

The Challenge of Non-regulated Stormwater in Meeting Urban Sector Pollutant Reduction Goals for the Bay Watershed

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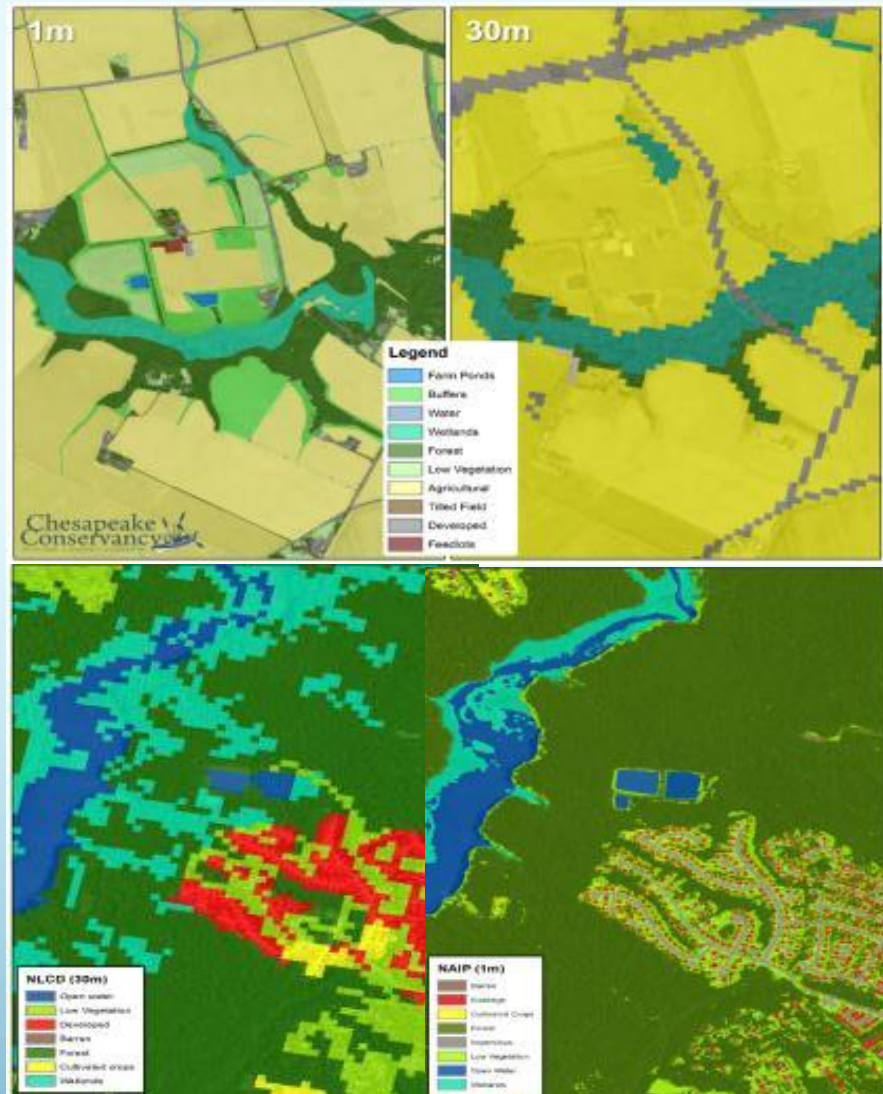


WQGIT



Great Land Cover Data Now Available for All Bay Communities

- ▶ Incredible progress in mapping IC in last 30 years
- ▶ Cover Resolution: 1 meter scale
- ▶ Fuzziness in defining TC an IC at the rural exurban boundary



Measuring IC in the Bay Watershed

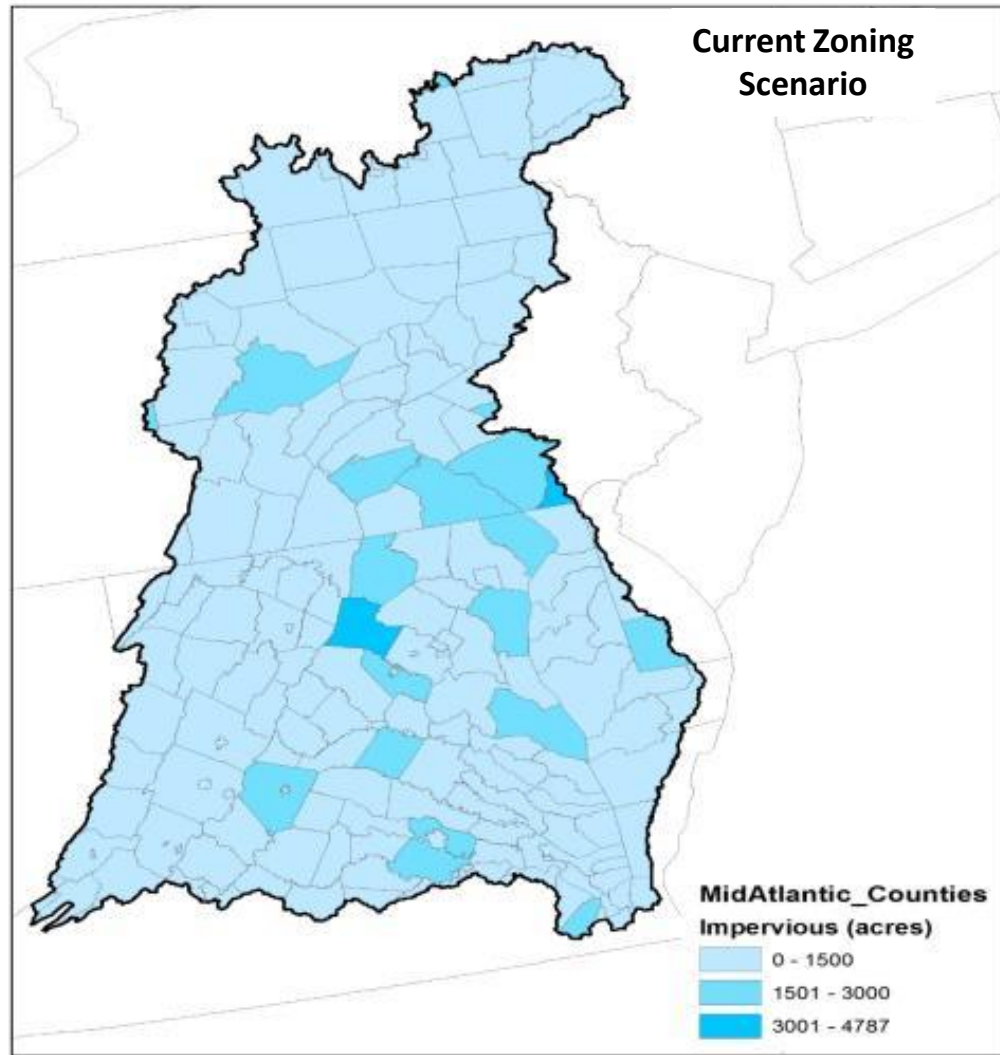
More Resolution = More Acres

Chesapeake Bay Watershed IC and PC Area Estimates (2016)

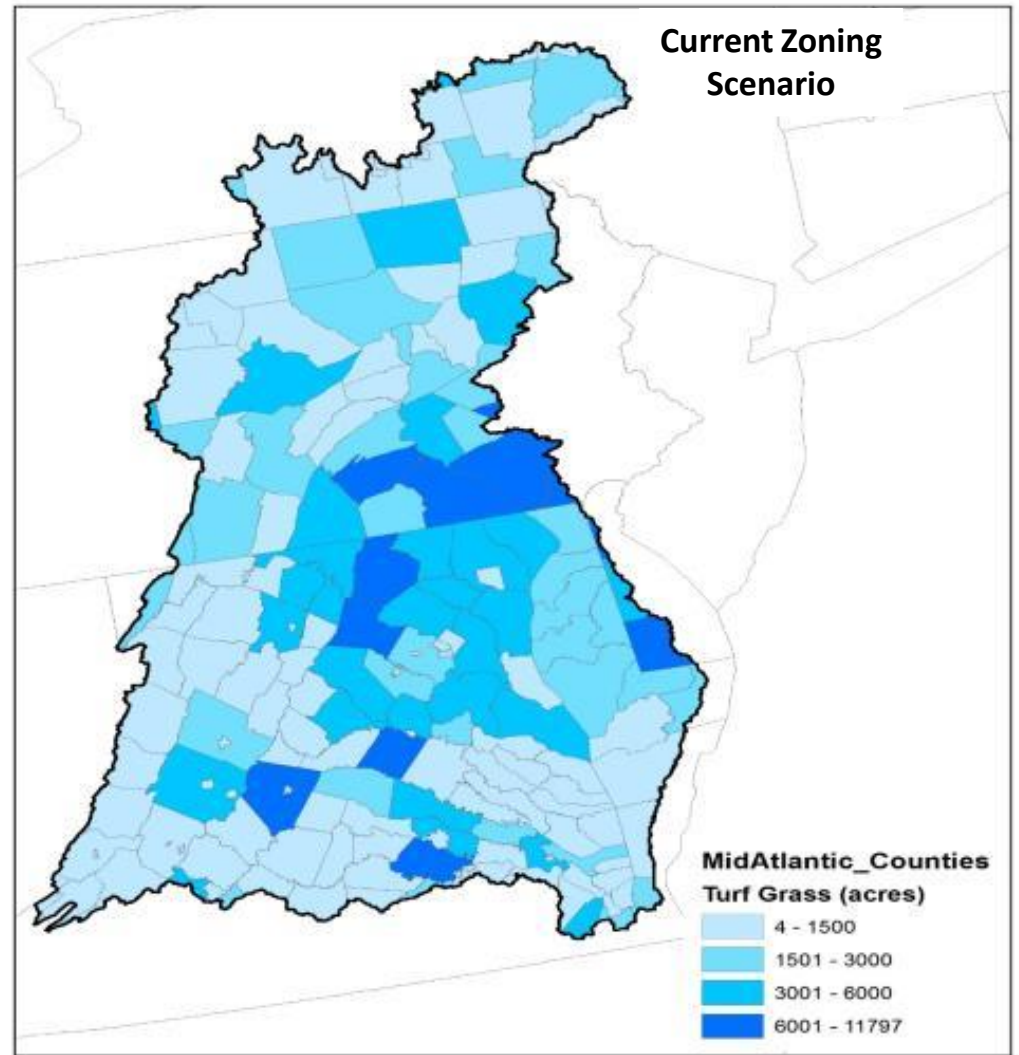
Measurement Technique	Impervious Cover (acres)	Pervious Cover (acres)
Landsat (30m) 2000	809,311	2,341,555
Multiple Models :2010	1,269,018	3,398,701
Hi Resolution Data (1m) (2018)	1,702,837	3,197,456 *
Source: CBP (2017) and Peter Claggett (2018) * New land use category “mixed open” reduces PC		

Most Recent Land Use Forecasts Show Continued Growth in the Exurbs

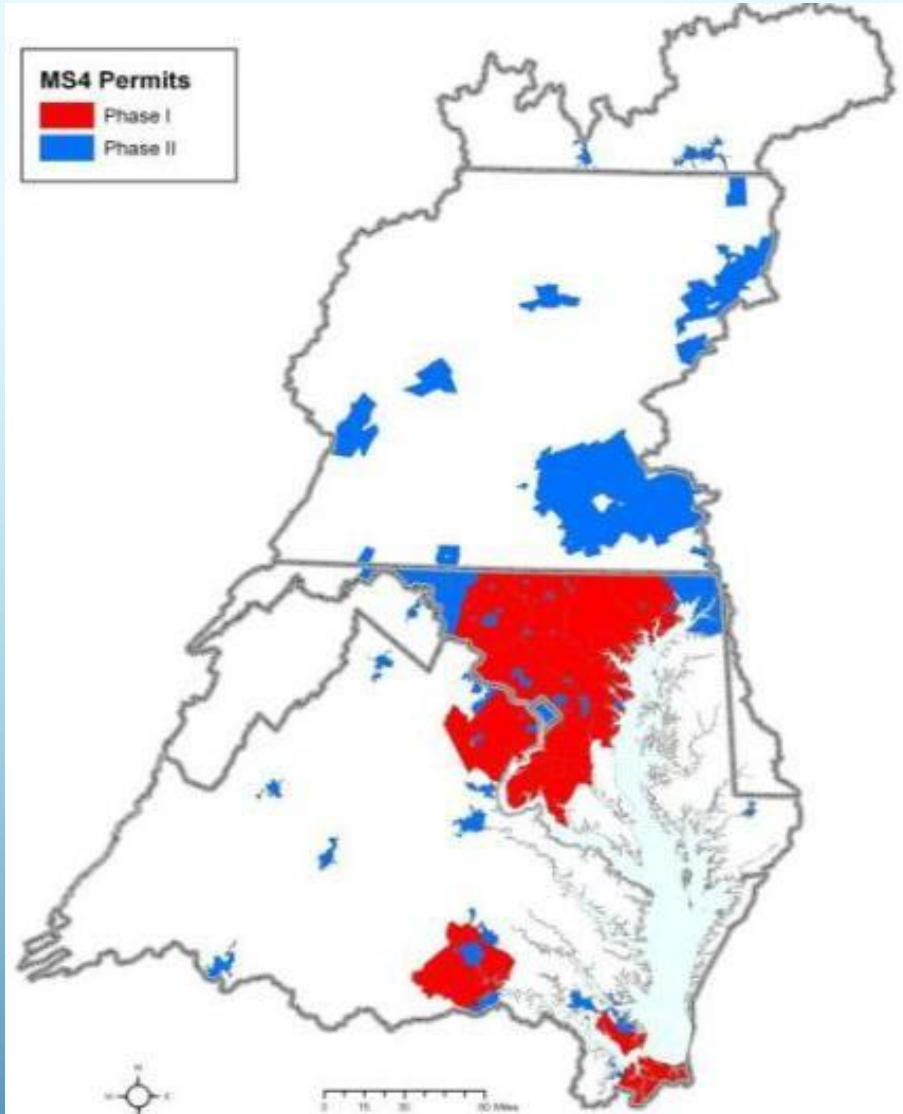
Increase in Impervious Surfaces



Increase in Turf Grass



Municipal Stormwater Permits Drive Urban BMP Implementation



- ▶ Bay Population: **18** million
- ▶ **25** Phase 1 MS4 communities
- ▶ **~700** Phase 2 MS4 communities
- ▶ 60% of urban land in watershed is not regulated by MS4 permits
- ▶ Numeric TMDL requirements finally included in most new MS4 permits

New Land Use Data Shows that Most Urban Land is in Small Communities that are NOT Regulated By MS4 Permits

Percent of Developed Land in Chesapeake Bay Watershed By Regulatory Category ¹						
Bay State	<i>Non-Regulated</i> ²		<i>MS4 Permittees</i> ³		<i>Combined Sewer</i> ⁴	
	%TC ⁵	%IC ⁶	%TC	%IC	%TC	%IC
DE	63	26	7	4	0	0
DC	5	6	22	30	8	27
MD	18	7	47	29	>1	>1
NY	54	32	6	5	1	1
PA	52	21	13	9	2	3
VA	48	22	16	15	>1	>1
WV	54	17	18	9	1	1
BAY Average	42%	18%	18%	14%	2%	5%

Bay Restoration Challenges Faced by Small Communities

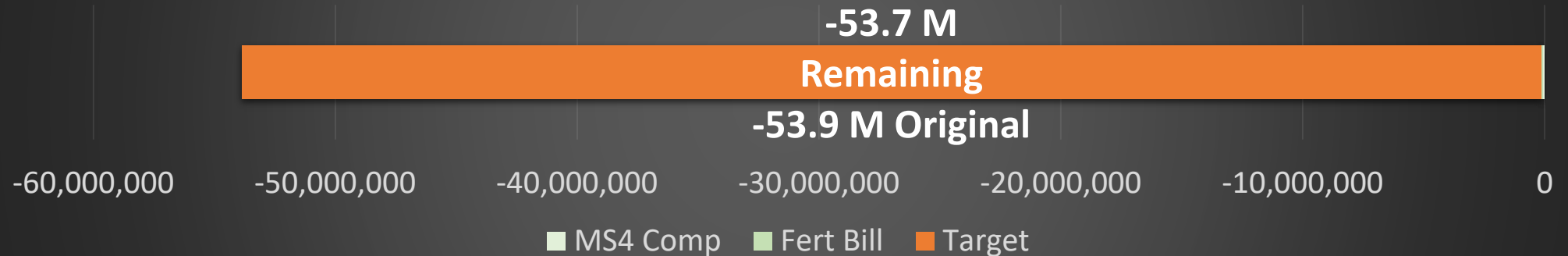
<i>Challenge</i>	<i>Small MS4 Communities</i>	<i>Un-Regulated Communities</i>
Pollutant Reduction Mandate for Existing Development?	Only 3 Bay states have numeric reduction requirements to meet Bay TMDL	No legal requirement to reduce loads
Stormwater Regulation for New Development?	Yes, must operate a post-construction stormwater program	Required by state, but locality has no review authority
Stormwater BMP Reporting or Tracking to State?	Yes, thru annual MS4 reports, but local BMP records are often poor	No. Lack a mechanism to do so Some tracking may be done by soil conservation districts

Bay Restoration Challenges Faced by Small Communities (continued)

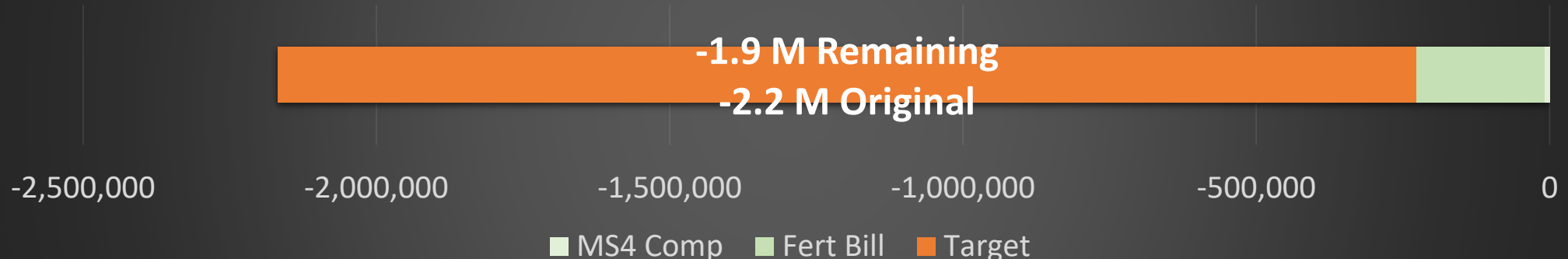
<i>Challenge</i>	<i>Small MS4 Communities</i>	<i>Un-Regulated Communities</i>
Urban BMP Verification?	Not aware of current BMP verification requirements and lack staff to implement them	No local capacity, so BMPs are dropped because they cannot be verified over time
Available Staff Resources?	Usually one PT staff at most	Un-staffed function.
Local Contractor Skills ?	Few local contractors have expertise in BMP design, construction, inspection or maintenance	
Understanding of Nutrient Accounting?	Very limited understanding	No need to understand
Ability to Prepare a PRP?	Limited	None

PA Example Shows Impact of Non-Regulated Stormwater on Phase 3 WIP Implementation

Pounds of Nitrogen Reduced from 2016 Progress at Edge of Stream



Pounds of Phosphorus Reduced from 2016 Progress at Edge of Stream



Some potential strategies....

Simplified Tools for Restoration Planning

- ▶ Rapid municipal restoration assessment guide for non-regulated communities*
- ▶ Simplified template for small MS4 pollutant reduction plans*
- ▶ CAST "How to" guide*

Capacity Building for Small Communities

- ▶ Increased outreach and training*
- ▶ Streamlined platforms for BMP reporting and verification
- ▶ Direct technical assistance (e.g., BMP help desk)*
- ▶ Access to onsite support from technical service providers*

Some potential strategies (continued)

Greater Inter-Municipal Coordination

- Inter-municipal agreements (Lancaster, PA)
- Inter-municipal staff sharing
- AIR-BMP (Intra-sector BMP sharing)
- Intra-sector BMP trading
- Enhanced role for soil conservation district staff

Designing a Pilot Program for Small Community Engagement in the Bay Watershed

Will require new regional partnerships among a diverse group of urban and rural stakeholders.

- ▶ State WIP agency
- ▶ All regulated and un-regulated communities
- ▶ Regional planning authority
- ▶ Various technical service providers (both NGOs and private sector)
- ▶ CBP technical staff
- ▶ Soil conservation district staff
- ▶ Other regional partners



Questions and Answers

