

Take Care

Storm water BMPs:
It's all about maintenance



Jarret Goddard

The task of selecting the proper storm water best management practice (BMP) for a site can be tedious. There are thousands of choices, from drainage swales and silt fences to hydrodynamic separation and storm water filtration systems.

As a state storm water regulator, I see many storm water plans. These plans detail everything that would be done to protect water quality and prevent erosion. Yet even a well-written and well-executed BMP plan will not provide the intended service without proper maintenance.

Structural storm water BMPs can be classified as “landscape-based” (devices installed or constructed on a site) or “subsurface” (planning or design approaches). Both BMP types have a place in a storm water plan, but recently there has been a big push to implement more landscape-based BMPs that include vegetation and soil designed to infiltrate, filter and detain storm water. Landscape-based BMP popularity seems to be based, in part, on the perception that it can be installed and left alone, with little to no maintenance.

That could not be further from the truth.

Let's think about what happens to a bioswale—a landscape-based BMP—after install. Rain events occur, and the bioswale functions as specified. Storm water flows to it from adjacent impervious areas and slowly infiltrates and evapotranspires, depositing sediment, trash and debris on the surface of the bioswale. Over time, the bioswale plants begin to grow. The trash and debris continue to accumulate at the site. As sediment deposits in different locations of the swale, the bioswale cross section begins to change. Eventually, the bioswale may no longer provide the design infiltration rate or storage volume.

An example of this bioswale maintenance may be found with the Oregon Department of Water Quality. Depending on the location and the amount of storm water flow to the bioswale, the department recommends that bioswales are inspected seasonally and after every major rain event to avoid failure. The bioswale may need

to be reshaped due to large sediment deposits. Its vegetation needs regular maintenance and plantings need irrigation during dry spells. Moreover, landscaper maintenance often uses the “mow, blow and go” method. A landscaper's primary focus is aesthetics, not key storm water design issues like infiltration rate, flow path of water through the BMP or storage capacity. The time and costs required for workers to maintain the swale increase, which offsets the upfront cost savings during installation. The cost of the bioswale may not be so economical after hours of labor-intensive maintenance.

This is just an example. Every BMP has its own level of functionality, primarily based on location and pollutant load as well as the target pollutant.

Never rule out a subsurface BMP based on the assumption that landscape-based BMPs are “greener” or maintenance free. This will only lead to deficiencies in your BMP plan. The use of subsurface BMPs is not meant to replace the use of landscape-based BMPs, but rather should be thoughtfully planned and carefully designed to work in tandem with these biofiltration approaches to minimize negative or counterproductive impacts.

When writing your storm water plan, research the BMPs you intend to specify. Look for local examples of installations and lessons learned regarding construction, performance, operation and maintenance. The cost for the optimum BMP may be a little higher on the front end, but it can save you thousands in the long run if the maintenance is simple.

There are many similar BMP products available. Do not assume these are all equal, especially when it comes to maintenance. With many BMPs to choose from, maintenance is key to long-term cost effectiveness. **SWS**

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