



Changing the Rules

A new state stormwater rule holds promise for a greener future

BY ELIE ARAJ, P.E., D.WRE

GROWING STORM
As development has increased, the associated volume of nitrogen levels to local waterways has increased dramatically.

A new state stormwater rule will change the way we manage stormwater runoff and offer incentives for those who implement low-impact development features. The proposed rule, which is expected to take effect in July 2010 after further consideration this year, will replace individual rules now in force in the state's five water-management districts.

Activities or structural improvements that help reduce nonpoint source pollution and limit the volume of stormwater runoff are called best management practices (BMPs). One of the most commonly used BMPs is the stormwater pond, which is effective for sediment removal. However, it is not so effective at removing nutrients, including excess nitrogen and phosphorous, which fuel the growth of harmful algal blooms in bays, rivers, and lakes.

Even with the addition of wet detention treatment ponds, nitrogen loadings from developed sites with 25 percent impervious surface are more than twice that of undisturbed lands. As development has increased, the associated volume of nitrogen loadings to local waterways has increased dramatically, resulting in elevated nitrate levels in springs and hundreds of nutrient-impaired surface waters across the state.

"Our rules have served us well, but now we recognize that to address nutrient water-quality problems, we need to do more," says Eric Livingston, chief of the Florida Department of Environmental Protection's Bureau of Watershed Management. A useful analogy, he says, is when the region went from secondary to advanced wastewater treatment. "To make that happen for stormwater, we've got to bring in the nonstructural toolbox." >>

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A RETURN TO BASICS

The proposed rule is likely to require that post-development runoff measures be equal to or lesser than pre-development for stormwater peak discharge rate, volume, recharge, and pollutant loadings. While toughening treatment standards, the proposed rule also includes new flexibility in how those standards can be met by encouraging nonstructural BMPs that could increase the amount of buildable land on a site. (See sidebar for examples of structural and nonstructural BMPs.)

For example, developers would receive credits for using such nonstructural BMPs as preserving vegetation and minimizing soil compaction, and for incorporating green development practices such as pervious concrete, green roofs, and Florida-friendly landscaping. Likewise, points would be taken away for clear-cutting lands and connecting impervious areas. The point is to provide incentives for sustainable development practices that reduce pollution and create healthier work and living environments.

In some respects, the new rule represents a return to basics, with more emphasis on pollution prevention, says Livingston. A three-pronged approach would reduce stormwater volume by:

- incorporating low-impact design practices, reducing connections between impervious areas, and increasing stormwater reuse
- reducing stormwater pollutants by promoting Florida-friendly landscaping practices and good housekeeping measures such as street sweeping

- retaining and enhancing a site's natural stormwater treatment capabilities by preserving riparian buffers and vegetation and boosting protection of wetlands and floodplains.

NECESSARY CHANGES

A number of policy issues remain to be ironed out—among them, how to quantify and award credits for non-structural BMPs, and how to ensure the longevity of certain low-impact development practices. Technical and policy advisors are also grappling with the thorny issue of urban-redevelopment-treatment requirements, i.e., how much is needed to achieve environmental improvements without discouraging redevelopment and inadvertently encouraging sprawl.

While it's unclear what those changes will be, redevelopment will probably be held to a different standard of treatment than new development, according to Livingston, who says one of the objectives of the new rule is to encourage urban infill.

Change can't come soon enough, according to Sarasota County Commissioner Jon Thaxton. "The bottom line is that the way the rule is presently drafted, it's essentially a prohibition of redevelopment," he explains. "The existing code requires that a significant portion of real estate go into stormwater treatment and management, which is entirely counter-productive from an economic standpoint if you are attempting to redevelop an older property."

Thaxton continues, "The problem with the existing rule is that if you do

incorporate bio-swales, disconnected pervious areas, green roofs, etc., you still have to build the stormwater retention pond."

For Sarasota County and most other municipalities trying to put the brakes on sprawl, that presents a huge problem.

"Nevertheless," says Thaxton, "we understand the water management districts' concerns, and they are legitimate concerns. We have invested hundreds of millions of dollars in nutrient reductions and seen remarkable accomplishments. The last thing we want to do is take that investment and increase pollutants to the bay. If we're not able to demonstrate that these low-impact-development standards result in quantifiable water quality and water quantity improvements, then we're in trouble."

CHALLENGES AHEAD

Commissioner Thaxton, a real estate agent and respected conservationist, acknowledges that crafting the new rule will be challenging. There may be a need for alternative scenarios in addressing one form of redevelopment versus another, he says, but how that's manifested in the rule will be very difficult.

"We tend to write rules and laws that stop the bad guys from doing wrong and, as a result, penalize the good guy who's trying to do right," Thaxton explains.

Still, Thaxton retains an open mind and is not ruling out advocating for a tiered strategy. "If you go to a 1960s-era shopping center, you see 100 percent impervious surface. Rain comes from the heavens and never touches the earth. So, if you

get 70 percent of the treatment you would otherwise require on newly developed land, is that better than allowing the totally impervious surface to remain for another 10 to 15 years?" he asks. "It's tough—where do you draw the line?"



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STORMWATER CHANGES AFLOAT

Proposed changes to the state's stormwater rule are in development, although rulemaking has been delayed a year to 2010. The aim of the new rule is to improve stormwater treatment and management by providing incentives to developers for low-impact development strategies, and to create a single, unified standard that applies to all water management districts.

Several issues remain to be ironed out—among them, how redevelopment will be addressed and what treatment levels and flexibility shall apply. Too-stringent standards will continue to tip the economic scales away from redevelopment and in favor of sprawl. Likewise, too much flexibility may open the door for abuse by certain developers.

Editor's Note: Elie Araj will be speaking on low-impact development regulations during the "Designing and Developing Green Communities 2009" symposium held in conjunction with the FGBC Mid-Year Conference, March 17-19, 2009, at the Rosen Shingle Creek in Orlando.

For more information, visit the FGBC website: www.FloridaGreenBuilding.org.

EXAMPLES OF STRUCTURAL AND NONSTRUCTURAL BMPs

Structural BMPs

- Pervious pavement
- Infiltration basins
- Subsurface infiltration beds
- Bioinfiltration trenches, such as rain gardens and bioretention areas
- Dry wells
- Vegetated swales
- Green roofs
- Wetponds
- Water-quality filters on inlets

Nonstructural BMPs

- Reducing impervious surfaces
- Protecting sensitive natural resources
- Minimizing disturbance
- Source control such as street sweeping
- Smart growth practices
- Conserving riparian areas (the banks of watercourses, lakes, and other bodies of water)
- Protecting/utilizing natural flow pathways
- Re-vegetating disturbed areas with native species

Source: Montgomery County (Pa.) Conservation District; www.montgomeryconservation.org.

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