



**Chesapeake Bay Program**  
*Science. Restoration. Partnership.*

# Future Model Updates

Lee McDonnell, EPA CBPO

1-26-26

Water Quality Goal Implementation Team

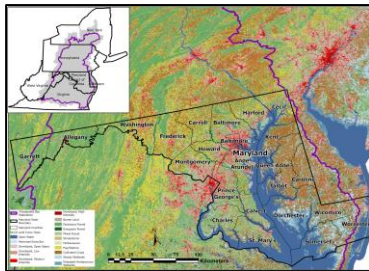
# Key Questions

- How frequently should the partnership watershed model incorporate new data and methods into a new version? Phase changed?
- What considerations should drive this process?
- How could partnership processes and decision making improve to provide more certainty for planning?
- What changes or improvements could simplify communications (i.e., explaining process in context of new data)

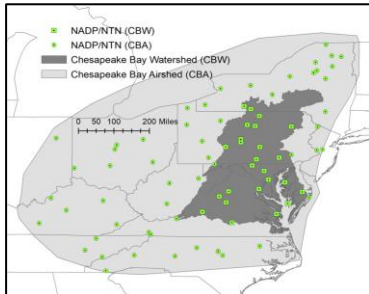
# Model Phase Change

## Data and Model Inputs

BMP Data  
Land Use Data  
Point Sources Data  
Septic Data  
U.S. Census Data  
Agricultural Data



Land Use Change Model

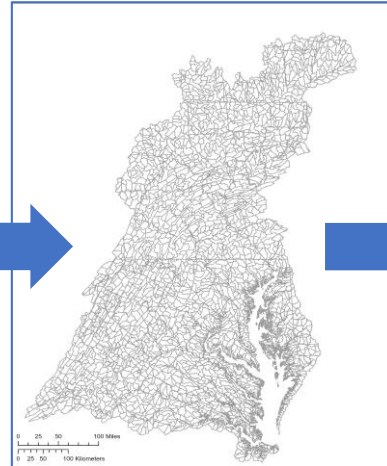


Airshed Model

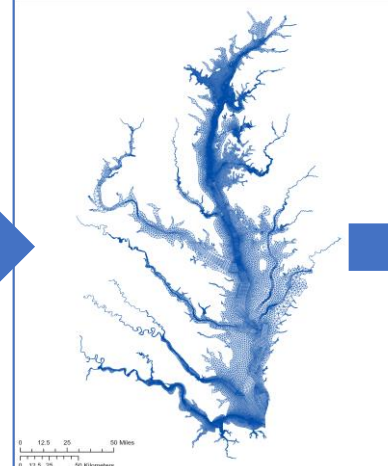
Precipitation Data  
Meteorological Data  
Elevation Data  
Soil Data

Nutrient and sediment targets for CBP state and Federal partnership

## Phase 7 Watershed Model/CAST



## Estuary Model

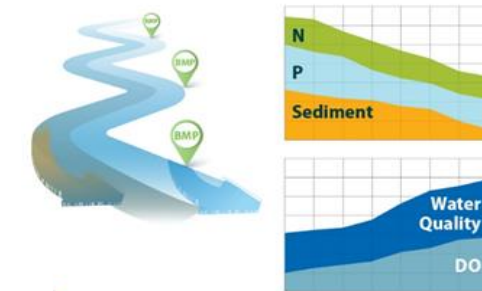


## Model Outputs

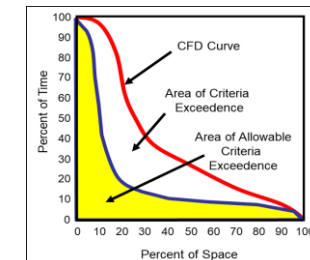
Prediction of Impacts



BMP Implementation Results



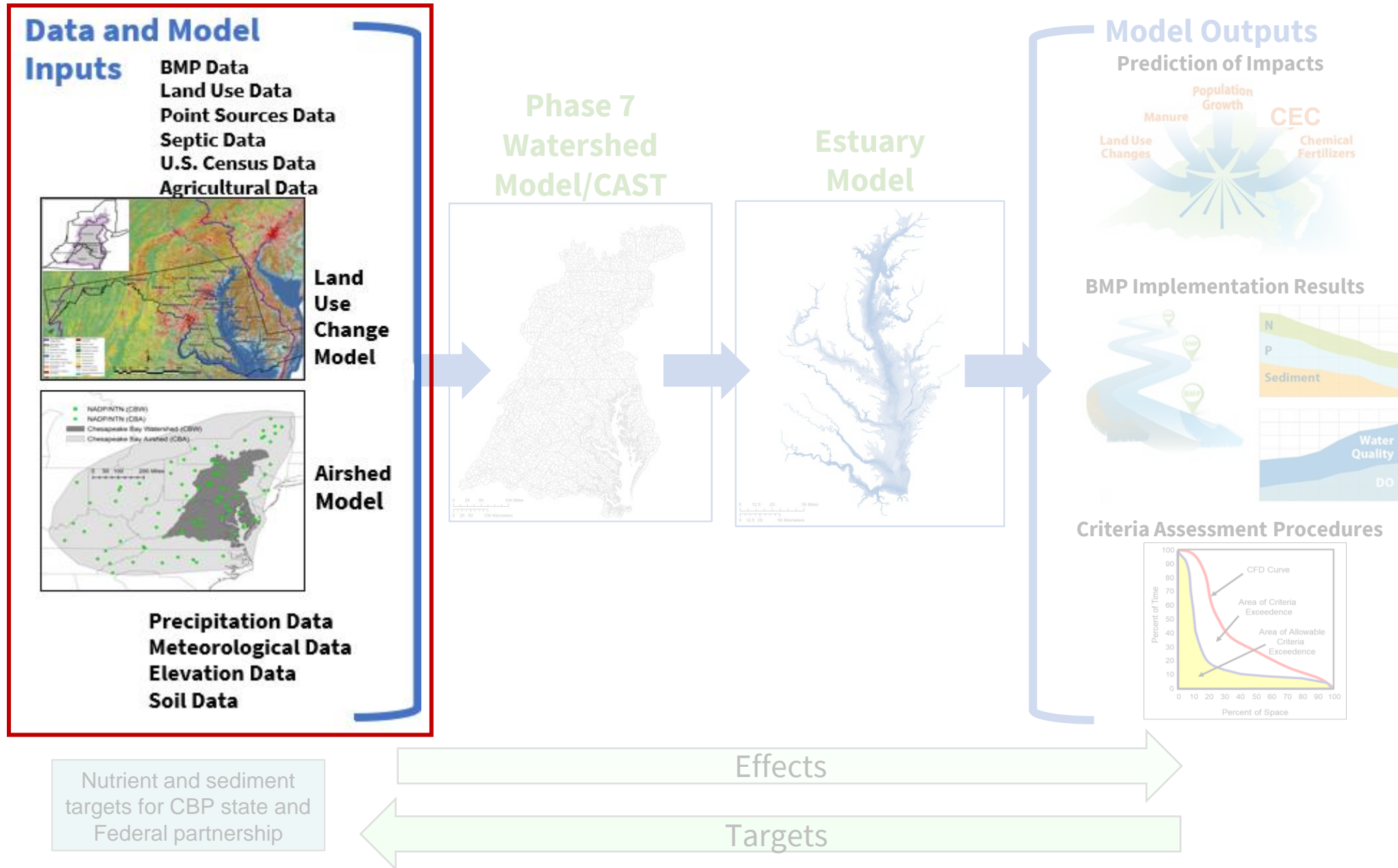
Criteria Assessment Procedures



Effects

Targets

# Version Change



# Previous Decisions and Recent Developments

- 2014-2016: Modeling Workgroup and WQGIT investigation
  - Decision: Update model every 2 years (rather than annually) to keep assumptions constant over two-year milestone period. Update historical BMPs.
- 2022/2023—PSC Decisions on CAST-21
  - CAST-23 will be last update for Phase 6 (no CAST-21)
  - Unaccounted additional loads post-2025
- Issues w/ annual and biennial updates
  - Too frequent, all had unintended consequences
  - Constant do loop of updates
  - Appearance of moving the goal posts

# Factors to consider

- Timing of input datasets (e.g., Land use, Census of Ag)
- Development and approval of new methods
- New and updated BMPs
- Monitoring Data (phase)
- Partnership processes and decision making
- Implementation and planning timelines (e.g., WIPs, Milestones, model phase)
- Others?

---

---

# Task for the WQGIT

- Review historical model development timelines and factors influencing frequency of updates, including causes for missed deadlines, and recommend improvements to the process and timing for updating the model and transitioning to new versions.
- Questions to be answered (at a future meeting):
  - When do we do the next Phase update?
  - How many times to perform version updates during Phase 7?