



## G3 GRANT

### THE FLOWER AVENUE GREEN STREET

GREEN STREETS ● GREEN JOBS ● GREEN TOWNS

#### PROJECT INFORMATION:

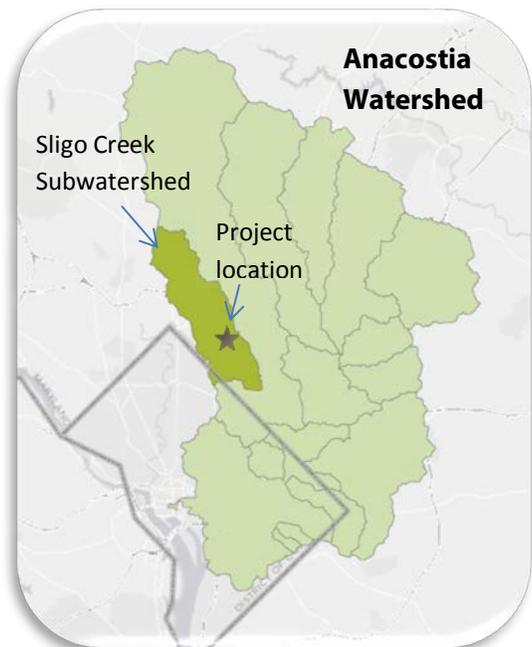
<b>Location:</b>	City of Takoma Park, MD
<b>Project Type:</b>	Final Design
<b>Restoration Practices:</b>	Stormwater curb extension, bioretention cells, bioretention swales
<b>Funding:</b>	Chesapeake Bay Trust and U.S. Environmental Protection Agency
<b>Amount Awarded:</b>	\$20,000
<b>Additional Funding Leveraged:</b>	\$1,940,330
<b>Status:</b>	In Process
<b>Key Words:</b>	Green street; urban retrofit; Anacostia; Chesapeake Bay

#### PROJECT OVERVIEW

The City of Takoma Park is a community in Montgomery County, MD, that borders Washington, D.C. In 2011, the City was awarded a \$20,000 Green Streets, Green Jobs, and Green Towns (G3) grant to support the redesign of a heavily-used road with little stormwater management into a green and complete street. In spite of the lack of continuous, well-maintained sidewalks, people of all ages walk up and down Flower Avenue to get to and from work and school. The project's overall goal is to reduce the runoff of polluted water into the nearby creek system while promoting safe pedestrian, bicycle, and vehicular use.

Support for the Flower Avenue green street project has been strong. The project was spearheaded by a conversation between the City and the Maryland State Highway Administration (SHA) to

transfer ownership of the road from SHA to the City, along with \$696,000 in reconstruction funds. The City then approached Montgomery County and the G3 grant program to secure additional design and reconstruction funds totaling \$220,000. Since that time, the roadway's final redesign is nearer completion and additional reconstruction dollars have been obtained. Construction is scheduled to commence in 2015.



**Project Location:** Sligo Creek Subwatershed (Anacostia River), City of Takoma Park, Montgomery County, MD

## TAKOMA PARK BACKGROUND

The City of Takoma Park is bordered by Washington, D.C. on the south and Prince George’s County, MD, to the north and east. Small in size (2 mi<sup>2</sup>) but densely inhabited (17,000 residents), the City was first incorporated in 1890. Flower Avenue was developed as a state highway that connected the City and Washington Adventist University to other nearby areas. By the 1990s, Flower Avenue functioned as more of a local street than a state highway, and ownership of portions of the roadway were transferred to Montgomery County and Takoma Park. In November 2010, Takoma Park City Council proposed that the City take ownership of the remainder of Flower Avenue in exchange for a one-time payment of \$696,000 – the amount that SHA had planned to spend to repave the road. The City agreed to use the state payment to reconstruct Flower Avenue as a green street.

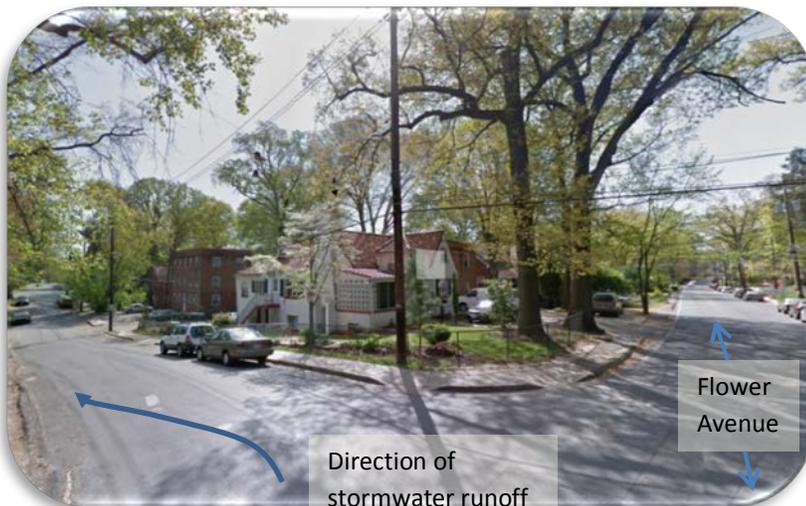
## PROJECT NEED

The newly acquired portion of Flower Avenue is a two lane road just under a mile long with a posted speed limit of 25 miles per hour. In spite of the lack of continuous sidewalks on the road’s eastern side, lack of American with Disabilities Act (ADA) compliant sidewalks on both sides, limited crosswalks, and speeding traffic, Flower Avenue is a popular place for residents to walk. It’s also a popular place to catch a bus. There are sixteen bus stops along the corridor: eight in each direction.



**Existing Asphalt Path (east side):** Walking on the east side’s asphalt path can be dangerous.

Polluted runoff from rain events or snowmelt is also an issue. Unlike newer streets which are generally constructed with catch basins or inlets that direct rain water into underground pipes, Flower Avenue has very little stormwater infrastructure. Only two inlets exist, both opposite each other on Flower Avenue 600 feet



south of the intersection with Domer Avenue; adding more would be cost-prohibitive. The City is instead focusing on installing green infrastructure measures (e.g.: rain gardens/ bioretention cells, permeable paving, swales) to slow down and reduce runoff into the local creek system.

**Flower Avenue, looking north:** During rain events, water flows onto nearby properties or side streets, quickly making its way to the creek. Here, water flows to a storm inlet on Dover Avenue. The roadway itself only has two storm drain inlets.

In the City's 2012 Watershed Implementation Plan, the retrofit of Flower Avenue as a green street was identified as one of several projects necessary to meet the City's Chesapeake Bay Total Maximum Daily Load (TMDL) goal to retrofit 20% of the City's existing impervious surfaces – such as roads, sidewalks, pavement, and rooftops – with improved stormwater management. Of the 79 retrofit acres necessary to meet the 20% goal, the City had retrofitted 14 acres of impervious area with green stormwater infrastructure by 2012 and had identified an additional 13 acres in credits for existing street sweeping, stream restoration, and tree planting activities. The Flower Avenue green street retrofit is expected to increase the number of acres retrofitted by between 0.6 to 3.6 acres.

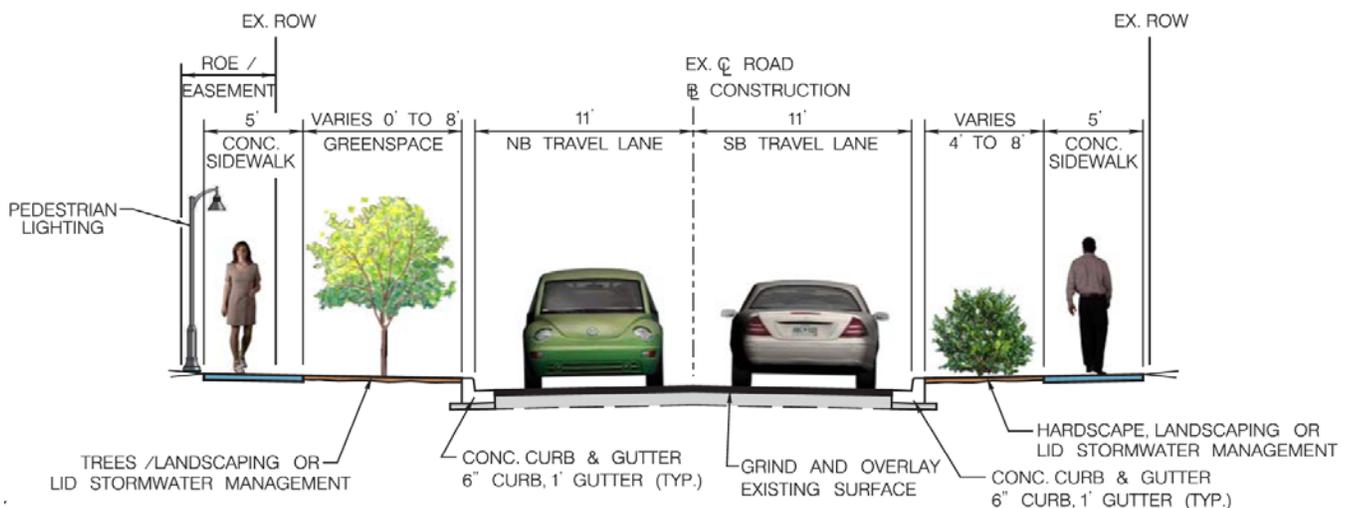


**Community Meeting.** Several community meetings were held during the process.

### FLOWER AVENUE GREEN STREET PROJECT

The Flower Avenue project kicked off in October 2011 with a land survey to identify the location of the right-of-way and property boundaries. By May 2012, a consultant team was chosen to prepare designs, details, and cost estimates and administer construction.

Typical of older urban communities, the extensive system of underground utilities and narrow right-of-ways (area between the property lines on each side of the road) proved challenging when designing the green street retrofit. The road's hills and bends affect the speed and direction of water flow, and there is limited curb and gutter. In addition, while the City wanted to target retrofits in public spaces that could be easily maintained, the



**Flower Avenue Improvements:** A cross-section of a proposed section of the roadway improvement. Here, parking has been removed to accommodate wider, ADA-compliant sidewalks and green stormwater infrastructure improvements.

design team had to steer clear of any areas with high foot traffic or parking demand. All of this served to limit the number of locations suitable for siting green stormwater infrastructure.

Two community meetings were held during the design process to engage community members in the design process and to allow the design team the ability to refine the designs based on community comments. From this, the team gathered information on community concerns regarding street safety and parking needs. Community members also expressed a desire to see additional green stormwater infrastructure features integrated into the design. A revised concept plan was released in September 2013.

### CHALLENGES AND LESSONS LEARNED

Community support for the Flower Avenue green street project has been strong, with residents from both community meetings encouraging the project to incorporate as much “green” into the design as possible. Pushing the envelope, however, has required the City to find ways to more than double the original budget.

Also impacting the budget and time frame has been the need to gain approval and coordinate improvements with the local water utility. About halfway through the design process, the City learned that the water utility was set to begin a water main replacement program in 2015 along Flower Avenue. The City successfully negotiated an agreement to incorporate water main replacements into the road reconstruction project. As one of the first projects of its kind, the local utility has not yet established siting guidelines or a review procedure to ensure that such practices are designed and installed in a manner that protects water and sewer utilities while ensuring the long-term efficacy of green infrastructure. Discussions regarding the location of green stormwater infrastructure practices in relation to water and sewer lines are ongoing.

### LEVERAGING RESOURCES AND ACTIONS

Seizing a significant opportunity, the City of Takoma Park has taken full advantage of the transfer of Flower Avenue’s ownership to redesign a street made only for cars to one that integrates the needs of all users.

The City has worked diligently to expand its budget and planning efforts to ensure that stormwater, utility, bicycle, pedestrian, and public transportation accommodations are incorporated in the street’s redesign. It has also looked for ways to save money by coordinating efforts with other right-of-way projects where possible. Over time, the City believes that these long-term investments will reap rewards in terms of the overall health of the community, the local waterways, and the Chesapeake Bay watershed.

Source	Funding Amount
MD SHA	\$696,000
G3 Grant	\$20,000
NFWF Grant	\$168,750
NCR Grant	\$1,040,330
County	\$200,000
City	\$106,250
Local Utility*	- TBD -
<b>Total</b>	<b>\$2,231,330</b>

\*To cover the cost of the water main switch

For more information, visit: <http://floweravenue.takomaparkmd.gov/>

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**Photo Credits:**

P. 1, project location map, canvas/world light gray base layer ©2014 Esri, DeLorme.

P. 2, asphalt path, east side, Google maps. Google, April 2012. Web 28 February 2014.

P. 2, Flower and Dover Ave intersection, Google maps. Google, April 2012. Web 28 February 2014.

P. 3, community meeting, City of Takoma Park.

P. 3, Flower Avenue Improvements, City of Takoma Park.