Village of Woodmere Service Department Surface Water Improvement Project

Pervious Concrete and Rainwater Harvest

When it rains, stormwater runoff washes over roads, parking lots, and roofs and other hard surfaces, picking up dirt, oils, metals, and chemicals. This polluted runoff flows directly to a storm drain and our creeks and streams without being treated. Runoff also heats up over hard surfaces, increasing stream temperatures and harming sensitive cold-water fish and other aquatic life. Large stormwater volumes can overwhelm municipal infrastructure and cause urban flooding and stream erosion. At this site, pervious concrete and underground cisterns demonstrate cost-effective strategies for stormwater management and sustainable water use. This green infrastructure mimics natural landscapes by infiltrating stormwater into the ground, filtering out pollutants, cooling it down and reducing the amount of runoff entering the storm drainage system. The cleaned and cooled stormwater recharges the groundwater that feeds Willey Creek, a coldwater habitat tributary of the Chagrin River.

Photo: Willey Creek at Jackson Field (South Chagrin Reservation), downstream from the Village of Woodmere.

Willey Creek

- Designated by Ohio EPA as **coldwater** habitat
- Flows through urban/suburban development
- Harmed by the effects of increasing stormwater runoff
- Benefits from improved upstream stormwater control measures

STORMWATER: SLOWING IT DOWN, SOAKING IT UP

This project is located at the headwaters of Willey Creek, a designated coldwater habitat tributary to the State Scenic Chagrin River. Preventing heated, polluted stormwater from flowing into Willey Creek helps preserve this sensitive, high quality stream habitat. Upstream stormwater control measures like pervious concrete and cisterns reduce the impacts of hard surfaces and protect downstream habitat by capturing and infiltrating polluted stormwater.

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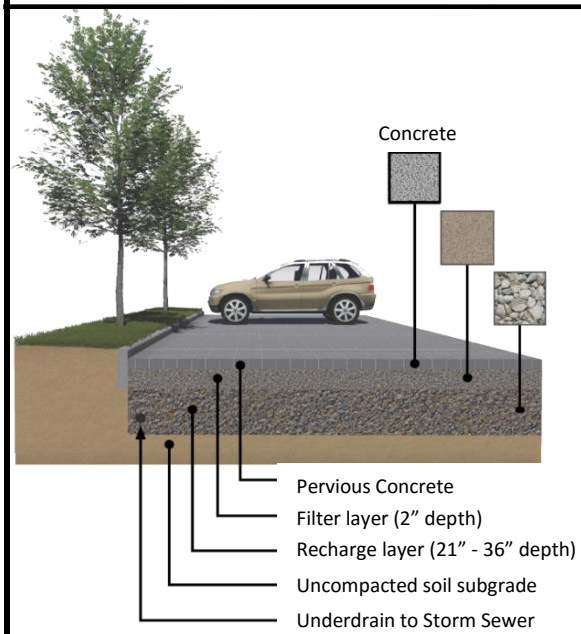

Pervious concrete

The Village of Woodmere, through an Ohio EPA Surface Water Improvement Fund (SWIF) grant, installed 770 square feet of pervious concrete at their Service Center.

Pervious concrete, unlike traditional concrete, has a network of void spaces that allow water to infiltrate through the concrete mix and into the underlying soils rather than run off the parking lot. Regular vacuum maintenance ensures that the concrete continues to drain water effectively.

PERVIOUS CONCRETE BENEFITS:

- Allows water to seep into the groundwater or creek
- Filters out pollutants
- Cools stormwater runoff

Rainwater Harvesting and Use

A 5,100 gallon in-ground catchment system was also installed using SWIF funds. This cistern filters, captures, and stores runoff from the 7,111 square foot service center roof. An ultraviolet filter eliminates any harmful bacterial growth. This cleaned source of water is used on-site for flushing toilets and washing service vehicles. Any stormwater overflow not captured by the cistern is directed to a vegetated swale, allowing it to filter through the ground before reaching the storm drainage system.

CISTERN BENEFITS:

- Clean source of water for on-site use
- Reduces stormwater volume to storm drains
- Keeps pollutants out of Willey Creek

CHAGRIN RIVER WATERSHED PARTNERS

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