Chesapeake Bay TMDL

Decisions and Expectations for 2017, 2025 and beyond

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Executive Director

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November 7, 2014

Chesapeake Bay TMDL

- 2010: TMDL established
- 2017: 60% of needed actions

MID-POINT ASSESSMENT

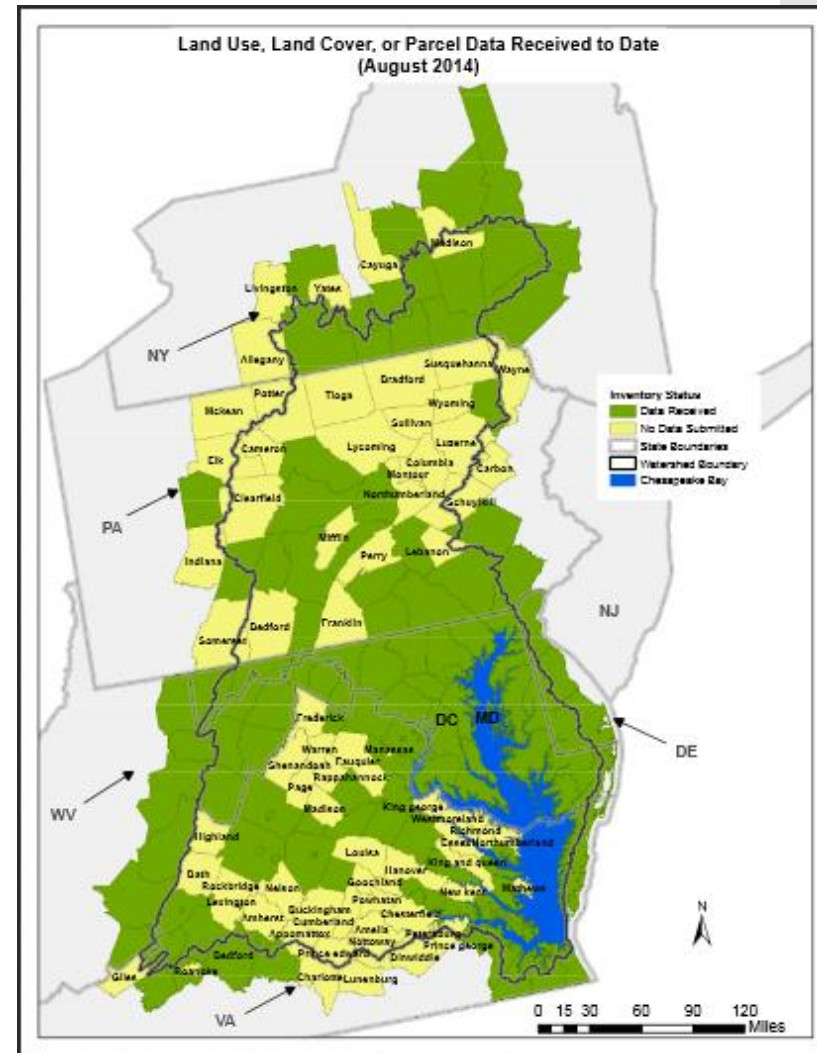- 2018: Phase III WIPs
- 2025: 100% of needed actions

2017
What is the Mid-Point Assessment?

- Evaluation of progress toward 2025 goal

- Update to Chesapeake Bay Watershed Model
  - Inputs
  - Assumptions
  - Calibration

What are the expected updates?

New categories of land uses and land use loading rates
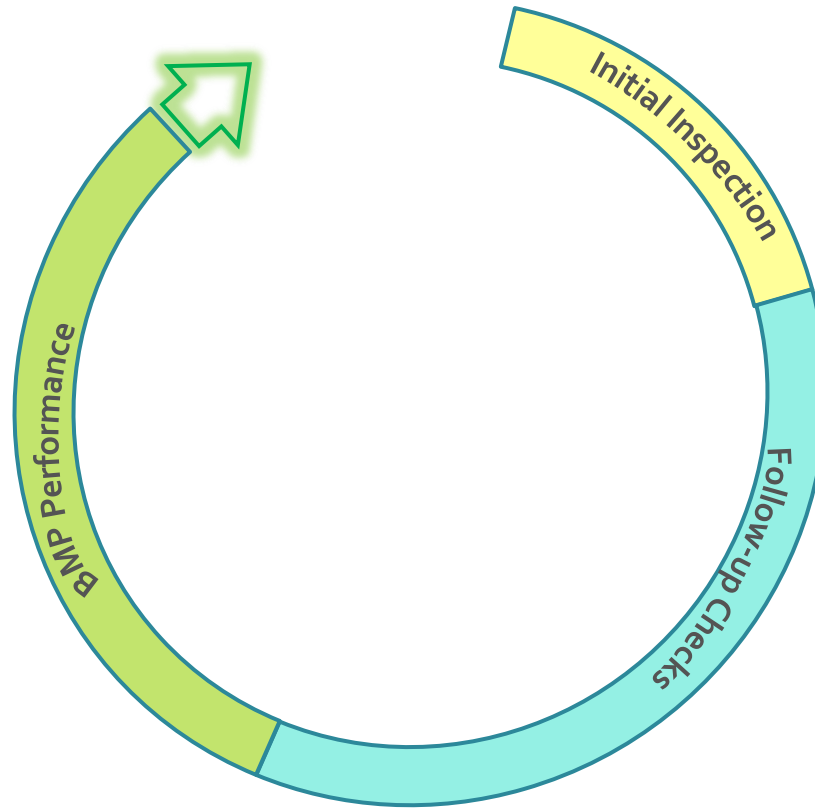
- To the extent that data is available

Land Use, Land Cover, or Parcel Data Received to Date
(August 2014)

Inventory Status
- Data Received
- No Data Submitted
- State Boundaries
- Watershed Boundary
- Chesapeake Bay

New and Updated BMPs

- Work is ongoing

What are the expected updates?

Cross-sector list of BMPs, as prioritized by workgroups

Sector	Sector priority*	BMP(s) to be reviewed
Ag	N/A	Manure Treatment Technologies
Ag	1-1	Manure injection / Manure incorporation
Ag	1-2	Cropland Irrigation Management
Multi	N/A	Abandoned Mine Reclamation
Forestry	1	Urban Tree Canopy
Forestry	2	Forest Management
Stormwater	1	Impervious disconnection
Stormwater	2	Outfall stabilization
Stormwater	3	New bioretention designs w/ enhanced nutrient reduction features

Lead: Sector Workgroups and Expert Panels

What are the expected updates?

Improved BMP information (Verification)

- Initial Inspection
- Follow-up Checks
- BMP Performance

Lead: Verification Steering Committee & Jurisdictions

Better data inputs

What are the expected updates?

- Fertilizer application rates — **FERTILIZER**

- Blended crop yield data
- Utilizing annual agricultural statistics — **NASS DATA**

- Animal Manure
- Animal numbers and distribution of animals
- Manure production estimates
- Manure nutrient concentration estimates
- Manure storage and handling loss and volatilization
- Mineralization assumptions — **MANURE**
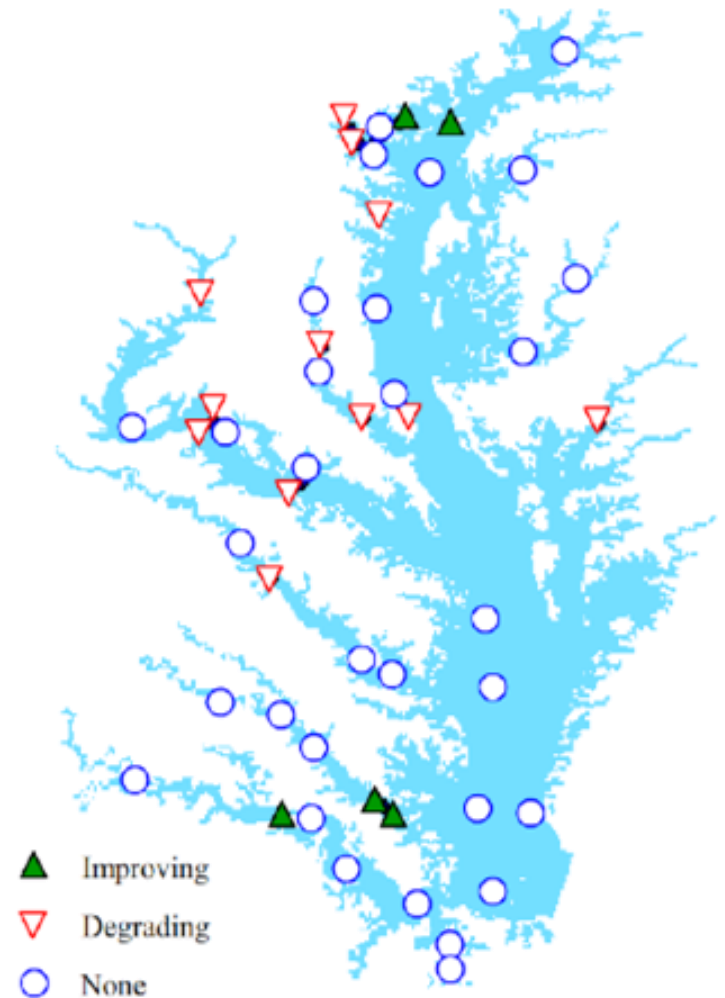
- Manure losses, distribution and fertilizer algorithm — **NUTRIENT SPREAD**

Lead: Agricultural Workgroup

What are the expected updates?

Incorporation of new monitoring data

- Identify and explain trends
- Recalibrate the Watershed Model

Trends in Fixed Site Benthic Condition

▲ Improving
▽ Degrading
○ None

Lead: Scientific, Technical Analysis & Reporting (STAR) Team

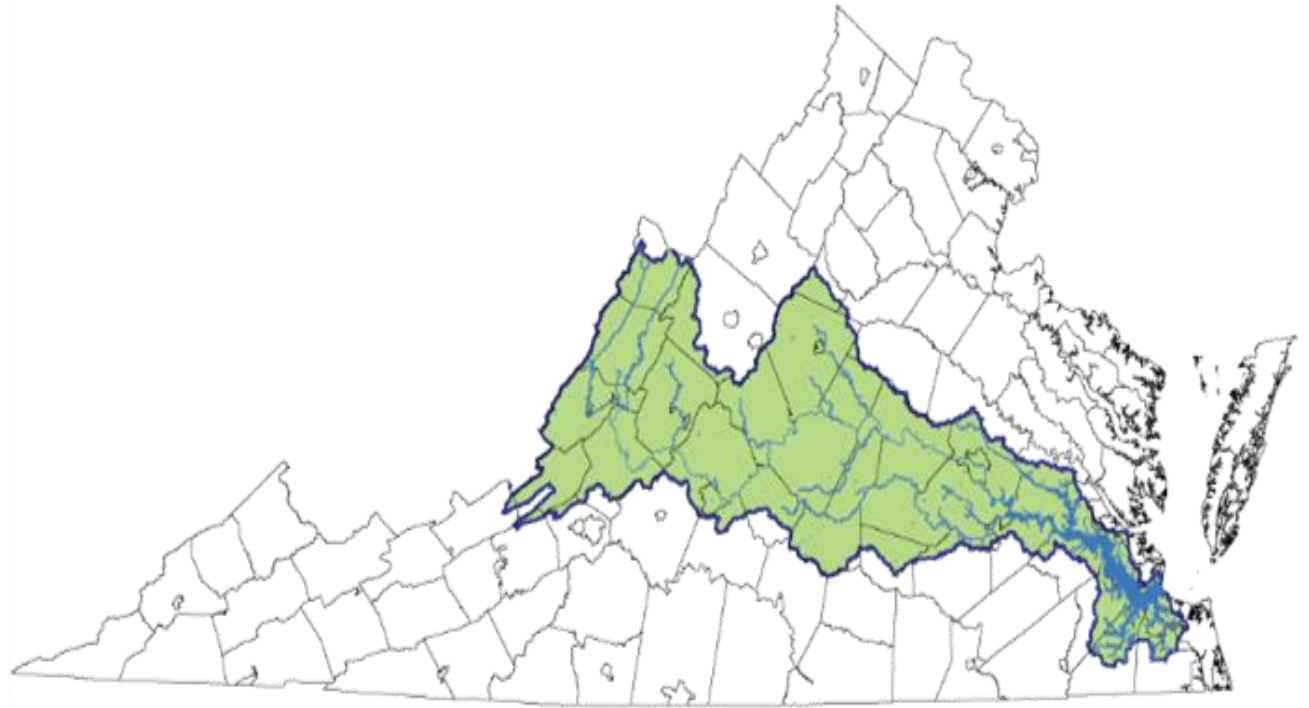# What are the expected updates?

Conowingo

Climate Change
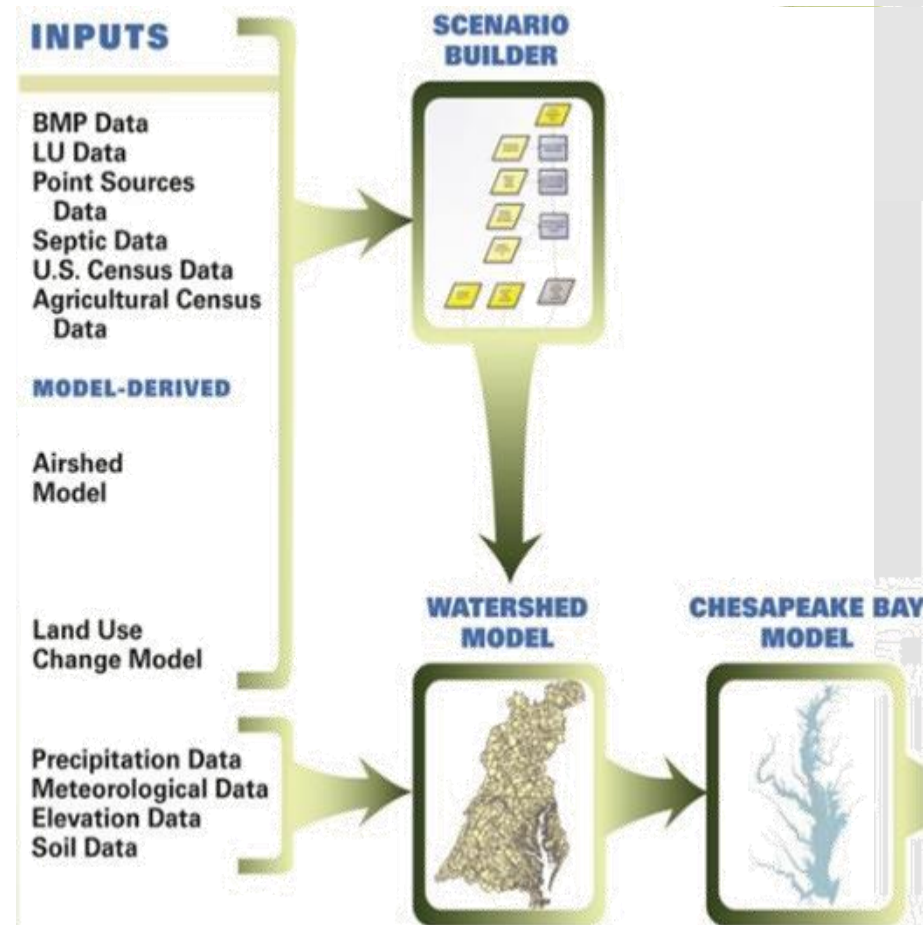- Estimate 2050 conditions

What are the expected updates?

Lead: EPA

James River Chlorophyll *a*

- Standards for Chesapeake Bay TMDL much more stringent than James River TMDL

What are the expected updates?

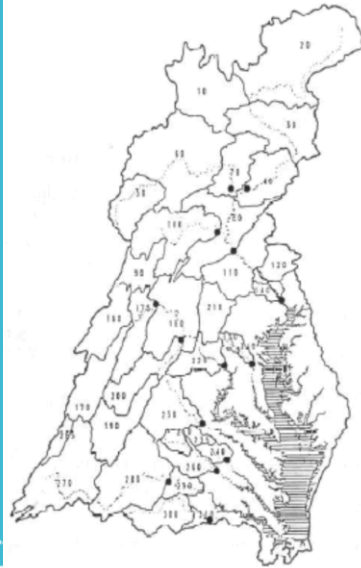Lead: VA DEQ and Modeling Workgroup

A "Phase 6" Enhanced Model

- Enhanced N & P simulation using multiple-model approach

- Incorporate regional factors into loading estimates

- Smaller-scale land segments

INPUTS

BMP Data
LU Data
Point Sources Data
Septic Data
U.S. Census Data
Agricultural Census Data

MODEL-DERIVED

Airshed Model

Land Use Change Model

Precipitation Data
Meteorological Data
Elevation Data
Soil Data

SCENARIO BUILDER

WATERSHED MODEL

CHESAPEAKE BAY MODEL

Lead: Modeling Workgroup

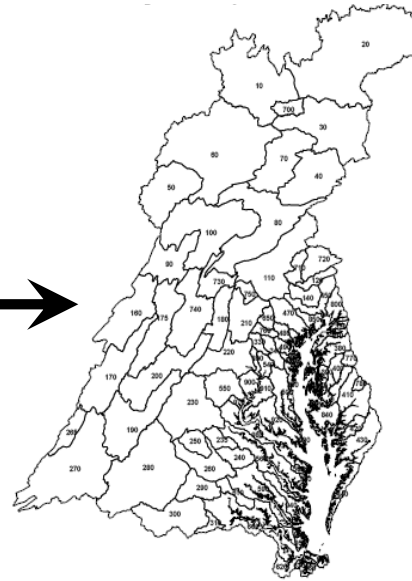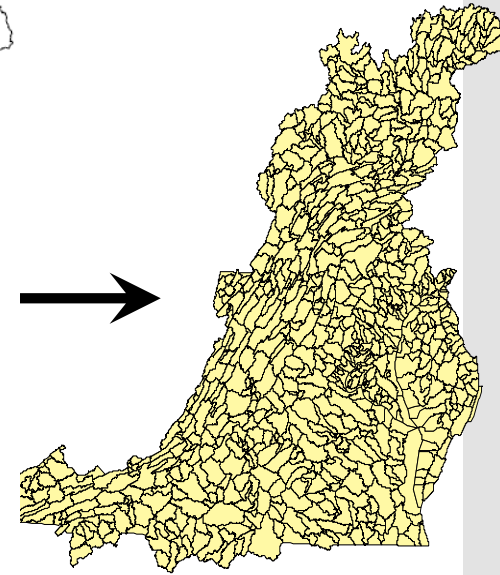# History of Chesapeake Bay Watershed Models

Phase 1

- Completed in 1982
- 63 model segments
- 5 land uses
- 2 year calibration period
- No BMPs simulated

Phase 4

- Completed in 1998
- 94 model segments
- 9 land uses
- 14 year calibration period
- 20 BMP designations

Phase 5

- Completed in 2010
- 1,000+ model segments
- 30 land uses
- 21 year calibration period
- 1400 BMP designations

Chesapeake Bay Program
A Watershed Partnership

Phase 6: December 2016

What are the implications?

- Phase III WIPs
- An updated TMDL?

Who is overseeing the work?