Stormwater Infrastructure and Parks: Comparing Scaled Approaches with Non-Traditional Partnerships
Tuesday, July 23, 2019 | 4:00pm
Professional and Continuing Education Credits

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SPEAKERS

Todd Appel, Managing Director, Quantified Ventures
Nathan Campeau, Barr Engineering Co.
Emily Rice, District of Columbia Department of Energy and Environment
Outcomes-based Financing for Green Infrastructure and Other Urban Resilience Projects

Todd Appel
Managing Director
Quantified Ventures
Quantified Ventures is an outcomes-based capital firm seeking to drive positive impacts for health, social and environmental challenges.
OUR TRUE NORTH involves a commitment to:
• Driving impact
• Linking financial results to proven outcomes
• Making a sustainable outcomes-based financing marketplace
Environmental Impact Bond (EIB) for Green Infrastructure in Proctor Creek

Water and Wastewater System Subordinate Lien Revenue Bonds, Series 2018D
Authorized Budget (6 Projects): $13.5 M

Overview:
• Announced in March 2018: DWM awarded opportunity to pioneer first publicly offered EIBs targeting impact-investors
• 100 Resilient Cities partnership – grant funding to structure and market bonds
• $13.5M to finance 6 green infrastructure projects in the upper Proctor Creek watershed
  • Combined and separate sewer areas
  • A mix of ecosystem restoration and urban stormwater BMPs to improve the health and resilience of Westside communities
• Multiple environmental and social benefits
• Expected to provide a total of 6.4 million gallons of stormwater storage capacity, resulting in 56 MG reduction in annual stormwater runoff
## Summary of Urban Green Infrastructure EIBs

<table>
<thead>
<tr>
<th>Primary Value Proposition of EIB</th>
<th>WASHINGTON, DC</th>
<th>ATLANTA, GA</th>
<th>BALTIMORE, MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the cost-effectiveness of green vs. grey infrastructure for CSO reduction?</td>
<td>How can green infrastructure improve local flooding, water quality, and economic conditions?</td>
<td>What are the ongoing operational costs and viability associated with green infrastructure?</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>$25,000,000</td>
<td>$14,020,000</td>
<td>$6,200,000 (est.)</td>
</tr>
<tr>
<td>Term</td>
<td>5 years</td>
<td>10 years</td>
<td>7 years</td>
</tr>
<tr>
<td>Placement</td>
<td>Private</td>
<td>Limited Public</td>
<td>Private</td>
</tr>
<tr>
<td>Structure</td>
<td>3-tiered</td>
<td>2-tiered</td>
<td>3-tiered</td>
</tr>
<tr>
<td>Outcome Metric</td>
<td>Volume capture (flow / runoff)</td>
<td>Volume capture (capacity / storage)</td>
<td>Plant survivability</td>
</tr>
<tr>
<td>Regulatory Driver?</td>
<td>Yes</td>
<td>No</td>
<td>Partial</td>
</tr>
</tbody>
</table>
| Types of GI | • Right of way planters  
• Bioretention on public parks | • Right of way planters  
• Bioretention on public parks  
• Stream & floodplain restoration | • Right of way planters  
• Bioretention on public parks  
• Stream & floodplain restoration  
• Impervious surface removal |
Towerside District Stormwater System

Nathan Campeau, PE, Barr Engineering Co.
Pillars of Prospect Park
Senior Housing, Independent Living, Assisted Living, Memory Care, + Childcare Center
283 units
~$85 million
Opens Spring 2020

The Link
Market Rate + Luxury Housing
Ground level Grocery
336 units
~$71.3 million
Opened Spring 2018

Towerside District Stormwater Park

Green on 4th
Affordable + Market Rate Housing
243 units
~$54.7 million
Opens Summer 2019

The Louis
Affordable + Market Rate Housing
70 units
~$XX million
Opens Fall 2019

Future Development in Contract phase, potential to tie into District Stormwater System
LANDOWNERS

• Pay 100% for water quality treatment
• Long-term O+M

15% $$ Savings

Stormwater as a Resource

WATERSHED

• Pay 100% for stormwater reuse
• Provide grants for reuse
• First 5-year O+M
1. Conveyance
2. Treatment to City standard (2 filtration basins)
3. Underground Storage (1.1 inches off impervious surfaces)
4. Reuse System
Conveyance

1,600 lineal feet of pipe conveys stormwater from four parcels to district stormwater system.

Treatment: Biofiltration

Two basins capture and treat runoff from 8 acres, cleaning to city standard.

Creation of a stormwater park.
Underground Storage

StormTrap system holds 207,000 gallons of filtered water for use by future development.

Reuse System

Reuse system delivers stormwater back to parcels for irrigation and possible industrial use.
~$300,000 treatment
~$360,000 storage + reuse
~$200,000 conveyance

$860,000 total construction

• 15% reduced costs for stormwater management
• 90% TSS and 60% TP reduction, 4.5M gal of reuse
• Creation of habitat
• Incentivize redevelopment
• Park-like amenity
Innovative Financing for Green Infrastructure and Authentic Community Engagement

Supporting the District’s Watersheds, Green Economy, and Social Entrepreneurs

Emily Rice
Environmental Protection Specialist
Department of Energy and Environment
Chesapeake Bay Watershed

Washington, DC
43% Impervious Surfaces in DC
Meeting our Water Quality Goals

1. EPA issues the District a MS4 Permit, which requires us to reduce the amount of polluted stormwater runoff from the District’s watersheds.

2. We developed a Watershed Implementation Plan that details actions to help achieve these requirements.

3. The District implements these actions through a variety of programs and regulations that incentivize, or in some cases require, use of green infrastructure to reduce the volume of stormwater runoff.

4. To fund these initiatives, the District established two special revenue funds.
Special Revenue Sources to Improve Watersheds

1. **Anacostia River Clean Up and Protection Fund (“Bag Fund”)**
   - Comprised of the 5 cent fees on paper and plastic bags
   - ~$2.5 million annually

2. **Stormwater Enterprise Fund**
   - Fees assessed on all District properties, including public lands
   - Based on the property’s amount of impervious surface
   - ~$13 million annually
The Bottom Line

DC cannot meet our water quality goals without actions by residents, businesses, churches, and community organizations.
Financing Options: INCENTIVE PROGRAMS

1. RiverSmart suite of programs provides technical and financial assistance to homeowners, nonprofits, and houses of worship interested in voluntarily installing green infrastructure.

2. Provide discounts on the District’s Stormwater Fee (based on a property’s impervious surface) for all properties with functional green infrastructure.

3. Large parcel tree planting program provides trees on public and private lands throughout the District.

4. Stormwater Retention Credit Trading allows a property to earn revenue for projects that reduce harmful stormwater runoff by installing green infrastructure or removing impervious area.
   • SRC Price Lock Program – allows a property to sell credits directly to DOEE
   • SRC Aggregator Startup Grant – supports technical and outreach work to identify potential SRC-generating GI projects in the MS4
   • SRC Site Evaluation Program – provides technical support to properties looking into the potential for SRC-generating GI projects on a property in the MS4
**Financing Options: COMPETITIVE GRANTS**


2. Green Zone Environmental Program Projects funds watershed-related activities and hands-on training for youth ages 14-24.

3. Community Stormwater Solutions Grants....
Community Stormwater Solutions Grants

Credit: Dance Place

Credit: National Housing Trust
About the Program

Launched in 2016 with the following goals:

1. Reduce impacts of stormwater runoff on the District’s watersheds
2. Fund community-oriented and –inspired projects
3. Expand DOEE’s work with community partners and strengthen existing relationships
4. Provide assistance to newer organizations to help them build capacity
Developed a list of project areas, based on funding source priorities, in order to support a broad range of community-inspired ideas:

- Design, install, and maintain green infrastructure
- Support the District’s emerging green economy, social entrepreneurs, and environmental start-ups
- Restore natural habitat
- Litter cleanups and prevention
- Engage communities, raise awareness, and bring about behavior change
Other Program Considerations

- Applicants must be physically located in the District.
- Projects located in the District’s separated storm sewer system (MS4), Anacostia Watershed, and other Targeted Subwatersheds receive priority points.
- Applicants that have never received a Community Stormwater Solutions Grant received priority points.

Annually – DOEE funds about 10 projects totaling $200,000.
Results

• Awarded 41 grants totaling $764,627
• 60% of grants went to community partners that had not previously received a DOEE grant
• Project budgets range from $2,000-$20,000
• Hosted a 5-week grant writing workshop series
Types of Projects Funded

• Environmental-themed public art projects
• Training for returning citizens on green infrastructure design, installation, and maintenance
• Community events to reduce impacts of trash
• Student-led action projects
• Resources like for school GI projects and the Anacostia Watershed Photo Database
Data from first two years

- 817 students and 950 community volunteers engaged
- 6,664 natives planted
- 30,807 lbs of trash removed from the District’s waterways and natural areas
- 123 community events executed
- 27 storm drain murals created
Strategies for successful and meaningful engagement

- Developed a broad list of project categories to help spark a range of ideas
- Provide multiple pre-application meetings in the community
- Developed and maintained a dedicated mailing list with direct outreach to “non-traditional organizations (like arts orgs)
- Transitioned to an online application
- Hosted free grant writing workshops
- Listen to our stakeholders and update the RFA accordingly
Thank you!
S P E A K E R  C O N T A C T

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Emily Rice, District of Columbia Department of Energy and Environment, emily.rice@dc.gov
MEMBERSHIP

Your connection to information and expertise on new urban park models, practices, and innovative partnerships.

Members have access to a suite of highly-curated resources specifically designed for the parks community including:

• Webinars
• Online resource library
• Urban park study tours
• Advocacy tools
• Discounted registration to Greater & Greener

Join City Parks Alliance today! To learn more, visit our membership table in the exhibition hall or go to cityparksalliance.org/membership.

#greatergreener