



The Urban Review

Sediment & Erosion Control Information Newsletter

Partnerships for Better Water Quality

Increasing services and assistance to local governments within Franklin County is one of Franklin Soil and Water Conservation District's strategic plan goals. The purpose of this goal is make a significant, positive long-term impact on natural resources in Franklin County by working with all local governments. This is important because natural resource conservation concerns such as water quality and storm water management do not stop at local jurisdictional boundaries.

The need for Franklin SWCD to develop partnerships and increase services to all local governments is quite evident as the deadlines for NPDES Phase II requirements approach. The more local governments that we provide guidance and assistance to regarding storm water management, the more consistent the policies and regulations will be from one local government to another. Franklin SWCD has increased our working agreements from 1 in 2003 to 7 in 2005 to assist Franklin County's municipalities with consistent and responsible storm water management!

The services that Franklin SWCD provides to municipalities can vary from environmental education and outreach, stream bank assistance and stewardship, sediment and erosion control, conservation easements, drainage outlet mapping,

watershed planning, backyard conservation, and water quality monitoring. We are in a unique position to work with all communities because we are a **non-biased** public service organization dedicated to providing educational and technical support on land and water quality issues. Natural Resource Conservation is our only focus, allowing us to be experts, with technical assistance and activities dating back to 1946. We receive support from Ohio Department of Natural Resources and Natural Resources Conservation Service. We also receive state match dollars on all local government grants that allows us to keep our costs relatively low. Finally, we have access to additional natural resource expertise with our Board of Supervisors, Associate Supervisors, and Earth Team Volunteers.

The partnerships between FSWCD and municipalities have proven to be a very successful tool for natural resource management. FSWCD staff and board appreciate the enthusiasm and support we have received from our partners. It is our vision to bring all local jurisdictions together to address storm water concerns, using similar approaches, collaboration, and consistent and coordinated drainage data through a central storm water committee for the county.

Keeping Soil On-Site: Sediment and Erosion Control

Sediment and erosion control are commonly used terms in the development and construction field. These terms are often used interchangeably and incorrectly throughout the industry. Their meanings and effectiveness at keeping the soil on site and out of streams and rivers vary greatly. For example, erosion control is the most effective and commonly considered the first line of defense in keeping soil on construction sites. Erosion control is essentially covering the soil with vegetative cover, straw, tree mulch, wood chips, hydroseed, hydromulch, plastic, etc. The most effective (ecologically and economically) way to control erosion is by maintaining or establishing a thick layer of vegetation, such as grass. Once the vegetation has been removed from an area it becomes vulnerable to

rain drop impact and erosion. For example, erosion from a construction site during one construction season can total from 1 to 2 dump truck loads of soil. Temporary vegetation can also be established quickly in disturbed areas to prevent sheet and rill erosion from occurring.

If a construction site will be constantly disturbed sediment control Best Management Practices (BMPs), which pond runoff to allow the (continued on page 2)

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Keeping Soil On-Site: Sediment and Erosion Control (continued from page 1)

sediment to settle out, are implemented. Common sediment control BMPs include silt fence, inlet protectors, and sediment basins. Sediment control BMPs are, however, only about 50% effective, compared to 90-98% effectiveness for erosion control. Overall effectiveness of sediment controls is low because once the sediment begins to erode and wash away it is very difficult to trap and put back on-site. Time is another factor to consider when using sediment control BMPs because sediment typically takes hours and days to completely settle out of ponded water. Furthermore, the resulting sediment that settles out onto a roadway must be cleaned up and sediment control BMPs require constant upkeep and replacement. In addition to being less efficient than erosion control BMPs, sediment control BMPs provide an added cost to the developer because they are more expensive to install and require constant maintenance.

The main goal in sediment and erosion control is to prevent the soil from leaving the construction site and becoming sediment. Keeping soil on site by establishing erosion controls (covering the soil), saves the developer money and helps maintain the water quality of nearby streams and rivers. Economically, preventing sediment from entering the street and inlet protectors saves the developer the cost of having the curb-gutters, streets, and inlets cleaned on a regular basis. In ecological terms, once the sediment is washed into the street and into the storm drain system it will be

deposited into the nearest stream or river. Sediment in streams and rivers causes the most damage to aquatic life by degrading water quality and severely impacting aquatic animal habitats. Areas needed for reproduction and food sources are destroyed when fine silts cover the sand and gravel streambed. Decreased clarity of the water prevents sunlight from reaching plants resulting in loss of aquatic plant communities. The result is a reduction in the number and variety of fish and other aquatic life. This negative impact often can be seen for many miles downstream.



Fall Seeding for Soil Stabilization

Remember those wet, cold, muddy days last winter? Those gray days when machinery and equipment bogged down in a foot of mud? When it was too cold for sod and too wet and muddy to get straw blowers out into the field? Well, now is the time to take action to prevent all that mess from happening again.

Yes, it's time to get the whole site stabilized. Putting down a temporary cover of annual rye grass, tall fescue, or wheat now should result in a good stand of vegetation by late fall. Temporary seeding is just that – temporary. It's meant to protect the bare soil from erosion during the wet seasons and

to be turned under when construction on that area resumes. The dates for temporary seeding are from August 16th to November 1st.

All permanent seeding should be completed by September 30th with bluegrass, tall fescue, or domestic ryegrass. After that date dormant seeding methods must be used. This entails preparing the seedbed and applying straw mulch then waiting until after mid-November to broadcast the seed mixture. The seeding rates must be increased by 50% at this time of year.

You may look out at the site right now and see a growth of weeds and grasses that came up on their own during the summer. Most of

these are annual plants that will die at the first frost leaving the ground bare again. Even though it may appear that seeding is unnecessary, over seeding with an appropriate seed mixture now will ensure adequate cover through the coming seasons.



Selection of Rolled Erosion Control Products

There are many different kinds of rolled erosion control products (RECPs) which can provide a cost-effective solution to almost any erosion problem. Varying from temporary erosion control blankets (ECBs) to permanent turf reinforcement mats (TRMs), these products can provide a diversity of economical and effective forms of protection for your project. However, deciding which type of erosion control material to use for a specific application can be a confusing task. The key to selecting which RECP will provide the most cost-effective erosion protection on your project is first to define the application. Is the site a slope where erosion is a result of the impact of raindrops and the runoff of sediment as rill or sheet flow? Is it a drainage channel where water flow is concentrated? Or is it a pond edge where variable water levels and repetitive wave action continuously erode the shoreline? Once the type of application is determined the appropriate stabilizing material must be considered. Finally, if vegetation is the final form of erosion control, how long does the RECP have to function for the planting to become fully mature?

Engineers must consider site-specific conditions which will allow them to tailor the appropriate

material to the application. A review of several different erosion control products, their function, and how to design with them will provide the knowledge necessary to carry out successful erosion control plans. By eliminating the tendency to overengineer, this approach has seen great success in controlling soil erosion, establishing vegetation, and reducing monetary costs.

Vegetation, either reinforced or unreinforced, is often the ideal soil stabilizing material due to its relatively low cost, easy maintenance, and aesthetic appeal. But vegetation still requires special consideration regarding its establishment and ability to permanently stabilize the soil. By providing a stable form of immediate cover, RECPs function as a barrier against the detachment and transport of sediment until vegetation assumes this role. Erosion control blankets and matings must effectively prevent detachment of soil particles by absorbing or dissipating the kinetic energy of raindrops. They must serve as barriers to the erosive forces of concentrated flows. Finally, by increasing the hydraulic roughness of the channel surface they may also allow for deposition of sediment contained in the flow.

Increased concentration of runoff from an increase in impervious surfaces (continued on page 4)

Mark Your Calendar!

Join us October 20th at 6:00 p.m. for an evening of camaraderie and conservation. The Franklin SWCD will be holding our Annual Banquet at the Confluence Park Restaurant. This year's theme is "Songs in the Garden" and our guest speaker will be Marvin Duren, owner of Marvin's Organic Gardens, presenting "Developing Bird Habitat" accompanied by his beautiful photographs. We will also be holding elections for our Board of Supervisors, presenting Conservation Awards for 2005, and holding a raffle to raise money for our conservation efforts. Please see our web site at franklinswcd.org for reservation forms. Hope to see you there!

Farm Science Review at the Gwynne

The 43rd annual Farm Science Review is being held this fall on September 20, 21, and 22 in London, Ohio. During this three day event be sure to visit the Gwynne Conservation Area. New exhibitors and information from the natural resource management experts will be available this year. Scheduled programs will also be conducted on a variety of conservation and resource management practices. Installed applications such as grassed waterways, stream bank stabilization and erosion control, a stream crossing, constructed wetland, and dry hydrant can be seen at the Gwynne.

Check out some of the habitats and ecosystems. The Gwynne Conservation Area has a prairie, riparian forests, a wetland, ponds, and wildlife cover plantings.

While visiting the Farm Science Review plan on taking a mini-workshop on pond management, warm season grasses, wildlife enhancement, federal conservation programs, or fighting invasive plants and insects. A schedule of workshops being held at the Gwynne during the Review is available on-line at <http://gwynne.osu.edu/>. Free shuttle tours of the Conservation Area will also be offered. The Gwynne Conservation Area is open year-round during daylight hours for hiking, dog walking, photography, and wildlife observation.



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Selecting Rolled Erosion Control Products

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may exceed the capability of natural vegetation to hold the soil in place. Since ECBs are temporary, when a mature stand of vegetation is established their erosion control function is no longer required. Erosion control blankets provide erosion control from 30 days to 3 years and are often ideal for protecting slopes and drainage swales. Their netting structures may be photodegradable or biodegradable. The matrix materials are usually organic fibers. Durability, longevity, and effectiveness are dependent on the combination of fibers and nettings. Selection of the proper ECB is dependent on the erosive forces present and longevity of protection required.

When vegetation alone will not provide the required permanent erosion protection a turf reinforcement mat may be needed. In areas such as high flow channels and steep slopes exposed to large volumes of runoff, the shear stress can exceed what the vegetation can resist. Under extremely high flows the vegetation itself can be stripped from the soil. Using heavy duty, non-degradable, three-dimensional structures, TRMs provide permanent reinforcement and structural stability to the roots and stems while supplementing erosion control of the vegetation. TRMs make it possible for vegetation to stabilize areas that were once only treatable with hard armor materials such as rock riprap or concrete. In the permanent phase of erosion protection the function of the TRM shifts; mature vegetation now provides the primary form of cover while the TRM's primary function is reinforcement of the vegetation. It must also provide supplemental cover to the soil surface for any erosive forces that penetrate the vegetation. TRMs should not be used under constant flow conditions or in any location that does not allow vegetation establishment.

Our Mission:

To promote responsible land use decisions for the conservation, protection and improvement of soil and water resources through effective partnering and technical guidance in Franklin County.