

# Permeable Pavers

The Anderson Township Park District had a variety of reasons to use permeable pavers at Clear Creek Park. The main reason is permeable paver maintenance cost is significantly lower than asphalt over the life of the paver. In addition, permeable pavers can be incorporated into the developments site work and assist in acquiring the desired pre construction stormwater capture and release from watershed.

Pavestones Eco-Priora paver line was selected for the Anderson Township Parks Clear Creek Project to provide stormwater runoff infiltration, reducing stormwater runoff quantities, delaying peak discharges and improving the quality of the water before it runs into the Little Miami River. These paving systems offer governing agencies, engineers, architects and homeowners real solutions to today's stormwater management regulations and requirements.

## **What is a Watershed?**

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. That area of land, a bounded hydrologic system, within which all living things are inextricably linked by their common water course and where, as humans settled, simple logic demanded that they become part of a community.

Watersheds come in all shapes and sizes. They cross county, state, and national boundaries. In the continental US, there are 2,110 watersheds; including Hawaii, Alaska, and Puerto Rico, there are 2,267 watersheds.

## **Benefits of Permeable Pavement**

1. Reduces stormwater runoff. Stormwater runoff from streets, driveways, and parking lots is a major source of pollution in lakes, rivers, and streams. When permeable pavement is used however, the water is absorbed by the ground, where microbes filter all but the most concentrated of pollutants as it sinks down into underground aquifers. This not only replenishes the aquifer, reducing the frequency and severity of water shortages during drought, it also decreases the frequency of flooding as sewer systems swollen with runoff discharge into rivers and streams.
2. Reduces the "heat island" effect. Urban areas are an average of 2-6 degrees warmer than surrounding countryside, thanks in part to the large quantities of heat storing asphalt. The urban heat island effect can lead to higher cooling bills and carbon emissions, as well as more heat related health problems in the summer. Depending on the type of permeable pavement used, permeable pavement has a higher Albedo level, which causes heat from the sun to be reflected back into the atmosphere at higher levels, rather than being absorbed and stored by the pavement. Many porous pavements incorporate grass or other low growing plants, which also have a cooling effect as they transpire moisture into the air.
3. Improves the health of nearby plants. Many plants have trouble growing in areas with large amounts of impervious pavement because it blocks air and water from reaching

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their roots. Permeable pavement allows a wider range of plant species to thrive near roads while many porous pavements incorporate plants directly into the surface. Greater health and diversity of plants in urban areas increases natural beauty, improves habitat for birds and other wildlife, improves air quality, and combats the urban heat island effect.

4. Reduces erosion. Permeable pavement protects the soil it covers from erosion as well as traditional pavements, and reduces runoff-related erosion to surrounding soil, stream beds, and other areas.
5. Reduces accidents. Permeable pavement provides better traction, especially in snowy or icy weather, reducing the chances of slips and falls. Ice conditions on permeable pavement are also reduced, because when ice melts on permeable pavement, it sinks into the ground, rather than pooling and refreezing as it does on conventional pavement.

### Life Cycle Benefits

Life Cycle Analysis (LCA) is a methodology for assessing the environmental performance of a service, process, or product over its entire life cycle, ICPI (interlocking concrete paving institute) studies revealed interlocking concrete pavements (ICPS) have an average life of at least 29 years. An additional study now underway is understanding of energy use and corresponding carbon footprint. Interlocking concrete pavement's with their longer life reduce environmental impacts over other types of pavements.

