Metropolitan Washington
Council of Governments

Montgomery County's CBPC Stormwater Tour Highlights
Breewood Tributary Restoration
May 19, 2017

I. MONTGOMERY COUNTY'S STORMWATER PROGRAM BACKGROUND

A. Montgomery County includes eight local watersheds within the Potomac and Patuxent River Basins.

B. Montgomery County projects target the most impaired watersheds first, based upon the County's watershed plans.

II. BREEWOOD TRIBUTARY RESTORATION PROJECT

A. Background on the area (see the map in the Montgomery County handouts)

- Part of the Anacostia Watershed, considered "poor water quality"
- The tributary is 42% impervious
- The neighborhood was constructed in the early 1960s-pre stormwater treatment
- 18.2 acres of controlled stormwater, by Montgomery County
- 8 acres of uncontrolled stormwater, because University Blvd. is in the control of State Highway Administration

B. Project details

- 10 green street practices
  - Locations constrained by pre-existing infrastructure (utilities, trees)
  - Designed to treat 1 inch of rain; retention period is 48 hours.
    - Retention is perceived well in this neighborhood, but in other neighborhoods there is concern over standing water with Zika virus, etc.
  - The stream restoration was completed first, followed by the rain gardens 2nd, and the bioretention will be completed 3rd.
- 3 Rainscape practices
  - Residents get stormwater credits for both the installation and for the maintenance.
- 1,200 linear feet stream restoration
  - Design phase and Army Corps permitting were challenging (took long).
  - COG's Anacostia Steering Committee identified Breewood Tributary as a good candidate for restoration.
- 1 Bioretention
  - It serves as an overflow for the water that overwhelms the rain gardens upstream.
- Restoration partnerships include Commercial/Faith Based restoration & multifamily Residential
- Project cost is $540K/impervious acre
- Breewood's green infrastructure upstream of the stream restoration is protective of the stream restoration investment.
- Bioretention maintenance is contracted out. Cost for bioretention is $1800/BMP/year.
  - Montgomery County is working with others on developing the National Green Infrastructure Certification Program to improve the quality of work (i.e., identifying native plants in the rain garden versus weeds, and properly situating the rocks for the water to flow into the inlets), and to grow the workforce.
- Project includes pre- and post-restoration monitoring, including:

- Breewood surface water has low to moderate levels of pollutants compared to typical urban runoff, making it harder to demonstrate improvement.
- Outfall and instream monitoring for:
    - Chemistry
    - Flow
    - Rainfall
    - Biological (benthic organisms)

III. CORE TOUR "TAKE AWAYS"

- Implementing green infrastructure requires a diverse skill set: Engineering (as they are engineered facilities that have to work hydraulically), but also landscape architecture (to know which plants will do well and have a positive aesthetic, in neighborhood settings).
- Green infrastructure relies constant 'adaptive management in order to achieve and maintain their functionality – including but not limited to monitoring, material changes, plant substitutions, soil conditions, weather impacts, etc.
- Stormwater implementation challenges included:
    - Army Corps permitting hurdles
    - Project's design phase can have long time horizons (e.g. up to 4 years) because of right-away, permitting and neighborhood coordination requirements)
    - Existing infrastructure — retrofitting landscapes requires working around existing underground utilities, ground slopes, etc.
    - Community perceptions — need to foster good relationships, and the County relies on residents for some maintenance (i.e., mowing around rain gardens, removing trash).
- Pre- and post- monitoring helps to measure the project's impacts and determine if refinements are needed.
- It's important to look at stormwater program costs holistically:
    - Upstream green infrastructure is protective of stream restoration investments.
    - While one particular project may be more costly than other projects, if that project is a good demonstration site then it also has added benefits (community education). Must look at costs over projects at program level versus project by project.
    - Lessons learned get applied to other projects.