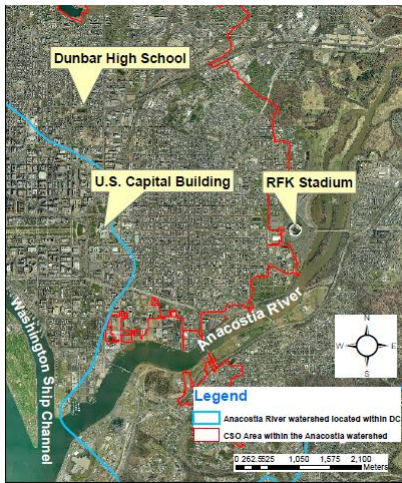




## GREEN STREETS | GREEN JOBS | GREEN TOWNS INITIATIVE

The Green Streets, Green Jobs, Green Towns Partnership (G3) aims to stimulate the green jobs market and enable families to work where they live and play. Small to mid-sized communities can boost their local economies and protect water resources through the use of watershed planning, design and construction of stormwater best management practices.



## “GREEN-O-VATION” PROJECT – O STREET GREEN STREET AT DUNBAR HIGH SCHOOL - WASHINGTON, DC

Washington, D.C., illustrates innovative green infrastructure with a twist – integration into a high school curriculum

The Washington DC City Government has redesigned a portion of O Street, NW, as a green street concurrently with the rebuilding of adjacent Dunbar High School. The “Green-O-vation” project is an excellent demonstration of how implementation of innovative stormwater elements can be integrated into an existing construction project. Three District Departments (Environment, General Services, and Transportation) collaborated to design and build the green street, which includes 6,125 square feet of bioretention cells to retain 1.2” of stormwater from a 1.2 acre drainage area.

Stormwater management and retainage/ treatment on site is even more important in this area of the DC, served by a combined sewer system (CSS). During heavy rainfall, sewage and stormwater combine and overflow directly into the Anacostia River. This project will help retain approximately 39,549 gallons of stormwater from reaching the CSS during a 1.2” rain event. The project also helps

relieve flooding in two adjacent neighborhoods that have frequently flood during storms, showcasing yet another advantage of the green street project.

One final benefit of the project is the ability to engage the students at Dunbar High School. This institution was founded as the first public high school for African American students in the United States. Since its founding, Dunbar has graduated many well-known alumni including Sterling Brown, H. Naylor Fitzhugh, Nannie Helen Borroughs, Duke Ellington, current District congressional Delegate Eleanor Holmes Norton and former District Mayor Vincent C. Gray.



1.2 acres fully treated in rainfall events up to 1.2”



39,549 gallons stormwater retained on site per severe rain event



6,125 ft<sup>2</sup> of bioretention



41 trees



900 native plants



Hundreds of students engaged per year



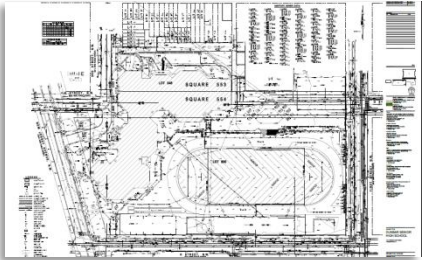
# PROJECT ELEMENTS

- **Impervious pavement removal**– Removal of pavement – about 8 feet of roadway to narrow it – allows installation of other practices that treat stormwater.
- **Bioretention cells** – These features filter and reduce stormwater runoff, allowing it to infiltrate into the ground before it enters into the storm drain system.
- **Tree pits and expanded tree wells**– Extended tree pits and wells into the street both reduces impervious surface cover and also reduces street area, narrowing the road and slowing traffic, increasing likelihood of pedestrian use.
- **Increased Urban Tree Canopy**– In urban areas a single tree can intercept from 500 to 4,000 gallons per year. Even young, small trees help, capturing 50 gallons per year. Trees not only treat stormwater, they provide a host of other benefits, including energy cost reduction in both summer (shade) and winter (proper placement can result in the reduction of energy use by 20-50%), aesthetics, property value enhancement, business traffic enhancement, and health benefits.
- **Educational Signage** – Due to the proximity to Dunbar High School, this site will be used for years to come to teach students about stormwater management. The project is already being integrated into the school’s curriculum.

G3 Grant Awarded: \$95,000  
Match Contribution: \$436,626  
Status: Completed 2015



green street



# SUSTAINABILITY & GROWTH: ADDITIONAL GREEN ACTIVITIES

This project not only helps the District attain the Sustainable DC target of using 75% of the existing landscape to manage stormwater runoff, but serves as an important model for installing low impact development (LID) in the public right of way. This project was designed to retain runoff from the 90<sup>th</sup> percentile storm for a 52,877 square foot drainage area. This aggressive approach at reducing stormwater runoff helps show agencies throughout the District and the region that stormwater retention projects can be successfully implemented in areas with limited space and considerable institutional barriers. Development of the design for this project displayed strong collaboration between local government agencies with varying responsibilities. This program is also designed to provide information about the impact of LID in the District on reducing combined sewer overflows to the Potomac River and Rock Creek.

The project will have extremely local benefits as well, complementing other green aspects of the new Dunbar High School building. The new building was designed to achieve LEED Platinum for Schools certification. The new school uses a geothermal heat pump, a 500,000 kW photovoltaic array, two 20,000 gallon cisterns for reusing stormwater, enhanced acoustics, materials with low concentrations of volatile organic compounds, and plentiful daylight and views. The green street project provides educational value and serve as an outdoor classroom demonstrating “real life” restoration and stormwater management to the student body and faculty of Dunbar High School and the surrounding community. Project engineers and Dunbar High School Faculty work together to integrate the “Green-O-vation” project into environmental science and sustainability lesson plans.



Similar efforts: DC’s 1<sup>st</sup> St NE Green Street



Similar efforts: Jay St NE Green Street

Project Partners: District Department of the Environment; District Department of General Services, District Department of Transportation, EE&K Architects and Engineers, Moody Nolan Architect, Chesapeake Bay Trust, U.S. Environmental Protection Agency