

Water Pro

Information for professionals working with water issues.

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TALK BACK! Take the WaterPro survey and subscribe to MCWD's E-Splash newsletter at <http://www.minnehahacreek.org/waterpro.php>

BETTER, STRONGER, FASTER, CHEAPER!

Good erosion control requires the presence of established vegetation to stabilize soils. At construction sites, this requirement poses particular problems; removal of topsoil and construction traffic can mean that first, second, and even third attempts to replant sites fail, increasing costs and delaying completion. In the meantime, sediment is washed downstream, increasing nutrients and degrading water and habitat in nearby lakes and streams.

Enter a the latest application in erosion and sediment control. It saves time and money. It promotes healthy vegetation. It is easy to operate. More features: no haul-off costs, easy to repair, stands up to driving, can be installed in winter, improves soil quality, and is more effective than silt fence (see studies, page 2). Best of all, you can begin using this new technology today!

The "latest and greatest" in today's erosion and sediment control is none other than garden-variety compost.

When used to stabilize construction sites, compost decreases erosion, removes pollutants, and encourages quick establishment of vegetation.

Cost savings. According to Dwayne Stenlund of the Minnesota Department of Transportation (Mn/DOT) Erosion Control Engineering Unit, costs for compost as

erosion control are comparable to conventional practices. "Compost berms cost about the same as silt fence. And for the seed bed preparation and turf establishment process, the cost of compost is similar to traditional methods, but it gives the best value because the failure rate for establishment is much lower."

Vegetation Support. By replacing valuable organic matter lost through topsoil removal, compost improves soil structure and pH. Fewer nutrients leach from the soil. Beneficial micro and macro organisms are added, creating a more hospitable atmosphere for plants. And compost can be pre-mixed with seed of your choice.

Runoff Management. When compost is used at a site, its soil becomes more porous. Porous soils hold more water, so less water runs off site during storm flows. Reduced

storm water runoff means less erosion and subsequent sediment loads in receiving waters. Porous soils also resist compaction and allow water to infiltrate, cleaning the water.

Pollution Control. Compost binds and degrades heavy metals, hydrocarbons and pathogens. Its humic acids chemically bind with oil and grease, fuel, pesticides and other substances that may run off or spill during construction or pre-construction activities.

Waste Reduction. Used silt fences go to landfills. Using compost for erosion control actually *reduces the waste stream* by recycling organic material, which is left to disintegrate and feed soil at the site.

For a list of compost suppliers and Mn/DOT certified installers, please call the MCWD at 952-471-0590.

SEE "HOW IT'S DONE" page 2.



Compost improves vegetation establishment, reduces costs and protects water quality at sites like this one on Gray's Bay, Lake Minnetonka, which is in its first growing season.

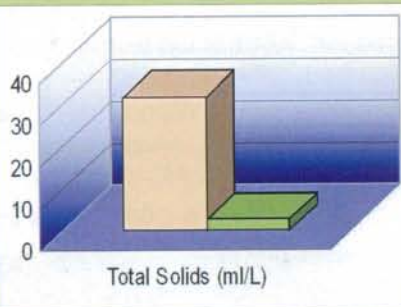
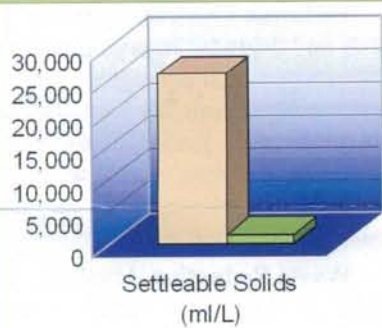
To see what the site looked like just months prior, and to learn about compost techniques see page 2.

COMPOST: HOW IT'S DONE

COMPARISON STUDIES

Studies consistently demonstrate that compost applications reduce soil loss and remove sediment and other pollutants from runoff. In one study*, compost applications reduced soil loss by 86 percent compared to bare soils. The same study showed compost cut sedimentation by 99 percent compared to silt fence and 39 percent compared to hydro-seeding, and that incorporating compost into soil increased infiltration by 125 percent.

*Field Evaluation of Source Separated Compost and CONEG Model Procurement Specifications for Connecticut DOT Projects, Demars and Long, December 1998. University of CT Dept. of Civil and Environmental Engineering.



Silt Fence
 Compost Berm

COMPOST BERMS REDUCED SOLIDS IN RUNOFF WATER

Runoff water that passed through compost berms contained significantly lower levels of sediment than runoff water that passed through silt fence. Results shown were collected at the toe of a 34% slope.

Ettlin and Stewart, *BioCycle Magazine*, December 1993.



A primer of compost application terms.

The most effective sediment control practices combine a variety of compost applications with other forms of erosion and sediment control. Proper installation is critical; compacted compost will not function properly.

Compost. A mixture of organic material that has undergone controlled biological decomposition until it is relatively stable.

Compost blankets. Non-compacted layers of compost, applied uniformly with spreaders or blowers, 1-3" thick over areas with a 4:1 or less slope.

Compost berms. Thick, molded layers of compost applied on steeper slopes. Runoff flows through the berms, which filter out sediment and other pollutants until the project is completed. Post-completion, the berms can be spread out and seeded at the site.

Compost logs or filter socks. Compost berms contained in photodegradable fabric socks; can be left on site after the project is complete.

Compost grout. Compost pneumatically injected into riprap with a blower; allows hard armored areas to vegetate quickly.

Pre-seeded compost: with any of the above applications, compost can be pre-mixed with a specified seed mixture, saving a step in the re-vegetation process and increasing chances of successfully stabilizing the site.

Compost was used to control erosion at a Gray's Bay restoration site, shown below (spring 2005) and on page 1 (summer 2005). In the photo below, a worker uses a blower to apply a uniformly thick compost blanket. Proper installation is critical to assure success; for a list of certified applicators, call 952-471-0590.

