**Developing a Demonstration of Need (DON)**

**for Solid Waste Disposal Facilities**

According to the Mississippi Code Annotated, Section 17-17-227, each local solid waste management plan must include a “determination of need” by the local government for any new or expanded solid waste management facility proposed for inclusion in the plan. A person, business or organization proposing a new disposal facility or an expansion of an existing disposal facility, must request that the local government include that new disposal capacity in the approved, local solid waste management plan. The request by the applicant to the local government must be accompanied by a “demonstration of need” (DON) for the proposed new disposal capacity. The DON must address the five primary components identified by state law and should be made available for public review and comment with other documents on the proposed facility.

After completing the public review and comment process, the local government must make a decision on whether to approve the new facility as proposed, to ask the applicant to alter the proposal or to deny the proposal. If the new proposed facility is approved in some form by the local government, the local government may approve the applicant’s DON as its “determination of need” or may adjust or supplement the demonstration before approving it as a final determination.

The demonstration of need is most relevant in cases where new disposal capacity is being considered (as opposed to facilities that involve the flow-through of wastes such as processing or transfer activities). Therefore, MDEQ is providing this guidance to applicants to give more detailed information on how to address the conditions of state law for solid waste disposal facilities (landfills and rubbish sites in particular). When developing the DON for a proposed new or expanded solid waste disposal facility for consideration by the local government, the MDEQ requests that the applicant, at minimum, follow these steps in responding to the five components described in state law.

Should an applicant wish to discuss the steps for developing a DON, MDEQ planning staff is available to provide further information and clarification on this process. Contact MDEQ staff at:

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**Steps to Develop a Demonstration of Need**

**Item 1 - Verification that the proposed facility meets needs identified in the approved local nonhazardous solid waste management plan which shall take into account quantities of municipal solid waste generated and the design capacities of existing facilities;**

MDEQ recommends that applicants consider the following steps to account for local waste generation rates and existing local disposal capacity. The results of this demonstration should help support the need for a proposed new or expanded disposal site to the local government or planning jurisdiction. (See Examples on Page 6).

1. Determine the estimated maximum waste disposal design capacity of the proposed disposal facility in cubic yards. The disposal capacity should generally be calculated by considering the maximum design depth, maximum design height, and lateral disposal footprint of the proposed disposal area with considerations for internal and external side slopes. (Note: External slopes are generally restricted to 25% or less. While internal slopes do not have a regulatory restriction, internal slopes generally do not exceed 33%). (Attach additional pages where necessary).

*Adjust the Design Capacity for Cover volumes*: The anticipated annual volume of cover material should be estimated. The earthen cover factor will vary from site to site based on the frequency of routine cover, the use of alternate temporary covers and the volume of interim or final cover applied. The range is typically from 5 to 15% of the overall capacity of the site. The amount of cover material used over the life of the facility will affect the disposal capacity of the facility and the projected cover material volumes should be subtracted from the overall design disposal capacity determined in part 1.a) to determine the available disposal capacity.

1. Describe the anticipated incoming waste amounts at the disposal site in cubic yards per year. In projecting this annual amount, the applicant should consider the overall quantity of solid waste available in the area taking into account the other available disposal facilities in the vicinity and the amounts/types of wastes currently being disposed at those locations along with the reported remaining life of those facilities. The overall tonnage (and/or volume) of waste available for disposal should generally be evaluated for the area that the proposed facility is expected to serve (See Item 4). However, a proposed facility may often have a proposed service area that is more expansive than what may be considered a “standard” or “routine” service area to accommodate for extraordinary disposal circumstances. Where an applicant has proposed such an expansive service area, we recommend the applicant limit the evaluation of available waste flow for the DON to a more routine service area as follows:

* For Commercial MSW Landfills – we recommend the available waste tonnage be evaluated from an area no larger than a 75-mile radius of the proposed facility
* For Commercial Rubbish Sites – we recommend the available waste tonnage be evaluated from an area no larger than a 25-mile radius of the proposed facility
* For Noncommercial, Captive Non-MSW Landfills or Rubbish Sites – the available waste tonnage should be identified based on the quantity expected from the source or sources of waste for the captive facility.

It’s important to note that the area used to evaluate waste volumes for a commercial facility does not mean that a proposed service area cannot extend beyond the radial areas described above. Also for your reference, please note that disposal tonnage information is reported annually by permitted facilities to MDEQ. A summary report for each calendar year is produced by MDEQ and can be located online by visiting the MDEQ solid waste web page at: [www.mdeq.ms.gov](http://www.mdeq.ms.gov). Where growth is anticipated, the projected waste disposal rate may be adjusted annually for projected growth or reduction in population as well as other projected economic and local development factors.

Once an annual gate tonnage rate is determined, an applicant may, where applicable, estimate the anticipated tonnage of materials to be removed prior to disposal (either for recycling purposes or for disposal elsewhere at a different type of solid waste facility) and subtract this estimated tonnage from the projected overall tonnage to determine the anticipated annual waste disposal rate (in tons) for the facility.

**Adjust the Waste Acceptance Rate for Operational Variables**

Prior to calculating the projected life of the proposed new facility or expansion, the anticipated waste acceptance rate will need to be adjusted to account for the operational variables of compaction and cover for the proposed site to determine the annual in-place waste disposal rate for the site. For both the compaction factor and cover factors, the applicant should disclose how these factors were determined.

1. *Adjust the incoming waste volumes for Compaction*: The annual in-place waste disposal rate should account for the expected compaction rate of the wastes. The compaction rate may vary (ranging from 750 lbs/cubic yard to up to 1600 lbs/cubic yard) based on the type of compaction equipment used at the site and other operational factors such as waste type and lift thickness.

EXAMPLE: Projected Annual Waste Disposal Rate = 50,000 tons

Expected Compaction Rate = 1000 lbs/cubic yard

1. From the calculated capacity (in Item 1.a) and the anticipated in-place waste disposal rate (in Item 1.b), the landfill owner/applicant should calculate and describe below the expected life for the proposed facility in years.

1. The applicant should provide a written rationale for the need for the projected life of the disposal facility. MDEQ recognizes the complexity in permitting landfill facilities and that this complexity can affect the capacity and life of a facility. It is anticipated that the “life” for an MSW landfill and for class I rubbish sites may be forecasted some years beyond the 20 year planning period life. For facilities that exceed the planning period of 20-years of disposal capacity for the jurisdiction, the applicant should provide supporting rationale describing the need for the proposed disposal capacity that exceeds the 20-year planning period.

**Item 2. Certification that the proposed facility complies with local land use and zoning requirements, if any;**

Attach appropriate documentation from the jurisdictional local government(s) that the proposed facility is consistent, authorized, properly zoned, and/or exempt under local zoning and land use ordinances or restrictions. If at the time this DON is provided to the local government the zoning process has not been completed, describe the status of the process to obtain local zoning approval.

If the local government does not have zoning regulations, then the applicant should attach written documentation from the jurisdictional local government (on the local government’s letterhead) that indicates that such regulations do not exist. An applicant should be aware that even in instances where zoning does not exist, a local government may still consider whether a proposed disposal facility is consistent with the current uses of the surrounding land area as part of the planning process.

**Item 3. Demonstration, to the extent possible, that the operation of the proposed facility will not negatively impact the waste reduction strategy of the local government submitting the plan;**

The applicant should review the approved recycling and waste reduction strategy in the approved local solid waste management plan for the situs local government and describe below how the siting of the proposed waste management facility may or may not impact existing local recycling and waste reduction strategies described for the jurisdiction. The applicant may consider including a description of any proposed recycling, reuse or beneficial use activities at the proposed disposal site for the local government to consider in determining if the facility may or may not negatively impact the local recycling and waste reduction strategy.

**Item 4. Certification that the proposed service area of the proposed facility is consistent with the local nonhazardous solid waste management plan;**

1. Describe the proposed service area of the facility. *The service area is that geographic area from which the proposed facility will be allowed to accept solid wastes.* The service area should be described in terms of the county or counties and/or state boundaries from which wastes may be disposed. A specified radius (in miles) from the facility boundary or another selected boundary or point may be used as an initial guide, but MDEQ suggests that the specified radius be converted to the approximate governmental boundary equivalents (such as municipality, county, or state jurisdictions) to simplify the identification of service area boundaries.

1. The applicant should provide a written explanation or justification below for the proposed service area of the facility in order for the local government to determine the consistency of the proposed service area with its local solid waste plan. This justification should receive added emphasis when the proposed service area is larger than the area of “routine service” to accommodate for extraordinary or special waste disposal circumstances.

**Item 5.** **A description of the extent to which the proposed facility is needed to replace other facilities.**

Describe how the proposed disposal facility is intended to replace disposal capacity that has been exhausted at existing operational disposal facilities. This disposal capacity could have been consumed at the facility that the applicant is seeking to expand, at another local disposal facility, or at a closed facility that is no longer in operation. Where possible, identify the amount of capacity that has been utilized that the proposed new capacity is intended to replace.

**Capacity Verification Example 1**

* The Martin County Board of Supervisors has proposed to expand its rubbish site. The county has a population of roughly 35,000 people. The design capacity for the proposed 25 acre expansion constructed 20 feet above grade has been determined to be 620,000 cubic yards.
* It is projected that roughly 50,000 cubic yards of capacity over the life of the facility will be consumed with periodic/final cover allowing roughly 570,000 cubic yards of waste disposal space.
* It is also anticipated that based on available compaction equipment and the type of rubbish wastes, the county expects an in-place waste density of approximately 750 lbs/cubic yards.
* The county is proposing a service area for the site that includes only Martin County’s wastes.
* Historic rubbish disposal volumes indicate that there is an average of approximately 14,000 tons of rubbish per year being disposed in the county. Over the 20 year planning period, this projects out to 280,000 tons.
* With anticipated population growth over the 20-year period of approximately 5%, an additional 14,000 tons is projected to be disposed for a total of 296,000 tons of incoming wastes.
* Based on these factors, the landfill is projected to use 39,593 cubic yards of air space annually.
* Taking into account that existing disposal capacity and the incoming volume of wastes, the life expectancy of the proposed expansion is roughly 14 years. This would fall within the 20 year planning range and would likely need no additional justification.

**Capacity Verification Example 2**

* The ACME Disposal Company has proposed a new rubbish disposal site in Redstone County with a calculated design capacity of approximately 3.1 million cubic yards, servicing roughly a 5 county-area.
* The Company estimates that the periodic soil and final cover systems will consume roughly 370,000 cubic yards of capacity leaving 2,730,000 cubic yards for disposal.
* It is also anticipated that based on available compaction equipment and the type of rubbish wastes, the company expects an in-place waste density of approximately 1000 lbs/cubic yards.
* Based on reporting data, the company documents that there is approximately 185,000 tons of rubbish disposed in the area (within a 25-mile radius) annually. Currently there are 2 other existing rubbish sites servicing the area with available capacity.
* The company projects that based on its current roll-off business and on the volumes that the 2 existing sites are managing that the company can reasonably collect and dispose of roughly 57,000 tons of rubbish annually.
* Based on these factors, the landfill is projected to use an average of 114,000 cubic yards of air space annually.
* Life expectancy of the new proposed rubbish site is 27 years. This falls within the 30 year accepted life for class I rubbish sites and would likely only need some narrative statement of support.