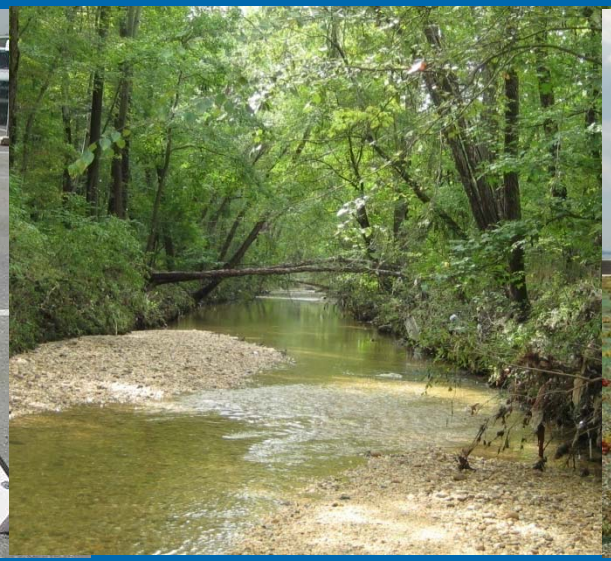
Use of Off-Site Retention by Major Regulated Projects


Presented by:
Brian Van Wye
District Department of the Environment

CENTER FOR WATERSHED PROTECTION

CHESAPEAKE STORMWATER NETWORK

DISTRICT DEPARTMENT OF THE ENVIRONMENT

green forward

Training Objective

- To provide practical guidance on how major regulated projects can use off-site retention to comply, in part, with the District's proposed stormwater retention standards.
- To request input and feedback.
- 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.
- Use of off-site retention:
  - Conditions and requirements.
  - Two ways to achieve retention off site.
  - Flexibility in satisfying off-site obligation.
  - Cost, process, and other key points.
- Basics of generation and certification of Stormwater Retention Credits (SRCs).
- Lowering barriers to SRC trading and DDOE's role.
- 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)

Using Runoff Reduction Method in DC: Step 1: Reduce SWRv By Design

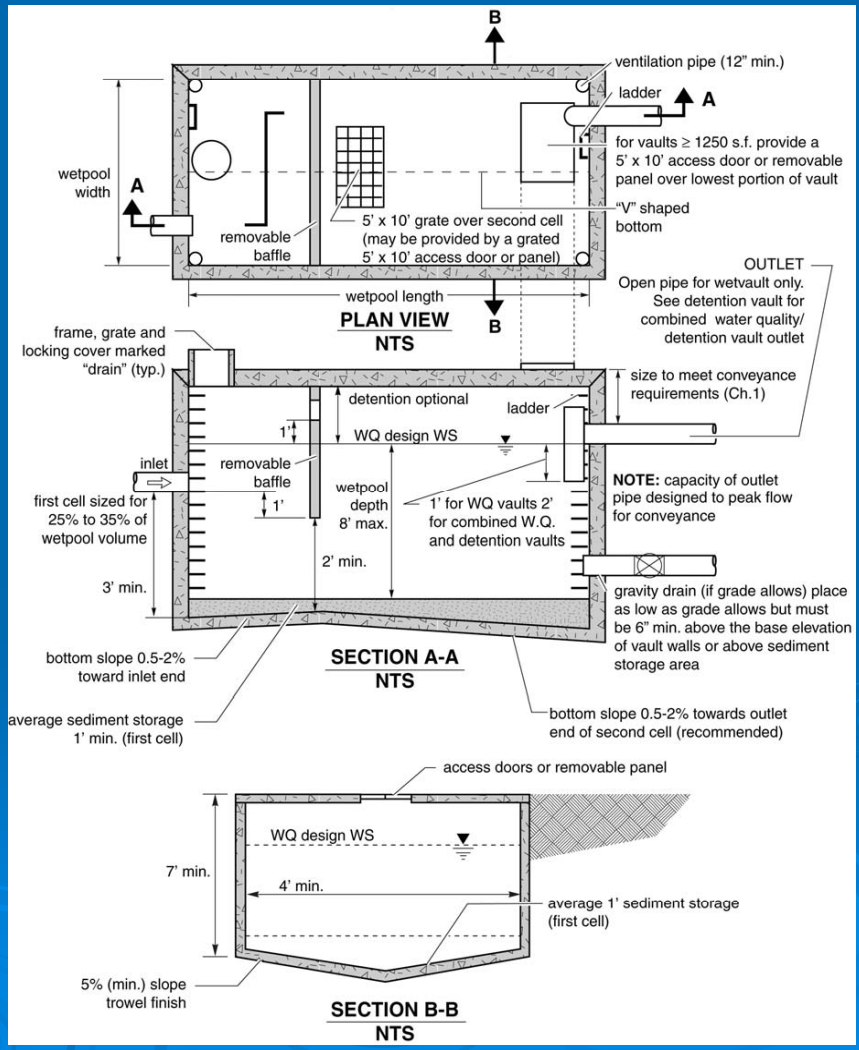
- Better site planning & design techniques
  - Preserve natural areas
  - Conservation design
  - Reduce clearing & grading limits
  - Reduce roadway widths
  - Eliminate excessive impervious cover
  - And more…

Step 2: Retain SWRv with BMPs

- Small-scale, distributed Best Management Practices (BMPs)
  - Soil Restoration
  - Downspout Disconnection
  - Rain Gardens/Small Bioretention Areas
  - Rainwater Harvesting
  - Permeable Pavement
  - Green Roofs
  - Natural Drainage Ways
  - Vegetated Channels
  - Site Reforestation
  - Buffers

Step 3: Capture & Treat Remaining On-site Minimum Volume

- Treatment practices
  - Filters
  - Ponds
  - Wetlands
- Each drainage area has minimum requirement.



Next: Iterate or Mitigate

When required retention volume not met on site, either:

- Go back to Step 1 (Iterative site design process).
  - Consider flexible options for on-site retention:
    - Over-control in some drainage areas.
    - Use Shared BMPs (S-BMPs).

OR

- Mitigate through use off-site retention.

Allowable Use of Off-Site Retention

On-site retention ≥ 50% of SWRv.

- No need to prove that on-site retention is technically infeasible or environmentally harmful.

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 (OSRv)

SWRv = **On**-Site Retention Volume + **Off**-Site Retention Volume

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

As with On-Site Retention Volume, Off-Site Retention Volume Must:

- Be achieved as of successful post-construction inspection.
- Continue to be achieved on an ongoing basis.
- Recorded on Stormwater Management Plan and in Declaration of Covenants.

Two Ways to Achieve Off-Site Retention Volume (OSRv)

- In-lieu fee.
  - Payable to DDOE.
  - $3.50 in-lieu fee achieves 1 gallon of OSRv for 1 year.
  - To be adjusted for inflation & other cost changes over time.
- Stormwater Retention Credits (SRCs).
  - Privately tradable.
  - 1 SRC achieves 1 gallon of OSRv for 1 year.
  - Possibly about $1 per SRC, based on simplified cost estimate.

Flexibility in Achieving Off-Site Retention Volume (OSRv)

A regulated site may:

- Use a mix of in-lieu fee and SRCs to achieve OSRv.
- May change mix of in-lieu fee vs. SRCs from year to year.
- Reduce/eliminate OSRv by increasing on-site retention.
- Achieve OSRv for multiple years at a time.
  - 1-year lifespan of an SRC or in-lieu fee payment begins when it is used to achieve OSRv for a specific year.

Calculating Cost to Achieve Off-Site Retention Volume (OSRv)

Impervious surface = 14,000 sf

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

Calculating Cost to Achieve 3,000 gal OSRv		
	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 (?)

Process for Use of Off-Site Retention

After DDOE approval of Stormwater Management Plan, showing SWRv, on-site retention, and OSRv, do the following:

1) 30 days prior to final construction inspection, submit documentation of how OSRv will be achieved:
   a) In-lieu fee (ILF) payment OR
   b) Application to use SRCs.
2) Receive DDOE approval of documentation.
3) Pass final construction inspection & start using ILF or SRCs.
4) 30 days prior to using up ILF or SRCs, submit additional documentation of how OSRv will be achieved.
5) Receive DDOE approval of documentation

---Steps 4 and 5 repeat indefinitely---

Failure to Achieve Off-Site Retention Volume (OSRv)

- DDOE will not approve final construction inspection until it has also approved submitted documentation for how OSRv will be achieved.
- A lapse in achieving OSRv results in DDOE assessing the corresponding in-lieu fee and an administrative late fee of 10%.

Points about Using Stormwater Retention Credits (SRCs)

- Maintenance failure at SRC-generating site does not invalidate SRCs purchased from that site.
- Once purchased, an SRC remains valid until used to achieve OSRv.
- SRCs can be banked indefinitely.
- Use of SRCs not limited by watershed, except as specified by District law.

Acquiring Stormwater Retention Credits (SRCs)

The developer of a regulated project may:

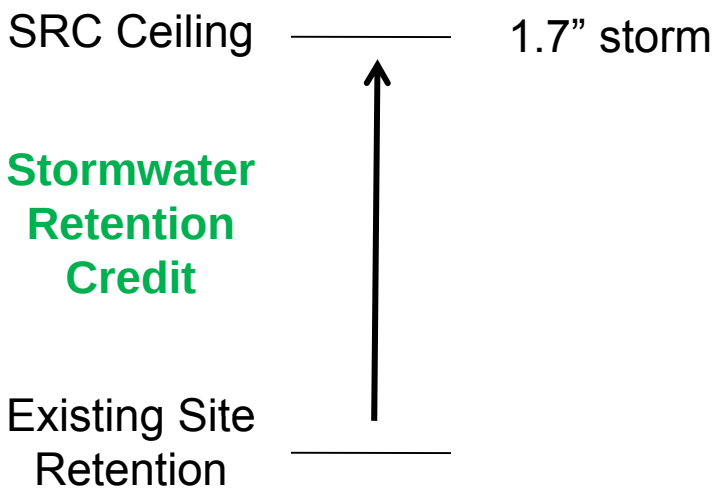
- Generate SRCs by:
  - Retrofitting another property that he/she owns.
  - Working with another property owner to retrofit.
- Purchase SRCs from other property owners or SRC aggregators.

  Note: A transfer of SRC ownership is not complete until approved by DDOE.

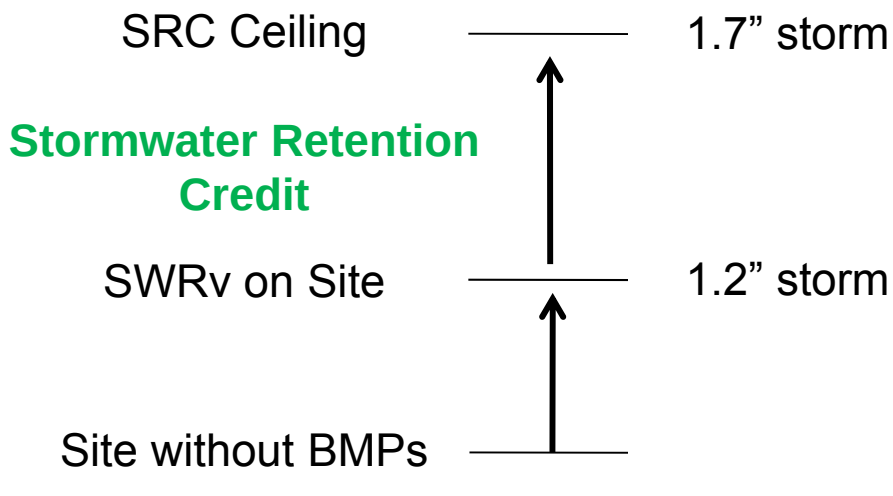
Generation & Certification of SRCs

- DDOE has sole authority to certify SRCs.
- Eligible BMPs & land cover changes must:
  1) Achieve retention in excess of regulatory requirements or existing retention.

Unregulated Retrofit Sites



Regulated Sites Exceeding SWRv



Creation & Certification of SRCs

- DDOE has sole authority to certify SRCs.
- Eligible BMPs & land cover changes must:
  1) Achieve retention in excess of regulatory requirements or existing retention.
  2) Be designed and installed in accordance with a DDOE-approved SWMP.
  3) Successfully complete post-construction final inspection and ongoing inspections by DDOE.
  4) Have current maintenance agreement or contract.

Creation & Certification of SRCs Cont'd

- DDOE certifies SRCs every 3 yrs. as long as:
  - Inspection passed.
  - Current maintenance agreement/contract in place.
- No maintenance covenant required on retrofit site.
- Maintenance failure results in:
  - No additional certification of SRCs.
  - Requirement to compensate for retention failure by forfeiting or replacing SRCs or paying in-lieu fee.

Example SRC Transaction

- Regulated site has 3,000 gal Off-Site Retention Volume (OSRv).
- 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 purchases 18,000 SRCs to achieve OSRv for 6 years.
- By end of 6-year period, regulated site purchases additional SRCs to continue achieving OSRv.

Lowering Barriers to SRC Trading

- Lowering barriers to SRC trading has potential to increase flexibility and cost savings for regulated sites and improve benefits for District waterbodies.
- DDOE inclined to:
  - Let private market identify opportunities and solve marketplace challenges.
  - Minimize unnecessary restrictions and complexity.
  - Maintain simplicity of program framework.
  - Maximize use of known/existing administrative procedures.

Minimal Role for DDOE

- Ensure off-site retention achieved.
- Create, administer, and enforce framework:
  - Verify eligibility of retention capacity, including inspections.
  - Certify SRCs.
  - Track SRC ownership and use.
- Facilitate trading:
  - Maintain list of SRC owners to provide to buyers.
  - Publicly share information about price of SRCs.
- Encourage SRC creation & minimize transaction cost.
  - Existing retention capacity, to 5/1/2009, eligible for SRCs.
  - SRC retrofits pay much lower fees for SWMP review

Additional Efforts Needed?

- Request input on other needs/roles for DDOE, e.g.:
  - Marketplace functions and logistics:
    - Auction or other marketplace.
    - Templates for contracts.
    - Other?
  - Creation and maintenance of market:
    - Purchase of SRCs to help provide demand certainty.
    - Portfolio of potential projects on public land.
    - Other?

Questions?

Brian Van Wye
202-741-2121
Brian.VanWye@dc.gov

To download the proposed rule, guidebook, and related resources, go to:

ddoe.dc.gov/proposedstormwaterrule