

# Archbold Engineering Department



## ARTS Wetland | Project 4-24

### Project Overview

In August 2024, the Village of Archbold began construction on a 35+ acre wetland project just south of Sauder Village property. The primary focus of the project has been to reduce nutrient runoff in a 232-acre, primarily agricultural, watershed. An added benefit with this project will be the wetland's ability to capture and slow the release of over 8.7 million gallons of runoff before it enters the heavily susceptible, flood-prone Flat Run waterway. This project will utilize a novel method of runoff control called an "Agricultural Runoff Treatment System" (ARTS).

The project is partially funded with a federal grant through the Ohio EPA for \$129,083. The Fulton County Soil & Water Conservation District also secured an H2Ohio Grant of approximately \$23,000 to cover labor and materials for grass seeding and tree planting. Public education opportunities, such as signage, coordinated tours/programs, and project information on the Village of Archbold website, will be done following completion of the project.

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### Project History

The Village of Archbold partnered with Jones & Henry Engineers and the EDGE Group in the creation of a stormwater infrastructure evaluation in 2022. The last study done on Archbold's stormwater system was completed in 1966 - contemporary and innovative research and recommendations for the Village was long overdue. Some primary goals of this study included: improve water quality, reduce localized flooding, and explore green/low-impact development solutions for stormwater management in the Village.

Many environmentally beneficial solutions were recommended for the purpose of stormwater management. The choice in location and methodology would provide a solid foundation upon which to begin the process of flood reduction in both the Quail Hollow and North Pointe Estates subdivisions.

The ARTS method of stormwater control was recommended by the Ohio EPA as both a green and low-impact alternative to traditional stormwater infrastructure, with the added benefit of nutrient reduction and wetland habitat creation for native flora and fauna.

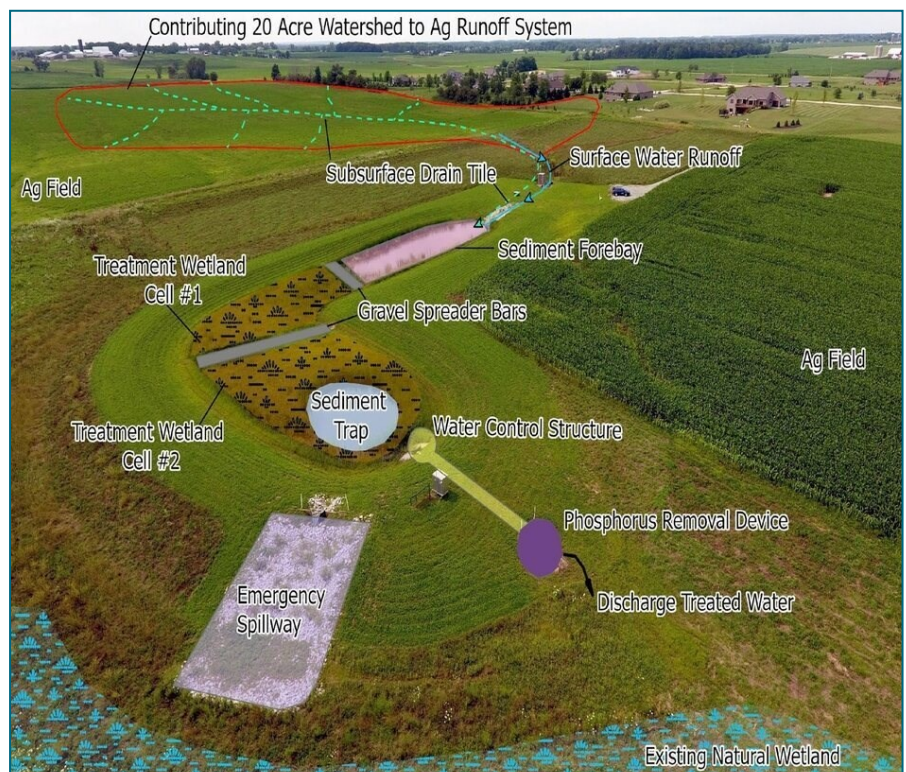
## ARTS & The Village of Archbold

An ARTS is a relatively new concept being used in conjunction with wetland construction. Whereas a standalone wetland pond has been used for decades to help treat and store runoff, an ARTS is designed to use “stacked practices” to help achieve an even higher removal of nutrients found in runoff.

An ARTS will be constructed on the Village-owned property to the north and west of the intersection of North Clyde's Way and East Lutz Road (aka the Reservoir Property).

This ARTS will consist of a new wetland pond surrounded by a grass buffer area that will be designed to receive and treat tile drainage and surface water from approximately 232 acres

of cropland. A new and enhanced grassed waterway with rock check dams will extend east from the wetland and is intended to protect from erosion and treat runoff from lands east of the property. Along with the enhanced water quality, the wetland will aid in detaining and metering storm water runoff into Flat Run, a focus for the Village to help alleviate localized flooding within the watershed.



Source: Fox-Wolf Watershed Alliance

## Archbold ARTS Practices

### Practices included in the East Lutz Road ARTS

#### **Vegetative Buffer** | 18.1 Acres

*Areas of grasses and plantings used to help filter and treat agricultural runoff before it enters the wetland.*

#### **Reforested Area** | 1.2 Acres

#### **Rock Checks** | 3 in Project

*Stone outcroppings that slow runoff as it enters the ARTS.*

#### **Wetland Forebay** | 0.9 Acres

*Small pond structure that captures and slows runoff to allow sediment to deposit.*

#### **Wetland Pond** | 15.5 Acres

*Large pond structure used to capture and hold the bulk of runoff, flourishing with plant, insect, and aquatic life that all help to remove nutrients and further treat agricultural runoff.*

#### **Grassed Waterway**

*Vegetative area that collects agricultural runoff and directs it to the wetland forebay.*

## Archbold Wetland Photos



*Southeast-facing view of newly constructed wetland pond. Outlet control structure and emergency spillway in left foreground.*



*Dexter Krueger, Archbold Village Engineer, explains to group of Fulton County public officials the benefits of an ARTS during a Field Day conducted October 2024.*

## Archbold Wetland Photos (cont.)

# Village of Archbold

## Agricultural Runoff Treatment System



## Best Management Practices:

- WETLANDS/CONSERVATION BASINS
- DRAINAGE CONTROL STRUCTURE
  - GRASSED WATERWAY
  - VEGETATIVE BUFFER
  - REFORESTATION
  - ROCK CHECK DAMS

*Village of Archbold ARTS sign. A physical sign will be placed at the wetland location.*



*Rock check dam with established surrounding forest system in Minnesota. Rock check dams slow the flow of water.*

*Photo by Limnotech.*