Preliminary Data Viz Tools to Assist with Draft Phase III Planning Targets

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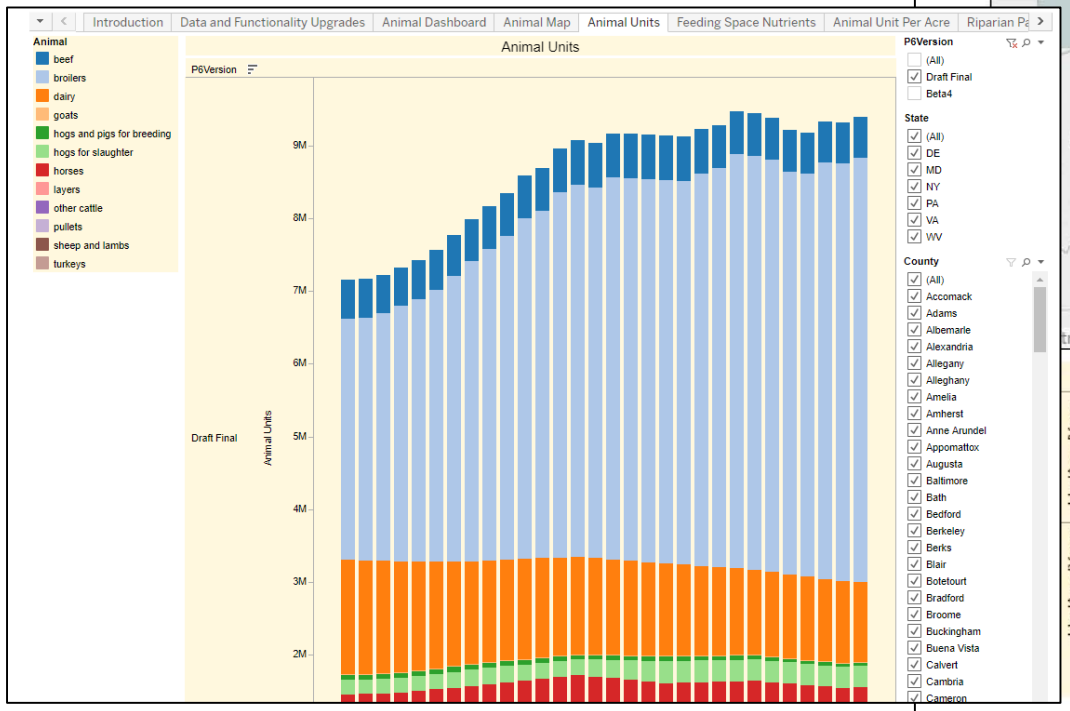
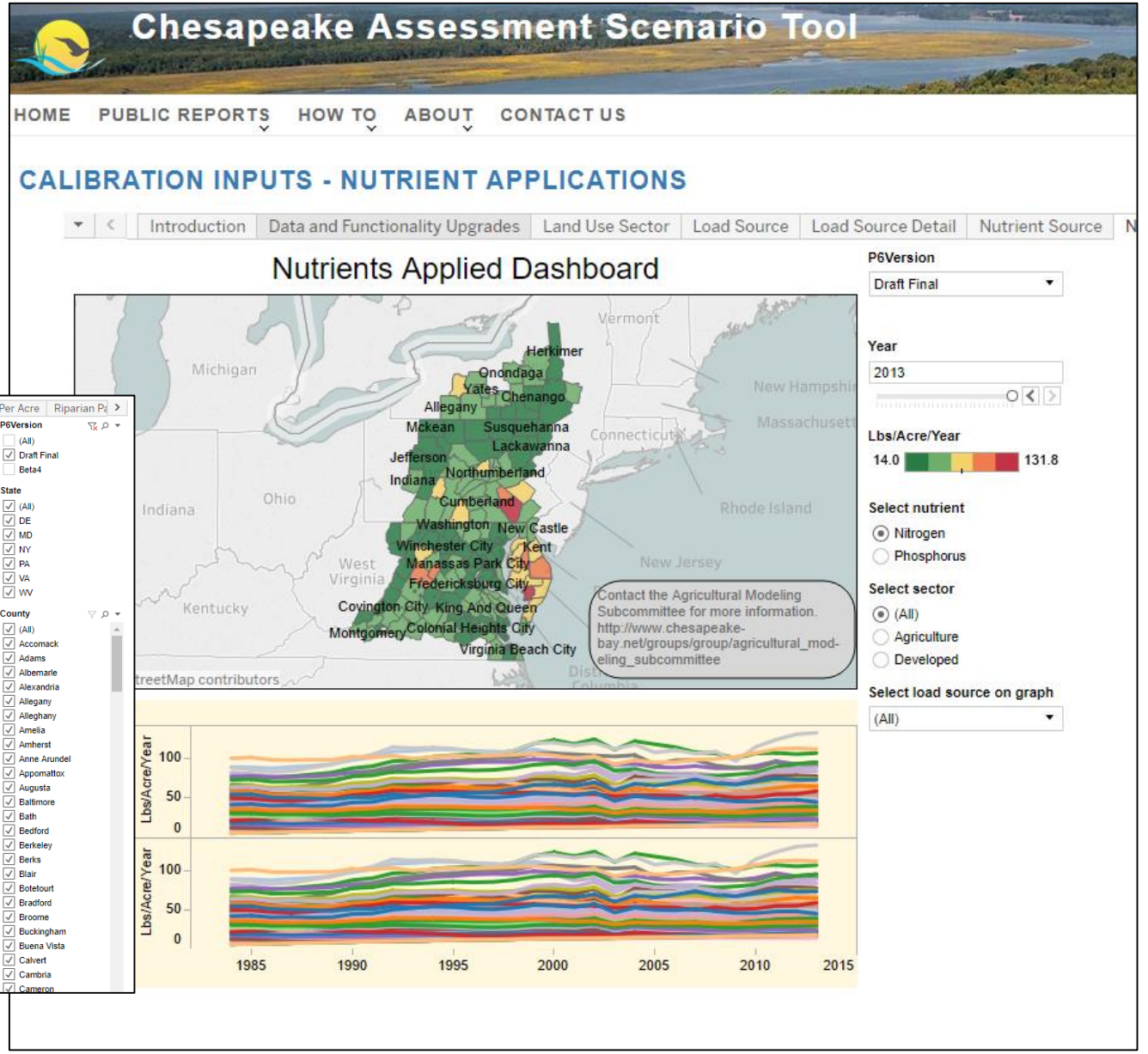
WQGIT Meeting
~~September 26, 2017~~
October 23, 2017

Overview

- Review what currently exists
- Sample prototypes
- WQGIT engagement moving forward

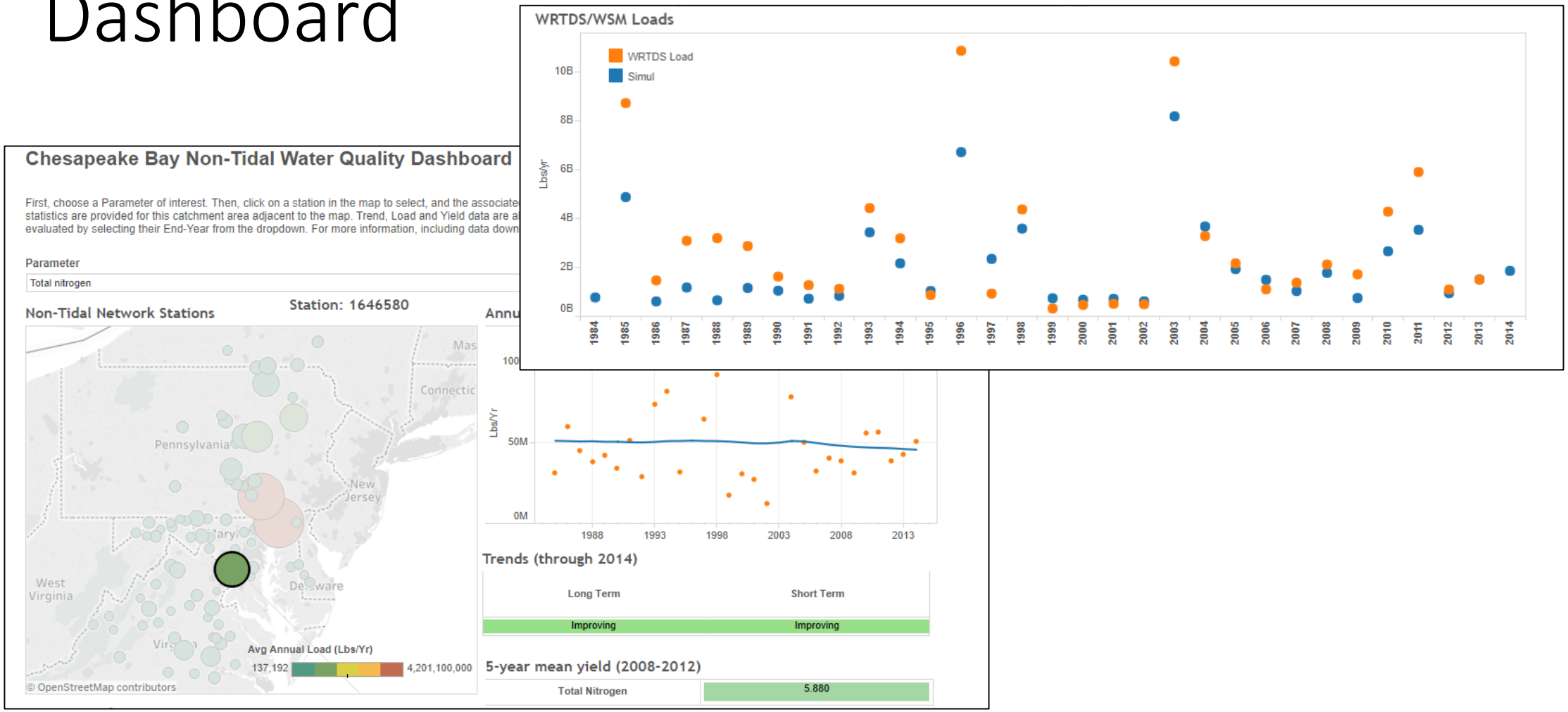
Phase 6 Model Inputs





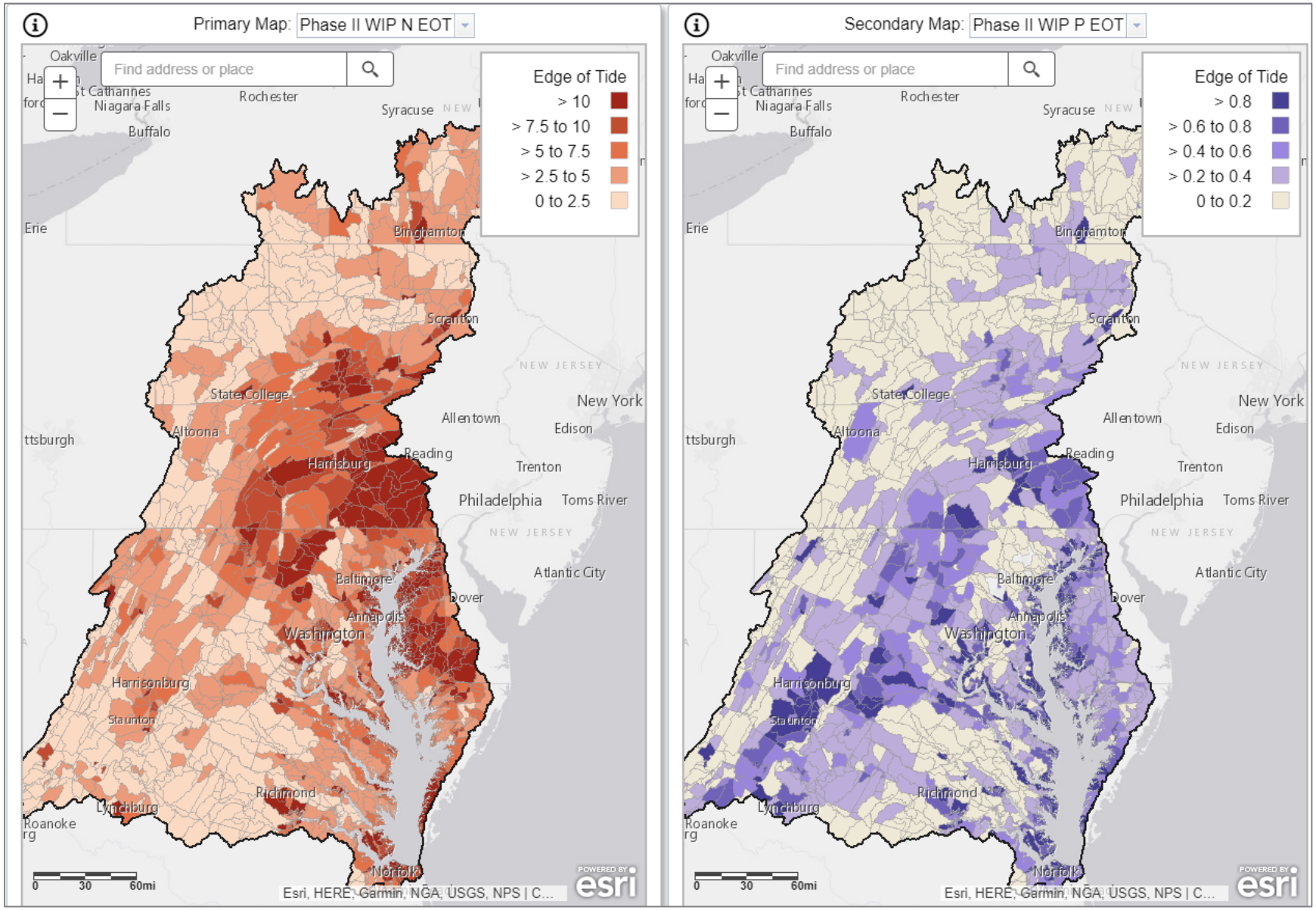
http://cast.chesapeakebay.net/Documentation/CalibrationInputs

Non-Tidal Water Quality Dashboard



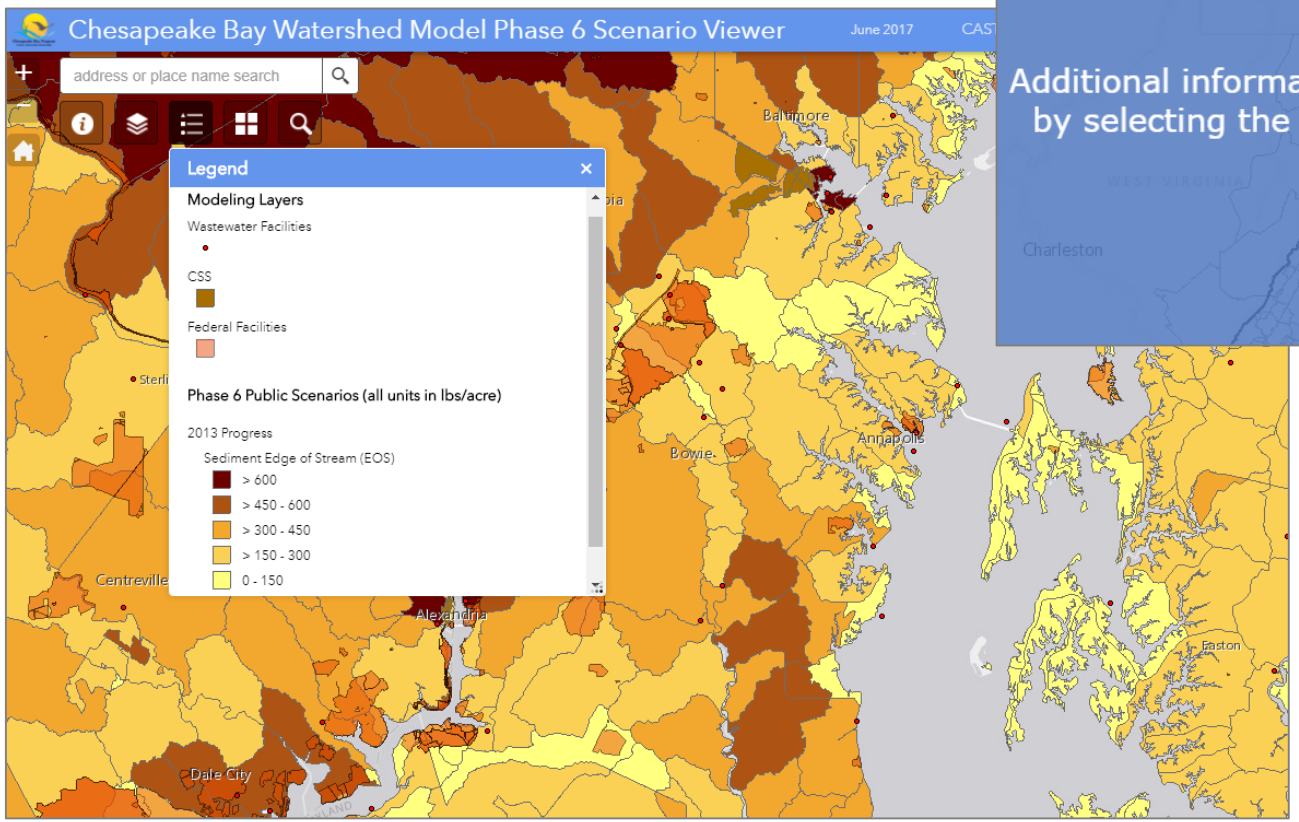
https://cast.chesapeakebay.net/documentation/NonTidalWaterQualityDashboard

Scenario Comparison Viewer



https://gis.chesapeakebay.net/mpa/comparescenarios/

Model Scenario Viewer



Welcome to the Chesapeake Bay Watershed Model Phase 6 Map Viewer.

This Viewer provides basic mapping functionality for a subset of Public Reports for Load Scenarios available from the CAST Tool. It also contains map layers for several commonly requested data layers associated with the Chesapeake Bay suite of models.

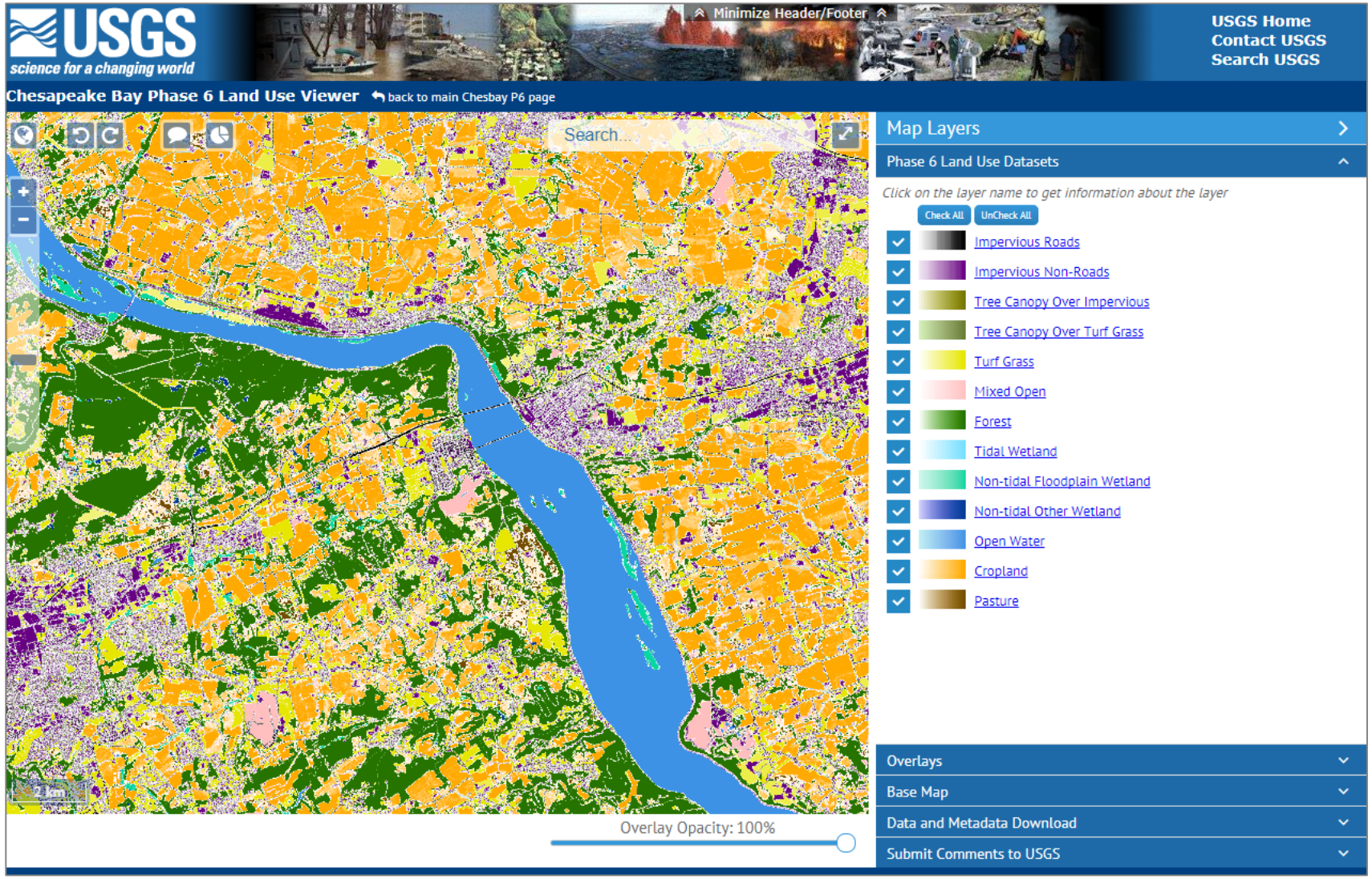
Additional information on using and navigating the Map Viewer is available by selecting the About Icon (*i*) in the upper left corner of the map view.

https://gis.chesapeakebay.net/mpa/scenarioviewer/

Model Scenario Viewer – Existing Data

- Modeling Layers
  - WWTP, CSS, MS4, Federal Facilities, Segment Boundaries, etc.
- Land Use Data
- Phase 6 Public Scenarios
- Cross-GIT Mapping Layers
  - Data layers identified as important to other Outcomes

Land Use Viewer



https://chesapeake.usgs.gov/phase6/map/

Guidelines for Allocations

2010 TMDL

- Allocated N and P loads must result in attainment of water quality standards
- Areas that contribute the most to the problem must do the most to resolve the problem.
- All tracked and reported reductions in nutrient loads are credited toward achieving final assigned loads.

Borrowed from Gary Shenk – 9/25/17

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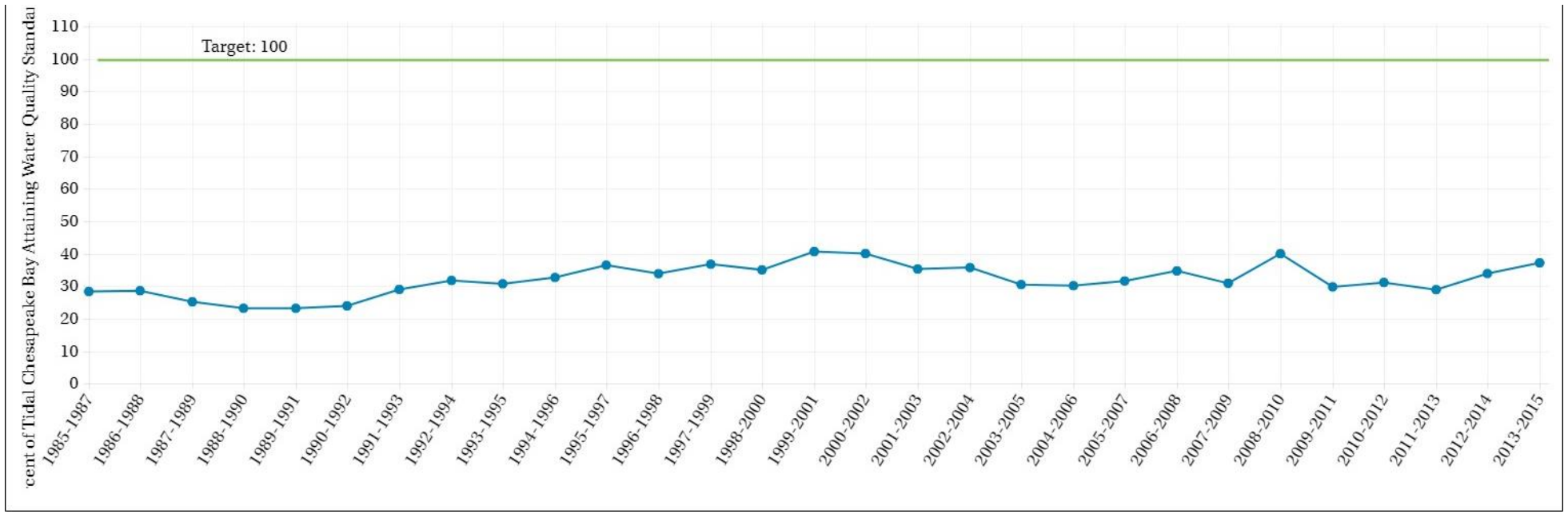
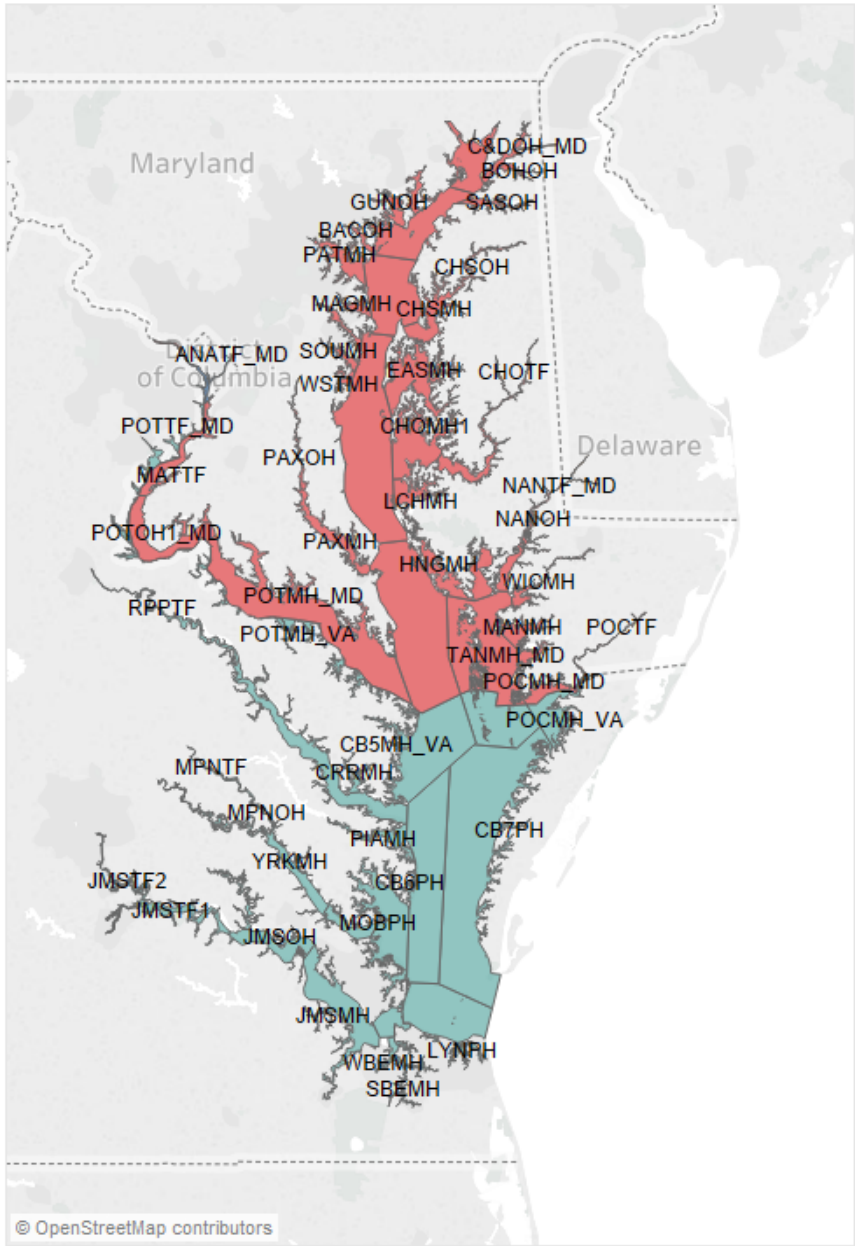
All Products are preliminary and DRAFT!!!!!

Water Quality Standards Attainment and Monitoring



Water Quality Monitoring Segment - Percent Nonattainment

Tidal Segments



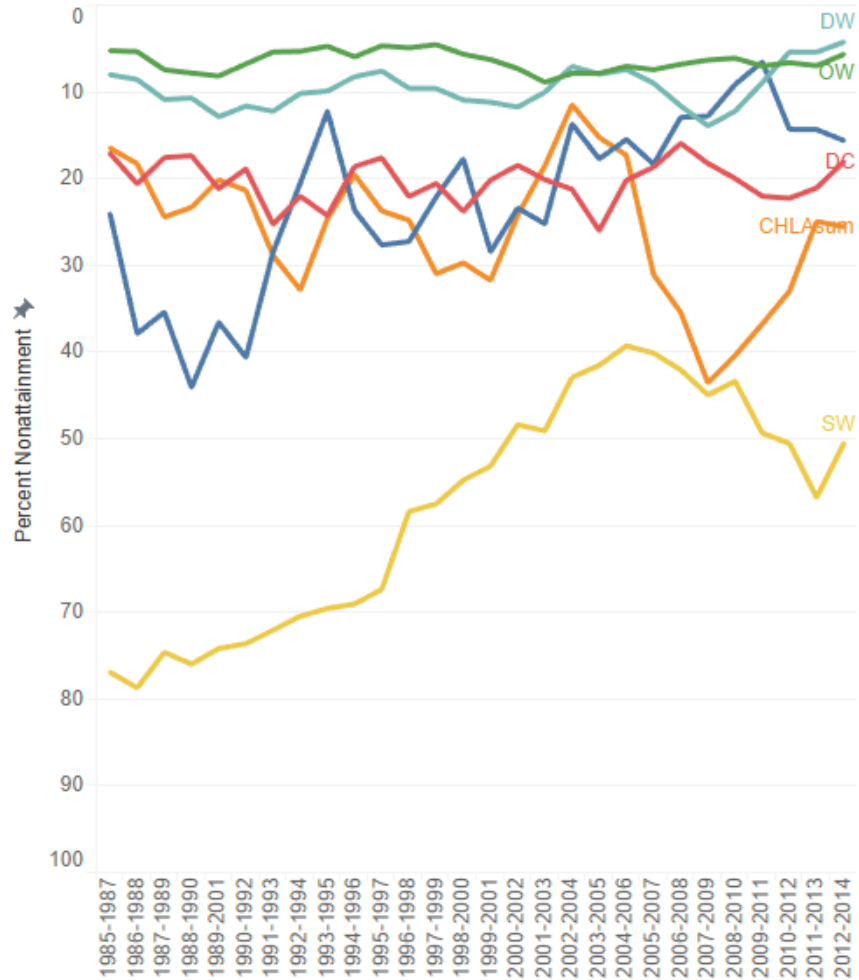
Segment Selector

(All)

Designated Use Key

- OW
- DW
- DC
- SW
- CHLAspr
- CHLAsum

Attainment Deficit (percent)



Note: Zero means the water quality criterion is met

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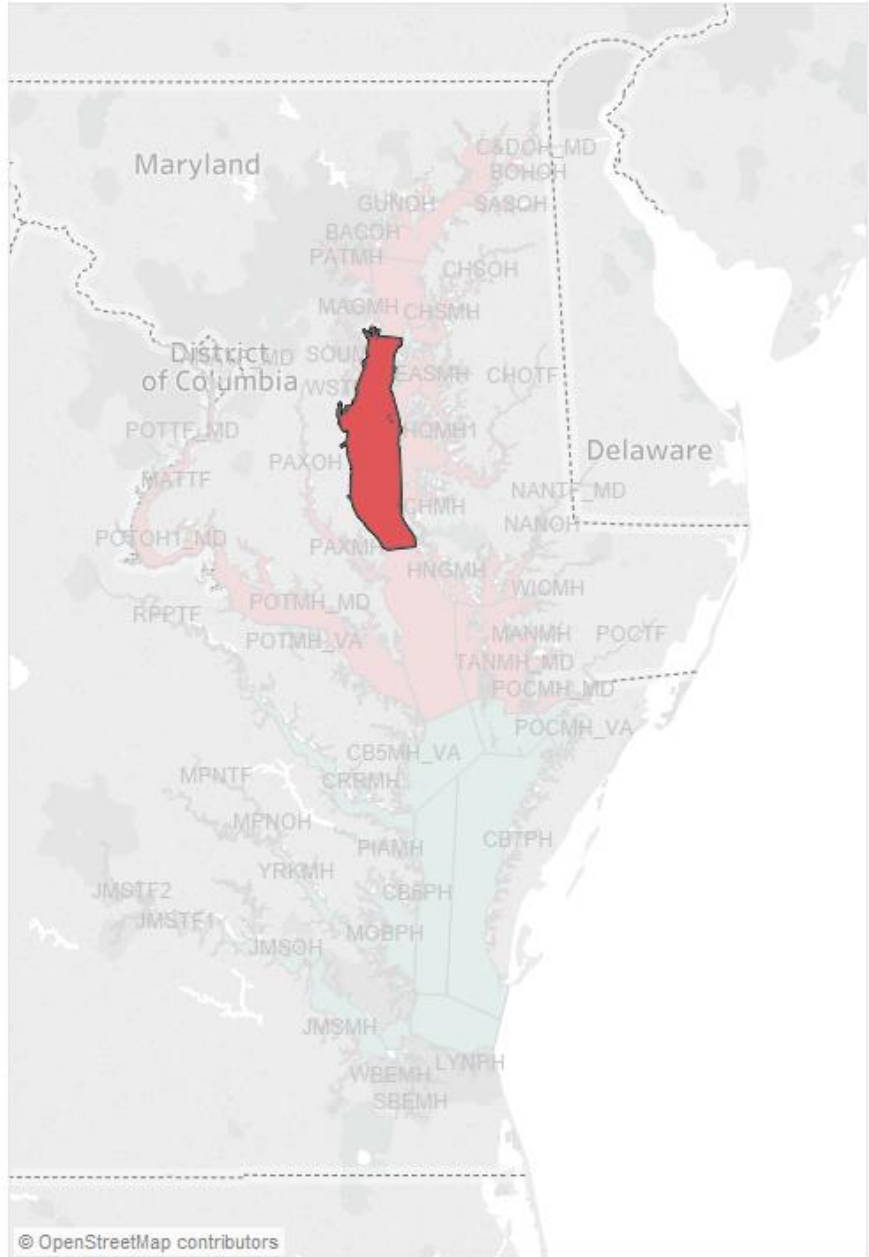

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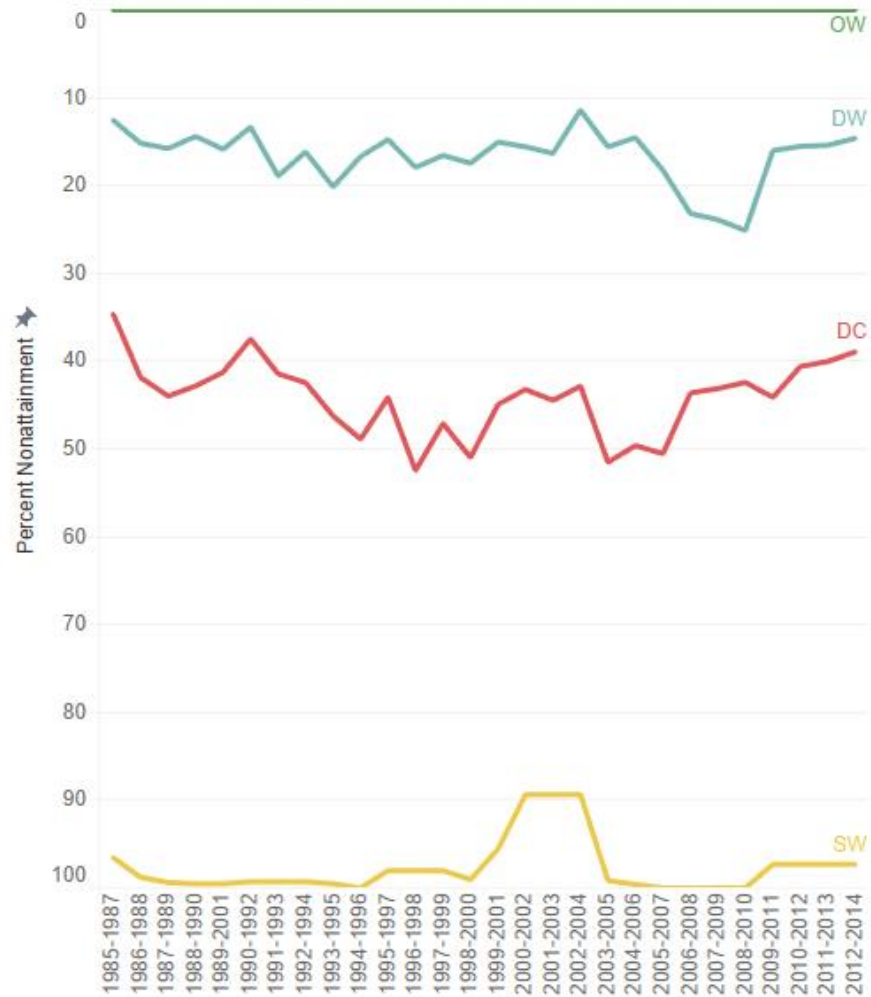


Note: Zero means the water quality criterion is met

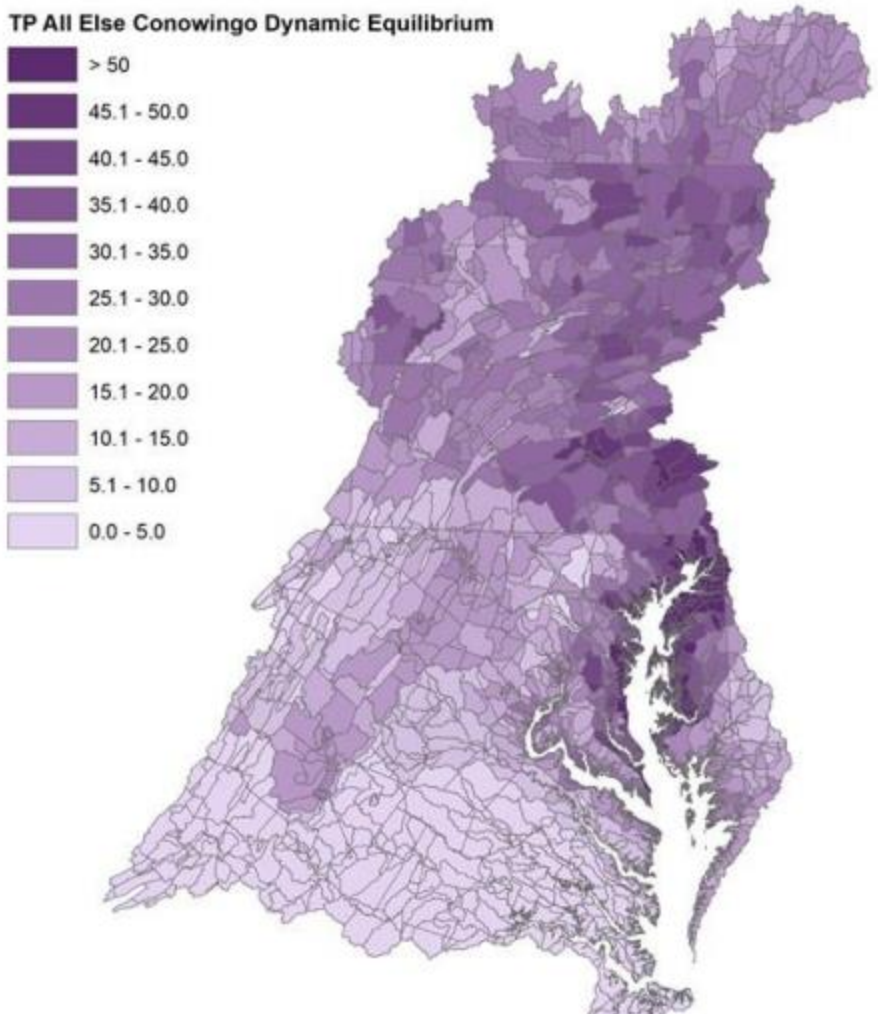
Determining Who Contributes the Most

Key factors:

Watershed Transport
- Watershed Characteristics
- Travel time
- Existence of impoundments

Position along mainstem bay
- Estuarine circulation

Existence of riverine estuary

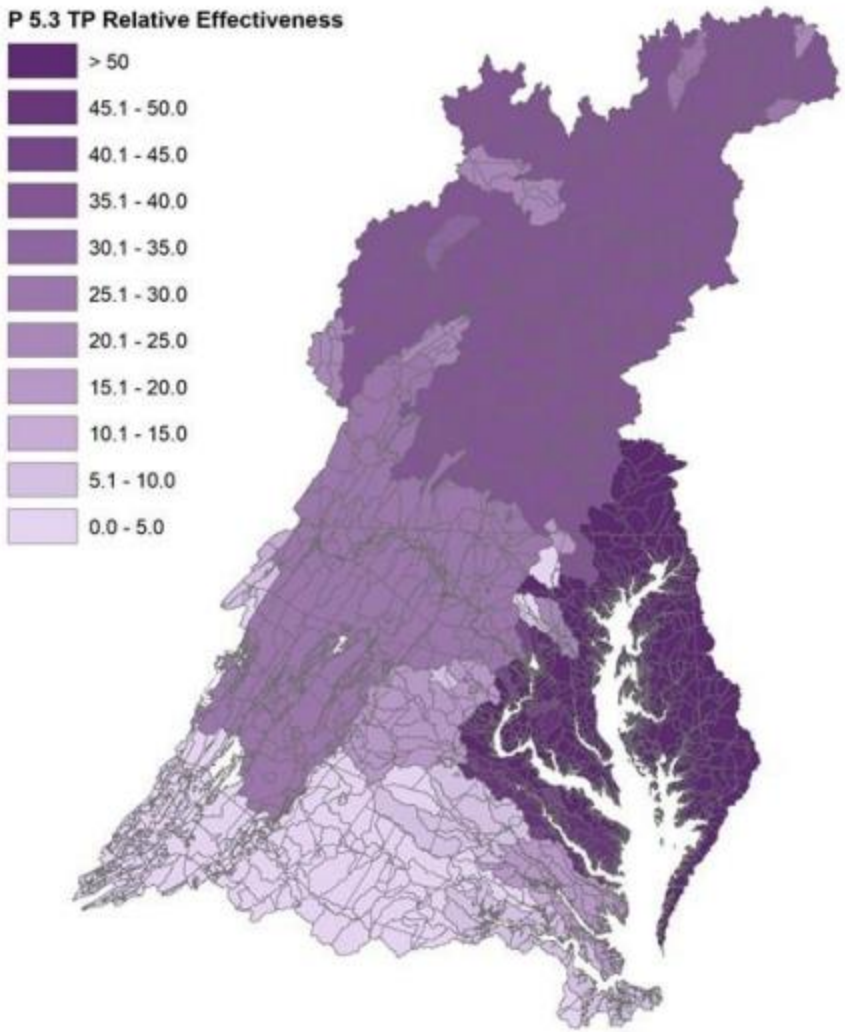


Watershed delivery:
Pound delivered per pound produced
Estuarine delivery
Oxygen reduced per pound delivered
Overall Effectiveness
Oxygen reduced per pound produced

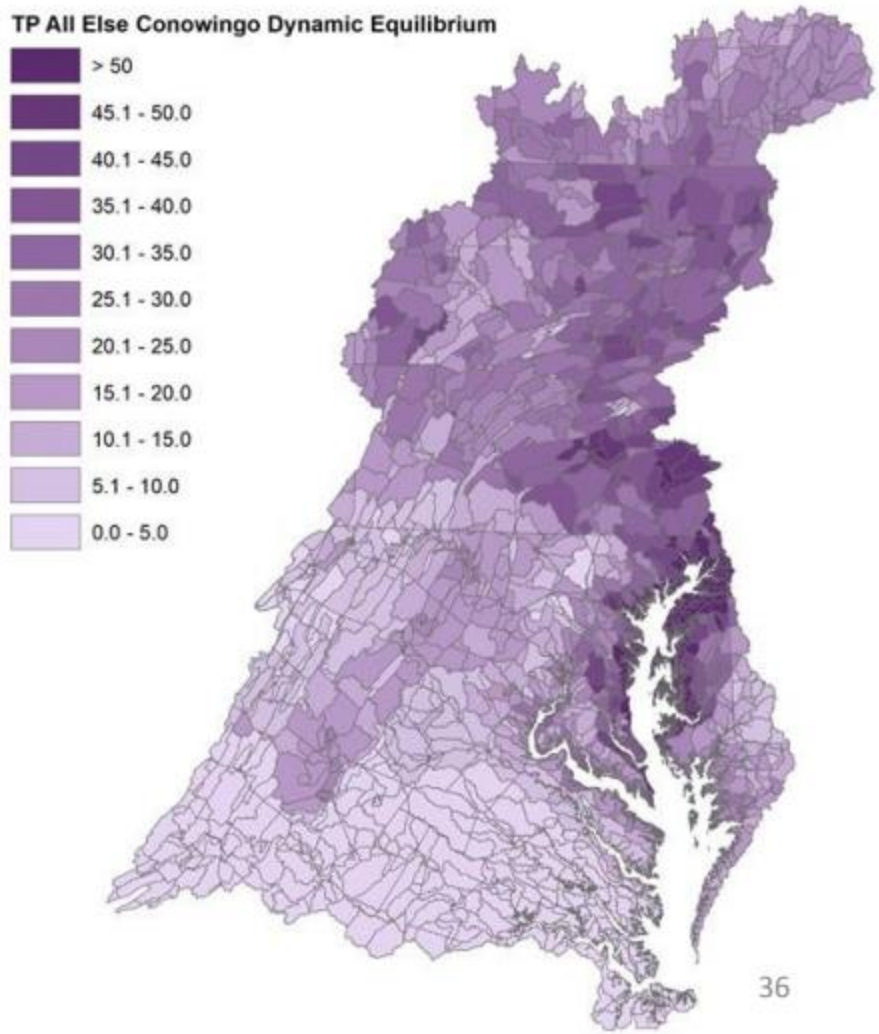
Borrowed from Gary Shenk – 9/25/17

Phosphorus Relative Effectiveness

P5



P6



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New Phase 6 Model Results

- Better inputs
- Better model
- Better calibration
- New No Action and E3
- Hydrodynamics
- Biogeochemistry
- Shoreline loads

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The Phase 6 Assessment of Deep Channel DO Standard Achievement

		Base	No Action	1985 Progress	1993 Progress	2013 Progress	WIP2	WIP2 + Cono Infill	WIP2 + Cono + CC	E3	All Forest
Phase 6		349TN	437TN	371TN	279TN	276TN	209TN	210TN	211TN	146TN	40TN
9/25/17		22.6TP	44.4TP	31.3TP	17.9TP	16.9TP	14.2TP	15.2TP	15.0TP	8.7TP	2.1TP
Cbseg	State	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel	1993-1995 Deep Channel
CB3MH	MD	16.0%	14.9%	10.6%	8.1%	1.6%	0.0%	0.6%	0.7%	0.0%	0.0%
CB4MH	MD	46.0%	56.1%	50.6%	47.2%	31.1%	16.8%	18.9%	19.4%	0.0%	0.0%
CB5MH	MD/VA	14.2%	21.8%	17.4%	15.6%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%
CHSMH	MD	37.4%	25.5%	19.8%	17.9%	9.3%	8.8%	11.5%	13.2%	0.6%	0.0%
POTMH	MD/VA	20.2%	23.9%	19.4%	17.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
POMMH	MD	20.4%	24.0%	19.5%	17.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
RPPMH	VA	19.0%	27.9%	18.3%	17.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
EASMH	MD	25.4%	34.4%	23.1%	19.5%	13.4%	9.8%	14.5%	14.6%	1.1%	0.0%
MD5MH	MD	21.7%	29.2%	24.4%	22.4%	6.8%	0.0%	0.0%	0.1%	0.0%	0.0%
VA5MH	VA	4.5%	11.9%	7.9%	6.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PATMH	MD	24.8%	44.2%	41.2%	28.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%