs. urban, etc.).

Performance of individual site

To evaluate the performance of an individual drop-off site, potential measures include:

- Quantity of material recovered over time; and
- Quantity recovered per capita over time (using the service area of 2,500 or 5,000 people).

Considering the historical information for the drop-off site, try to identify and determine the reasons for any trend. Factors to consider include:

- Is there a correlation with disposal and generation trends?
- Is there a correlation between increases/decreases and outreach/lack of outreach?
- Are increases/decreases due to adding/removing materials from the collection?
- Was there a change in how materials are collected (single stream versus multiple sorts)?
- Is there an outlier in the data? What caused the outlier?
- Did changes in collecting data affect the measures (e.g. began receiving data per drop-off rather than as an aggregate of all drop-offs)?

Relative Performance

This evaluation involves comparing drop-offs to one another to determine relative performance of each. The purpose is to determine which are the highest and lowest performing relative to one another. One way to do this is to compare the quantities collected. Potential measures include:

- Quantity of material recovered; and
- Quantity of material recovered per capita (using service area of 2,500 or 5,000 people).

Below are several suggestions on how to perform this evaluation:

- Compare the quantity of material recovered and quantity recovered per capita at each drop-off site against quantity recovered and quantity recovered per capita at other drop-off sites within the SWMD.
- Compare the quantity of material recovered and quantity recovered per capita at each of the SWMD's drop-off sites against quantity recovered and quantity recovered per capita at similar drop-off sites in other SWMDs.
- Compare like drop-offs (i.e. can't compare a full-time urban drop-off to a part-time rural drop-off).

Curbside Recycling Services

There are at least two ways to evaluate the performance of curbside services:

- Evaluate performance of an individual curbside service over time; and
- Evaluate relative performance by comparing curbside services to one another.

To evaluate performance of curbside recycling services, it is helpful to obtain the following information for each curbside service for the reference year and the four prior years:

- For non-subscription curbside services, the number of households with opportunity to use the curbside service (only those that the service is offered to (i.e., not multi-family housing units if the service isn't offered to them)). [**NOTE:** *it would also be useful to know the number of households that participate if that data is available or can be obtained.*].
- For subscription curbside services, number of households participating (i.e., number of subscriptions) and number of households that could participate.
- Quantities and types of materials recovered [**NOTE:** *Include only materials typically collected through a curbside program (not materials like yard waste or appliances)*].
- Recycling rate.
- Cost of the service.
- Demographics of each community (income, age, education, etc.).
- Contamination rates, if available (might be able to obtain from the MRF where material from the service is processed).

Performance of an Individual Curbside Service

To evaluate the performance of an individual curbside service, potential measures include:

- Quantity of material recovered over time.
- Quantity recovered per household over time.
- Recycling rate over time.
- Number of households participating over time.
- Potential recovery (use an average weight for recyclables collected in the container (tote, cart) and use that average to determine how much could be recovered if the entire service area or additional households participated).
- Contamination rate.

Using the historical information for the curbside service, have the measures listed above been increasing, been decreasing, remained constant, fluctuated inconsistently? Try to determine the reasons for the trend. Factors to consider include:

- Is there a correlation with disposal and generation trends?
- Are increases/decreases due to outreach/lack of outreach?
- Are increases/decreases due to adding/removing materials from the collection?
- Were the same containers used for all five years or were changes made (e.g., switched from using totes to using carts)?
- Were economic incentives introduced (e.g., pay-as-you-throw)?
- Is there an outlier in the data? What caused the outlier?
- Was there a change in the cost of the service to homeowners?
- Was there a change in the program (e.g., from subscription to non-subscription service)?
- Did changes in collecting data about the curbside service affect the measures?
- Has contamination changed over time? Has an outreach campaign changed contamination? Are their persistent contaminants?

Relative Performance

This evaluation involves comparing curbside services to one another to determine relative performance of each. The purpose is to determine which are the highest and lowest performing relative to one another. Potential measures include:

For non-subscription curbside services:

- Quantity of material recovered per household (either per household with the ability to use the service or per participating household).
- Recycling rate (requires ability to obtain quantities of both materials recycled and trash disposed per community).
- Participation rate, if number of participating households is available.
- Contaminate rate.

For subscription curbside services:

- Number of participating households as a percentage of total households that could subscribe to the service (not including multi-family units that can't participate).
- Quantity of material recovered per participating household.

- Recycling rate (requires ability to obtain quantities of both materials recycled and trash disposed per community).

[NOTE: *If a community's contract for curbside recycling service doesn't currently require the service provider to report number of households that participate, the contamination rate, or the quantities of materials recycled, then the SWMD might work with the community to make reporting that information a requirement under the contract. The same is true if a community's contract for trash service doesn't require the service provider to report quantity of waste disposed by that community.]*

Below are several suggestions on how to perform this evaluation:

- Compare the quantity of material recovered through, contamination rate, and participation in each curbside service against recovery, contamination, and participation for other curbside services within the SWMD. The purpose is to determine which are the highest and lowest performing relative to one another.
- Compare like services (i.e., don't compare a non-subscription service to a subscription service).
- Compare the number of households participating versus potential participation (the number of households with the ability to use the curbside service).
- Compare the per household weight of material collected to per household weights collected through similar curbside services in other SWMDs.

3. Determine the factors that contribute to increased participation/recovery or that are barriers to better participation/recovery. Suggestions for this evaluation include:

A. For drop-offs, consider factors such as:

- location (is the site easy/difficult to find);
- visibility/placement at the site (once at the site, is it easy to find the containers);
- signs.
- advertising/promotion.
- mix of materials accepted (do some drop-offs collect high volume materials and others do not (such as cardboard) or are there other differences in the mix of materials collected).
- availability (are they available often enough or at convenient hours (e.g., 24/7, during business hours only, part-time, once a month, available only during work hours, etc.)).
- ease of use (if the containers have lids, are the lids easy to open, are the openings too high).
- single stream collection versus multiple sorts (does the sort make it harder to use the site?).
- aesthetics.
- safety (such as lighting, surrounding area).
- proximity to multi-family housing units versus single family homes (which could increase quantities collected per capita).

- proximity to commercial/industrial businesses (which could increase quantities collected per capita).
- demographics (e.g., economic conditions of area, average household income etc.).

B. For curbside services, consider factors such as:

- collection frequency (weekly versus biweekly).
- container characteristics (type (totes vs. carts), size, ease of moving).
- mix of materials accepted (are there differences in the mix of materials collected, particularly for high-volume materials such as cardboard).
- whether non-traditional households are included (e.g., multi-family housing units).
- education/outreach (communities where outreach was provided may have better results than communities where outreach wasn't provided).
- cost of the service to the homeowner.
- presence or absence of economic incentives.
- material sorts (single stream vs. multi stream).
- demographics of the community (economic conditions, household income, age, education, rural vs. urban, etc.).

4. Look for commonalities and differences

Try to identify commonalities among the highest performing curbside services and drop-off locations. Do the same for lower performing services and locations. Also, look for differences between successful and non-successful services and locations.

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Commercial/Institutional Sector Analysis

Considerations for the Commercial/Institutional Sector Analysis

Evaluate the commercial/institutional sector to determine if existing programs (offered either through the SWMD or other entities) are adequate to serve that sector or if there are needs that are not being met. Evaluate the strengths and weaknesses of its existing programs.

The commercial/institution sector consists of the following (not an exhaustive list):

- Commercial businesses
- Schools and universities
- Government agencies
- Office buildings
- Stadiums
- Amusement parks
- Event venues (stadiums, concert halls),
- Hospitals
- Non-profit organizations

The SWMD could consider the following factors during this analysis:

Geographical

- Does a county have one or two large communities where commercial businesses/institutions are concentrated (such as a city surrounded by rural areas? The county seat? A county with one city?)
 - Are those businesses/institutions recycling?
 - If yes:
 - Are they recycling large volume materials?
 - Is their material contaminated?
 - Do they educate employees about proper recycling?
 - Do employees have convenient access to recycling containers?
 - If no:
 - Why (lack of space, lack of available services, don't generate enough material to attract a service provider, don't want to pay?)
 - What can the SWMD do to help obtain recycling services for the businesses/institutions?
- Are there other commercial/institutional clusters within a county (such as in a university town or a shopping mall) or clusters of similar commercial businesses/institutions (such as bars, restaurants, retail stores, office buildings)?
 - . If yes:
 - What types of recyclable materials are generated?
 - Are those businesses/institutions recycling?
 - If yes,
 - Are they recycling large volume materials?
 - Is their material contaminated?
 - Do they educate employees about proper recycling?

- Do employees have convenient access to recycling containers?
- If no:
 - what type(s) of opportunities would best serve the cluster (such as glass recycling program for bars and restaurants or a paper recycling program for office buildings)?
 - How could the SWMD facilitate establishing a recycling program?
- If a building exists with multiple tenants, can the SWMD facilitate recycling services for the tenants?

Functionality

- Is space to store a recycling container an issue for commercial businesses?
- Do contracts between landlords and tenants or between waste companies and landlords/tenants prevent recycling services? [**NOTE:** *Contracts for trash collection services may automatically renew, and landlords may not be aware of options for negotiating services.*] Can the SWMD assist with contracting or educate landlords/tenants about contracting?
- Is cost a barrier to commercial/institutional generators obtaining recycling services?
- Is the lack of available recycling options a barrier?

Other Considerations:

- Does the SWMD currently help commercial/institutional generators, such as identify recycling options, offer waste audits, provide contracting assistance?
 - What are the strengths and weaknesses of the SWMD's services?
 - If yes, did the SWMD work with any commercial businesses/institutions?
 - If yes:
 - Did the businesses/institutions contact the SWMD?
 - If yes:
 - how did they find out about the SWMD's services?
 - Did the businesses/institutions implement reduction or recycling programs because of receiving assistance from the SWMD?
 - Do the businesses/institutions report quantities of materials recycled to the SWMD?
 - If no:
 - How does the SWMD market the availability of services to businesses/institutions? Are those efforts sufficient?
 - Is the SWMD's message reaching the intended audience?
 - How can the SWMD improve how it markets its services?
 - If no, how can the SWMD assist (e.g., contracting assistance)?
- Do the largest commercial/institutional generators have recycling services?
- Are they recovering the materials that constitute the largest portions of the waste stream?
- Does the SWMD get data from those generators?
- Are available recycling services adequate/convenient? Is the lack of available service providers a barrier to commercial/institutional generators?
- Is data collection an issue? [**NOTE:** *The SWMD will analyze its data collection program in Section L later in this appendix.*]

- Do commercial/institutional generators have access to recycling programs for all recyclable materials they generate (i.e., more than just cardboard and paper), such as food waste and glass?
- Do local K-12 schools have in-school recycling programs?
 - Are those programs run by teachers, students, or serviced by custodial staff?
 - Are the programs comprehensive (do they collect all materials)?
 - Do different buildings within the same school district have a coordinated program?
 - Does the school receive money from its recyclable materials?
 - Does the SWMD provide recycling education in schools that don't have in-school recycling programs?
- Are there unique or other large generators that have special recycling needs - such as a prison, airport, convention center, event venue (arena, sports stadium,), hospital, or other specific type of generator? Do those generators have recycling programs? If no, what could the SWMD do to help them obtain recycling services?
- Is the SWMD host to a unique commercial business or institution with a transitory/seasonal population? Examples include an amusement park, a university, and natural features which draw tourists (such as a large body of water or a national park). If yes and the population skews the SWMD's waste generation and/or disposal, then does the SWMD need to study the situation to gather data and determine how to address the specific needs of the transitory population?
- Are there existing recycling opportunities, provided by either the SWMD or other entities, to allow the SWMD to achieve the commercial sector component of Goal 1?
- Has the SWMD attempted to reach out to property management firms that manage large retail or office complexes? If yes, how successful have those efforts been? If no, can the SWMD begin outreach?
- Are there services that are needed but are not being provided? Can the SWMD assist in establishing those services or provide the services (e.g., direct services such as "milk runs", waste audits, contracting assistance, working with local waste companies, etc.).
- Is the SWMD taking advantage of statewide initiatives (e.g., grants for bar and restaurant glass recycling and multi-family housing)?
- Does or can the SWMD involve other stakeholders, such as local chambers of commerce, trade associations, property management firms etc.?
- Has the size of the commercial sector (number of businesses, employment, etc.) been increasing, staying the same, or decreasing? How does that affect the SWMD and the programs it offers/should offer?
- Has the composition of the commercial sector (i.e., types of businesses) been changing or has it remained the same? How does that affect the programs the SWMD offers/should offer?

Evaluation of programs the SWMD provided [NOTE: the SWMD may have done some of this analysis by following suggestions above.]:

For the programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated by the SWMD? If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn't work?
- Are there programs that were implemented but not as expected in the current plan? If yes, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why? Are there programs the SWMD could provide instead?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses of those programs? How did the programs perform? What were the impacts of the programs?

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3 Industrial Sector Analysis

Considerations for the Industrial Sector

Evaluate the industrial sector to determine if existing programs (offered either through the SWMD or other entities) are adequate to serve that sector or if there are needs that are not being met. The goal of the analysis is to determine if there are programs the SWMD could provide to address the industrial sector or if that sector is already adequately served.

The SWMD could consider the following factors during this analysis:

- What are the largest industrial entities (by employees, output, generation)? What materials make up their waste streams?
- Do the largest entities have recycling services? If yes, are they recycling the materials that make up the largest components of their waste streams? If not, are there available options for the industries to recycle those materials? Can the SWMD help the industries obtain recycling services?
- Does the SWMD receive survey results from the largest entities? If yes, are the results reliable? If no, can the SWMD establish a relationship with the companies? **[NOTE: The SWMD will analyze its data collection program in Section L later in this appendix.]**
- Are there entities that generate large quantities of waste that are not being recycled? If yes, is it because there isn't a market for the waste? Is it because the entity doesn't know about its options? No service providers?
- Are there any industrial parks in the SWMD? If yes, what types of businesses are in the park? What types of recyclable materials are generated? Are there recycling opportunities for all of those materials? If no, what type(s) of opportunities would best serve the park? How could the SWMD facilitate establishing a recycling program?
- What types of privately provided recycling services are available to industrial generators (ie. hauler provided services)? What types of services do they use?
- Are there services that are needed but aren't being provided? Can the SWMD facilitate establishing those services?
- Are there any generators that strongly influence the SWMD's waste generation and recycling from year to year? Examples include a steel mill, an auto manufacturer, or others that are affected by the economic conditions.
- Does the SWMD engage the industrial sector/offer assistance to industrial businesses (such as helping them identify recycling options, waste audits, or contracting assistance)?
 - If yes, did the SWMD work with any industrial businesses?
 - If yes, did the SWMD contact those businesses or did the businesses contact the SWMD? If the businesses contacted the SWMD, how did the businesses find out about the SWMD's services? Was the SWMD able to provide requested services? Did the businesses implement reduction or recycling programs after receiving assistance from the SWMD? Do the businesses report quantities of materials recycled?
 - If no, how does the SWMD market the availability of services to businesses? Are those efforts sufficient? Is the SWMD's message reaching the intended

audience? How can the SWMD improve how it markets its services? If the SWMD isn't marketing the availability of its services, then how can the SWMD reach out to industrial businesses?

- If no, what assistance can the SWMD provide (e.g. facilitate a workshop with local industries, establish a workgroup of industrial representatives and SWMD staff that meets regularly to network, facilitate a focus group of industrial representatives to identify needs and barriers, contracting assistance, waste audits?)
- Is there an industrial association the SWMD can work with to establish relationships with industrial generators? [**NOTE:** *The SWMD will analyze potential partnerships in Section J later in this appendix.*]
- Has the size of the industrial sector (number of businesses, employment, etc.) been increasing, staying the same, or decreasing? How does that affect the SWMD and the programs it offers/should offer?
- Has the composition of the industrial sector (i.e., types of businesses) been changing or has it remained the same? How does that affect the programs the SWMD offers/should offer?

[Note: Ohio Revised Code 3734.53(A)(14) requires a solid waste management plan to contain a program for providing informational or technical assistance regarding source reduction to solid waste generators. When conducting the industrial sector analysis, evaluate whether any of the SWMD's programs address source reduction and the effectiveness of those programs. If the SWMD does not address source reduction, then evaluating what other SWMDs offer is a good way to identify what is possible.]

Evaluation of programs the SWMD provided:

For the programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated by the SWMD? If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn't work?
- Are there programs that were implemented but not as expected in the current plan? If yes, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why? Are there programs the SWMD could provide instead?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses of those programs? How did the programs perform? What were the impacts of the programs?

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4. Waste Composition Analysis

Considerations for the Residential/Commercial Waste Composition Analysis

Ohio EPA is **not** recommending that the SWMD conduct a waste sort to determine the composition of its waste. For this analysis, the SWMD will look at the wastes that typically make up the largest portions of the residential/commercial waste stream and whether the SWMD currently has or should have programs to address those wastes.

Yard waste, food waste, and fiber (cardboard and paper) typically comprise the largest portions of the waste stream by weight. At a minimum, evaluate the availability of and need for programs to recover those materials.

Determine whether generators within the SWMD have opportunities for recovering those materials (the SWMD does not have to be the provider of the program). If opportunities exist, then the SWMD will evaluate recovery through those opportunities. If small amounts of material are being recovered, then the SWMD will evaluate options for increasing recovery. If opportunities are not available, then the SWMD will evaluate what barriers exist to implementing programs and determine what programs it could either provide or facilitate establishing to improve recovery.

The SWMD should also identify any large quantities of unique wastes, evaluate whether those wastes are being recycled and if not, what the SWMD may be able to do to make opportunities available.

For yard waste, here are examples of factors the SWMD could consider:

- How much yard waste was composted/diverted in the reference year versus other years? How does that amount compare to yard waste recovered elsewhere in Ohio? How does that amount compare to how much was projected for that year in the current solid waste management plan? Can the SWMD identify causes for differences?
- Were there factors in the reference year that might have contributed to larger/less amounts of yard waste recovered in other years (such as a major storm or drought? A facility that closed/opened? A community collection program that began/ended? Data received from a facility in one year but not others?)
- Is the existing infrastructure for recovering yard waste adequate (refer to the inventory in Appendix B)?
 - Are there publicly available composting facilities?
 - If yes, where? Are they being used? If existing facilities aren't being used, why? Is it because residents don't know about the facilities? Facilities are not convenient? Facilities have limited hours? Residents don't want to pay to use a facility? Resident's don't like putting yard waste in their vehicles? What could the SWMD do to increase use of facilities?
 - If no, should there be? Where? What type(s)? What could the SWMD do to facilitate establishing facilities?

- Do communities have curbside collection of yard waste?
 - If yes, how are those programs performing? If performing poorly, then why? Are the programs adequately promoted? Do residents know how to use the program (don't know whether to rake leaves to curb or put them in containers, what type of containers to use, where to buy bags, don't know how to prepare yard waste, don't know when collection is)?
 - If no, are there communities that should have collection service? Can the SWMD do anything to facilitate establishing collection services?
- What geographic areas generate the largest quantities of yard waste that need to be managed off generators' properties? Do those residents have convenient opportunities for yard waste?
- Does the SWMD educate residents about managing yard waste?
 - If yes, do education materials need to be updated? How does the SWMD make education available to residents? Are residents accessing the information/know how to find information? What could the SWMD do to improve how information is provided?
 - If no, should the SWMD have education programs? What types?

For food waste, the SWMD could consider:

- How much food waste was recovered during the reference year? How does that amount compare to food waste recovered in previous years and elsewhere in Ohio? How does the amount compare to the quantity projected in the current solid waste management plan? Can the SWMD identify causes for differences and for increases/decreases?
- Are there local programs for managing food waste – such as food banks, publicly available Class II composting facilities, anaerobic digesters, companies to transport food waste from the generator to the management facility, etc.
 - If yes, does the SWMD make this information available to generators of food waste? If yes, how effective is the information or the means of conveying the information? Does the information need to be updated? If not, how could the SWMD make information available?
 - If no, is there something the SWMD can do to facilitate obtaining local service providers? Can the SWMD collaborate with other SWMDs to develop local services and management options?
- Are there large generators that are not diverting their food waste, such as a large food manufacturer or processor, grocery stores, an area with a large concentration of restaurants, a university, a prison, etc.? If yes, why? There aren't available options? They don't know about available options? There is no one to transport food waste to available options? They don't know the benefits of diverting food waste?
- Does the SWMD have a program for educating generators about options for diverting food waste? If no, should the SWMD have a program? If yes, has the program been successful at reaching food waste generators? If no, why? How does the SWMD market its education services? Can the SWMD improve marketing services to generators?
- Are there other things the SWMD can do to facilitate diverting food waste?

For fiber (paper and cardboard):

- How much fiber waste was recovered during the reference year? How does that amount compare to fiber recovered in previous years and elsewhere in Ohio? How does the amount from the reference year compare to the quantity projected for that year in the current solid waste management plan? What caused increases/decreases and differences?
- Do large office buildings or complexes have recycling programs for fiber?
 - If yes, how well are those programs performing? Are collection containers, material mix, and education materials (such as signs) adequate?
 - If no, why? what can the SWMD do to facilitate implementing programs?
- Do government offices have recycling programs for fiber?
 - If yes, how well are those programs performing? Are collection containers, material mix, and participation information (such as signs) adequate?
 - If no, why? What can the SWMD do to facilitate implementing programs?
- Are there local service providers for commercial fiber recycling routes?
- Are other large generators of fiber recycling it (such as distribution/warehouses, retail stores, restaurants, health care facilities, etc.)
- Is fiber collected through available recycling opportunities (e.g. if a curbside program is a bag-based or tote based program, can residents recycle cardboard? If no, is there a way to include cardboard in the material collected?)
- Does the SWMD provide outreach to generators of fiber to help them identify recycling options?
 - If yes, has the program been successful at reaching fiber generators? How does the SWMD market its services? Are there other ways/more effective ways of contacting fiber generators?
 - If no, how can the SWMD reach out to generators?
- Are there other things the SWMD can do to facilitate diverting fiber?

Evaluation of programs the SWMD provided:

For the programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated by the SWMD? If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn't work?
- Are there programs that were implemented but not as expected in the current plan? If yes, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why? Are there programs the SWMD could provide instead?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses

of those programs? How did the programs perform? What were the impacts of the programs?

Evaluation of participation in state and/or local material-specific initiatives (such as glass and pharmaceuticals)

Is the SWMD already participating in/taking advantage of programs for recovering specific materials?

- If yes, evaluate the effectiveness/recovery through those programs. Look at the instructions for the other material analyses above for direction.
- If no, why? What are the options for the SWMD to get involved (such as: provide information, promote collection opportunities, implement a collection program, provide funding for a program)?

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5. Economic Incentive Analysis

Considerations for the Economic Incentive Analysis

In accordance with Goal 6 of the *2020 State Solid Waste Management Plan*, the SWMD is required to explore how to incorporate economic incentives into source reduction and recycling programs. For this analysis, evaluate any existing economic incentives that offered to encourage people to recycle. If private companies and/or the SWMD do not currently offer economic incentives, then evaluate the feasibility of implementing incentives. If the SWMD does offer economic incentives, evaluate the performance of those incentives.

Factors to consider include:

- Are there communities with pay-as-you-throw (PAYT)/volume-based trash collection programs?
 - If yes,
 - Is the trash receptacle used/method of assessing cost the most effective (e.g., bag-based program versus container-based program)?
 - Is the cost structure of the program/range of trash container sizes adequate to encourage recycling?
 - Are the homeowners served by curbside recycling programs? Do homeowners pay for the service separate from or through the PAYT fees?
 - Are the types of recycling containers used conducive to recycling/could switching the containers result in better recovery (e.g., if using bags, can residents recycle cardboard?)
 - Is the volume of the recycling container large enough?
 - Can the SWMD take advantage of the volume-based alternative demonstration for Goal 1?
 - How are programs performing (relative to other programs within the SWMD or compared to programs in other SWMDs)? If the programs are performing better than expected/better than other similar programs, then identify the factors that contribute to the performance. If programs are underperforming, evaluate the weaknesses and barriers preventing higher performance and determine ways of overcoming those weaknesses and barriers.
 - If no,
 - Why? No interest from communities for switching to a PAYT system? No private service providers that offer PAYT collection? What can the SWMD to facilitate establishing PAYT services?
- Does the SWMD provide outreach to communities regarding PAYT collection?
 - If yes, has the outreach been successful at getting communities to implement PAYT services? How does the SWMD market itself to communities? Are there other ways/more effective ways of contacting communities? Are there specific communities the SWMD could work with?
 - If no, how can the SWMD reach out to generators?
 - Can the SWMD review existing trash service contracts and develop bid specifications for combined PAYT and recycling services?

- Does the SWMD have an economic incentive program to encourage communities to implement recycling services or to recycle more material through existing services (e.g., a community-based financial incentive grant program)?
 - If yes,
 - is the funding for the program adequate? If no, can the SWMD devote more money to the program?
 - is the methodology for determining how much money a community will receive appropriate (e.g., based on population vs based on quantity recovered vs based on recycling rate)?
 - does the funding strategy encourage communities to implement the best recycling programs possible (i.e., incentivize PAYT and curbside recycling over traditional trash collection and drop-offs)?
 - have communities begun recycling more material after receiving incentive grants?
 - If no,
 - Why? Inadequate revenue to fund a program?

- Does the SWMD or another entity provide any other types of financial incentive programs, such as residential reward programs (e.g., “Get Caught Recycling”, Recycle Bank, etc.)?
 - If yes, how have the programs performed?
 - If no, can the SWMD provide a financial incentive program or facilitate someone else providing a financial incentive?

If there were no economic incentive programs available in the SWMD (offered either through the SWMD or other entities), then as required by Goal 6 of the 2020 State Plan, the SWMD will evaluate the feasibility of implementing an incentive program. The SWMD should:

- Research programs implemented by other SWMDs for ideas.
- Evaluate available funding.

Evaluation of programs the SWMD provided:

For programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated?
 - If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn’t work?
 - If no, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn’t work?
- Were there programs from the current plan that the SWMD didn’t implement? If yes, why? Are there programs the SWMD could provide instead?

- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses of those programs? How did the programs perform? What were the impacts of the programs?

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6. *Restricted and Difficult to Manage Waste Streams Analysis*

Considerations for the Restricted and Difficult to Manage Waste Analysis

Goal 6 of the 2020 State Plan requires SWMDs to provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste, and obsolete/end-of-life electronic devices.

For this analysis, evaluate existing programs the SWMD offers for managing restricted wastes and difficult to manage wastes. If the SWMD does not currently offer programs for those wastes, then evaluate the need for and feasibility of providing them.

[Note: The SWMD likely will analyze programs for collecting yard waste in the waste composition analysis. If that is the case, then do not repeat that analysis here.]

Although not required by the 2020 State Plan, there are other difficult to manage wastes that a number of SWMDs provide programs for and that all SWMDs should consider as potential programs. These wastes include:

- Appliances.
- Pharmaceuticals.
- Household and rechargeable batteries.
- Bulky items (such as furniture, carpet, mattresses, etc.).

Some factors to consider include:

- Are there programs offered either by the SWMD or by others to address all of the wastes required by Goal 5? **[NOTE: The SWMD will have to demonstrate that it will provide programs for all wastes in Appendix I.]**
- Does the SWMD provide collection programs (e.g., temporary collection event, permanent collection location) for any of the wastes addressed by Goal 5?
 - If yes, then evaluate available collection program.
 - Is the collection program convenient to all residents in the SWMD?
 - Is the amount of money the SWMD spends on the collection program worth the quantity of materials managed (particularly when considered in light of other things the SWMD could do)?
 - How does the cost per unit collected or per person served compare to cost per unit or per person served for others (more expensive, less expensive, about the same)? Can the SWMD identify reasons for differences in costs? Are there things other SWMDs do to keep their costs low that the SWMD can do (e.g., not accepting latex paint)?
 - Does the SWMD assess user fees for participating in collection programs? If yes, is the amount of the user fee adequate or too much? If no, should the SWMD assess user fees?
 - Are the quantities managed through the collection program commensurate to those managed by other SWMD for similar programs (per capita)?

- How does the SWMD advertise collection programs? Is there a correlation between participation rates and advertising efforts? Are there ways the SWMD can improve how it advertises collection programs?
- What are the strengths and weaknesses of the program? What works and doesn't work
- Compare the collection program as it was provided in the reference year to how the SWMD anticipated the program would be provided in the currently approved plan:
 - Did the SWMD make changes to the program during the planning period? If yes, why and what were the effects of those changes?
 - How did the quantities of material collected compare to the quantities projected in the currently approved plan? If the quantities were different, what can the SWMD learn about developing projections for the plan update?
- If no, then:
 - How does the SWMD address restricted wastes? Through outreach (webpage, printed materials, etc.)? Does the SWMD provide information about properly managing the wastes? Provide information about local places to take restricted wastes?
 - Do the SWMD's outreach programs need to be updated?
 - Does the SWMD monitor usage of available information (e.g., number of visitors to web pages, quantity of printed material distributed)? If yes, is the information frequently accessed/requested (ie are the ways the SWMD makes information available effective)? If no, how can the SWMD evaluate usage of its information sources?
 - Does the SWMD solicit input into the effectiveness of its outreach? If yes, how has the SWMD used that input? If no, how could the SWMD get feedback about its outreach?
 - What other ways can the SWMD make information available or are there ways the SWMD can improve how it makes information available?
 - Does the SWMD regularly update available information? Does the information need to be updated? Does the SWMD need to establish a schedule for reviewing and updating the information being made available?
 - Is a collection program something the SWMD could provide? If yes, then should the program be a temporary collection event or a more permanent collection program? How much would a collection program cost? Can the SWMD offset the cost of a program with user fees? Can the SWMD collect multiple materials through the same program?
 - Can the SWMD collaborate with other solid waste management districts to provide a collection program (e.g., a consortium for hazardous waste collection, agreements between solid waste management districts to allow residents from both solid waste management districts to participate in each other's events)?
 - Is the SWMD participating in statewide or local initiatives for managing restricted or hard to manage wastes (e.g., pharmaceutical collection)? If no, should and how can the SWMD participate?

- Does the SWMD apply for available grants for scrap tire collection programs? If no, should the SWMD apply in future grant rounds?
- Are there privately provided programs for recycling restricted and difficult to manage wastes available in the SWMD (e.g. companies or other organizations that recycle electronics, lead-acid batteries, etc.)?
 - If yes, does the SWMD maintain a list of available programs?
 - If yes, then how does the SWMD make that list available? What can the SWMD do to improve how it makes people aware of the programs? How often does the SWMD update its list? **[NOTE: If the SWMD does not maintain a list, then the SWMD will create one as part of the comprehensive resource guide required by Goal 3 of the 2020 State Plan].**
 - If no, then should the SWMD provide programs? Is there anything the SWMD can do to help develop privately provided programs? What else can the SWMD do to provide residents with options?

Evaluation of programs the SWMD provided:

For the programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated?
 - If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn't work?
 - If no, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why? Are there programs the SWMD could provide instead?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses of those programs? How did the programs perform? What were the impacts of the programs?

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7. Diversion Analysis

Considerations for the Diversion Analysis

For this analysis, evaluate the quantities of waste reduced/recycled in the reference year and four prior years. Refer to data in Appendices E and F.

Information in the workbook on tab E-7b may help with this analysis.

All SWMDs will measure and analyze their waste diversion regardless of whether they opt to achieve Goal 1 or Goal 2. There are general factors that all SWMDs should consider. There are also specific factors a SWMD should evaluate depending upon whether it demonstrated achieving Goal 1 or Goal 2 in its currently approved solid waste management plan.

Some general suggestions for analyzing diversion include:

- Did the SWMD achieve Goal 2 in the reference year?
 - If no, is it because of inadequate or bad data, lack of available programs, a large quantity of a particular waste that isn't being recovered, a large quantity of a particular waste that can't be recovered (e.g. FGD waste, oil and gas waste)?
 - If yes, is it due to obtaining good data? Can the SWMD attribute data to specific programs?
- Trend – has the diversion rate been increasing, been decreasing, remained constant, fluctuated inconsistently?
 - Can variation in amounts recovered be explained by an outlier (such as: a large ice storm or other natural disaster that resulted in more yard waste composted in one year than in others; a large processing facility or generator returned a survey in one year but not in others; a significant recycling program was started/discontinued)?
 - If decreasing rate, can it be explained at least in part by recovery of lighter weight material (such as plastic replacing glass)?
- How does the diversion trend correlate with disposal and generation trends?
- What contributed to/caused increases/decreases?
- How does the SWMD's rate compare to the residential/commercial and industrial rates prescribed by Goal 2?
- How does the SWMD's rate compare to those for other, similar SWMDs? How does the SWMD's per capita recycling rate compare to those for other SWMDs?
- How does the SWMD's rate compare to the average diversion for Ohio?
- What materials comprise the largest amounts of all material recycled?
- What sectors are responsible for the greatest diversion?
- Are there materials that make up large portions of the waste stream that aren't being recycled in large quantities? [**NOTE:** refer to the results of the waste composition analysis completed for C above.]
- Are there sectors where more diversion is possible?
- Which programs result in the greatest diversion?
- Are there programs that should be diverting more material?

- Are there factors that contributed to higher than normal recovery of a material (e.g. yard waste due to a storm event)?
- How much waste does the current plan project would be recovered in the reference year? Is the projected quantity higher, lower, or similar to how much was actually recovered? Are there factors the SWMD did not consider/could not anticipate that resulted in inaccurate projections? How can the SWMD apply what it learned to projections for this plan update?

SWMDs that demonstrated achieving Goal 2 in their currently approved plans

If the SWMD opted to demonstrate achieving Goal 2 in its current approved plan and the SWMD did not achieve the goal, then evaluate and explain contributing factors such as

- What contributed the most to not meeting the goal? Lack of data? Programs? Underperforming recycling opportunities?
- If programs or recycling opportunities didn't perform as projected, why? If the SWMD will continue those programs or recycling opportunities how can it improve performance?
- Evaluation/measurement of programs or recycling opportunities revealed that projected recovery was estimated too high.
- The SWMD was unable to or did not collect data or did collect data but obtained limited data. - Explain why. [**NOTE:** *The SWMD will evaluate data collection efforts in Section L below.*]
- Key generators/recyclers that responded to past surveys did not respond to the survey for the reference year. Is it because they went out of business?
- Planned programs weren't implemented or existing programs were discontinued – Explain why and how those influenced the reduction and recycling rates.
- The SWMD determined that material previously credited was not creditable. Explain why.
- Were quantities of waste disposed higher than projected or did disposal increase more than quantities recovered?

If the SWMD opted to demonstrate achieving Goal 2 in its current approved plan and the SWMD did achieve the goal, then evaluate and explain contributing factors such as

- Did programs or data collection contribute the most to total quantities recovered?
- What programs/activities contributed the most to quantities recovered?
- Are there programs that recovered more materials than were projected to or were the quantities recovered close to projections?
- Were unanticipated programs implemented? If yes, what programs and how did those programs affect quantities recovered?
- Did decreases in the quantities of waste generated or disposed contribute to achieving the goal?
- Is there a correlation between the quantities disposed and recovered (e.g. disposal decreased while recovery increased or both disposal and recovery increased, but recovery increased more)?

SWMDs that demonstrated achieving Goal 1 in their currently approved plans:

If the SWMD demonstrated achieving Goal 1 in its current approved plan, then compare the SWMD's waste reduction and recycling rate in the reference year with the rate projected for that year in the current approved plan and develop conclusions about differences. Consider factors such as:

- Did the SWMD achieve its target waste reduction and recycling rates?
 - If the rate was higher than projected, what contributed to the higher rate?
 - Was it programs or data collection that contributed the most to total quantities recovered?
 - What programs/activities contributed the most to quantities recovered?
 - Are there programs that recovered more materials than were projected to?
 - Were unanticipated programs implemented? If yes, what programs and how did those programs affect quantities recovered?
 - Did decreases in the quantities of waste generated or disposed contribute to achieving the goal?
 - Is there a correlation between the quantities disposed and recovered (e.g. disposal decreased while recovery increased)?
 - Were there factors that contributed to higher than projected/normal recovery of a material (e.g. yard waste due to a storm event)?
 - If the rate was lower than projected, what contributed to the lower rate?
 - If programs didn't perform as projected. Explain why (if SWMD will continue those programs, how will it improve performance?)
 - Evaluation/measurement of programs revealed that projected recovery was estimated too high.
 - The SWMD's was unable to or did not collect data or did collect data but obtained limited data. - Explain why. **[NOTE: The SWMD will evaluate the SWMD's data collection efforts in Section L later in this appendix. Examples of survey forms and recommendations for conducting surveying are available on Ohio EPA's website a.]**
 - Key generators/recyclers that responded to past surveys did not respond to the survey for the reference year. Is it because they went out of business?
 - Planned programs weren't implemented or existing programs were discontinued – Explain why and the effects on the reduction and recycling rates.
 - The SWMD determined that material previously credited was not creditable. Explain why.
 - Quantities of waste disposed were higher than projected and increased more than quantities recovered.

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8. Special Program Needs Analysis

Considerations for the Special Program Needs Analysis

Ohio Revised Code Section 3734.57(G) gives SWMDs the authority to fund a number of activities that are not related to achieving the goals of the state solid waste management plan. In addition, there are other programs that SWMDs fund that are not addressed in either the state plan or law. If the SWMD already funds or provides any of these activities or programs, then evaluate the performance and status of those activities and programs in the reference year and the value to the SWMD. If the SWMD did not fund or provide these activities and programs in the reference year, then evaluate whether it needs to fund or provide any of them to address local needs.

Potential allowable uses to consider include:

- Cleaning up solid waste and scrap tire dumps (particularly if the SWMD has a large number of open dumps).
- Health department support [pursuant to ORC Section 3734.57(G)(3) and (G)(7)].
[NOTE: SWMDs can provide financial support to only those health departments that have been approved by Ohio EPA to enforce the solid waste laws and rules.]
- Enforcement agency support [pursuant to ORC Section 3734.57(G)(7)].
- Financial assistance for counties for the costs of hosting a solid waste facility [pursuant to ORC Section 3734.57(G)(4)].
- Paying the costs incurred by a board of health for collecting and analyzing samples from public or private water wells on lands adjacent to solid waste facilities [pursuant to ORC Section 3734.57(G)(5)].
- A program for inspecting solid wastes generated outside of Ohio and disposed of at solid waste facilities located within the SWMD [pursuant to ORC Section 3734.57(G)(6)].
- Financial assistance to municipal corporations and townships for the costs of hosting a composting, energy or resource recovery, incineration, or recycling facility [pursuant to ORC Section 3734.57(G)(9)].

Other needs to consider include:

- Funding to pay for closing a facility landfill and/or pay for post-closure care of a closed facility.
- Disaster debris management/disaster response.

Staffing needs.

- Other needs that are unique to the SWMD.

Evaluation of programs the SWMD provided:

For the programs the SWMD provided in the reference year, compare status of programs in the reference year with how programs were designed in the current approved plan.

What programs did the SWMD expect to offer under the current plan?

- Were the programs implemented as anticipated by the SWMD?

- If yes, how did the programs perform? What were the impacts of the programs? What are the strengths and weaknesses of the programs? What worked and didn't work?
- If no, why? What was different between how a program was anticipated to work versus how it was implemented? Was the program successful? What are the strengths and weaknesses of the program? What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why? Are there programs the SWMD could provide instead?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan? If yes, why? What are the strengths and weaknesses of those programs? How did the programs perform? What were the impacts of the programs?

Does the SWMD have contracts with agencies the SWMD provides funding to? Does the SWMD have a means of monitoring how agencies spend the money they are given? Do those agencies report to the SWMD regarding how they used the money?

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9. Financial Analysis

Considerations for the Financial Analysis

For this analysis, evaluate the SWMD's financial position, not just in terms of its current situation but also in terms of what the SWMD's financial situation will be during the planning period. While performing this analysis, think about finances in terms of both being able to finance core programs and programs the SWMD wants to implement during the planning period. The SWMD will use what it learns from conducting this analysis when completing Appendix O (Financial Data).

Use the historical financial data from Appendix O when performing the financial analysis (i.e. data from the reference year and the four prior years).

Revenues

Below are some suggestions for evaluating revenue:

- Have the SWMD's recent revenues been increasing, been decreasing, remained constant, or fluctuated inconsistently? What factors contributed to the trend or influenced revenue receipts?
 - How does the trend correlate with disposal and generation trends?
 - If the SWMD has multiple sources of funding, has revenue from one source changed more than others? How? Why?
 - Are increases due to receiving revenue from a new revenue mechanism?
 - Are decreases due to discontinuing an existing revenue mechanism?
 - Is there a year where revenue was much higher/lower than normal? If yes, what caused the outlier? How does the outlier skew the trend? Would eliminating the outlier result in a more definitive trend or a more accurate basis for making projections?
 - Are any changes associated with a particular facility/facilities?
 - Can an outlier be explained by something like a natural disaster, power being out for an extended period of time (lots of spoiled food disposed) or some other event that would cause more waste to have been disposed than normal?
- What funding mechanisms provide the most money? How stable are those mechanisms?
- Are there any threats to the ongoing security of a major funding source (such as a landfill closing and no longer being able to collect disposal fee)? Are there more stable funding sources the SWMD could use?
- Is the lack of money preventing the SWMD from meeting the goals of the state plan?
- How much revenue does the SWMD earn per person? How does that compare to other SWMDs?
- Are there nearby solid waste management districts that are proposing to designate facilities? How will that affect waste flows to landfills located within the SWMD?
- Has the SWMD recently designated facilities or is proposing to designate facilities? How will/would that affect the SWMD's revenues?

- Are there any facilities that remit revenue to the SWMD that will/may close?
- Are there any new facilities (e.g. landfills or transfer facilities) planned/opening that could affect waste flows and how much waste the SWMD will collect fees on?
- What are the fee structures of nearby SWMDs? If higher/lower than the SWMD's, how do those fees affect the flow of waste into or out of the SWMD?
- Is a nearby solid waste management district ratifying changes to its fees? How could that affect the flow of waste?
- Compare the amount of money earned through each revenue source in the reference year to how much the SWMD projected it would earn for that year in the currently approved plan. Review the methodology for making projections. How accurate were the revenue projections? Are there factors that the SWMD did not consider/could not anticipate that affected the accuracy of projections? How can the SWMD apply what it learned to projections for this plan update?

In addition to the factors listed above, a SWMD could consider the following revenue-specific factors:

Disposal fee

- Where did the waste that was disposed at landfills located within the SWMD originate?
 - How much waste was from within the SWMD versus from other SWMDs or out of state? Which contributes the most to the SWMD's revenue?
 - Have the quantities from each source changed or been consistent?
 - Is there a large contract for waste collection that comprises a significant portion of total waste disposed (e.g. trash collection for a major city)?
 - If yes, when is that contract up for renewal? Has the company that won the contract changed recently? Does the contracted company change frequently? Does the company that has the contract affect whether waste comes to landfills located within the SWMD? If yes, where is the waste disposed of when it doesn't come to the SWMD? What are the resulting effects on revenue receipts?
- If the SWMD has a disposal fee, did the SWMD recently change its fee structure? If yes, how did this change how much revenue the SWMD received?
- If revenues from the disposal fee changed from those projected in the currently approved plan and/or have changed over the past five years, then identify the changes.
 - Are changes in revenue due to changes in the quantities of in-district, out-of-district, and/or out-of-state waste received? Can the SWMD identify the reasons for those changes?
 - Did a landfill in another SWMD close and waste was redirected to a landfill(s) in the SWMD? Did a landfill in the SWMD close and waste that previously was disposed within the SWMD went to a landfill(s) in another SWMD?
 - Did a landfill in the SWMD increase its intake of waste (with something like a railroad spur or by accepting fracking waste) or decrease its intake of waste?

- Did the SWMD implement flow control causing more waste that previously went to landfills in other SWMD to stay in the SWMD? Did another SWMD implement flow control diverting waste away from a landfill in the SWMD?
- Did waste flows change due to a change in a contract for waste hauling services?

Generation fee:

- How much waste generated by the SWMD was disposed in facilities located within the SWMD versus disposed at facilities located outside of the SWMD?
- Are the quantities of waste on which a facility paid fees the same as the quantities the owner/operator of the facility reported receiving from the SWMD in its facility annual report?
- How much waste generated by the SWMD was routed through transfer facilities prior to being taken to a landfill? Which landfills did each transfer facility send its waste to? Was any of the SWMD's waste mischaracterized during the process?
- If the SWMD has a generation fee, did the SWMD recently change the amount of the fee? If yes, how did it change how much revenue the SWMD received?
- If revenues from the generation fee changed from those projected in the currently approved plan and/or have changed over the past five years, then identify what caused the changes.
 - Was waste that was previously mischaracterized as originating in another SWMD re-characterized as coming from the SWMD or vice versa?
 - Are changes in revenue from the generation fee due to changes in the quantities of waste disposed?
 - Did a transfer facility begin taking waste from the SWMD causing potential mischaracterization of waste?
 - Did waste that was previously disposed of in Ohio go to a facility located in another state?
 - Did a facility begin/cease reporting having taking waste from the SWMD even though the facility historically didn't/did take waste from the SWMD?

Other Revenue Sources:

Evaluate other sources the SWMD uses for revenue following the same train of thought as for disposal and generation fees (i.e. evaluating change over the past several years and the reasons for the change). Things to consider for individual funding sources are provided below

- Contracts - does the SWMD have negotiated contracts (not associated with facility designations) with owners/operators of waste facilities to remit revenue (e.g. per ton of waste received from out-of-state?) Will those contracts expire soon? Is the SWMD confident that it can renegotiate contracts for at least equivalent revenue? What about the potential for more revenue?
- Rates and Charges – If the SWMD assess rates and charges, is being unable to collect from all improved parcels affecting the SWMD's revenue? Does the SWMD have a system for collecting delinquent accounts?
- Recycling Revenue

- Have revenues earned on recyclables increased, decreased, remained constant, or fluctuated inconsistently?
- Are changes in revenue due to changes in the quantities of recyclables recovered? If yes, what contributed to the change (e.g., added/removed a material from the collection mix; changed from totes to carts; new curbside program/existing curbside program discontinued; increase/decrease in number of drop-offs; change from multi-stream collection to single stream collection; etc.)
- Are changes due to increased/decreased value of recyclables?
- Did the SWMD recently negotiate/renegotiate profit sharing with a processor?
- Debt, Bonds - How does paying off existing debt affect the SWMD's ability to fund programs? If the SWMD is considering new debt, how would paying off the debt affect the SWMD's ability to fund programs and maintain a positive balance?
- Designation agreements - (look at the recommended analyses for the disposal and generation fees)
- Tipping Fees - If the SWMD receive revenues from a solid waste facility (such as a county-owned landfill or transfer facility), is the facility expected to operate for the entire planning period? Has the facility reported having accepted more/less waste in recent years? Is the amount the SWMD receives fixed or variable?
- Misc. - user fees, county contributions

Expenditures

- Compare the amounts of money spent in the reference year to how much the SWMD projected it would spend for that year in the currently approved plan. Review the SWMD's methodology for making projections. How accurate were the expenditure projections? Are there factors the SWMD did not consider/could not anticipate that resulted in inaccurate projections? Are there specific programs with actual versus projected expenditures that were significantly different? How can the SWMD apply what it learned to projections for this plan update?
- Have the SWMD's recent expenditures increased, decreased, remained constant, or fluctuated inconsistently? Why? Are increases due to implementing a major new program? Due to inflation? Are decreases due to discontinuing one or more programs? Is there a year that is an anomaly? If yes, what caused the anomaly (such as a major purchase)?
- What are the SWMD's major expenditures? Have expenditures on those programs changed significantly? Do the most expensive programs help the SWMD meet the goals of the state plan? Are there ways the SWMD can make changes to expensive programs to decrease the cost while maintaining the same level of service?
- How much does the SWMD spend on specific programs relative to other SWMDs on a per capita basis?
- Are there new programs the SWMD wants to implement but can't afford? How could the SWMD fund those new programs? Can the SWMD assess a user fee? Increase amount of existing fee? Implement a new source of revenue? Decrease expenditures in other areas?
- Will the SWMD construct or operate a new facility or make upgrades to an existing facility? If yes, how much will it cost (consider both capital and operational costs)?

How would the SWMD get the money to cover the cost? [**NOTE:** *The SWMD will prepare a budget for a facility in Appendix O.*]

- Can the SWMD eliminate programs or reduce the costs to fund new programs or improve other programs?
- Are there any contracts the SWMD has with service providers that will expire soon/is the potential for the cost of a new contract to be higher?
- Cost/benefit analysis – are the programs that the SWMD spends large amounts of money on worth the results?
- Are overhead expenditures projected to increase (like salaries, benefits, rent, etc.). How much? What are increases based on?
- Are there any upcoming capital improvements the SWMD intends to make/would like to make? How much would those improvements cost?
- How will inflation affect the costs of programs?
- If the SWMD operates a facility or services drop-off locations or curbside recycling programs, what is the breakdown between capital costs and operating costs? Have operating costs been increasing, decreasing, or fluctuating inconsistently? What has contributed to the change (e.g. cost of fuel, increased/decreased staff, salary increases, equipment repair, etc.)?

Carry over balance:

- Has the SWMD been spending or accumulating cash balances? Why? Due to increased/decreased revenue? Due to increased/decreased expenditures? Is the cash balance higher or lower than projected in the currently approved plan?
- If the SWMD has been spending its cash balance, then how long can the SWMD continue to pay for its current costs, spend its cash balance and still be financially solvent? If the SWMD could experience a shortfall, when?
- In the event of a projected shortfall, how would the SWMD resolve it? Increase revenue? How? Decrease expenditures? Which expenditures?
- If SWMD has been accumulating a cash balance, then are there new or existing programs the SWMD can spend the money on? Does the SWMD need to reduce its fees because it is accumulating significant money?
- How much money does the SWMD maintain on-hand for emergencies? Is that amount adequate to cover expenses during an emergency?

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10. Regional Analysis

Considerations for the Regional Analysis

The purpose of the regional analysis is to consider regional opportunities for collaboration and partnerships, and to also consider how the SWMD's decisions may impact other stakeholders in the region. This analysis may result in the creation of a systematic plan to communicate, collaborate and/or partner with the stakeholders identified through this process.

Although SWMDs are all working towards common goals, the methods as to which those goals are achieved can differ across jurisdictional boundaries. For example, education and outreach, recycling services, and fees can differ significantly between one SWMD to another. This can cause confusion to residents and businesses who often times cross jurisdictional boundaries or conduct business in several SWMDs. This analysis will allow a SWMD to analyze the feasibility of collaborating and partnering with neighboring SWMDs, and other stakeholders, to promote a cooperative and consistent message, offer standardized services, and to examine the impact of each other's decisions.

To facilitate this analysis, the SWMD might consider convening a meeting of coordinators from adjacent solid waste management districts to discuss regional opportunities and impacts.

Identify Regional Stakeholders

Consider identifying all stakeholders in the region who have a key interest and involvement in SWMD programs, problems and solutions. Regional stakeholders are not limited to neighboring SWMDs. Other stakeholders could include universities, private entities, local agencies, municipalities, townships, recyclers, haulers and nonprofits. Identify stakeholders who are the people, interest groups, public/private entities and organizations who:

- Have a necessary involvement in SWMD activities
- Who cause the problems
- Are the affected by the problems
- Solve the problems
- Have the resources to create and implement solutions
- Will be affected by those solutions
- Are needed to effectively and credibly define problems and create solutions

Communication and Collaboration

By promoting communication and collaboration, the SWMD may be able to connect stakeholders, activities, processes and information that will benefit each entity involved. Below are some basic principles of collaboration:

- **Networking** – the sharing or exchanging of information for a mutual benefit
- **Coordinating**- networking and altering activities to achieve common goals

- **Cooperating** – coordinating, sharing and, or pooling resources for a mutual benefit
- **Collaborating** – cooperating and enhancing the capacity of another, for mutual benefit to achieve a common purpose

A crucial step in a successful and meaningful collaboration is to open the lines of communication between the stakeholders that were identified above. SWMDs may find it helpful to facilitate a meeting among those stakeholders. Other steps for a successful collaboration include:

- Defining a clear need to collaborate
- Working together to define and solve problems
- Having a strong commitment to collaboration and support from each stakeholder
- Having an open process that allows each individual/entity to be heard
- Identifying and having strong leadership
- Strong stakeholder participation
- Resolving conflict as it arises
- Overcoming any mistrust between individuals and entities that stem from historical experiences

Regional Partnerships

Explore opportunities to partner with neighboring SWMDs. There may be opportunities for cost savings by sharing services. For example, would it be possible to partner up and hire a regional education specialist? Not only would this save on costs to each SWMD involved but it would also ensure that a consistent message is being delivered to residents and to businesses in the region.

Below are some topics to consider for this analysis:

- Is the SWMD already participating in regional programs with one or more other SWMDs?
 - Are those programs formal or informal?
 - If the SWMD is participating in regional programs, are there opportunities for improving those programs or expanding participation to other SWMDs?
- What's the potential of forming a mutually beneficial partnership with one or more SWMDs in the region?
- Do SWMDs in the region face similar problems or issues that can be the focus of a collaborative effort for a solution?
 - How are neighboring SWMDs handling or approaching the similar problem?
- Are there opportunities for collaboration with nearby SWMDs for services (such as processing facilities, providing education, sharing of staff, collection events, etc.)?
- Are there opportunities for collaborative contracting among local jurisdictions (e.g. contracting for trash or recycling services)?
- Are there other entities in the area that the SWMD would benefit from partnering with (such as city or university)?

Regional Impacts

Decisions made by one SWMD, can adversely affect other SWMDs and vice versa. The individual decisions regarding solid waste management in one SWMD, may impact residents, local governments and businesses in other SWMDs in the region.

Below are some examples of decisions that may have a regional impact:

- If the policy committee intends for the SWMD to designate where waste can go, has the policy committee evaluated the impacts of the surrounding solid waste management districts and other identified stakeholders?
- If the policy committee is recommending a change to the SWMD's funding mechanisms, has it evaluated the impacts on surrounding solid waste management districts and other identified stakeholders?
- Opening/closing a recycling center/MRF
- Opening/closing a solid waste facility
- Franchising/cooperative contracting as it affects the flow of waste and other SWMD's abilities to collect fees (i.e. a hauler that also owns a facility starting to take waste to their facility when multiple haulers used to take waste to different facilities)

Has the SWMD evaluated the impacts they may encounter if a neighboring SWMD implements any of the above activities or actions?

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11. Data Collection Analysis

Considerations for the Data Collection Analysis

The purpose of this analysis is to analyze the SWMD's current data collection efforts and to identify ways the SWMD can improve its data. The conclusions drawn from this analysis will be used to develop improvements in Appendix I.

To truly understand and analyze the data collection program, describe, in detail, the data collection process from beginning to end for each sector. Also list the sources of data for each sector. Identify the staff involved in the data collection process and estimate the amount of time data collection requires.

Residential:

- How does the SWMD collect data for the residential sector?
- Are haulers, processors and other facilities surveyed?
- Are there gaps in the data? In other words, are there known recycling activities occurring that just aren't being reported? Can a plan be developed to fill those "gaps"?
- Does the SWMD use published Ohio EPA data? If so, what portions of that data are used?
- Have issues with Ohio EPA data been identified?
- What other sources of data are being used?

Commercial:

- How does the SWMD collect data for the commercial sector?
- Does the SWMD distribute a commercial survey?
 - If so, how are commercial entities identified?
 - How many attempts does the SWMD make to solicit a response?
 - What mode(s) of surveying are offered?
 - What is the response rate of the commercial survey?
 - What problems are encountered when surveying the commercial sector?
- Are haulers, processors and other facilities surveyed?
- Are there gaps in the data? In other words, are there known recycling activities occurring that just aren't being reported? Can a plan be developed to fill those "gaps"?
- Does the SWMD make an effort to meet with any commercial entities one on one?
- Does the SWMD use published Ohio EPA data? If so, what portions of that data are used?
 - Have issues with Ohio EPA data been identified?
- What other sources of data are being used?
- How is double counting prevented?

Other factors to consider include:

- Does the SWMD partner with any other entity to solicit survey responses?
- What is the frequency of data collection efforts?
 - Does it differ by sector?

- Is the data, or lack thereof, preventing the SWMD from achieving Goal #2 of the State Plan?
- Are all entities being surveyed or is the survey targeted to a select few that meet certain criteria?
 - What criteria are being used to select survey participants?
- How does the SWMD believe data collection could be improved?
- How long are the surveys for each sector?
- What kind of data are entities being asked to provide?
- Does the SWMD collaborate with the assigned Ohio EPA planner?
- Does the SWMD have the staff available to dedicate the time needed to perform a comprehensive data collection effort? If not, has the SWMD considered alternative methods (ex. Hiring an intern, working with a local university etc.)?

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12. Education/Outreach Analysis

Considerations for the Education/Outreach Analysis

Read the **description of requirements for outreach and education** in Appendix L prior to conducting this analysis

Evaluate the SWMD's existing education, outreach, and technical assistance efforts to determine if there are programs to address all five of the target audiences. The SWMD will also evaluate the effectiveness and adequacy of its existing programs. The SWMD will decide which programs it will continue providing, those it will discontinue, any changes it will make, and new programs it will provide. The SWMD will also identify its strategy for incorporating the principles identified for Goal 4 into the education, outreach, and technical assistance programs. **[NOTE: Some of the recommendations below may be addressed when conducting other analyses. If that is the case, do not repeat those here.]**

Below are some suggestions for things to consider during the evaluation:

Target Audiences:

- Does the SWMD have programs to address the 5 target audiences?
 - If yes, evaluate those programs in accordance with instructions under the heading for "Existing Programs".
 - If no, the SWMD doesn't have programs for a target audience, then why?
 - Is it because the audience doesn't have a strong presence in the SWMD (such as a small industrial sector)?
 - Is it because the SWMD is unsure of the best way to reach out to a target audience?
 - Is it because the audience hasn't responded to past efforts to reach out to it?
- Are there unique or special interest groups that need particular attention? Examples include a university, prison, airport, event venue (such as an arena, sports stadium, or convention center), hospital or other specific type of generator.
 - If yes, then does the SWMD already reach out to those groups?
 - If yes, then evaluate those programs in accordance with the instructions under the heading for "Existing Programs".
 - If no, evaluate how to address them in accordance with the instructions under the heading for "Phase Two"

Existing Programs:

For the education, outreach, and technical assistance programs the SWMD offers:

- Is a program appropriate given available recycling opportunities?
 - Is the SWMD providing awareness education to a target audience that doesn't have access to a recycling opportunity?

- If yes, then the outreach and marketing plan should shift the focus on educating that audience to focusing on the audience that can establish a recycling opportunity.
 - Is the SWMD providing awareness education to a target audience that does have access to a recycling opportunity?
 - If yes, then the outreach and marketing plan will involve aligning those programs with social marketing principles.
 - Is the SWMD targeting with the correct audience given what the SWMD is trying to accomplish?
 - Is the program “one-size-fits-all” or is it specific to the type of recycling opportunity? For example, does the SWMD use the same strategy and message to address drop-off locations and curbside recycling services? Residents that use drop-offs and residents that use curbsides should be addressed differently.
- Did/how does the SWMD measure the results/effectiveness of its programs?
- How did programs perform/what were the impacts of the programs?
- What are the strengths and weaknesses of the programs?
- What worked and didn’t work?
- When is the last time the SWMD made changes to the programs?
- Has the SWMD ever asked for feedback from the target audience regarding the programs?
- How did the SWMD market available programs to the target audiences?
 - Were those efforts sufficient?
 - Did the message reach the intended audience?
 - How can the SWMD improve how it markets itself and its services?
- Is there consistency throughout the SWMD (particularly relevant to a SWMD with multiple counties) and among the target audiences in the message being communicated?

Compare status of programs in the reference year with how programs were designed in the current approved plan.

- What programs did the SWMD expect to offer under the current plan?
 - Were the programs implemented as anticipated?
 - Are there programs that were implemented but not as expected in the current plan?
 - If yes, why?
 - What was different between how a program was anticipated to work versus how it was implemented?
 - Was the program successful?
 - What are the strengths and weaknesses of the program?
 - What worked and didn’t work?
- Were there programs from the current plan that the SWMD didn’t implement? If yes, why?
- Did the SWMD implement programs during the planning period that weren’t anticipated in the current plan?
 - If yes, why?
 - What are the strengths and weaknesses of those programs?

- How did the programs perform?
- What were the impacts of the programs?

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13. **Recyclable Material Processing Capacity Analysis**

Considerations for the Processing Capacity Analysis

The lack of processing capacity can be an obstacle to implementing new recycling services and implementing initiatives to recover more material through existing services. Before a SWMD can increase recovery of materials, there has to be adequate capacity to process the materials within a reasonable driving distance.

The purpose of this analysis is to evaluate existing capacity for processing recovered materials. Through this analysis, the SWMD will determine if there is adequate processing capacity and, if not are there things the SWMD can/needs to do to facilitate obtaining capacity.

Factors to consider include:

- Where are recyclable materials from the SWMD processed? [**NOTE:** *if the SWMD owns and operates a processing facility, then evaluate that facility below.*] Do those facilities have enough capacity/ability to process more material?
- How far away are available processing facilities?
- Do communities/businesses/schools/others pay processing costs? How much? How do those costs compare to processing costs in other parts of the state? Do communities/businesses/schools/others share profits with the owner of the processing facility?
- Is the lack of regional processing capacity, the high cost of transporting materials to a processing facility, and/or the current cost of processing materials a barrier/barriers to improving recovery of recyclable materials?
 - If yes:
 - Are materials transported directly to a processing facility or are they routed through a transfer facility?
 - Are there processing facilities in the region not being used to process recyclable materials from the SWMD? Do those facilities have the ability to accommodate how recyclables are collected in the SWMD (i.e single versus multiple sort)? Do they have the ability to process more recyclables?
 - Is there a processing facility in the area that doesn't have enough capacity to accept additional material? Can the SWMD work with the owner of the facility to upgrade capacity and make it capable of taking material from the SWMD? Can the SWMD work with the owner to obtain a grant from Ohio EPA for upgrades?

[NOTE: *The SWMD needs to ensure that there is processing capacity for projected increases in the quantities of recyclable materials to be recovered through programs such as curbside recycling services and drop-off locations. This is particularly important if there isn't convenient or adequate processing capacity in the SWMD's region of the state.*

If there isn't /won't be adequate processing capacity, then the SWMD should define its role in and have a strategy for either obtaining access to available capacity or developing new capacity. The SWMD will likely play a larger role if communities run their own recycling programs than it would if programs are run by private service providers.]

- Is there a publicly owned processing facility in the area that strictly takes material from its service area (such as a county or city-owned facility that processes material from only the county or city?). Can the SWMD collaborate with the owner to expand the service area?
- Does/could the SWMD assist communities/businesses/others with contracting to obtain better processing costs?
- Would it make sense for the SWMD to build or contract with a private company to build or operate a transfer facility for recyclable materials?
- Should the SWMD consider building and operating a processing facility for recyclable materials?

If the SWMD operates a material recovery facility/recycling center/processing facility, then evaluate that facility. Some factors to consider include:

- Is the current facility adequate to handle all material currently being managed? How about manage additional material?
- If the facility operating at capacity and the SWMD will implement programs to increase quantities of materials recovered, where will those materials be processed?
- How old is the equipment? Does it need frequent repairs? Do shutdowns frequently affect the ability to process materials? Is the equipment old technology that isn't efficient (such as manual sort versus automated sort)? Does SWMD need to replace equipment? How much would that cost? Where/how would the SWMD obtain the money? Is it worth the investment?
- Are there other processing facilities nearby that could take materials if the SWMD no longer operated its own facility? How do the processing costs at those facilities compare to the costs at the SWMD's facility (could evaluate by finding out how much communities/businesses pay to use the facility)?
- Is the facility a dual/multiple sort facility or a single stream facility? If a multiple sort facility, does that limit converting local curbside and drop-off services to single stream and/or automated services? Is there a demand for single stream/automated collection service in the area? What would it take to convert the facility to single stream service?
- Was the facility established before other entities established processing facilities in the area? If yes, does it make sense for the SWMD to continue operating its facility/upgrade its facility given other available options?
- How does the SWMD staff the facility? Does the SWMD rely on paid staff or "volunteers", such as from a prison work program? Are there issues that complicate operations or staffing the facility, such as union issues, high turnover rates?
- Does the SWMD have frequent worker injuries/workers compensation claims?

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12. Education/Outreach Analysis

Considerations for the Education/Outreach Analysis

Read the **description of requirements for outreach and education** in Appendix L prior to conducting this analysis

Evaluate the SWMD's existing education, outreach, and technical assistance efforts to determine if there are programs to address all five of the target audiences. The SWMD will also evaluate the effectiveness and adequacy of its existing programs. The SWMD will decide which programs it will continue providing, those it will discontinue, any changes it will make, and new programs it will provide. The SWMD will also identify its strategy for incorporating the principles identified for Goal 4 into the education, outreach, and technical assistance programs. **[NOTE: Some of the recommendations below may be addressed when conducting other analyses. If that is the case, do not repeat those here.]**

Below are some suggestions for things to consider during the evaluation:

Target Audiences:

- Does the SWMD have programs to address the 5 target audiences?
 - If yes, evaluate those programs in accordance with instructions under the heading for "Existing Programs".
 - If no, the SWMD doesn't have programs for a target audience, then why?
 - Is it because the audience doesn't have a strong presence in the SWMD (such as a small industrial sector)?
 - Is it because the SWMD is unsure of the best way to reach out to a target audience?
 - Is it because the audience hasn't responded to past efforts to reach out to it?
- Are there unique or special interest groups that need particular attention? Examples include a university, prison, airport, event venue (such as an arena, sports stadium, or convention center), hospital or other specific type of generator.
 - If yes, then does the SWMD already reach out to those groups?
 - If yes, then evaluate those programs in accordance with the instructions under the heading for "Existing Programs".
 - If no, evaluate how to address them in accordance with the instructions under the heading for "Phase Two"

Existing Programs:

For the education, outreach, and technical assistance programs the SWMD offers:

- Is a program appropriate given available recycling opportunities?

- Is the SWMD providing awareness education to a target audience that doesn't have access to a recycling opportunity?
 - If yes, then the outreach and marketing plan should shift the focus on educating that audience to focusing on the audience that can establish a recycling opportunity.
- Is the SWMD providing awareness education to a target audience that does have access to a recycling opportunity?
 - If yes, then the outreach and marketing plan will involve aligning those programs with social marketing principles.
- Is the SWMD targeting with the correct audience given what the SWMD is trying to accomplish?
- Is the program "one-size-fits-all" or is it specific to the type of recycling opportunity? For example, does the SWMD use the same strategy and message to address drop-off locations and curbside recycling services? Residents that use drop-offs and residents that use curbsides should be addressed differently.
- Did/how does the SWMD measure the results/effectiveness of its programs?
- How did programs perform/what were the impacts of the programs?
- What are the strengths and weaknesses of the programs?
- What worked and didn't work?
- When is the last time the SWMD made changes to the programs?
- Has the SWMD ever asked for feedback from the target audience regarding the programs?
- How did the SWMD market available programs to the target audiences?
 - Were those efforts sufficient?
 - Did the message reach the intended audience?
 - How can the SWMD improve how it markets itself and its services?
- Is there consistency throughout the SWMD (particularly relevant to a SWMD with multiple counties) and among the target audiences in the message being communicated?

Compare status of programs in the reference year with how programs were designed in the current approved plan.

- What programs did the SWMD expect to offer under the current plan?
 - Were the programs implemented as anticipated?
 - Are there programs that were implemented but not as expected in the current plan?
 - If yes, why?
 - What was different between how a program was anticipated to work versus how it was implemented?

- Was the program successful?
- What are the strengths and weaknesses of the program?
- What worked and didn't work?
- Were there programs from the current plan that the SWMD didn't implement? If yes, why?
- Did the SWMD implement programs during the planning period that weren't anticipated in the current plan?
 - If yes, why?
 - What are the strengths and weaknesses of those programs?
 - How did the programs perform?
 - What were the impacts of the programs?

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Appendix I

Actions, and Priorities

After completing Appendix H, Ohio EPA recommends the SWMD use its conclusions and findings to make decisions about the programs the SWMD will provide during the planning period. Suggested steps are as follows:

- 1) Make a list of actions – This list will consist of things the SWMD could do to address the conclusions and findings from The analyses. Compile the list without evaluating each item from the perspective of “is this something we want to or can address?”

Including an item on the list does not mean the SWMD has committed to doing anything. Ohio EPA anticipates that a SWMD that completes this step as intended will identify more actions than it could address in the upcoming planning period. The SWMD may also identify things that it is not able to address now or even in the future. It is all good information to have.

This step will provide the SWMD with a comprehensive list of ideas. The SWMD can use this list when making decisions about what the SWMD will do during the upcoming planning period.

- 2) Evaluate the list developed in step 1 –Commit to the actions the SWMD will address during the upcoming planning period (of all the action items on the list made in 1 above, which does the SWMD feel are the most important to address during the upcoming planning period?). Those actions will be the SWMD’s priorities for the planning period and will determine what programs the SWMD will provide.

When identifying priorities, ensure the SWMD will have programs to address all the required goals of the state solid waste management plan. If the SWMD does not already have programs to address all the required goals, then the SWMD can have priorities to develop programs to meet unfulfilled goals.

- 3) Identify/develop programs and strategies – Next identify the programs and strategies the SWMD will use to achieve its priorities. These programs and strategies, along with existing programs the SWMD will continue to provide, will be the programs and strategies the SWMD commits to implementing during the planning period.

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Appendix J

Supplemental Instructions for Appendix J

Examples of acceptable demonstrations:

- The largest city in a SWMD has a population of 20,000 with three existing, full-time drop-offs in the city (for a total population credit of 15,000). The SWMD can provide either one additional full-time drop-off or two part-time drop-offs to achieve providing 100 percent of the population in the city with the opportunity to recycle.
- A city, with a population of 9,200, currently has no drop-offs. The SWMD commits to siting 2 full-time drop-offs in the city resulting in a population credit of 10,000. Although this will give more than 100 percent of the residential population the opportunity to recycle, the SWMD can take the entire population credit for the second drop-off. However, the SWMD cannot credit any additional recycling opportunities for that city after calculating in the second full-time drop-off.
- A city in a SWMD has a population of 12,000 and has non-subscription curbside recycling. The SWMD cannot count population credits for any drop-offs that are provided in the city.

Weight of Material Collected:

This alternative methodology assigns the number of users to an existing drop-off based on weight of material collected. The more material collected the greater the number of users that are assumed to use the site. This methodology is best suited to drop-offs where large quantities of recyclable materials are collected. Using this methodology, a SWMD may be able to assign a higher population credit to a drop-off than would be assigned using the default credits.

This methodology applies regardless of the number of hours a drop-off is available or the population of the community in which the drop-off is located. However, a drop-off must meet the following criteria to be assigned population credits using this methodology:

- The drop-off must have collected at least 100,000 pounds (50 tons) of material in the reference year.
- The drop-off must have been in place for the entire reference year.
- Weight data must be for the reference year and must be reported data specific to the drop-off being evaluated (i.e., not estimated or otherwise calculated or derived from an aggregate weight for multiple drop-offs).
- The total weight of material collected at the drop-off must consist of weights from only the materials that are typically collected at a residential drop-off (e.g., aluminum cans, plastic bottles, paper, cardboard, glass, etc.). The SWMD cannot include weights from atypical materials that may be collected at the drop off, such as yard waste, appliances, HHW, lead-acid batteries, scrap metals, and food waste.

Reference Table B below presents the scale of population credits that correspond to pounds of material collected. Ohio EPA developed this scale using an algorithm that uses data obtained during a study of participation at drop-offs that the Agency conducted in 2003 and 2004.

As shown in Reference Table B, to receive more than 2,500 population credits, a drop-off must have collected more than 450,000 pounds in the reference year. To receive more than 5,000 population credits, a drop-off must have collected more than 900,000 pounds in the reference year.

Reference Table B: Drop-off Population Credits Based on Weight of Material Collected in Reference Year

Weight Collected in Reference Year (pounds)	Population Credit	Weight Collected in Reference Year (pounds)	Population Credit
100,000	550	1,000,000	5,400
150,000	825	1,050,000	5,675
200,000	1,100	1,100,000	5,950
250,000	1,350	1,150,000	6,225
300,000	1,625	1,200,000	6,500
350,000	1,900	1,250,000	6,750
400,000	2,175	1,300,000	7,000
450,000	2,450	1,350,000	7,300
500,000	2,700	1,400,000	7,575
550,000	2,975	1,450,000	7,850
600,000	3,250	1,500,000	8,100
650,000	3,500	1,550,000	8,375
700,000	3,800	1,600,000	8,650
750,000	4,050	1,650,000	8,900
800,000	4,350	1,700,000	9,200
850,000	4,600	1,750,000	9,450
900,000	4,850	1,800,000	9,750
950,000	5,150	1,850,000	10,000
> 1,850,000	1 additional person per every 200 lbs above 1,850,000, which can be computed using the formula below: $10,000 + [(N - 1,850,000)/200]$ Where N = the amount of material collected in lbs.		

Complete tab J-2 in the workbook for all drop-offs assigned population credits based on the weight of material collected.

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Instructions for assigning population credits to a Mixed Municipal Solid Waste Materials Recovery Facility (“Dirty” MRF)

The population credit assigned to a dirty MRF depends upon the facility's recovery rate [NOTE: the recovery rate was calculated in Appendix B, Table B-3.]

Population Credit:

- If the dirty MRF recovers at least 15 percent of the waste processed at the facility, then the population credit equals the number of people whose waste is processed at the facility.
- If the dirty MRF recovers less than 15 percent of the waste processed at the facility, then the population credit is reduced proportionately as follows:
 - Population credit = population served * (recovery rate ÷ 15).

Example: A community with a population of 100,000 sends all of its residential waste to a dirty MRF. The MRF has a recovery rate of 10 percent. So, the population credit is calculated as: $100,000 * (10/15) = 66,667$.

The SWMD can count no more than 66,667 people towards its demonstration for achieving Goal 1.

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Instructions for a waiver from achieving Goal 1:

[NOTE: The 2020 State Plan made it possible for a SWMD to apply for a waiver from Ohio EPA to provide less than 80 percent of the residential population with opportunities to recycle. Potential demonstration factors include:

- Current or planned recycling drop-offs sites are located on transportation corridors.
- Current or planned recycling drop-off sites are located near the border of two political subdivisions within the SWMD to attract residents from both subdivisions to deliver materials to the drop-off.
- Recycling drop-off locations are in high traffic shopping areas or other similar locations.
- Current or planned recycling drop-off sites are in areas where curbside service is not currently possible due to cost or other reasons.
- Drop-offs are targeted at multi-family residential households.
- Other demonstrations as provided by the SWMD or required by Ohio EPA.

The justification for the waiver must clearly delineate why the performance and location of current and planned infrastructure are adequate to achieve Goal 1 and meet the needs of the SWMD without meeting the 80 percent standard.

Contact Ohio prior to preparing a demonstration that relies on receiving a waiver.]

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Appendix L

Supplemental instructions regarding target audiences

How a SWMD addresses a particular target audience or segment of a target audience will be determined by the available recycling programs/lack of recycling programs in the SWMD. This is also true for the message that is delivered, the attention devoted to an audience, and a target audience's role in the overall outreach and marketing plan.

For example, if residents throughout the SWMD have access to recycling services, then the SWMD will spend most of its time and resources providing outreach and marketing efforts to residents to get more of them using the available services. Since it doesn't need to establish additional infrastructure, the SWMD may not provide extensive outreach to community decision makers and elected officials. Instead, the SWMD may provide community leaders with periodic progress reports or involve them in publicity events to keep them engaged.

If there are inadequate or ineffective residential recycling services, then community decision makers will play a much more important role in the SWMD's outreach and marketing plan. The message delivered to community and political leaders will encourage them to establish new or improve existing residential recycling programs. The SWMD will not devote significant time or resources to providing new residential outreach programs until the necessary recycling services are in place.

Demonstrating Target Audience Not Priority

The SWMD can demonstrate that it does not need to address a particular target audience if that audience does not have a strong presence in the SWMD. Furthermore, a SWMD with multiple counties may have different target audiences in each county depending upon the presence or absence of an audience in a county.

As an example, a single county SWMD without an appreciable industrial sector may not need to include extensive outreach programs for industrial generators in its outreach and marketing plan. Similarly, a SWMD with two counties where there is a strong industrial sector in only one county will likely provide more extensive outreach to industrial generators in that county than the county lacking the industrial sector.

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Social Marketing

Social marketing is like commercial marketing. However, instead of promoting a product, social marketing promotes a desired behavior/ seeks to change an undesirable behavior. Recycling is an example of a desired behavior. Social marketing is aimed at influencing people to behave in ways that are in society's best interest, such as recycling.

Social marketing can be applied to many recycling opportunities. It can be used on a large scale, such as influencing residents in multiple neighborhoods to participate in composting programs and on a small scale, such as influencing city officials to implement curbside recycling in their city.

Ohio EPA encourages SWMDs to learn more about the social marketing process prior to developing their outreach and marketing plans. Additional information about social marketing is provided in a document titled “[Overview of Social Marketing](#)” that is available on Ohio EPA’s website.

A great deal of information already exists about why people do or do not recycle given a specific situation and how to get more people to recycle in that situation. It may be possible to obtain some of the information that about a target audience by researching secondary sources. The document titled “[Overview of Social Marketing](#)” that is available on Ohio EPA’s website contains a bibliography with potential sources to consult.

Assuming that there is a recycling program, common reasons why people might not use the program (i.e. barriers) include [**NOTE:** *some of these may be actual barriers and some may be perceived barriers*]:

- They don’t know how to recycle (don’t know what their recycling opportunities are);
- They feel recycling takes too much time/is too difficult.
- They believe that the current recycling program is inconvenient (don’t want to drive to a drop-off or don’t want to dirty their vehicle by putting recyclables in it to go to a drop-off).
- They don’t know what to recycle or how to prepare materials to be recycled.
- They don’t have space to store recyclables.
- They don’t have enough time to recycle.
- They can’t remember to recycle.
- They feel that recycling costs too much.
- They don’t believe that recycling is important or makes a difference.
- They feel that recycling is not beneficial.
- They think that people like them don’t recycle/they don’t see other people recycling.
- They think recyclables just end up in the landfill.

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[**NOTE:** *None of the following examples demonstrate how to implement a social marketing campaign nor do they represent complete social marketing strategies. They are meant to further illustrate what the requirements described in this appendix mean.*]

Example A. Providing outreach based on available infrastructure

The largest city in a SWMD has a very active downtown with numerous retail shops, restaurants, bars, and office complexes. While analyzing the commercial sector (in Section 2 of Appendix H), the SWMD learned that few businesses and buildings have recycling services. Each business/building owner is responsible for obtaining waste collection services, and there are several waste companies that serve the downtown area. Some of those waste companies provide recycling services and some do not. The SWMD’s outreach

to commercial businesses in the city will promote establishing a downtown recycling program. This will require the SWMD to work with the business owners, local planning commissions, landlords, the waste companies, and city officials. The goal is to establish a unified downtown recycling program with the maximum number of businesses participating.

Once a recycling program is established, then the SWMD will provide outreach to business owners and landlords to promote participation in the program. The SWMD may also provide outreach to business employees or office workers regarding how the program works – what materials are collected, how to prepare materials, etc. – and internal logistics – how to set up the internal collection program. Outreach to city officials likely will be more limited at this time and may consist of periodic reports regarding the success of the program.

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Example B Aligning existing program with social marketing

An example of updating an existing program to incorporate social marketing principles and tools is an information booth. Many SWMDs provide an informational booth at community events, such as the county fair. These booths give the SWMD a great opportunity to interact with the public and learn about people’s recycling habits.

See the ideas below:

1) The SWMD can use its booth as opportunity to learn about why people do/do not recycle:

Things to learn about people who don’t recycle:

- Do they have access to either a curbside recycling service or a drop-off recycling location?
 - If yes, but don’t use it, then find out:
 - What community they live in (provide community-specific fliers that detail each community’s recycling services).
 - Why they don’t use it (What are their barriers to recycling (i.e., barriers to the desired behavior)?). See the list of potential barriers provided earlier under the heading for **Develop and implement outreach effectively** for likely responses.
 - What would convince them to recycle (what do they need to do the desired behavior).
 - If they be willing to sign a commitment to begin recycling. If yes, provide a commitment card for them to sign and return. Also, find out if they are willing to let the SWMD post the commitment on-line.
 - If no, then find out
 - Would they like to be able to recycle?
 - If yes, would they be willing to write a letter to their local officials asking for a program (provide them a form letter to sign and return to the booth)?
 - If no, why?

Things to learn about people who do recycle

- What community do they live in?

- How often do they use a recycling service?
 - If regularly, then find out
 - What motivates them to recycle (i.e. what do they see as the benefits?).
 - If they recycle everything that is accepted through their recycling service.
 - If they recycle things that aren't accepted through their recycling service?
 - If they would they be willing to help the SWMD spread the word by becoming a community ambassador, distributing door hangers, being featured on the web page, or being featured in marketing materials.
 - If inconsistently, then why?
 - Because they can't remember? Provide them with something that can serve as a prompt to remind them to recycle (such as a refrigerator magnet)
 - Because they don't accumulate enough material to use the service more often?
 - Would they be willing to sign a commitment to recycle more often? If yes, provide a commitment card for them to sign and return. Also, find out if they are willing to let the SWMD post the commitment on-line.
- 2) Use the information booth as an opportunity to test new promotional materials (such as flyers, billboards, etc.). The SWMD's booth might be a good opportunity to get feedback on those materials.
 - 3) Distribute community-specific flyers that provide information about each community's recycling opportunities. Combine that with data that quantifies the community's efforts (such as the community's recycling rate).
 - 4) Have people sign commitments to recycle.
 - 5) Use the booth to provide people with feedback on recycling efforts within the SWMD. As an example, distribute a fact sheet that shows the recycling rates for the SWMD as a whole and for each community within the SWMD.
 - 6) Use the booth as an opportunity to recruit people to participate in a focus group.
 - 7) Review the Information provided at the booth. If the information is primarily awareness education, then develop new materials/strategies that are focused on encouraging participation in recycling programs.

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Example C Outreach Priorities:

Example C1: After assessing yard waste management, (in Appendix H, Section 4 - Residential/Commercial Waste Composition Analysis and in Section 6 - Restricted and Difficult to Manage Waste Streams Analysis), the SWMD determines that there is an excessive amount of yard waste still being disposed. There are two reasons for this. There are no publicly available composting facilities within the SWMD. In addition, there are large, commercial landscaping companies that currently dispose of their yard waste in the local landfill facility. Because there aren't any local composting facilities, the landfill owner isn't able to direct the companies to a composting facility. Furthermore, none of the communities

in the SWMD have yard waste collection programs because they have no place to take the collected material. The SWMD does provide residents with information about backyard composting, but the SWMD has not actively promoted backyard composting for several years.

The SWMD chooses increasing yard waste diversion as the SWMD's overall outreach priority. The SWMD will first focus its efforts on getting composting facilities established. Once a composting facility is available, the SWMD will provide outreach to market available facilities to generators of yard waste, including landscaping and land-clearing businesses and residents. The SWMD will also begin contacting officials from the three largest municipalities about establishing at least seasonal yard waste collection programs.

Example C2: While analyzing the commercial sector, the SWMD learned that a large city school district does not have a district-wide recycling program. Individual teachers at several buildings have independently implemented limited recycling programs. These programs were implemented as a way of teaching students about recycling. Because the programs are independent of one another, the materials that are collected differ from one school to another. Further, the program is labor intensive, and relies on volunteers, usually the teachers, to transport recyclable materials from the school to a local drop-off. None of the schools have central locations to accumulate materials so the teachers must collect materials from each classroom before they can take the materials to the drop-off. Even at the buildings that have recycling programs, significant quantities of recoverable materials are still being thrown away.

Other schools within the SWMD are served by a free paper recycling program. Most of the schools are diverting minimal amounts of paper. Not all classrooms at these schools participate in the free service, and those that do participate aren't recycling all types of paper. The service provider is considering discontinuing the service because the costs of servicing the schools are higher than the revenues generated by the paper.

There is the potential for collecting significant quantities of recyclable materials, particularly paper, from schools. The company that provides the free paper recycling program is willing to share revenues with the schools provided enough schools participate in the service and the schools can collectively supply an adequate amount of paper to the company.

The SWMD develops an outreach program to get all or as many schools as possible participating in the paper recycling program. The program has two phases. The first phase targets school administrators. That phase is designed to persuade administrators to secure a contract with the service provider. For those schools that elect to participate, the SWMD also will visit each school and to help establish the most efficient internal collection system. During the second phase, the SWMD's education specialist provides in-school outreach to school children, teachers, and support staff regarding how to use the program. When necessary, the education specialist also instructs support staff (such as the janitorial staff) about the logistics of the program.

Other examples of outreach priorities:

- A trash hauler in the largest community in the SWMD offers subscription curbside recycling service. Few residents have signed up for the service, and the hauler is

preparing to raise its subscription fees. The SWMD sees this as an opportunity for the SWMD to work with the mayor and city council on upgrading the curbside service to non-subscription service.

- The bars and restaurants in a local college town currently dispose of their glass bottles. The SWMD sees potential for significant diversion. Thus, the SWMD targets its outreach efforts to the bar owners and commercial recycling providers to establish recycling services.
- A SWMD has an established network of drop-off recycling locations, and residents are using the drop-offs. However, the SWMD is finding too much trash in the collection receptacles. The SWMD chooses getting residents recycling more of the correct materials and placing less trash in the drop-off receptacles as the SWMD's outreach priority.
- After analyzing results from a recent industrial survey, the SWMD learns that several manufacturers reported that they dispose of large amounts of waste. The SWMD chooses working with these manufacturers on developing recycling programs as its outreach priority.

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Appendix M

Supplemental Instructions for Demonstration of Access to Disposal Capacity

Inadequate Landfill Capacity

Some regions of the state have less landfill capacity than others. This leaves the possibility for regional capacity shortages if an existing facility ceases operating. Furthermore, landfill capacity is more of an issue when the SWMD's waste is directly hauled to landfills than if the waste is routed through transfer facilities.

Given that Ohio has at least 30 years of remaining statewide capacity, if there are any regional landfill capacity issues, it is likely that A SWMD's strategy will focus on using transfer facilities to get the waste to an existing facility instead of siting a new landfill facility. If the SWMD has access to transfer facilities, the SWMD can assume it will have access to any of the landfills the transfer facilities send waste to

The SWMD would not have access to adequate disposal capacity if one or more of the landfills that took the largest amounts of waste do not have adequate remaining life for the first eight years of the planning period. In that case:

- Insert Table M-1 into the working version of the plan where indicated;
 - Where indicated with "[replace with explanation regarding remaining capacity]", explain why existing landfills are not adequate to provide capacity; and
 - complete step 2 below.
- If all the landfills that took the largest amounts of waste have adequate remaining life but there is uncertainty about whether a facility will continue to operate (such as due to ongoing operational issues, an owner/operator that is considering closing the facility), then:

- insert Table M-1 into the working version of the plan where indicated.
- explain the uncertainties about a facility where indicated with “[replace with explanation regarding remaining capacity]”.
- complete step 3 below.

Step 2 – Facility Expansions

Has the owner/operator of the facility in question applied for a permit to expand the facility (Ohio EPA will supply this information)?

- If yes, are there any known issues with the permit application or the expansion site (such as zoning issues)?
 - If there aren’t any known issues, then assume that the facility will continue to operate during the planning period and take waste from the SWMD. Where indicated with “[replace with explanation regarding remaining capacity]” after Table M-1, explain why the SWMD doesn’t anticipate any capacity issues with facilities with outstanding permit applications.
 - If there are known issues, then where indicated with “replace with explanation regarding remaining capacity” after Table M-1, explain why and complete step 3.
- If the owner/operator has not applied for a permit to expand the facility, then where indicated with “[replace with explanation regarding remaining capacity]”, provide an explanation and complete step 3.

Step 3 - Identify the SWMD’s role in addressing a capacity shortage

Complete this step only if there is the potential for a disposal capacity shortfall. SWMDs have limited influence on where waste is disposed. Therefore, rather than identifying alternative disposal scenarios, the SWMD will identify what its role will be in addressing a potential shortfall in disposal capacity. The goal is to specify the actions the SWMD will undertake to assist its constituents with disposal options.

The SWMD’s level of involvement will be influenced by the scope of the capacity shortage and the number of people affected. As an example, the SWMD would likely have a larger role if the landfill that is projected to close accepts 90 percent of the SWMD’s waste than it would if that landfill accepts 15 percent of the SWMD’s waste. The SWMD’s role will likely also be influenced by how far away landfills with available capacity are located.

At a minimum, the SWMD needs to communicate with communities and businesses that would most likely be impacted. For some SWMDs, that may be the extent of their involvement. At the other extreme, a SWMD may need to establish or facilitate establishing a transfer facility to get waste to landfills that are too far away for direct haul to be possible.

Potential roles for the SWMD include:

- Work with the communities to help them identify solutions, such as identifying landfills and/or transfer facilities within a reasonable driving distance.

Changes in where a community’s waste is disposed will likely change collection and disposal costs. The SWMD may be able to help evaluate the costs of options. Also,

who pays for trash collection and disposal services could affect which option a community chooses. For example, increased costs can be passed along to homeowners more easily if they are billed for services directly. However, if the cost of service is paid for through taxes, the community will likely bear the increased cost.

- Work with businesses that will be impacted to help them identify solutions.

[NOTE: *The SWMD needs to verify that the landfill or transfer facility can/will take the SWMD’s waste. For example, if the landfill is a publicly owned/operated facility that takes waste from a limited area (such as a city-owned facility that takes waste from just the city) then it isn’t an option. Similarly, if a transfer facility already operating at capacity (can’t manage additional waste), then it isn’t an option.)*

- Facilitate cooperative contracting among affected communities.
- If the SWMD has designation agreements and existing facilities are not adequate to make up for a capacity shortfall, then the SWMD may need to designate additional facilities
- Establishing or facilitate establishing a transfer facility. This might be necessary if landfills with available capacity are too far away to make direct haul possible.

Where indicated with “[replace with text to explain the SWMD’s role]” describe what the SWMD’s role will be in the event of a landfill capacity shortage.

Return to landfill capacity demonstration

Appendix O Additional Instructions

Supplemental Instructions for Projecting Revenue

Additional things to consider for projecting revenue

- Project the amounts of revenue to be earned during the planning period for each revenue source the district anticipates receiving revenue from using the methodology that makes the most sense for that source. Options include:
 - Hold revenue constant at the amount of revenue earned in the reference year or an average of revenue received over time. This option makes the most sense for sources where the money received does not fluctuate (e.g., improved parcel assessment).
 - Project using average percentage change in revenue.

For the average percentage change in revenue, ensure that the average makes sense considering the individual years. For example, if the SWMD’s five-year average change was an increase in revenue receipts but for the past two years the SWMD received decreasing revenue, then using the average is likely not representative.

Project using a methodology developed by the SWMD. Be sure to explain the methodology developed and how it is the best way to project revenue amounts

Below are some simplified examples of making projections for revenue:

- Revenue from the generation fee over the past five years has consistently increased by three to five percent each year. To be conservative the SWMD projects that revenue will increase by three percent per year for the first 6 years of the planning period;
- The quantity of waste the SWMD collected its generation fee on during the past five years fluctuated up and down, but never by more than four percent either way, and by 1.5% on average. Therefore, the SWMD projects that the waste the SWMD will collect revenue on during the planning period will increase by 1.5% through 2021, the fifth year of the planning period. From 2022 to the end of the planning period, the SWMD held the amount of money it would receive constant at the amount for 2021.
- Overall, out-of-district waste receipts decreased by five percent from 2015 to 2020. However, receipts from 2018 to 2019 increased by 0.5 percent and from 2019 to 2020 by 0.75 percent. Based on labor market information published by the Ohio Department of Job and Family Services in 2020, economic activity in the SWMD's region of the state will increase incrementally until 2026.

Most of the out-of-district waste that landfills in the SWMD receive originates from adjacent solid waste management districts that are in the same economic region. Thus, the SWMD projects that out-of-district waste receipts will continue to increase by 0.75 percent per year until 2021, the fifth year of the planning period. From 2022 until the end of the planning period, the SWMD held out-of-district waste receipts constant at the 2021 quantity. The SWMD will submit a draft plan update to Ohio EPA in 2021. The SWMD will reevaluate its financial position and trends and compare revenue projections to actual receipts while preparing that update.

- Out-of-district waste receipts at the only landfill located within the SWMD decreased every year since 2017. The landfill had six years of operating life in 2017 based on 2016 waste receipts. At the time the SWMD prepared the plan update, Ohio EPA anticipated issuing a permit to expand the facility in early 2020. However, to ensure that the landfill would have adequate permitted capacity to continue operating until the permit is issued, the owner/operator voluntarily reduced out-of-district waste receipts beginning in 2015. The owner/operator redirected waste to its other landfill located in northeastern Ohio. From 2015 to 2018, out-of-district waste receipts decreased by 65 percent.

From 2016 to 2017 and again from 2017 to 2018, the amounts of out-of-district waste received at the landfill were about the same. At the time this plan update was prepared, it wasn't clear how much waste the owner/operator would accept at the landfill once construction is completed. Therefore, for lack of a better indicator, the SWMD held out-of-district waste receipts constant at the 2018 quantity for the planning period.

From 2014 to 2019, the quantity of in-district waste disposed at the county's municipal solid waste landfill increased on average, by five percent annually. However, in 2019, the landfill received numerous loads of solid waste removed from a large, legacy open dump. As a result, the SWMD received more revenue from in-district waste in 2019 than in any other year. The quantity from 2019 skews average annual waste receipts, and, using the average overestimates how much revenue the SWMD should expect to receive. When the quantity of in-district waste from 2019 is removed, the landfill received, on average, 3.5 percent more in-district waste annually from 2014 to 2018.

The SWMD projects that in-district waste receipts will increase by 3.5 percent annually until 2025. From 2026 to the end of the planning period, the SWMD held in-district waste receipts constant at the 2025 quantity.

- A large city in the SWMD will begin a new non-subscription curbside recycling service in the second year of the planning period. All materials collected through the service will be delivered to the SWMDs processing facility. The SWMD projects increases in revenue resulting from selling the new recyclables for the first two years of the planning period. Beginning in the third year of the planning period, the SWMD levels off its projections to account for plateauing of quantities collected through the service.
- A SWMD operates a permanent household hazardous waste collection center and charges residents a user fee when they bring material to the center. In the second year of the planning period, the SWMD will cease accepting latex paint at the center. Consequently, the SWMD expects to collect significantly less material at the center and that the decision will likely reduce participation. The SWMD projects a decrease in the amount of revenue it will collect from user fees .

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Supplemental instruction for explaining expenses in Table O-7

Example Explanations:

Below is an example for explaining a line item with projected annual incremental increases (e.g., increases due to inflation only):

2.e.5 Other

2015 to 2020 - This is the cost of providing the household battery collection program. The cost for the reference year is the cost to purchase the collection container, to ship the full container to the processor, and for the processing fees charged by the service provider. The SWMD increased the cost by two percent annually to account for inflation.

Below is an example for explaining a line item with intermittent expenses (e.g. plan updates, collection events held every other year, etc.):

1.a Plan Preparation

2013-2015
and

2018-2021 - This is the cost to hire a consultant to prepare the SWMD’s solid waste management plan updates. The cost for 2012 to 2014 is the actual contracted price for this plan update. The SWMD assumed the cost of the contract for the 2018 to 2021 plan update would be the same.

Below are examples for explaining a line item with anomalies (such as purchasing new equipment, a one-time allocation of money (such as for disaster debris management))

2.d.1 Curbside Recycling

2015-2030 With the exception of 2017, 2018, and 2025, the projected cost represents the SWMD's cost of providing the curbside recycling services and consists of operational expenses. The costs of the program in the reference year and the four prior years are the SWMD's actual expenses and includes: salaries and benefits for drivers; fuel, maintenance and repair for vehicles; and replacing damaged and lost collection totes,

Annual increases reflect projected increases in salaries and benefits. Beginning in 2016, salaries are expected to increase 1.7 percent annually. This increase is based on the Social Security Administration's most recent Cost of Living Adjustment (COLA).

2017 The SWMD will purchase two new collection trucks to convert to single-stream automated collection and new carts for both trash and recyclables. The cost of each truck is estimated at \$585,000 (for a total of \$1,170,000). The cost is based on the quoted price from the manufacturer based on the specifications the SWMD provided to the manufacturer.

The purchase price of the carts is based on a per cart cost of \$55. That cost is an average of cart costs for three distributors. As each household will receive two carts, the total cost of carts was calculated by multiplying the number of households to receive service (14,750) by 2, adding another 500 carts for replacing damaged and lost carts, and then multiplying the total number of carts by \$55. Total cost of carts is estimated to be \$1.65 million.

2018 The SWMD projects that the annual operating cost will decrease by \$35,000 as the result of efficiencies achieved by switching to single-stream, automated collection. The SWMD will eliminate one full-time driver, and projects that the costs for vehicle maintenance and repair will decrease due to operating newer trucks.

2025 Cost to purchase replacement carts. Cost was estimated based on the SWMD needing to purchase 250 carts at \$55 per cart (the average cart cost from quotes obtained from three distributors).

2.n. Emergency Debris Management

2016 The SWMD will set aside \$75,000 to be used to assist communities in the event of a disaster event. The \$75,000 was not subtracted from the District's balance since the amount is an allocation not an actual expense the SWMD will incur in 2016.

Below is an example for explaining a line item with costs that are covered by another line item.

2.e.3 Electronics Collection

2015 - 2030 The electronics collection program is held in conjunction with the household hazardous waste program (line item 2.e.2). The contract cost for the household hazardous waste program includes the costs for both collection programs.

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Instructions for an alternative budget and Tables O-9, O-10, and O-11

The SWMD has several options for an alternative budget, including the following.

- Provide an alternative budget based on contingent funding (complete section C.1 below).
- Provide an alternative budget based on identifying contingent expenses (complete section C.2 below).
- Provide an alternative budget based on both contingent funding and expenses (complete section C.3 below).

Examples of reasons a SWMD might provide an alternative budget:

- An in-district landfill is nearing the end of its useful life based on currently permitted capacity and it isn't clear whether the owner/operator can obtain a permit-to-install to expand the facility. If the facility closes, then the SWMD will not be able to collect its disposal fee.
- Pending state or federal legislation that may affect the per ton amount a SWMD can assess in fees.
- A large community will renegotiate the contract for trash collection in three years. The current trash hauler brings waste to the in-district landfill. However, the previously contracted hauler transported the waste to an out-of-district landfill. If the community contracts with a different hauler, there is no guarantee the community's waste will continue to be delivered to the in-district landfill. Without that revenue, the SWMD cannot continue to provide all of its current programs.
- The SWMD projects it will offset annual deficits by spending an existing cash balance. Given uncertainties with expenses or revenues, it isn't clear if the SWMD will encounter financial difficulties during the planning period.
- There are programs the SWMD is looking into but doesn't currently have enough money to implement. The SWMD wants to have the option of implementing these programs if it is in a financial position to do so. The SWMD specifies the programs, provides cost estimates for each, and specifies how much extra revenue would be needed before the SWMD would implement the programs.

- There is fracking planned in adjacent SWMDs and the SWMD hosts the only landfill in the region. Thus, waste generated from the fracking will likely be disposed at the landfill located within the SWMD. This has the potential to generate significant revenue, but how much revenue is still unclear. The SWMD wants to reserve its ability to spend this potential revenue on new programs.

C.1 Contingent Funding

If an alternative budget involves different funding source(s), different amounts of revenue from existing funding sources, or a different schedule(s) than those projected in tables O-1 through O.5, **complete tabs O-9 and O-11 in the workbook.**

After inserting Tables O-9, where indicated with “[replace with text to support Table O-9]”, describe the process the SWMD will follow to determine when the contingent funding mechanism(s) will be implemented. This description should address the criteria the SWMD will use to determine that the contingent funding source is needed, the timeline for implementing the contingent funding source once the decision is made to use the funding source, and how projected revenue from the source was calculated.

After inserting Table O-11, where indicated with “[replace with text to support Table O-11]”, provide any text necessary to explain the amounts in Table O-11.

C.2 Contingent Expenses

If an alternative budget involves adjusting program expenses from how they are projected in Table O.7, **then go the workbook and complete tabs O-10 and O-11.**

Use an alternative budget based on contingent expenses to address:

- Reducing or eliminating expenses to balance less than projected revenue; and
- Increasing expenses for existing programs or new expenses the SWMD would incur if the SWMD has more money available than projected. This allows the SWMD to account for things it would like the SWMD to do if there is more money than projected.

After inserting Tables O-10 and O-11, where indicated with “[replace with text to support Table O-10]”, describe the process the SWMD will follow to determine when the contingent expenses will be implemented. Address the criteria the SWMD will use to determine that the contingent expense strategy will be implemented, the timeline for implementing the contingent expense strategy, and how the SWMD will continue to meet the goals of the state solid waste management plan under the contingent expense strategy.

Go to the “Explanation of Contingent Expenses” section and explain the expenses shown in Table O-10. Follow the instructions for providing explanations for expenses associated with Table O-7, except the explanations will reflect entries in Table O-10. In the explanations, make sure to describe the differences between Tables O.7 and O.10.

C.3 Contingent Funding and Contingent Expenses

If the alternative budget involves a different funding source(s), different amounts of revenue from existing funding sources and/or a different schedule(s) than projected in tables O-1 through O-5 **AND** adjusting program expenses from how they are projected in Table O-7, **then go to the workbook and complete tabs O-9 and O-10, and O-11.**

After inserting tables O-9, O-10, and O-11, follow the instructions above for providing supporting text for each table.

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Instructions for Major Facility Budget

The budget will account for and estimate the costs the SWMD will incur to build or renovate and to operate the facility. The budget will also explain how the SWMD will pay for the costs and estimate revenue for all funding sources of money the SWMD will use to pay for the expenses.

The budget needs to be detailed enough for the SWMD's constituents to determine whether it makes to invest money to build or renovate the facility.

Present information in the way that makes the most sense, likely in a combination of tables and text.

Facility Description:

If the facility is new, then provide a description of the facility and explain why the SWMD needs the facility. If it is an existing facility that needs to be renovated, then explain the purpose and extent of the renovations. If the SWMD will conduct a feasibility study of the new facility or renovations to the existing facility during the planning period, then explain the timeline for the feasibility study, who will conduct the study, who will be involved in making the decision regarding whether to proceed with constructing or renovating the facility, the deadline for deciding, and any other pertinent information.

If the SWMD will construct or renovate the facility during the planning period, then explain where the facility will be located (for a new facility), provide a timeline for constructing and opening the facility or doing the renovations, explain whether the SWMD will operate or contract for operating the facility, indicate whether the SWMD will designate waste to the facility, and provide any other pertinent details.

Expenses:

The analysis will include projected costs for each phase of the project. Phases should be broken down into major line items. For example, phases might include developing the facility, acquiring land and equipment, preparing the site, constructing the facility, and operating the facility.

Examples of costs to include for each phase are provided below. These examples are not

meant to be an exhaustive list of the costs to include. A SWMD should provide all applicable costs in its analysis.

Development expenses - individual costs to consider for this category include:

- Feasibility studies
- Legal costs
- Facility design
- Obtaining permits

Capital costs - individual costs to consider for this category include:

- Purchasing land
- Equipment (both initial purchases and replacement)
- Financial assurance

Site preparation and construction - individual costs to consider for this category include:

- Material costs
- Grading/moving earth
- Installing engineered components
- Utilities (electric, water, sewer, etc.)
- Access roads/road improvements

Operating expenses – The budget analysis should provide an annual operating budget for the facility. Individual costs to consider for this category include:

- Leases
- Employee salaries and benefits
- Utilities
- Insurance
- Equipment maintenance and repair
- Fuel
- Environmental monitoring
- Annual license

Other Costs - individual costs to consider for this category include:

- debt payments

If the SWMD will incur expenses for the facility, then include those expenses in Table O-7 (and/or Table O-10 if the plan provides a contingent budget).

Funding

The analysis will explain the sources of money the SWMD will use to build or renovate the facility. The analysis will also estimate how much revenue the SWMD will receive from each source. Possible funding sources include:

- Revenues from operating the facility
- Fees
- Debt
- Bonds

- General revenue
- Revenue from the sale of recyclables

Where indicated with “[replace with explanation of a major facility project]”, describe the major facility project

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Instructions for Affected Community Compensation Agreement

Ohio Revised Code 3734.53(A)(10) requires a solid waste management plan to provide an analysis of expenses that the district is liable for under **Ohio Revised Code Section 3734.35**.

An affected community is a municipal corporation, township, or county that is within one kilometer or less of a proposed publicly owned landfill or proposed modification of a publicly owned landfill, is not located in the same SWMD as the landfill and would not host of the landfill.

A modification is defined in Ohio Revised Code 3734.05(A)(2)(d)(i) as any increase of more than ten per cent in the total capacity of a solid waste facility.

An affected community can negotiate an agreement for compensation with a solid waste management district for expenses the affected community would incur do to siting, operating, or closing the landfill.

If the district is a party to an affected community agreement or could be subject to an affected community agreement because there is a proposed new or proposed modification to a publicly owned landfill, then where reserved with “[replace with the analysis of the district’s liability for an affected community agreement]”, provide the analysis.

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