

Watershed Restoration Factsheet:

University Towers/Northwood Presbyterian Church Stormwater Retrofit Project



Locations of stormwater retrofit projects at University Towers and Northwood Presbyterian Church

Breewood Watershed Facts:

Watershed: Breewood Tributary is a subwatershed of Sligo Creek, which drains to the Anacostia River.

Watershed size: 63 acres

Watershed imperviousness: 38%

Property Ownership:

University Towers HOA, Presbytery of Washington City

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: 12

Total impervious area treated: 4.4 acres

Project status: 30% design

Estimated construction start: Fall 2016

Other Facts:

The stream channels associated with the Breewood Tributary have been 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.

The 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. Implementation of this plan 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, design and construction is underway on public and private properties in the Breewood watershed including University Towers and Northwood Presbyterian Church.

Pre-Restoration Conditions

The Breewood watershed is fully developed, with 38% impervious cover. Land cover includes

medium and high density residential areas, roadways, institutions (school and church), and forested parcels along the Breewood Tributary. The Breewood Tributary is typical of an urbanized stream channel.

Eroding stream banks along the Breewood Tributary



Much of the tributary has progressively down-cut, with

steep, eroding banks. Upland properties have little stormwater management and piped drainage to the stream system.

Restoration/Retrofit Actions and Benefits

Assessments conducted in the Breewood watershed determined that University Towers is the largest source of uncontrolled stormwater runoff flowing into the Breewood Tributary. Other sources of stormwater runoff in the watershed including, Northwood High School, Hemingway Ct. townhouses and the Breewood Manor neighborhood all have stormwater management facilities in place.

Currently, stormwater runoff from parking lots at the University Towers is piped directly to the Breewood Tributary with no treatment. Stormwater retrofit projects have been identified at both the University Towers and Northwood Presbyterian Church that will capture and treat

stormwater prior to entering the Breewood Tributary.

Proposed stormwater retrofit practices at University Towers include **three (3) bioretention areas, one (1) micro bioretention, five (5) tree boxes, and three (3) permeable paver areas. One (1) bioretention area is proposed at Northwood Presbyterian Church.** These stormwater practices, called Environmental Site Design (ESD) practices, are intended to capture and treat stormwater runoff from small drainage areas or sections of parking lot by: 1) filtering pollutants from stormwater, 2) reducing the overall volume of stormwater flowing from University Towers to the Breewood Tributary and 3) allowing water to soak into underlying soils and recharge groundwater supplies which helps maintain stream flow in the Breewood Tributary during dry periods.

Stormwater that flows into bioretention facilities, raingardens and tree boxes

soaks down through the planting media and into layers of sand and gravel. It's during this process that much of the pollutants are removed. Some pollutants, such as bacteria, oils & greases are broken down by microbes in the soil, while others, such as metals, are retained in the mulch and soil media, which is periodically removed and replaced during routine maintenance.

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 gaps between the pavers to a gravel bed where it is held until it either drains out an underdrain or soaks into underlying soils.

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

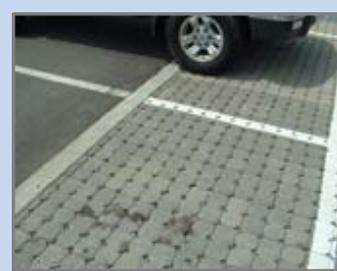
Example of a bioretention facility



Example of a tree box



Example of permeable pavers



For more information:

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