Green Infrastructure & Stormwater Management CASE STUDY

Kellogg Creek Restoration

Location: Concord Township, OH
Client: Lake County Stormwater Department
Design Firm(s): URS Corporation, Cleveland
Landscape architect/Project contact: Thomas Evans, ASLA
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ASLA Chapter: Ohio

Project Specifications

Project Description: The Kellogg Creek Stream Restoration project restores ecological functions to suburban stream corridor and thereby relieves flooding, bank erosion, and restores habitat to a 2,200 lineal foot stream corridor. Restoration of floodplain functions through a corridor with closely abutting condominiums and single family homes reduces flood elevations by up to 2' and removes numerous structures from the floodplain.

Project Type:
Other (please specify)
A retrofit of an existing property

Design features: Stream restoration to relieve flooding and erosion.

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

Impervious area managed: greater than 5 acres

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 1 acre to 5 acres. About 2 acres of additional stream corridor easements were acquired and preserved thru this project.

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? Providing flood relief along the 2,200 lineal foot stream corridor will relieve flooding and enhance property values of about 25 residences.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $500,000-$1,000,000 (Public funding: Local - project funded by local stormwater fees.)

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: Adjacent homeowners and the condominium association voluntarily donated additional stream easements in order to increase the constructed floodplain width and increase project effectiveness.

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: 5

Job hours devoted to project:

Planning and Design: 2,000
Construction: 4,000
Annual Maintenance: 40

Performance Measures

Stormwater reduction performance analysis:

HEC RAS modeling indicates that restoration of floodplain functions within a 40' easement corridor along the 2,200 lineal foot stream channel provides about 5 acre-feet of stormwater storage which reduces flood elevations by up to 2' and removes 8 residential structures from the floodplain. The project serves a suburban watershed of about 300 acres.

Community & economic benefits that have resulted from the project: The project depended on building homeowner support and donation of stream easements. Removal of structures from the 100-year floodplain reduces flood insurance costs, and increases property values in this suburban neighborhood. The project represents the first stream restoration project undertaken by the Lake County Stormwater Department and as such provides a demonstration project for Lake County.

Additional Information

Links to images: A project profile with images, description and plans are readily available from the landscape architect.

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