

Chesapeake Bay TMDL Action Plan Informational Session

Office of VPDES Permits
October 2014



Agenda

- Background (Jaime)
- Determining Size and Extent of the MS4 (Kelsey)
- BMP Clearinghouse (Jeff)
- Break
- Bay Program Efficiencies & Retrofit Curves(Jeff)
- Urban Stormwater Retrofit Projects (Derick)
- Lunch

Agenda (cont.)

- Stream Restoration (Derick)
- Break
- Special Conditions 7 and 8 (Kelsey)
- Nutrient Trading (Allan)
- Q&A

Background

- Watershed Implementation Plan (WIP) – November 2010
- Chesapeake Bay TMDL approved by EPA - December 2010
 - Total Nitrogen, Total Phosphorus, and Sediment
 - MS4s assigned WLAs:
 - Urban land classification
 - River basin
- WIP Phase II – March 2012
- WIP Phase III – Coming 2017
- MS4 Permits Reissued
 - Small MS4 GP - July 2013
 - Phase I's - Ongoing
- Bay TMDL Action Plan Guidance GM14-2012 - August 2014

L2 Scoping Run Reductions

- Series of reduction scenarios entered into the Chesapeake Bay Model 5.3.2
- Level 2 (L2) scoping run reductions for urban sources
- Existing pervious and impervious conditions as of June 30, 2009.
- L2 Reductions equal to:

Pollutant of Concern	Impervious, regulated	Pervious, Regulated
Nitrogen, total	9%	6%
Phosphorus, total	16%	7.25%
Sediment, total suspended	20%	8.75%

Permit Reduction Requirements

- Reductions apply to all MS4 permittees
- Phased approach over multiple permit cycles
 - 5% of L2 - first permit cycle
 - 35% of L2 - second permit cycle
 - 60% of L2 - third permit cycle
- Implemented by Bay TMDL Action Plan
- *3 sources of reductions*
 - *Existing sources* as of 6/30/09
 - *New Sources* constructed between 7/1/2009 and 6/30/2014
 - *Grandfathered* (9VAC25-870-48) projects construction initiated after 7/1/2014

Existing Source Reductions

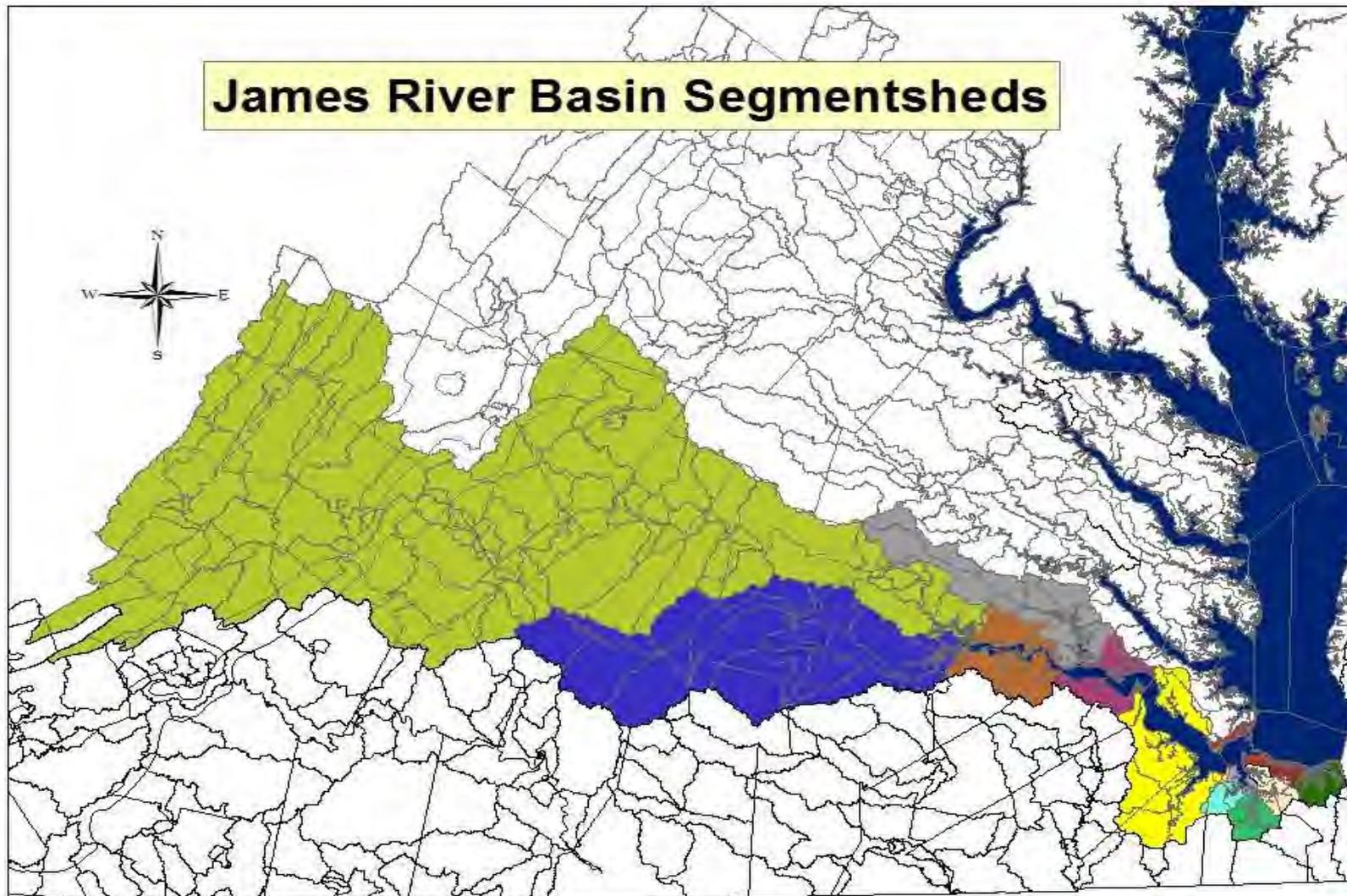
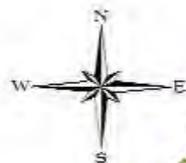
- 5% of L2 reductions
- MS4 General Permit Tables for 4 Major River Basins
 - James, York, Rappahannock, and Potomac
 - Dischargers to the Small Coastal Basin assigned river basins as appropriate
 - Use Table 2 to calculate existing source loads as of 2009
 - Loading rates calculated from 2009 Progress Run model results for basin-wide loads by land type
 - Use Table 3 to calculate Required Reductions to meet 5% of L2 reductions
 - NOT equal to 5% of loads calculated in Table 2
 - Loading rates calculated from WIP L2 reduction scenario

James River Basin Segmentsheds

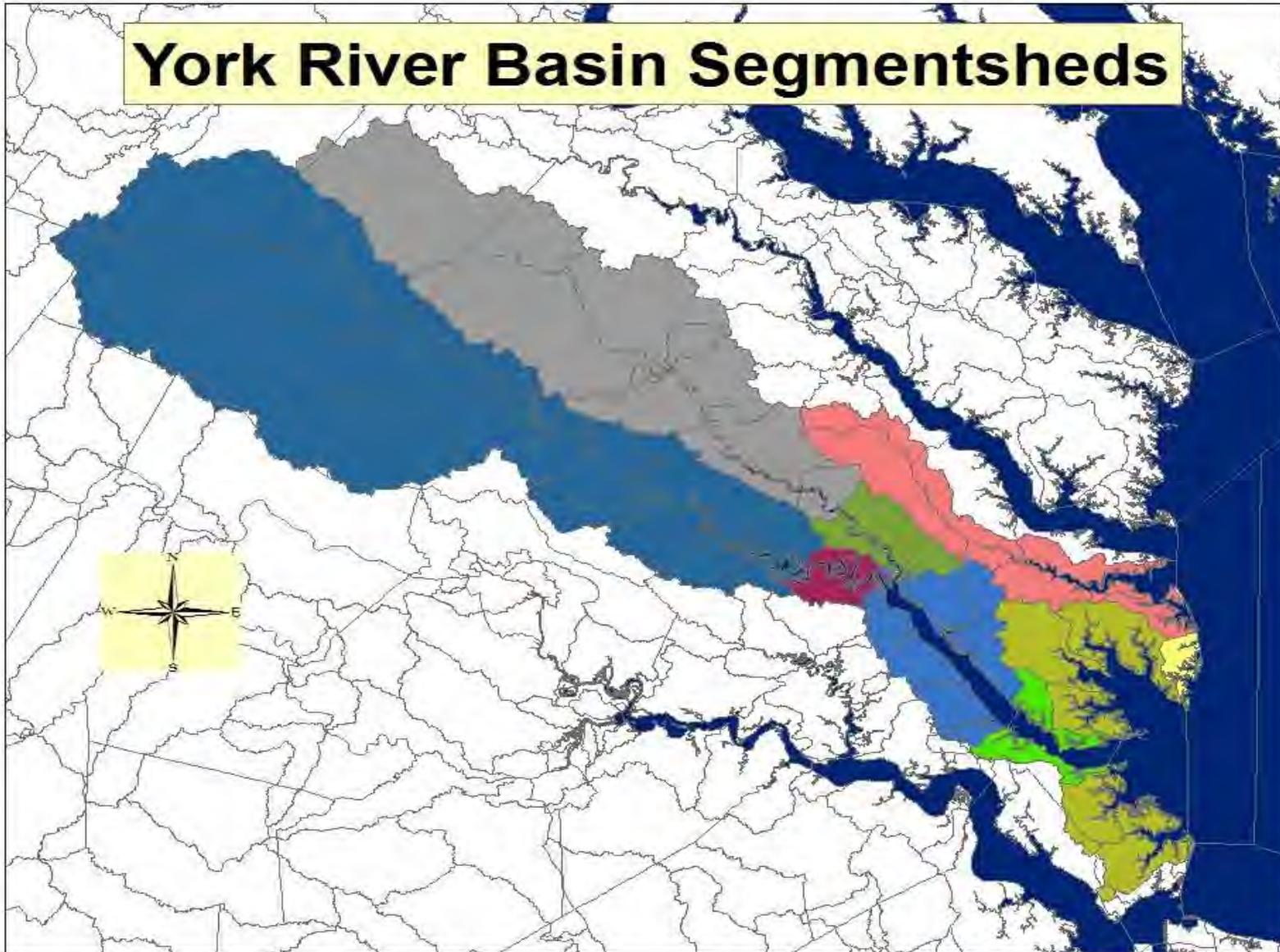
P5_Segmentsheds

CBSEG_92

-  Non-Bay Areas
-  APPTF
-  CB5MH_VA
-  CB6PH
-  CB7PH
-  CB8PH
-  CHKOH
-  CRRMH
-  EBEMH
-  ELIPH
-  JMSMH
-  JMSOH
-  JMSPH
-  JMSTF1
-  JMSTF2
-  LAFMH
-  LYNPH
-  MOBPH
-  MPNOH
-  MPNTF
-  PIAMH
-  PMKOH
-  PMKTF
-  POCMH_VA
-  POCOH_VA
-  POTMH_MD
-  POTMH_VA
-  POTOH_MD
-  POTOH_VA
-  POTT_DC
-  POTT_MD
-  POTT_VA
-  RPPMH
-  RRPOH
-  RRP TF
-  SBEMH
-  TANMH_MD
-  TANMH_VA
-  WBEMH
-  YRKMH
-  YRKPH

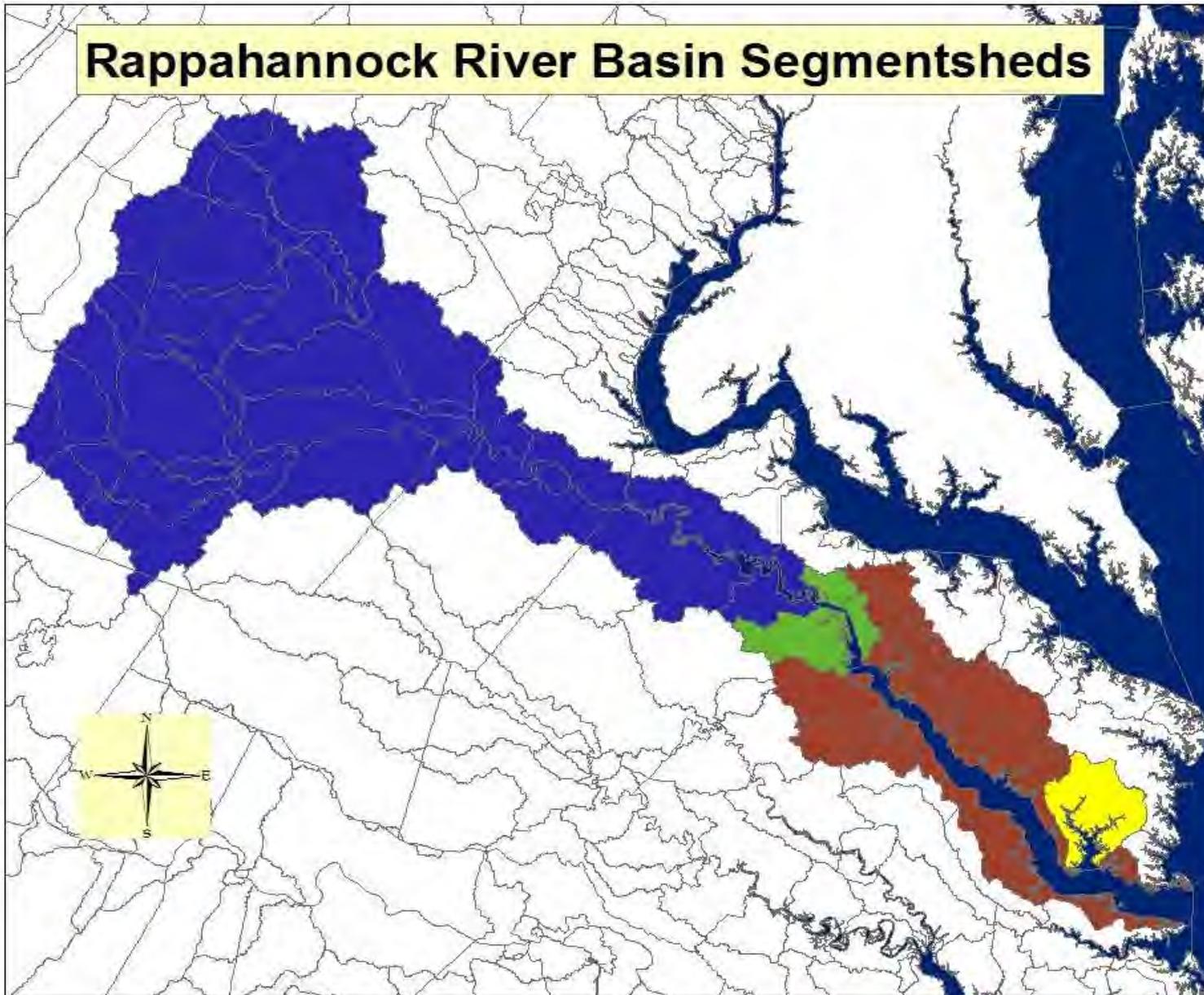


York River Basin Segmentsheds



- P5_Segmentsheds
CBSEG_92
- APPTF
 - CBSMH_VA
 - CBSPH
 - CB7PH
 - CHKOH
 - DRRMH
 - EBEMH
 - ELIPH
 - JMSMH
 - JMSOH
 - JMSPH
 - JMSTF1
 - JMSTF2
 - LAFMH
 - LYNPH
 - MOBPH
 - MPNOH
 - MPNTH
 - PIAMH
 - PMKOH
 - PMKTF
 - POCMH_VA
 - POCOH_VA
 - POTMH_MD
 - POTMH_VA
 - POTOH1_MD
 - POTOH_VA
 - POTTF_DC
 - POTTF_MD
 - POTTF_VA
 - RPPMH
 - RPPOH
 - RPPTF
 - SSEMH
 - TANMH_MD
 - TANMH_VA
 - WSEMH
 - YRKMH
 - YRKPH

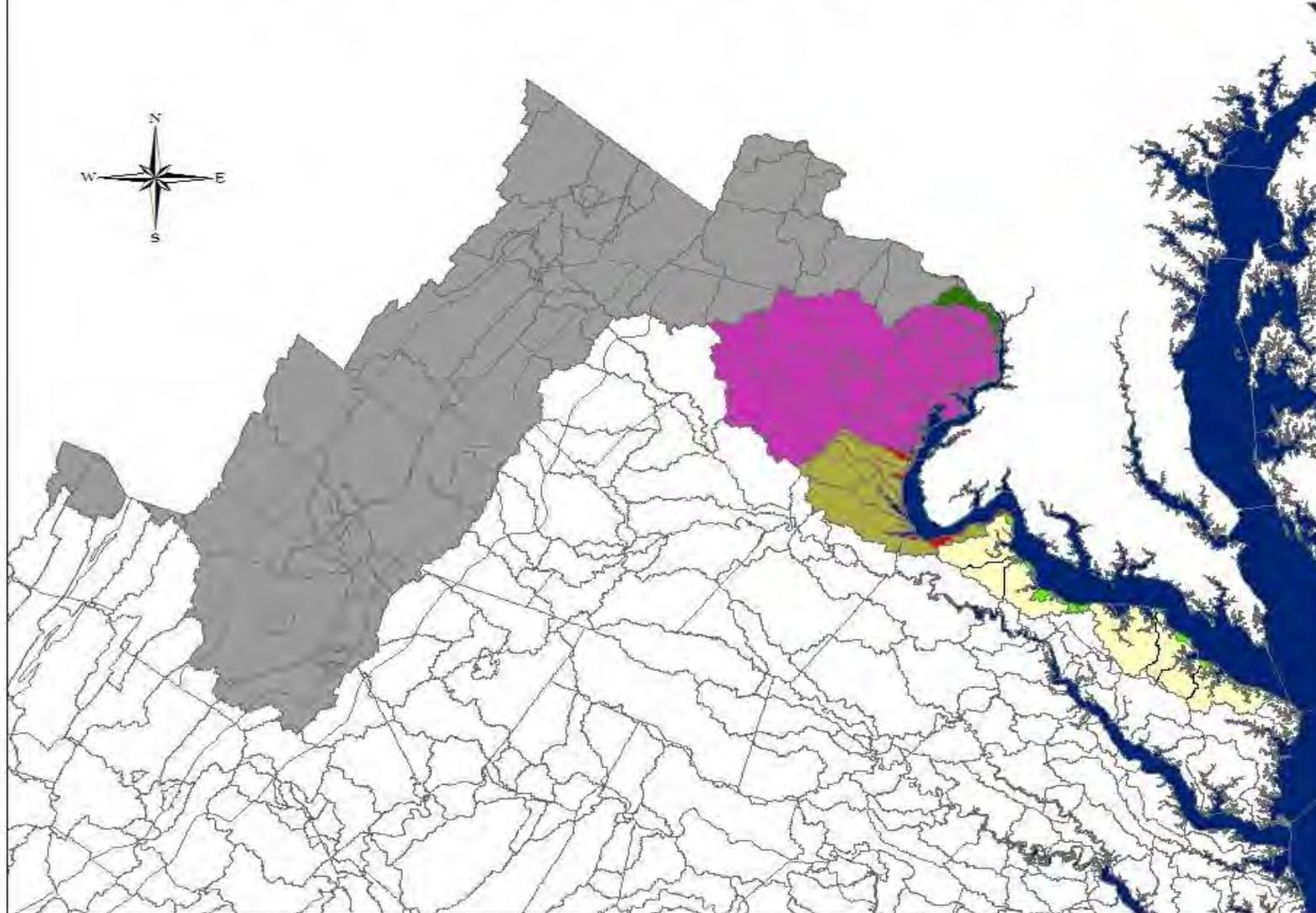
Rappahannock River Basin Segmentsheds



P5_Segmentsheds

- CBSEG_92
- APPTF
 - CBSMH_VA
 - CB6PH
 - CB7PH
 - CBSPH
 - CHKOH
 - CRRMH
 - EBEMH
 - ELIPH
 - JMSMH
 - JMSOH
 - JMSPH
 - JMSTF1
 - JMSTF2
 - LAFMH
 - LYNPH
 - MOBPH
 - MPNDH
 - MRNTF
 - PIAMH
 - PMKOH
 - PMKTF
 - POCMH_VA
 - POCOH_VA
 - POTMH_MD
 - POTMH_VA
 - POTOH1_MD
 - POTOH_VA
 - POTT_DC
 - POTT_MD
 - POTT_VA
 - RPPH
 - RPOH
 - RPPH
 - SBEVH
 - TANMH_MD
 - TANMH_VA
 - WBEVH
 - YRKMVH
 - YRKPVH

Potomac River Basin Segmentsheds



P5_Segmentsheds
CBSEG_92

- APPTF
- CB6MH_VA
- CB6PH
- CB7PH
- CB8PH
- CHKOH
- CRRMH
- EBEMH
- ELIPH
- JMSMH
- JMSOH
- JMSPH
- JMSTF1
- JMSTF2
- LAFMH
- LYNPH
- MOBPH
- MPVOH
- MPNTF
- PIAMH
- PMKOH
- PMKTF
- POCMH_VA
- POCOH_VA
- POTMH_MD
- POTMH_VA
- POTOH1_MD
- POTOH_VA
- POTTF_DC
- POTTF_MD
- POTTF_VA
- RPPMH
- RPOH
- RRPTF
- SSEMH
- TANMH_MD
- TANMH_VA
- WBEH
- YRKMH
- YRKP

Other Considerations

- Newly Designated MS4
 - 2010 Census
 - 16 new MS4s required permits
 - Issued Spring 2014
 - Not required to meet 5⁰% reduction this (first) permit cycle
 - Submit action plan 180 prior to permit reissuance with registration statement
 - Required to meet 40% reduction by end of 2nd permit term

Other Considerations

- Expanded Urbanized Areas for *existing* permittees
 - Portion of locality previously identified as urbanized
 - Urbanized areas increased based on 2010 Census
 - 5% reduction on existing sources *in that expanded* area not required
 - Action plan submitted with registration statement 180 days prior to reissuance
 - 40% reduction of existing source in the expanded area required by end of 2nd permit term

Action Plan Guidance

- Procedures to meet the Chesapeake Bay TMDL Special Condition
- Stakeholder Advisory Group
 - Formed August 2013
 - Phase I and II MS4 permittees, environmental groups, association representatives
 - 2 meetings
 - 4 opportunities to reviewed drafts
 - Hundreds of comments received, reviewed, and incorporated as appropriate
- Guidance finalized 8/18/2014

Action Plan Guidance

- Inconsistency:
 - Stream Restoration Example V.H.1 (44.88 lb/ft/yr) and Table V.H.1 (TSS = 43.4 lb/ft/yr)
- Already outdated
 - Stream Restoration Expert Panel Report revised 9/8/2014
 - Revised Default Rate for TSS
 - Non-Coastal Plain: 44.88 lb/ft/yr
 - Incorporates 0.181 sediment delivery factor
 - Coast Plain: 15.13 lb/ft/yr
 - Incorporates 0.061 sediment delivery factor

First steps...

- Determine size and scope of the MS₄
- Quantify pervious and impervious acreage
 - Subtract out from service area acreage:
 - Forested lands
 - Industrial SW individual VPDES permit
 - Industrial SW general VPDES permit
 - Jurisdiction wide approach (conservative)
- Calculate loads
- Calculate required reductions

MS4 General Permit Tables

**Table 2a: Calculation Sheet for Estimating Existing Source Loads
for the James River Basin**

***Based on Chesapeake Bay Program Watershed Model Phase 5.3.2**

Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	2009 EOS Loading Rate (lbs/acre)	Estimated Total POC Load Based on 2009 Progress Run (lb/yr)
Regulated Urban Impervious	Nitrogen		9.39	
Regulated Urban Pervious			6.99	
Regulated Urban Impervious	Phosphorus		1.76	
Regulated Urban Pervious			0.5	
Regulated Urban Impervious	Total Suspended Solids		676.94	
Regulated Urban Pervious			101.08	

MS4 General Permit Tables

Table 3a: Calculation Sheet for Determining Total POC Reductions Required During this Permit Cycle for the James River Basin

***Based on Chesapeake Bay Program Watershed Model Phase 5.3.2**

Subsource	Pollutant	Total Existing Acres Served by MS4 (6/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs/acre)	Total Reduction Required First Permit Cycle (lbs/yr)
Regulated Urban Impervious	Nitrogen		0.04	
Regulated Urban Pervious			0.02	
Regulated Urban Impervious	Phosphorus		0.01	
Regulated Urban Pervious			0.002	
Regulated Urban Impervious	Total Suspended Solids		6.67	
Regulated Urban Pervious			0.44	

Methods to Receive Credits

- Structural BMPs
 - Virginia Stormwater Clearinghouse BMP efficiencies
 - Chesapeake Bay Program BMP efficiencies
 - Bay Program Retrofit Curves
- Land Use Change
- Stream Restoration
- Urban Nutrient Management
- Forest Buffers
- Nutrient Trading
- Redevelopment
- Case by case proposals (may require Bay Program approval; might be better suited for subsequent permit terms)

** BMPs on unregulated land must meet baseline reductions before reductions count toward required regulated reductions.*

BMP Efficiencies

- Use efficiencies that are current at the time of Action Plan submittal
- Efficiencies revised after Action Plan is approved will not be retroactively applied to projects planned for this permit cycle
- Credit guarantee for projects that are completed or under construction before the end of the permit term
- If multiple efficiencies exist, encouraged to use most conservative values for project planned beyond this permit term
- Update Action Plans for 35% reduction (submitted 180 days before permit expiration) to use most current efficiencies for projects where construction has not started

Today's Discussion

- Virginia's BMP Clearinghouse Efficiencies
- Bay Program BMP Efficiencies
- Bay Program Retrofit Curves
- Stream Restorations
- Special Conditions 7 & 8 – additional required reduction scenarios
- BMP Retrofits
- Nutrient trading options



Questions?