Stormwater Credit Trading

Calumet Stormwater Collaborative
January 4, 2019

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Incentivizing more, accelerated stormwater management through trading

- The Cook County Watershed Management Ordinance currently allows for offsite mitigation for detention and volume control, but with certain restrictions. To date, virtually no offsite options have been pursued.
- MPC and TNC have been exploring options for off-site stormwater controls and a market-based approach
  - MPC and TNC have coined the term StormStore™

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Potential benefits for the Chicago region

- Multiple benefits for appropriately established offsite trading:
  - Implement stormwater controls where they can produce valuable results
  - Protect water quality
  - Re-use vacant or marginal land
  - Provide green space with natural habitat
  - Make infill and transit-oriented development more feasible
  - Opportunity for stormwater solutions from private sector, conservation organizations, land banks, residents in addition to governments

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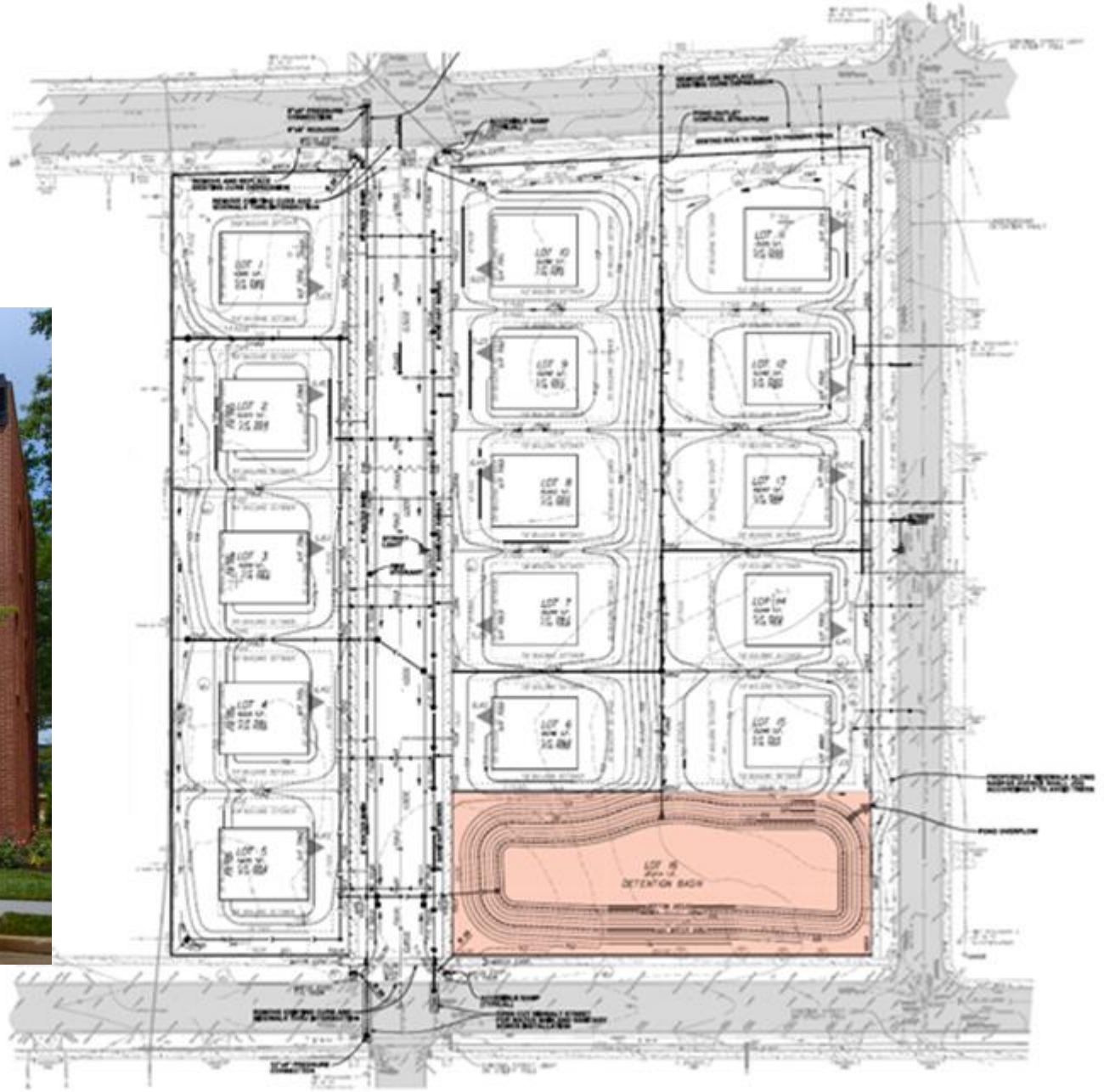
Hypothetical Example of Demand Site

Infill Affordable Housing Development

Site Area	5.1 acres
Number of Units	15
Building Square Feet	74,918 sq ft
Impervious Surface Area	2.39 acres
Type of Detention	Wet pond
Detention Volume	1.3 ac ft
Type of Green Infrastructure	Infiltration Basin
GI Volume	.24 ac ft



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Hypothetical Supply Site Example – Detention

Site Type: Vacant Lot (owned by the Land Bank)
Pre-Project Condition: Mix of gravel and poor quality turf. Very little storage or infiltration

Post-Project Features:
- Park-like setting
- Unlined detention basis with flat slopes
- Trees and other vegetation
- Site will manage street runoff

Stormwater detention: 150,600 gallons

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StormStore™ feasibility study for Cook County – November 2017

- Real Estate Demand Analysis
  - Identify situations where developers would have benefitted from or would have utilized offsite mitigation if it were available
- Land and Hydrological Analysis (“Opportunities Map”)
  - Identify where are sites well-suited for detention or volume control
- Policy Analysis
  - Identify key features of other successful trading programs (Washington, D.C., Chattanooga, TN) and evaluate policy considerations

Refining the concept: focus groups, Advisory group

- During focus groups with developers, barriers were identified which have prevented development sites from pursuing an offsite option to date:
  - Time consuming to identify a mitigation site and broker a 1:1 transaction with another site.
  - Current WMO language is limiting and/or unclear, for example when it is not **practicable** to provide onsite controls or when there are demonstrated **site limitations.**
  - Offsite trading currently allowable for sites under 10 acres.

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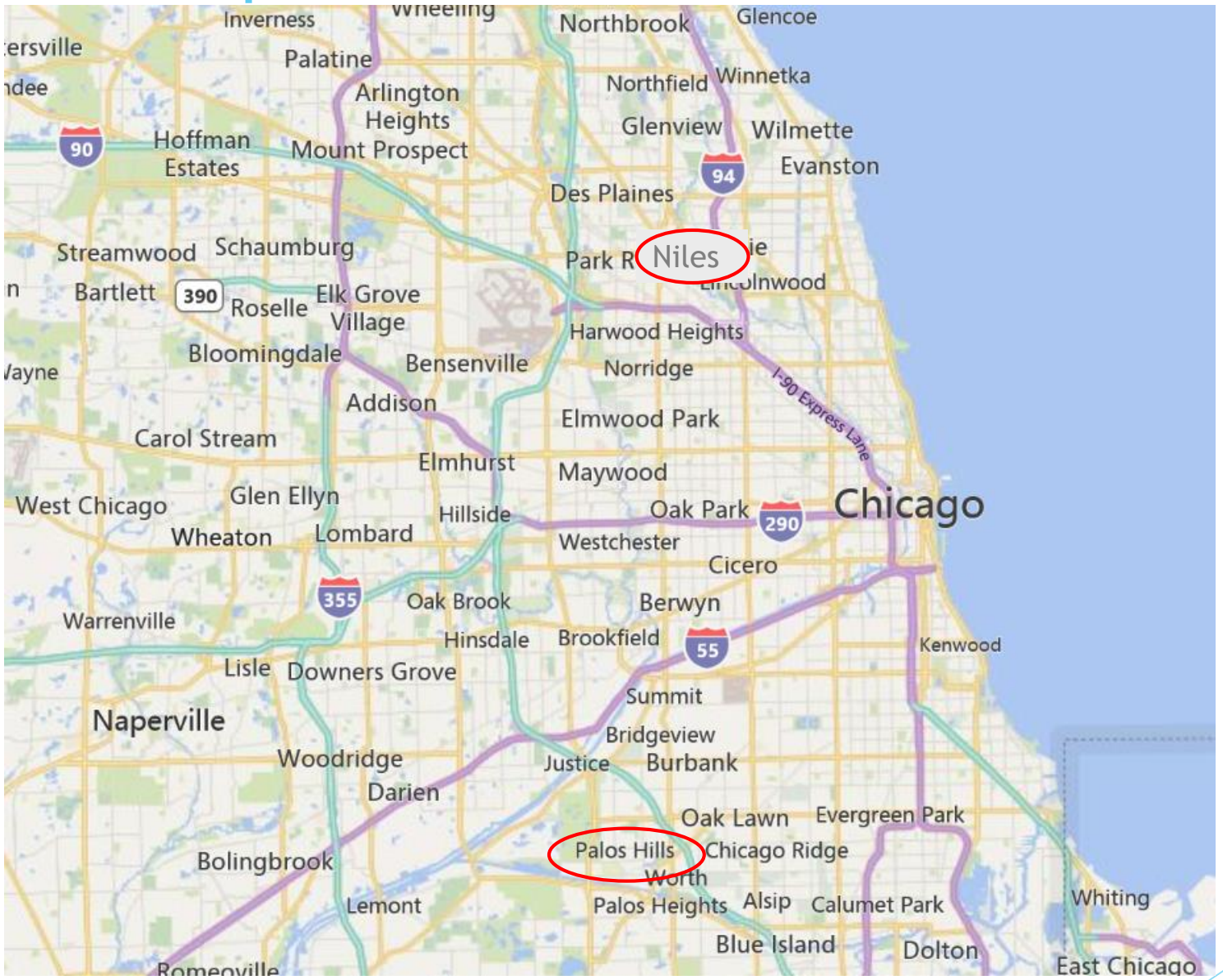
Test Case Scenarios in Two Cook County Municipalities



June 2018

Goal:
Identify barriers to participation in offsite stormwater trading using real-world examples and participants.

Stormwater Credit Trading – lessons from Washington, D.C.

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Today's Speakers

Brian Van Wye

Associate Director

Department of Energy & Environment

Washington, D.C.

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Craig Holland

Senior Director

The Nature Conservancy, Global Cities Program

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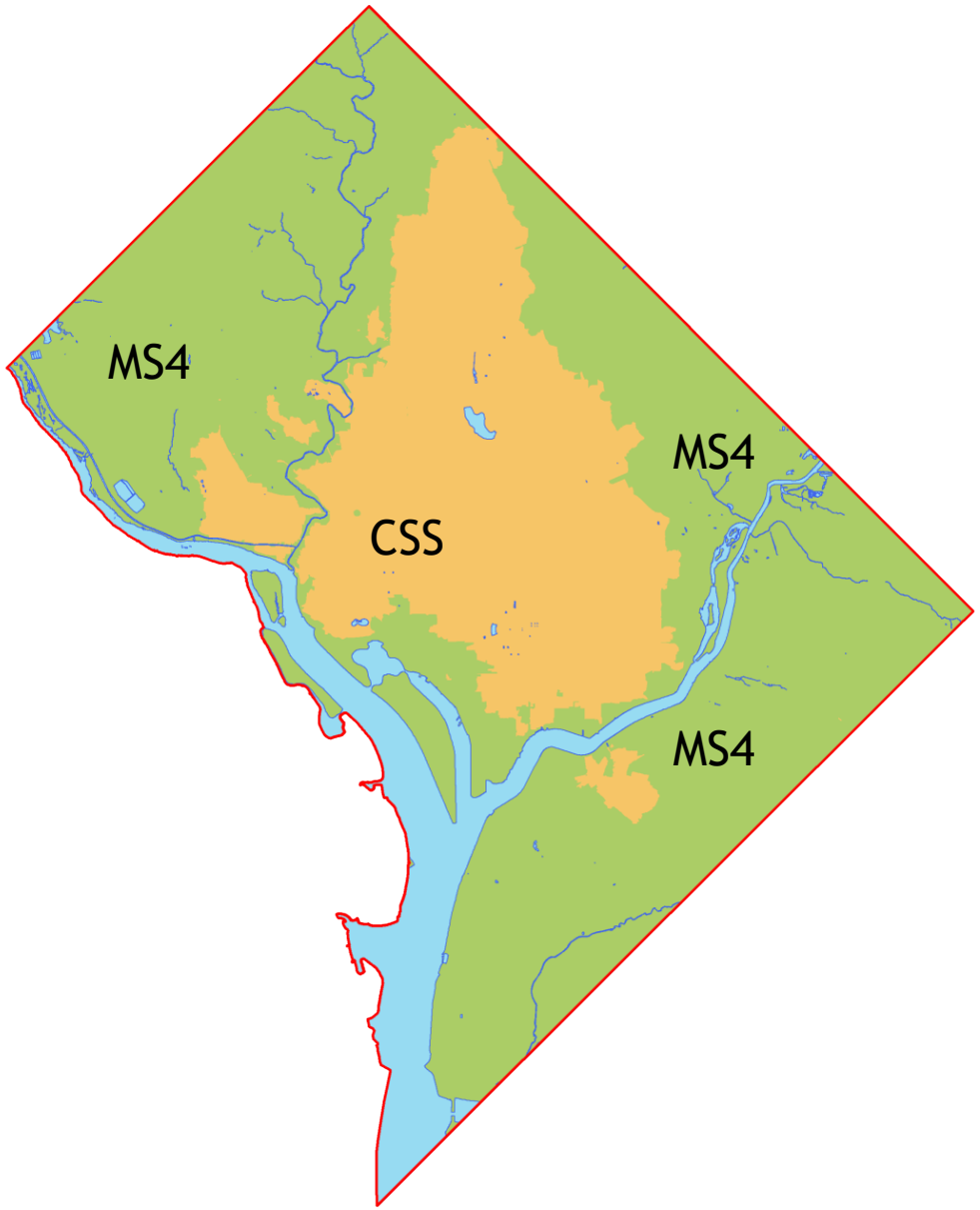

IMPERVIOUS SURFACES AND STORMWATER IN WASHINGTON, DC

- 43% Impervious surface
- 1/3 drains to Combined Sewer System (CSS)
  - $2.6B tunnel project to reduce Combined Sewer Overflows
- 2/3 drains to Municipal Separate Storm Sewer System (MS4)
  - $7B+ green infrastructure retrofits to capture runoff
  - $10M/year budget – existing funds

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REGULATIONS KEY TO MS4 SOLUTION IN DC

- Regulated development is redevelopment, retrofitting existing area
- 10x more area retrofitted through regulations than through DOEE spending
- 2013 Stormwater Rule:
  - Requires GI to manage a design storm (1.2-inch for most projects)
  - Allows Stormwater Credit trading, with 50% of regulatory retention requirement met off site

Trading was key to enabling passage of regulations

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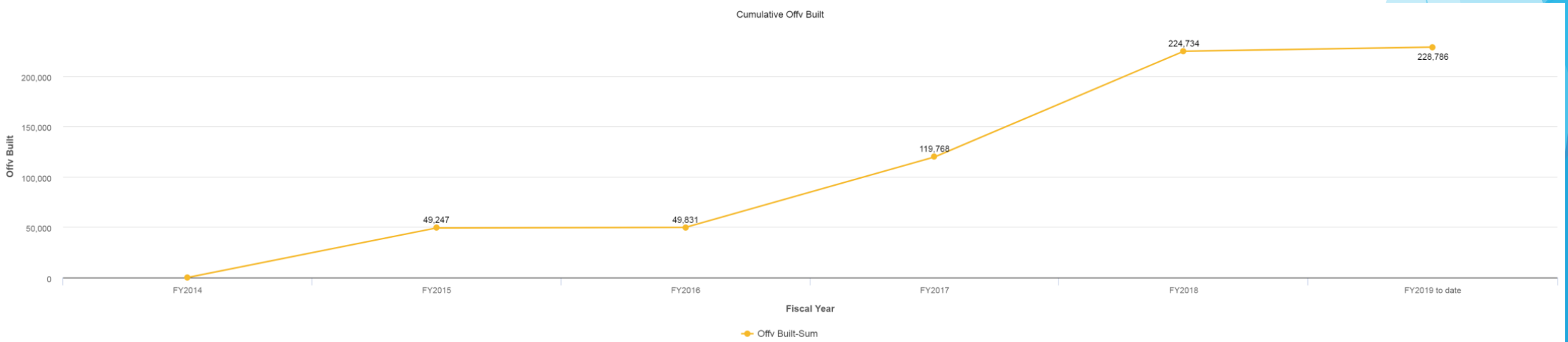
RESULTS: SITES COMPLYING OFF-SITE

- Approximately 14% of regulated sites (83 projects) have opted to meet some of their retention obligation off-site (529,110 gallons) – 26% of their total retention requirement
- 39 projects have completed construction (or within 4 weeks)
  - 23 are purchasing SRCs (105,505 SRCs/year)
  - 13 are generating their own SRCs (121,713 SRCs/year)
  - 3 are paying In-Lieu Fee (2,260 gallons/year)



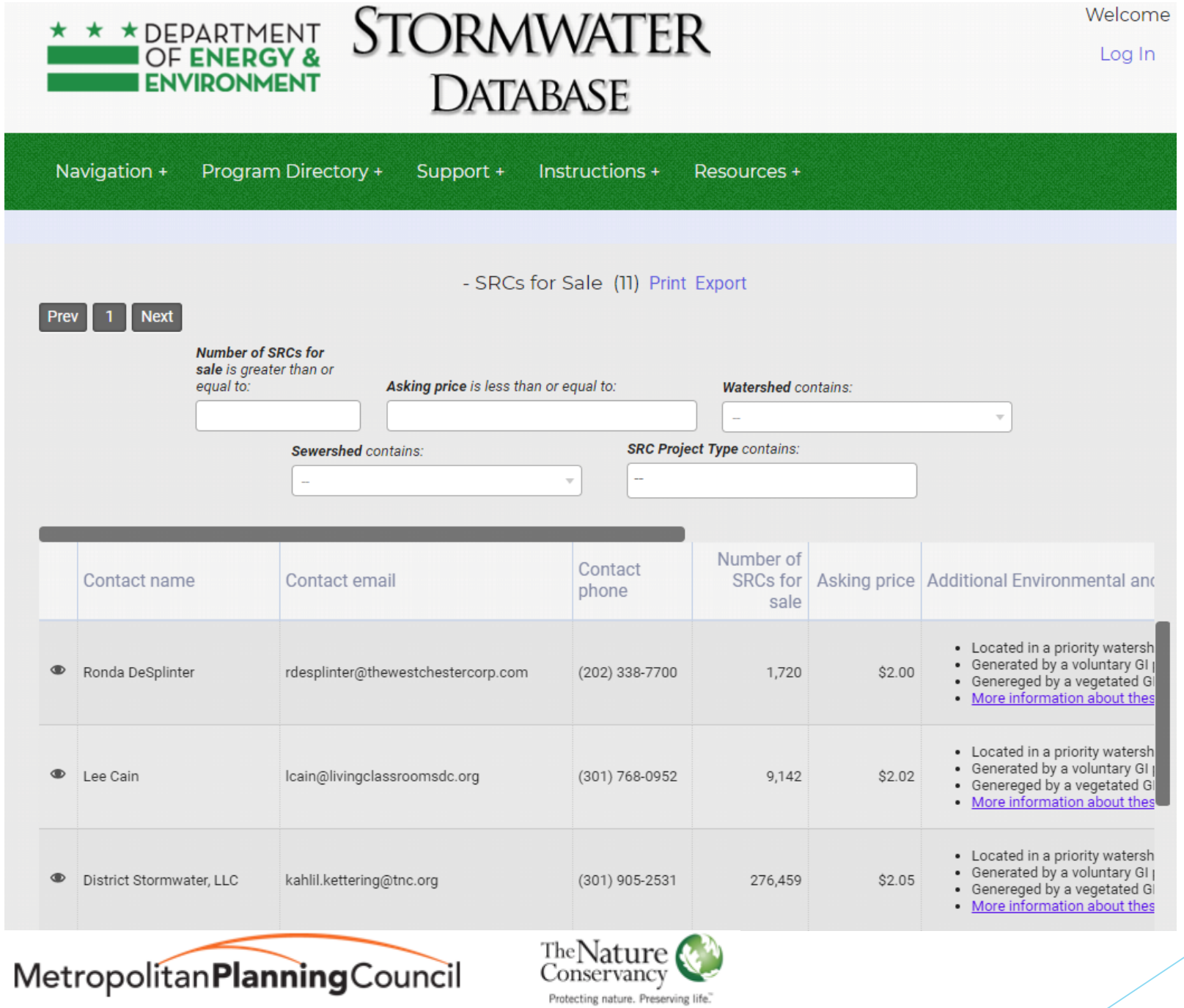
RESULTS: SRC SALES

- 43 trades overall
- 270,685 SRCs purchased
- $550,954.40 in sales
- 18 trades YTD at average $2.08/SRC

- SRC Sales (43) Print Export

Prev 1 Next

Transfer Date ▲	SRC Watershed	SRC Sewershed	SRC Sale Price	Number of SRCs Sold	Value of SRCs Sold	Notes about SRC Trade
11/14/2018	Anacostia	MS4	$1.91	782	$1,493.62	
11/14/2018	Anacostia	CSS	$2.00	3,468	$6,936.00	
11/13/2018	Anacostia	MS4	$1.91	4,950	$9,454.50	
10/15/2018	Anacostia	MS4	$2.00	11,013	$22,026.00	
8/23/2018	Potomac	MS4	$2.00	36	$72.00	
8/22/2018	Potomac	MS4	$2.00	548	$1,096.00	
8/8/2018	Potomac	CSS	$1.99	18,025	$35,869.75	
6/19/2018	Potomac	CSS	$1.99	1,052	$2,093.48	
6/12/2018	Anacostia	CSS	$2.00	5,905	$11,810.00	
6/8/2018	Rock Creek	CSS	$1.74	9,296	$16,151.80	
5/24/2018	Anacostia	CSS	$2.00	12,806	$25,612.00	
5/22/2018	Potomac	MS4	$2.00	2,142	$4,284.00	
5/15/2018	Anacostia	CSS	$2.00	12,671	$25,342.00	
3/29/2018	Anacostia	MS4	$2.50	27,092	$67,730.00	
3/29/2018	Rock Creek	CSS	$1.70	1,242	$2,111.40	
3/6/2018	Rock Creek	CSS	$1.75	1,859	$3,253.25	
2/26/2018	Anacostia	CSS	$2.35	438	$1,029.30	
1/16/2018	Potomac	MS4	$1.90	1,825	$3,467.50	



Example of stormwater credit trading market - Washington DC

Online interface for buying/selling credits

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November 2018

Washington, DC Stormwater Credit Trading: Perspectives from a Market Participant

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Green Infrastructure Development Company

PROPERTY OWNER

Interested in market but does not have money or expertise to build green infrastructure

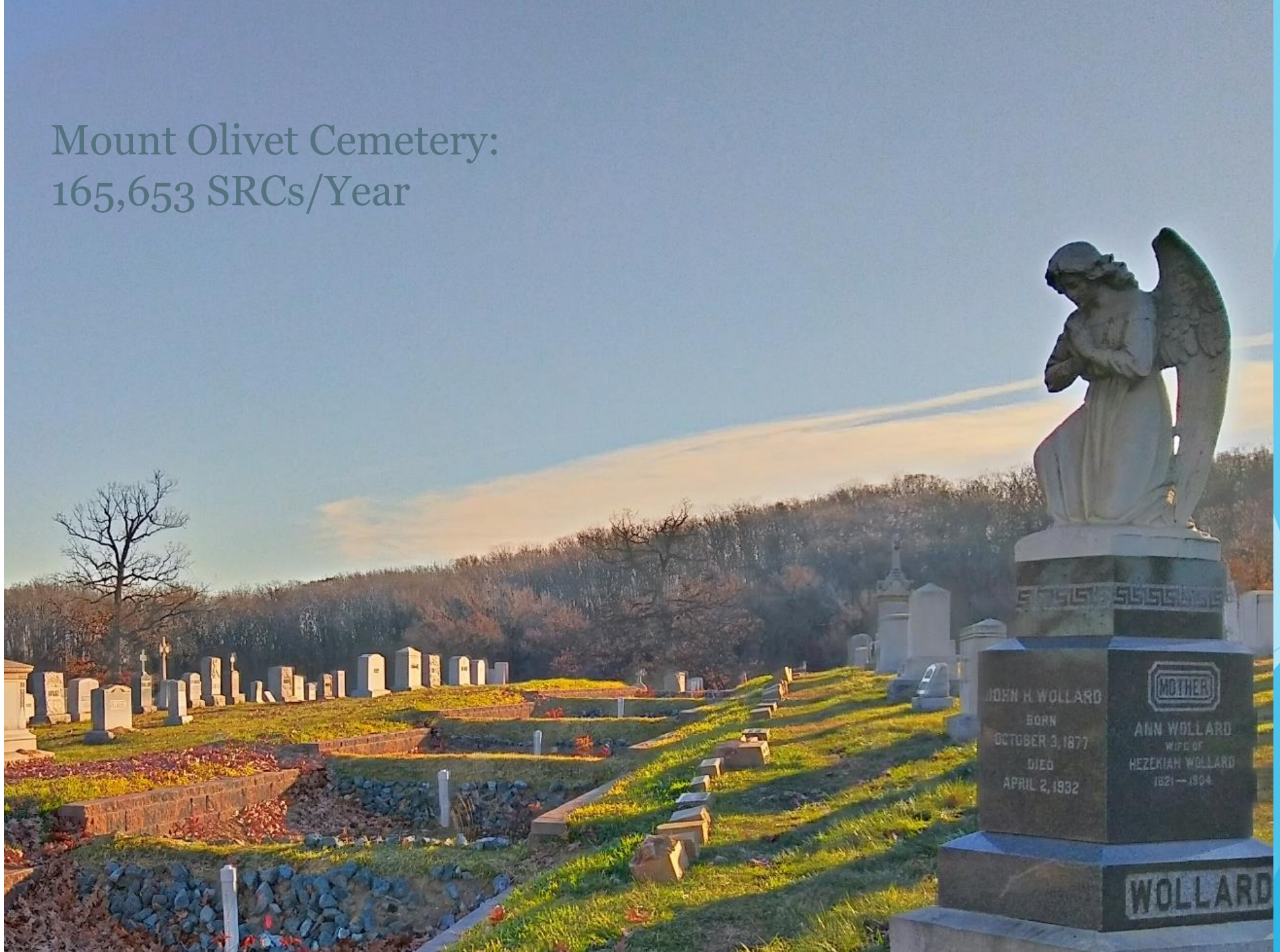
DISTRICT STORMWATER

Single source of compliance for developer. Single source of financing and green infrastructure design, build, and maintenance for property owner. Makes it easy for both parties to enter market.

REAL ESTATE DEVELOPER

Skeptical of market including concerns around liquidity and transaction costs. Has not fully analyzed new compliance costs.

Mount Olivet Cemetery: 165,653 SRCs/Year



Highlights of Proposed changes to the WMO

Appropriate ground-rules for offsite controls

1. Assuring no adverse impacts

- Development project must show no adverse impacts (damages)
  - neighboring properties
  - within the local catchment

- If known downstream flooding or sewer capacity deficiencies in the catchment, offsite detention facility must be
  - in the same catchment and upstream
  - or at the known problem area

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2. Promoting positive benefits

- The offsite detention facility would:
  - be located and designed to reduce stormwater runoff in a catchment that currently has inadequate capacity
  - If the offsite detention is helping to address an existing flooding problem(s), allowing the controls to be offsite will result in a positive benefit

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3. Flow attenuation

Require that at least 50% of the required volume control be provided onsite

- A combination of onsite and offsite control provides a greater level of stormwater control in small storms
- More than 50% of the required volume control may be managed offsite if
  - Site constraints demonstrated

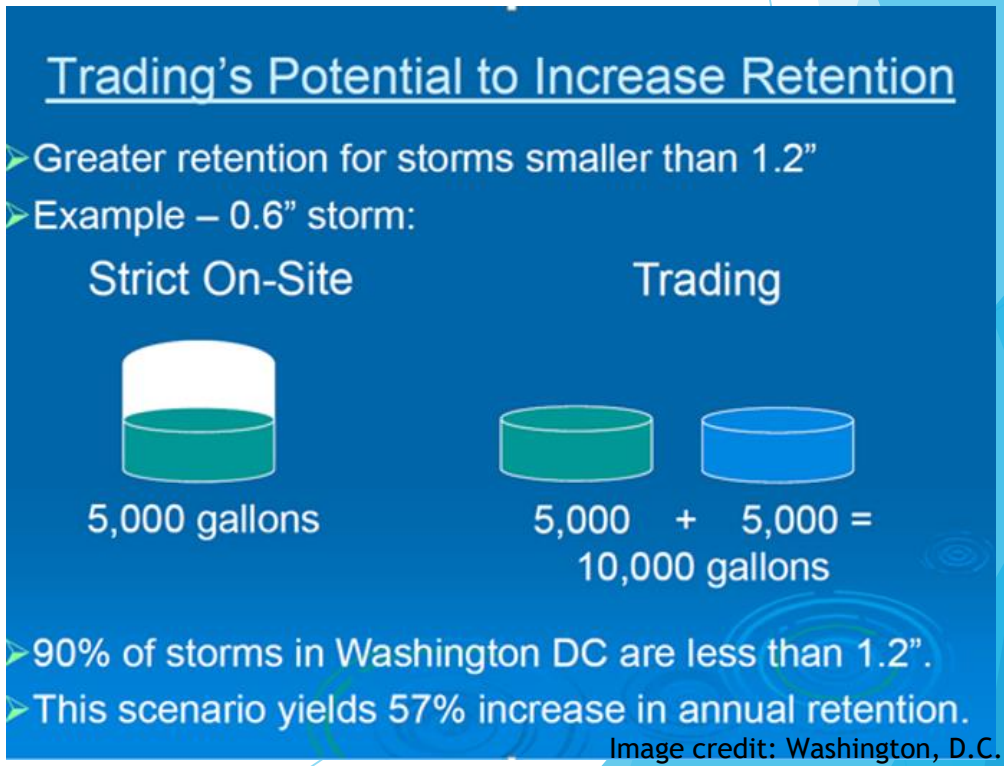

Image credit: Washington, D.C. Department of Energy & Environment

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4. Maintenance of controls over time

- Owner/operator of offsite stormwater detention facilities and volume control practices must
  - Develop, maintain, implement operation and maintenance plan
- Documented self-inspections and self-certifications of maintenance activities submitted to the program/exchange
- Performance bond

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5. Equity in the market

- *For Development Sites* – Offsite controls may make transit-oriented developments or affordable housing developments more economically feasible

- *For Offsite Controls* – Disadvantaged neighborhoods are disproportionately affected by flooding
  - If offsite controls must be located and designed to address an existing flooding problem(s), neighborhoods experiencing flooding will benefit

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Recent Actions, What's Next

Draft language for enabling stormwater trading in the WMO presented to the TAC October 2018

Survey of TAC members

Revised draft based on comments received

Presentation to the TAC December 2018

Forwarded proposed language to MWRD for consideration as part of 2019 WMO amendments

MWRD may include with proposed 2019 WMO Update

Comment period will open next week!

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