



Porous Concrete at Glenwillow Village Hall

The Village of Glenwillow installed a porous concrete system in September 2013 at the Village Hall located at 29555 Pettibone Road. This project is part of an on-going effort to restore and maintain the water quality of Tinkers Creek and the Cuyahoga River.

Porous Concrete

What is porous concrete?

Porous concrete is a surface able to support vehicles while allowing water to infiltrate into the soil below. Traditional impervious concrete and asphalt surfaces generate large amounts of runoff during rain events. This volume of runoff is quickly conveyed into storm drains and waterways resulting in flash floods, erosion, property damage, and poor water quality. In addition to reducing runoff volumes, porous concrete also serves as a filter for stormwater by retaining sediment and some polluting particles. While porous concrete is not intended to handle the

amount of water from an infrequent massive flood, it will still effectively relieve some pressures on the existing stormwater drainage system.

About this Project

The Village constructed 2,000 square feet of porous concrete that treats runoff from 7,600 square feet of existing impervious surfaces. The project meets several goals of the Tinkers Creek Watershed Action Plan to help preserve and improve the water quality of Tinkers Creek. Drainage from this area empties into Mud Creek, near its confluence with Tinkers Creek.

How is it maintained?

Porous concrete requires cleaning in order to ensure it will continually drain water effectively. Oils and chloride from rock salt can impair the concrete's ability to work effectively so

a street vacuum or cleaner is used to remove buildup. The concrete then works to drain water and filters it naturally through the layers of rock underneath. By reducing the concentration of pollutants that are conveyed directly into tributaries and waterways, the concrete protects local water resources.

What about over time?

Studies of the long term surface permeability have found high infiltration rates initially, a decrease, and then a leveling off with time. With initial infiltration rates of hundreds of inches per hour, the long term infiltration capacity remains high, even with clogging. When substantially clogged, surface infiltration rates usually well exceed 1-inch per hour, sufficient in most circumstances to effectively manage stormwater.



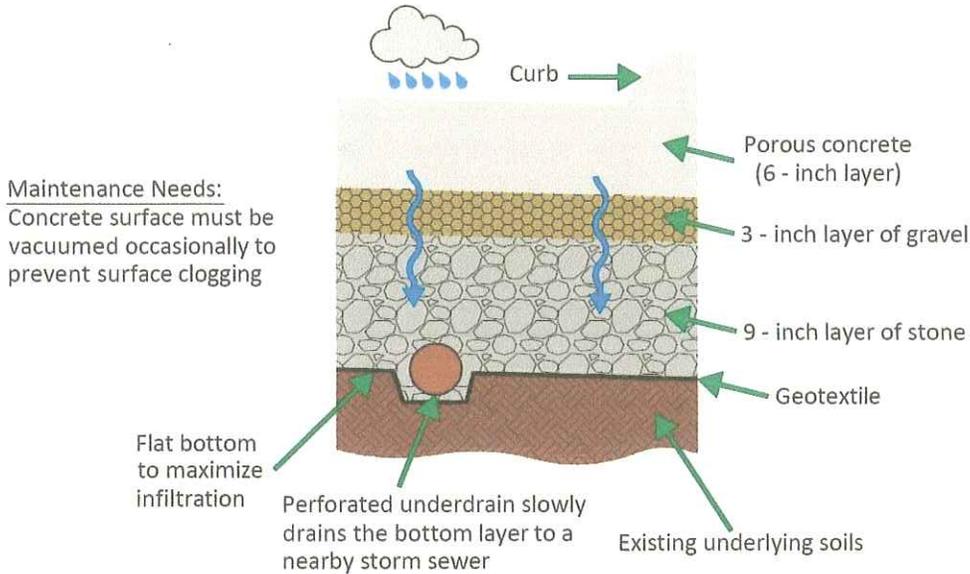
What happens in the winter?

When the sun and temperature are right, ice and snow can melt and immediately soak into the pavement surface. Water does not collect on the

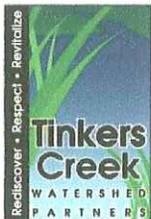
surface and re-freeze, which reduces slipping hazards. Deicing salts can be used.

Water in the base typically drains within 24-hours. It's unlikely that ice will form in the base within this time period

should temperatures drop below freezing. If the water does freeze before draining, there is adequate space for the ice to expand.



Porous Concrete Cross Section



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