

## Liberty Township

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### For More Information



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740.881.5432



Friends of the Lower  
Olentangy Watershed  
614.267.3386  
[www.olentangywatershed.org](http://www.olentangywatershed.org)

Friends of the Lower Olentangy Watershed



Ohio EPA Surface Water  
Improvement Fund  
614.644.2020



A wooded stretch of Wildcat Run travels through Liberty Park

*The SWIF (Surface Water Improvement Fund) Grant enabled three stream segments to be restored to improve water quality entering the Olentangy River. The 319 Grant was used to establish a storm water management demonstration site which not only improves the quality of runoff water in Liberty Township, but also serves as an demonstration site for communities, developers and others. Through these projects, Liberty Township is setting an example on habitat restoration and preservation and serving as a model to others on innovative methods that may be used to effectively treat storm water run off.*

### FUNDING

The Wildcat Run Stream Restoration in Liberty Park was completed in 2012 to restore the natural functions of the stream. Thanks to efforts by Liberty Township and Friends of the Lower Olentangy River (FLOW), funding was granted by Ohio EPA's Surface Water Improvement Fund to restore three stream segments in the Park and establish a conservation easement on stream-side woods.

## Storm Water Improvement Fund and 319 Grant Project



Liberty  
Township  
Liberty Park

7761 North Liberty Road, Powell, Ohio

### Wildcat Run Restoration Project and Storm Water Management Demonstration Site



Wildcat Run incised channel erosion



# Wildcat Run Restoration and Storm Water Management Demonstration Site

Liberty Park is the new home to a unique storm water demonstration project showcasing a variety of green techniques to manage storm water run-off using visually appealing examples. Ten demonstration areas show how Low Impact Development (LIDs) techniques work and provide examples that developers, planners and land managers can see in action! Traditional engineering practices that use constructed pipelines to manage runoff are coming under fire for impacts to water quality in cities across the nation.

This project shows multiple techniques that help reduce the overall volume of water running off of the site and help reduce nutrient and silt loading to natural waterways. The project reduces storm water runoff from impervious surfaces like ball courts and parking areas. The goal is to achieve a decrease in the volume of water runoff by 20%, the ability to provide on-site capture of water from up to a 3/4" rainfall event and a measurable reduction in sediment, phosphorus and nitrogen loads, which in elevated levels will be harmful to habitat and aquatic life. Wildcat Run Tributary feeds into the Olentangy River which is classified by the OEPA in this area as "exceptional warm water habitat".



Green storm water techniques demonstrated at Liberty Park include two types of pervious pavement systems, several configurations of bio-

retention basins, infiltration trenches planted with trees and grasses, and a rain harvesting tank that supplies a drip irrigation system for a residential-style rain garden. Bio-retention basins are constructed using variations of native and engineered soil, some with underdrains for additional storage capacity.



- A** The main stem of Wildcat Run as restored using a constructed "natural channel" design. The deeply incised channel was relocated and raised to better connect the stream with the surrounding floodplain, with meanders and stone "step-pools" to slowly drop water to the elevation of a culvert beneath Liberty Road. A streamside buffer of deep-rooted vegetation protects the restored stream.
- B** The southern tributary to Wildcat Run was restored using a "self-forming channel" natural design. A 40-foot wide and nearly level floodplain was graded and seeded with native plants, and water is allowed to form its own channel over time. The new floodplain is broad and flat allowing rain water to spread out and soak into the ground.
- C** The drainage swale from the Park pond was widened, with more meanders and stone check-dams to slow water velocity between the Park pond and the main channel of Wildcat Run. Vegetation along the swale was expanded to help soak water into the ground, trap sediment and nutrient pollution associated with storm water.
- D** To protect the stream restoration area, Liberty Township has placed a 25 acre stream-side woods into a permanent conservation easement to prevent development on this upstream area.
- E** Liberty Park created a 5 acre deep rooted prairie on a hill overlooking the stream, further exemplifying land conservation practices that promote water quality.

## Three Techniques of Stream Restoration Used

1. The main stem of Wildcat Run west of Liberty Road was restored using a "natural channel" design. The channel bed was raised to better connect with the surrounding floodplain, reinstituting meanders and stone "step-pools" to slowly drop the water to the elevation of the culvert under Liberty Rd.
2. The southern tributary to Wildcat Run was restored using a "self-forming channel" design. A wide and nearly level floodplain was graded and seeded with native plants, and water was allowed to "select" or form its own path within a larger channel over time. The new floodplain is broad and flat allowing rain water to spread out and soak into the ground. Vegetated floodplains help slow the flow of rain water.
3. The Liberty Park pond drainage swale was re-created as a wider, more sinuous vegetated swale, with stone check-dams to slow the velocity of water draining from the pond, especially during peak flows, to the main channel of Wildcat Run. Vegetation along the swale was expanded to trap more sediment and help soak water into the ground, these are easily replicable and cost effective ways to manage silt and nutrient pollution associated with storm water.