

## **Draft PADEP SERO MS4 Outfall Guidance – May 2006**

Storm water discharges are responsible for the majority of the stream impairments in the Southeast Region of Pennsylvania. For the most part, these stream impairments are being caused by the storm water discharges from municipal separate storm sewer system outfalls. The goals of the MS4 permit program are to reduce the discharge of pollutants from these outfalls, and to protect water quality in the receiving waterways. Identifying and inspecting the physical outfall structures themselves is an important element of this program. Municipal permittees will need to locate, map, and inspect these outfalls as part of their MS4 program activities. In addition, wherever these outfalls have dry weather flow discharging from them, then that flow will need to be sampled to assess whether it is clean or polluted.

An outfall is the point where a municipal separate storm sewer discharges to surface waters. The “point” could be a pipe, ditch, channel, tunnel, or any discernable, confined, and discrete conveyance. “Surface waters” are any and all rivers, streams, creeks, impoundments, ditches, water courses, lakes, dammed water, ponds, springs, wetlands and all other bodies or channels of conveyance of surface water, whether artificial or natural. In most cases, storm water outfalls are pipes coming from an underground storm water collection system and discharging to a stream bank. Sometimes, a storm water outfall may be from an entirely above-ground collection system, such as when road or parking lot runoff enters and flows in a ditch or other surface conveyance, and then enters a waterway as a point source.

The MS4 permit covers the discharge of storm water from municipal separate storm sewer systems to surface waters of the Commonwealth. The permit requires that these discharge points, or outfalls, be periodically inspected, or screened, to check for the presence of dry weather flow and polluting materials. It is important for MS4 permittees to maintain an inventory of all the outfalls from their storm water collection systems. In most cases, it will be necessary to do field reconnaissance work to locate all the outfalls, which should then be accurately mapped. This inventory and mapping will support your Illicit Discharge Detection and Elimination (IDD&E) program. The efforts to map the outfalls, and then to inspect and track information about each outfall, will provide the foundation for a good MS4 pollution prevention program.

The MS4 permit requires permittees to implement and enforce a program to detect and eliminate illicit discharges into the municipal separate storm sewer system. Part of this program is the requirement to develop a storm sewer system map that shows the location of all outfalls and the names and locations of all surface waters that receive discharges from these outfalls. Another program requirement is to develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the municipal separate storm sewer system. This plan, as outlined in the MS4 Protocol, includes screening outfalls during dry weather. Which outfalls? Any outfall that contains the discharge from an MS4 permittee’s municipal separate storm sewer system is an outfall that needs to be mapped and screened. These outfalls may be located on public or private property. Wherever a municipality’s storm water pipes or outfalls are located on private property, there should be a right-of-way, or easement agreement, between the municipality and the property owner. Whether or not there is a right-of-way or easement agreement, the outfall needs to be mapped and screened.

There are, however, valid reasons for a municipality to consider mapping all storm sewer outfalls within their boundaries, whether or not they are municipally owned and operated. Total Maximum Daily Loads (TMDLs) will be developed and implemented by PADEP in many impaired watersheds, and the next MS4 permits (in 2008) will contain requirements to address this. The TMDL process will look at the total storm water discharges from a municipality within a particular watershed and will require the municipality to take certain actions. In order to accomplish this, the municipality will need to know the location and ownership of all storm water outfalls within their municipal boundaries (including the privately owned ones.)

Some municipalities have found it difficult to understand what structures, or what locations, should be considered “outfalls” for the purposes of the MS4 permit. The majority of outfalls are pipes located at the bank of a stream, but there are a variety of other types of outfalls to consider also. The discharge from a pipe to a swale or ditch that is normally dry would qualify as an outfall, as would a discharge from an underground storm sewer to an enclosed (culverted) section of a creek, or a discharge that is located under a bridge, or a discharge into a detention basin. It should be noted that detention basins usually have overflow structures that carry flow to a nearby stream. If a certain basin receives more than one piped or channelized discharge, then the overflow from the basin may be considered to be a separate outfall itself. If the municipal MS4 permittee does not own a particular basin, then the municipality would not be responsible to screen or monitor the flow from the basin overflow outfall. In such a case, the municipality’s responsibility for its storm water discharge is directed at its outfall where storm water flow enters the basin. However, if the municipality does own the basin, then the basin overflow outfall to the receiving stream is their responsibility, and should be included on their map and inventory of outfalls.

For strictly above-ground storm water collection systems, the screening procedures should be relatively simple. These systems are more easily accessible for visual assessment or sampling of the flow, and they are less likely than buried pipes to be carrying dry weather flow (groundwater infiltration, or illicit discharges). In most cases, a pipe under a road that simply transports flow from one side of the road to the other is not an outfall that needs to be mapped and screened. As commonly seen in rural communities, these systems often involve open swales that collect surface runoff from adjacent roads.

For underground storm sewer systems, the best way to inspect for dry weather flow, and to screen or sample that flow, is to go to the outfall itself. If physical circumstances make it difficult or impossible for a person to reach the outfall, then the screening and sampling of dry weather flow may be performed at a nearby upstream manhole or access point.

The Pennsylvania Department of Transportation (PA DOT) and each county have their own MS4 permits, and are responsible for storm water runoff from their facilities, including roadways. They are responsible for screening the dry weather discharges from outfalls associated with state and county roads.

For further guidance or assistance on specific outfall mapping or screening issues in your community, please contact the PADEP Southeast Regional Office.