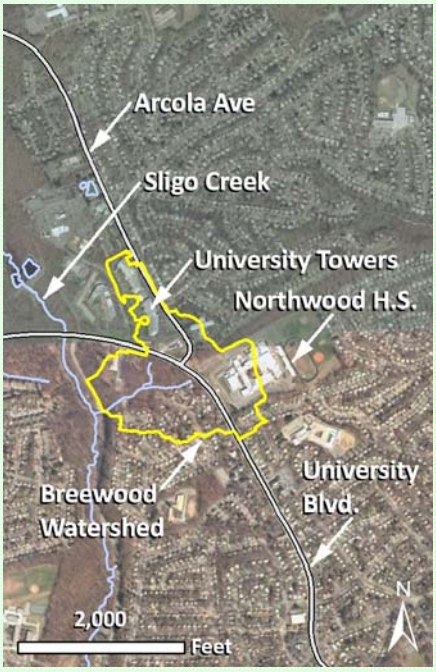
Watershed Restoration Factsheet: University Towers/Northwood Presbyterian Church LID Retrofit Project



Breewood Watershed vicinity map showing location in Silver Spring, MD.

Project location for stormwater retrofits at the University Towers Condominiums and Northwood Presbyterian Church.

Breewood Watershed Facts:
Watershed: Breewood Tributary is a subwatershed of Sligo Creek, which drains to the Anacostia River.
Watershed size: 58 acres (0.09 sq. mi.)
Watershed imperviousness: 38%

Property Ownership:
University Towers HOA, Maryland State Highway Administration, Montgomery County, Presbytery of Washington City, Kemp Mill Estates Townhomes HOA

Restoration Goals:
Implementation of innovative stormwater management practices on the University Towers and Northwood Presbyterian Church properties to improve water quality and the health of the Breewood Tributary.

Restoration/Retrofit Project Facts:
Number of retrofits anticipated: 10
Total impervious area treated: 4.4 acres
Project status: 30% design
Estimated construction start: Fall 2015

Other Facts:
The stream channels associated with the Breewood Tributary will be stabilized and restored in conjunction with this project.

Project Description

The Montgomery County Department of Environmental Protection has identified the Breewood Tributary for the implementation of an innovative, comprehensive watershed management plan. This plan includes both upland stormwater source control measures and stream restoration/stabilization.

This plan is designed to assist in compliance with the County's Municipal Separate Storm Sewer System (MS4) permit by addressing major sources of water quality impacts, including uncontrolled stormwater runoff. Restoration actions will improve water quality, stream health, and ecological function in the Breewood Tributary and downstream waters, including Sligo Creek. As part of this effort, stormwater retrofit planning and design is underway for public and private properties in the Breewood watershed.

Pre-Restoration Conditions

The Breewood watershed is fully developed, with 38% impervious cover. Land cover includes medium and high density residential areas, roadways, institutional uses (school and church), and forested parcels along the Breewood Tributary. The Breewood Tributary is typical of an urbanized stream channel. Much of the tributary has progressively down-cut, with steep, eroding banks. Upland properties have little stormwater management, with piped drainage to the stream system.

Eroding stream banks along the Breewood Tributary.

Restoration/Retrofit Actions and Benefits

The initial investigation in the Breewood watershed found the most promising stormwater retrofit opportunities within the grounds of University Towers Condominiums. All parking lot runoff is currently piped, with no existing treatment. Stormwater retrofits will focus on capturing and treating parking lot runoff.

The proposed stormwater retrofits use bioretention, also known as rain gardens. These small-scale, attractive landscape features provide water quality treatment for small storms (one inch or less), with safe bypass for larger storms. Located around the perimeter of the parking lot, the bioretention facilities will improve water quality by using natural soil and vegetation processes to remove common stormwater pollutants, including sediment, oil and grease, nutrients, and heavy metals. Additionally, permeable pavers will be installed at several locations throughout the parking lot to avoid loss of parking spaces. Permeable pavers allow water to pass through the surface and soak into underlying soils.

Landscape design and plant selection in the proposed bioretention facilities will complement the current landscaping plan at University Towers. The County will work with the community to minimize parking impacts during and after construction. Bioretention facilities are designed to draw down collected water within 24 hours and dry out between storms, eliminating concerns about mosquitoes.

A total of 5 bioretention and 4 permeable paver retrofit opportunities were identified at University Towers, with one additional retrofit at Northwood Presbyterian Church. Collectively, these retrofits will provide water quality treatment for approximately 4.4 acres of impervious area, improving the health of the Breewood Tributary, Sligo Creek, and the Anacostia and Potomac Rivers.

Retrofit opportunity in western University Towers parking lot.

Retrofit opportunity in grass swale on east side of University Towers.

Example of a bioretention cell retrofit in a parking lot.

Example of a permeable paver retrofit in an existing parking lot.

For more information:
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