
Procedural and Technical Considerations for the Regulatory Floodplain Location Restriction Demonstration

THIS POLICY DOES NOT HAVE THE FORCE OF LAW

APPLICABLE RULES

MSW: OAC 3745-27-20(C)(2)
OAC 3745-27-06(C)(6)
ISW: NA
RSW: NA
Tires: NA

Cross References:

DSIWM Guidance 0138, Location Restriction
Demonstrations - Implementation Instructions

PURPOSE

This document outlines technical and procedural considerations for the regulatory floodplain location restriction demonstration (LRD) required by Ohio Administrative Code (OAC) 3745-27-20(C)(2) and 3745-27-06(C)(6) [see also OAC 3745-27-20(A)(3)(b), 3745-27-06(C)(1), and 3745-27-20(B)(1)(b)].

APPLICABILITY

This guidance document applies to applicants proposing a new municipal solid waste (MSW) unit(s) after June 1, 1994.

LRDs for any existing units and new units in authorized fill areas designated as of June 1, 1994, should have already been completed and placed in the operating record.

This policy is not applicable to owners and operators of MSWLFs located near watercourses for which flood insurance rate maps do not exist.

BACKGROUND

OAC 3745-27-20(C)(2) states, "The limits of solid waste placement of the sanitary landfill facility are not located in a "regulatory floodplain" as that term is defined in Rule 3745-27-01 of the Administrative Code, unless the owner or operator can demonstrate that the unit(s) of the sanitary landfill facility will not restrict the flow of the one hundred year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment."

OAC 3745-27-01(R)(5) states, "Regulatory Floodplain means an area covered by a one hundred year flood as depicted on a flood insurance rate map published by the federal emergency management agency." A "one hundred year flood" is not a flood event that happens once in a hundred years, rather it is a flood event that has a one percent chance of occurring every year.

"Washout" is the carrying away of solid waste by waters of the flood.

The applicant needs to demonstrate that the limits of solid waste placement are not located in a regulatory floodplain unless the owner or operator can demonstrate that the units will not create the specified adverse impacts:

- Filling in the floodplain may restrict the flow of flood waters, causing greater flooding upstream.

Procedural and Technical Considerations for the Regulatory Floodplain Location Restriction Demonstration

- Filling in the floodplain may reduce the size and effectiveness of the temporary water storage capacity of the floodplain, which may cause a more rapid movement of flood waters downstream, resulting in higher flood levels and greater flood damage downstream.
- If washout is not prevented, wastes may be carried by flood waters and flow from the site, affecting downstream water quality.

PROCEDURE

LRDs for existing units and new units in authorized areas should have already been completed. Therefore, this document will address how to proceed with the regulatory floodplain LRD as part of a permit-to-install (PTI) application for a new unit proposed after June 1, 1994. DSIWM recommends using the following procedure to satisfy the LRD rule requirements. The procedure is presented in two parts. In the first part of the LRD, the applicant determines whether or not the proposed new unit(s) is in a regulatory floodplain. If it is located in a regulatory floodplain, then the applicant performs the second part of the LRD. The second part demonstrates that the flow of the one hundred year flood is not restricted, the temporary water storage capacity of the floodplain is not reduced, and washout of solid waste will not occur. The LRD must represent the conditions at the time the PTI application is submitted for review. DSIWM recommends that the LRD address the following:

Part 1: Determining Existence of a Regulatory Floodplain

Compliance with the floodplain location restriction begins with a determination of whether the unit is located in the regulatory floodplain. The regulatory floodplain for specific sites can be identified from flood insurance rate maps (FIRMs) maintained by the Federal Insurance and Mitigation Administration's Hazard Mapping Division of the Federal Emergency Management Agency (FEMA). These maps can be ordered through their web site at:

<http://www.fema.gov/fhm/>. FIRMs should also be used in providing the information required in the plan sheet by OAC 3745-27-06(B)(2)(b)(iii).

For this part, the LRD should show on the FIRM the location of the unit(s). If a FIRM does not exist, the LRD should include a note relating this information.

If the applicant believes that the FIRM is outdated or inaccurate, the applicant may apply to FEMA for:

- S a Letter of Map Amendment (LOMA), or
- S a Letter of Map Revision - based on Fill (LOMR-F), if fill placement is the basis of the request or
- S a Letter of Determination Review (LODR).

Forms for this purpose can be found at http://www.fema.gov/fhm/frm_main.shtm. FEMA responses to these letters need to be included in the LRD.

Part 2: Demonstrate None of the Specified Consequences will Occur

If a unit is located in a regulatory floodplain, the applicant must demonstrate that the unit will comply with the flow restriction, temporary storage, and washout provisions of the LRD requirement. DSIWM recommends the following approach for satisfying the LRD requirements. Note the applicant is obligated to enact the measures (see also DSIWM Guidance# 0138, Location Restriction Demonstrations - Implementation Instructions).

- * Estimate the flow velocity and volume of floodplain storage in the vicinity of the unit during the base flood. This assessment includes a comparison of storage capacity and floodwater velocities with the unit and without the unit in the floodplain. Raising the base flood level by more than one foot can be an indication that the unit may reduce and restrict storage capacity flow. For the purposes of the LRD, DSIWM will use the one foot level for assessing the effect of the unit on flood restriction and storage capacity.

Procedural and Technical Considerations for the Regulatory Floodplain Location Restriction Demonstration

However, if there is a local flood district, the applicant will also need to satisfy their limits on flood levels which may be more stringent.

- * Due to the numerous variables and difficulty in predicting various flood situations, DSIWM does not recommend trying to calculate whether the flood waters will cause washout of waste. Instead, washout should be prevented through either diversion of the flood waters or use of erosion control methods.

Diversion of flood waters is preferred because it also prevents additional quantities of water from entering the landfill area, resulting in increased leachate production, handling and system problems, flooding and disruption of sedimentation ponds and other surface water management systems, and flooding of drainage systems. Embankments/dikes are commonly used to divert flood waters. However, because construction of an embankment/dike may result in further decrease of the water storage and flow capacities to unacceptable levels, the addition of an embankment/dike must also conform to the flow restriction and temporary storage requirements outlined

above. Any embankments/dikes will also need to be protected from erosion.

Erosion control methods include use of gabions (wire structures filled with stone), paving bricks, and mats.

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