High Standards

Deploying BMPs to reduce storm water runoff

By Derek Berg

Most professionals working in storm water management likely are aware that for the last several years, the U.S. Environmental Protection Agency (EPA) has been hard at work on a new national storm water standard. Release of the draft standard has been delayed several times, including the most recent missed deadline this June. Additional delays seem inevitable, given the magnitude of the policy, but timeline aside, change is coming to a storm water program near you.

It also should not come as breaking news to anyone able to use "NPDES" or "TMDL" in a sentence that storm water management is in the midst of a paradigm shift. We cannot seem to lock down an agreed-upon nomenclature, but whether it be low impact development (LID), environmental site design or green infrastructure, the new end goal is reducing the volume of runoff reaching receiving waters. Runoff reduction is the storm water management equivalent of the two-for-one special. Retain water on site using infiltration practices and/or rainwater harvesting, and we eliminate the need to treat that water, as well as relieve the stress that increased flow rates and volume can cause to stream corridors. That does not even account for other potential benefits like recharging groundwater, reducing demand for potable water on site, improving aesthetics or potentially reducing overall drainage infrastructure costs. We likely can all concur that when it is feasible, onsite retention of the water quality volume is an optimal approach to storm water management.

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Unfortunately, while many sites afford opportunities to retain at least some of the water quality volume on site, there are many instances in which it is not realistic to retain the entire storm water quality volume on site. The challenges are particularly pronounced in highly urbanized areas, which tend to be space constrained and have more occurrences of compacted or contaminated soils. Even in areas with abundant land and soil well suited for infiltration, high groundwater, shallow bedrock or potential contamination from hot spots can quickly take infiltration off the table. Rainwater harvesting serves as another option for onsite retention, but in many areas of the country, finding enough demand for harvested water to substantially reduce the annual runoff volume without a prohibitively large cistern proves challenging.

When we cannot keep water on site, the next best thing we can do for receiving waters is to provide effective runoff treatment. It is concerning, however, to note that most of the emerging retention/LID-centric storm water policies fail to provide sufficient guidance on when and how to best deploy flow-through BMPs. It is crucial that EPA not overlook this important issue as its new national storm water policy is being finalized. Incorporating language that acknowledges that onsite retention will not always be possible and that properly vetted and sized flow-through BMPs should be deployed in these instances will be crucial to ensuring receiving waters are protected and restored. SWS

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