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Reuse Economics

Converging water management practices starts with storm water

Water is necessary for economic growth, a healthy environment and vibrant communities for future generations. With gridlock in Washington and broken budgets at all levels of government, it may not seem like the right time to make broad changes in water management policy. But change is happening, and the catalyst for that change is storm water management policy and low-impact development (LID).

LID regulations continue to proliferate across the country. While there are many benefits to LID, opportunity costs do exist. Prescriptive LID requirements often mandate the consideration of bioretention and surface infiltration, which can take up as much as 15% of a total site area. Herein lies the opportunity cost, as these surface-based solutions could lead to reduced parking, lower property value and more land cost for each project, as well as increased sprawl.

LID solutions do not need to be surfaced based, and many rules allow rainwater harvesting to be used as a runoff reduction tool. In fact, capturing runoff for reuse may be the first step toward an improved approach to water management.

Water generally is managed in three separate ways. Drinking water is captured remotely, pumped long distances, vigorously treated to the highest standards and then used to flush toilets and irrigate lawns. Wastewater management treats black, gray and air-conditioning byproduct water as one—mixing it and requiring vigorous treatment regardless of the source. Storm water is treated as a pollutant and managed with space-intensive practices or large capital expenditures, without placing any value on the water itself.

With the cost of water held artificially low and external costs excluded from the price, there is no economic incentive to switch from this cheap and environmentally damaging water management strategy. We have reached the turning point, however. Water supplies are dwindling. Aging infrastructure is crumbling. Waterways continue to be polluted. All that is missing is an economic incentive.

There are billions of dollars spent annually to manage storm water runoff from new development, and billions more spent on big pipe systems to prevent combined sewer overflows. With LID mandates and large opportunity costs for surface-based LID practices, this is the missing incentive for reuse as a runoff reduction practice.

Reuse systems quickly are becoming commonplace, and they are poised to explode. Plumbing and health codes are in the process of changing, and archaic water laws preventing reuse are under review. These changes have helped the reuse industry grow, but the economic driver for mainstream change is still missing. That is why we must start connecting the billions spent on storm water management as justification for use of reuse systems.

As site-civil engineers, storm water managers and site contractors, you are positioned to design, approve and install reuse systems. Information on these systems is plentiful, and local installations are setting precedents. Building owners are eager for green technology. Recommend a reuse system to architects and developers as a runoff reduction practice. It can be the most economical LID option to construct and lower the long-term cost of ownership.

The storm water community has the economic justification to accelerate the convergence of water management practices across the country. The time for a new approach to water management is now. SWS

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