Implementing Green Infrastructure:
Creative Approaches to Reducing Regulatory and Financial Barriers in Rural and Urban Communities

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“Managing Stormwater: Economic Factors that Influence Developers’ Decisions”

ECO Northwest
Downtown vs. North East
District of Columbia

Context for Regulatory Programs:

- **MS4 Permit:**
  - 1.2” retention standard for new and redevelopment for sites that disturb 5,000 sq feet
  - Retrofit of 418 acres including 35 acres in ROW during 5 year permit term.
- No alternative to GI
- Combined Sewer Overflows (LTCP)
District of Columbia

- Stormwater Retention Credit Trading Program
- Private Use of the Public Right of Way
SWRC Trading Program

- **Scenario A: On-Site Retention Only**
  - 1.2” retention on site 1 (the “Regulated Development”)

- **Scenario B: Trading (On-Site & Off-Site Ret.)**
  - 0.75” retention on site 1
  - 0.45” retention on site 2
Why is annual retention greater under Scenario B?

Smaller SMPs on 2 sites use full retention capacity more often, for greater annual retention & capture of first flush.

*Based on rainfall data downloaded from NOAA for Reagan-National Airport.
Flexibility for Regulated Sites

<table>
<thead>
<tr>
<th>Hypothetical Comparison of Cost Savings from Scenario A vs. Scenario B</th>
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<tbody>
<tr>
<td>**Annual Vol. Retained ***</td>
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<tr>
<td><strong>Estimated Retention Cost</strong></td>
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*Annual volume retained, based on 2009 rainfall data.

**Retention on Site 1 is $3.25/gallon and on Site 2 is $0.65 per gallon. (Based on analysis of the incremental cost to achieve retention, compared to existing District regulations, by Industrial Economics, Inc.)
DC Trading Program: Credit Generators

- Regulated development with excess capacity
- Unregulated renovation and retrofit projects
- Public retrofits
DC Trading Program

- Strong mechanisms for certification, tracking and enforcement
- Runs with the land
- Annual compliance obligation
- Annual payment-in-lieu option
- No double counting
DC Trading Program

Benefits:

• WIN: Give developers greater flexibility.
• Win: Lower costs, greater efficiency
• WIN: Maximize benefit to District waters.
• WIN: Social benefits of GI (env. Justice)
• Win: Leverage private $ for public retrofits
Public Rights of Way

One Constitution Square
Public Rights of Way

How it could benefit:
- Lower Costs for Private Development
- Better products and performance
- Amenity value to tenants and the public
- Leverage private $ for public stormwater
1050 K Street NW
10,000 gallon fiberglass cistern in right of way: $20,000
5,000 gallon concrete cistern in parking deck: $25,000
Project Treats 3000 square feet of improved ROW; avoided cost to city: $8,100 (does not include site work)
ROW Obstacles

- **Primary Issues**
  - Utilities
  - Maintenance
  - Liability
  - Equity: should public space be used for private purposes?
  - Future needs

- **Interested Parties**
  - Utilities
  - Water and Sewer Authority, Metro
  - DOT, Department of Planning, Parks and Rec, etc.
  - Developers
Potential Outcomes

- Develop qualifying criteria and regulations for private use of ROW for GI.
- Incorporate ROW stormwater management into the permit application process.
- Credits and fee reductions for treating public SW
- Annual fee for use of ROW for the treatment of private SW.
Flexibility

- Trading Programs
- Public Space Access
- Offsite Mitigation
- Public/Private partnerships
- Multi-use projects
- Economies of scale
- Centralized facilities
Canal Park
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