

A recent change in state law also allows district commissioners to file complaints if they believe excessive erosion is causing sediment damage to public property or to private property where public improvements have been made.

1.3 SOIL EROSION AND SEDIMENT CONTROL MEASURES MATRIX

An erosion control measures matrix has been developed that parallels the three categories of erosion control measures: vegetative and soil stabilization, structural, and special condition erosion control measures. This matrix will enable the designer or planner to quickly review the various options available and the situations in which the options will perform satisfactorily on the basis of various conditions of the proposed construction site.

The matrix takes into account various conditions, including soil erodibility, degree of slope, climate, topography, and season of the year. These conditions have particular criteria:

- **Perimeter Control.** Planned measures installed around the perimeter of the construction site to prevent surface water from damaging the area during or after construction
- **Slope Protection.** Planned measures installed on or above an erosion slope to prevent soil erosion and sedimentation
- **Borrow and Stockpiles.** An area of the construction site where earth is borrowed (excavated to use as fill at another location) or stockpiled (topsoil is temporarily stored) to be respread following construction
- **Drainage Areas.** The area of land above the development site (including the construction site) that naturally contributes water runoff to the area under construction
- **Sediment Trapping.** Planned measures installed below a potentially erosive area, designed to catch eroded soil temporarily until the area above can be stabilized and/or damage to the area below can be prevented
- **Streams.** A water course flowing naturally through a construction site
- **Temporary Stabilizing.** Planned measures installed to provide temporary cover to an erosive area on a construction site while permanent stabilization of the area is being established
- **Permanent Stabilizing.** Planned vegetation or structural measures installed to permanently prevent a constructed area or finished site from eroding
- **Soil.** The makeup of the top surface of a construction site (texture of soil: sand, silt, or clay) must be taken into account in planning and designing measures to control erosion during and after construction. See your County Soil Survey for details
- **Slope.** The inclination of the land surface from the horizontal, with the steeper and longer slopes having the most erosion potential
- **Effectiveness.** The value of each measure to control erosion over a specified period of time

In the following tables (Tables 1.3 through 1.5), each practice has been analyzed according to the criteria and an X has been marked in each section that pertains to the practice. Information pertaining to a given practice is found on the front and back of each page.

Table 1.3. Vegetation and soil stabilization erosion control measures

Measure	Description	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Compost blanket	A 1- to 4-inch surface application of compost/mulch or a blend to protect areas with erosive potential		X			X		X	X		X		X	X		X	X			X	
Compost filter tube	A tubular mesh sock filled with a specified blend of composted materials, used to slow flow velocity, capture and degrade chemical pollutants, and trap sediment		X			X		X	X	X	X		X	X		X	X		X		
Dust control	A chemical applied to an exposed soil to prevent the movement of dust		X					X		X	X	X	X	X	X				X		
Flocculents	Natural materials or a class of chemicals that cause colloidal particles (clay) to coagulate; the coagulated particles group together to form flocs that will settle out of detained stormwater					X													X		
Grass channels	A temporary drainageway to convey runoff through, along, or around an area; these can be established to serve as permanent controls				X	X	X	X		X	X	X	X			X	X	X	X	X	X
Mulching	Applying plant residue or other suitable material to protect the soil surface		X	X	X			X	X	X	X	X	X	X	X	X			X		
Rolled erosion products (RECP)	Prefabricated blankets or netting which are formed from both natural and synthetic materials		X			X		X	X	X	X		X	X		X	X		X		
Seeding and fertilizing	Seeding grasses and legumes on disturbed soil areas Note: A ground cover of grass is the most effective method of controlling erosion		X	X	X	X		X	X	X	X	X	X	X	X	X	X		X	X	X
Sodding	Bare soil covered with cut sod, usually bluegrass, to provide rapid ground cover and stabilization of the soil; often used in waterways and flumes		X		X				X		X	X	X	X	X	X	X				X
Stream channel vegetation	The use of vegetation to retard stream channel and bank erosion and maintain soil stability				X		X		X	X	X		X	X		X	X	X	X	X	X
Surface roughening	A rough finish on clay soils; this procedure should generally be limited to use only after the fall seeding period has passed to carry a site through the winter months		X					X				X	X	X	X	X			X		
Vegetative filter strip	A strip of grass planted at right angles to the flow of runoff; a 30-foot width is desirable, though as little as 10 to 15 feet can be helpful	X	X			X		X	X		X	X	X	X	X	X				X	X
Wattles	A sediment and stormwater velocity control device, generally tubes of straw, rice straw, or coconut husk encased in ultraviolet (UV) degradable plastic netting or 100% biodegradable burlap material; wattles help stabilize slopes by breaking up the length and by slowing and spreading overland water flow		X			X		X	X	X	X		X	X		X	X		X		

Key

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|-------------------------|-------------------------|---------------------------|
| A Perimeter Control | H Permanent Stabilizing | O Drainage Area < 1 acre |
| B Slope Protection | I Soil – Sandy | P Drainage Area 1-5 acres |
| C Borrow and Stockpiles | J Soil – Silty | Q Drainage Area > 5 acres |
| D Drainage Areas | K Soil – Clay | R Effectiveness < 6 mo |
| E Sediment Trapping | L Slope 0% - 3% | S Effectiveness 6-12 mo |
| F Streams | M Slope 3% - 8% | T Effectiveness > 12 mo |
| G Temporary Stabilizing | N Slope > 8% | |

Table 1.4. Structural erosion control measures

Measure	Description	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Bench	A slightly reverse sloping step on a back slope to reduce slope length		X	X				X	X			X	X	X	X	X			X	X	X
Compost filter berm	A temporary or permanent ridge of soil located so runoff water is channeled to a planned location		X		X		X	X	X		X	X	X	X	X	X	X	X	X	X	X
Check dam	A small temporary barrier or dam constructed across a drainage ditch				X	X		X				X	X	X		X			X	X	X
Diversion structure	A temporary or permanent dike or compost filter berm located so water can be directed to a planned location	X	X		X			X	X	X		X	X	X		X	X		X	X	X
Temporary slope drain	A temporary structure, either metal or flexible pipe, used to carry runoff water from the top of a slope to the bottom	X	X		X	X		X	X	X	X	X	X	X	X	X			X	X	X
Energy dissipator	An obstacle placed at the outlet of a drainage pipe or where a rapid flow of water needs to be reduced to prevent erosion				X		X	X	X	X	X		X	X	X		X	X	X	X	X
Flotation silt curtain	A silt curtain used in a lake or pond to keep silt-laden water within the construction area						X	X		X	X	X	X			X	X	X	X	X	
Rock chutes and flumes	A device to transport water in a structure to a lower level without erosion		X		X			X	X	X	X	X	X	X	X	X	X		X	X	X
Silt fence	A temporary barrier of geotextile fabric used to intercept sediment on small drainage areas; one of the most convenient control measures to use on all projects	X	X	X	X	X		X	X	X	X	X	X	X		X	X		X	X	
Gabion	A rectangular wire mesh box filled with rock and used in a variety of places where heavy flexible reinforcement is necessary		X		X		X	X	X	X	X	X	X	X		X	X	X	X	X	X
Inlets	A structure to accept surface runoff and dispose of water in a storm water disposal system				X	X	X		X	X	X	X	X	X	X	X	X		X	X	X
Jetties	A structure used to deflect water current away from selected sections of a streambank				X		X		X	X	X	X	X			X	X	X	X	X	X
Level spreader	A water flow outlet device constructed at zero grade so concentrated runoff may empty at non-erosive velocity onto an area stabilized with existing vegetation		X		X			X			X	X	X			X	X		X	X	
Pipe outlet	An apron or other energy dissipating device placed at the outlet of a drainage pipe		X		X			X	X		X	X	X	X		X	X		X	X	X
Retaining wall	A constructed wall to assist in the stabilization of cut or fill slopes where permissible slopes cannot be obtained without the use of a wall	X	X		X				X	X	X	X	X	X		X			X	X	X
Riprap	A permanent erosion resistant ground cover of large, graded, loose angular stone used where water erosion is a problem		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Stabilized construction entrance	A crushed rock or gravel stabilized pad located at points of vehicular ingress or egress at a construction site	X						X	X		X	X	X	X		X	X		X	X	X
Sediment barrier	Temporary structures that allow water-borne silt to settle in the structure while the water continues on				X	X		X		X	X	X	X	X		X			X		
Sediment basin	A basin created by building a dam across a waterway or by excavation or a combination of both; a sediment basin usually consists of a dam, a pipe outlet, and an emergency spillway				X			X			X	X	X	X		X	X		X	X	X
Sediment trap	A depressed area in drainage areas that allows the runoff to slow and the silt to settle				X	X		X		X	X	X	X	X		X			X		
Streambank protection	A permanent structure that will stabilize an eroding streambank				X		X		X	X	X	X	X			X	X	X	X	X	X
Subsurface drainage	A perforated pipe, tubing, or tile installed beneath the ground surface to intercept and convey ground water for suitable disposal	X	X		X			X	X	X	X		X	X		X	X		X	X	X

Key

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Table 1.5. Special conditions erosion control measures

Measure	Description	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Retention pond	A permanent pool of water that has the capacity to store storm water until it is released from the structure				X	X			X			X	X					X			X
Infiltration basin and trench	A depressed area formed by the removal of overburden to expose a porous or sandy soil that allows a flow of runoff water to be absorbed; may also be constructed by excavating a trench and filling it with suitable porous soil				X			X	X	X	X	X	X			X	X	X			X
Serrated cut	Stairstep grading used in soils containing large amounts of soft rock where it may be impossible or impractical to smooth grade		X						X												X
Stream crossing	A temporary structure installed across a flowing stream for use by construction equipment				X		X	X		X	X	X	X					X			X
Wetlands	Important control measure for removal of sediment, nutrients, and urban pollutants by passing runoff water through a constructed wetland area				X	X	X		X	X	X	X	X			X	X	X			X

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