



Green Infrastructure & Stormwater Management CASE STUDY

Wilcox Wetland Preserve

Location: Streetsboro, OH

Client: Geis Development

Design Firm(s): URS Corporation

Landscape architect/Project contact: Thomas Evans, ASLA

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ASLA Chapter: Ohio

Project Specifications

Project Description: The Wilcox Wetland Preserve stormwater wetland is located within a 40-acre open space preserve central to a 200-acre mixed use development. The 14-acre wetland basin is designed to serve multiple purposes serving as a regional stormwater basin to reduce peak discharges, filter runoff pollutants, serve as a wetland mitigation, as well as provide a central open space to a mixed use development.

Project Type:

Open space - park

Part of a new development

Design features: Stormwater treatment wetland.

This project was designed to meet the following specific requirements or mandates:

Local ordinance, developer/client preference, the project fulfilled stormwater management codes as well as state and federal wetland mitigation regulations.

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: greater than 5 acres. A 40-acre central open space was preserved.

The regulatory environment and regulator was apprehensive about the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? The developer requested that the wetland

preserve incorporate 2 miles of loop trails, be low maintenance, and encompass 40-acres of open space to serve as a "central park" to the surrounding 200-acre mixed use development.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Privately funded)

Was a green vs. grey cost analysis performed? No

Cost impact of conserving green/open space to the overall costs of the site

design/development project: Design of the stormwater wetland reduced costs of the overall development by consolidating stormwater management for the 200-acre mixed use development. The developers charged property buyers a stormwater fee to fund construction of the stormwater wetland. The 40-acre central open space also fulfills an open space/zoning requirement for the adjacent townhouse development.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Significantly reduced costs (10% or greater savings). The stormwater wetland, serving as a central stormwater basin, created significant savings in land area and land values, by avoiding individual stormwater facilities on individual properties. Costs for one central stormwater basin were significantly less than 10 separate facilities.

Number of jobs created: 15

Job hours devoted to project:

Planning and Design: 2,000

Construction: 2,000

Annual Maintenance: 80

Performance Measures

Stormwater reduction performance analysis:

HEC RAS modeling indicates the 14-acre wetland basin, serves as a regional basin, and reduces peak discharges by 80% for the entire 1,100-acre watershed it serves. USEPA data for similar sized stormwater treatment wetlands indicate a 50-75% reduction in a wide variety of runoff particulates and pollutants.

Community & economic benefits that have resulted from the project: The Wilcox Wetland Preserve provided stormwater quantity and quality functions for a rapidly developing 1,100-acre watershed, provides a 40-acre community park, helped stimulate residential, commercial, and

industrial development, as well as increased property values of the surrounding properties.

Additional Information

Links to images: Plans, images, and further information are readily available from the landscape architect.