

Fredericksburg Tries Natural Filtering of Storm Water

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Hal Wiggins, a self-proclaimed environmentalist, grinned proudly as he looked at the two-foot-wide metal channel at the foot of the huge, sloping parking lot at Fredericksburg's Central Park Mall. Whenever it rains, storm water loaded with escaped car fluids and other pollutants runs into the channel and is dumped directly into a patch of birch, dogwood and winterberry trees.

"This stuff is a toxic cocktail," Wiggins said, still grinning. "Plants love it!"

The patch of trees, behind the Chuck E. Cheese restaurant, is about 100 feet long and 20 feet wide and looks like nothing more than some vegetation in a sandy ditch. But the ditch is known technically as a "bioretention unit" and is an example of a new school of thinking about storm water and development.

It is carefully engineered underground with layers of sand and gravel to filter and clean polluted water naturally and get it back into the ground, a radical change from the pipes and retention ponds that have defined storm water management for the past two decades.

Wiggins, an environmental scientist with the U.S. Army Corps of Engineers in Fredericksburg, is a disciple of the new philosophy, called low-impact development, and is hawking it in one of the country's fastest-growing regions.

With the support of a few other environmental advocates, he has helped put the Fredericksburg area in the forefront of low-impact development, requiring or facilitating its use in several major developments that require Army Corps permits because they affect wetlands or streams.

Water-quality experts say low-impact development is the way of the future, the only way to protect places such as the Chesapeake Bay from the pollutants being piped from retention ponds directly into streams and rivers.

The standard technique of the past 25 years has deprived the ground of rainwater that it needs to recharge the water table and to which it was accustomed, they say.

"We've been disposing of the water and not thinking about how nature used the water to protect the aquatic resources," said Larry Coffman, who manages the urban storm water program for Prince George's County and is considered a pioneer of low-impact development.

Coffman said the current system makes both flooding and drought worse. "We change the hydrology by changing the water balance and screw things up," he said.

While low-impact development proponents, including Coffman, praise the Fredericksburg area for embracing the new methodology, not everyone in the area is rushing to jump on board.

Developers are still debating whether it costs more to build and maintain the natural-looking bioretention pits, also known as "rain gardens," than the so-called "pipe and pond" systems, and they say they worry about the loss of developable land. The environmental research is too new and is inconclusive, some of them say.

Other skeptics include sprawl opponents who say such techniques encourage endless suburbia instead of forcing planners to focus on limiting growth to certain areas.

Ed Risse, a Warrenton land-use consultant, calls low-impact development "a bad idea dressed up in green." The problem is sprawl, he said, and sprawl needs to be replaced with land-use decisions that set aside separate areas of condensed housing and countryside.

Those who profit from low-impact development are land speculators, developers and builders, Risse argues, adding that watersheds such as the Chesapeake need minimal urban development.

To Bill Vakos III and other real estate developers, low-impact development isn't something to rush into.

Vakos's Fredericksburg company is talking with the Army Corps of Engineers about whether to use low-impact development on a 256-acre office and commercial project in Spotsylvania.

Vakos said he suspects that low-impact development might cost more than the conventional pond system, and he said that its merits haven't been proved.

"I think that dialogue is still going on," he said.

Other developers say that it will be cheaper to build natural filtration pits than huge retention ponds. Low-impact development "was born out of a desire to save money," said Neil Weinstein, executive director of the Low Impact Development Center in Beltsville.

Wiggins and river advocate John Tippet have convinced some officials of the merits of low-impact development, helping put the region in a leading class with the Pacific Northwest in embracing it, Weinstein said.

Stafford County rewrote its construction code this year to allow for low-impact development practices, and Spotsylvania County is about to do likewise.

Although low-impact development might not eliminate sprawl, proponents say it's better than the alternative.

"Land-use decisions are made by politicians and land-use experts," Coffman said.

"I don't talk about LID in terms of controlling sprawl and traffic and schools. That's not what it's about," he said.

Low-impact development "is trying to ensure we have the best technology possible to make sure we protect our waters."

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