Goal and Timetable

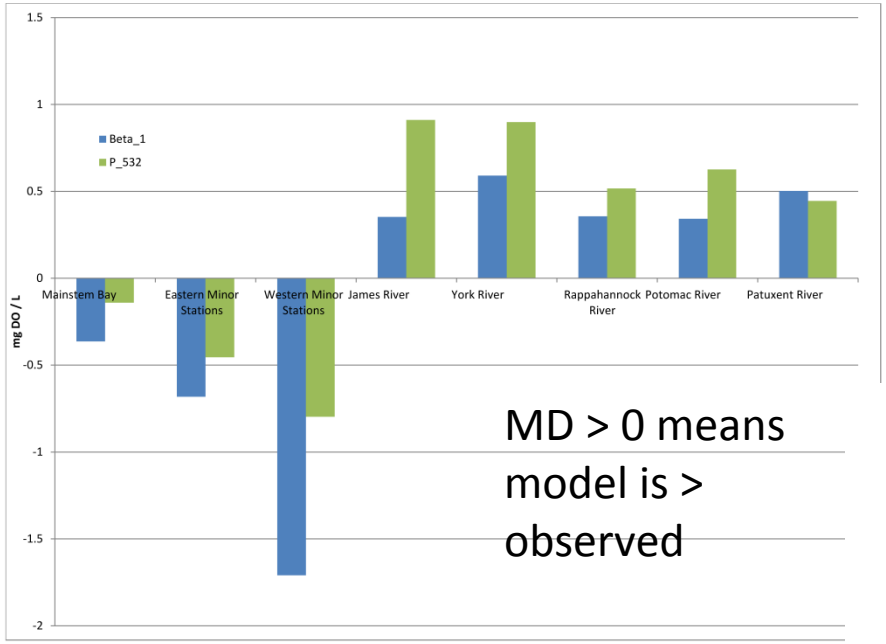
- We have Beta_1 Phase 6 WSM loads.
- Fully-operational WQM by the end of January 2016:
  - Results as good as or better than model version used in 2010 TMDL study.
  - Incorporation of G1, G2, G3 organic matter.
  - Wetland nutrient attenuation and wetland loss.
  - Oyster sanctuaries and aquaculture.
  - Representation of shallow-water data and processes.

Results as Good as or Better than 2010 TMDL Study

- We have run the WQM for two sequences:
  - 2002 – 2011
  - 1991 – 2000
- The 1991 – 2000 sequence is a classic verification against independent data.
- That's what we are going to look at.
- The verification combines two independent variables:
  - Changes we have made to model and parameters for the 2002 – 2011 sequence.
  - Beta_1 WSM loads.

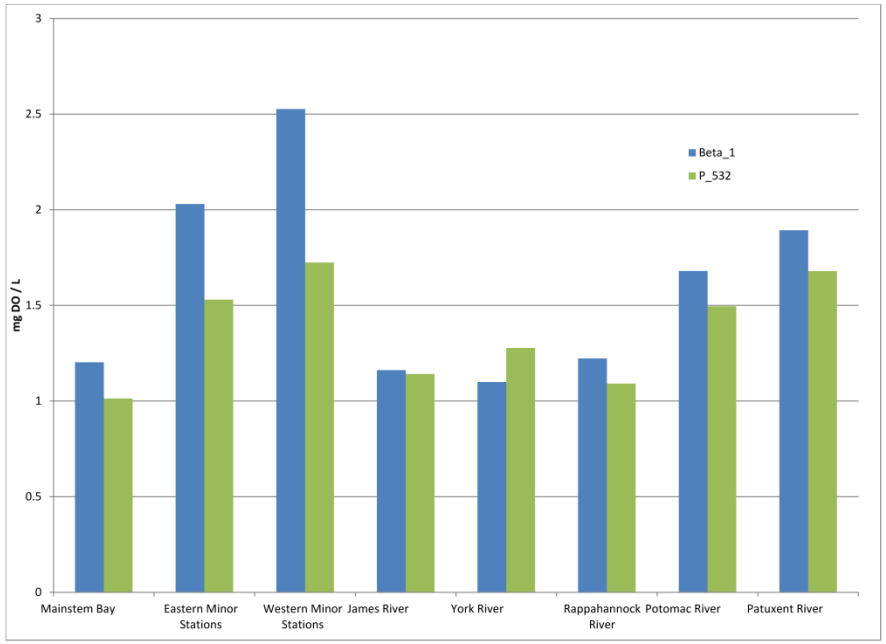
Statistical Comparisons

Mean Difference - DO



MD > 0 means model is > observed

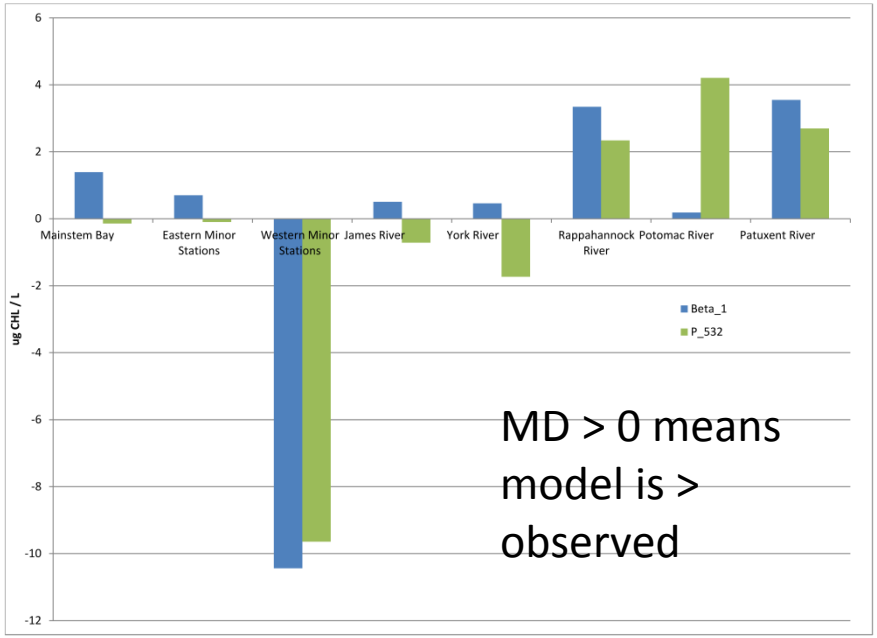
Absolute Mean Difference - DO



DO is almost universally lower than before. No material improvement.

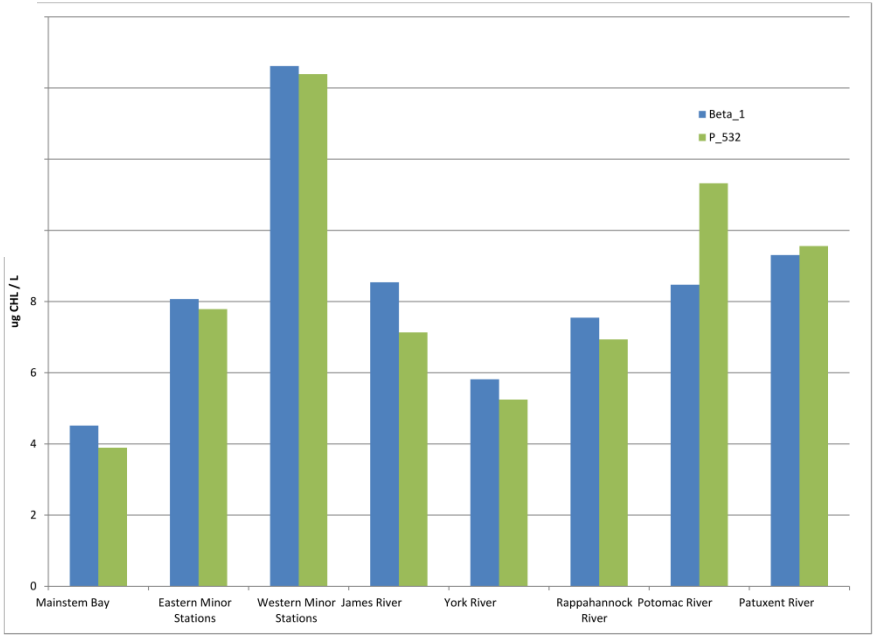
Statistical Comparisons

Mean Difference - CHL



MD > 0 means model is > observed

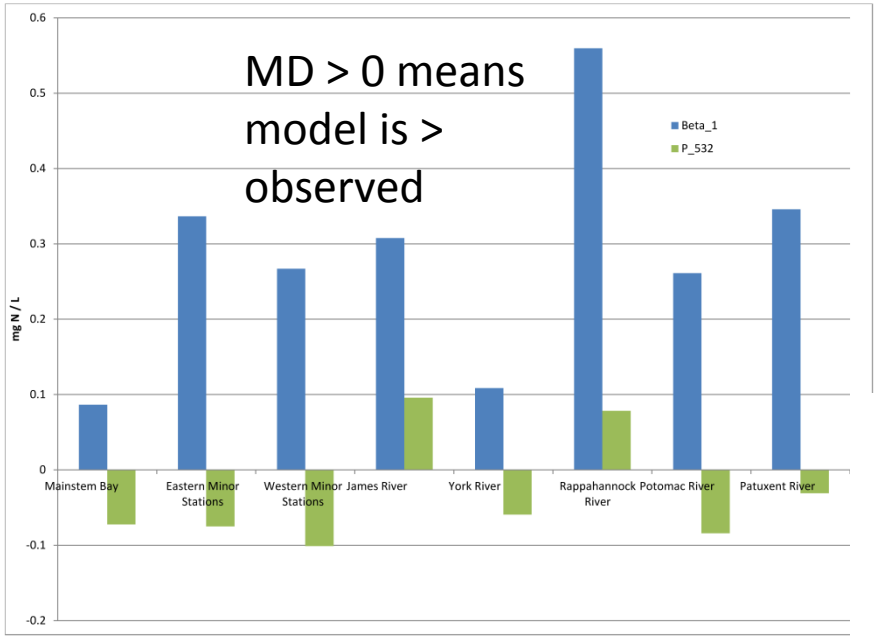
Absolute Mean Difference - CHL



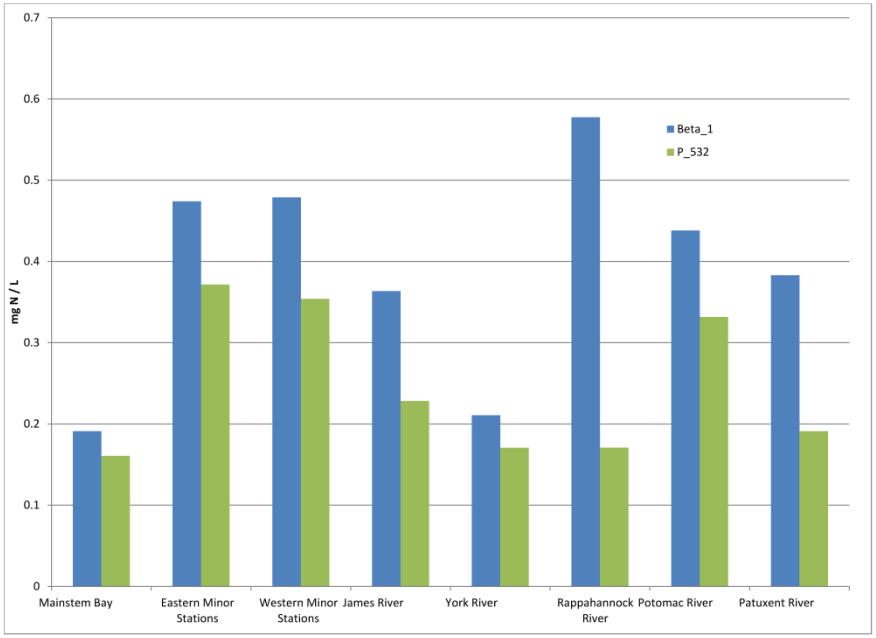
Changes in chlorophyll are mixed.
No material change.

Statistical Comparisons

Mean Difference – Total N



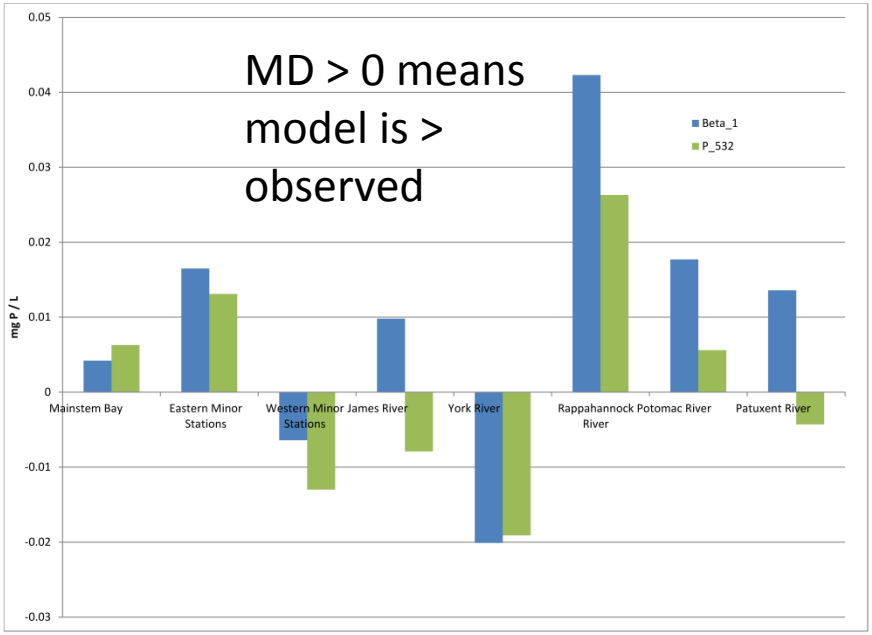
Absolute Mean Difference – Total N



Total nitrogen universally higher than before. A deterioration in calibration status.

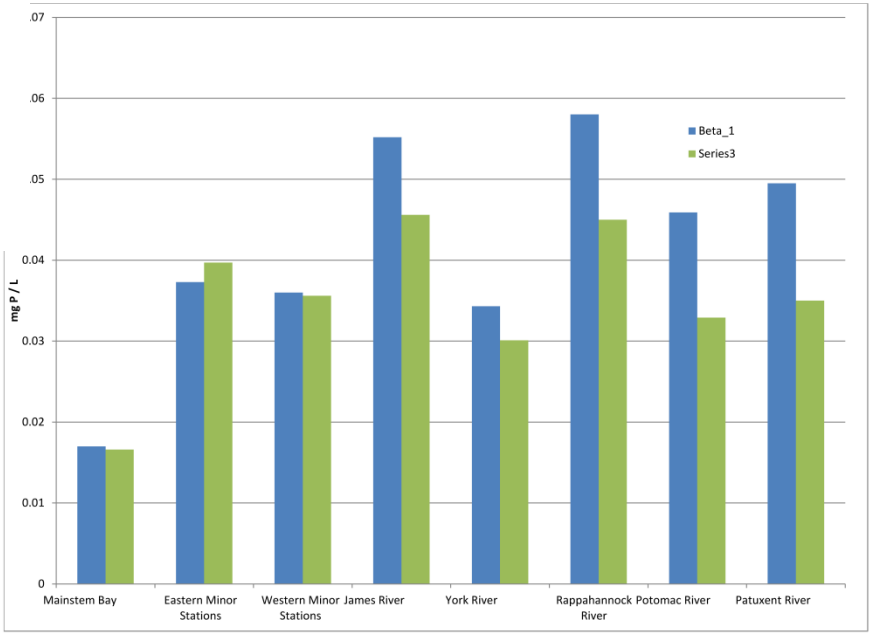
Statistical Comparisons

Mean Difference – Total P



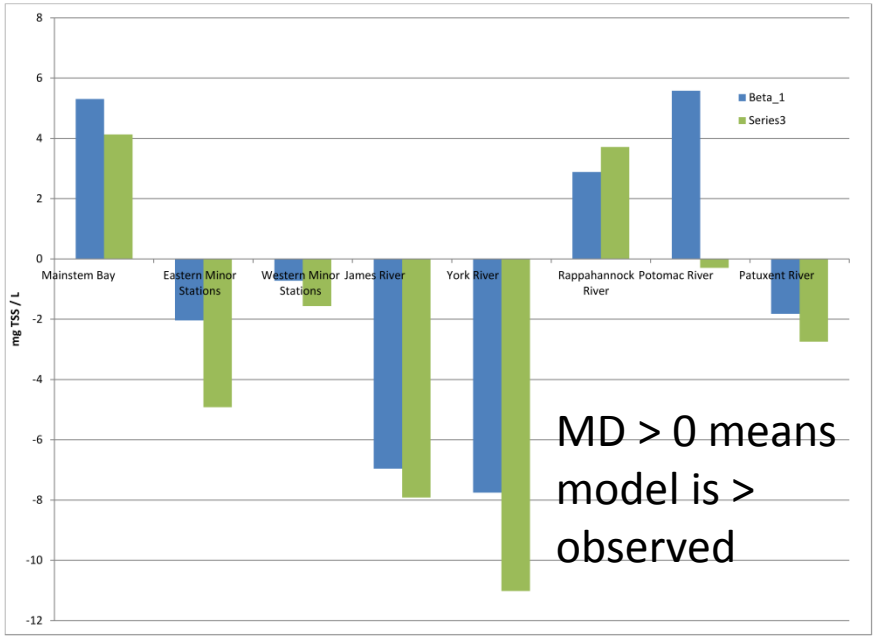
Total phosphorus is often higher than before. About the same status in Bay, some deterioration in calibration is major tributaries.

Absolute Mean Difference – Total P



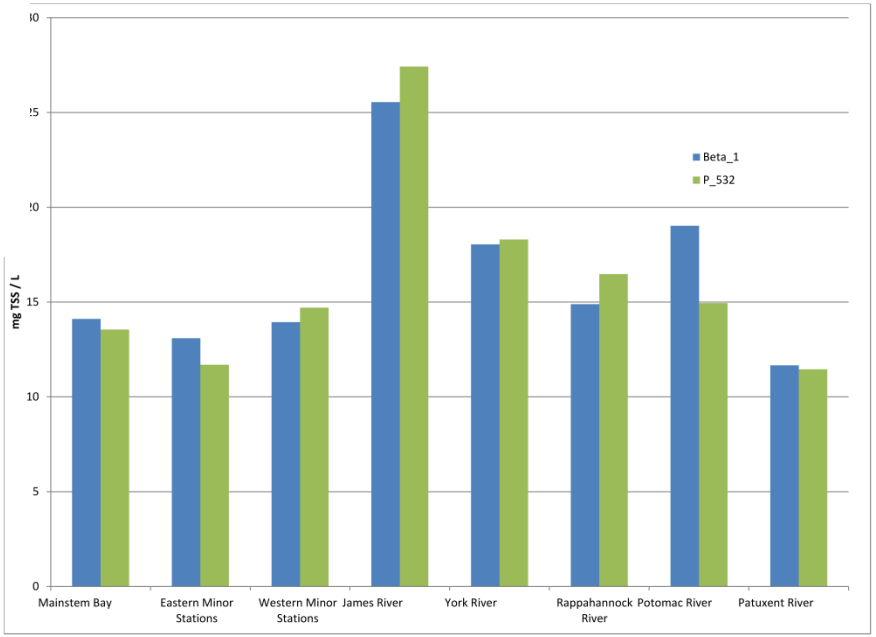
Statistical Comparisons

Mean Difference - TSS



MD > 0 means model is > observed

Absolute Mean Difference - TSS



TSS are mostly higher than before. No material change in calibration status.

Let's Stop for a Minute

- Our results combine changes to the model and changes to the loads. We have not isolated loading effects (we will).
- It does appear higher modeled TN and TP are loading effects.
- We have said nothing about the loading status. We have only noted changes. The loads may be better than Phase 5.3.2
- Going forward, it appears that we are going to have to make potentially large changes to adjust to new, higher nutrient loads.