RESTORING CHURCH CREEK & LAKE ERIE
Permeable Pavement and Bioretention Cells
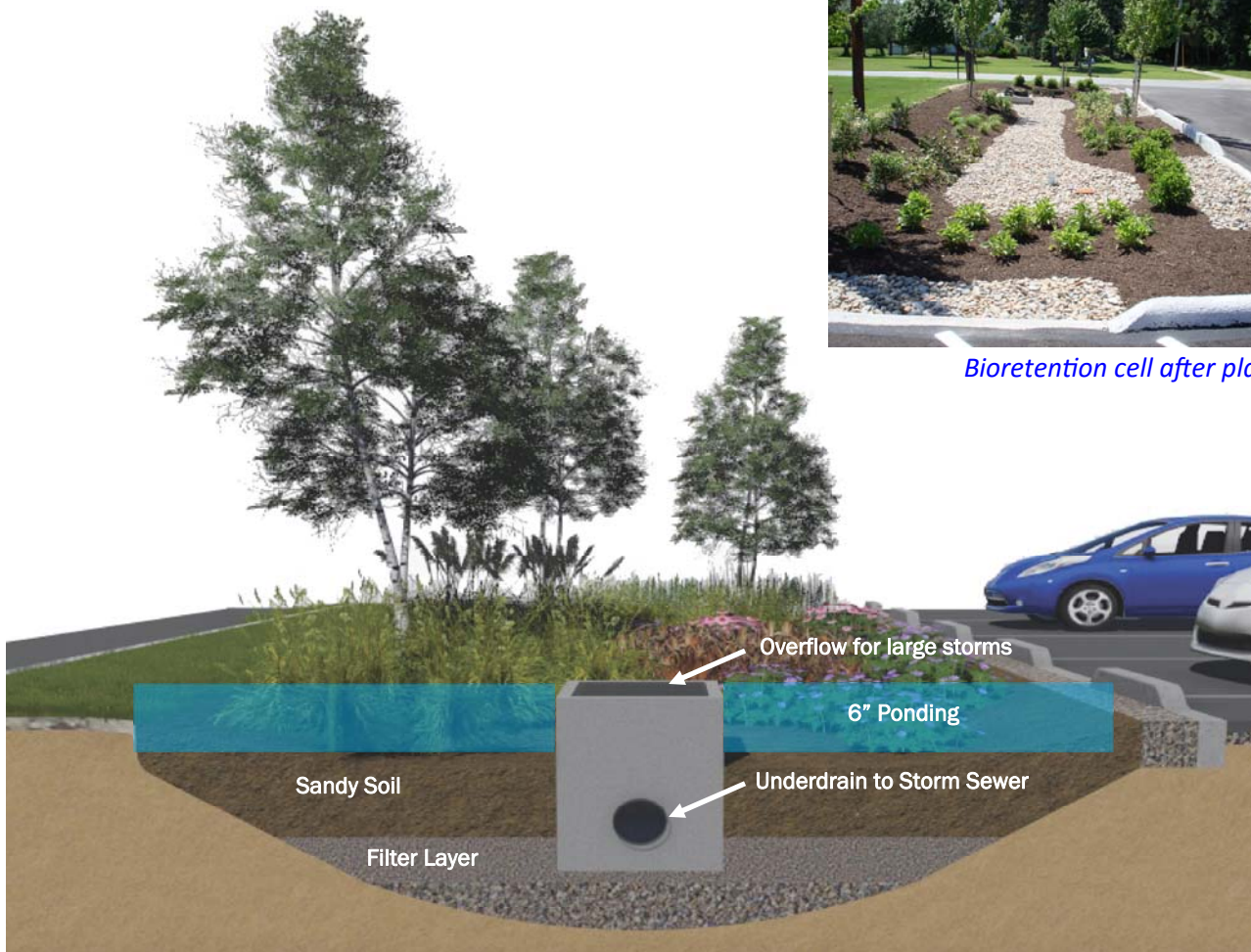## Clean and Reduce Stormwater Runoff

In spring of 2016, the Madison Township administration building parking lot was renovated to clean and reduce stormwater runoff to Church Creek and Lake Erie. The newly renovated lot includes two bioretention cells and permeable pavement. These systems help the parking lot behave more like a natural landscape, mimicking natural process to help water soak into the ground where it's absorbed and filtered by soil, gravel and plant roots.

How does bioretention work?

Rain and snow melt runoff flows into the bioretention through gaps in the curbs. Water ponds and then drains within 24 hours, traveling through layers of sandy soil and gravel that clean and filter the water. Some water is taken up by plants and some soaks into the ground. What's left is slowly released to a perforated pipe that carries it to a storm sewer that drains to Church Creek and eventually to Lake Erie.

Bioretention cell after planting

Overflow for large storms

6" Ponding

Underdrain to Storm Sewer
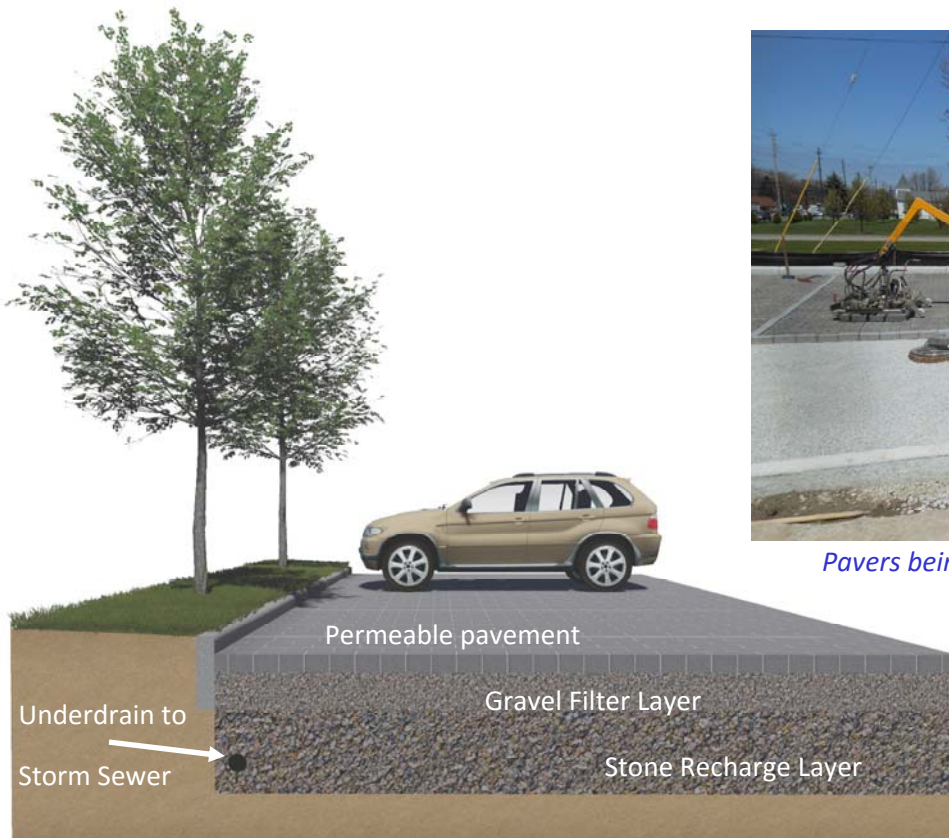
Sandy Soil

Filter Layer

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How does Permeable Pavement Work?

Rain and snow melt runoff from the asphalt parking lot drains to 2,760 square feet of pavers and passes through the spaces in between and into layers of underlying stone. The water slows down as it flows through the layers of stone, and pollutants are removed. Some of this water soaks into the ground beneath the stone, and some is slowly released to a perforated pipe underdrain that carries it to a storm sewer that drains to Church Creek. In summer, heated water entering our streams directly from conventional pavement can harm aquatic life and habitat. Reducing this thermal loading improves overall stream health. In winter, drainage of snowmelt through the pavers could reduce the amount of salt needed, also leading to improved water quality.

Pavers being installed over gravel and stone layers

Permeable pavement

Gravel Filter Layer

Stone Recharge Layer

Underdrain to Storm Sewer