

Twin Creek Wetland Enhancement

FAST FACTS

LOCATION:

12033 Best Place
Sharonville, OH 45241

PROJECT PARTNERS:

City of Sharonville
Mill Creek Alliance
Christopher B. Burke
Engineering

PROJECT AREA:

5 acres

PROJECT COST:

\$56,825

COMPLETED:

Winter 2023

PROJECT FEATURES:

Wetland Enhancement
Site Restoration
Education & Outreach

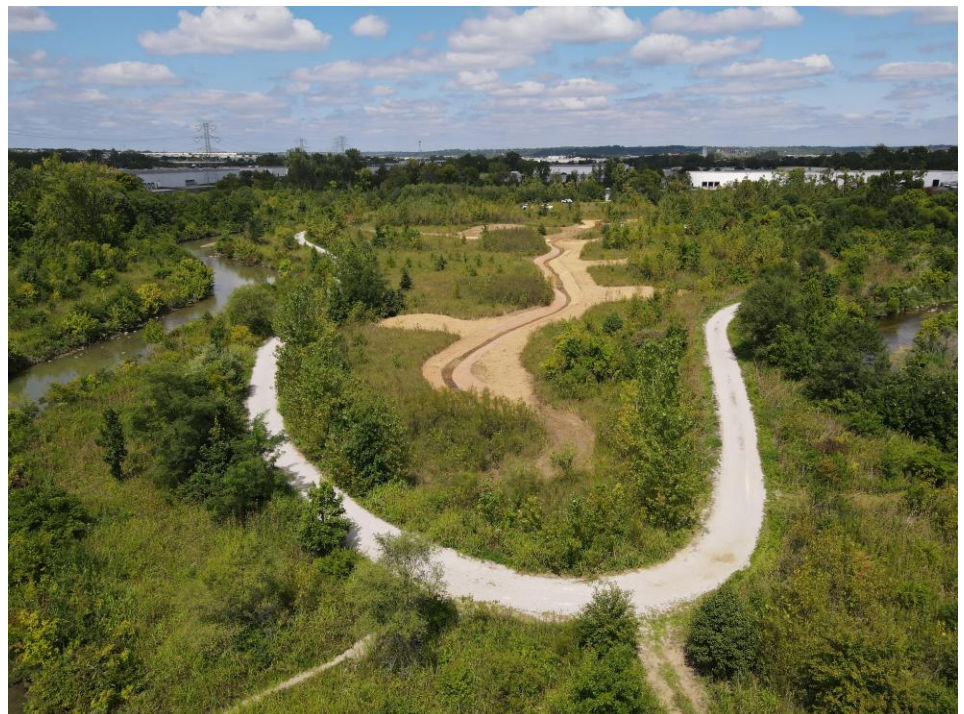
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Installed in 2012, the Twin Creek Preserve (TCP) project was one of the largest stream restoration projects in Southwest Ohio. The goal of that project was to achieve full water quality attainment with Warm Water Habitat (WWH) Aquatic Life Use standards (ALU) by restoring segments of the Mill Creek mainstem and East Fork Mill Creek. The 5-acre Twin Creek Preserve wetland was designed to have flow from the Mill Creek and East Fork Mill Creek whenever each stream increased in elevation. The wetland was planted with native wetland vegetation species. A few years after project completion, Twin Creek Preserve was listed as an “eBird Hotspot in Ohio”. Wetland birds known to frequent the area include herons, ducks, geese, and osprey. Midwest Biodiversity Institute (MBI) sampling indicated large improvements in water, biological, and habitat quality.

However, over time, it was determined that only a portion of the wetland was exhibiting the hydrology, soils, and vegetation characteristic of a true wetland. In 2021, only one of 9 monitoring sites near the TCP was in full ALU WWH attainment. Modest adjustments were necessary to the water regime to maintain the hydric status of the soil at the site and improve the ecological functions and services of the existing native vegetation at the Project site. It is anticipated that the completed project will bring an expanded area of the surrounding Mill Creek and East Fork segments into attainment with the ALU WWH designation.



PROJECT GOALS:

- Enhance 5.0-acre wetland
- Remove and replace with native plants
- Improve wetland habitat
- Improve water quality

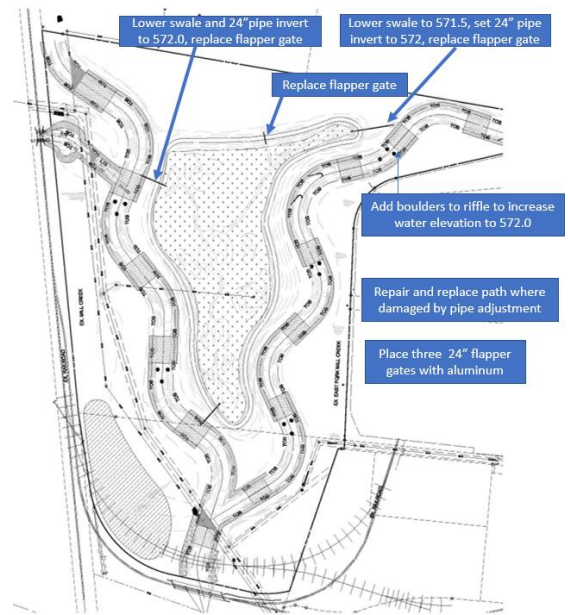
PROJECT PARTNERS:



Christopher B. Burke Engineering, Ltd.



Christopher B Burke Engineering designed lowering the elevation of the invert pipes connecting the wetland to the Mill Creek mainstem and East Fork Mill Creek base flow. Benchmark Land Management excavated two pipes, lowered the trench elevations some 3.0-feet, and replaced the pipes. Two heavy iron flapper gates were replaced with light and durable aluminum gates to increase water flow into the wetland. Approximately 120 cubic yards of existing swales were reshaped to better distribute water throughout the wetlands. The swales were stabilized with coir fabric. Stream banks were stabilized with geotextile. Bioengineering further restored approximately 0.2 acres of area disturbed during enhancements with native seed, and live stakes including Elderberry, Silky Dogwood, Viburnum, Buttonbush, and Willow. Lastly, existing riffles were enhanced with some 64 tons of rock to improve energy dissipation and structural stabilization and enhance the environmental chemistry that improves water quality.



Enhancement of the 5-acre wetland will increase the base flow into the existing wetland. The base flow of the East Fork Mill Creek is primarily the discharge of the UMCWRF. While this facility meets its discharge requirements, diverting a portion of the creek flow to the wetland will further polish this water by sequestering any residual carbon, nitrogen, phosphates, and metals that may remain, thereby improving water quality. Furthermore, the increased hydrology will drive the vegetation to be more hydric and ecologically more valuable, thereby improving habitat.

