

Bainbridge Township, in partnership with Chagrin River Watershed Partners, was awarded a \$333,250 Ohio EPA Section 319(h) grant in 2020 along with \$50,000 in local match from the Township to stabilize 750 linear feet of Smith Creek, a designated coldwater stream and tributary of the State Scenic Aurora Branch of the Chagrin River and create 3 acres of wetland floodplain. The project lies at Centerville Mills Park, a former YMCA youth camp now owned and managed as a public park by Bainbridge Township.

Prior to restoration, Smith Creek was channelized throughout Centerville Mills Park, had limited floodplain connection, and was severely eroding the adjacent earthen dam of Lake Paterek which risked breaching. This erosion led to serious sedimentation issues downstream and threatened Smith Creek's cold water habitat status. Floodplains are important for dissipating the erosive energy of high flow floodwaters and filtering out pollutants from water. Streambank erosion jeopardizes nearby infrastructure and contributes excessive sediment and pollutants to downstream areas, leading to unhealthy habitat conditions for aquatic life.

Davey Resource Group, Inc. (DRG) and Marks Construction, Inc. were contracted as the design-build team to complete the restoration using a bioengineered approach. Sinuosity was added to the stream channel to slow water velocity and mitigate erosive forces. A series of grade control structures within the stream channel were also installed, including rock sills and riffle-pool sequences, to stabilize the stream and provide high-quality instream habitat. Floodplain connection was also restored by draining Lake Paterek, removing the earthen dam and a majority of the former lakebed, and creating a seven-acre wetland floodplain. The creek's riparian area and newly created floodplain were vegetated with a native wetland seed mix. Additionally, the wetland floodplain will help to reduce the impact of high-flow rain events and mitigate downstream risk of flooding.

Funders and Partners:

This project was financed in part or totally through a grant from the United States Environmental Protection Agency through an assistance agreement with the Ohio Environmental Protection Agency. The contents and views, including any opinions, findings, conclusions or recommendations, contained in this product or publication are those of the authors and have not been subject to any Ohio Environmental Protection Agency or United States Environmental Protection Agency peer or administrative review and may not necessarily reflect the views of the Ohio Environmental Protection Agency or the United States Environmental Protection Agency and no official endorsement should be inferred.



Figure 1 Smith Creek Channelized throughout Centerville Mills Park facing north from Crackel Road (2018)



Figure 2 Smith Creek experiencing significant erosion throughout Centerville Mills (2018)