

Appendix M – Waste Management Capacity Analysis

Instructions (remove this text box for the solid waste management plan)

This appendix will provide the policy committee's strategy for ensuring that the SWMD has access to solid waste management facilities.

The Ohio Revised Code requires solid waste management plans to demonstrate that the SWMD will either have access to adequate capacity at solid waste facilities to manage its waste or will identify additional facilities that are needed to dispose of the SWMD's waste. While the primary focus of this strategy is ensuring access to adequate disposal capacity, the policy committee will also ensure that it has access to processing capacity for recyclables and, if needed, access to transfer facilities.

For many years, Ohio has had at least 30 years of 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 policy committee needs to provide a capacity demonstration in the solid waste management plan.

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 the statewide capacity, if there are any regional landfill capacity issues, it is likely that the policy committee's strategy will focus on using transfer facilities in order to get the waste to an existing facility instead of siting a new landfill facility. As long as the SWMD has access to transfer facilities, the SWMD would have access to any of the landfills the transfer facilities send waste to.

For most SWMDs, completing the demonstration of access to disposal capacity will be simple. The policy committee will not devote resources to projecting waste flows to landfills or identifying disposal options. The policy committee will determine if the landfills that historically took waste from the SWMD can continue to take waste during the planning period.

If it is possible that the SWMD could encounter a shortage of disposal capacity, then the policy committee will specify what the SWMD's role will be in addressing that shortage. The scope of the SWMD's role will likely depend on the presence or absence of transfer facilities and whether public or private entities provide trash collection services.

Ohio EPA and the policy committee will collaborate to complete the demonstration of access to solid waste landfills and transfer facilities. Ohio EPA has much of the information needed for the demonstration. Therefore, Ohio EPA will supply that information to the policy committee. Most policy committees will In situations where it isn't clear if a SWMD will have access to adequate disposal capacity, the policy committee will determine what the SWMD's role will be in planning for a potential capacity shortage.

In general, incinerating solid waste is not a major component of solid waste management in

Ohio. Therefore, This appendix does not incorporate solid waste incinerators into the demonstration of disposal capacity. However, there are companies that are looking into alternative waste options that involve technologies for using waste to produce energy. Examples include waste derived fuels, pyrolysis, gasification, and incineration with energy recovery. If a company in the SWMD intends to implement one of these technologies or is exploring one of these options, then the policy committee should explain that in this appendix.

A. Access to Publicly-Available Landfill Facilities

Instructions for Demonstration of Access to Landfill Facilities (remove this text box for the solid waste management plan)

Step 1 – Analysis of remaining operating life

Table M.1 (supplied by Ohio EPA), 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.

[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.]*

- If the landfills that historically took the largest amounts of the SWMD's waste have adequate remaining life for the first eight years of the planning period (and there is no reason to suspect a facility will close in the next eight years due to something like on-going, unresolved violations or notice that Ohio EPA is proposing to deny the operating license for the facility.), then the policy committee can assume that the SWMD has access to adequate disposal capacity. Provide text to explain.

[NOTE: *The idea is to evaluate remaining life of the main landfills that the SWMD relies on for disposal. It isn't possible to provide criteria for all SWMDs to define what main means. In general, Ohio EPA thinks of main as being the landfills that combined took 75 percent of the SWMD's waste that was disposed. For some SWMDs, this could be one landfill. For others, it could be multiple landfills.*

If the main facilities have adequate capacity and there are no known issues with the facilities, then the policy committee can assume the SWMD has adequate access to disposal capacity. If there is the potential that a facility that took a small amount of the SWMD's waste may close, then the policy committee can assume that there is adequate disposal capacity for that waste at the main landfills.

Eight years covers the six and half years the SWMD will operate under this solid waste management plan plus a year and half to ensure that the SWMD won't encounter a significant situation that could take time to address. As an example, a SWMD that has historically relied on county-owned landfill that is scheduled to close in seven years will now have to send waste further away. This will increase waste disposal costs for many communities. The policy committee wants to know its options so it can address access to disposal capacity in the next update of the solid waste management plan. So, the policy committee directs the SWMD develop a plan for constructing a transfer facility.

The policy committee will use that plan to make decisions during the process of preparing the next update of the solid waste management plan.]

- If not all of the landfills that took the largest amounts of waste have adequate remaining life for the first eight years of the planning period, then provide an explanation and complete step 2.
- If all of 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 complete step 3.

[NOTE: *Most SWMDs will need to complete only step 1. A few SWMDs will need to complete more steps.]*

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 the policy committee can assume that the facility will continue to operate during the planning period and take waste from the SWMD commensurate to the reference year. Provide text to explain why the policy committee doesn't anticipate any capacity issues with facilities.
 - If there are known issues, then provide an explanation and complete step 3.
- If the owner/operator has not applied for a permit to expand the facility, then provide an explanation and complete step 3.

Step 3 Analysis of available regional daily capacity

Table M.2 (supplied by Ohio EPA) provides the available daily disposal capacity at the remaining facilities the SWMD has historically used to manage large quantities of waste. The focus is on landfills within the SWMD's region (i.e. those where waste is the most likely to go, generally those within 60 miles of the SWMD).

[NOTE: *If a distant facility historically took small amounts of waste from the SWMD, then don't include that facility in the analysis. As an example, in 2013, the Adams-Clermont SWMD sent 6 tons of waste to American Landfill in Stark County and 2 tons of waste to Evergreen Landfill in Wood County. Both are far away, and neither received waste from the Adams-Clermont SWMD in 2012 or 2011. So, neither are likely destinations for large quantities of waste in the future.]*

Table M.2 presents remaining daily disposal capacity at landfills in the SWMD's region. The table shows whether those facilities have enough daily capacity to accept all waste from the region, not just waste from the SWMD. The analysis presented in Table M.2 is based on regional disposal needs. If a facility closes, all of the waste that used to go that facility will have to be redistributed to other landfills. The SWMD will be competing with other SWMDs for access to the remaining capacity. Therefore, the policy committee needs to ensure that other existing landfills will have enough capacity to accept all of the waste that is currently disposed

at the facility, not just the SWMD's waste.

The analysis uses remaining daily capacity at landfills in the SWMD's region of the state to determine if there is adequate capacity to dispose of the waste from a facility that will or may cease operating.

As used in Table M.2:

- AMDWR (acronym for Authorized Maximum Daily Waste Receipt) – AMDWR is the maximum amount of waste that can be accepted at a facility in one day. The AMDWR is established in the permit for the facility.
- Operating Days – number days the facility accepted waste during the reference year, as reported by the owner/operator in the annual facility report
- Total Waste Accepted – total amount of waste accepted from all sources at the landfill during the reference year as reported in the facility annual report
- Total Waste Accepted per day – This is calculated by dividing total waste accepted by the number of operating days
- Available AMDWR – This is the unused disposal capacity at a facility. Available AMDWR is calculated by subtracting the total waste accepted per day from the facility's AMDWR. The remainder represents the additional tons per day the facility could accept.

To complete this analysis:

- A. Calculate the tons per day accepted in the reference year at the facility that is projected to close.
- B. Compare quantity calculated in A to the quantity of unused AMDWR available at remaining facilities in the region. If unused daily capacity at analyzed facilities is adequate to accept all waste from the region, then the analysis is complete. Provide text to explain.

[NOTE: *Ohio EPA does not have the same information for out-of-state landfills that it has for Ohio landfills. For example, the states adjacent to Ohio do not impose maximum daily acceptance limits on their landfills. Thus, Ohio EPA does not know how much additional waste out-of-state landfills can accept. If the policy committee intends to rely on an out-of-state landfill for disposal capacity, then the policy committee may need to contact either the owner/operator of the landfill or the state agency that regulates landfills to ensure that the facility has adequate remaining life. If the SWMD may send more waste to the landfill than it has historically sent, then the policy committee will also have to determine if the landfill has adequate operating capacity to take that additional waste.]*

[NOTE: *Need to consider if a landfill has limitations that prevent it from taking more of the SWMD's waste or any of the SWMD's waste. An example is a publicly-owned landfill that accepts waste from a limited area (e.g. Wilmington Landfill and the city of Brooklyn Landfill). Another example is a facility that is voluntarily taking limited amounts of waste (such as to preserve capacity or delay having to close the facility. If one of the facilities in Table M.2 has a limitation, then do not include the unused AMDWR in the calculation.)*

- C. If unused daily capacity isn't adequate to accept all waste from the region, then provide text to explain and complete step 4.

Step 4 Identify the SWMD's role in addressing a capacity shortage

The policy committee will complete this step only if there is the potential for a disposal capacity shortfall. By completing this step, the policy committee acknowledges that access to disposal capacity could be an issue. However, SWMDs have limited influence on where waste is disposed. Therefore, rather than identifying alternative disposal scenarios, the policy committee will identify what the SWMD's role will be in addressing a potential shortfall in disposal capacity. Ultimately, 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 accepts 90 percent of the SWMD's waste than it would if the 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. 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.
- Work with city sanitation departments to identify available landfills and/or transfer facilities within driving distance.

[NOTE: *Need 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 landfill 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
- Establish or facilitate establishing a transfer facility. This might be necessary if landfills with available capacity are too far away to make direct haul possible.

In the space reserved 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.

Table M.1 Remaining Operating Life of Publicly-Available Landfills

Facility	Location	Years of Remaining Capacity
In-District		
Out-of-District		
Out-of-State		

[Replace with text to describe]

Table M.2 Available Regional Capacity at Publicly-Available Landfills

Facility	Location	AMDWR	Operating Days	Total Waste Accepted (tons)	Total Waste Accepted per day (tons)	Available AMDWR (tons)

Total

[Replace with text to describe the SWMD's role]

B. Access to Captive Landfill Facilities

Instructions (remove this text box for the solid waste management plan)

Table M.3 (supplied by Ohio EPA), lists the captive landfills within the SWMD and the years of remaining operating life of those landfills.

If there is sufficient remaining life at existing captive landfills for the first eight years of the planning period (and there is no reason to suspect a facility will close in the next eight years due to something like on-going, unresolved violations), then the policy committee can assume that the company that owns the captive landfill has access to adequate disposal capacity. Provide text to explain.

If there isn't adequate life at the facility for the first eight years of the planning period, then the policy committee will specify what, if any, assistance the SWMD will provide the company with its disposal needs. Potential assistance includes

- Work with the company to help it identify disposal options. This could involve identifying local landfills within driving distance that have adequate capacity to take the company's waste or transfer facilities to reduce the transportation distance to a landfill.

[NOTE: *Need 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 landfill isn't an option. Similarly, if a transfer facility already operating at capacity (can't manage additional waste), then it isn't an option).*

- Work with the company to develop a contract for disposal services/negotiate a tipping fee.

In the space reserved 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.

Table M.3 Remaining Operating Life of Privately-Available Landfills

Facility	Location	Years of Remaining Capacity

[Replace with text to explain the policy committee's review of captive landfill facilities]

C. Access to Processing Capacity for Recovered Materials

Instructions (remove this text box for the solid waste management plan)

If a it projects increases in the quantities of recyclable materials to be recovered, then the policy committee needs to ensure that there is adequate processing capacity for those recyclables. This is particularly important if there isn't convenient processing capacity in the SWMD's region of the state. Further, although they do not have capacity limits similar to landfill facilities, most processing facilities do not have unlimited capabilities for processing materials. Therefore, the policy committee needs to ensure that facilities that have historically processed the SWMD's materials have the ability to accept additional materials.

The policy committee will use what it learned from the analysis conducted in Appendix H, section 13, to draw conclusions about the SWMD's access to processing capacity. In the space reserved with "[replace with text to describe the SWMD's conclusions regarding processing capacity]", list and/or describe the policy committee's conclusions.

If it concludes that the SWMD will not have access to adequate processing capacity, then the policy committee will define the SWMD's role in and 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.

In the space reserved with "[replace with text to explain the SWMD's access to processing capacity.]" describe the SWMD's role in and strategy for ensuring that it will have access to adequate processing capacity.

If there is adequate processing capacity, then, in the space reserved with [replace with text to explain the SWMD's access to processing capacity]", describe the processing facilities that the SWMD expects to rely on for recyclable collected within the SWMD during the planning period.

replace with text to describe the SWMD's conclusions regarding processing capacity]

[replace with text to explain the SWMD's access to processing capacity.]