

## Navigation Guide to Chesapeake Bay Program's Phase 6 Watershed Model Analysis Tools

*revised January 5, 2018*

### Purpose

The Chesapeake Bay Program's (CBP) Watershed Model (WSM) uses multiple input data to estimate the amount of nutrients reaching tidal waters from the watershed. Inputs include land-use, fertilizers and other nutrient amendments, wastewater and septic loads, atmospheric deposition and a number of other factors that affect loading rates. Output from the watershed model is fed into the water quality and sediment transport model (WQSTM), which estimates attainment of water quality criteria for dissolved oxygen, water clarity and chlorophyll-A. In addition, the watershed model is the main accounting mechanism by which progress is measured toward for the Bay TMDL's nutrient and sediment reduction goals.

Raw input into and output from the WSM is documented in very large Excel files that require major manipulation to extract information at geographic scales likely to be of most interest to local government users. For Phase 6, the Bay Program has developed or modified several online tools to assist the Bay Program partners, local governments and other parties in accessing model data.

### CBP's WSM Online Tools

#### 1. Land-Use Data

The final Phase 6 Land use data is available at two sites in two different forms:

The interactive "Land Use Viewer" provides a series of maps that depict the final Phase 6 Bay Program current land use (in 10-meter pixel form) and show various overlay tabs, such as sewer service areas, federal facilities and MS4 service areas

- <https://chesapeake.usgs.gov/phase6/map>

The tabular version of the land use data is available at:

- [ftp://ftp.chesapeakebay.net/Modeling/Phase6/Phase\\_6\\_201710/Watershed\\_Model/WSM\\_Inputs/land\\_use/](ftp://ftp.chesapeakebay.net/Modeling/Phase6/Phase_6_201710/Watershed_Model/WSM_Inputs/land_use/)

This ftp link allows users to download land use data in a .csv format, which can then be opened in Excel. In addition to "current" land use – keyed to 2013 – the tabular data has been extrapolated back to 1984.

#### 2. Graphical Interface to the Phase 6 WSM Input

Also known as "Tableau," this tool allows users to generate charts and maps of the various input data to the watershed model. Many of the inputs are specific to agricultural lands, but the tool does include atmospheric deposition and fertilizer application rates to the various turfgrass land uses. It also has septic data, such as number of systems, percent population on septic vs. sewer, and people/system. <https://mpa.chesapeakebay.net/Phase6DataVisualization.html>

### 3. CAST

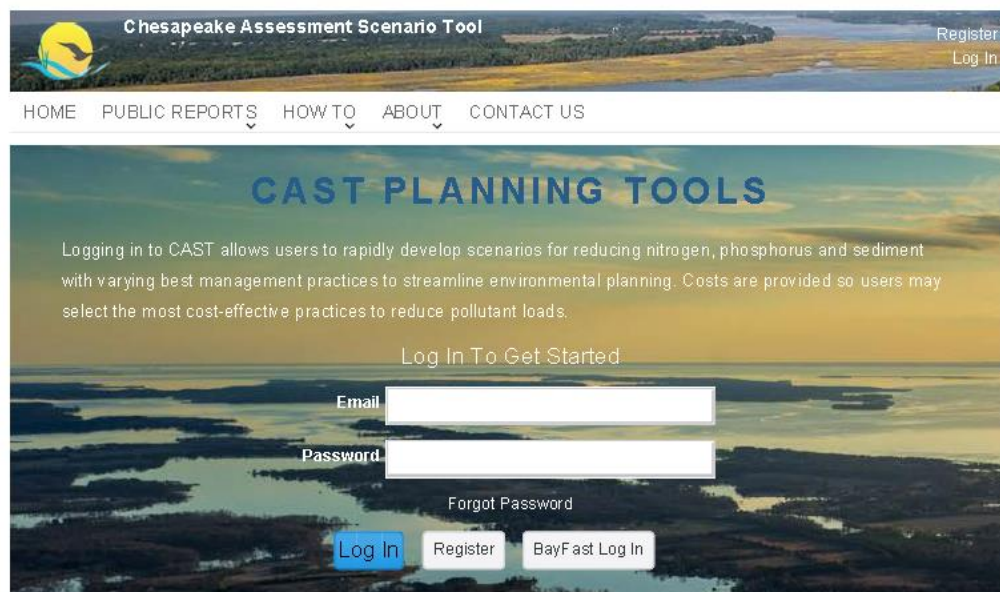
This tool (the acronym stands for Chesapeake Assessment Scenario Tool) allows users to examine N, P and sediment loading information at scales from county-level to the major river basin generated either by standard Bay Program modeling scenarios (such as annual progress runs) or by scenarios generated by the user. It represents an upgrade from the previous state-specific versions of the tool, such as MAST and VAST. The new version is completely consistent with the watershed model itself. Users need to apply for passwords.

To log into CAST:

- <http://cast.chesapeakebay.net/>

It also comes with a FAQ document: <https://mpa.chesapeakebay.net/Phase6FAQ.html> that provides useful information on the transition between previous versions and the new version based on WSM Phase 6.

CAST- Home Page



Chesapeake Assessment Scenario Tool

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Log In

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## CAST PLANNING TOOLS

Logging in to CAST allows users to rapidly develop scenarios for reducing nitrogen, phosphorus and sediment with varying best management practices to streamline environmental planning. Costs are provided so users may select the most cost-effective practices to reduce pollutant loads.

Log In To Get Started

Email

Password

[Forgot Password](#)

#### COG staff contacts:

- Overall policy; representative to the CBP Water Quality Goal Implementation Team  
Tanya Spano, [tspano@mwkog.org](mailto:tspano@mwkog.org), 202-962-3776
- Watershed model overview, process dynamics  
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- Watershed model analysis; assistance to members in navigating analysis tools  
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