

TVA Flood Storage Loss Guideline

The objective of the Flood Storage Loss Guideline is to avoid to the maximum extent possible the loss of flood storage on TVA reservoirs. Flood Storage is located within the Flood Storage Zone on TVA reservoirs. The Flood Storage Zone is the space between the January 1 Flood Guide elevation and the 500-year flood (or TVA Flood Risk Profile) elevation at the project location.

Proposed projects or activities involving development within the flood storage zones on TVA reservoirs will be reviewed to ensure consistency with Section 26a of the TVA Act. During the review of proposed projects, TVA will determine if the activity qualifies as a repetitive action in the flood storage zone. Here is a list of repetitive actions in the flood storage zone.

- Private and public water use facilities (e.g., fixed or floating boat docks, fixed or floating boathouses, fixed piers)
- Commercial recreation boat dock and water use facilities (e.g., docks, fixed piers, fixed or floating boat slips, fixed or water-related dock buildings, but not including habitable structures, or fuel handling facilities)
- Picnic tables, benches, grills
- Utilities (water and sewer lines, etc.)
- Mooring and loading facilities for barge terminals
- Minor fills (e.g., slopes for boat launching ramps, public highways, railroad crossings, pedestrian crossings, pedestrian walkways and crossings, private driveways, retaining walls and riprap for bank stabilization and parking lots)
- Bridges and culverts

For the repetitive actions, TVA determined that many projects would be approvable without further review concerning displaced flood storage because of the nature of the proposed actions. Cumulatively, the impacts of the losses resulting from the repetitive actions would be considered to be minor in nature and insignificant. *The loss of flood storage associated with a particular repetitive action may not exceed 1 acre-foot.* If the loss of flood control storage is greater than 1 acre-foot, the project would not be considered as a repetitive action.

For projects *not* qualifying as repetitive actions (either because the proposed project is not a repetitive action or the loss of flood storage due to a repetitive action would exceed 1 acre-foot), the applicant would be required, as appropriate, to evaluate alternative sites and/or alternative actions to the placement of fill or the construction of the project within the flood storage zone. The evaluation of alternatives would either identify a better option or support and document that there is no reasonable alternative to the loss of flood storage. If the loss of flood storage cannot be reasonably *avoided*, the applicant must then demonstrate how the loss of flood storage will be *minimized*. In addition, the applicant should provide documentation to TVA addressing:

1. The amount of anticipated flood storage loss
2. The cost of compensation of the displaced flood storage
 - a. How much it would cost to excavate material from the flood storage zone, haul it to an upland site and dispose of it?
 - b. How much it would cost to excavate material from another site within the flood storage zone, haul it to the project site to use as the fill material?

3. The estimated cost of the project
4. The nature and significance of any economic and/or natural resource benefits that would be realized as a result of the project

Note: Item 2 would be compared to the applicant's estimated cost of obtaining fill material from an upland site to determine if these would be economically feasible alternatives. This cost comparison should be done before any environmental review of the proposed compensation site is undertaken.

TVA staff would review the applicant's documentation to determine if:

1. There are no reasonable alternatives to the loss of flood storage
2. Displaced flood storage quantities have been minimized
3. There are benefits associated with the project that could be considered to offset the loss of flood storage

Steps to Ensure Compliance with the Flood Storage Loss Guideline

Determine if the proposed project would be located within the flood storage zone

- If the proposed project would be located within the flood storage zone:
 - Does the proposed project qualify as a repetitive action with less than one acre-foot of lost flood storage?

Yes:

If the repetitive action project would result in a net loss of no more than 1 acre-foot of flood control storage, then it would be consistent with the requirements for repetitive actions – **No Further Action Required.**

No:

If the repetitive action project results in a net loss of more than 1 acre-foot of flood control storage, or if the project would not qualify as a repetitive action regardless of the amount of lost flood storage, the applicant would be required to provide supporting documentation on efforts to minimize potential flood control storage losses, and information on anticipated cost, and projected benefits, under "Evaluation of Alternatives" next.

Evaluate and provide documentation regarding alternatives to the location of the project within the flood storage zone. If a determination can be made supporting the location of the project within the flood storage zone, the applicant must provide documentation addressing (1) proposed strategies for minimizing flood storage losses, and (2) information on anticipated costs and projected benefits by following steps 1 through 4 on pages 1 and 2.

Evaluation of Alternatives

- Identify and evaluate possible locations outside the flood storage zone (Alternative Sites)

At a minimum, alternative site evaluations should address the following concerns:

- Natural Resources - Topography, Soils, Sensitive or Unique Habitats (i.e., wetlands, threatened and endangered species, etc.), Hazards
 - Socioeconomics - Visual and Aesthetic Resources, Cultural Resources (historic or archeological sites, etc.), Construction Costs, Impacts on Services or Infrastructure, and Cost of Compensation for Lost Flood Storage
 - Legal - Deeds, Leases, Easements, Ownership
- Identify and evaluate other means to accomplish the same purpose (Alternative Actions).
 - No Action.

When making a determination that there is no reasonable alternative for the location of a proposed project within the flood storage zone, environmental impacts and/or benefits, project cost, compensation costs, economic benefits resulting from the project, and anticipated natural resource benefits associated with the project should be considered.

If the applicant proposes removal of material from within the flood storage zone to an area outside the flood storage zone as a means of offsetting the anticipated loss of flood storage, then the removal should occur from an area located above the June 1 Flood Guide elevation whenever possible. Descriptions of the proposed removal and disposal sites must be included with the project proposal.

To ensure these activities do not result in an excess loss of flood storage, the following review criteria should be applied to each request before approval:

- All facilities should be designed to displace the least amount of flood storage possible while achieving project purposes
- All activities will adhere to the minimum standards of the National Flood Insurance Program
- Spoil material will be disposed of properly in accordance with local, state, and federal regulations at an inland site outside of the 100- and/or 500-year floodplain as appropriate.