

**Natural Resources Conservation Service  
Conservation Practice Standard**

**Sediment Basin**

(No.)

**Code 350**

**Definition**

A basin constructed to collect and store debris or sediment.

**Scope**

This standard applies to the installation of all basins where the primary purpose is to trap and store waterborne sediment and debris.

**Purpose**

To preserve the capacity of reservoirs, ditches, canals, diversions, waterways, and streams; to prevent undesirable deposition on bottom lands and developed areas; to trap sediment originating from construction sites; and to reduce or abate pollution by providing basins for deposition and storage of silt, sand, gravel, stone, agricultural wastes, and other detritus.

**Conditions Where Practice Applies**

This practice applies where physical conditions or land ownership preclude treatment of a sediment source by the installation of erosion-control measures to keep soil and other material in place or where a sediment basin offers the most practical solution to the problem.

**Design Criteria**

The capacity of the sediment basin, as measured to the elevation of the crest of the emergency spillway, or the principal

spillway if there is no emergency spillway, shall be at least 67 cubic yards per acre of contributing drainage area (0.5 inches/acre).

Sediment basins should be cleared out when the storage capacity as described above is reduced by sedimentation to 27 cubic yards per acre of contributing drainage area (0.2 inches/acre).

A principal spillway consisting of a vertical pipe or box type "riser" joined watertight to a pipe "barrel" which will extend through the embankment and outlet beyond the downstream toe of the fill, shall be provided. The upper half of the riser will be perforated, with 1/2" diameter holes spaced 8 inches vertically and 10 - 12 inches horizontally, to provide for a gradual drawdown after each storm event. The minimum capacity of the principal spillway will be sufficient to discharge 5 inches of runoff from the drainage area in 24 hours (0.21 cfs/acre of drainage area) when the water surface is at the emergency spillway crest elevation.

Comparable alternative drawdown (or dewatering) methods may be used provided they serve the above intended purpose which is to trap sediment and provide protection against overtopping from subsequent runoff.

The design of dams, spillways, and drainage facilities shall be according to NRCS standards for ponds (378) and grade stabilization structures (410) or according to the requirements in TR-60, as appropriate for the class and kind of structure being considered.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Temporary basins having drainage areas of 5 acres or less and a total embankment height of 5 feet or less may be designed with less conservative criteria if conditions warrant. The embankment shall have a minimum top width of 4 feet and side slopes of 2:1 or flatter. An outlet shall be provided of earth, pipe, stone, or other devices adequate to keep the sediment in the trap and to handle the 10-year frequency discharge without failure or significant erosion.

Provisions shall be made for draining sediment pools if necessary for safety and vector control. Fencing and other safety measures shall be installed as necessary to protect the public from floodwater and soft sediment. Due consideration shall be given to good visual resource management.

### **Planning Considerations for quantity and quality**

#### **Quantity**

1. Effects on the water budget, especially volumes and rates of runoff, infiltration, evaporation, deep percolation, and ground water recharge.
2. Effects on downstream flows and aquifers that would affect other water uses and users.
3. Effects on volume of discharge flow on the environmental, social, and economic conditions.
4. Effects on the water table downstream and the results of changes of vegetative growth.

#### **Quality**

1. Effects on erosion, movement of sediment, pathogens, and soluble and sediment-attached substances.
2. Effects on the visual quality of onsite and downstream water resources.
3. Effects of construction and early establishment of protective vegetation on the surface and ground water.

4. Effects on wetlands and water related wildlife habitats.

### **Plans and Specifications**

Plans and specifications for installing sediment basins shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

Construction of sediment basins within the scope for ponds (378) shall have, as a minimum, specifications commensurate with those for ponds (378). Those within the scope of TR-60 shall be in accord with the guide specifications contained in the National Engineering Handbook, Section 20.

### **References**

Manual for Erosion and Sediment Control in Georgia  
 NRCS Conservation Practice Standards  
 Code 410 - Grade Stabilization Structure  
 Code 378 - Pond  
 Code 382 - Fence  
 NRCS - Technical Release No. 60