High-Resolution Land, Tidal Water, and Tidal Wetland Boundaries to Inform the Phase 7 Models

Modeling Workgroup Quarterly Review
October 5, 2021
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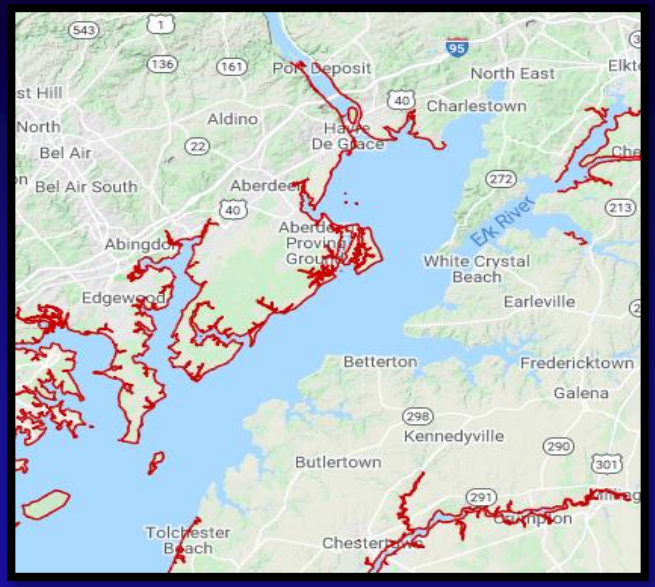
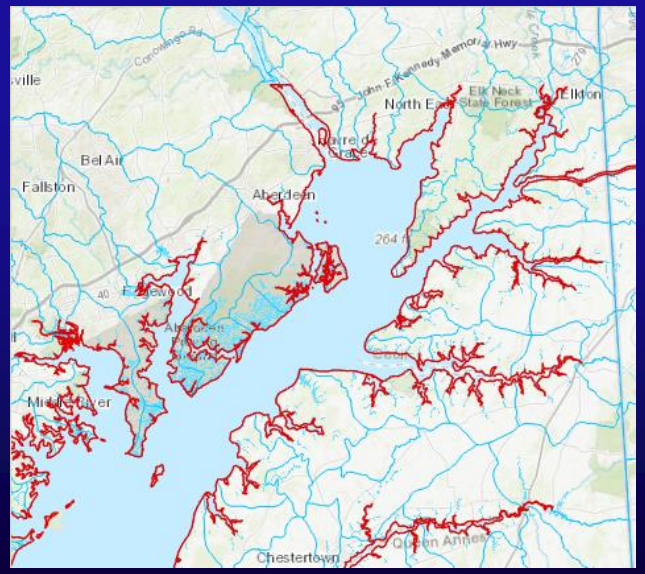
Previous Actions and Decisions

- Evaluated various tidal shoreline layer candidates and rejected most due to incomplete coverage of the Chesapeake and its tidal tributaries.
- Initially planned to continue using CBP's high resolution shoreline layer (derived from 1990s NOAA data) and began making minor corrections – complemented with 2017 tidal wetlands land cover data.
- In response to estuary model needs, began investigating the feasibility of creating a mean higher high water (MHHW) shoreline layer.

NOAA CUSP



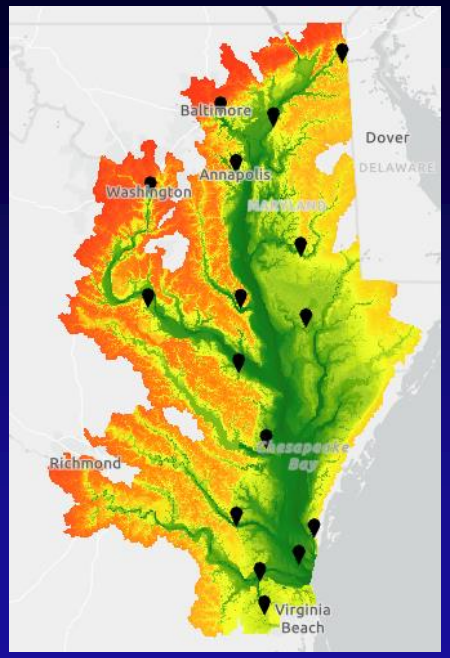
CBP High Resolution Shoreline



MHHW shoreline layer

- Approach was to collect tidal data from NOAA tidal gauges, divide the Bay and tributaries into segments, and generate contours for each segment using a 1m resolution topobathy layer.

- Pilot project in the James revealed some challenges:
  - Data resolution
  - DEM artifacts requiring manual editing



1m topobathy layer with subset of tidal gauges

Bridge with incorrect tributary contour

2017 Land Cover Data

- A tidal wetlands layer is being created by the CBP Land Change Modeling Team, derived from 2017 1m imagery
- Imagery may have been collected during a variety of tidal stages

Nanticoke River in Wicomico County, MD

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2017 Land Cover Data

- Tidal wetlands combined with open water may provide the exact boundaries needed
- Will require additional investigation

Nanticoke River in Wicomico County, MD

2017 Land Cover Data – Open Water

- Bridges may present an issue
- Higher-elevation DEM contour may help define tidal area for use with land cover, or may be useful as a standalone shoreline layer

Open Water class from 2017 CBP 10m land cover dataset

Contact

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