CITY OF WEST ST. PAUL

BEST MANAGEMENT PRACTICE (BMP) GUIDANCE MANUAL

INTRODUCTION

BMP examples given in this guide provide ways to meet erosion and sediment control requirements in the City of West Saint Paul. Best Management Practices are not limited to these examples; many other BMPs may be acceptable. Reference tools given at the end of the guide and manufacturer information for practices used, will ensure BMPs are selected and installed properly.

Sediment Control BMPs

SILT FENCE

Silt fence is generally used as perimeter control to keep sediment on site. Silt fence slows runoff allowing water to flow through while filtering sediment and keeping it on site.

Silt fence is made of geotextile fabric and is machine sliced or trenched into the ground 8 to 12 inches, leaving 2 feet of fabric above ground. The trench is filled and soil compacted next to the fabric. Steel or wooden posts are attached to the fabric located on the downstream side of water flow. Posts must be at least 5 feet long, embedded 2 feet into the ground and secured with three zip ties in the upper 8 inches of fabric. Maximum post spacing is 6 feet.

COMPOST LOG

Compost logs can be used for perimeter control, ditch checks and inlet protections. Compost logs slow water velocity and filter runoff.

The logs are made from a geotextile tube filled with shredded mulch or woodchips. They are easy to install, and multiple logs should overlap about 6 inches so there are no gaps; no stakes are required. These logs are easily reused. Logs should form a smile shape to keep sediment on site.

ROCK LOG

Rock logs can be used for perimeter control, ditch checks and inlet protections. Rock logs slow water velocity and filter sediment.

Typically used on paved surfaces, rock logs are installed by overlapping edges about 6" creating a smile shape. Due to their weight, rock logs are not staked and are a little more difficult handle. However, if not damaged they can be reused multiple times.

INLET PROTECTIONS

Inlet protections protect storm drain inlets by filtering out sediment while allowing water to pass through.

Some can sit on top of the inlet or surround the inlet, while others are inside the inlet. Inlet protections come in many varieties such as; prefabricated protections, various logs and bags.

When choosing your inlet protection it is important to know **one size does not fit all.** Different protections are designed for different inlets. When choosing your inlet protection consider installation and maintenance ease, safety, and effectiveness.

Install inlet protections to specifications provided, and be sure there are no gaps, rips, or holes allowing water to be unfiltered. Inlet protections must be cleaned when 1/2 full.

ENTRANCE BMPS

Entrance BMPs are required to limit sediment tracking from vehicle and equipment traffic onto the street and other paved surfaces. The most common is a rock entrance.

Rock entrance must be at least 50 feet long, 20 feet wide, have a filter under liner and be 6 inches thick of clean 1.5 to 3 inch rock. Other prefabricated BMPs exist such as tracking pads and mats. Other BMPs like mulch or different aggregates may be used. Be creative and reuse products available (e.g. slash mulch from clearing & grubbing). Maintenance must occur as the BMP becomes ineffective or full of sediment.

Erosion Control BMPs

MULCH

Mulch is primarily used as temporary stabilization; it can also be used to establish permanent vegetation after seeding occurs, or as an entrance BMP. Mulch holds soil in place to reduce erosion. Temporary mulch can be placed on soils not ready for permanent seeding, and on exposed soils outside of seeding dates to meet temporary stabilization requirements.

There are two main types of mulch products: 1) straw or hay material; 2) wood material. Straw mulch should be applied evenly with 90% coverage (about 2 tons/acre). Disc anchoring straw mulch will help hold it in place. Wood mulch can be produced on site from clearing and grubbing material.

EROSION CONTROL BLANKETS

Erosion control blankets are commonly used where mulch is not appropriate such as steeper slopes, concentrated flow areas like ditch bottoms and narrow areas. Blanket can be used as a stand-alone product to hold soil in place temporarily. It is most commonly used to reduce erosion until vegetation establishes.

Erosion blankets can be made of straw, wood or coconut fibers held together by netting. There are nine categories of blankets, each corresponding to different site conditions. Slope, length of time in place and flow velocity dictates what type is used.

When installing blanket, the underlying soil should be smooth so the blanket can lay flat. Blanket should be laid parallel to the direction of water flow with the netting on top. Blanket must be stapled down appropriately with adjacent blankets overlapping at least 4 inches.

HYRDAULIC SOIL STABILIZERS

Hydraulic soil stabilizers are hydraulically applied tackifiers (glue), or mulch material with a tackifier. These products are used for temporary soil stabilization, with or without seed, or for erosion control to establish permanent vegetation. Typical uses are in areas with limited access, steep slopes and stockpiles, not to be used in concentrated flow areas.

There are four main products, all can be used with or without seed: 1) Natural Tackifier - glue used to hold soils and straw mulch in place; 2) Hydromulch - glue and wood fibers to hold soil and straw mulch in place; 3) Hydromulch Blend - hydromulch with recycled paper and a green dye added; 4) Bonder Fiber Matrix - wood product and glue used on steep slopes for permanent mulch cover.

Winter BMPs

Erosion and sediment control BMPs are required during winter construction; snowmelt is considered stormwater runoff and is required to be treated. To prevent pollutants from leaving the construction site during the winter season. it is recommended that the following are considered:

- Stop land disturbing activities until warm weather returns. Sequence work so land disturbing activities occur prior to freeze up.
- Stabilize all exposed soil surfaces with vegetation, mulch, blankets or other BMPs before the ground freezes. Remember, the City requires that all soils be stabilized if no land disturbing activity has occurred for 14 days, this includes winter.
- Maintain construction entrance BMPs to limit tracking during snow melts.
- If new land disturbing activities occur, proper BMPs must be installed. See the Erosion and Sediment Control Pocket Guidebook for details on installing winter BMPs.
- Inlet protections may be removed after freeze up as appropriate because they can pose problems in the winter (flooding, damaged by plows). These BMPs must be installed in the spring appropriately to weather conditions and/or resuming work.
- Perimeter control devices may need to be moved or enhanced to avoid winter damage.

Links For Additional Information

Erosion and Sediment Control Pocketbook Guide (2009) - This is an awesome reference everyone should look at about BMP types and installation. It can be downloaded or purchased.

MN/DOT Standard Specifications for Construction - Sections 2573 & 3876 thru 3898 contain most of the erosion/sediment control and storm water information. will assist with understanding products and installation
http://www.dot.state.mn.us/pre-letting/spec/

MN/DOT Approved/Qualified Product list - Erosion Control and Landscaping section provides quality BMP product examples.
http://www.dot.state.mn.us/products/index.html#

MN Pollution Control Agency - Construction Storm water- Lots of good BMP guidance and information.
http://www.pca.state.mn.us/water/stormwater/stormwater-c. html

University of MN - Erosion and Stormwater Management - Education and training source.
http://www.erosion.umn.edu/