Generation and Certification of Stormwater Retention Credits

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District Department of the Environment

DISTRICT DEPARTMENT OF THE ENVIRONMENT
green forward

Training Objective

- To provide an overview of DC 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.
- To provide an overview of the database for Stormwater Retention Credit Trading and RiverSmart Rewards.
- To use the database to participate in the Stormwater Retention Credit and RiverSmart Rewards programs.

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.
  - Calculating return from installing green infrastructure.
  - RiverSmart Rewards discount program.
- DDOE's Stormwater Database
- Database group activity

Basics of DC's Stormwater Regulations

New District Stormwater Retention Performance Standards

Major land-disturbing activity

- 5,000 ft^2 or more of 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

- Renovation for which:
  - Cost exceeds 50% pre-project value of structure and
  - Combined footprint of structure and land disturb ≥ 5,000 ft^2.
- Retain the first 0.8” of rainfall on site or through a combination of on-site and off-site retention.

Calculating Required Retention Volume

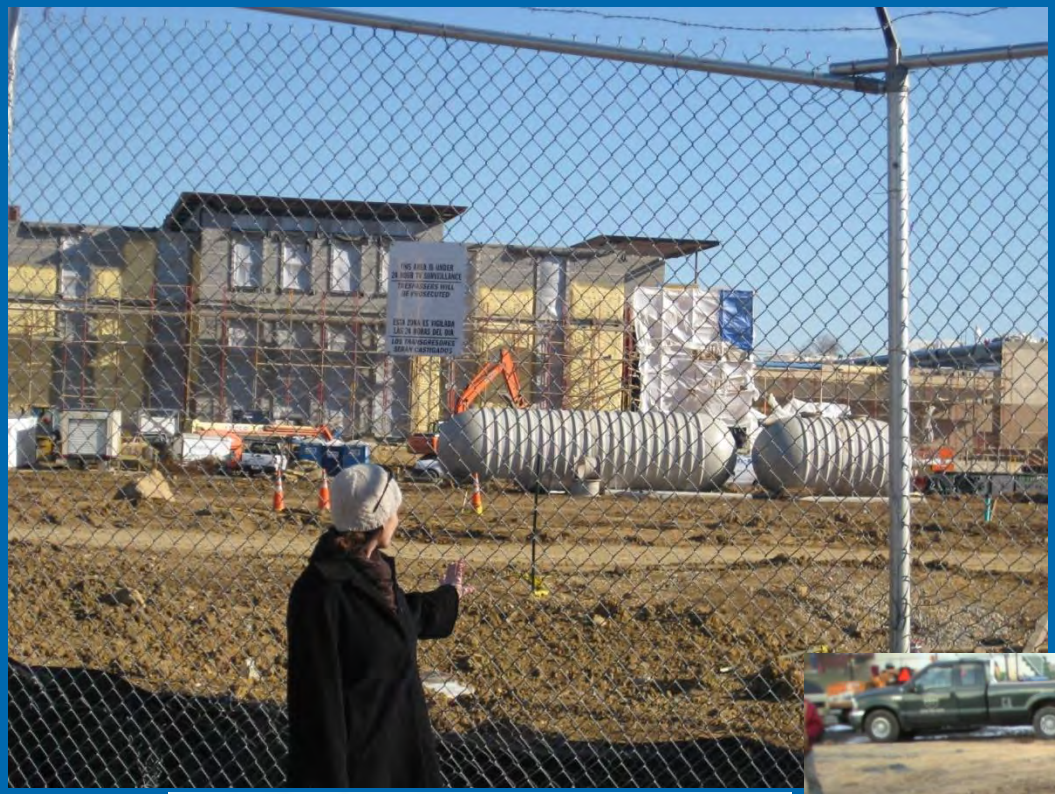
$SWRv = P\ (Rv_I * \%I + Rv_C * \%C + Rv_N * \%N) * SA * 7.48 / 12$

- 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

Bioretention Cells

Rainwater Harvesting for Non-potable Uses

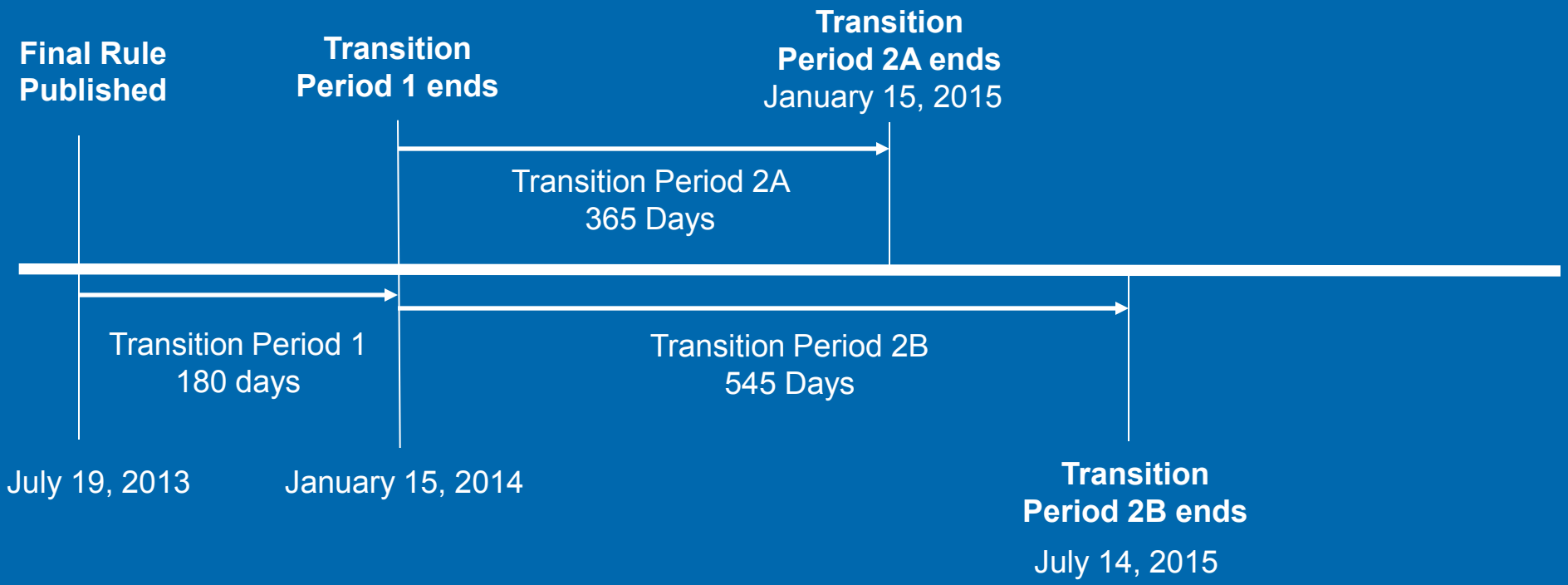


Transition Plan

Transition Period 1

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

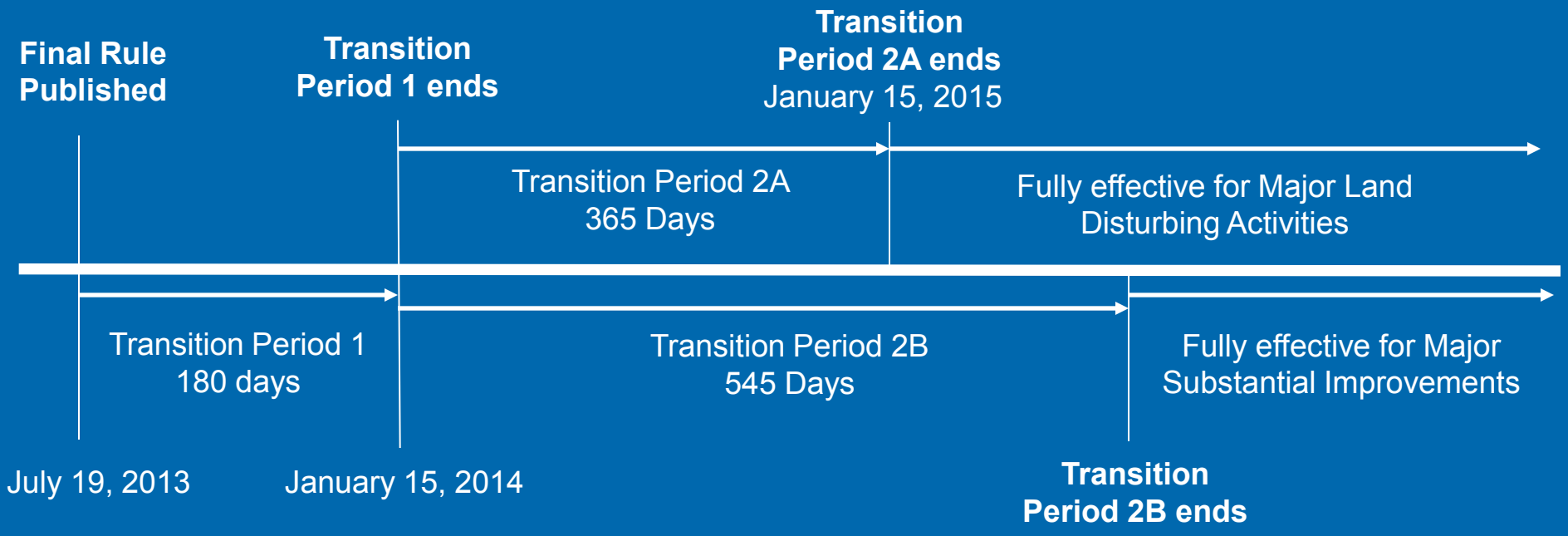
Transition Plan



Transition Period 2A and 2B

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

Transition Plan

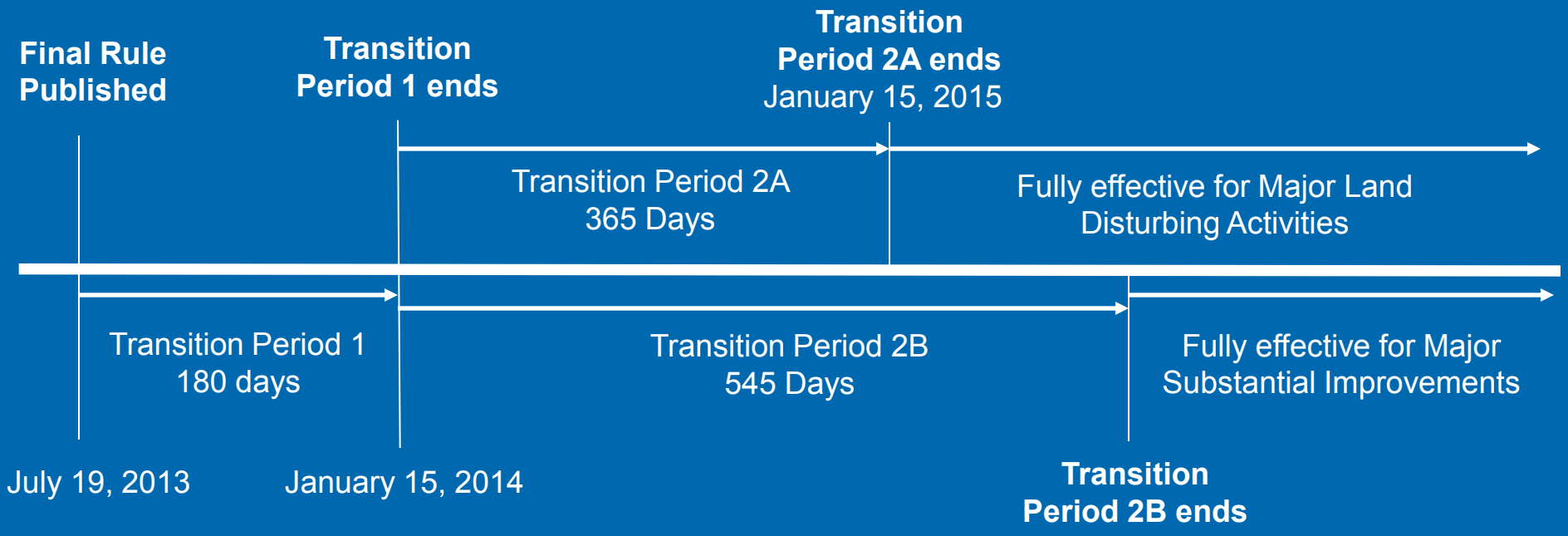


Fully Effective

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 Planned Unit Development application.
  - Application for Design Review under Capital Gateway Overlay.
  - Final design submission to National Capital Planning Commission.

Transition Plan



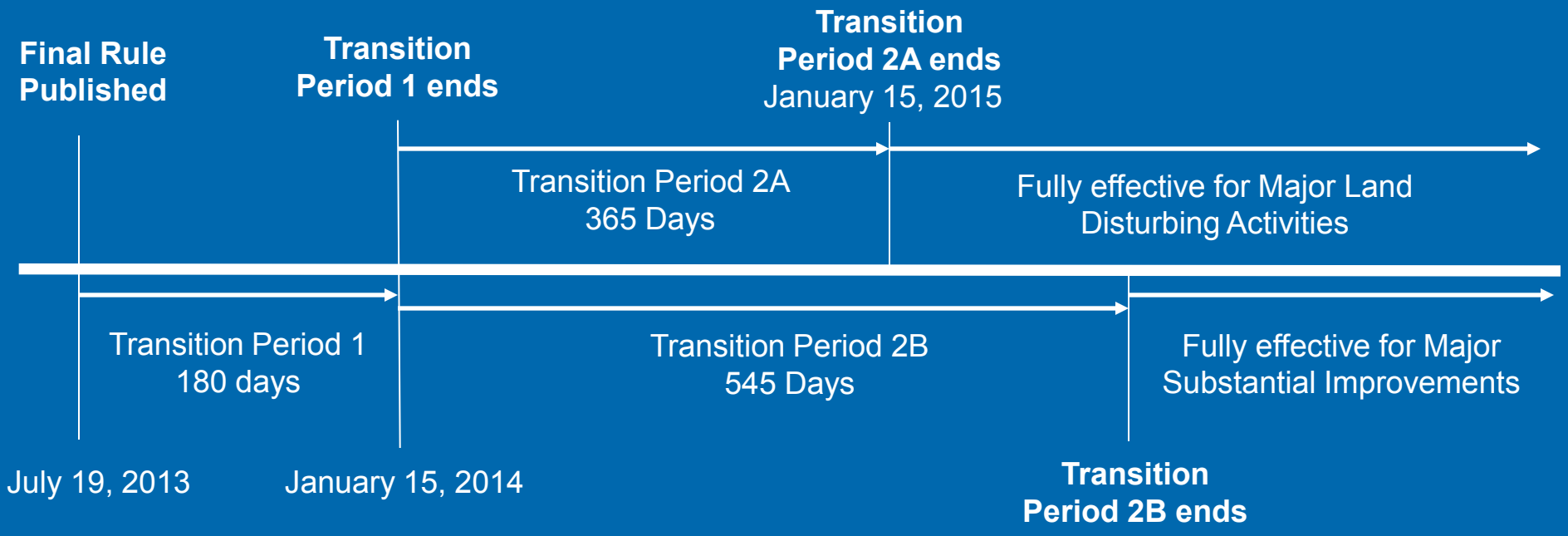
Fully Effective

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 Historic Preservation Review Board or Commission on Fine Arts.
- Design submission to National Capital Planning Commission.
- Variance from Board of Zoning Adjustment.
- Large tract review by DC Office of Planning.

Overview of How Regulated Sites Use Off-Site Retention

Allowable Use of Off-Site Retention

On-site retention ≥ 50% of SWRv.

- Free to go off site.

On-site retention < 50% of SWRv.

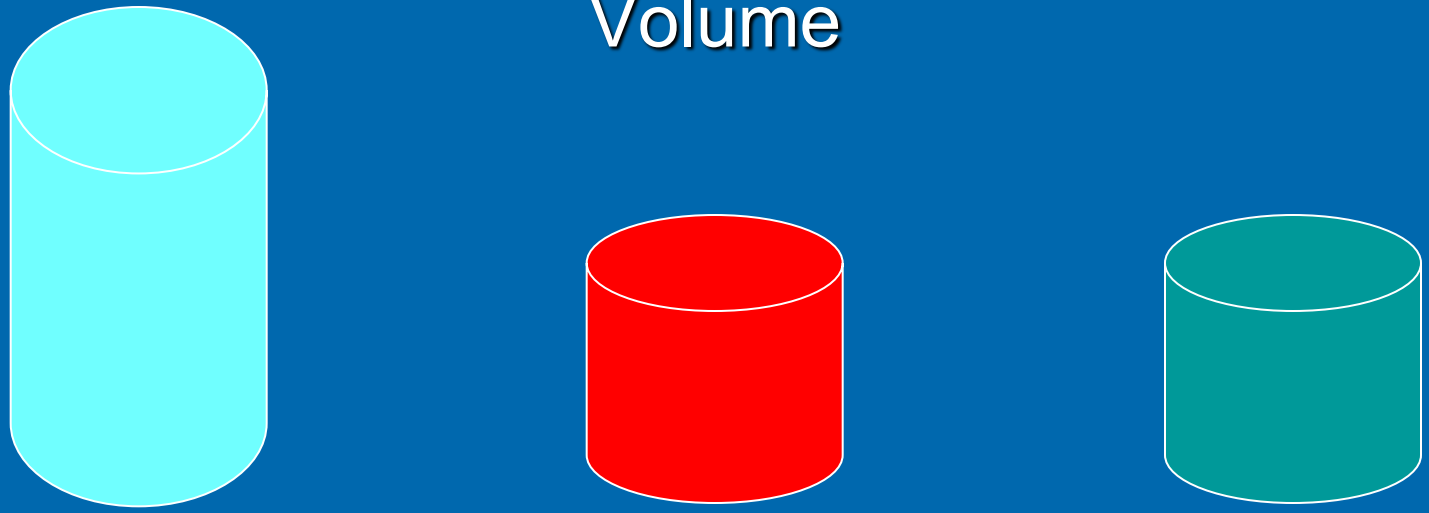
- Must prove that on-site retention is technically infeasible or environmentally harmful.

Impervious surface = 14,000 sf

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

Off-Site Retention Volume (Offv)

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



10,000 gallons

5,000 gallons

5,000 gallons

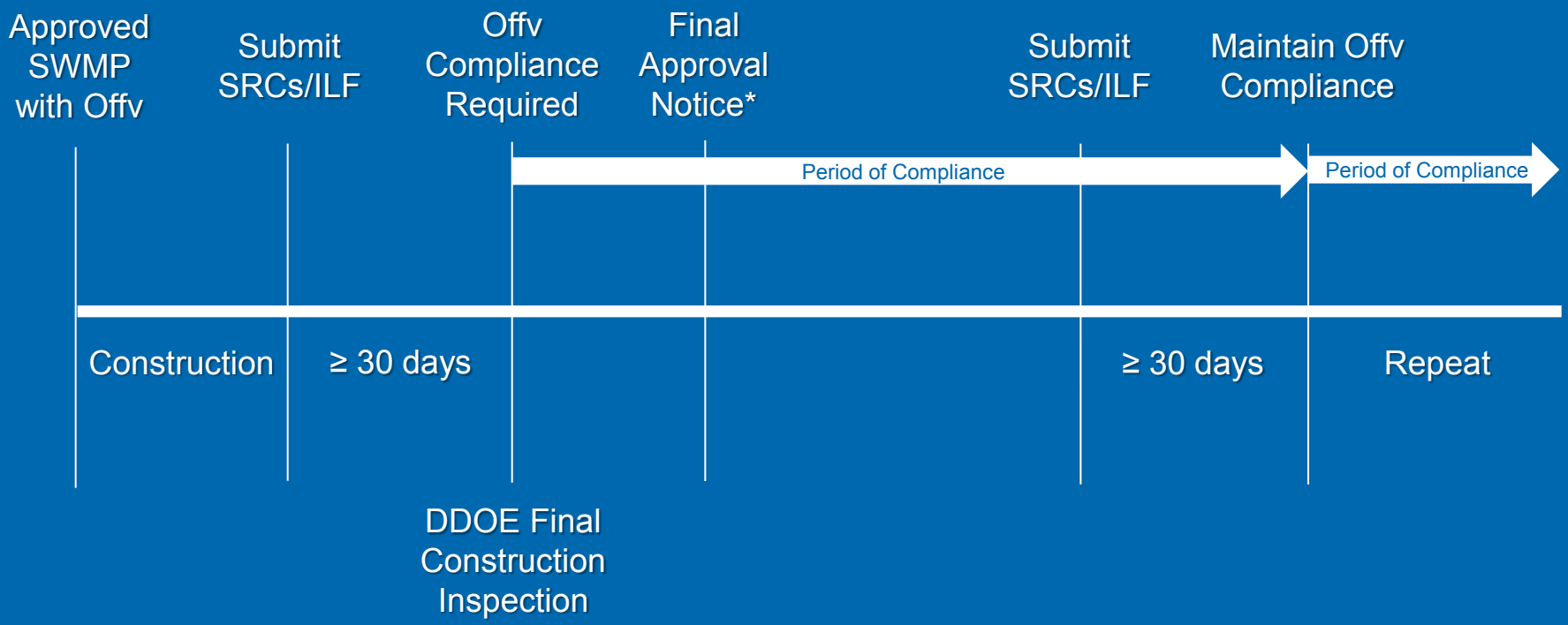
Two Options to Achieve Offv

- In-lieu fee (ILF) payment = $3.57
  - 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.

Timeline for Achieving Offv



* To receive a Final Approval Notice, regulated sites must submit an As-Built SWMP and proof of meeting any Offv obligation.

Calculating Cost to Achieve Offv

Impervious surface = 14,000 sf

SWRv = 10,000 gal.
On-site minimum = 5,000 gal.
On-site retention = 7,000 gal.
Offv = 3,000 gal.

Calculating Cost to Achieve 3,000 gal Offv		
	In-Lieu Fee	**SRCs**
Annual	=$3.57 * 3,000 =$10,710	= SRC Market Cost * 3,000 =$3,000 (?)
5 years	=5 * $3.57 * 3,000 =$53,550	= 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 and Certification of Stormwater Retention Credits

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.

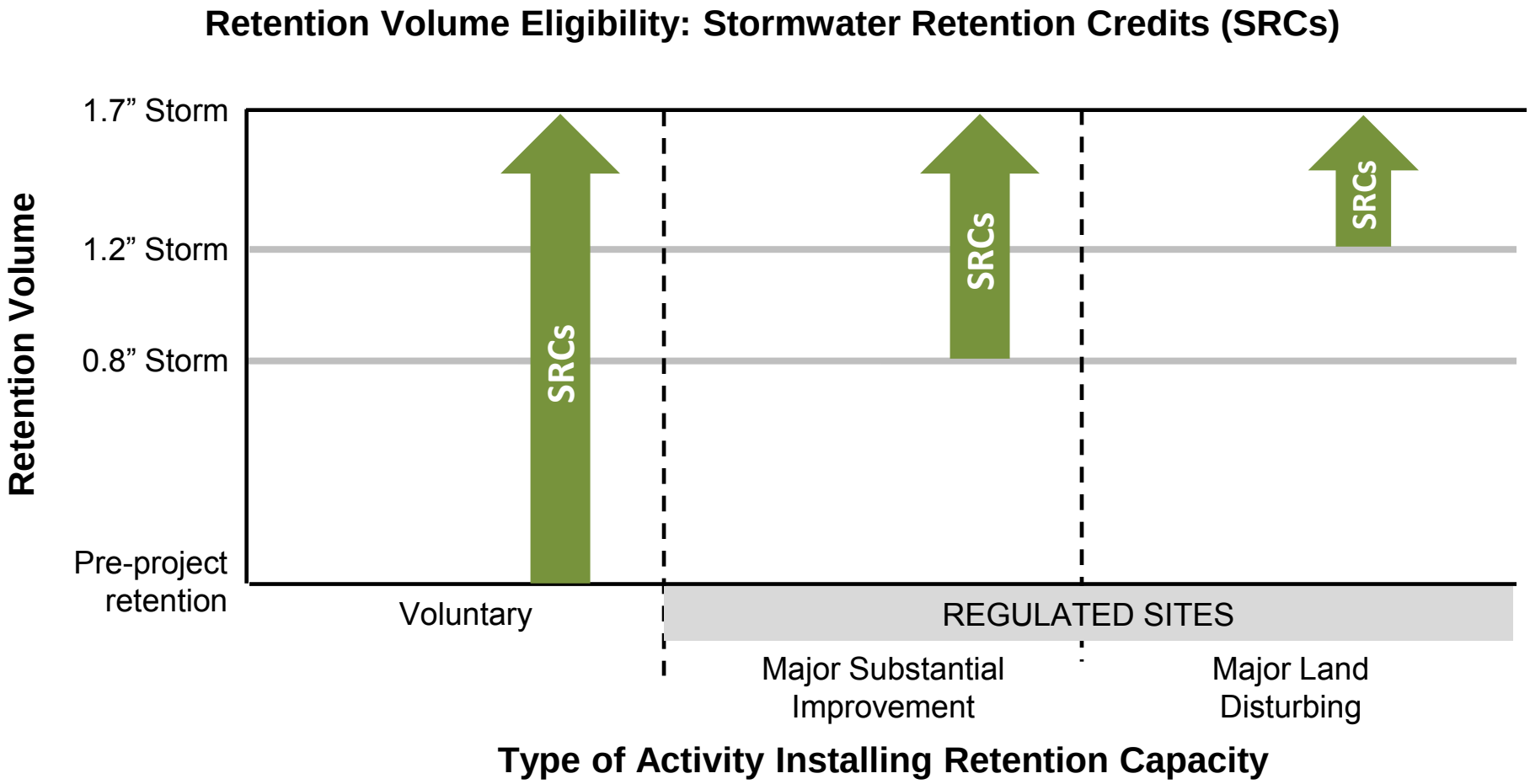
Example SRC Transaction

- 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.

Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

1) Achieve retention above existing retention or regs.



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

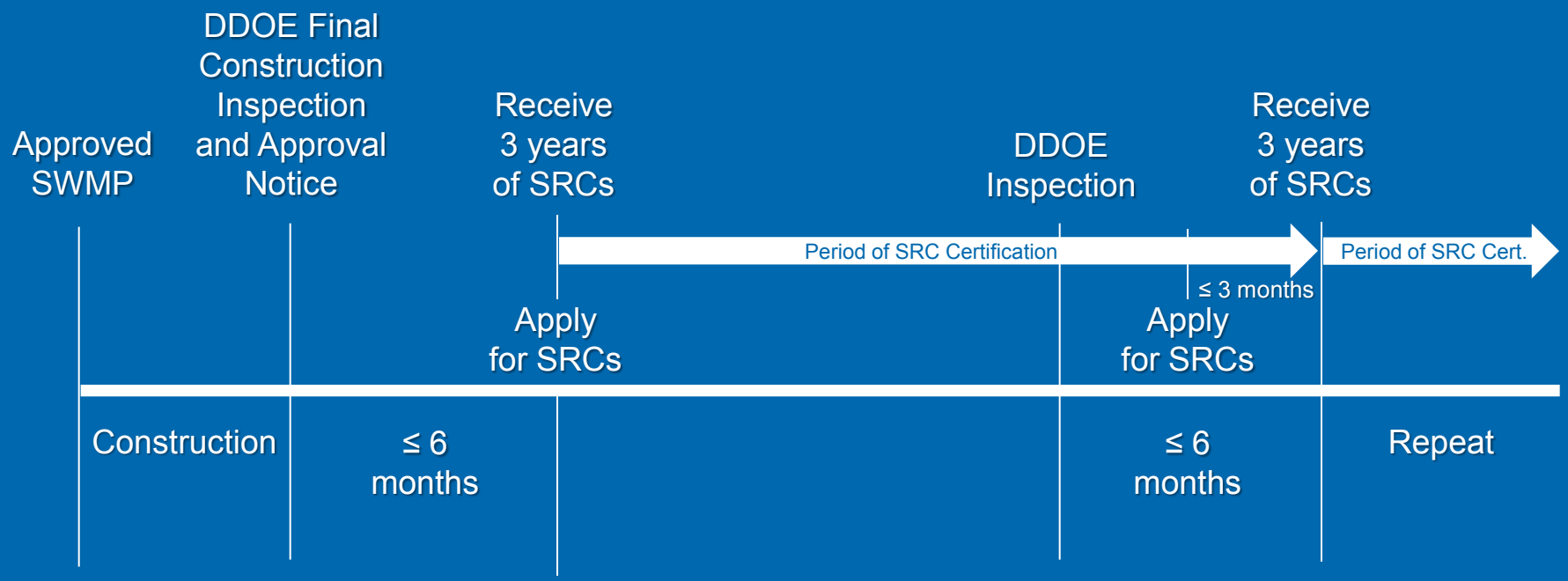
1) Design and receive DDOE approval of SWMP.
2) Install retention capacity.
3) Pass DDOE final construction inspection.
4) Apply for DDOE certification of SRCs, including:
   - As-built SWMP.
   - For period of certification, submit maintenance contract or documentation of ability/expertise.
5) Receive 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--------

Overview of 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.

Timeline for Generating SRCs

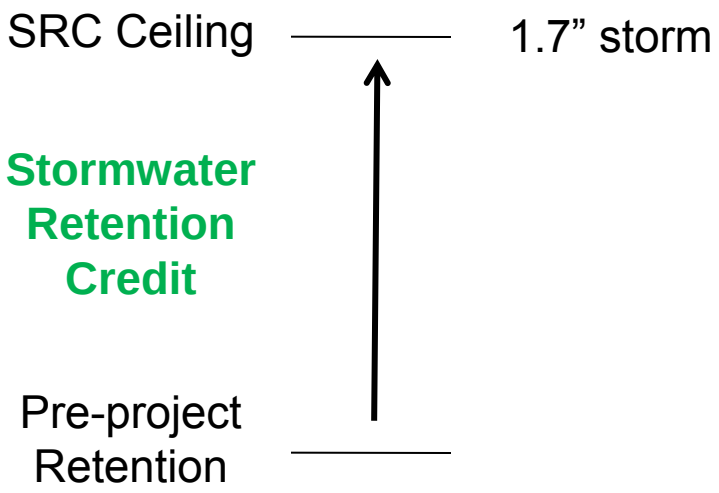


* To receive a Final Approval Notice, SRC-generating sites must submit an As-Built SWMP.

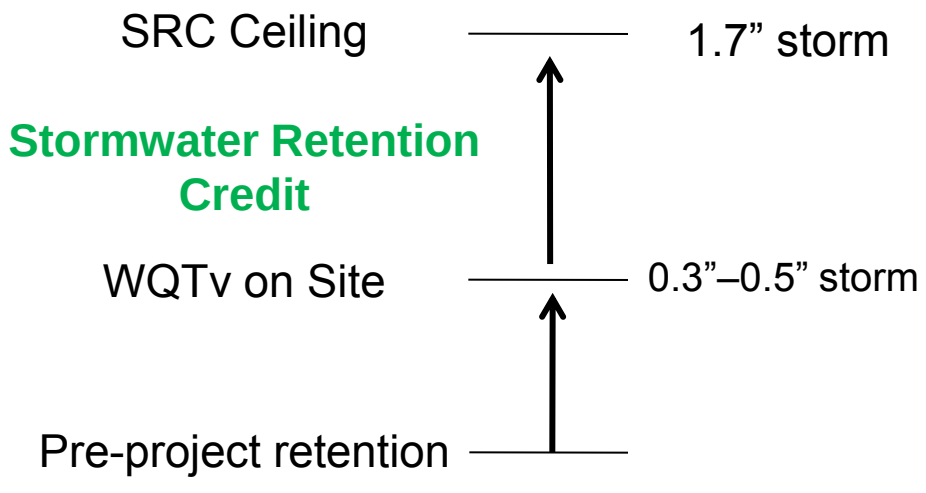
Eligibility for BMPs Submitted Before 1/15/14

- 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 Submitted 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 DDOE final 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 Mar. 5, 2015 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	20150305-A19-01400-000001-20150305-A19-01400-001000
Year 2	1,000 SRCs	20160305-A19-01400-000001-20160305-A19-01400-001000
Year 3	1,000 SRCs	20170305-A19-01400-000001-20170305-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.

SRC Price Required to Cover Cost

- Actual price will depend on numerous market factors and be negotiated by buyers and sellers.

Estimate of SRC Price Required to Cover Cost to Generate (SRC = 1 gallon of retention capacity for 1 year)							
					Cost-Covering SRC Price		
	Capital cost per gallon of retention (Pv)	Land cost per gallon (Pv)	Maint. Cost over Payback Period (Pv)	Sum of Pv Costs (cap. cost + land value + maint. cost)	5% ROI	7.16% ROI	12.61% ROI
10-year payback	$4.00	$4.85	$1.67	$10.52	**$1.36**	**$1.51**	**$1.91**
20-year payback	$4.00	$4.85	$2.87	$11.72	**$0.94**	**$1.12**	**$1.63**
10-year payback	$6.00	$4.85	$2.51	$13.36	**$1.73**	**$1.92**	**$2.42**
20-year payback	$6.00	$4.85	$4.31	$15.16	**$1.22**	**$1.45**	**$2.11**

Calculating Return from Installing Green Infrastructure

- Use DDOE's Retention GI Financial Return Calculator.

DDOE Facilitation of the SRC Market

- SRC registry, database, and website.
- SRC transaction template contract.
- SRC purchase guarantee to reduce demand uncertainty.
- Tax treatment for SRC purchases/in-kind transfers.

DDOE Facilitation of the SRC Market

- Portfolio of potential SRC-generating projects.
- Informal meetings for trading and networking.
- Reduced plan review fees for projects installed solely to generate SRCs.

Fees for SWMP Review to Certify SRCs

	≤ 10,000 ft^2	> 10,000 ft^2
Initial	$3,300 $ 587	$6,100 $ 868
Final	$1,500 $ 128	$2,400 $ 204
Supplemental	$1,000 $ 510	$2,000 $ 510

RiverSmart Rewards

- DC Gov't (DDOE) Stormwater Fee ($2.67/ERU for FY2015).
- DC Water Impervious Area Charge ($16.75/ERU for FY2014).
- Collected by DC Water on water and sewer 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

RiverSmart Rewards Discount Program

-----Based on 1.2” storm-----

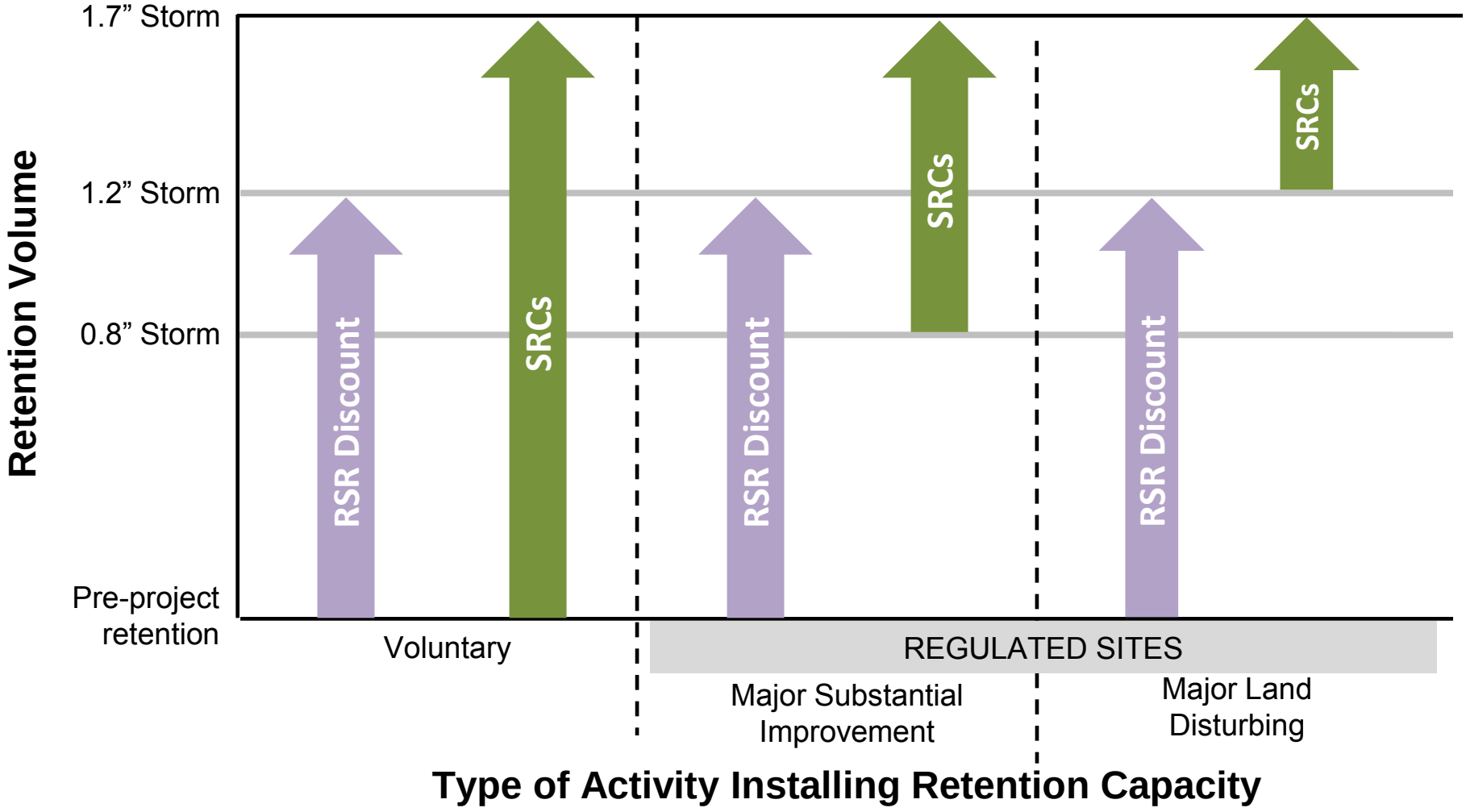
Potential 10-Year Financial Return on Retention BMP - SRC Revenue and Discount on Impervious Fees												
Assuming installation of BMP to retain 1.2" of stormwater from 1 Equivalent Residential Unit												
	Rate	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	**10-Year Total**
Max Discount – DC Water IAC	4%	$5	$6	$8	$10	$11	$12	$13	$14	$15	$15	**$107**
Max 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**

-----Based on 1.7” storm-----

Potential 10-Year Financial Return on Retention BMP - SRC Revenue and Discount on Impervious Fees												
Assuming installation of BMP to retain 1.7" of stormwater from 1 Equivalent Residential Unit												
	Rate	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	**10-Year Total**
Max Discount – DC Water IAC	4%	$5	$6	$8	$10	$11	$12	$13	$14	$15	$15	**$107**
Max Discount – SW Fee	55%	$18	$18	$26	$26	$26	$26	$33	$33	$33	$33	**$273**
Projected Value of SRCs (inflation-adjusted)	$1.25	$1,258	$1,301	$1,345	$1,390	$1,437	$1,486	$1,536	$1,588	$1,642	$1,697	**$14,680**
Total		$1,281	$1,325	$1,379	$1,426	$1,474	$1,524	$1,582	$1,635	$1,690	$1,745	**$15,061**

Properties may receive discounts for retention up to the 1.2” storm and SRCs for retention up to the 1.7” storm.

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



DDOE's Stormwater Database

Uses

- Apply for a RiverSmart Rewards discount.
- Certify SRCs.
- View SRCs for sale.
- Transfer SRCs.
- View final SRC sale prices.
- Retire SRCs.
- Use SRCs or ILF to meet Offv.
- View your SRC activity.

Additional Information

Brian Van Wye
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SRC Trading – Evan Branosky
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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