Green Infrastructure & Stormwater Management CASE STUDY

Saylor Creek Watershed Improvements

Location: Prairie Trail, Ankeny, IA
Client: City of Ankeny
Design Firm(s): Nilles Associates
Landscape architect/Project contact: Roger Silver, ASLA
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ASLA Chapter: Iowa

Project Specifications

Project Description: The city of Ankeny, Iowa developed park areas within a new development including two 5-acre lakes, associated forebays, constructed wetlands, and over 4,000 LF of creek stabilization improvements. The system serves as stormwater detention and water quality treatment for the 1,100 acre development with the city. The lakes and creek create new recreational opportunities for the community as well. Native vegetation and trails were incorporated into the design.

Project Type:
Open space -park
Part of a new development

Design features: Bioretention facility, bioswale, constructed wetlands, lake forebay, and riffle dams.

This project was designed to meet the following specific requirements or mandates:
State statute, local ordinance, to meet funding criteria, developer/client preference

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

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? Road crossings, trails, fishing structures, native plantings.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $1,000,000-$5,000,000 (Public funding: Local, WIRB grant (Watershed Improvement review Board) Iowa)

Related Information: $4.7 million total construction costs over 3 projects. Bid items included materials, equipment and labor so we do not have a break out for those figures.

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: Areas for improvements were designated on a project master plan. The improvements were developed within these designated areas. Cost of preserving these areas had little effect on overall costs. There were costs associated with trails, tree planting, and maintenance, but the additional greenspace surrounding the improvements helped to reduce the construction costs of the creek stabilization by allowing room for lower cost solutions.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs.

Number of jobs created: Unknown

Job hours devoted to project:

Planning and Design: Over 3,000
Construction: Over 3,000
Annual Maintenance: 40

Performance Measures

Stormwater reduction performance analysis:
The lakes and associated treatment practices were designed to detain and treat a 1.25-inch rainfall event.

Community & economic benefits that have resulted from the project: Increased property value of exisitng and planned residential, commercial, and office uses adjacent to or with views of the lakes and park areas.

Additional Information

Links to images: http://www.nillesinc.com/services/stormwater.htm