

# BAY JOURNAL

## Groups advocate tougher stormwater permits in region

**Caps on impervious surfaces, measurable pollution limits in runoff among items sought**

**By Karl Blankenship**

For years, Maryland's Montgomery County has been widely considered to have one of the best stormwater management and stream protection programs in the nation.

Unlike most communities, it has a fee to ensure that thousands of stormwater control devices are maintained. It has a long track record in monitoring the health of — and restoring—its streams, along with a host of other initiatives.

"Montgomery County has a stream restoration program. It has done a fine job of detailing the status of its waterways. Its biological monitoring is first-rate," said Bruce Gilmore, a consultant working for the Chesapeake Bay Foundation.

Nonetheless, a coalition of nearly two dozen environmental and civic groups, called the Stormwater Partners Coalition, says the county is not doing enough to protect local waters, or the Chesapeake. "Unfortunately, the patient still needs more attention," Gilmore said.

In a move the coalition says could set a precedent for about two dozen other large jurisdictions in the watershed with "Phase 1" stormwater permits, it is pressing the Maryland Department of the Environment to ratchet up requirements when it reissues the county's five-year permit this summer.

Specifically, the coalition wants the new permit to have measurable limits on pollutants carried in runoff. The groups want tough new development standards near high quality streams that would, among other things, limit impervious surfaces. And, they want 25 percent of the areas built before stormwater controls were required to be "retrofitted" with new runoff-reducing techniques.

David Weaver, a spokesperson for the county, defended its programs, as "very aggressive ... Montgomery County has done more than any jurisdiction in Maryland to address water quality issues within our borders."

He noted that the county commission this spring approved an additional \$1.5 million for stormwater management activities and created a Clean Water Task Force to make sure all departments work together to control runoff and promote new state-of-the-art runoff control technologies. The funding and the task force had

been pushed by the coalition.

The county recently added a full-time position in its Transportation Department dedicated to addressing environmental issues, including runoff.

"We are always pushing ourselves to do better, and welcome advocates to push us to do better," Weaver said.

At issue is just how much better it—and other municipalities—must do to clean up streams and local waterways.

Stormwater is one of the Bay's—and the nation's — most intractable water quality problems. Most land developed before the early 1980s had no stormwater quality controls. Runoff systems were designed primarily to shunt water off developed areas as quickly as possible to prevent flooding.

The impact on runoff was staggering: About 16 times more water runs off a 1-acre parking lot than a 1-acre meadow. Huge amounts of water would gush into waterways after storms, literally ripping apart stream corridors. The runoff carried a stew of pollutants, from animal droppings to pesticides, from chemicals leaked from cars to air pollutants falling from the sky.

In the early 1980s, states and many local governments stepped up the regulation of runoff, generally requiring retention ponds at large developments to temporarily hold runoff before it flowed into a stream. In 1990, the EPA began requiring stormwater systems in urban areas with populations of 100,000 or more to have discharge permits, just like industries or wastewater treatment plants, which have to be re-issued every five years.

(Smaller urban areas have also been required to have "Phase 2" stormwater permits in recent years, but those are more general in their requirements than permits for larger areas.)

Nonetheless, many urban waterways have continued to degrade under a wave of new development. According to the Bay Program, more than 1,570 miles of streams and 44 square miles of estuarine waters in the region don't meet local water quality standards because of urban runoff. Runoff from urban areas also contributes about 16 percent of the phosphorus, 11 percent of the nitrogen and 9 percent of the sediment that degrades Bay water quality.

But it's a costly pollution source to control. A report by the Chesapeake Bay Watershed Blue Ribbon Finance Panel put the price tag for dealing with stormwater at about \$15 billion—more than the combined cost of controlling all other sources of nutrient pollution.

The high price has caused some to focus on more cost-effective nutrient control measures, such as agricultural runoff. Others contend urban runoff is an area that

can't be ignored: Agricultural land is declining while urban and suburban areas are growing. The amount of impervious surfaces—such as roads, roofs, parking lots—grew by 41 percent in the last decade while the watershed population grew by 8 percent.

“The Bay cleanup goals will never be met if they don't deal with this more aggressively,” Gilmore said.

Which is one reason the coalition targeted tougher stormwater permits as a means of ratcheting down pollution from urban areas. Unlike traditional discharge permits, though, stormwater permits typically describe the types of programs, or stormwater control practices that should be in place to reduce runoff, rather than setting end-of-pipe pollution limits.

The existing Montgomery permit, issued in 2001 and set to expire this summer, requires the county to monitor both the pollutants and biological health of its streams, including taking samples after at least a dozen storm events each year.

It has to control runoff to the “maximum extent practicable” from new development, and follow guidance in Maryland's 2000 Stormwater Design Manual which promotes new techniques to minimize impacts on streams.

The county has to have a public outreach program to educate the public about ways to minimize stormwater pollution, and it has to seek out illicit dischargers into its stormwater system.

One of the permit's provisions—which the state includes in all permits for large stormwater systems—requires the county to identify small watersheds totaling at least 10 percent of the areas developed prior to stormwater regulations and retrofit them with runoff controls, or otherwise improve stream quality.

But the coalition contends that monitoring shows water quality in at least a third of its streams is getting worse—not better—

under the existing permit. Only 11 percent improved. And, two-thirds do not meet water quality standards. “The proof is in the pudding, which is the water quality in the county, which is declining,” said Lee Epstein, director of CBF's Lands Programs.

The coalition members contend the pace of restoring older areas is too slow—retrofitting 10 percent of the county's older areas in every five-year permit cycle would require at least half a century to complete the job, they note, assuming all the retrofits work. They want at least 25 percent of the degraded areas dealt with in the next five years.

Further, they want the county to redirect how it spends its watershed restoration money. Instead of focusing mostly on high-cost stream restoration and channel modifications - which has absorbed more than half of those funds since 1990 - they

want more emphasis placed on incorporating "low impact development" techniques which reduce runoff by promoting water infiltration into the ground in headwater areas. Focusing on stream restoration without reducing the volume of upstream runoff, they said, is "putting the cart before the horse."

The coalition also contends that stormwater controls on new development are not protective enough, noting that water quality has deteriorated near new developments under existing permit programs. The groups want a move from "stormwater management" to "environmental site design," where efforts to deal with runoff—such as protecting open areas, significantly reducing impervious surfaces and promoting infiltration—are dealt with early in the planning and design process.

In watersheds with high-quality streams, they would like to establish an 8 percent cap on impervious cover, and protect about two-thirds of the land as open space. Runoff from impervious areas would be directed to open spaces or devices where it would infiltrate into the ground and not flow into streams.

"A gallon of stormwater that is infiltrated or is otherwise captured and reused on site is a gallon not delivering any of a number of pollutants to the Anacostia or the Bay," said Diane Cameron, a consultant working on the permit issue for the Natural Resources Defense Council and the Audubon Naturalist Society.

Finally, the groups want the permit to have numeric discharge limits on pollution—just like those in permits for industries. They argue that the such limits are required under the federal Clean Water Act, which requires any waterbody that fails to meet water quality standards to have a cleanup plan called a "Total Maximum Daily Load."

A TMDL is an estimate of how much of a given pollutant a waterbody can receive and still meet its water quality standards. Once a TMDL is established, the act requires that a "waste load allocation" be made to all sources that contribute to the problem and be incorporated into discharge permits. The coalition insists that placing quantifiable pollution caps in the permits is essential to putting rivers and streams on a "pollution-reducing diet."

Many of the issues raised by the coalition reflect directions the state signaled it wanted programs to go when it issued a new, 2-inch-thick, stormwater design manual in 2000. The manual calls for emphasizing runoff control strategies that mimic "existing hydrology through total site design." It called for a "philosophical change" from relying on a single large structural device such as a stormwater pond to using smaller, less obtrusive practices that promote stormwater infiltration rather than runoff.

The manual establishes the sizes of structural Best Management Practices that are needed to handle various levels of impervious surfaces, but developers can get

credit for nonstructural BMPs that reduce the amount of runoff—such as not placing curbs along a street and allowing water to flow into a grass swale. Those credits allow developers to reduce the size of things like traditional stormwater retention ponds, which can be expensive.

State officials believe developers will increasingly take advantage of those credits over time as they become more familiar with them. The coalition, by contrast, would like the alternative techniques to become a more formal part of the initial site design process, and see the permit as a mechanism to help force that change.

“A lot of this has to do with time frames,” said Brian Clevenger, who writes stormwater permits for the Maryland Department of the Environment. “We are moving at a slower pace than they would like. And they would like to push the envelope, which is what they are supposed to do.”

But officials said they were reluctant to include elements in a permit—such as the 25 percent retrofit—when there was no obvious way to pay for it.

“It’s not as much as how you address it,” said Ken Pensyl, manager of MDE’s Sediment, Stormwater & Dam Safety Program. “We have the ability to do this. It’s a matter that there is a few billion dollars worth of effort that needs to be done to take care of 300 years of sins in terms of how we developed.”

The sharpest disagreement is over the placement of measurable waste load allocations—or pollution limits—in the permit. Pensyl worried that municipalities would be forced to spend their money “chasing numbers” by monitoring pollution in discharges rather than putting more controls on the ground. Montgomery County alone, he said, has more than 3,000 major stormwater outfalls—and many more smaller ones.

Further, those numbers would vary widely because the amount of pollution changes based on a host of factors, including the size of a rain event, and the time between rainstorms—more pollutants can build up on surfaces when there are long stretches between storm events.

“That is the whole thing about stormwater,” Pensyl said. “It is not a constant effluent that I can turn around and crank a valve and get it cleaner. It changes on a regular basis, between drought and storm events that occur.”

Pensyl said he would rather have monitoring focus on in-stream water quality as a measure of whether actions taken on the land were being effective.

The question of how strict permits should be may ultimately be resolved by the EPA, which oversees Clean Water Act permit programs. Officials would not comment on the specifics of the Montgomery County permit, but EPA region III officials said they have been undertaking their own analysis of how to improve stormwater programs.

“Clearly as more and more TMDLs are completed across the Bay region, there will be an obligation to incorporate those waste load allocations into the stormwater permits,” said Jon Capacasa, water division director for the region. “It is not a discretionary item.”

But he said the allocations will typically be for entire subwatersheds, not individual outfalls. He noted Region III had already taken the first steps toward incorporating such limits in the District of Columbia stormwater permits, which the EPA writes.

Capacasa also expects future permits to require more in-stream monitoring. While monitoring has been a part of Maryland’s permits for years, many stormwater permits have focused mainly on the implementation of controls—without examining whether those controls were helping water quality.

“If we are focused on outcomes, and having stormwater permits show true environmental results, you need ambient monitoring to see whether the waterbody is getting better or worse,” Capacasa said. Based on those results, requirements can change in each new permit to promote programs that seem to yield the best results.

David McGuigan, who oversees Region III’s permit enforcement program, said the region recently completed an audit of stormwater permits to gain information for future permits. Among the lessons learned:

- There has often been a disconnect between the stormwater program and a water quality result. Municipalities are often required to implement a program, but have not always been required to show an actual improvement in the streams.
- Many agencies within local governments deal with stormwater, but often there is not coordination among them to fully implement stormwater programs.
- More needs to be done to prevent water quality problems from new development so they do not require expensive retrofits in the future.

“If you were able to stop future degradation, that would be a success,” McGuigan said. “To roll it back would be an even much more significant success. But it is going to be a long, long-term effort. To redo how things have been done for decades cannot be done in one permit cycle.”

### **Low Impact Development**

Low impact development, sometimes called environmentally sensitive design, is increasingly promoted as an alternative to traditional stormwater management. It seeks to reduce or eliminate stormwater and its associated pollution by trying to

mimic natural hydrology by promoting infiltration into the soil, rather than runoff. LID can protect streams, recharge groundwater and reduce pollution.

This is done by minimizing impervious surfaces through such techniques such as promoting rain-absorbing green roofs, using permeable pavement or smaller parking lots.

Low impact development techniques can be as simple as eliminating curbs so rain can flow into grass swales and soak into the ground. Other common techniques include steering runoff to rain gardens and other bioretention devices, directing runoff to open areas where it can recharge groundwater or incorporating more trees, which absorb rainfall.

**Karl is the Editor of the Bay Journal.**

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