

## Small Construction Site Erosion Control

### When it Rains it Erodes

Keeping soil on construction sites is important to water quality in Lake Okabena and the streams flowing to Lake Ocheda and Heron Lake. Unprotected construction sites can lose large amounts sediment during rain storms and snow melt events, polluting surface waters.

According to the US Environmental Protection Agency, between 20 to 150 tons of soil per acre are lost every year from construction sites due to storm water runoff and erosion. On a typical quarter acre residential lot in Worthington, more than 10,000 pounds, or 100 cubic feet of soil may be lost per year. Much of this soil is carried by storm water in ditches and storm sewers and deposited in lakes, streams and wetlands.

Even small construction sites can have a big effect on water quality. The good news is that pollution can be prevented by planning and simple erosion and runoff control practices.

### Plans and Permits Required

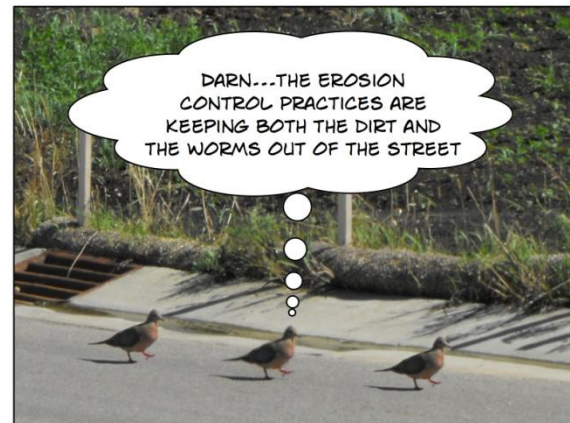
Small site erosion control plans and watershed district permits are required for projects where:

1. More than 200 cubic yards of soil will be moved, or
2. Between 10,000 square feet and one acre will be disturbed by construction activities.

This means that permits and plans are required in Worthington for most new homes, some large remodeling projects and many larger landscaping projects.

Worthington requires building permit applicants to submit a small construction site erosion control plan before permits are issued.

Landowners or their contractors are responsible for creating the erosion control plans. Either Heron Lake or Okabena-Ocheda watershed district staff may help create the plan depending on where the construction site is located.



### Best Management Practices

An erosion control plan will prescribe Best Management Practices (BMP's) to minimize erosion, and keep sediment on site. BMP's must be installed and remain in place from the time the land is first disturbed until the site is permanently stabilized. The BMP's recommended will vary depending on what is being built and the site's location and topography.

Some of the most commonly used BMP's are listed below.

- **Silt Fence** – Silt fence reduces soil erosion on slopes. When installed properly on the perimeter of construction sites, it keeps silt from moving offsite.



Silt fence must be trenched into the ground at least six inches so that water does not undercut it. On hillsides, it should be installed parallel to the slope and be long enough to keep water from flowing around it.

Silt fence must be maintained to work properly. In Worthington, it is likely wind will detach the fabric from the wooden stakes or fence posts several times during the construction season. When this happens, it should be reattached to the posts immediately.

Straw bales are often used as an alternative to silt fence. Bales must also be trenched into the ground and be anchored with stakes.

- **Erosion Control Mat** - Erosion control mats are often used to prevent erosion and protect the perimeter of construction sites. Erosion control mats are also used to protect areas near rain gutter downspouts.

The matting material must be anchored to the ground, usually with metal staples. Grass seed is often planted under the matting to create a permanent stable surface.



- **Vegetation Management** - Construction activities remove the plants that normally keep soil in place. Sometimes the easiest and cheapest BMP is leaving the vegetation undisturbed on parts of the construction site. A simple strip of grass along a street curb can be cheaper and more effective than harder to maintain silt fence. Strips of grass may also be used to prevent erosion and filter water flowing off roofs and hard surfaces.

Grass strips often fail when contractors or subcontractors drive over them in wet conditions. Another cause of failure is using grassed buffer areas to store construction materials or excavated soil.

- **Construction Driveways** - Vehicles often track mud from construction sites onto streets. Mud tracking can be minimized by restricting vehicles to temporary rock construction driveways. Restricting traffic to rock driveways has the added benefit of keeping contractors and subcontractors from

driving over and destroying other erosion control BMP's.

- **Street Cleaning** – Permit holders are responsible for removing soil tracked or washed onto streets. This must be done daily, or more often, if needed.
- **Storm Sewer Catch Basin Protection**  
Most small construction site BMP's are designed to keep sediment out of streets. Even well planned and properly installed BMP's sometimes fail under unexpected circumstances. For this reason, catch basin protection is often needed as a backup.

The most common catch basin protection BMP's use porous bags filled with small rocks. These often fail when vehicles drive over them or they are removed by snow plows.

- **Temporary Seeding** – Construction sites often remain bare for months longer than expected. Landowners and contractors can reduce the time and expense of reinstalling and maintaining BMP's, like silt fence, by temporarily seeding bare soil with annual or perennial grasses.

Grass does not grow very well in construction site fill, so black soil may need to be spread before seeding. To be effective, grass seeded to control erosion through the winter and spring seasons should be planted by the middle of September.

Temporary grass seeding has the added benefit of reducing the amount of mud tracked by children and dogs into newly built homes.

- **Final Stabilization** – Erosion control BMP's must be installed and maintained until the construction site is permanently stabilized. After



construction is completed, a permanent cover of sod or grass must be established in all areas that are not protected by buildings, hard surfaces or other landscaping practices. When erodible surfaces are covered by 70 percent vegetative cover, erosion control BMP's may be removed.

Due to construction delays, weather events and the onset of winter, final stabilization may not occur until the summer following home construction. Homeowners are responsible for maintaining the erosion control BMP's during this time. The most durable and easiest to maintain BMP is often temporary seeding of exposed soils.

