LEVELING THE BMP PLAYING FIELD

The need for unified design criteria

Although manufactured storm water treatment devices are relatively new compared with flood control and early treatment best management practices (BMPs), it is time to stop looking at these systems as "innovative" and start defining consistent design standards based on the years' worth of performance data that is now available.

The absence of design standards for proprietary BMPs has resulted in a competitive battlefield where it is impossible for engineers to compare one system to another. System cost becomes the determining election criteria, causing water quality to be the ultimate loser as systems become smaller and smaller.

Innovative BMPs, otherwise know as manufactured BMPs, have historically been put in a separate category than traditional BMPs. While storm water manuals often include several pages of design specifications and examples for traditional BMPs, manufactured systems are often tagged on as an afterthought, providing minimal guidance regarding how to properly size a system beyond "per the manufacturer's recommendation."

This worked 20 years ago when the systems were first being introduced to the market; however, as these technologies become more commonplace, it is essential that uniform sizing criteria be established. Uniform sizing criteria will create a level playing field where manufactured systems can be compared to one another and to other types of treatment systems easily. It will also ensure that devices are sized to meet regulatory requirements and water quality goals.

Typically, storm water sizing criteria for treatment devices defines design storms or volumes for water quality and quantity. Design criteria focused on feasibility, conveyance, treatment of the defined storm or volume and maintenance that should be applied to proprietary systems. The feasibility of a structure is determined by examining historical applications of the unit. For example, the use of flow-through separators downstream of detention is not a feasible application. The conveyance capabilities of any given system are determined by performing washout testing during peak flow rates. If a system is unable to convey the peak flow rate on a site, then a bypass structure must be placed upstream to divert excess flow from the treatment structure.

Performance standards of proprietary systems are perhaps the most researched aspect of the systems. Laboratory studies are made readily available by most manufacturers, but it is impossible to compare these studies because they rarely implement the same testing procedures. Field studies are also available, but they are not always easy to find. Consistent testing protocol is necessary when comparing systems. On the other hand, maintenance is perhaps the most overlooked criteria for all BMPs—traditional or innovative. The anticipated pollutant load must be included as a design standard, and all systems should be designed such that maintenance frequency does not create a burden for the site owner.

There are programs in place that have succeeded in leveling the playing field for manufactured treatment devices by looking specifically at these unified criteria. Testing protocols have been developed for both laboratory and field testing to ensure that systems are testing equally and results can be compared with ease. Water quality would benefit greatly if these programs were uniformly adopted and treatment capabilities—not price—would be the determining factor when selecting a BMP. SWS

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