

# MSU SUSTAINABLE STORMWATER MANAGEMENT WALKING TOUR

## IM WEST POROUS ASPHALT

Michigan State University has implemented Low Impact Development (LID) practices to capture stormwater from surrounding roads, parking lots, and buildings.

Previously, water from these surfaces entered the storm sewer system, which led directly into the Red Cedar River.

Now, through a variety of LIDs, stormwater is captured and either reused or infiltrated on site. Capturing stormwater reduces pollutant runoff into the river therefore improving water quality.

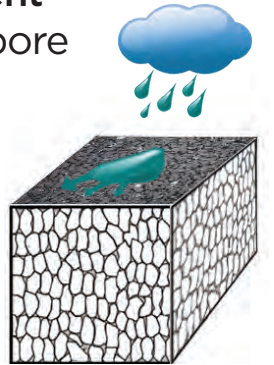
① Open-grade asphalt mix is the top layer, typically 5" thick. This consists of relatively large stones bound together with a bituminous binder and fewer small particles such as sand or fines which allows water to infiltrate into the sub-layers.

② A recharge bed contains larger stones of a single size to provide support for vehicles while also containing up to 40% void space that can fill with stormwater during rainfall events.

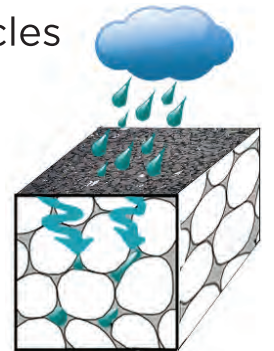
③ An uncompacted subgrade layer has a higher rate of infiltration over a compacted soil layer. During a rainfall event, stormwater will slowly filter down through this soil layer, recharging the groundwater.



**Typical pavement** has little to no pore space (2-3%) which causes almost all the water to run off the surface quickly.



**Porous asphalt** contains space between particles (15-18%). This opens space allows water to infiltrate freely down to the sublayers for storage, reducing stormwater runoff.



### Porous Asphalt

Impervious paving materials lead to high surface runoff that picks up pollutants while flowing towards natural waterways, leading to reduced groundwater recharge. Porous asphalt is an alternative paving material that allows for stormwater to infiltrate a surface and reduce sheet runoff. Porous asphalt filters water, so that pollutants are contained and/or broken down by organisms in the soil. Porous asphalt is an important tool in reducing stormwater runoff, especially in dense urban areas where space for other green infrastructure alternatives is limited.

### Did You Know?

Studies have shown that porous asphalt parking spaces can typically infiltrate up to 80% of stormwater runoff. These paving systems can also remove about 60%-85% of undissolved nutrients and up to 95% of sediment.

### Contributing Departments

Infrastructure Planning and Facilities  
Institute of Water Research  
Department of Horticulture



**SUSTAINABILITY**

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