Green Infrastructure & Stormwater Management CASE STUDY

South Grand Great Streets Improvements

Location: St. Louis, MO
Client: East/West Gateway Metropolitan Planning Organization
Design Firm(s): Design Workshop, Inc.
Landscape architect/Project contact: Kurt Culbertson, FASLA
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ASLA Chapter: Colorado

Project Specifications

Project Description: We are installing a six block redevelopment of South Grand which includes porous pavement in sidewalks and rain gardens in the bulb outs.

Project Type:
Transportation corridor/streetscape
Part of a redevelopment project

Design features: Rain garden, porous pavers, and curb cuts.

This project was designed to meet the following specific requirements or mandates: We scored the project against LEED and Sustainable Sites but our intent was to exceed both.

Impervious area managed: 5,000 sq/ft to 1 acre

Amount of existing green space/open space conserved or preserved for managing stormwater on site: 5,000 sq/ft to 1 acre

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? I believe this project provides the most extensive use of metrics for a landscape architecture project in the United States. All of these factors and more were considered.

Cost & Jobs Analysis

Estimated Cost of Stormwater Project: $1,000,000-$5,000,000 (Public funding: Federal)

Related Information: Total project cost is about $3.1M, a portion of which was for the rain gardens and porous paving in the sidwalks. However, total planting area was also expanded through this redevelopment which further reduced impervious surfaces.

Was a green vs. grey cost analysis performed? No. There was a modest analysis of the cost of porous paving versus traditional broom finished concrete, but it was our intent from the outset to manage stormwater through green techniques.

Cost impact of conserving green/open space to the overall costs of the site design/development project: I would say nothing.

Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)? Did not influence costs. This project was constructed with federal stimulus funds. As St. Louis is under federal court order to resolve issues associated with its combined sewer system, the city had a great interest in demonstrating green stormwater techniques.

Number of jobs created: Unknown.

Job hours devoted to project: Not available

Planning and Design: Not available
Construction: Not available
Annual Maintenance: Not available

Performance Measures

Stormwater reduction performance analysis:
We estimate that 100% of the stormwater falling onsite will be captured on site.

Community & economic benefits that have resulted from the project: The project includes a "road diet" in which the roadway was reduced from four lanes (two each direction) to two lanes each direction with a center turn lane. As a result traffic speed was significantly reduced and related traffic noise dramatically reduced. It is projected that there will be a significant reduction in accidents and as a result substantial savings to private property owners and the city. It is further projected that the redevelopment will yield positive sales tax growth to the city, yielding a positive fiscal return on investment from the public funds expended.

Project Recognition

Central States ASLA Honor Award