CITY OF Apple Valley

*Natural Resources*

# ***Erosion & Sediment Control Compliance Information: Examples of Best Management Practices***

****Sediment controls MUST be installed before any land-disturbing activity begins****

******Lack of installation or improper installation may result in discontinued building inspections, a stop work order, or other penalties******

## TYPES OF SEDIMENT CONTROLS

### Silt Fence

Silt fence is often used as a sediment control along the perimeter of the construction site to keep sediment contained on the property. It may also act as a barrier to lessen construction activity on certain areas of the site. As a temporary sediment control, silt fence retains runoff and allows the sediment to settle out. This Best Management Practice is most beneficial for areas of diffuse sheet flow over flat terrain.

This control device is made out of geotextile fabric which is machine sliced or trenched 8" to 12" into the sediment beneath, leaving close to 2' of fabric above the ground. The trench must be backfilled and the sediment directly next to the fabric must be compacted. Steel or wooden posts should be attached to the fabric, using three zip ties in the upper 8" of fabric and the posts should be located on the downstream side of water flow, every few feet. Silt fence needs to be cleaned out when it reaches one-third of the way full.

### Biologs

Biologs are used to slow water velocity and filter stormwater runoff. They do not require stakes. These logs are constructed from geotextile fabric and are typically filled with shredded wood mulch or woodchips. Proper installation (as shown to the right) require that logs do not have gaps between them and are overlapped forming a smile shape. Biologs are reusable if they are still intact after the completion of a project. They are often moved to another site which may save the contractor money.

### Straw Logs (waddles)

Straw logs are a type of sediment control log that are made out of netting and straw, and are lighter then biologs. Water is able to penetrate through the log while capturing sediment. Straw logs are installed with a wooden stake at a 45 degree angle with the top of the stake pointing upstream.

*Keenan Hayes, Natural Resources – City of Apple Valley* ● 6442 140th Street W., Apple Valley, MN 55124
http://www.ci.apple-valley.mn.us/ ● 952-953-2464 ● khayes@ci.apple-valley.mn.us

## Rock Logs

Rock logs are used to slow water velocity and are typically used on paved surfaces. These should also overlap to prevent sediment from migrating though. Due to their weight, rock logs do not have to be staked.

## Berms

Berms are created using woodchips, shredded mulch, or sod. They are used as a sediment control device typically on the back side of a curb with or without a sidewalk, or on the sides of a driveway. Berms must be 12" in height and extend at least 36" in width. The mulch must be maintained and reapplied as often as necessary.

## Rock Construction Entrance

Rock entrances are required to minimize vehicle tracking off-site. A rock entrance (50' minimum) with 1.5 to 3 inch clean & clear rock or a tracking pad with shredded wood mulch is required. Class 5 rock can be used for parking pads, but NOT as a rock construction entrance. Properly installed rock construction entrances are constructed by spreading 6 inch layer of clean and clear rock over geotextile fabric. This fabric is used to prevent future erosion underneath the rip-rap. This must be maintained and reapplied as necessary.

## Storm Drain Inlet Protection

Storm drain inlets that are down-gradient from the project area must have inlet protection devices installed prior to any soil-disturbing activity taking place. An example of this would include drop-in prefabricated protection that will catch sediment running into the storm sewer and would include an overflow for water to drain. Inlet protection must be cleaned out when ½ full.

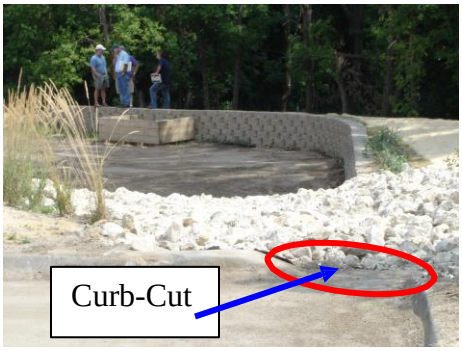
## Flotation Silt Curtain

Grading that takes place near open water may require a silt curtain to be placed in the water to contain contaminated runoff. This will also reduce erosion resulting from wave action. If a silt curtain is required you must also couple this BMP with erosion controls along the shoreline. There are different specifications for use in still water (most common to the lakes and ponds in Apple Valley) and moving water.

*Keenan Hayes, Natural Resources – City of Apple Valley* ● 6442 140th Street W., Apple Valley, MN 55124
http://www.ci.apple-valley.mn.us/ ● 952-953-2464 ● khayes@ci.apple-valley.mn.us

# TYPES OF EROSION CONTROLS

## Culvert Outlet Protection




Rock or rip-rap aprons are commonly used to slow velocities and dissipate energy to reduce impact from culvert discharges. An example of outlet protection is rip-rap placed level or beneath a curb-cut flowing into an infiltration basin. It may also be used as a pre-fabricated filter.

## Hydromulch (with seed)

Hydromulch is typically a mixture of tackifier (can be used on its own), seed, mulch and recycled paper (used to retain moisture) and is typically blown on the project site. The mulch is green to be aesthically pleasing. Also, the color helps judge thickness of the application in order to easily notice any missed spots.

## Erosion Control Blankets

Erosion blankets can be straw mulch, excelsior fibers, or coconut fibers. Each blanket represents a different thickness and the appropriate material should be used depending on the slope requiring stabilization and length of time.

**Within 14 days** regardless of slope steepness, if construction activity has been temporarily or permanently ceased, **slopes must be stabilized.**

## Erosion Stabilization Matting (aka Turf Reinforcement Mats)

Turf matting is designed to reinforce vegetation and can withstand higher velocity flows than erosion control blankets. Mats are composed of non-degradable synthetic fibers, filaments, nets and wire mesh. Turf mats are commonly used in channels, ditches and on slopes above emergency overflow areas.

*Keenan Hayes, Natural Resources – City of Apple Valley* ● 6442 140th Street W., Apple Valley, MN 55124
http://www.ci.apple-valley.mn.us/ ● 952-953-2464 ● khayes@ci.apple-valley.mn.us

**Temporary Tarping**

Stock, fill, and sediment piles are NOT to be placed in the right-of-way and must have temporary cover to prevent runoff onto paved surfaces.

**Ditch Checks**

Ditch checks are used to slow water velocity in a ditch. In return, this will decrease the amount of erosion in the ditch. Common ditch checks are: 1) sliced in silt fence; 2) biologs 3) rock logs; 4) straw waddles; & 5)rock check dams

**Temporary Diversions**

Temporary diversions direct contaminated runoff to sediment traps, route clean runoff away from disturbed areas and minimize erosion from steep fill areas.

## Other Important Information to Remember for your Project Site

**Street Sweeping**

Excess sediment tracked onto all paved surfaces must be swept **within** 24 hours. **Failure to do so may result in a stop work order.** In order to prevent excessive tracking, a rock vehicle entrance must be installed.

**Tree Preservation & Protection Areas**

Construction activity may cause damage to trees. At a minimum, to avoid compaction and root damage, safety fencing will be required to extend around the drip line of trees. This barrier fencing must remain around the tree until final grading has been completed.

*Keenan Hayes, Natural Resources – City of Apple Valley* ● 6442 140th Street W., Apple Valley, MN 55124
http://www.ci.apple-valley.mn.us/ ● 952-953-2464 ● khayes@ci.apple-valley.mn.us

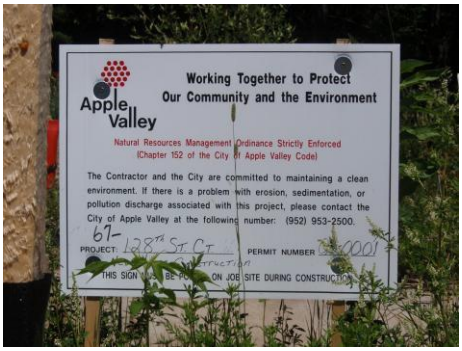
## Concrete Washout

All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. Liquid and solid wastes may not touch the ground and there must not be runoff from the concrete washout operations or areas. All concrete washout areas must be designated with a sign stated 'concrete washout'. Extra materials and wastes must be properly disposed in a garbage bin. Hazardous substances must be properly stored to prevent spills.

## Dewatering Techniques

Dewatering is used for removing contaminated water from sediment traps and trenches. Water cannot be discharged into waters of the state. It must be discharged into a sediment retention structure or filtered. The water needs to be clean when it leaves the site.

## NRMP Signage Display




The Natural Resources Management Permit (NRMP) signage from the City of Apple Valley must be visibly displayed on the project site. This NRMP sign is provided by the City to the contractor once the security deposit is collected.

***Best Management Practices are not limited to the above items****

*The above information was gathered from:*

**Erosion & Sediment Control Pocketbook Guide – University of Minnesota – ESC Program**
http://www.erosion.umn.edu

**Erosion & Sediment Control Certification & ETeam Training Manual by:**
Minnesota Erosion Control Association, Minnesota Department of Transportation

**NPDES General Construction Activity Permit**
http://www.pca.state.mn.us/publications/wq-strm2-51.doc

*Please see below for additional links and information on Erosion & Sediment Control.*

*Keenan Hayes, Natural Resources – City of Apple Valley* ● 6442 140th Street W., Apple Valley, MN 55124
http://www.ci.apple-valley.mn.us/ ● 952-953-2464 ● khayes@ci.apple-valley.mn.us

CITY OF Apple Valley

*Natural Resources*

## Links to Erosion & Sediment Control

**NPDES General Stormwater Permit for Construction Activity**
**(New Construction Permit in effect Aug. 1st, 2008)**
http://www.pca.state.mn.us/publications/wq-strm2-51.doc

**Quick-Compliance Tips Erosion & Sediment Control Requirements**
http://ci.lakeville.mn.us/departments/departmentspdf/ER_quicktips.pdf

**Erosion and Sediment Control Certification Program**
http://www.erosion.umn.edu/courses/schedule.htm

**City of Apple Valley Ordinance – (Type in Natural Resources Management into "Quick Search")**
http://www.amlegal.com/nxt/gateway.dll/Minnesota/applevalley/cityofapplevalleyminnesotacodeofordinanc?f=templates$fn=default.htm$3.0$vid=amlegal:applevalley_mn

**Current Erosion Control News**
http://www.erosioncontrol.com/ec.html

**Search Metropolitan Council –Environmental Services & BMP'S**
http://www.metrocouncil.org/environment/Watershed/BMP/manual.htm

**NPDES Permitting and Supplemental Links**
http://proteus.pca.state.mn.us/water/stormwater/stormwater-c.html

**MPCA – Stormwater Construction Inspection Guide**
**(Get an idea of what ESC inspectors do…)**
http://www.pca.state.mn.us/publications/wq-strm2-10.pdf

**BMP's - Click on…Chapter 6. Erosion Prevention & Sediment Control**
http://www.pca.state.mn.us/water/pubs/sw-bmpmanual.html

**Sediment & Erosion Control for New Homeowners**
http://www.pca.state.mn.us/publications/wq-strm2-07.pdf

**Erosion & Sediment Control for Residential Areas – City of Apple Valley**
http://www.ci.apple-valley.mn.us/natural_resources/erosion_control/Erosion_Brochure.pdf