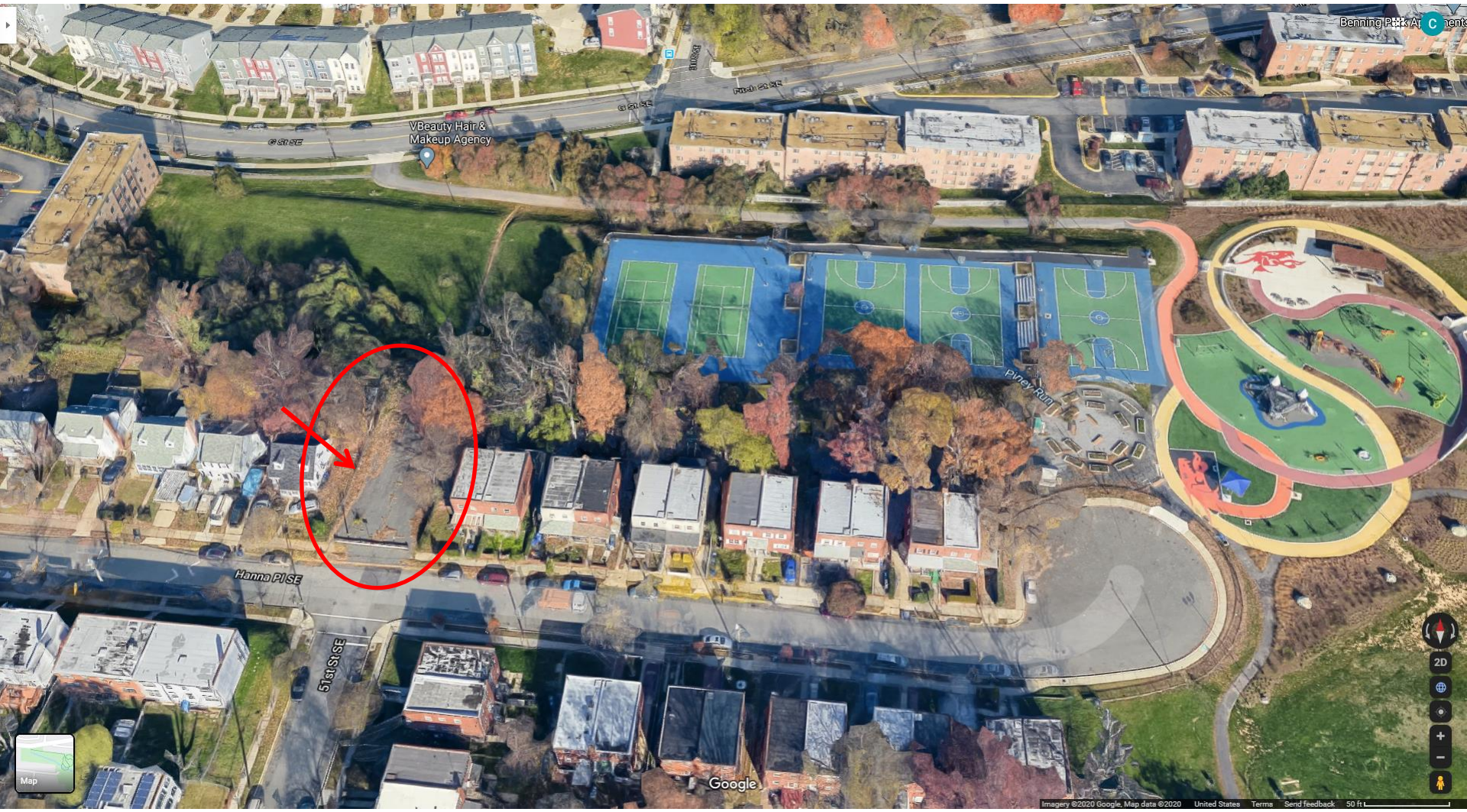
Need for IC BMP Cleanup

- Issue raised @ Feb USWG Meeting
- April 15 Background Memo Concludes: A simple, single, unified crediting approach for ICR and ICD is needed. Current approaches unworkable
- **Requested Action**: Review memo recommendations to provide more consistency in how ICR/ICD credits is qualified, calculated, reported and verified to the CBP program and provide comments to USWG by no later than May 15, 2020.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Appendix A Acreage of ICR and ICD reported in the Chesapeake Bay Watershed [1]				
	IMPERVIOUS COVER REDUCTION (acres)			
STATE [2]				
YEAR	DC	MD	PA	VA
2009	0	206 [3]	0	225
2018	0	122	10	297
2025	2	199	18	36,565
YEAR	IMPERVIOUS COVER DISCONNECTION (acres)			
2009	0	17	0	0
2018	0	111	0	0
2025	8	2012	0	0

[1] Source: Jeff Sweeney, CBPO

[2] DE, NY and WV did not report any implementation of either ICR or ICD

[3] For several years, MD reported BMPs in their "design by era" and/or "ESD to MEP" category

The 6 Phases of ICD Crediting

1. 2006-2008: Category G Practices:
2. 2008-2011: Table B-4 Practices
3. 2012-2015: State Stormwater Standard EPR (Table 3)
4. 2016-18 ICD and Urban Filter Strip EPRs
5. 2019: PEDs for Soil Amendments: 2019
6. 2020 Anything goes, but nothing reported

Category G: Impervious Surface Reduction	Using a BMP to reduce the total area impervious area and therefore encouraging stormwater infiltration.
Natural area conservation	Maintaining areas such as forests, grasslands and meadows that encourage stormwater infiltration.
Disconnection of rooftop runoff	Disconnecting the rooftop drainage pipe and allowing it to infiltrate into the pervious surface thereby reducing the impervious area.
Disconnection of non-rooftop impervious area	Directing sheet flow from impervious surfaces, i.e. driveways and sidewalks, to pervious surfaces instead of stormwater drains.
Rain Barrels	Rain barrels retain a predetermined volume of rooftop runoff (Prince George's LID).
Green Roofs	A multi-layer construction material consisting of a vegetative layer that effectively reduces urban stormwater runoff by reducing the percentage of impervious surfaces in urban areas. (US EPA LID Fact Sheet)

Impervious Area Disconnection Coupled with Soil Amendments

TN	TP	TSS
12.3%	14.6%	15.6%

Assumptions: (a) impervious to pervious ratio (I:P) of 1 or lower (b) at least 1 inch of compost (at 50% organic matter) is added (c) at least 3 inches of incorporation into the native soil occurs and all other qualifying conditions are met

Table 2
Excerpts from "Table B-4" Nutrient Removal Rates for Stormwater BMPs

Practice	Design Level[1]	TN Load Removal[4]	TP Load Removal
Rooftop Disconnect	1	25 to 50	25
	2	50	
Filter Strips	1	25 to 50	25
	2	50 to 75	50
Green Roof	1	45	
	2	60	
Rain Tanks & Cisterns	1	15 to 60	15
	2	45 to 90	45

Notes – See Full Table B-4 in Appendix B of SPS EPR (2012) for the complete footnote

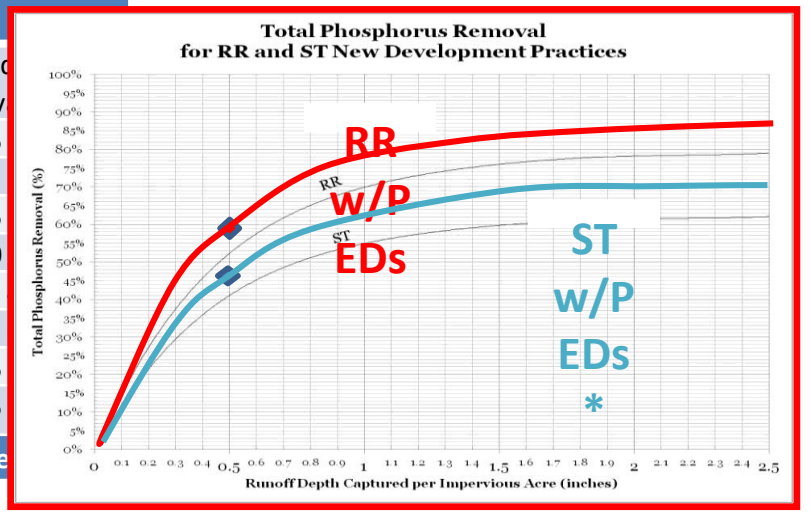
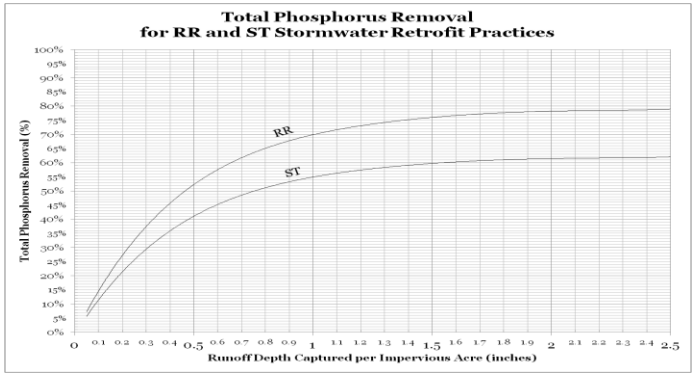


Table 3 Classification of Runoff Reduction BMPs in SPS EPR (adapted from SPS EPR, 2012)

Accepted Non-Structural Runoff Reduction (RR) Practices
Landscape Restoration/Reforestation
Riparian Buffer Restoration
Rooftop Disconnection (aka Simple Disconnection to Amended Soils, to a Conservation Area, to a Pervious Area, Non-Rooftop Disconnection)
Sheetflow to Filter/Open Space* (aka Sheetflow to Conservation Area, Vegetated Filter Strip)
Non-Structural BMPs, PA 2006 BMP Manual, Chapter 5



ICR as a Land Use Change

- New pervious and impervious land use loading Rates in Phase 6 Model (2018)
- Improved resolution impervious and pervious cover
- No hydrologic adjustment for compacted urban soils in current watershed model
- Most practices are very small in area

Recommendations- I

- Set up a small joint USWG and LUWG team to propose a simpler, consolidated approach to calculate, report and verify ICR and ICD credits.
- Avoid complex protocols or detailed calculations
- Rely instead rely on reduced unit loading rates that reflect the effective hydrologic response achieved by these small practices (0.1 to 0. 3 acres, in area).
- The preferred unit might be pounds per acre reduced by the IC change for that geographic areas, as directly derived from CAST.

Recommendations - II

- These rates could be increased by a fixed increment to reflect additional urban soil restoration (decompaction, soil amendments or use of PEDs).
- States may choose to define the specs and qualifying conditions for ICR/ICD practices in the context of their existing state-wide design manuals
- Still not practical to use current Bay land cover data to verify ICR or ICD practices at the watershed scale.
- Field inspection will still be needed for this practice

Sediment and Nutrient Reduction Crediting for the Chesapeake Bay TMDL

- Chesapeake Stormwater Network: www.chesapeakestormwater.net
- More than a dozen expert panels for BMPS since 2013
- Complex, consensus-based, multi-state approval process (i.e., the Bay partnership)
- Ongoing issues: BMP reporting and verification, un-intended environmental consequences, fragile male egos, definitions and qualifying conditions, providing regulatory certainty in an era of changing science

- BMPs for New and Redevelopment Projects
- Urban Stream Restoration
- Stormwater Retrofits
- Urban Nutrient Management
- Street Cleaning
- Nutrient Discharges from Grey Infrastructure
- Residential Stewardship Practices

- Enhanced Erosion and Sediment Control
- Floating Treatment Wetlands
- Septic System Upgrades
- Impervious Cover Disconnection
- Urban Tree Planting/Canopy Expansion
- Conservation Landscaping
- Shoreline Management Practices

Chesapeake Bay Program
A Watershed Partnership