ENVIRONMENTAL EVOLUTION

Year-ahead storm water and erosion control industry forecast

Compiled by Caitlin Cunningham

Each year the editorial staff of *Storm Water Solutions* invites a panel of storm water and erosion control industry leaders to share their business predictions for the new year. Here three seasoned professionals share insight on the state of the industry and what regulatory, technological and economic developments we might expect to see in 2012. One common theme is clear: Water and the environment will play an increasingly important role in other industries' plans and operations.

Making Space for Water

Bob Andoh, Ph.D.
Director of Innovation
Hydro Intl.

In 2012, water and the environment will continue to rise on the agenda, particularly with growing realization of the challenges related to making space for water in the urban environment. Uncertainties regarding impacts of climate change and urban creep resulting from the unremitting pace of urbanization will affect the current trend toward green infrastructure.

The trend will continue and is the right direction to go in terms of more sustainable approaches in integrated urban water management. But in the urban retrofit scene, the space requirements for green infrastructure are such that the industry increasingly will find that these solutions often are not feasible on their own. This is particularly true when requirements, such as the need to ensure that the urban water infrastructure is resilient, adaptable and can cope with extreme events, are taken into account.

Space constraints, especially in ultraurban catchments, will result in revaluations of the green infrastructure projects deploying only plant-based solutions. There will be a growing recognition of the role that proprietary systems can and have to play in integrated urban water management—particularly innovative technologies that can be utilized effectively in combination with green infrastructure either as pretreatment systems to improve their efficacy and facilitate maintenance or to provide space-efficient treatment trains.

There is a need for compact (i.e., small footprint), high-efficiency, robust and low-maintenance controls and treatment systems that can be utilized as part of a tool kit of integrated solutions to address the challenges of urban diffuse pollution and flooding from storm water runoff and other wet-weather-induced flow sources. This need will spur further innovation. Innovation especially will be seen in systems and devices that can be retrofitted into the existing urban drainage infrastructure and that also can be deployed in conjunction with both green and gray infrastructure to leverage the best of both types.

BMPs Unite

Craig Beatty
President
Stormwater Equipment Manufacturers Assn.

For two decades, improving storm water runoff quality and managing volume reduction have been both an evolving and reactionary phenomenon. The rush to create a solution oftentimes

resulted in inconsistent performance claims from proprietary and nonproprietary systems attempting to satisfy arbitrary requirements.

Treatment of storm water runoff is a complex problem that requires the use of different best management practices (BMPs) to achieve the goal stated in the Clean Water Act (CWA) of fishable and swimmable waters.

Requirements such as 80% total suspended solids removal were implemented as a standard of measurement, leading to the question, "80% of what?" Storm water runoff contains an extremely wide range of sediment particle sizes, which results in a significant impact on the actual pollutant removal percentage results.

Best available technology became another performance standard adopted by many regulators, who assume that the desired level of storm water quality will be achieved based solely on the particular type of system utilized.

Regardless of the approach, little consistent, repeatable and reliable empirical data has been collected to prove or predict the level of improvement achieved in storm water effluent quality. With greater implementation of total maximum daily load requirements, future attention will be focused on the quantitative results achieved in storm water effluent flowing into receiving bodies of water.

Low-impact development (LID) is currently the most favored BMP being implemented as a solution for storm water management. The emphasis on use of LID BMPs has resulted in the proliferation of site designs that use natural or green nonproprietary systems. It is important to note that these LID BMPs must be constructed and installed on site in strict accordance with detailed specifications—most times by site contractors who have little or no prior experience in the construction and the impact it has on the specific LID BMP specified. In addition, it is unlikely that reliance on LID BMPs, to the exclusion of other technologies, will result in the optimum solution for pollution removal and volume reduction.

One lesson all storm water stakeholders should understand from our experiences is that neither the proprietary or nonproprietary systems alone have consistently achieved the desired results in all cases. The prior exclusion of any BMP before actual site characterization does not serve the purpose and intent of the CWA.

Storm water management must focus on a rational balance between realistic life-cycle economic costs and actual quantitative results. LID BMPs should be used when it is clear that their true life-cycle costs and proven pollution removal claims achieve an acceptable result. The same analysis should apply to proprietary BMPs. And, when one approach alone cannot reach the desired results, then a complementary combination or treatment train scenario should be considered.

The entire storm water industry and our environment will best be served through the complementary use of proprietary and nonproprietary systems in 2012 and beyond.

New Life in 2012

Andrew Demers
Vice President, Director of Course Development
Stormwater USA

From a national perspective, I feel that the state of the storm water industry is doing well and that the entire industry will see new life in 2012. Stakeholders are more committed than ever to introducing sound policy, and they are finding more efficient ways to manage our environmental resources.

Billions of dollars from federal and state funds, private enterprise and philanthropic angel funds have fueled the research efforts of the CWA. The results from those investments have been very clear in demonstrating that our natural recourses are being jeopardized by the impacts associated with the behaviors of our citizens and their general noncompliance with the CWA.

I am very encouraged when I see the leadership that is being displayed from all U.S. Environmental Protection Agency (EPA) regions. This commitment is also evident as associations, academic leaders and regional professionals continue to commit their resolve to creating solutions to support efforts in storm water and the CWA in general.

If I had to identify an area of opportunity surrounding the compliance efforts of the CWA, it would be enforcement. There is a palpable sentiment throughout the industry that we go nowhere without enforcement. As they say, "we inspect what we expect."

Stormwater USA is happy to be assisting with compliance efforts by educating committed private and public entities on the principles and practices of erosion and sediment control through an online training series. We commend the EPA and their efforts as they continue to operate under the same economic pressures that have been affecting us all. We also commend all the committed professionals who work on creating the solutions and drive policy that will protect our natural resources for generations to come. SWS

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