



Green Infrastructure & Stormwater Management CASE STUDY

Blacklick Creek Greenway Recreational Trail -Phase 7

Location: Columbus, OH

Client: Columbus and Franklin county Metropolitan park District

Design Firm(s): S&H Engineering, P.E. and Metro Parks Design Section, Landscape Architects

Landscape architect/Project contact: William A. Buescher, RLA

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ASLA Chapter: None

Project Specifications

Project Description: The project involved the relocation on a public roadway to allow room for the construction of Phase 7 of the Blacklick Creek Greenway Trail. A stormwater wetland was constructed to handle the runoff from 38.1 acres of watershed. The stormwater runoff was directed into a sediment control forebay with a capacity of 4,149 c.f. and a water quality wetland pond with a capacity of 38,540 c.f.. The total disturbed area with 10.1 acres. The majority of the project was also located within the 100-year floodplain of Blacklick Creek.

Project Type:

Public roadway realignment and greenway trail construction
Part of a new development

Design features: Bioretention facility. The watershed and roadway runoff were captured and passed through a sediment settling basin and then over a vegetated weir into a stormwater wetland basin. Heavy flows above the normal wetland pool elevation are held and metered out through a draw down oriface. An overflow structure is in place to handle 100-year storm events.

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

County ordinance, local ordinance, permitted by both County and City

Impervious area managed: 1 acre to 5 acres

Amount of existing green space/open space conserved or preserved for managing

stormwater on site: 1 acre to 5 acres. Existing parkland was used to construct the trail and the stormwater wetland.

The regulatory environment and regulator was supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? The stormwater wetland was intended to become an educational component with interpretive signs describing the stormwater runoff treatment.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: \$100,000-\$500,000 (Public funding: Local, county property tax park district levy)

Related Information:

- Total cost \$114,500

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: Since the project was almost entirely within existing parkland the goal was to limit the disturbance of the existing parkland. This helped to keep the amount of disturbed area to minimum and the costs of restoring and seeding the land to minimum.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?

Slightly increased. The plan to capture the flows from the 38.1 acre watershed and treating the storm water runoff within the storm water wetland did require a larger basin to be graded and planted with wetland plantings. The watershed is currently not within parkland, it is mainly farmland which has the potential for future development. The storm water will help protect the creek from farm nutrient runoff and future development runoff and sediment control.

Number of jobs created: During construction approx. 20

Job hours devoted to project:

Planning and Design: Aug, 2008 to Nov. 2009 for approvals, 7 plan submissions

Construction: Jan. 2010 to Sept. 2010

Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:

The stormwater wetland has a normal pool of water which has an EPDM liner to help maintain the saturated soil conditions and water elevations to support the wetland plants. The water

quality pool above the normal pool elevation is designed for a 3/4" rain and has a draw-down orifice for a 24-hour draw-down. The 2-year storm events are detained on-site and do not exceed pre-development runoff rates.

Community & economic benefits that have resulted from the project: The completion of this section of the Blacklick Greenway Trail is a critical link in establishing a regional bikeway that will provide safe routes for alternative transportation by bike and providing opportunities for exercise and enjoyment of nature. Many neighboring housing developments are beginning to tie into the trail network which is an amenity for these developments.

Additional Information

Links to images: Please contact us to send photos, etc. via email.