

Lockland/West Fork Mill Creek Low-Head Dam Mitigation Project

FAST FACTS

LOCATION: Lockland, OH

PROJECT PARTNERS:

Mill Creek Alliance

Christopher B. Burke
Engineering, LLC

Coors Seltzer

PROJECT DIMENSIONS:

250 linear ft

0.5 Acres

PROJECTED COST:

\$50,000

TIMEFRAME: 2021-2022

PROJECT FEATURES:

Dam Mitigation

Streambank
Stabilization

Invasive Vegetation
Removal and Replacement

Ramp Installation

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Mill Creek Alliance (MCA) proposes the mitigation of a low-head dam/sewer crossing (LHD) located on West Fork Mill Creek in Lockland, Ohio, along with associated riparian zone restoration. Mill Creek was once “the most endangered urban stream in North America”, but is experiencing dramatic improvements in water quality. A number of LHDs act as barriers inhibiting further water quality improvements and repopulation of the watershed by fish, turtles, mussels, and macroinvertebrates. Lockland is an economically disadvantaged community with which MCA is also working to construct a bike trail and water trail along the stream corridor.

Through construction of a 30'x 30' riffle, the proposed project will mitigate a low-head dam and reconfigure the stream channel to improve water quality, better manage flood waters, and connect the downstream and upstream aquatic and terrestrial habitats. Water quality improvements will include denitrification, reduction in PAH, increased Oxygen content, and decreased water temperature. The stream improvements will also benefit a recently discovered population of freshwater mussels. Mussels were extirpated from Mill Creek for over 100 years, but are now also beginning to repopulate the watershed.



Lockland West Fork Mill Creek LHD Mitigation Project
Proposed Area Highlighted in Blue

PROJECT IMPACTS:

Improve the quality of
8,705,478,110 gallons/year

Open 35.8 square miles
to improved fish passage

Improve dissolved O₂ by
0.25 mg/liter

18,160 pounds of O₂
entrained in the water per
year.

Improved paddling
access

The proposed work on the streambank includes the physical and chemical removal of shallow-rooted invasive honeysuckle, which does not hold the streambed in place. Dense replanting is proposed with a hardy native seed mix, along with a plant palette of woody cuttings, bare root, and container stock to replenish forest vegetation and recreate a mixed-aged stand of trees and shrubs to maximize habitat diversity post-restoration and decrease streambed erosion and downstream sedimentation. This work in particular is well-suited for volunteers from MCA and Coors to work together on.

In addition, the streambank will be secured with rock placed at the base of the bank. Alternatively, timber and woody materials salvaged on-site can be economically installed, if hydraulic analysis of the flow conditions confirm the suitability of the technique.

Finally, access ramp built for the stream improvements will be constructed of permeable materials and will provide long-term access for paddling, fishing, and other recreation

