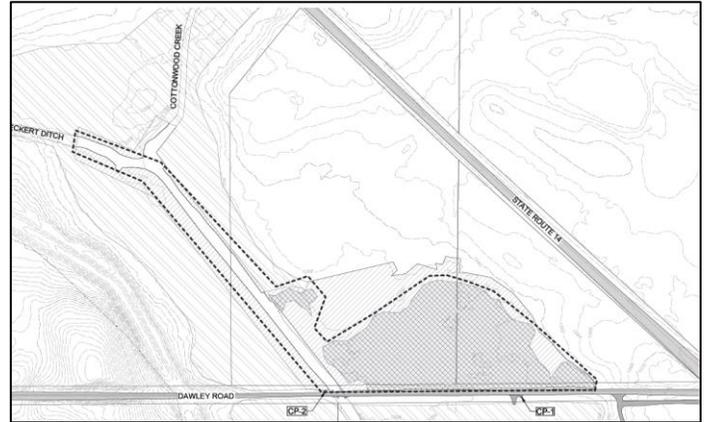




Eckert Ditch Drinking Water Quality Improvements Project

319 (h) Grant to Protect and Improve Drinking Water Quality

As part of the City of Akron Water Bureau’s (AWB) mission to provide clean and affordable drinking water to the nearly 300,000 residents, grant funding was sought to improve upstream water quality of tributaries flowing into Lake Rockwell Reservoir, the raw water supply for the City of Akron Drinking Water Filtration Plant. In 2017 AWB was pleased to receive grant funding for restoration of Eckert Ditch and the surrounding floodplain on City-owned property in Portage County, Ohio EPA project # 17(h)EPA-17. The total project cost was \$419,017, with a federal funding of \$237,914, and AWB match of \$181,103.



Eckert Ditch 319 Site



Despite the already high quality of the overall wetland area, phosphorus and bacteria continue to contaminate Lake Rockwell, adding substantially to the potential formation of Harmful Algal Blooms (HABs), as well as degradation of other source water quality parameters such as nitrogen, phosphorus, bacteria and total suspended solids.

Goal 1: Restore floodplain, control Invasive species, and restore native wetland species to increase biodiversity and associated floodplain health and effectiveness.

Goal 1 Solution: Improvement of the natural flood plain and riparian corridor through the removal of invasive species, reintroduction of native species, and improving wetland quality and detention time of Eckert Ditch before it enters Lake Rockwell Reservoir.



1 Invasive monoculture of cattails in floodplain



2 Physical removal of invasive cattails as part of 319 project



3 Chemical control of invasive cattails



Ohio 391 # 17(h)EPA-17 Fact Sheet

City of Akron Water Bureau

Goal 2: Stabilize the stream channel, which had been heavily modified by previous agricultural land uses, and reduce phosphorus and bacteria moving through the site into Lake Rockwell Reservation.

Goal 2 solution: There were concerns that doing major stream restoration this close to the reservoir could disturb sediment that would potentially flow into the reservoir during and just after construction. Because of this, Akron installed phosphorus removal structures that mimic sinuosity without physical restoration, as well as beneficially reuse a water treatment residual known as Alum to capture and permanently remove phosphorus from the water. Research for the beneficially reused material was funded through the Ohio Water Development Authority’s Research and Development Grant #7881. These structures are routinely maintained, and the beneficial reuse material is changed out when it reaches phosphorus capacity determined by regular water quality sampling events.



4 Reconnecting Eckert Ditch with adjacent floodplain



5 Installation of in-stream phosphorus reduction structures



6 Phosphorus structure removable and refillable beneficial reuse cartridges

This project began in 2018 and was completed in 2020. Water quality in stream will continue to be routinely monitored as part of the AWB Watershed Division monitoring and sampling program, and through continued grant funding, including Ohio Water Development Authority Research and Development Grant and Ohio SeaGrant.

Project Outcome: Initial water quality samples show that the improvements to this site have already contributed to a higher quality of water leaving the area, though continued monitoring and further research will be conducted to ensure that the project was successful. The floodplain has been reconnected to Eckert Ditch, which has already shown reduced flooding where Eckert Ditch crosses under Dawley road.

The City of Akron would like to extend a special thanks to the support and dedication of the Ohio Environmental Protection Agency, and to the University of Akron College Of Engineering for research and design assistance on this and the other grants involved in making this project reality. It is our hope that other surface water supplied communities may be able to find a similar beneficial reuse for their own water treatment residuals to remove troublesome nutrients from source waters.



7 Phosphorus reduction/artificial sinuosity structures post construction