

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**FLOODWAY**

(feet)  
CODE 404

**DEFINITION**

A channel, usually bounded by dikes, used to carry flood flows.

**PURPOSES**

To carry floodwater from a side drainage across a flood plain into the channel of a main stream. Floodways are also used along the course of a main stream where, by means of dikes, part of the flood plain is used to carry floodwater and the rest is protected.

**CONDITIONS WHERE PRACTICE APPLIES**

(1) Overflow areas of streams or rivers where existing channels are inadequate to carry the floodwaters without flooding and damaging property, and the design storm discharge can be confined between dikes or a combination of channel and dikes without causing excessive erosion.

(2) Sites where the storm runoff from side tributaries that will be ponded outside the floodway will not cause damages in excess of the benefits less the cost of the project. This practice does not apply to floodwater diversions (400) that divert water from lowlands. A floodwater diversion can empty into a floodway. This practice does not apply to channel improvement where the spoil is set back from the excavated areas and where no provision is made to confine the floodwater to the channel side of the spoil. An outlet for the floodway must be available to provide for discharge of the quantity of water for which the floodway is to be designed without creating stage increases in the outlet that could result in damages above or below the point of discharge that might involve legal action under state laws.

**CRITERIA**

The design and installation of a floodway and each of its features shall be based on engineering surveys and investigations that shall be made as recommended in applicable sections of the NRCS National Engineering Handbook and in TR-25, "Planning and Design of

Open Channels". Rates of flow resulting from runoff from the storm against which protection is to be provided and the design for stability of the channel included in the floodway shall be determined from and based on these investigations. Criteria for channel stability, velocity, and coefficient of roughness contained in the standard for open channels (582) shall be followed. Proportioning of the width and depth of flow in the floodway shall be based on consideration of the area to be occupied by the floodway with respect to the area to be protected, requirements for entrance of side drainage into the floodway, stage of water in the outlet for the design storm, velocities in the floodway at design flow and requirements for stability of the channel and dikes, and the effect on the water surface profile upstream from the floodway.

In designing a floodway, the effect of future upstream floodway construction that will increase the peak rate of flow should be considered. Provisions for future enlargement of the floodway to take care of this increase may be warranted.

In selecting the location and design of a floodway careful consideration shall be given to the preservation of valuable fish and wildlife habitat and trees that are of significant value for wildlife food or shelter and to visual resources.

From an economic standpoint, the best design for a floodway, including channel improvement and the correct proportioning of the width of the floodway and the height of dikes, results in a minimum cost for the dikes, channel improvements, and the value of the unprotected land in the floodway. The value of the unprotected land for this analysis would be the difference in its value if it could be protected and its value for floodway purposes.

**Class I floodways**

Class I floodways shall be designed to provide maximum feasible protection. If urban protection is one of the primary objectives of a project or segment thereof, the project shall be planned to keep water out of the main part of the urban area if the largest flood of

record were repeated. Such protection shall rarely be less than the 100-year-frequency level.

Dikes used or constructed as a part of Class I floodways shall meet NRCS criteria established for Class I dikes.

### **Class II floodways**

If dikes are included as a feature of Class II floodways, they shall meet NRCS standards for Class II dikes, and the design criteria established thereby shall also apply to the floodway.

If dikes are not included in Class II floodways, the floodway shall have the capacity to carry the peak runoff from a 10-year-frequency storm as a minimum.

### **Class III floodways**

If dikes are included as a feature of Class III floodways, they shall meet NRCS standards for Class III dikes, and the design criteria established thereby shall also apply to the floodway. If dikes are not included in Class III floodways, the floodway shall have the capacity to carry the design flow selected on the basis of a study of site conditions.

## **CONSIDERATIONS**

### **Water Quantity**

1. Potential changes in runoff, infiltration of runoff water into soil, percolation below the root zone, and the amount of ground water recharge.
2. Effects of soil moisture changes on vegetation or land use in the vicinity of the floodway.

### **Water Quality**

1. Potential to reduce erosion and sedimentation; the effect of sedimentation on water quality, and sediment damage to flood plains, streambanks, and downstream channels.
2. Effects on the area's visual quality.

### **Classification**

In as much as a large percentage of floodways includes dikes as a major feature of the floodway, the same classification used for floodways. The classes are defined in the standard for dikes (356).

### **Class I floodways:**

1. Include Class I dikes as a feature of the floodway or
2. Are constructed to protect areas where either of the following conditions apply:
  - a. There is a possibility of loss of life should dike failure occur.
  - b. High-value land or improvements are to be protected.

### **Class II floodways:**

1. Include Class II dikes as a feature of the floodway or
2. Are constructed to protect agricultural lands of medium to high capability; improvements are generally limited to farmsteads and allied farm facilities.

### **Class III floodways:**

1. Include Class III dikes as a feature of the floodway or
2. Are constructed to protect agricultural lands of relatively low capability or improvements of relatively low value.

### **Endangered Species Considerations**

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed

species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

### **PLANS AND SPECIFICATIONS**

Plans and specifications for constructing floodways shall be in keeping with this standard and shall describe the essential requirements for properly installing each feature of the floodway to achieve the intended purpose.

### **OPERATION AND MAINTENANCE**

Provisions for maintenance shall be as specified in the standard for open channels (582).