



Aerators and Fountains in Retention Ponds

A lively fountain splashing in a pond that sparkles in the sun is a beautiful sight. Most of the time. However, when that lively fountain is splashing in a silty retention pond or sediment basin the outlook is completely different.

Storm water basins on construction sites are designed to capture the sediment-laden runoff that occurs whenever bare soil is exposed to the elements then release runoff at a controlled rate. They are built to hold the water long enough for most of the sediment to settle out. Sand in the runoff settles very quickly to the bottom of the basin but silt and clay particles can take days to settle out. The cleaner surface water then slowly filters through geotextile wrapped riser pipes into the nearest waterway or storm drain. This entire riser structure is removed when construction is complete, the drainage area stabilized and excess sediment removed from the pond. At that time the basin can be converted to a more aesthetic water feature that also controls storm water for water quality.

Aerators and fountains are designed to keep the water moving in a basin. This movement oxygenates the water, prevents stagnation, and inhibits mosquito growth.

Colored dyes are sometimes added to the water for a pleasing tint and to inhibit algae growth by blocking out excess sunlight. In a finished pond or lake an aerator serves a useful purpose, in a construction site sediment basin it can be disastrous to the down stream habitat.

When sediment-laden runoff is not allowed time to settle because of constant agitation of the water the silt will end up in the waterway. Once there it will eventually settle out, coating streambeds and plants used for habitat by amphibians and fish. Aerators and fountains have their place in improving the water quality of a finished pond; they simply have no place in a sediment basin.



Non-structural BMPs

Some of the most effective Best Management Practices (BMPs) are ones you don't structurally see out on the construction site. Although not normally thought of as BMPs, ordinances and enforcement can be some of the best ways to meet the responsibilities of NPDES Phase II. These ordinances are intended to conserve and protect the natural resources on site that may otherwise be adversely affected by land disturbing activities. Without these regulations and the means of enforcing them, it can be difficult to achieve compliance on site.

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As stated in the NPDES Phase II permit for MS4s, it is required that all permittees in the rapidly developing communities have an erosion and sediment control ordinance in place by March of 2006. The local regulations are intended to protect public property and to prevent damage to our local waterways. These ordinances may set standards for what is required for plan approval, what is required on the construction (continued on page 2)

Green Roof Subcommittee

A subcommittee has been formed in Franklin County to develop and promote a Green Roof Program. Green Roofs are “roof top gardens” that vary in depth and are composed of soil and vegetation, planted over a waterproof membrane. Green Roofs benefit communities by providing storm water management, energy savings potential, and aesthetic appeal. The purpose of the Green Roof Subcommittee is to promote a green roof



that will outline the many environmental benefits this program can provide. The subcommittee will develop standards for the design of a living roof system that can be submitted to local governments for their review and understanding. Further, it is our goal to have local governments include the Green Roof Design into their building standards.

Currently, the subcommittee is surveying sources of green roof design, construction, and effectiveness. This research will allow the subcommittee to become familiar with the components of a green roof, what works best in our climate and learn potential problems and limitations that green roofs present. In the near future the subcommittee will visit various green roof systems throughout the region, develop green roof design standards, and present green roof design to local governments.

The subcommittee is under the direction of the Franklin County Greenway Steering Committee. Current members of the Green Roof Subcommittee include representatives from Columbus Green Building Forum, Franklin Soil and Water Conservation District, City of Columbus, and the Mid Ohio Regional Planning Commission.

Non-structural BMPs

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sites to remain in compliance with NPDES Phase II, and set forth regulatory action to assure that the ordinance is effective. More specifically, they can set design requirements for grading, erosion and sediment control practices, and waterway crossings to meet water quality standards. Also, they can set limits for clearing and grading and can require enforcement action within a certain amount of time.

Some ways to ensure compliance include implementing fines, which set monetary penalties for violations of the approved Storm Water Pollution Prevention Plan; issuing stop work orders when a plan is violated; and bonding requirements, which set aside funds to repair damage to construction site erosion and sediment controls.

There are some limitations to an effective erosion and sediment control ordinance. Site inspections are required to ensure the ordinance is being adhered to. These site inspections need to be regularly conducted with a qualified inspector and throughout the entire phase of construction. Ordinances are only as effective as the degree to which they are enforced and by whom is enforcing them. Franklin SWCD can assist in inspecting construction sites for erosion and sediment control, reviewing plans for appropriate BMPs, and work with the local communities to establish a storm water management ordinance. Also, Franklin SWCD offers erosion and sediment control trainings for any city or developer interested and has examples of ordinances available. Model ordinances may also be found at www.epa.gov/nps/ordinance/mol2.htm.

Public Service Park Tour

Come join us for a tour of the Public Service Park in Northern Kentucky and see some of the latest Best Management Practices for pollution prevention and storm water management at the Sanitation District No.1 in Ft. Wright. The Public Service Park provides an opportunity to see real world applications of a variety of innovative stormwater control techniques. This guided tour will showcase an oil/water separator, green roof, urban forest, several types of permeable pavements, wet retention and dry detention basins, a cistern, and biofiltration swale.

Only \$20 will reserve a seat on the bus on June 24th for this guided tour. We will depart from the Franklin SWCD parking lot at 8 a.m. and arrive at the Park around 10 a.m. Our tour will be conducted by experts in the field who will be available to answer any technical questions that may arise. Bring along your lunch money; we'll be stopping for lunch on the way

back. We should arrive back at the District lot around 3 p.m. For additional information check out our website. To reserve a seat call Melissa Little at 614-486-9613 by June 17th.



StormCon is Coming!

The 4th Annual North American Surface Water Quality Conference & Exposition will be held on July 18-21, 2005, in Orlando, Florida. Join the fast-growing national network of stormwater professionals and industry leaders to learn about technical, managerial, and technological solutions to stormwater challenges. This is an excellent opportunity to expand your knowledge and earn CECs through this four track workshop curriculum. This year the four program tracks will cover Best Management Practices, Research and Testing, Monitoring Water Quality, and Managing the Stormwater Program. For complete information on registering for workshops, presenting a paper, sponsorship opportunities, exhibit space, or moderating visit www.StormCon.com or contact Steve DiGiorgi, StormCon Director, at stevédg@forester.net.

Erosion and Sediment Control Certification

New laws governing misuse of land and water resources, damages inflicted by erosion and sediment, and storm water quality concerns create a need for the services of trained professionals. Such professionals increasingly must be able to show evidence of their qualifications.

A certification program to identify professionals who are qualified for educational, scientific, and service activities with both public and private agencies in the erosion and sediment field is in the public interest. Standards and procedures for certifying persons qualified in erosion and sediment control have been developed through the International Erosion Control Association. The Certified Professional in Erosion and Sediment Control (CPESC),

Inc. programs have been developed to fulfill this need.

These certification programs are based on scholarly preparation, knowledge, and experience. Certified professionals listed on the registry will meet educational and practical experience standards, subscribe to a code of ethics, and pass a qualifying examination.

For information on the certification program or to find a certified professional in your area contact CPESC at info@cpesc.org or check out their website at www.cpesc.org. The Ohio Valley Area Representative is David Ritter; he can be contacted at: dritter@summitswcd.org



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The BMP Review: Construction Site Phasing

What is construction site phasing and why is it important? Construction phasing is not the same as construction sequencing. As most contractors and developers will tell you, construction sequencing is the standard practice of completing one portion or aspect of a project at a time, with site grading typically completed in a single step. In many circumstances, the time difference between grading and actual building construction can take years.

Construction site phasing minimizes soil erosion through a somewhat more complex construction process. Only one portion of a site is disturbed at any one time to construct the infrastructure necessary to

complete that phase. Subsequent phases are not started until earlier phases are substantially completed and exposed soils are mostly stabilized. This “just-in-time” construction practice can dramatically reduce disturbed soil exposure times and resulting erosion problems.

Despite the value of construction site phasing, very few projects are successfully phased. Because many sediment control practices are at best 90% efficient in removing suspended solids, erosion prevention techniques that limit the initial erosion of sediments can have dramatic results in reducing sediment loss from construction sites (Corish, 1995). Uncontrolled urban construction sites can lose between 20

and 200 tons per acre of sediment per year (Dreher and Mertz-Erwin, 1991). Contrast this with an undisturbed meadow or forest, which loses less than one ton/acre of sediment per year. Clearly, a great reduction in sediment export is possible when clearing is reduced. A carefully phased project can reduce sediment loss by more than 40% over a typical mass-graded site.

Construction phasing is only one of several erosion prevention techniques that can be used to reduce soil loss. Instead of relying on trapping already suspended solids, the phasing techniques rely on erosion prevention.

Technical Note #88 from Watershed Protection Techniques. 2(3): 413-417

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.