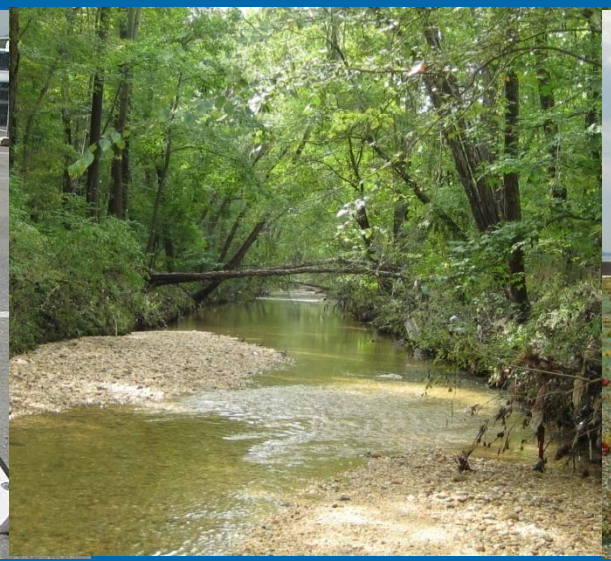
Generation and Certification of Stormwater Retention Credits


Presented by:
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CENTER FOR WATERSHED PROTECTION

CHESAPEAKE STORMWATER NETWORK

DISTRICT DEPARTMENT OF THE ENVIRONMENT green forward

Training Objective

- To provide an overview of new stormwater management regulations and the use of off-site retention by regulated sites.
- To provide practical guidance on how property owners and aggregators can generate DDOE-certified Stormwater Retention Credits for their own use or to sell to regulated sites regulated.
- Not meant to go into detail on DDOE's rationale for the program design, including impacts on District waterbodies.

Training Outline

- Basics of new stormwater retention standards.
- Overview of how regulated sites use off-site retention.
- Generation & certification of Stormwater Retention Credits:
  - Eligibility requirements.
  - Maintenance requirements.
  - Overview of SRC certification process.
  - Eligibility for BMPs installed before January 15, 2014.
  - SRC serial numbers.
  - Process for buying and selling SRCs.
  - Stormwater Impervious Fee Discount Program.
  - Online SRC and Discount portal
  - Calculating SRCs for example scenarios.
- Questions.

New District Stormwater Retention Performance Standards

Major land-disturbing activity

- Retain the first 1.2” of rainfall on site or through a combination of on-site and off-site retention.

Major substantial improvement activity

- Retain the first 0.8” of rainfall on site or through a combination of on-site and off-site retention.
- No additional detention required.

Calculating Required Retention Volume

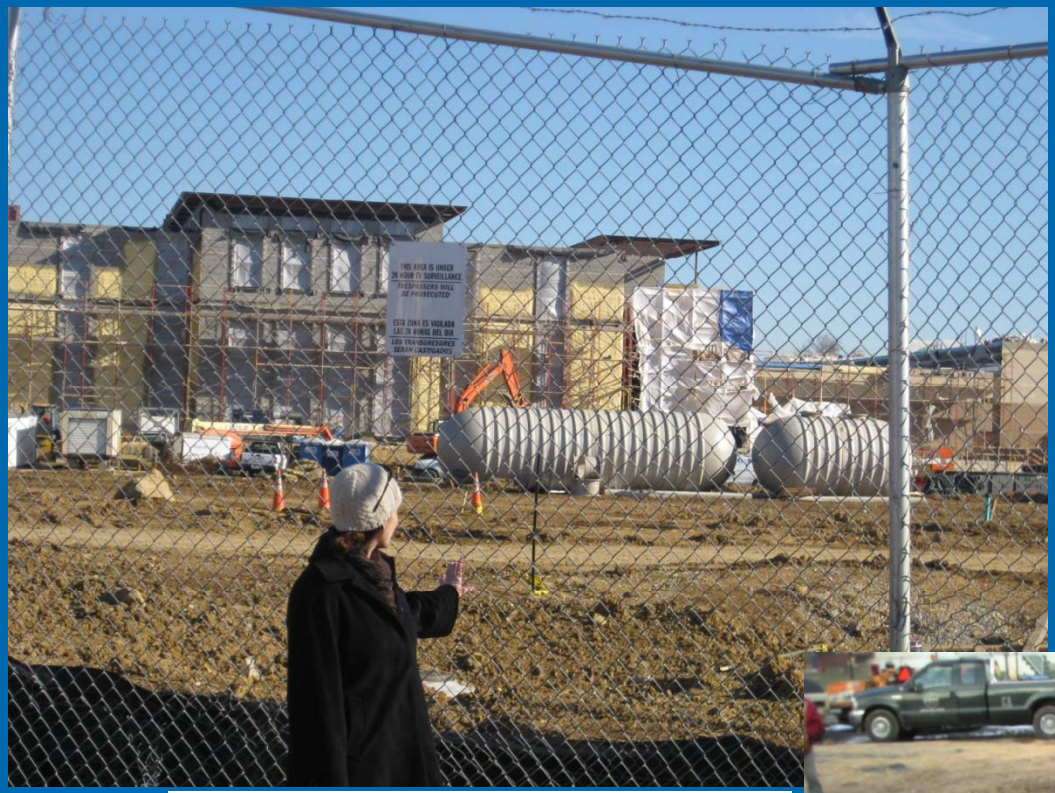
$SWRv = P (Rv_I * \%I + Rv_C * \%C + Rv_N * \%N) * SA * 7.48 / 12$

- SWRv = Volume required to be retained (gal)
- P = 1.2 inches (90^{th} percent rainfall event for the District)
- Rv_I = 0.95 (runoff coefficient for impervious cover)
- Rv_C = 0.25 (runoff coefficient for compacted cover)
- Rv_N = 0.0 (runoff coefficient for natural cover)
- %I = % of site in impervious cover
- %C = % of site in compacted cover
- %N = % of site in natural cover
- SA = Surface area (square feet)

Green Roofs

Stormwater
Tree and LID Boxes

Rainwater Harvesting for Non-potable Uses

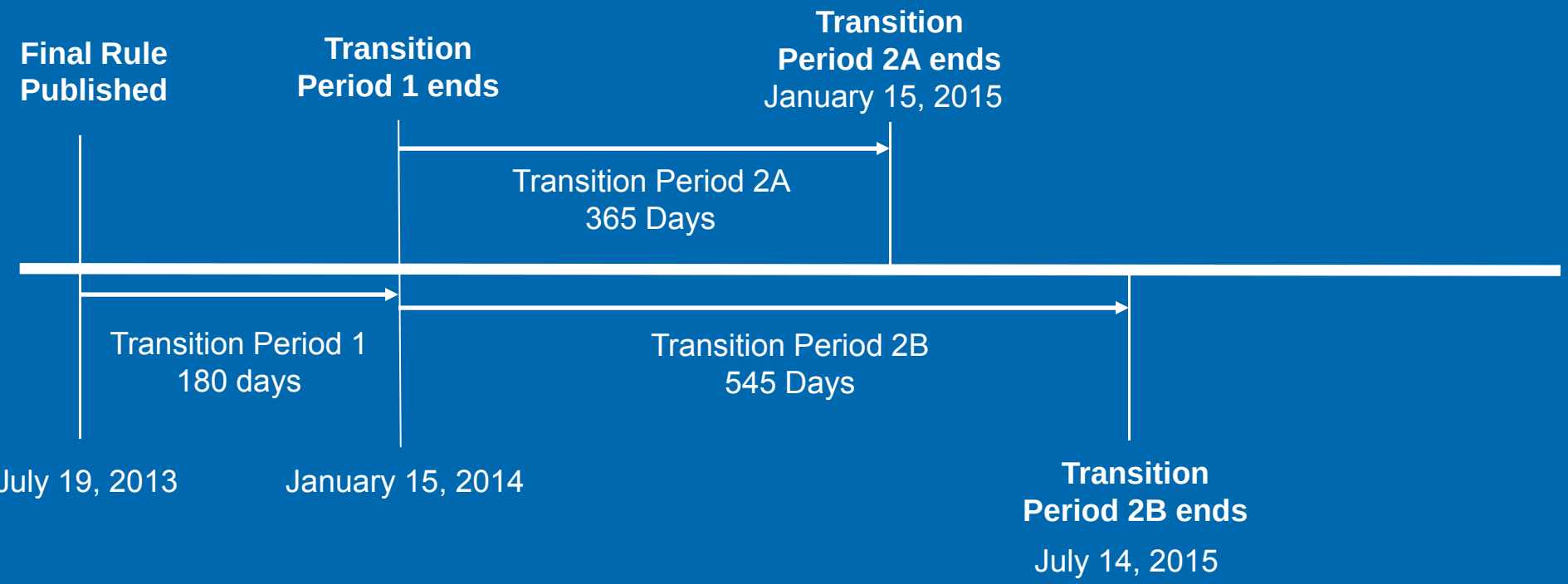


Transition Plan

Transition Period 1

- Regulated projects comply with existing regulations.
- Tied to submittal of first SW Management Plan as part of building permit application process.

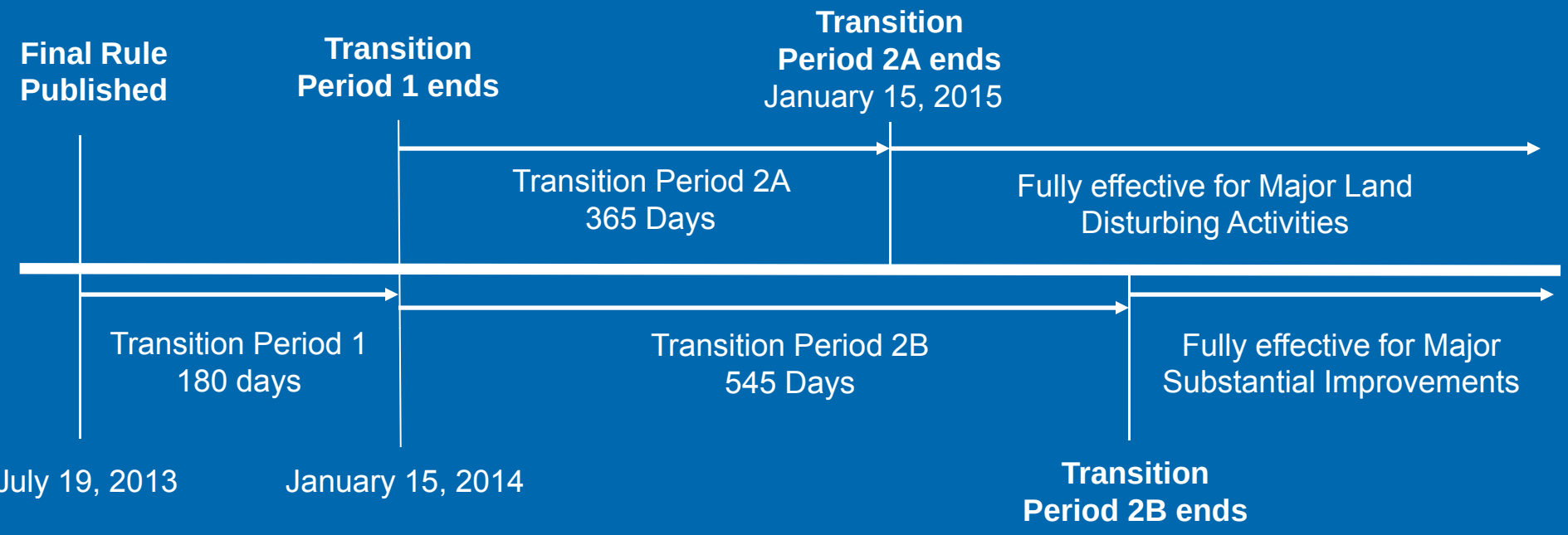
Transition Plan



Transition Period 2A and 2B

- Minimum on-site retention requirement waived.
- Entire retention volume may be achieved off site.

Transition Plan

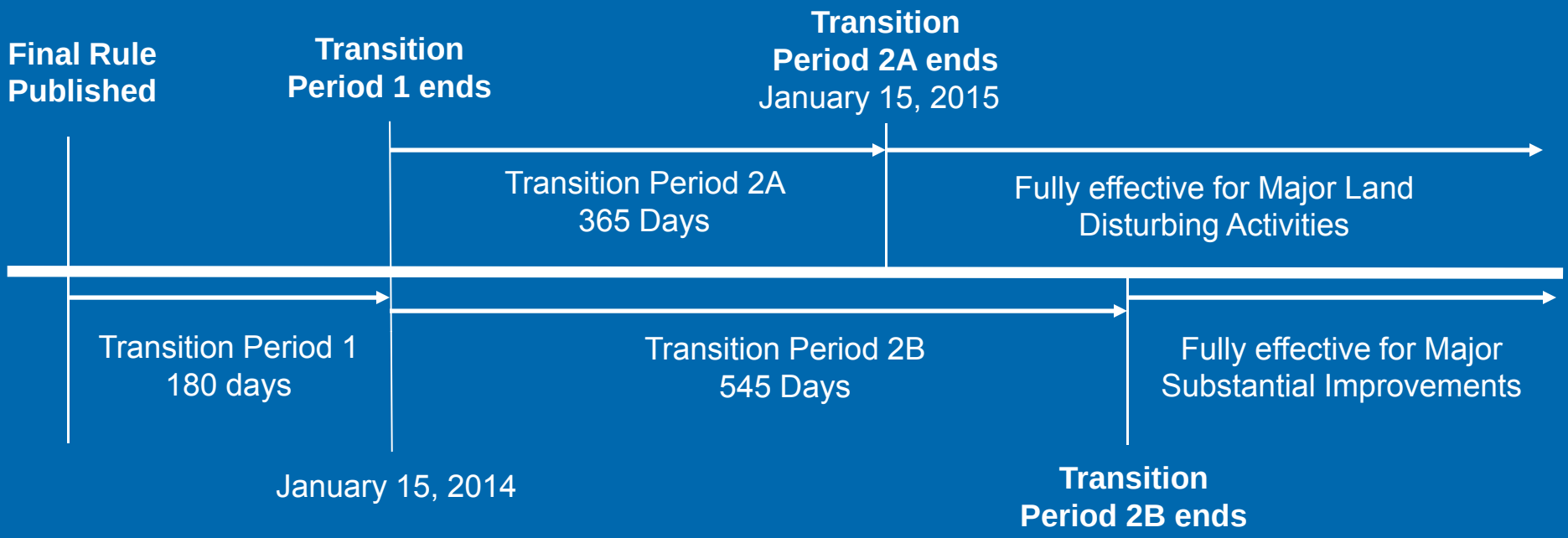


Fully Effective

1) Exceptions for projects grandfathered under a previous period:

* Projects that have submitted an Advanced Design to a reviewing body, and subsequent approval has not expired.
  - Stage 2 PUD application
  - Application for Design Review under Capital Gateway Overlay
  - Final design submission to NCPC

Transition Plan



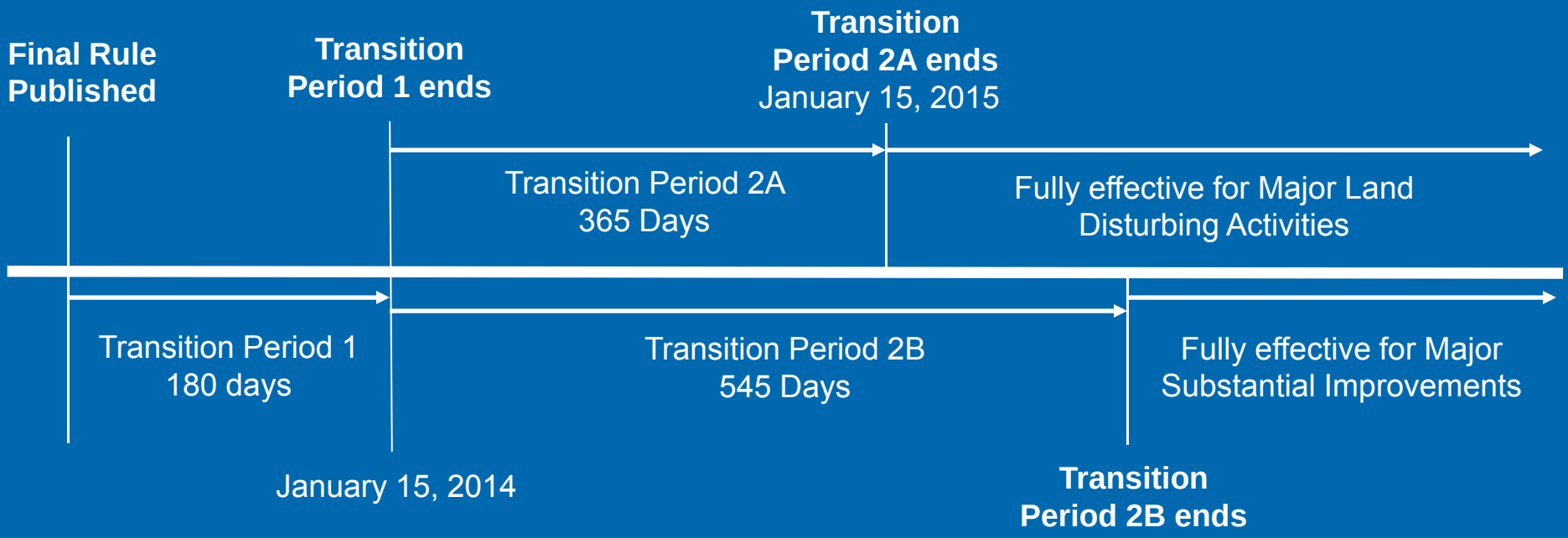
Fully Effective

1) Exceptions for projects grandfathered under a previous period:

* Projects that have submitted an Advanced Design to a reviewing body, and subsequent approval has not expired.

* Multi-phased projects submitting SWMP with SW BMPs/ infrastructure for entire site being installed in initial phase.

Transition Plan



Fully Effective

2) Exception - grounds for on-site relief when unexpired approval of:

- Concept review by HPRB or CFA.
- Design submission to NCPC.
- Variance from BZA.
- Large tract review by DCOP.

Allowable Use of Off-Site Retention

On-site retention ≥ 50% of SWRv.

- Free to go off site.

On-site retention < 50% of SWRv.

- Must prove that on-site retention is technically infeasible or environmentally harmful.

Impervious surface = 14,000 sf

SWRv = 10,000 gal.
On-site minimum = 5,000 gal.

Off-Site Retention Volume (Offv)

Offv = **SWRv** - **On**-Site Retention Volume

3,000 gallons

10,000 gallons

7,000 gallons

Two Options to Achieve Offv

- In-lieu fee (ILF) payment = $3.50
  - Paid to DDOE.
  - Corresponds to 1 gallon of retention for 1 year.
  - Achieves 1 gallon of Offv for 1 year.
  - Inflation adjusted annually.
- Stormwater Retention Credits
  - Privately tradable.
  - 1 SRC corresponds to 1 gallon of retention for 1 year.
  - 1 SRC achieves 1 gallon of Offv for 1 year.

Achieving Offv

- Offv stated on SW Management Plan (SWMP).
- How Offv will be met is not stated on SWMP.
- Offv must be met as of DDOE final construction inspection.
- Offv is an ongoing obligation that can be:
  - Met on yearly or multi-year basis.
  - Met with a mix of ILF & SRCs and mix can change.
  - Reduced in the future by increasing on-site retention.
- If a regulated site lapses in compliance with Offv:
  - DDOE automatically assesses ILF and late fee (10%).
  - DDOE will take enforcement action as necessary.

Calculating Cost to Achieve Offv

Impervious surface = 14,000 sf

SWRv = 10,000 gal.
On-site minimum = 5,000 gal.
Offv = 3,000 gal.

Calculating Cost to Achieve 3,000 gal Offv		
	In-Lieu Fee	**SRCs**
Annual	=$3.50 * 3,000 =$10,500	= SRC Market Cost * 3,000 =$3,000 (?)
5 years	=5 * $3.50 * 3,000 =$52,500	= 5 * SRC Market Cost * 3,000 =$15,000 (?)

Use of Stormwater Retention Credits

- Clock starts on 1-yr. lifespan when used for Offv.
- SRCs can be banked indefinitely.
- Use of SRCs generally not limited by watershed, except trading ratios for AWDZ sites.
- Maintenance failure at SRC-generating site does not invalidate SRCs purchased from that site.
- An SRC owner can retire SRCs without using.

Generation of Stormwater Retention Credits

- DDOE is sole SRC-certifying authority.
- Retention capacity must be located in the District.
- DDOE will certify up to 3 years' worth of SRCs every 3 years for eligible retention capacity.

Example SRC Transaction

- Grocery parking lot voluntarily retrofits w/4,000 gal BMP to generate 3 years of SRCs or 12,000 SRCs.
- Church parking lot voluntarily retrofits w/2,000 gal BMP to generate 3 years of SRCs or 6,000 SRCs.
- Regulated site has 3,000 gal Offv and purchases total of 18,000 SRCs to achieve Offv for 6 years.
- By end of 6-year period, regulated site purchases additional SRCs.

SRCs: Remaining Topics

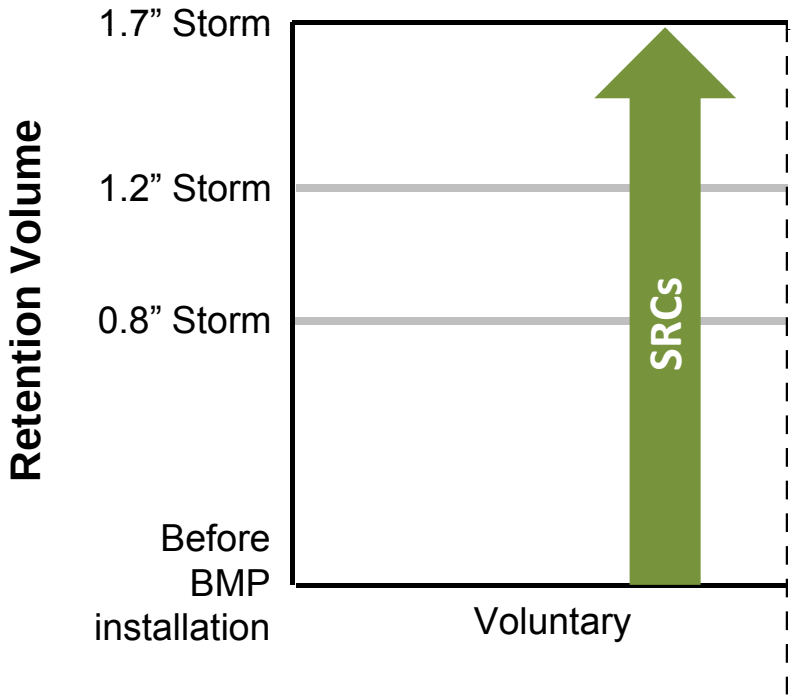
- Eligibility requirements.
- Maintenance requirements.
- Overview of SRC certification process.
- Eligibility for BMPs installed before Jan.15, 2014.
- SRC serial numbers.
- Process for buying and selling SRCs.
- Calculating SRCs for example scenarios.

Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

1) Achieve retention above existing retention or regs.

Retention Volume Eligibility: Stormwater Retention Credits (SRCs)

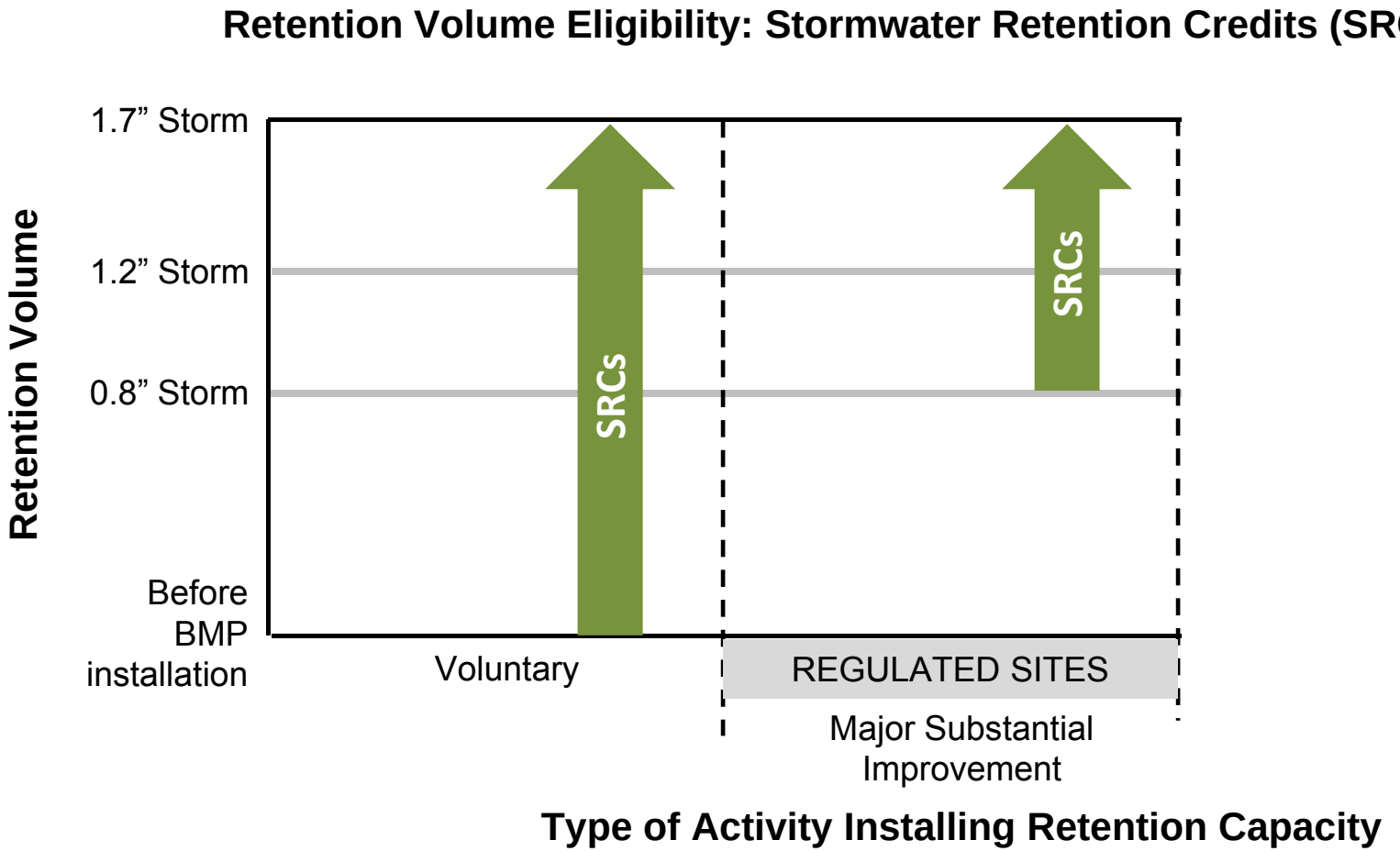


Type of Activity Installing Retention Capacity

Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

1) Achieve retention above existing retention or regs.



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Eligible BMPs & land cover changes must:

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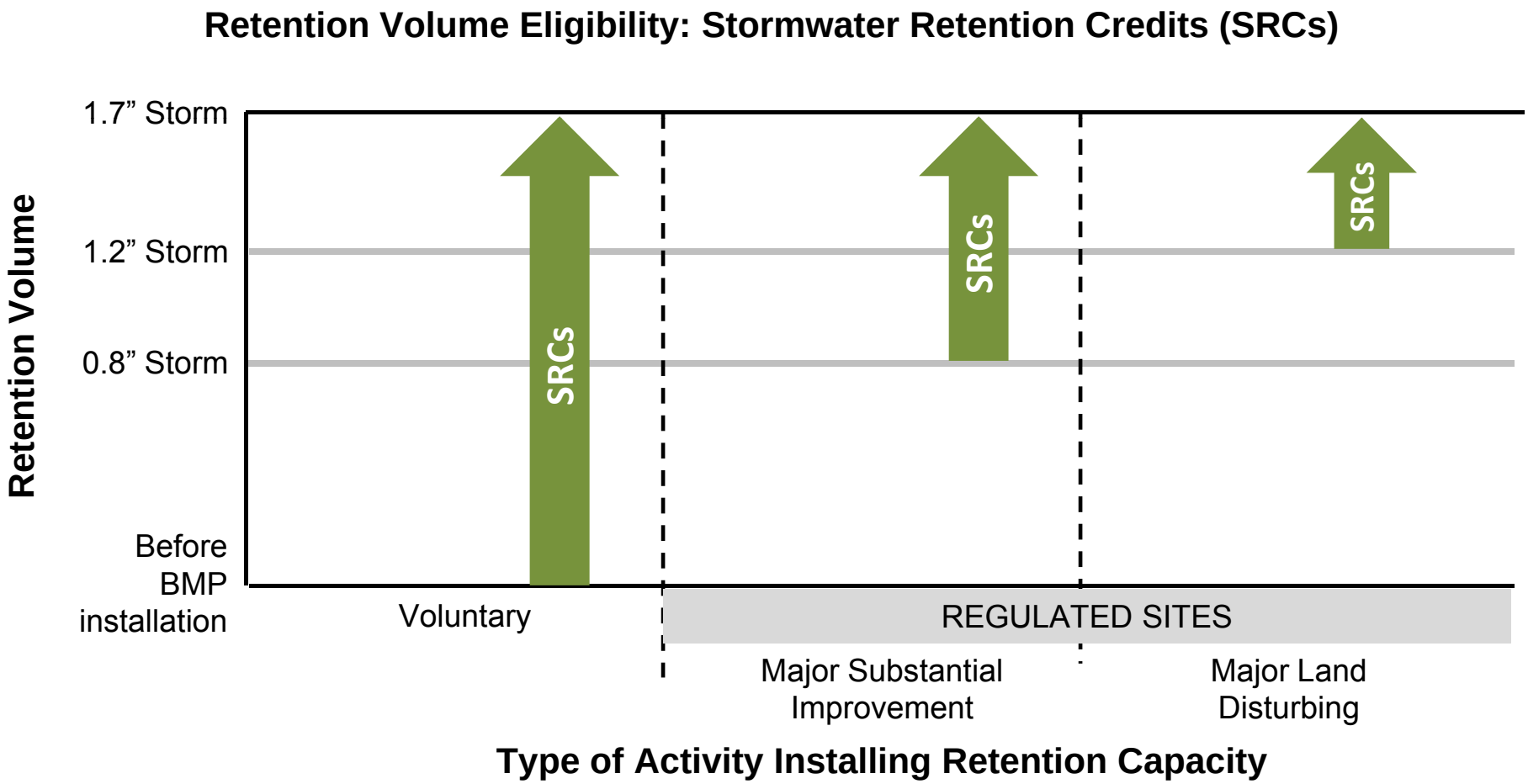


Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

1) Achieve retention above existing retention or regs.
2) Be designed and installed in accordance with DDOE-approved SW Management Plan (SWMP).
3) Successfully complete final DDOE construction inspection and ongoing inspections by DDOE.
4) Have current maintenance contract or document ability/expertise to maintain.

Maintenance Requirements

- Property used for SRC-retrofits not permanently obligated to that use:
  - No maintenance covenant required for SRC-generating retention capacity.
  - Retention capacity must be maintained for time period for which DDOE certifies SRCs.
  - Maintenance obligation can be ended by forfeiting SRCs or purchasing SRCs for DDOE to retire or paying ILF.
- Failure to maintain retention capacity for time of SRC certification results in:
  - DDOE requires retention volume to be compensated for.
  - DDOE may take enforcement action.
  - No additional certification of SRCs.

Overview of SRC Certification Process

1) Design and receive DDOE approval of SWMP.
2) Install retention capacity.
3) Pass DDOE post-construction inspection.
4) Apply for DDOE certification of SRCs, including:
   - As-built SWMP.
   - For period of certification, submit maintenance contract or documentation of ability/expertise.
5) Receive up to 3 years' worth of SRCs.
6) Maintain retention capacity and pass inspections.
7) After 3 years, apply for additional SRCs, including
   - Current maintenance agreement or contract for period.
8) Receive up to 3 years' worth of SRCs.

-----Repeat 6-8 indefinitely--------

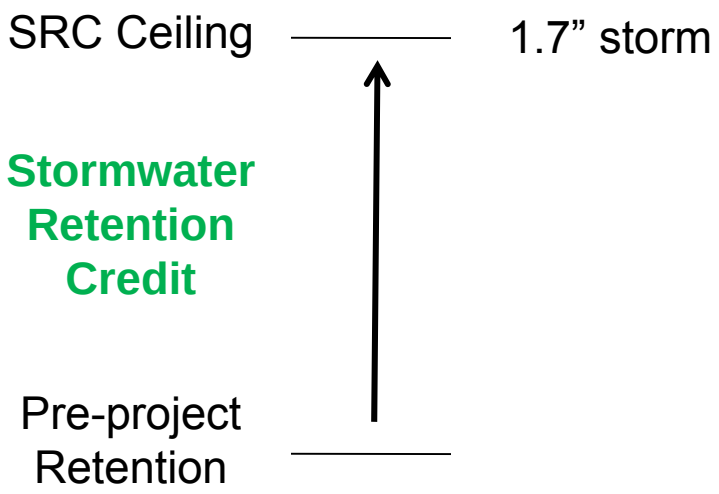
SRC Certification Process Cont'd

- DDOE is now accepting applications.
- DDOE will certify SRCs as of the date that DDOE receives a complete application for SRC certification.
- Retention capacity after May 1, 2009, may be eligible.

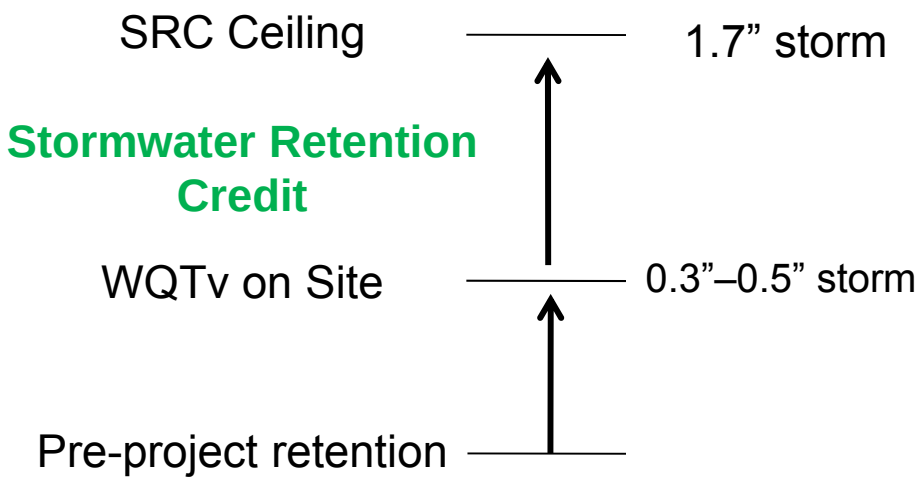
Eligibility for BMPs Installed Before 1/15/14

- May be eligible if installed after May 1, 2009.
- Eligibility requirements largely the same:
  1) Achieve retention in excess of regulatory requirements or existing retention (must document).

Unregulated Retrofit Sites



Regulated Sites Exceeding WQTv



Eligibility for BMPs Installed Before 1/15/14

- May be eligible if installed after May 1, 2009.
- Eligibility requirements largely the same:
  1) Achieve retention in excess of regulatory requirements or existing retention (must document).
  2) Be designed and installed consistent with DDOE specifications – As-built Stormwater Management Plan.
  3) Successfully complete final DDOE construction inspection and ongoing inspections by DDOE.
  4) Have current maintenance contract or document ability/expertise to maintain.

Unique Serial Number for Each SRC

Beginning of certification year (yyyymmdd)	-	Major & Sub drainage (A,R,P & 2 digits)	-	SWMP number (5 digits)	-	Individual gallon of capacity (6 digits)

Example: Application submitted Jan. 1, 2014 for 3,000 SRCs for:

- 1,000 gallons of retention capacity installed:
  - In Watts Branch sub-drainage of Anacostia watershed.
  - In accordance with SWMP # 1400.
- DDOE issues:

Year 1	1,000 SRCs	20140101-A19-01400-000001-20140101-A19-01400-001000
Year 2	1,000 SRCs	20150101-A19-01400-000001-20150101-A19-01400-001000
Year 3	1,000 SRCs	20160101-A19-01400-000001-20160101-A19-01400-001000

Process for Buying and Selling SRCs

1) Negotiate terms of transfer/contract between buyer and seller.
2) Submit application for transfer of SRC ownership.
3) Receive DDOE confirmation of transfer of SRC ownership.

- One of purposes of this process is to collect and share price information, without violating confidentiality.

SW Impervious Fee Discount Program

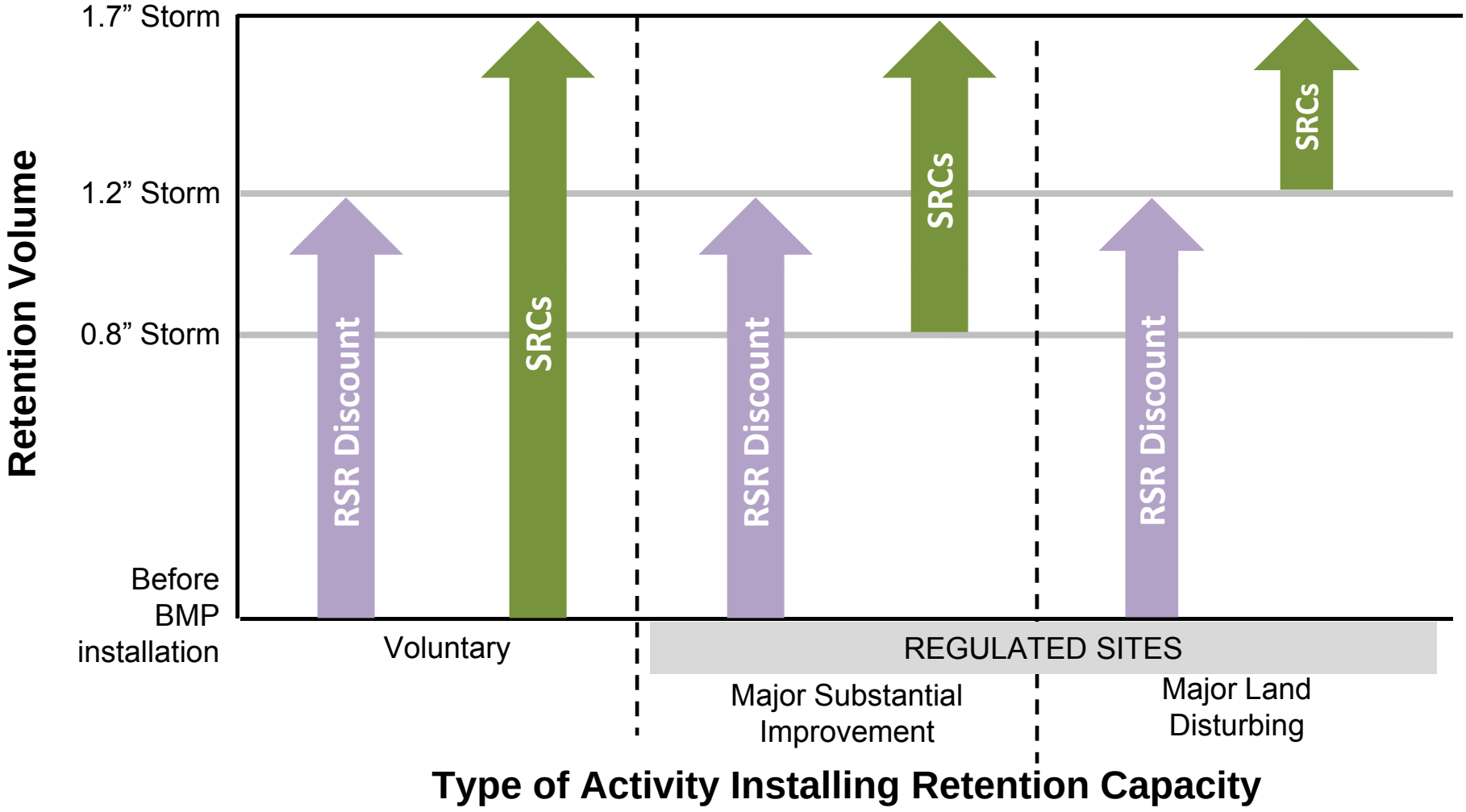
- Two SW Impervious Fees:
  - DC Gov't (DDOE) Stormwater Fee
  - DC Water Impervious Area Charge (IAC)
- Collected by DC Water on water bill.
- Two separate Discount rulemakings for each fee.
  - DDOE - 55% max discount for 1.2" retention from 1 ERU
  - DC Water – 4% max discount for 1.2" retention from 1 ERU

Potential 10-Year Financial Return on Retention BMP - SRC Revenue and Discount on Impervious Fees

Assuming installation of BMP to retain 1.2" of stormwater from 1 Equivalent Residential Unit

	Rate	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	**10-Year Total**
Max.Discount - DC Water IAC	4%	$5	$6	$8	$10	$11	$12	$13	$14	$15	$15	**$107**
Maximum Discount - SW Fee	55%	$18	$18	$26	$26	$26	$26	$33	$33	$33	$33	**$273**
Projected Value of SRCs (inflation-adjusted)	$1.25	$888	$917	$949	$981	$1,014	$1,048	$1,083	$1,120	$1,158	$1,197	**$10,354**
Total		$910	$941	$983	$1,017	$1,051	$1,086	$1,129	$1,167	$1,206	$1,245	**$10,734**

Retention Volume Eligibility: RiverSmart Rewards (RSR) Discount and Stormwater Retention Credits (SRCs)



Online SRC/RSR Portal

- Provides users with online applications and other information on the SRC and RSR programs
- SRC Generators
  - Apply for SRC certification.

Online SRC/RSR Portal

- Provides users with online applications and other information on the SRC and RSR programs
- SRC Owners
  - View SRC account
  - Transfer SRCs
  - Retire SRCs

Online SRC/RSR Portal

- Sites with Offv
  - Apply to Use SRCs for Offv.
  - Notify DDOE of ILF payment to meet Offv.
  - View Offv status.

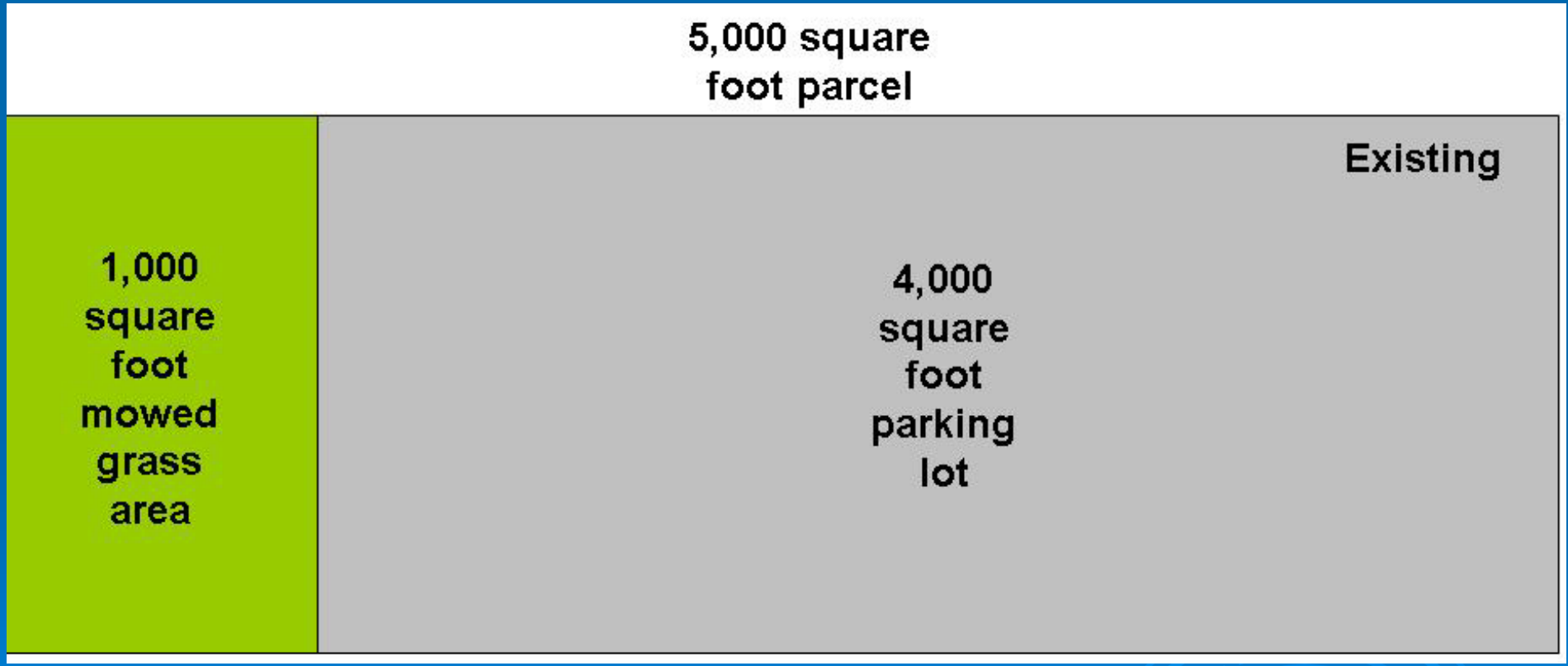
Online SRC/RSR Portal

- Everyone
  - View the SRC registry.
  - View existing applications.
  - Apply for RiverSmart Rewards Discount.

Calculating SRCs for Example Scenarios

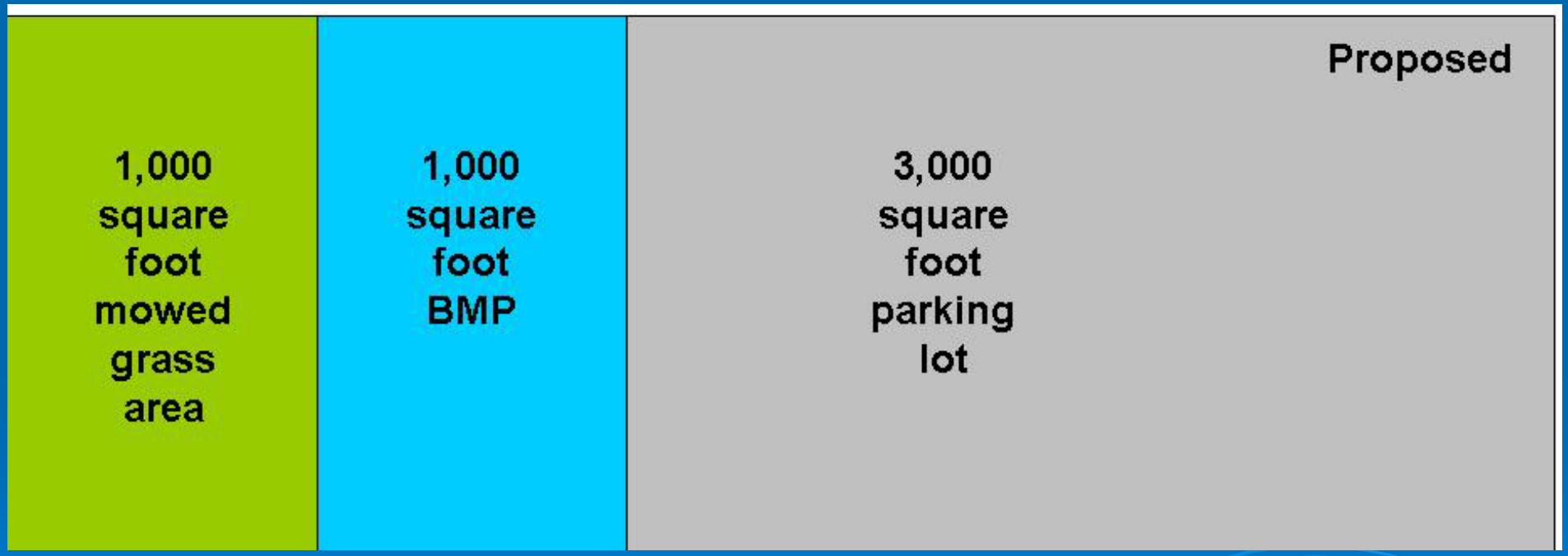
- Use DDOE's SRC calculator spreadsheet.

Scenario 1 (Existing Conditions)



	Drainage Area				
Step 1: Pre-Project Retention	A	B	C	D	E
Impervious Area (ft^2)	4,000	0	0	0	0
Compacted Cover Area (ft^2)	1,000	0	0	0	0
Natural Area (ft^2)	0	0	0	0	0
Retention from Pre-Project Land Cover (gal)	1,007	0	0	0	0
Retention from Pre-Project Best Management Practice (BMP)					
BMP 1 (gal)	0	0	0	0	0
BMP 2 (gal)	0	0	0	0	0
BMP 3 (gal)	0	0	0	0	0
Add together BMP 4, 5, 6, etc.(gal)	0	0	0	0	0
Total Pre-Project Retention (gal)	1,007	0	0	0	0

Scenario 1 (Proposed Conditions)



Step 2: Proposed Retention					
Impervious Area (ft^2)	4,000	0	0	0	0
Compacted Cover Area (ft^2)	1,000	0	0	0	0
Natural Area (ft^2)	0	0	0	0	0
Retention from Proposed Land Cover (gal)	1,007	0	0	0	0
Retention from Proposed BMP - include BMPs retained from pre-project conditions					
BMP 1 (gal)	1,500	0	0	0	0
BMP 2 (gal)	0	0	0	0	0
BMP 3 (gal)	0	0	0	0	0
Add together BMP 4, 5, 6, etc.(gal)	0	0	0	0	0
Total Proposed Retention (gal)	2,507	0	0	0	0
Step 3: Calculate SRCs (internal calculation)					
Total Additional Retention Proposed	1,500	0	0	0	0
Step 4: Verify SRCs (internal calculation)					
SRC Ceiling	4,292	0	0	0	0
Maximum SRCs (based on pre-project BMP)	4,292	0	0	0	0
SRC Eligible Volume (gal)	1,500	0	0	0	0
Site Total SRC Eligible Volume (gal)	**1,500**				

Scenario 1 Stormwater Fee Discount

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- 4 ERUs x $2.67/ERU = $10.68/mo.
  - Note: The number of ERUs on a property is determined by DC Water and specified on the property's water bill.

1. 1,500 gallons of retention added.
2. 1,500 gallons = 2.1 ERUs
3. 2.1 ERUs x 55% = 1.2 ERUs
4. 1.2 ERUs x $2.67 = $3.20

(monthly stormwater fee discount)

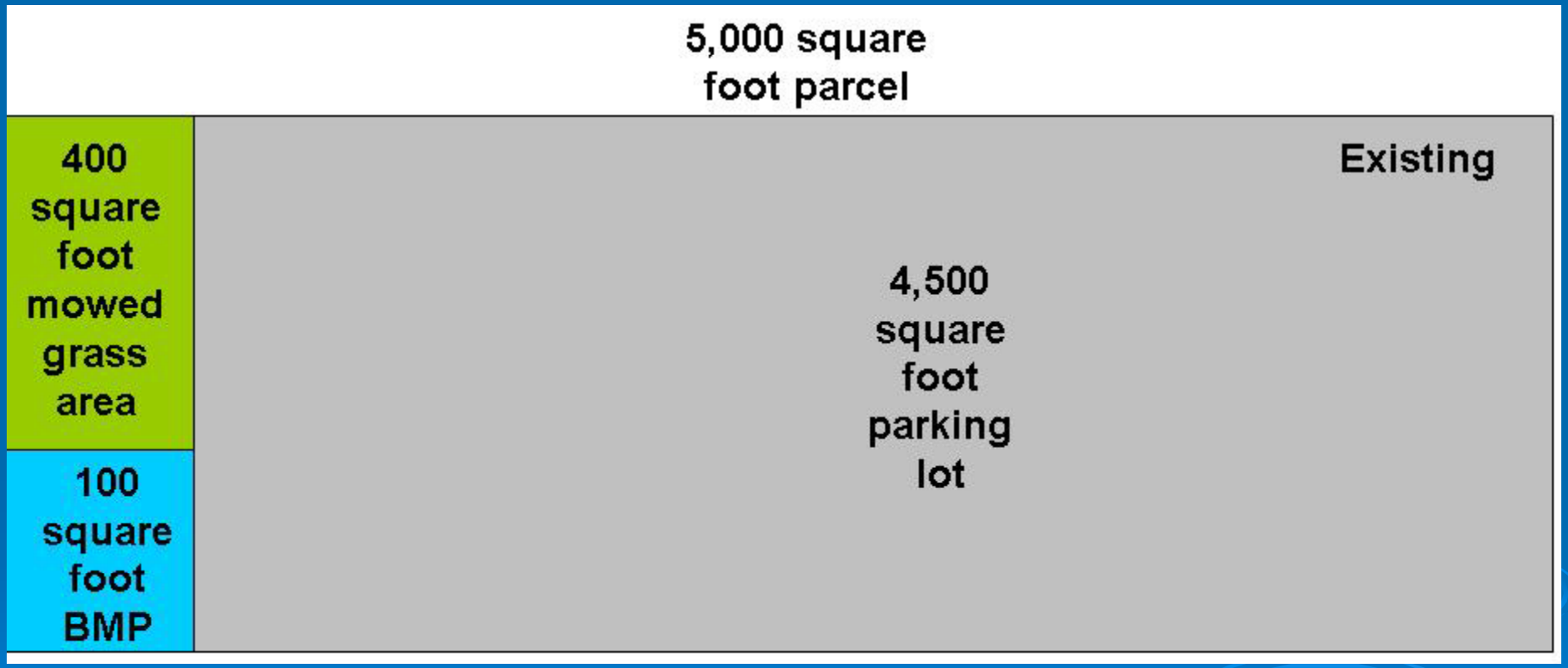
Scenario 1 IAC Reduction

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- 4 ERUs x $9.57/ERU = $38.28/mo.

1. 1,500 gallons of retention added.
2. 1,500 gallons = 2.1 ERUs
3. 2.1 ERUs x 4% = 0.1 ERUs
4. 0.1 ERUs x $9.57 = $0.96

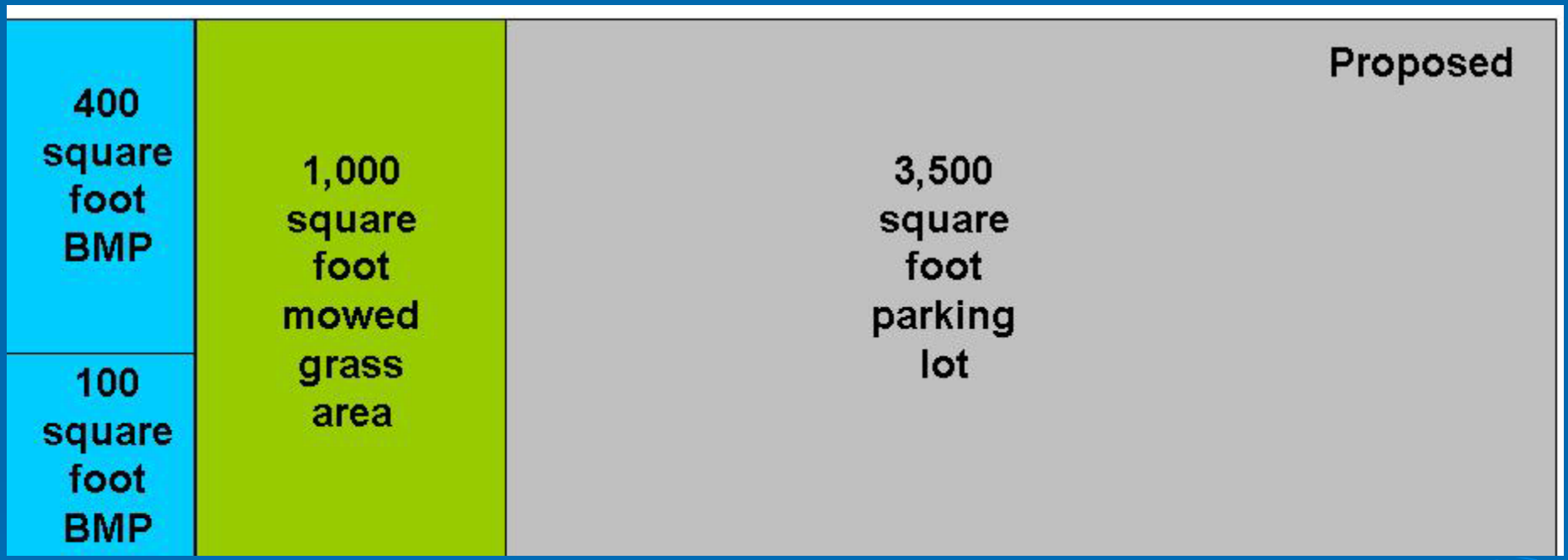
(monthly IAC reduction)

Scenario 2
(Existing Conditions)



	Drainage Area				
Step 1: Pre-Project Retention	A	B	C	D	E
Impervious Area (ft^2)	4,600	0	0	0	0
Compacted Cover Area (ft^2)	400	0	0	0	0
Natural Area (ft^2)	0	0	0	0	0
Retention from Pre-Project Land Cover (gal)	562	0	0	0	0
Retention from Pre-Project Best Management Practice (BMP)					
BMP 1 (gal)	1,000	0	0	0	0
BMP 2 (gal)	0	0	0	0	0
BMP 3 (gal)	0	0	0	0	0
Add together BMP 4, 5, 6, etc.(gal)	0	0	0	0	0
Total Pre-Project Retention (gal)	1,562	0	0	0	0

Scenario 1 (Proposed Conditions)



Step 2: Proposed Retention					
Impervious Area (ft^2)	4,000	0	0	0	0
Compacted Cover Area (ft^2)	1,000	0	0	0	0
Natural Area (ft^2)	0	0	0	0	0
Retention from Proposed Land Cover (gal)	1,007	0	0	0	0
Retention from Proposed BMP - include BMPs retained from pre-project conditions					
BMP 1 (gal)	1,000	0	0	0	0
BMP 2 (gal)	1,500	0	0	0	0
BMP 3 (gal)	0	0	0	0	0
Add together BMP 4, 5, 6, etc.(gal)	0	0	0	0	0
Total Proposed Retention (gal)	3,507	0	0	0	0
Step 3: Calculate SRCs (internal calculation)					
Total Additional Retention Proposed	1,945	0	0	0	0
Step 4: Verify SRCs (internal calculation)					
SRC Ceiling	4,737	0	0	0	0
Maximum SRCs (based on pre-project BMP)	3,737	0	0	0	0
SRC Eligible Volume (gal)	1,945	0	0	0	0
Site Total SRC Eligible Volume (gal)	**1,945**				

Scenario 2 Stormwater Fee Discount

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- Original Bill: 4.6 ERUs x $2.67/ERU = $12.28/mo.
- Request re-calculation based on reduced impervious cover: 4.0 ERUs x $2.67/ERU = $10.68/mo.

Scenario 2 Stormwater Fee Discount

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- 4.0 ERUs x $2.67/ERU = $10.68/mo.

1. 2,500 gallons of retention on site
2. 2,500 gallons = 3.5 ERUs
3. 3.5 ERUs x 55% = 1.9 ERUs
4. 1.9 ERUs x $2.67 = $5.07

(monthly stormwater fee discount)

Scenario 2 IAC Reduction

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- Original Bill: 4.6 ERUs x $9.57/ERU = $44.02/mo.
- Request re-calculation based on reduced impervious cover: 4.0 ERUs x $9.57/ERU = $38.28/mo.

Scenario 2 IAC Reduction

- 1,000 sf = 1 ERU = 710.75 gallons of runoff
- 4.6 ERUs x $9.57/ERU = $44.02/mo.

1. 2,500 gallons of retention on site.
2. 2,500 gallons = 3.5 ERUs
3. 3.5 ERUs x 4% = 0.1 ERUs
4. 0.1 ERUs x $9.57 = $0.96

(monthly IAC reduction)

Additional Information

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RiverSmart Rewards Discount – Emily Rice
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To download the 2013 SW Rule, 2013 SWMG, and related information, visit

ddoe.dc.gov/swregs

- Ch. 6 of 2013 SWMG – Use of Off-Site Retention
- Ch. 7 of 2013 SWMG – Generation & Trading of SRCs