



DRENNAN DITCH

Two-Stage Ditch Installation and Sediment Removal for Nutrient Reduction

A 2.25-mile stretch of Drennan Ditch has been enhanced to improve water quality and increase flood storage capacity. The County’s contractors removed an estimated 13,500 tons of sediment from the ditch bed from the start of Drennan Ditch just east of S. Raab Rd. to N. Meilke Rd. The County has also constructed a two-stage ditch on the north side of the westernmost 840 linear feet of Drennan Ditch.

Project Location

The Drennan Ditch project area is within the Swan Creek Watershed, which drains approximately 204 square miles in northwestern Ohio and is a tributary of the Maumee River and the western Lake Erie basin.

The two-stage ditch installation is located at the confluence of Prairie Ditch and Frankfort Ditch that drain almost 10,000 acres of cultivated cropland combined.

Sediments that accumulated over during the past century were dredged to improve drainage in another two miles of Drennan Ditch.



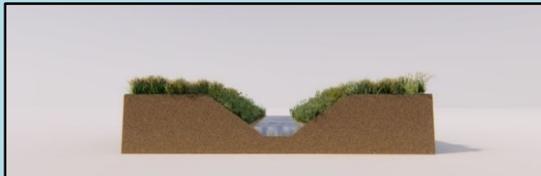
Pre-construction view from Irwin Road, facing west.

Photo date: March 2019



Post-construction view from Irwin Road, facing west.

Photo date: July 2021



Conventional Ditch

What is a Two-Stage Ditch?

A two-stage ditch is a widened ditch with a deep bench that serves as a floodplain area that creates more flood storage capacity and habitat while providing an opportunity for sediment suspended in the water column to drop out.



Drennan Ditch Hybrid Two-Stage Design

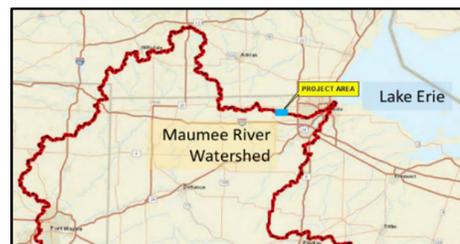
What is the Design Plan at Drennan Ditch?

The westernmost 840 linear feet of Drennan Ditch was converted to a hybrid two-stage ditch with a 10-foot-wide lower stage channel and a 16-foot-wide bench along the north side of the ditch. The ditch bank above the bench rises at a 4:1 slope and is seeded with native plants. Erosion control matting has been placed along the top half of the bank to stabilize the ditch.

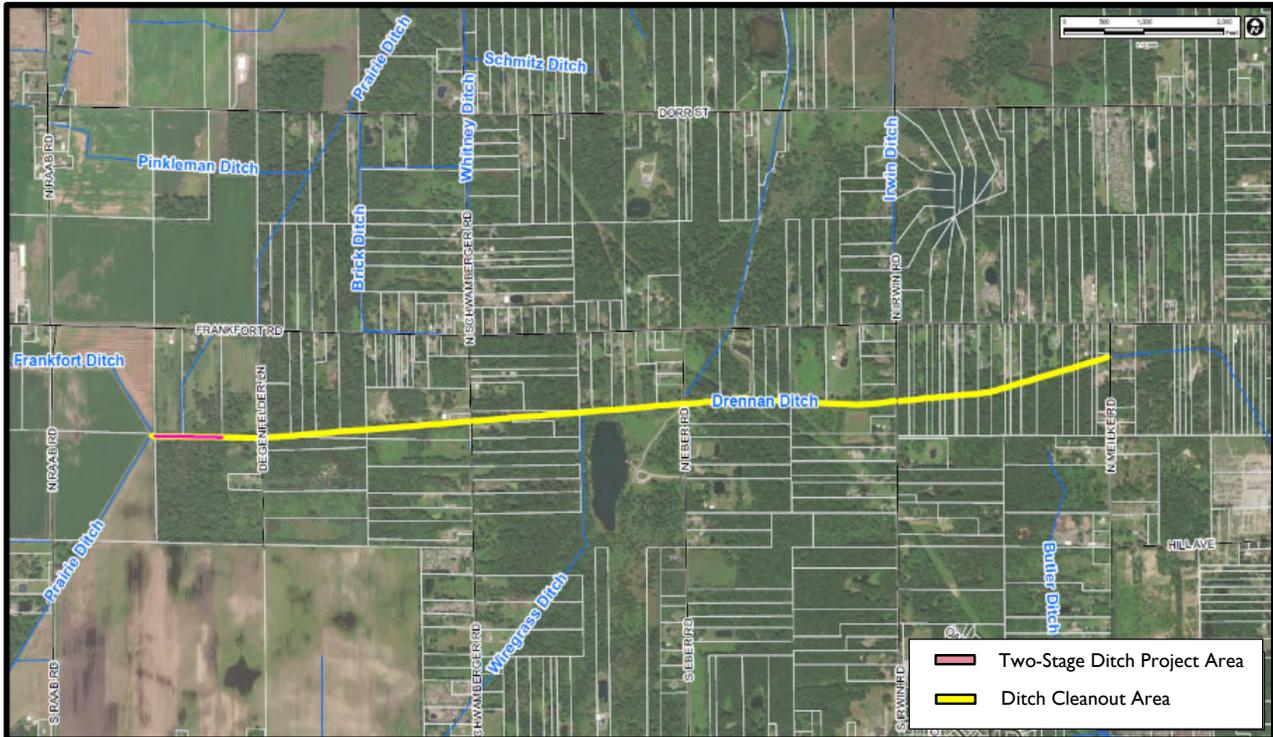
Anticipated Benefits

Drennan Ditch improvements will contribute to nutrient load reductions in the western Lake Erie basin. Nutrients flowing from watersheds into Lake Erie are the primary cause of harmful algal blooms in the lake. Project activities are anticipated to:

- Reduce phosphorus loading by 19,100 pounds
- Remove 13,500 tons of sediment



Project Location



Why Was This Location Selected?

The Drennan Ditch improvement project was initially selected as a result of requests by Spencer Township Trustees and local residents to help improve the ditch due to significant nearby flooding. This ditch has not been improved since the 1930s and there was a large accumulation of sediment – up to 3.5 feet within the project area. As the Lucas County Engineer’s Office was making plans for sediment removal and management, it became apparent that incorporating a two-stage ditch could reduce overall nutrient loading and increase flood storage capacity in the watershed.

Construction Details

Construction of the two-stage ditch and sediment cleanout was completed by The Weber Company between March 2021 and November 2021. Erosion controls were used to minimize sediment release into the ditch. The Lucas County Engineer’s Office is pleased with the outcome of this important project. Please contact our office if you have any questions or if you encounter any challenges associated with the constructed project.

Project Funding

This project was funded through a \$200,000 grant from the Great Lakes Commission’s Great Lakes Sediment and Nutrient Reduction Program (funded through the Great Lakes Restoration Initiative) and Spencer Township.

For more information about project funding, please contact:

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