Diverting Upland Runoff Around Exposed Soils

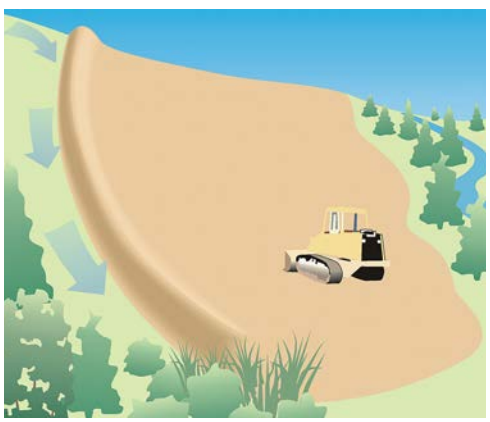
Keep clean upland runoff from flowing through your construction site or route it through stable ditches so it won't get muddy. Included are some simple approaches for dealing with uphill sources of runoff.

Diversion berms

A diversion berm is a long, mounded "collar" of compacted soil located uphill from the excavated area. The berm is designed to intercept overland runoff and direct it around the construction site. This prevents "clean" water from becoming muddied with soil from the constructions site. Berms can be temporary or permanent landscape features of the site.

Berms should be located so that stormwater flowing along their uphill face follows a gently sloping path (i.e., less than 5% channel slope). Turf reinforcement mats, erosion control blankets, or rock protection might be needed for berms that channel water at a slope of 5% or more. Berm side slopes should be 2:1 or flatter, 10 to 14 inches high, and seeded immediately after construction.

Extend the downhill end of the berm so it directs overland flow to areas of thick vegetation or flat surfaces to promote dispersal and infiltration. Seed and mulch berms after construction to minimize erosion.



Berms and ditches diverting clean upland runoff around construction sites reduce erosion and sedimentation problems. Seed berms and ditches after construction.

Diversion ditches

Diversion ditches are similar to berms – they are designed to intercept and divert upland runoff around bare soil areas. Ditches are cut above cleared or fill areas and designed with a gentle slope to carry water away from work areas. Ditches should be 8 to 12 inches deep and seeded. Side slopes should be 2:1 or flatter.

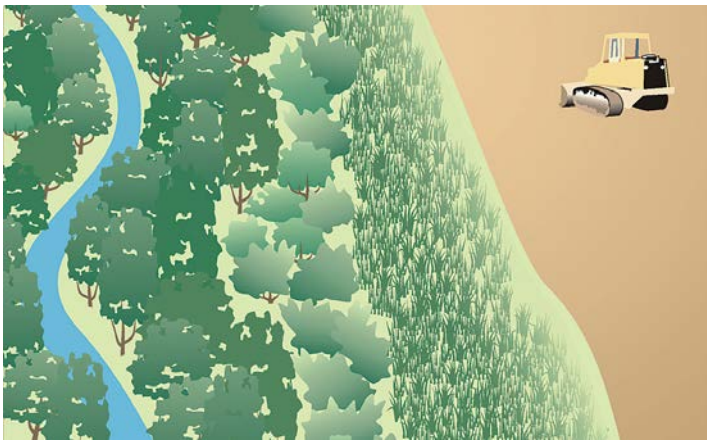
Stabilized, lined ditches can also be used to move upland water through your site without getting muddy. Construct and line “pass-through” ditches before general clearing or grading work begins.

Ditches should discharge to areas with thick vegetation or flat surfaces to promote dispersal and infiltration. Gullies must be repaired as soon as they appear. Ditches with slopes less than 5% may be heavily seeded, mulched, and maintained without additional protection if stabilized quickly after construction. Ditches with slopes of 5% or more need erosion control blankets, turf mats, or rock liner protection.

Diversion ditches should be lined with grass at a minimum, and blankets if slopes exceed 10:1 (10%).

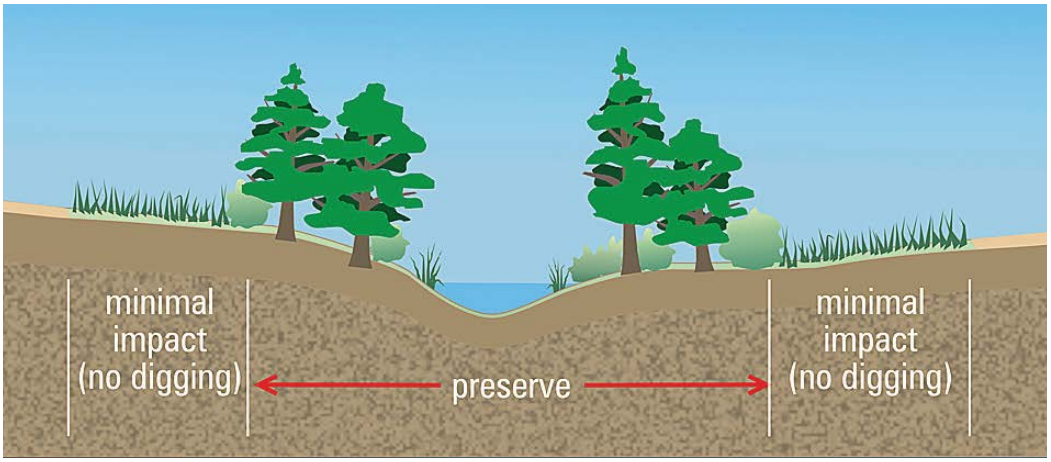
Vegetated buffers

Grass, shrubs, trees and other vegetation located above or below excavated areas should be preserved if possible. Vegetation above construction sites prevents high volume sheet runoff flows from moving across cut or fill areas. Vegetation below the construction site helps filter and trap sediment before it can move into ditches, channels, and streams.



All vegetated areas help promote infiltration of stormwater, which is a key objective in preventing erosion and controlling sediment movement off the construction site. Vegetated buffers along channels, streams, and other waterways must not be cleared unless proper permit coverage is provided by KDOW. Research has shown that a buffer of 100 feet or more is needed to protect water quality and aquatic habitat.

Vegetated buffers above or below your work site are always a plus. They trap sediment before it can wash into waterways, and prevent bank erosion. KPDES permits require a 25 to 50 ft. undisturbed buffer between construction actvities and banks of waterways.



Vegetated waterways help move upland water through or past your site while keeping it clear of mud. Do not disturb existing vegetation within 25 to 50 ft. of channel banks, and leave a buffer of tall grass and shrubs between stream bank trees and disturbed areas.

Good construction, seeding, and stabilization of diversion berm. Note that diversion ditch is lined with grass on flatter part of slope, and with rock on steeper part.

	Good installation of rock-lined berm to divert rain runoff around residential construction site on steep slope near a river. Diversion ditches can be lined with grass if channel slopes are 20:1 or less, and with blankets or turf mats if they are steeper.
	Good establishment of a berm at final grade before seeding.

Resources

EPA Vegetated Buffers