

Treatment Wetland

Agricultural Treatment Wetland

KEY METRICS

≈ 490 lb/yr

Total nitrogen removed

≈ 56 lb/yr

Total phosphorus removed

≈ 19 tons/yr

Total suspended solids removed

PROJECT DETAILS

 Location
Denton, Maryland

SERVICES

Stormwater retrofit design, Treatment wetland design, Hydrologic and hydraulic analysis, Grading and earthwork, Permitting support, Construction support

PROJECT DESCRIPTION

A new engineered treatment wetland on an Eastern Shore farm in Denton, Maryland, designed to capture and treat agricultural runoff, reduce nutrient and sediment loads to downstream waters, and relieve an upstream flooding problem. Excess material from construction is being reused on site to raise low, previously unfarmable areas of the field.

Sustainable Science, LLC designed an engineered treatment wetland on a working farm near Denton, Maryland, on the Eastern Shore. The wetland captures and treats agricultural runoff before it reaches downstream waters, reducing the nutrient and sediment loads that affect water quality across the Chesapeake Bay watershed.

The system provides about 1.35 acre-feet of treatment volume and captures runoff from a contributing drainage area of roughly 95 acres. It was laid out as a series of sinuous cells that lengthen the flow path, slow the water, and give sediment and nutrients time to settle and be taken up by wetland vegetation. The project is currently under construction, with completion targeted for early summer 2026.

The wetland was graded into a meandering flow path that routes runoff through a sequence of shallow pools and planted benches. The banks were shaped and stabilized with erosion-control matting and seeding so the new wetland establishes quickly and holds up through construction-phase storms.

As vegetation takes hold, the cells will provide both water quality treatment and habitat, turning a drainage problem into a functioning wetland that works with the surrounding farm.

