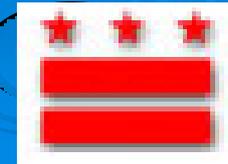


Generation and Certification of Stormwater Retention Credits



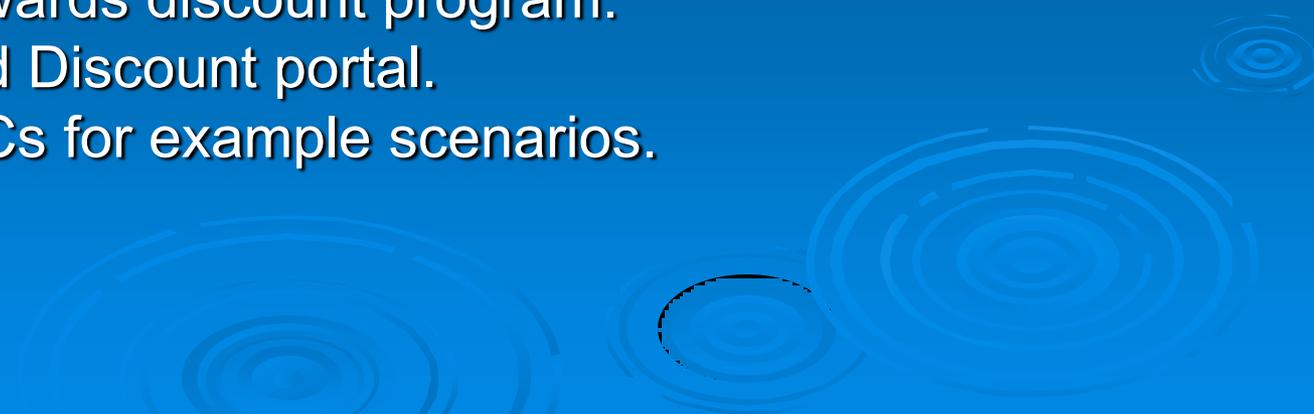
Presented by:
Evan Branosky
District Department of the Environment
Greg Hoffman, P.E.
Center for Watershed Protection



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.
- 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.
 - RiverSmart Rewards discount program.
 - Online SRC and Discount portal.
 - Calculating SRCs for example scenarios.
 - Questions.
- 

New District Stormwater Retention Performance Standards

Major land-disturbing activity

- 5,000 ft² 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 $\geq 5,000$ ft².
- Retain the first 0.8” of rainfall on site or through a combination of on-site and off-site retention.

Calculating Required Retention Volume

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

- SWR_v = Volume required to be retained (gal)
- P = 1.2 inches (90th 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)

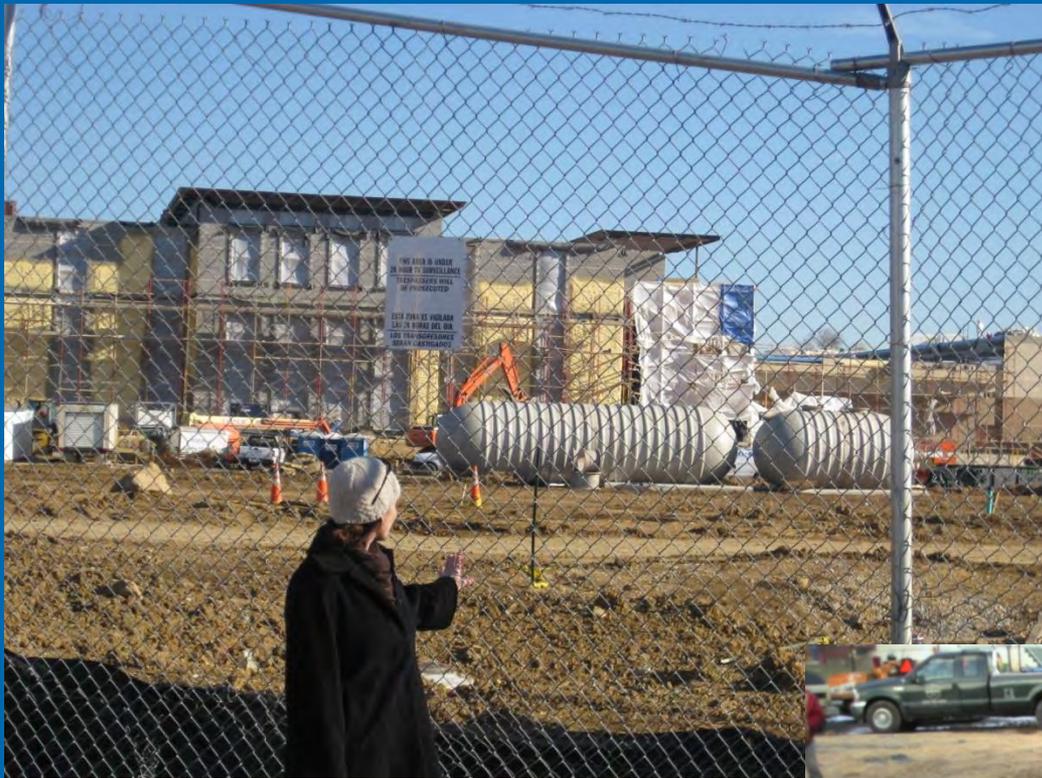
Green Roofs



Stormwater Tree and LID Boxes



Rainwater Harvesting for Non-potable Uses



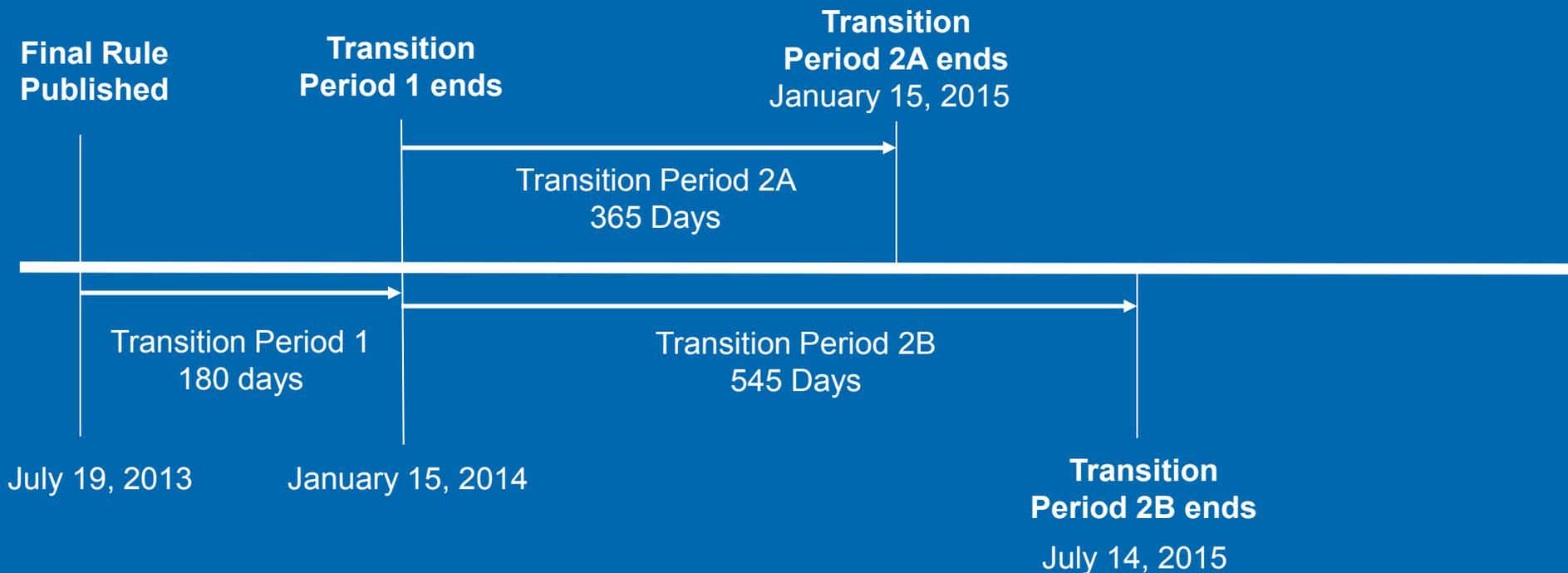
Transition Plan



Transition Period 1

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

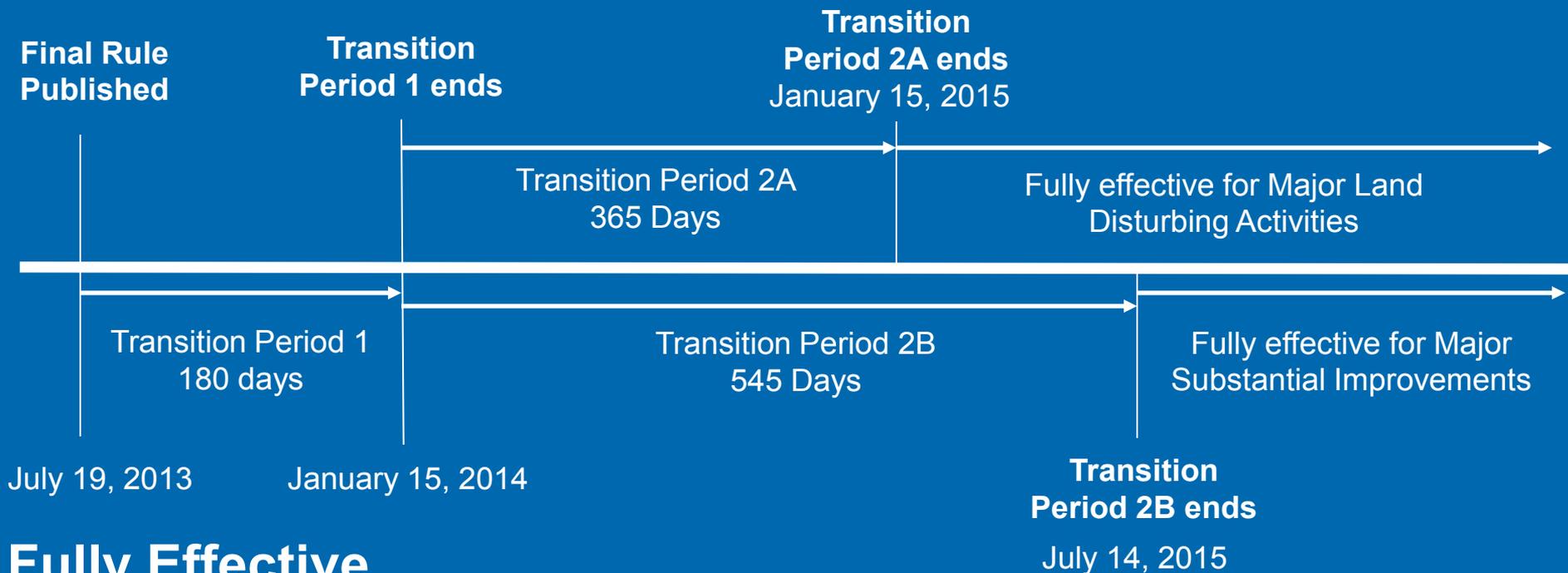
Transition Plan



Transition Period 2A and 2B

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

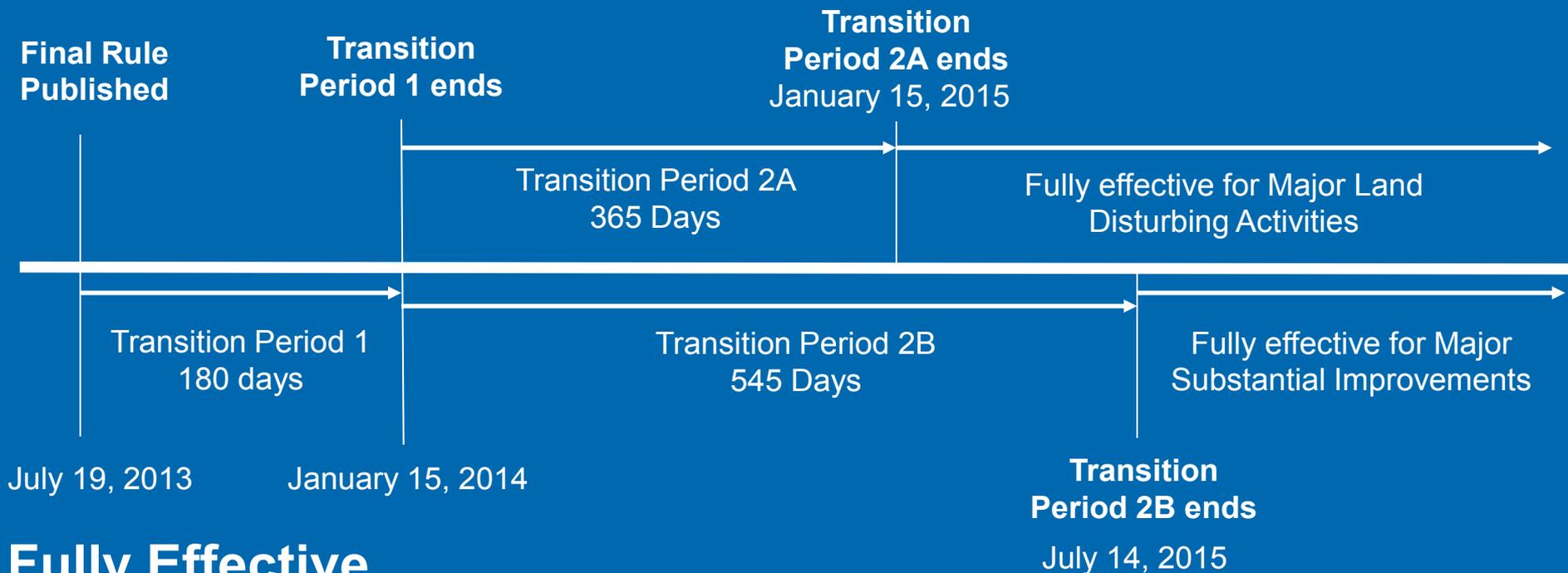
Transition Plan



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

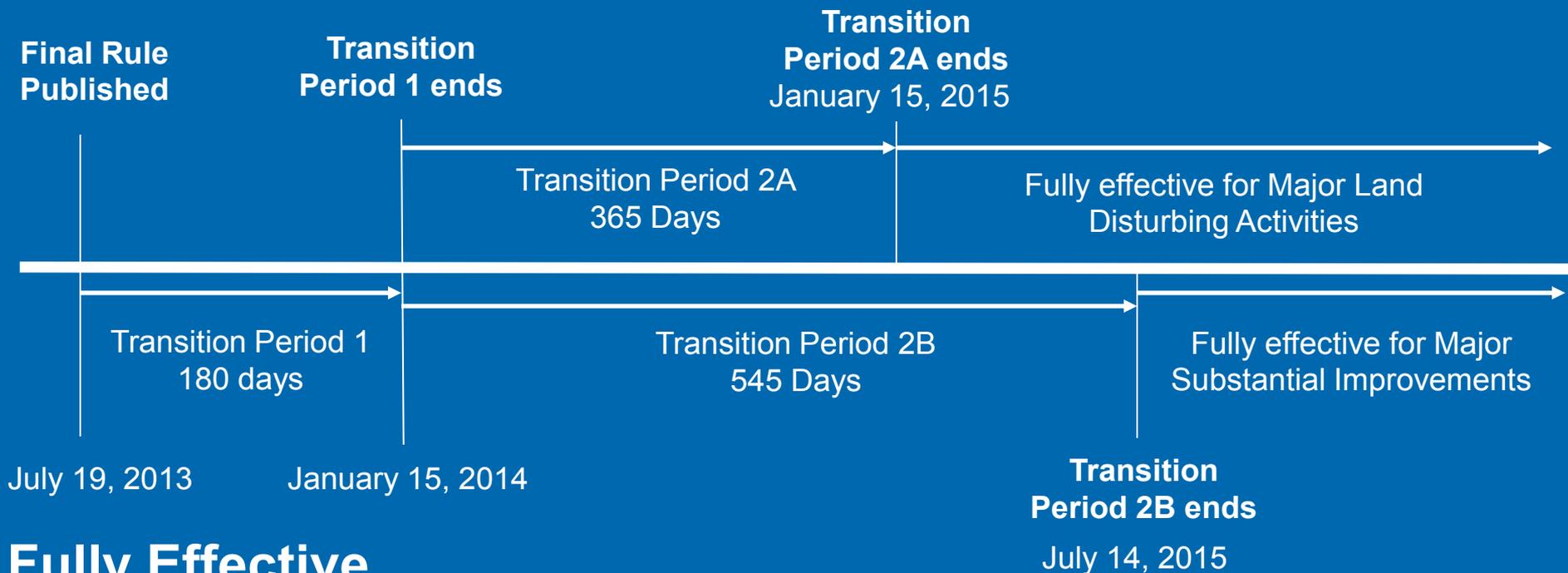
Transition Plan



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

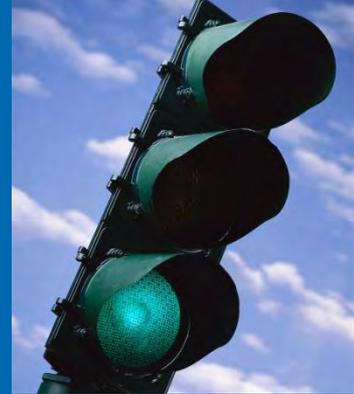
2) Exception - grounds for on-site relief when unexpired approval of:

- 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.

Allowable Use of Off-Site Retention

On-site retention $\geq 50\%$ 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.



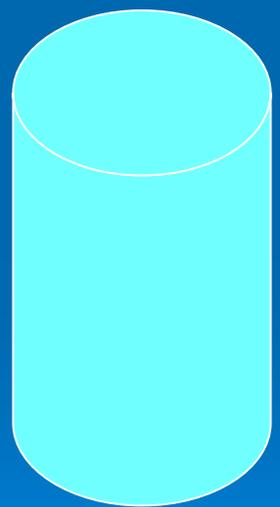
Impervious surface =
14,000 sf

SWRv = 10,000 gal.

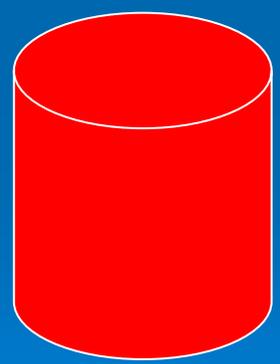
On-site minimum = 5,000 gal.

Off-Site Retention Volume (Offv)

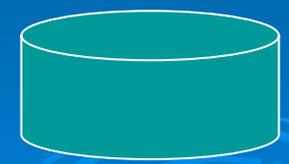
$$\text{SWRv} - \text{On-Site Retention Volume} = \text{Offv}$$



10,000
gallons



7,000
gallons



3,000
gallons

Two Options to Achieve Offv

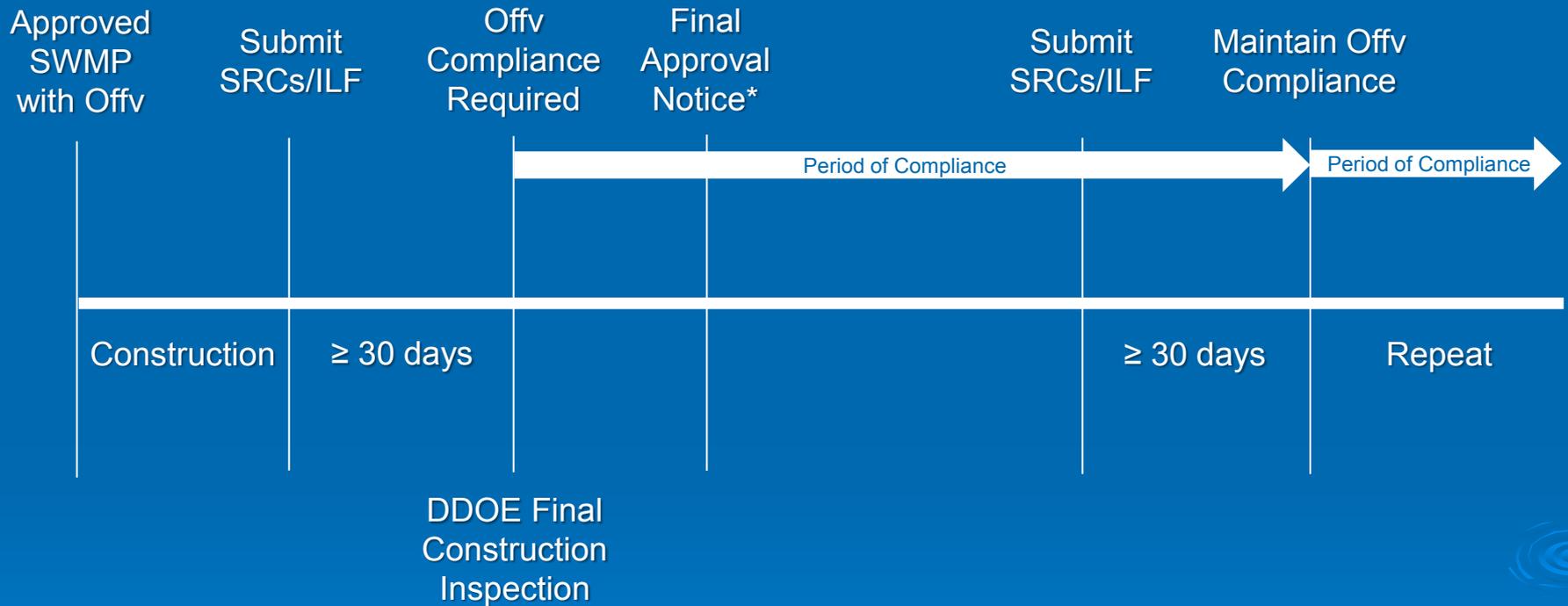
- In-lieu fee (ILF) payment = \$3.50
 - Paid to DDOE.
 - Corresponds to 1 gallon of retention for 1 year.
 - Achieves 1 gallon of Offv for 1 year.
 - Inflation adjusted annually.

- 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.

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

SWR_v = 10,000 gal.

On-site minimum = 5,000 gal.

On-site retention = 7,000 gal.

Off_v = 3,000 gal.

Calculating Cost to Achieve 3,000 gal Off_v

	In-Lieu Fee	SRCs
Annual	$= \$3.50 * 3,000$ $= \$10,500$	$= \text{SRC Market Cost} * 3,000$ $= \$3,000 (?)$
5 years	$= 5 * \$3.50 * 3,000$ $= \$52,500$	$= 5 * \text{SRC Market Cost} * 3,000$ $= \$15,000 (?)$

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

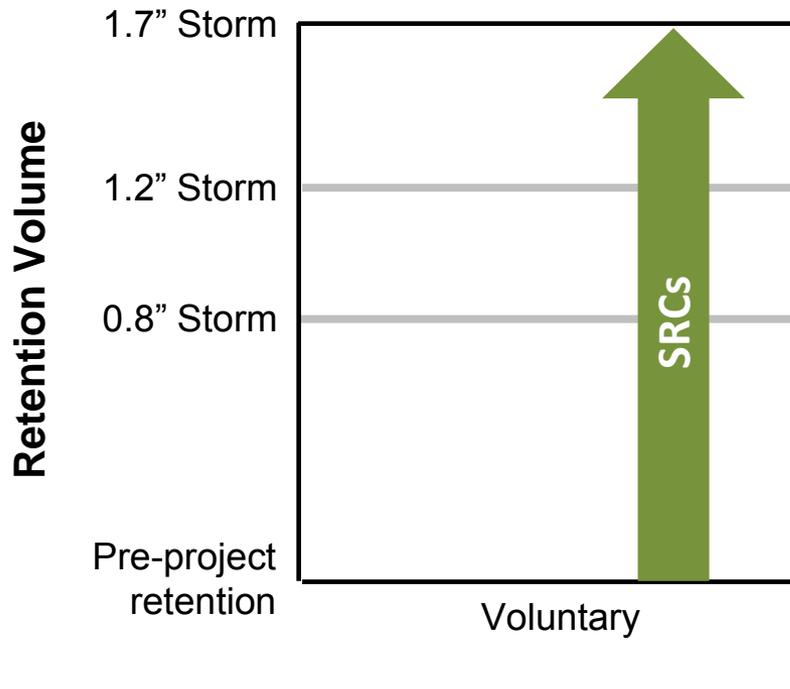
- Eligibility requirements.
- Maintenance requirements.
- Overview of SRC certification process.
- Eligibility for BMPs submitted before Jan.15, 2014.
- SRC serial numbers.
- Process for buying and selling SRCs.
- DDOE efforts to encourage trades.
- Calculating SRCs for example scenarios.

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)



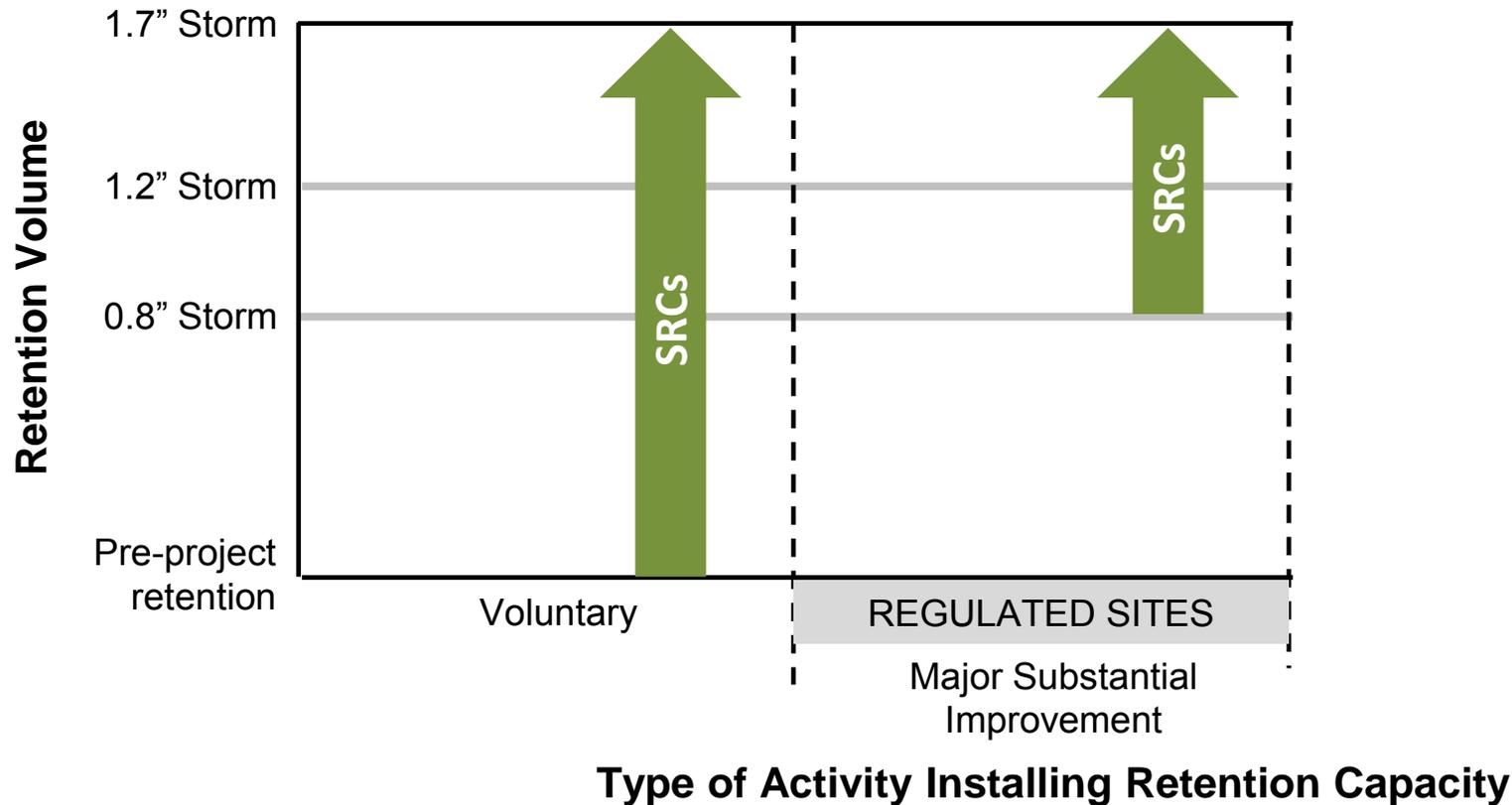
Type of Activity Installing Retention Capacity

Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

- 1) Achieve retention above existing retention or regs.

Retention Volume Eligibility: Stormwater Retention Credits (SRCs)

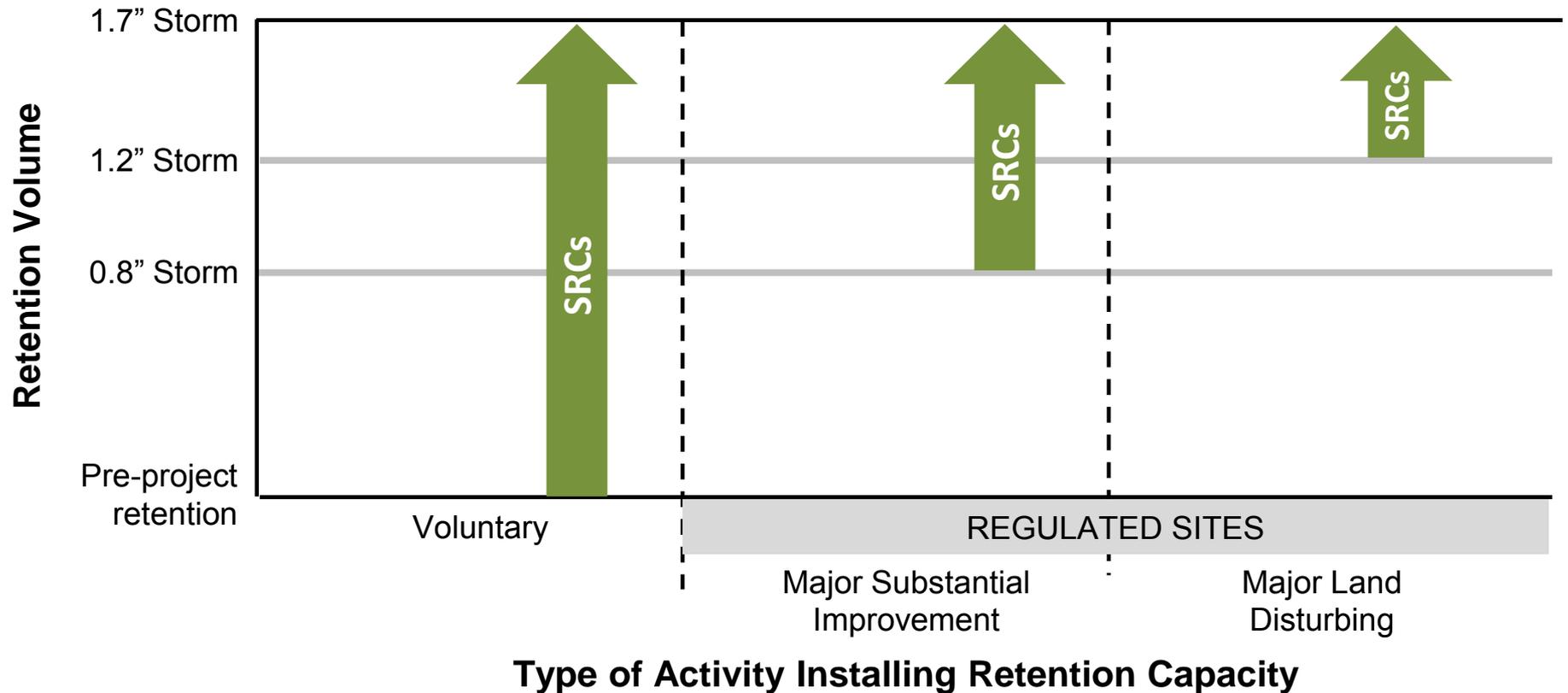


Eligibility for SRC Certification

Eligible BMPs & land cover changes must:

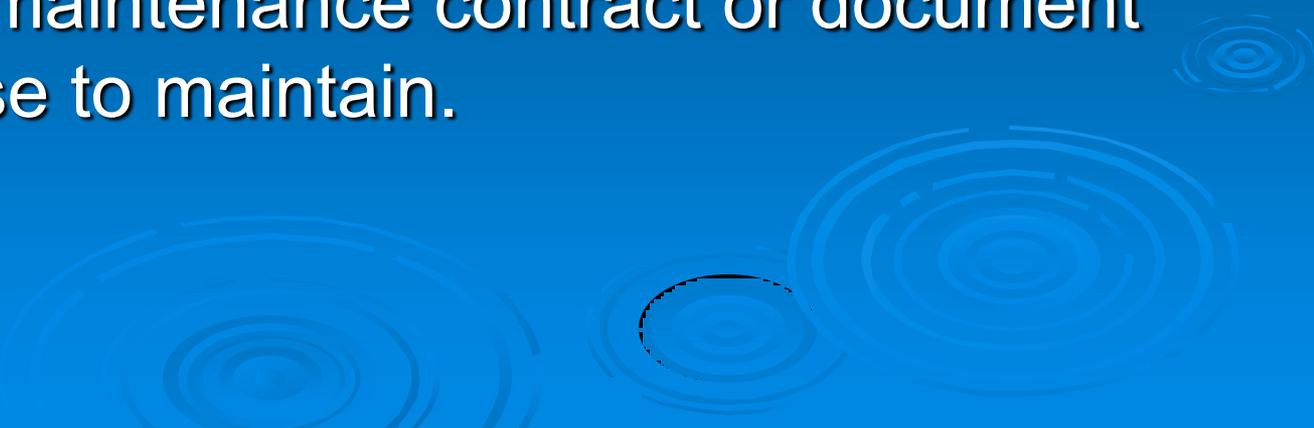
- 1) Achieve retention above existing retention or regs.

Retention Volume Eligibility: Stormwater Retention Credits (SRCs)



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.

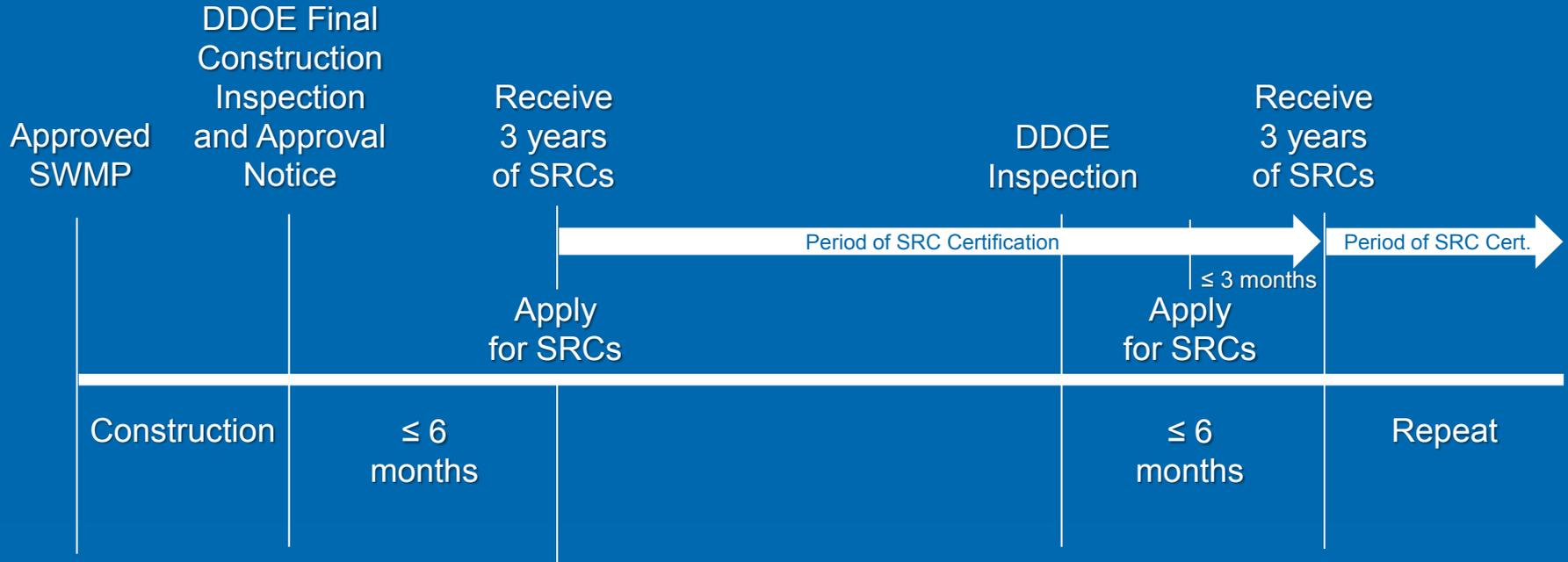
Overview of SRC Certification Process

- 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

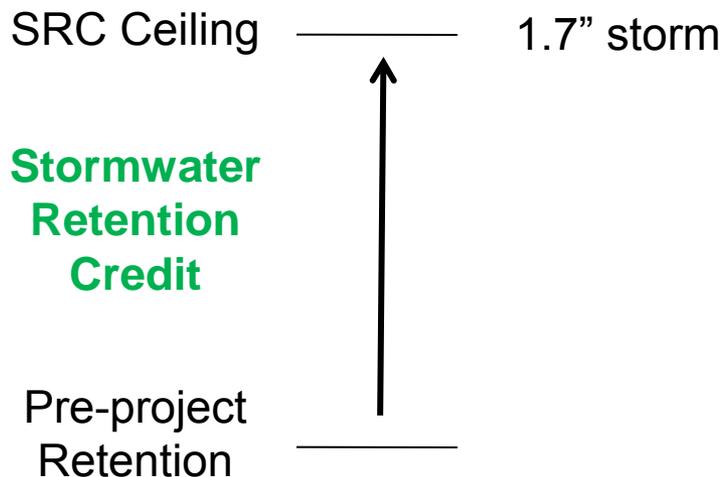


* To receive a Final Approval Notice, SRC-generating sites must submit an As-Built SWMP.

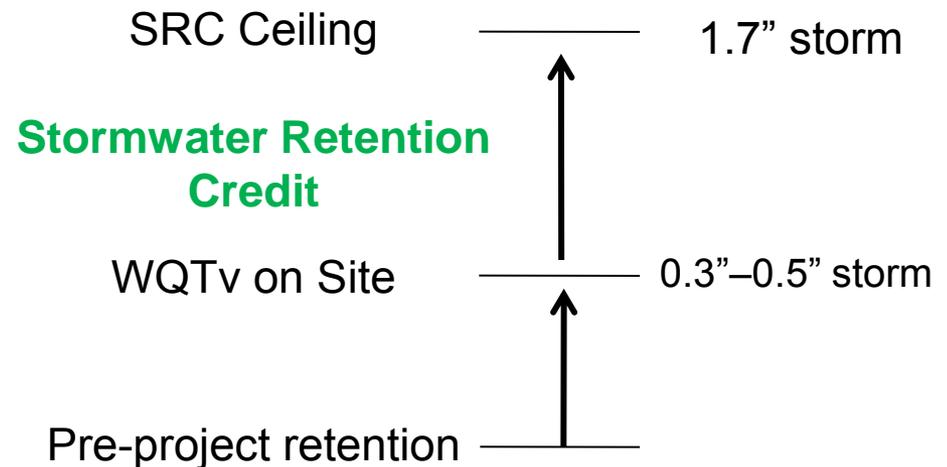
Eligibility for BMPs Submitted Before 1/15/14

- 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 Feb. 5, 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	20140205-A19-01400-000001-	20140205-A19-01400-001000
Year 2	1,000 SRCs	20150205-A19-01400-000001-	20150205-A19-01400-001000
Year 3	1,000 SRCs	20160205-A19-01400-000001-	20160205-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

DDOE Efforts to Encourage Trades

- Capturing anticipated Offv and SRCs from approved SWMPs.
 - Developing template trading contract for buyers and sellers.
 - Planning informal auctions to connect buyers with sellers and vice versa.
 - Planning discussion group of market participants.
- 

RiverSmart Rewards

- DC Gov't (DDOE) Stormwater Fee (\$2.67/ERU for FY2014).
- DC Water Impervious Area Charge (\$11.85/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
- Retroactive discount for BMPs if application submitted before July 31, 2014.

RiverSmart Rewards Discount Program

-----Based on 1.2" storm-----

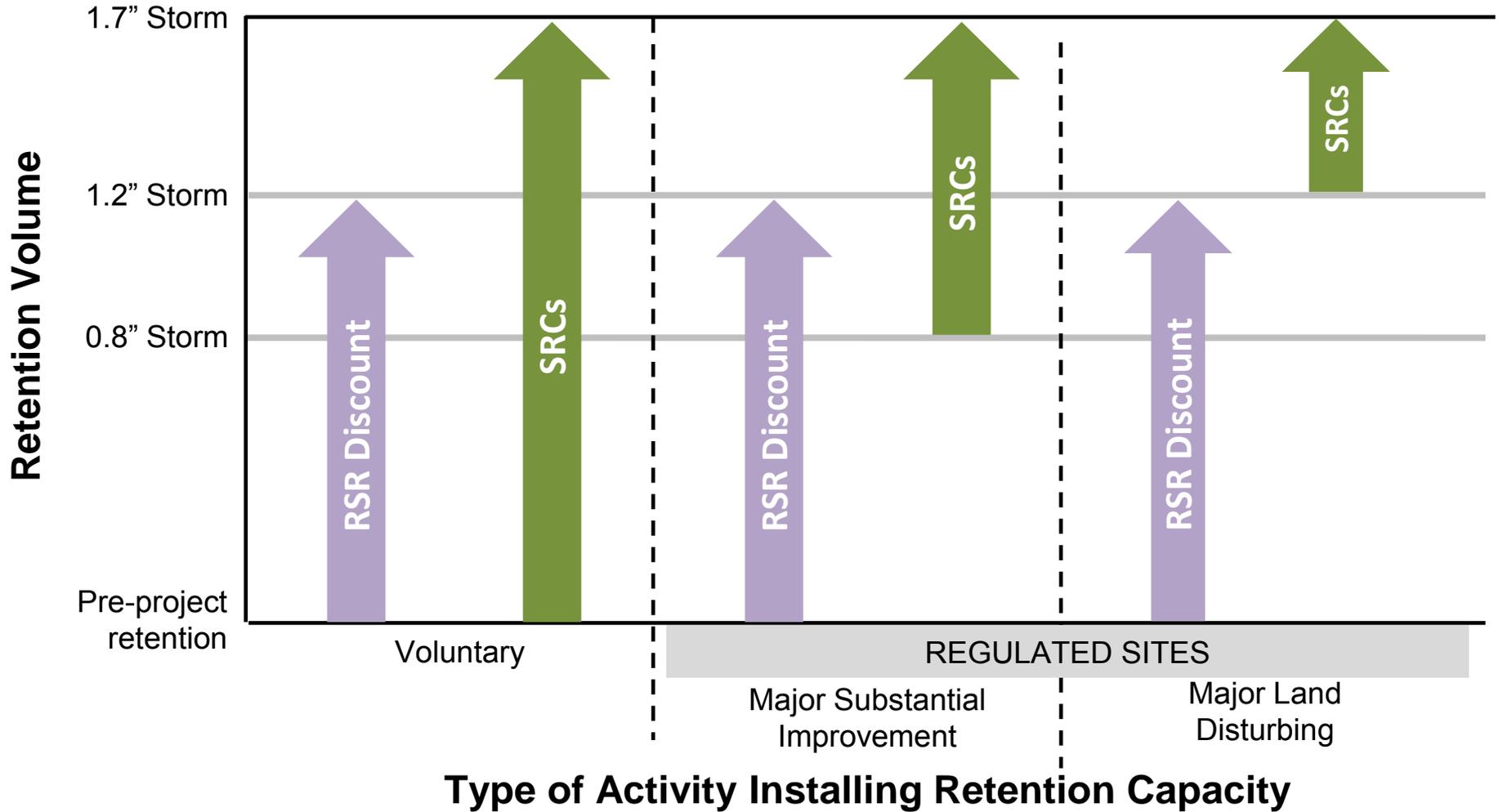
Potential 10-Year Financial Return on Retention BMP - SRC Revenue and Discount on Impervious Fees												
Assuming installation of BMP to retain 1.2" of stormwater from 1 Equivalent Residential Unit												
	Rate	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	10-Year Total
Max.Discount - DC 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

-----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	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	\$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)



Online Database

Allows users to:

- Create an account.
- View Instructions.
- View account information.
- Certify SRCs.
- Transfer SRCs.
- Retire SRCs.
- Use SRCs or notify DDOE of ILF payment to meet Offv.
- View the SRC Registry.
- Receive a RiverSmart Rewards discount.

Additional Information

Brian Van Wye

Brian.VanWye@dc.gov; 202-741-2121

SRC Trading – Evan Branosky

Evan.Branosky@dc.gov; 202-535-2295

RiverSmart Rewards Discount – Emily Rice

Emily.Rice@dc.gov; 202-535-2679

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