



Design Information for Erosion and Sediment Control Measures

A. General

The following sections provide design information for a variety of erosion and sediment control measures. Each section describes the measure, how to properly design and implement it, and the benefits that it provides. Each measure's benefits are shown on the first page and a rating (high, medium, or low) is given for each; a summary of the individual measures and their benefits is shown in Table 7E-1.01. The benefits have been divided into five categories that directly affect erosion or sediment transportation. The following are descriptions of each of the benefits shown in Table 7E-1.01.

B. Flow Control

Flow control refers to the ability of a practice to reduce flow velocity (either sheet or concentrated flow). Reducing flow velocity helps reduce erosion and transportation of sediment. Controlling velocity is important on long or steep slopes. High-velocity flows can quickly cause severe erosion.

C. Erosion Control

Erosion control is the measure's ability to stabilize the surface and prevent soil particles from becoming displaced. Erosion control should be utilized on all disturbed surfaces. Preventing erosion from taking place is the simplest and most cost-effective method of keeping sediment from leaving a site.

D. Sediment Control

Sediment control is the ability of a practice to remove suspended soil particles from runoff after erosion has taken place. Sediment control measures are the last line of protection against releasing sediment laden runoff into water bodies or waterways. Where sediment control devices are used along a water body (stream, lake, pond, wetland, etc.), it is recommended that two or more redundant practices be installed to provide an additional level of protection if one practice fails.

E. Runoff Reduction

Runoff reduction is the ability to reduce the volume of runoff from a site. Reducing the volume from an area also reduces the potential for both erosion and sediment transportation. These methods utilize absorption or increase the potential for infiltration of stormwater into the soil.

F. Flow Diversion

Flow diversion consists of routing upland runoff around disturbed areas. By reducing the amount of runoff over a disturbed area, the potential for erosion and sediment transportation is also reduced.

G. Selecting Control Measures

The following table may be used to select a system of both erosion control and sediment control measures. No single measure should be relied upon as the sole method of erosion control and sediment control.

Table 7E-1.01: Summary of Erosion and Sediment Control Measures and Benefits

Section	Control Measure	Benefits				
		Flow Control (Velocity)	Erosion Control (Stabilization)	Sediment Control (Removal)	Runoff Reduction (Volume)	Flow Diversion
<i>Vegetative and Soil Stabilization Erosion Control Measures</i>						
7E-2	Compost Blanket	M	M	L	M	
7E-5	Temporary Rolled Erosion Control Products	L	H			
7E-16	Dust Control		M			
7E-17	Erosion Control Mulching	L	M	L	L	
7E-18	Turf Reinforcement Mats	L	H			
7E-19	Surface Roughening	L	L		L	
7E-22	Temporary Erosion Control Seeding	M	H	M	L	
7E-23	Grass Channel	L	H	L	L	
7E-24	Permanent Seeding	M	H	M	M	
7E-25	Sodding	M	H	M	M	
7E-26	Vegetative Filter Strip	L	L	M	L	
<i>Structural Erosion Control Measures</i>						
7E-7	Check Dams	H		L		
7E-8	Temporary Earth Diversion Structures					H
7E-9	Level Spreaders	H				M
7E-10	Rip Rap	H	H			
7E-11	Temporary Pipe Slope Drains					H
7E-21	Flow Transition Mats	L	H			
7E-27	Rock Chutes and Flumes	M	H			
<i>Sediment Control Measures</i>						
7E-3	Filter Berms	L		L		L
7E-4	Filter Socks	L		L		L
7E-6	Wattles	L		L		
7E-12	Sediment Basin	H		H	L	
7E-13	Sediment Traps	H		H	L	
7E-14	Silt Fences	L		M		M
7E-15	Stabilized Construction Entrance			L		
7E-20	Inlet Protection			L		
7E-28	Flocculants			H		
7E-29	Flotation Silt Curtain			M		