

# E&M Engineers and Surveyors, PC

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Springville, New York 14141  
(716) 592-2851

Bradford, Pennsylvania 16701  
(814) 362-5546

[www.emengineers.com](http://www.emengineers.com)

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## Drinking Water Security and Safety

by Jeffrey C. Bahret, PE

In this post 9/11 world we now find ourselves in, the way we look at our drinking water supply must change. By President Bush signing the Public Health, Security and Bioterrorism Preparedness and Response Act (PL 107-188), provisions to help safeguard the nation's drinking water systems against terrorist attacks have been put in place. This PL 107-188 action does a number of things, including the amendment of the Safe Drinking Water Act title XIV of the Public Health Law.

Based on the population served by the system, the Bioterrorism Act of 2002 requires Vulnerability Assessments and Emergency Response Plans to be completed by the following deadlines:

<u>System Size</u>	<u>Vulnerability Assessment</u>	<u>Emergency Response Plan</u>
25 to 3,300	N/A	N/A
3,301 to 49,999	6/30/04	12/31/04
50,000 to 99,999	12/31/03	6/30/04

This Act has many requirements dependent upon the communities water system size. In an effort to provide our clients a summary, the following central provisions are required:

- Each community water system serving a population of greater than 3,300 persons shall conduct an assessment of the vulnerability of its system to a terrorist

attack or other intentional acts intended to substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water. The vulnerability assessment shall include, but not be limited to, a review of pipes and constructed conveyances, physical barriers, water collection, pretreatment, treatment, storage and distribution facilities, electronic, computer or other automated systems which are utilized by the public water system, the use, storage, or handling of various chemicals, and the operation and maintenance of such system.

- Each community water system serving a population greater than 3,300 shall prepare or revise, where necessary, an emergency response plan that incorporates the results of vulnerability assessments that have been completed. Each such community water system shall certify to the Administrator, as soon as reasonably possible after the enactment of this section, but not later than six (6) months after the completion of the vulnerability assessment that the system has completed such plan. The emergency response plan shall include, but not be limited to, plans, procedures, and identification of equipment that can be implemented or utilized in the event of a terrorist or other intentional attack on the public water system. The emergency response plan shall also include actions, procedures, and identification of equipment which can obviate or significantly lessen the impact of terrorist attacks or other intentional actions on the public health and the safety and supply of drinking water

provided to communities and individuals.

- The USEPA shall provide guidance to community water systems serving a population of less than 3,300 persons on how to conduct vulnerability assessments, prepare emergency response plans, and address threats from terrorist attacks or other intentional actions designed to disrupt the provision of safe drinking water or significantly affect the public health or significantly affect the safety or supply of drinking water provided to communities and individuals.
- Funding has been authorized to help finance the associated costs in completing the above activities.
- Some community systems will require only minor changes to comply with the identified points in the Vulnerability Assessment. In contrast, some systems due to their age or specific configuration may need a great deal of capital improvements. Either way, E&M is prepared to assist in any fashion to enable your water system to comply with PL 107-188.

### **Too Much Water in Your Back Yard?**

By: Al Vanderpoel, PE

After a couple of dry years, we again have an abundance of rainfall in Northwest Pennsylvania and Western New York. While this is great for growing conditions, it can become annoying when you are unable to mow your lawn or even walk through those wet spots in your backyard.

There are some things you can do to solve these problems, and some things you cannot do. The most basic thing to do is to divert the water away from those low spots. Channeling the runoff by building up a small mound or swale, or by constructing a small ditch to divert water away from problem areas is the most positive approach. The same methods that you might use to divert water from your house can be used on your lawn. Don't forget to look at the basics. Are culvert

pipes plugged that would drain an area? Are roof down spouts draining water to a wet area?

Another approach is to install perforated pipe in the wet areas, with the outlet pipe being directed to a ditch or even a dry area of your lawn. The perforated pipe should be installed about one foot deep with washed stone placed about six inches around the pipe, and preferably with the stone wrapped in a fabric cloth. The pipe must slope away from the wet area, which is sometimes difficult since these are usually low areas to begin with.

Finally, a simple yet sometimes effective approach is to plant a tree in a wet area. A weeping willow, for example, will sometimes dry up a wet area and solve your problem.

There are also some things you cannot do with storm water, that you must keep in mind. Most communities now have a storm water management ordinance, and the common thread in all these ordinances is that you cannot increase the runoff from your parcel to a neighbors. If you construct a ditch, you cannot simply divert the current runoff to your neighbors land. This would include diverting your runoff into a culvert under the highway, and have the culvert pipe discharge additional flow to another parcel. On the reverse side of this, don't expect help from your municipality just because the storm water is coming from a culvert under a road. More often than not, the municipality is not the cause. While the local municipality occasionally has jurisdiction over increased storm water flows, often it is a civil matter that must be resolved between the neighbors.

Another thing you cannot do is to drain storm water into your sanitary sewer pipes. The sewer lateral from your house can drain only sanitary wastes. Your local sewer authority may discover that storm water is entering your sanitary system, and they will have no choice but to order you to correct this situation. Your only recourse then is to do those things listed above that will help your drainage concerns.

Often, the fix is very simple, and one day's work will correct a long term problem. But always keep

in mind that you cannot solve your water problems by just diverting it to your neighbor. Common sense is the key.

## **NPDES Regulation Changes**

by Christopher M. Ernst, EIT

The regulations concerning the National Pollutant Discharge Elimination System (NPDES) for stormwater runoff associated with construction activities have changed for Pennsylvania and New York States in the year 2003. Prior to this year, an NPDES permit was required when 5 or more acres of land were disturbed during a construction project. The new permit requirements for each state are as follows:

### Pennsylvania

The instructions for the General or Individual Permit for Stormwater Discharges Associated with Construction Activities state the following:

“Persons proposing earth disturbance activities which disturb five (5) or more acres, or an earth disturbance or any portion, part, or during any stage of, a larger common plan of development or sale that involves five (5) or more acres of earth disturbance over the life of the project, OR persons proposing earth disturbance activities with a point source discharge to surface waters of the Commonwealth that disturb from one (1) to less than five (5) acres, or an earth disturbance or any portion, part, or during any stage of, a larger common plan of development or sale that involves one (1) to less than five (5) acres of disturbance with a point source discharge to surface waters of the Commonwealth over the life of the project, must apply for the General NPDES Permit for Stormwater Discharges Associated with Construction Activities. A point source is defined as any discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, well, discrete fissure, or container from which pollutants are or may be discharged.”

Simply speaking, an NPDES permit is now required for construction projects that involve over 1 acre of earth disturbance, unless there is no point source of stormwater discharge. If there is no point source, then a permit is only required for earth disturbances of 5 acres or greater. The other significant change is the fact that the permit now looks at the overall plan of development, therefore, a person cannot avoid the NPDES permit by phasing their construction to remain under the 1 or 5 acre earth disturbance threshold. An individual is eligible for coverage under the General NPDES permit except for the following: projects located within “special protection” watersheds, projects that affect existing water quality standards or threatened or endangered species and habitat, or projects that have the potential for toxic discharges. If these situations are present, then the person must apply for an Individual NPDES permit, which is a more involved and expensive review of the proposed project.

The NPDES permit is delegated to and administered by the Department of Environmental Protection (DEP). DEP has delegated the management of the NPDES program to County Conservation Districts. For more information give us a call, visit [www.dep.state.pa.us](http://www.dep.state.pa.us), or contact your County Conservation District.

### New York

The NPDES regulations for New York State are essentially the same as for Pennsylvania except for the following:

1. The NPDES permit is referred to as State Pollutant Discharge Elimination System (SPDES) in New York.
2. The SPDES permit is required for all earth disturbances greater than 1 acre regardless if there is a point discharge or not.
3. The SPDES is administered and managed by the New York State Department of Environmental Conservation (NYSDEC).
4. A permit may be necessary for earth disturbances under 1 acre if the NYSDEC determines that it is required pursuant to Environmental Conservation Law.

A General and Individual SPDES permit are both available in New York, with most construction activities being eligible for coverage under the General SPDES permit. Projects that will affect water quality standards and threatened or endangered species or their habitats will require an Individual SPDES permit.

For more information on New York SPDES requirements give us a call, contact your Regional NYSDEC office, or visit [www.dec.state.ny.us](http://www.dec.state.ny.us).

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**E&M ENGINEERS AND SURVEYORS PC  
482 S. CASCADE DRIVE  
PO BOX 159  
SPRINGVILLE, NY 14141-0159**