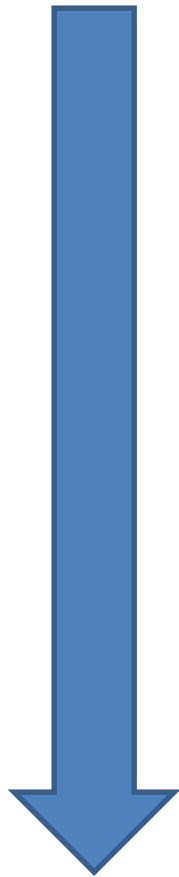


Chesapeake Bay TMDL & Shoreline Management BMP Credits

James Davis-Martin

Virginia Department of Environmental Quality

Chesapeake Bay TMDL and the Midpoint Assessment



2010: Bay TMDL Established

Phase I WIP

Phase II WIP

2017: **Midpoint Assessment**

60% of needed reductions

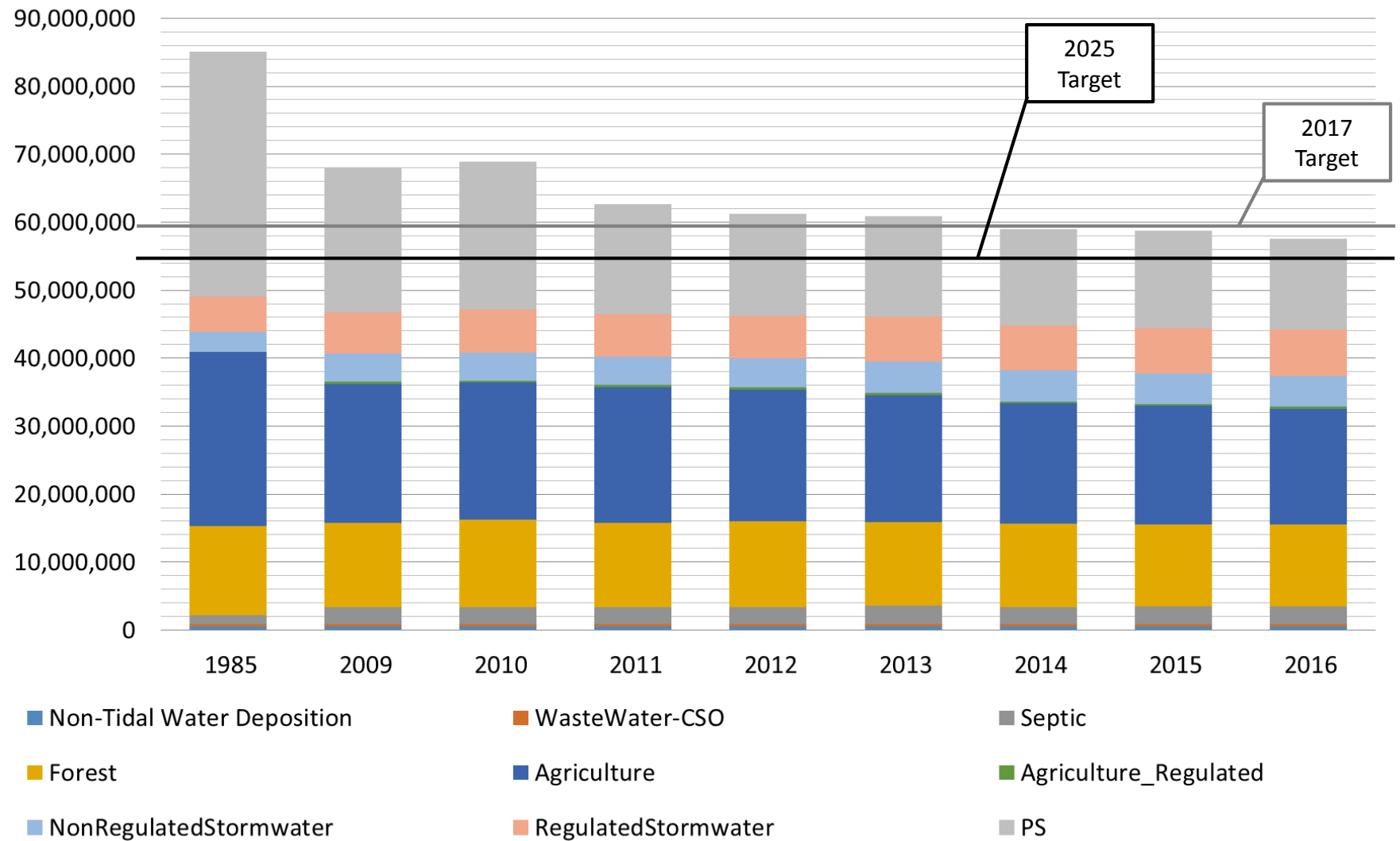
Improve science and models

2018: Phase III WIP

2025: 100% of needed reductions

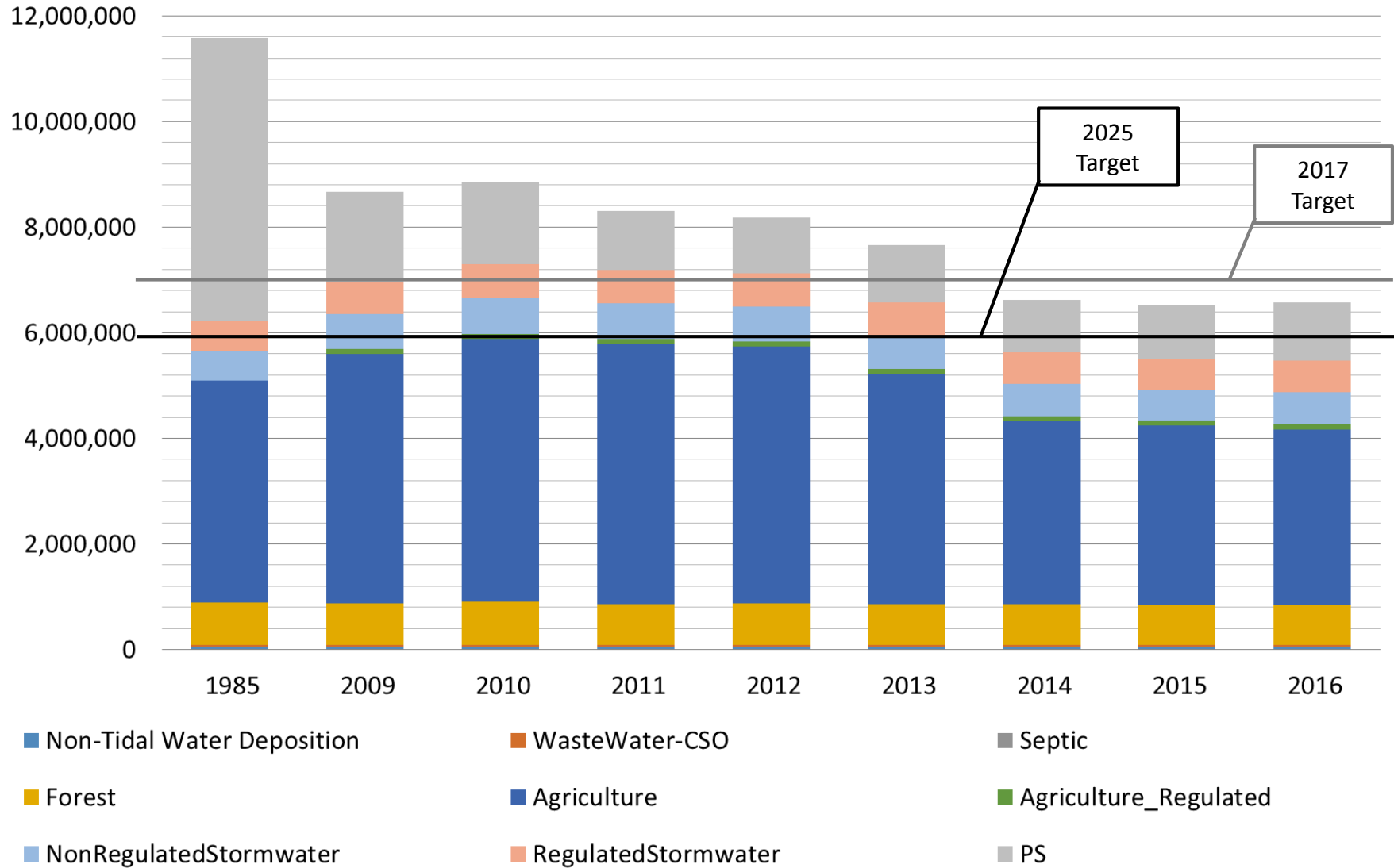
Virginia Delivered Nitrogen Loads to Chesapeake Bay

CBWM v.5.3.2



Virginia Delivered Phosphorus Loads to Chesapeake Bay

CBWM v.5.3.2



Virginia Delivered Sediment Loads to Chesapeake Bay

CBWM v.5.3.2



Shoreline Practice Reporting

- Current Bay Models account for shorelines stabilized prior to 2006
- 2016 Progress – cumulative total of 1922 feet of shoreline management practices
- DCR, VMRC and VIMS working to verify and report practices installed in recent years
 - Start with Permits
 - Focus on Living Shoreline Projects
 - Verification of installation and function
 - SEAS inspection
 - GIS analysis of imagery and other data sources
 - Anticipate expanded reporting beginning in 2017

Bay Program Protocols for Crediting Shoreline Management Practices

Living Shorelines

Nonstructural

Hybrid with Sill

Hybrid with Breakwater

Breakwater System*

Revetment*

Bulkhead/Seawall**

Recommendations of Expert Panel on Shoreline Management (version date is 07/13/15)

Recommendations of the Expert Panel to Define Removal Rates for Shoreline Management Projects

Submitted by:

Nathan Forand, Kevin DuBois, Jeff Halka, Scott Hardaway, George Janek, Lee Karrh, Eva Koch, Lewis Linker, Pam Mason, Ed Morgereth, Daniel Proctor, Kevin Smith, Bill Stack, Steve Stewart, and Bill Wolinski

Accepted by Urban Stormwater Work Group: April 15, 2014

Approved by Watershed Technical Work Group: February 13, 2015

Approved by Water Quality Goal Implementation Team: July 13, 2015

Chesapeake Bay Partnership

Prepared by:

Sadie Drescher and Bill Stack (Chair), Center for Watershed Protection, Inc. and EPA Chesapeake Bay Program Office (CBPO) Sediment Reduction and Stream Restoration Coordinator



Table 1. Summary of shoreline management pollutant load reduction for individual projects.

Protocol	Name	Units	Pollutants	Reduction Rate
1	Prevented Sediment	Pounds per year	Sediment TN and TP to be determined	<ul style="list-style-type: none"> Measured TSS, TN and TP content in sediment prevented. Calculated based on shoreline erosion with reductions for sand content and bank instability
2	Denitrification	Pounds per year	TN	<ul style="list-style-type: none"> Measured TN removal for denitrification rate associated with vegetated area. 85 lbs TN/acre/yr
3	Sedimentation	Pounds per year	Sediment and TP	<ul style="list-style-type: none"> Measured TSS and TP removal rates associated with vegetated area. 6,959 lbs TSS/acre/yr 5.289 lbs TP/acre/yr
4	Marsh Redfield Ratio	Pounds	TN, TP	<ul style="list-style-type: none"> Measured TN and TP removal rates associated with vegetated area. 6.83 lbs TN/acre/yr 0.3 lbs TP/acre/yr
5	Non-conforming/Existing Practices	Linear Feet	Sediment. TN and TP to be determined	<ul style="list-style-type: none"> 137 lbs TSS/lf/yr (MD) 84 lbs TSS/lf/yr (VA)

Shoreline Management in WIP 3

- Document new incentive programs
- Consider strategies for expanding and integrating programs
- Continue improvements in reporting implementation
- Consider tools to help estimate potential implementation of practices and anticipated reductions

Chesapeake Bay TMDL & Shoreline Management BMP Credits

Questions?

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