

Bulldozing a creek in order to help save it

City spending \$10 million on disputed Stony Run job

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In the name of **saving** the environment, Baltimore is spending more than \$10 million to bulldoze a wooded park and cut down nearly 150 trees for a stream reconstruction project. But some scientists warn that this aggressive method of erosion control is outdated, discredited and destructive.

Supporters of the project say that altering Stony Run in Roland Park, adding a series of curves, small dams and pools, will reduce silt and pollution flowing downstream toward the Chesapeake Bay.

"It's like, 'Eureka!' We found that stabilizing the stream is such a win-win situation," said William Stack, pollution control administrator for the Baltimore Department of Public Works.

"It improves the aesthetics, improves the habitat, and decreases the sediment, nitrogen and phosphorus for the Chesapeake Bay," he said, as a bulldozer churned along a muddy stream **bank** that was once shaded by trees.

Similar projects have been carried out across the country. But critics say there is little evidence that they work, and that flattening riverbanks with bulldozers and removing large trees whose roots stabilize the soil can lead to increased erosion and eliminate the shady canopy that cools rivers.

"I am not a fan at all of restoration that requires taking out trees," said Margaret Palmer, director of the University of Maryland's Chesapeake Biological Lab.

Palmer, who teaches courses on stream restoration to engineers, said she could not comment directly on Baltimore's Stony Run project because she hasn't studied it. But she said the general approach sounds like an outdated and "very controversial" one - cutting down lots of trees to allow bulldozers to carve S-shaped curves into a stream that didn't have them before.

"That is often done," Palmer said of tree removal, "because it's **easier** to get equipment in and out, and it's cheaper. But that is not what is well accepted across the country anymore."

Trees are essential to the health of river systems, she said. Stripping away the shady canopy over a stream can "fundamentally change the whole system."

Stony Run is a 3.3 mile-long creek that starts in a quiet neighborhood of North Baltimore. It trickles between the ball fields of private schools, wandering south through a leafy public park,

past Loyola College and under bridges to join the Jones Falls, which pours into Baltimore harbor.

A path along Stony Run is popular among joggers. It has been featured in news articles as a beloved island of peace in a troubled city. Water gurgles under a church-like vault of shady trees. The stream is scattered with boulders and logs, and edged by tall clay banks, over which gnarled roots dangle like the knuckles of old men.

But the stream receives most of its water from storm drains beneath city streets, and so it sometimes is littered with wrappers and reeks of sewage.

Baltimore's project to reduce erosion of Stony Run's banks uses a modified "Rosgen-type approach," named after a Colorado-based stream restoration pioneer, Dave Rosgen, said Stack, who took classes from him. Some early drawings for Baltimore's designs came directly from Rosgen's papers, according to project meeting minutes.

An August 2004 article in the journal *Science* described Rosgen as a charismatic, cowboy hat-wearing businessman who has inspired legions of "Rosgenauts" who are confident that they can build better streams with bulldozers and boulders.

"Many academic researchers question the science underpinning his approach, saying it has led to oversimplified, 'cookbook' restoration projects that do as much harm as good," the *Science* article said. "Rosgen-inspired projects have suffered spectacular and expensive failures, leaving behind eroded channels choked with silt and debris."

A woman who answered the phone yesterday at Rosgen's business said he was out of town and unavailable for comment.

Stack said his design team had taken Rosgen's "idealized" approach and adapted it to make it more suitable for an urban stream.

With Rosgen playing a leading role, river rebuilding has become a \$1 billion-a-year industry in the United States. The projects often are designed to re-engineer creeks into fortified stormwater control systems that filter pollutants flushed from roads and parking lots.

At least 4,700 projects of varying designs, costing an estimated \$426 million, have been built in the Chesapeake Bay watershed since 1990, according to an article last year in the journal *Frontiers in Ecology and the Environment*. But little research has been done into whether they actually work, the article said.

Don Outen, a natural resources planner with Baltimore County who has helped design several stream restorations there, said he likes the Rosgen system of analyzing and classifying streams for rebuilding. Outen said the method is more flexible and less expensive than the old method of controlling erosion by building concrete channels