

# after the fire



## Dike

**CAUTION:** After a fire many trees are weakened from burning around the base of the trunk. The trees can fall over or blow down without warning. Shallow-rooted trees can also fall. Therefore be extremely alert when around burned trees.

### What is a dike?

A dike is an earthen or rock berm or barrier of soil constructed to protect property from flooding.

### When is a dike used?

A dike is used when increased storm runoff or debris flow from burned areas are likely to cause flooding or other damage to high value properties, such as a home site or business, and there are adequate space and soil available to construct a dike. They may be used in combination with a runoff diversion and other practices to accomplish this purpose. Dikes must be constructed of appropriate material and remain stable when exposed to flooding. When a sufficient quantity of suitable material is not available on site some other type of flood barrier should be considered. A poorly designed dike can create a false sense of security or contribute to increased erosion and flooding at other locations. Dikes should be planned and designed with the assistance of an experienced engineer.

### How is an NRCS dike designed?

**Location:** Dikes are located so they can intercept flood water and direct it safely past the area being protected without causing other damage. The dike must utilize existing topographic features or completely encircle the area being protected, as necessary to prevent flood water from going around its ends.



# Dike

## How is an NRCS dike designed?

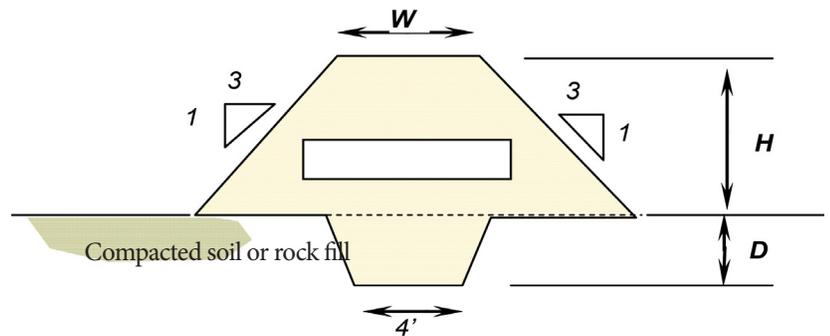
**Height:** The top of the dike is set to prevent overtopping from a storm frequency consistent with the hazard involved, but should not be less than a 25-year frequency, 24-hour duration storm. Dikes protecting major structures, homes, school buildings and high capacity roads should have enough height to prevent overtopping from a 100-year frequency 24-hour duration storm. A hydrological analysis should be completed to account for the burned acres within the watershed.

**Cross Section:** The dike cross section will be trapezoidal, and shall accommodate the equipment to be used for constructing it. (see Figure 1) The dike must have stable side slopes, generally not be steeper than 3:1. The dike top width, base width and core trench dimensions are selected based on the design height, as shown in Table 1.

**Erosion Protection:** The dike and other disturbed areas should be seeded and mulched. If the soils or climatic conditions preclude the use of vegetation for erosion protection, non vegetative linings such as gravel, rock riprap, or cellular block may be used.

## What maintenance is required?

Vegetation or other erosion protection must be kept in good condition. The dike should be checked after each flood event, and repaired as necessary. Temporary dikes should be removed when they have served their purpose.



## Contact Information

Natural Resources Conservation Service  
 Jennifer Walser  
 District Conservationist  
 707-794-1242 Ext. 3  
 jennifer.walser@ca.usda.gov  
 www.ca.nrcs.usda.gov

Sonoma Resource Conservation District  
 Jeff Schreiber  
 707-569-1448 Ext. 110  
 sonomarc.org

Height, H	Minimum Dike Top Width, W	Dimensions Core Depth, D
< 3 ft	4 ft	1 ft
3 - 5 ft	6 ft	2 ft
5 - 10 ft	8 ft	3 ft
> 10 ft	Not recommended	

