Briefing on:

DC Clean Rivers Project
Green Infrastructure Program

Briefing for:

American Water Resources Association
National Capital Region Section

November 12, 2015
Agenda

- Background
- DC Clean Rivers Project
- Green Infrastructure Implementation
- Drivers for Long-term Success
- Questions

![Green Roof at Fort Reno Reservoir](image)
Background: Why Stormwater is a Problem in DC and Other Cities

Natural Environment:
- 0% Impervious Surface

Built Environment:
- 75-100% Impervious Surface
Background:
Sewer Systems in DC

- **Combined Sewer System**
  - Sunny Day:
    - Downspout
    - Storm drain
    - Sewage from domestic, commercial, and industrial sources
    - Outfall pipe
  - Rainy Day:
    - Downspout
    - Storm drain
    - Combined sewage and stormwater
    - Outfall pipe
  - 1 pipe
  - Combined Sewer Overflow = CSO

- **Separate Sewer System**
  - Sunny Day:
    - Downspout
    - Storm drain
    - Separate storm sewer
    - Outfall pipe
  - Rainy Day:
    - Downspout
    - Storm drain
    - Separate storm sewer
    - Outfall pipe
  - 2 pipes

*Discharge occurs when pipe's capacity is exceeded*
Background: Where are Combined Sewers Located?

- 1/3 area is combined (12,478 acres)
- 47 Active CSO outfalls
  - 13 to Anacostia
  - 10 to Potomac
  - 24 to Rock Creek
- Three receiving waters
  - Anacostia River
  - Potomac River
  - Rock Creek
Background: What is Green Infrastructure (GI)?

- Bioretention and Rain Gardens
- Permeable Pavement
- Rain Barrels and Cisterns
- Vegetated Swales
- Native Landscaping
- Green Roofs
Background: Examples of Green Infrastructure in Cities

Bioretention along Streets

Permeable Pavement along Streets and in Alleys

Other potential GI could include: Rain barrels, Cisterns, Green Roofs, etc.
DC Clean Rivers Project: Magnitude of the Problem, DC Water’s Solution

Anacostia River | Potomac River | Rock Creek | Total System
---|---|---|---
2142 | 1063 | 49 | 3254
1282 | 638 | 43 | 1963
54 | 79 | 5 | 138

96% Reduction

<table>
<thead>
<tr>
<th>Year</th>
<th>Anacostia River</th>
<th>Potomac River</th>
<th>Rock Creek</th>
<th>Total System</th>
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<td>1996</td>
<td>2142</td>
<td>1063</td>
<td>49</td>
<td>3254</td>
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<td>2013</td>
<td>1282</td>
<td>638</td>
<td>43</td>
<td>1963</td>
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(DC Water Formed)
DC Clean Rivers Project: Long Term Control Plan Timeline

- 1998 - LTCP Started
- 2002 - Final LTCP
- 2003 - LTCP Meets WQS (EPA/DC)
- 2005 - Consent Decree Signed
- 2007 - New Nitrogen limits require changing LTCP
- 2011 - DC Water evaluates GI for Potomac and Rock Creek

Public Participation

May 20, 2015 – EPA/DOJ lodge Consent Decree Modification in District Court
DC Clean Rivers Project: Progress on Tunnels

DC Clean Rivers Project has let more than $1.2 Billion in Construction & Engineering Contracts.
DC Clean Rivers Project: Updated Plan

- DC Clean Rivers Project: $2.6 Billion
- Nitrogen Removal: $950 Million
- Total > $3.5 Billion
- 25 yr implementation (2005 – 2030)
- 96% reduction in CSOs & flood relief in Northeast Boundary
- Approx 1 million lbs/yr nitrogen reduction predicted
DC Clean Rivers Project: Environmental, Social and Economic GI Benefits

Environmental
- Reduce runoff
- Improve air quality
- Reduce summer temperatures
- Reduce energy usage
- Offset climate change
- Habitat improvement

Social
- Enhance aesthetics
- Improve livability through green space
- Reduce scope and duration of disruption during construction

Economic
- Create green jobs
- Enhance property values
- Improve quality of life
Green Infrastructure Implementation: Rock Creek and Potomac River Project

- Development of Program Plan (or Facility Plan)
- Identification of first two GI projects under modified consent decree (Rock Creek Project A and Potomac River Project A)
  - Maximized Volume Capture
  - Feasibility of Design and Construction
  - Synergy with DC Agencies (DDOT, DOEE)
  - Maximizing Triple Bottom Line Benefits
  - Pre- and Post- Construction Monitoring
  - Facilitation of Maintenance
  - Minimized Cost
  - Compatibility with neighborhood needs and aesthetics
Green Infrastructure Implementation: Rock Creek and Potomac River Projects Schedules

- Rock Creek Project A:
  - **RFP Development:** 2015 – mid 2016
  - **Procurement:** mid 2016 – early 2017
  - **Design-Build:** early 2017 - 2019
  - **Monitoring:** 2019 – 2020

- Potomac River Project A:
  - **RFP Development:** 2015 - late 2016
  - **Procurement:** late 2016 – mid 2017
  - **Design-Build:** mid 2017 - 2019
  - **Monitoring:** 2019 - 2020

Complete GI Program Schedule Available at: dcwater.com/green (‘Resources’ Section)
Green Infrastructure Implementation: Coordination with Agencies & Organizations

Examples:

- District Department of Transportation (DDOT)
  - Infrastructure coordination and synergies

- Department of Energy and the Environment (DOEE)
  - Environmental protection

- District of Columbia Historical Preservation Office (DC SHPO)
  - Historic and archeologic sites identification

- U.S. Commission of Fine Arts (CFA)
  - Preserving the character of the District

- Old Georgetown Board (OGB)
  - Preserving the character of Georgetown
Drivers for Long-term Success: Green Jobs Program in the District

- Green Jobs Memorandum of Agreement (MOA) created with District of Columbia and DC Water
- Overall Goal:
  - 51% of new jobs created by contracts or procurements entered into by DC Water with third parties to implement GI required by modified decree are filled by District residents
- Applies to:
  - Professional services
  - Construction
  - Inspection and maintenance activities
Drivers for Long-term Success: DC Water Maintenance Program Goals

- Green Infrastructure is maintained and managed just as gray infrastructure assets
- DCCR’s Green Infrastructure Maintenance Program goals:
  - Function
    - Ensure GI function to meet performance requirements.
  - Safety
    - Ensure public and maintenance crew safety.
  - Aesthetics
    - Ensure GI maintains the original project aesthetic goal.
Questions?

DC Water
DC Clean Rivers Project

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