

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

DAM, MULTIPLE-PURPOSE

(number and acre-feet)
CODE 349

DEFINITION

A dam constructed across a stream or a natural watercourse that has a designed reservoir storage capacity for two or more purposes, such as floodwater retardation and irrigation water supply, municipal water supply, and recreation.

PURPOSE

A multiple-purpose dam must provide distinct and specific storage allocations for two or more of the following purposes:

- Floodwater retardation
- Irrigation
- Fishing, hunting, boating, swimming, or other recreational uses,
- Improve environment or habitat for fish or wildlife
- Municipal
- Industrial
- Other uses

A reservoir for which multiple use is made of the same storage allocation is not a multiple-purpose dam; however, a dam designed for joint-use storage is a multiple-purpose dam.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies only to sites meeting all the following criteria:

- Topographic, geologic, and soils conditions at the proposed site are

satisfactory for the development of a feasible dam and reservoir.

- The watershed is protected from erosion to the extent that the sediment yield will not shorten the planned effective life of the reservoir.
- Water is available from a single or combined source of surface runoff base flow or from subsurface storage in sufficient quantity and adequate quality to satisfy the intended purposes.

CRITERIA

Foundation, embankment, and spillway.

All dams designed under this standard shall meet or exceed the foundation, embankment, and spillway criteria in Pond (378) standard and specification or in TR-60, Earth Dams and Reservoirs, as appropriate.

Floodwater retarding pool and spillway.

Dams having a floodwater retarding purpose shall meet or exceed the requirements of the Dam, Floodwater Retarding (402) standard and specification.

Outlet works. Outlet works discharging releases for several purposes shall have adequate capacity to carry the peak flow resulting from the combined demands at any time. Outlet conduits and appurtenances shall be designed according to criteria that are equal to or better than that called for in conservation standard and specification for Pond (378) or in TR-60, as appropriate.

Storage. The usable storage capacity shall be adequate for all purposes. Seasonal variations in demand and the expected

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

349-2

losses from seepage and evaporation must be considered.

Sediment storage. The capacity, in addition to that required for all other purposes, must offset depletion by sediment accumulation for a period equal to the design life.

Type of structures. All dams and appurtenances shall be designed to meet applicable NRCS standards for the specific type and class of structure.

PLANS AND SPECIFICATIONS

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

OPERATION AND MAINTENANCE

Provisions shall be made as necessary for operation and maintenance requirements and may include a formal plan for larger more complex dams.

The following University of Missouri Agricultural Guide provides information on operating and maintaining structures with embankment dams:

1548 "Maintaining Small Dams"

**NATURAL RESOURCES CONSERVATION SERVICE
MISSOURI CONSTRUCTION SPECIFICATION**

**FOR
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(349)**

Construction operations shall be carried out in such a manner and sequence such that erosion and air and water pollution will be minimized and held within legal limits. A land disturbance permit from the Missouri Department of Natural Resources may be needed if the disturbed area is greater than five acres in size.

The completed job shall present a workmanlike appearance and shall conform to the line, grades, and elevations shown on the drawings or as staked in the field.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used.

Construction operations shall be carried out in a manner that erosion and air and water pollution are minimized and held within legal limitations. The completed job shall present a workmanlike finish. Construction shall be according to the following requirements as specified for the job.

Specifications for dams to which the standard for ponds (378) apply shall, as a minimum, be commensurate with those for ponds (378). Specifications for dams to which the criteria in TR-60 apply shall be in accord with the guide specifications contained in the National Engineering Handbook, Section 20.

Additional details: _____

