

Green Infrastructure & Stormwater Management CASE STUDY

Nannie Helen Burroughs Avenue

Location: Washington, D.C.


Client: District of Columbia Department of Transportation

Design Firm(s): Low Impact Development Center, RMA, EEK

Landscape architect/Project contact: Meredith Upchurch, ASLA

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ASLA Chapter: Potomac







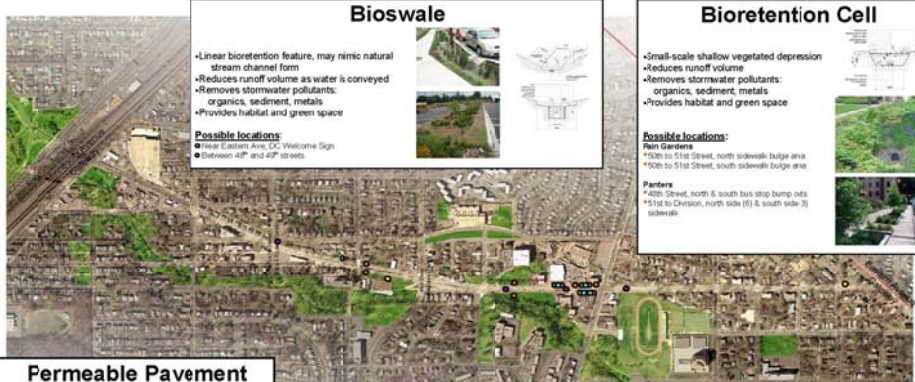
Nannie Helen Burroughs Avenue Great Street

Proposed Low Impact Development Practices

Stormwater solutions which support sustainable urban design





Bioswale

- Linear bioretention feature, may mimic natural stream channel form
- Reduces runoff volume as water is conveyed
- Removes stormwater pollutants: organics, sediment, metals
- Provides habitat and green space

Possible locations:

- Near Eastern Ave. DC, Welcome Sign
- Between 4th and 6th streets

Bioretention Cell

- Small-scale shallow vegetated depression
- Reduces runoff volume
- Removes stormwater pollutants: organics, sediment, metals
- Provides habitat and green space

Possible locations:

Rain Gardens

- 50th to 51st Street, north sidewalk bulge area
- 50th to 51st Street, south sidewalk bulge area

Panthers

- 4th Street, north & south bus stop bump outs
- 51st to Division, north side (S) & south side (S) sidewalk

Permeable Pavement

- Reduces runoff volume
- Removes pollutants: sediment, oils and grease, metals
- Reduces urban heat island
- Aesthetic value: many color and pattern options
- ADA compliant pavement

Possible locations:

- North side of 4th to 6th
- Between 5th and Division Ave.

Vegetated Filter Strip

- Includes soil amendments and sustainable landscaping
- Reduces runoff volume
- Provides habitat and green space

Possible locations:

- 40th Street, Slope on the northside of 1st St
- 50th to 51st Street, Median
- 51st Street to Division, Sidewalk
- Division to 50th Street, Median

Street Trees

- Reduces runoff volume
- Reduces urban heat island
- Improves air quality
- Reduces noise and wind effects
- Provides shade

Healthy tree pilot locations:
(structural soil under permeable pavement)

- 5th St. to Division Ave.
- North side of 40th to 42nd

Nannie Helen Burroughs Ave. is a neighborhood street with "green" practices that builds on its history and park-like context with great access to Watts Branch trail and the Kenilworth Aquatic gardens.

For additional information, please contact:

District Department of Transportation (DDOT) 64 New York Avenue,
Alli Shakeri, PE Ward 7 & 8 Program Manager (202) 671-6712 or alli.shakeri@dc.gov

Project Specifications

Project Description: The Nannie Helen Burroughs Ave. project is both a D.C. Great Streets project and a green street. The Great Streets project promote economic development through

streetscape improvements and this 1.5-mile project included as a primary goal to manage stormwater from the street using Low Impact Development. Stormwater management includes bioretention areas, bioretention planters, bioswales, permeable paving, soil amendments, and improved street tree planting. Stormwater runoff from the street is reduced significantly before it flows into Watts Branch, the Anacostia River, and the Chesapeake Bay.

Project Type:

Transportation corridor/streetscape

A retrofit of an existing property

Design features: Bioretention facility, bioswale, porous pavers, and curb cuts.

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

Local ordinance, developer/client preference

Impervious area managed: 1 acre to 5 acres

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 supportive of the project.

Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements? In this currently disadvantaged neighborhood, the LID is intended to be an enhancement to the neighborhood and this was a primary consideration during design.

Cost & Jobs Analysis

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

Related Information: [I can provide more detailed information.](#)

Was a green vs. grey cost analysis performed? No

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

Number of jobs created: Not Available

Job hours devoted to project:

Planning and Design: 2,000 estimate

Construction: 2,500 estimate

Annual Maintenance: 90 estimate

Performance Measures

Stormwater reduction performance analysis:

LID captures and treats 25% of project area (2.15 of 8.44 acres). SWMM Modeling shows LID reduces runoff by 12%. LID fully captures & treats the 1" rain event and the 1-year, 24 hour (2.7") rain event.

Community & economic benefits that have resulted from the project: Project is under construction in 2011.

Project Recognition

EPA Green Highways Initiative project

Additional Information

Links to images: <http://www.lowimpactdevelopment.org/nhb/>

http://www.lowimpactdevelopment.org/nhb/downloads/NHBLIDToolsposter9.30.08_8.5x11.pdf