

EPA's new green parking lot allows scientists to study permeable surfaces that may help the environment

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Paved parking lots and driveways make our lives easier, but they often create an easy pathway for pollutants to reach underground water sources and alter the natural flow of water back into the ground. The U.S. Environmental Protection Agency today announced a study that will investigate ways to reduce pollution that can run off paved surfaces and improve how water filters back into the ground.

EPA is testing a variety of different permeable pavement materials and rain gardens in the parking lot at the agency's Edison, N.J. facility, which houses offices and its laboratory. Most major sources of pollution going into our waterways are well-controlled, but pollution runoff from hard surfaces remains a complicated problem.

"Runoff from parking lots and driveways is a significant source of [water pollution](#) in the United States and puts undo stress on our water infrastructure, especially in densely-populated urban areas," said EPA Acting Regional Administrator George Pavlou. "By evaluating different designs and materials, this study will help us develop strategies to lessen the environmental impacts of parking lots across the country and make our communities more sustainable."

This summer, EPA replaced a 43,000-square-foot section of the parking lot at its Edison facility with three different types of permeable pavement and planted several rain gardens with varying vegetation for

the study. Over the next decade, EPA will evaluate the effectiveness of each pavement type and the rain gardens in removing pollutants from stormwater, and how they help water filter back into the ground. The parking lot will be functional during the study to accurately evaluate how the different types of pavement handle traffic and vehicle-related pollution like leaking oil.

Stormwater runoff is generated when precipitation from rain and snow flows over land or impervious surfaces, like parking lots or rooftops, and does not readily flow back into the ground. As the runoff flows over the land or impervious surfaces, it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff discharged is not properly treated.

This study is part of an effort by EPA's National Risk Management Research Laboratory to evaluate permeable pavement as it relates to stormwater management practices on a national scale. While the installation of permeable pavement systems has become more prevalent, there is a lack of full-scale, outdoor, real-world permeable pavement research projects.

EPA also recognizes the potential of rain gardens as a green infrastructure management tool to lessen the effects of peak flows on aquatic resources. While local governments and homeowners are building many of these systems, relatively few studies have quantified the ability of rain gardens to allow the ground to better absorb and filter stormwater, which reduces peak flows.

Source: U.S. Environmental Protection Agency

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