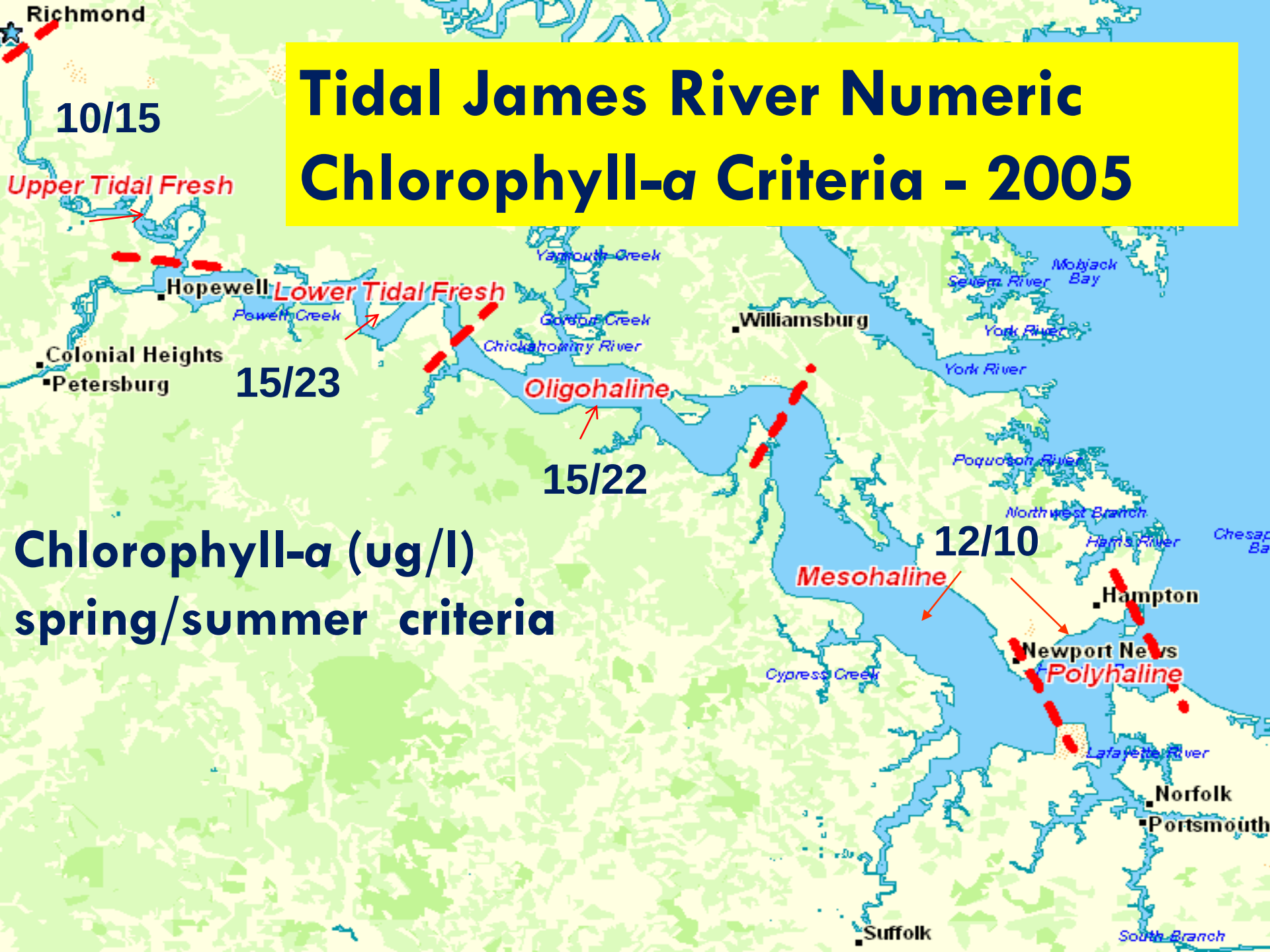
JAMES RIVER CHLOROPHYLL STUDY

Stakeholder Advisory Group
VCU Rice Center
September 15, 2014

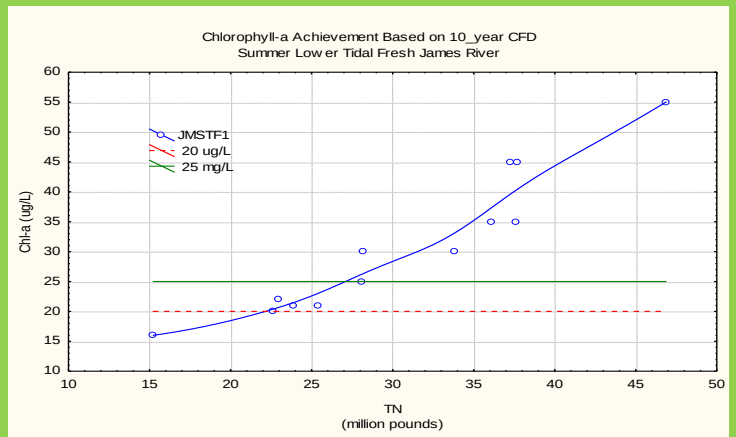
Tidal James River Numeric Chlorophyll-*a* Criteria - 2005



Chlorophyll-*a* (ug/l) spring/summer criteria

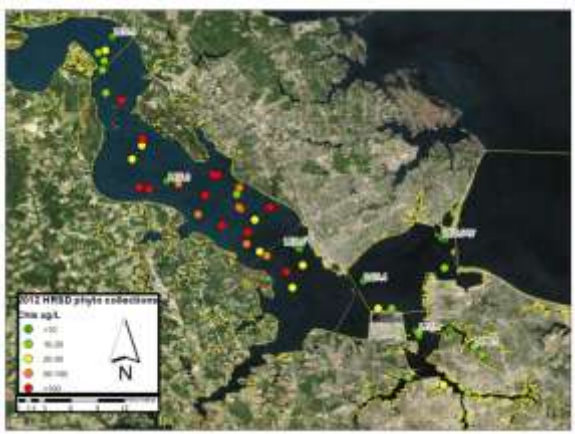
Chlorophyll *a* Numeric Criteria

- Undesirable or nuisance aquatic plant life… → algal blooms & HABs
- Balance population of aquatic life → P-IBI Phytoplankton Index of Biotic Integrity
- Attainability



Chesapeake Bay TMDL

- Set nutrient load caps for all river basins throughout Bay watershed
- James River basin cap loads much lower than 2005 when EPA approved chlorophyll standard
- Impact estimated to add $1-2 billion to nutrient reduction costs
- VA conclusion: let's make sure first



James River
Chlorophyll *a* Criteria

Rulemaking :

- NOIRA published Sept. 12, 2011
- DEQ requested a waiver to the usual regulatory schedule - the Governor approved
- Ensure timely completion of regulatory process until 2017, if necessary

James River CHLa Study

Re-visit existing numeric CHLa Criteria – protective of the aquatic life

Designated Use	Chlorophyll a µ/l	James River Segment	Temporal Application
Open Water	10	JMSTF2	March 1 - May 31
	15	JMSTF1	
	15	JMSOH	
	12	JMSMH	
	12	JMSPH	
	15	JMSTF2	July 1 - Sept 30
	23	JMSTF1	
	22	JMSOH	
	10	JMSMH	
	10	JMSPH	

Re-visit JR TMDL loads
site-specific modeling

- Watershed
- Hydrodynamic & Water Quality
- HAB

TMDL Model Scenarios –
assess chlorophyll-a attainment

JR Chl-a Study Schedule

2011 - - - - - - Workplan Developed
Notice of Intended Regulatory Action (NOIRA)

2012 - - - - - - Workplan Implementation

2012-14 - - - - **Monitoring and Modeling**

2015 - - - - - - Assessment Review and Science Advisory Panel Recommendations

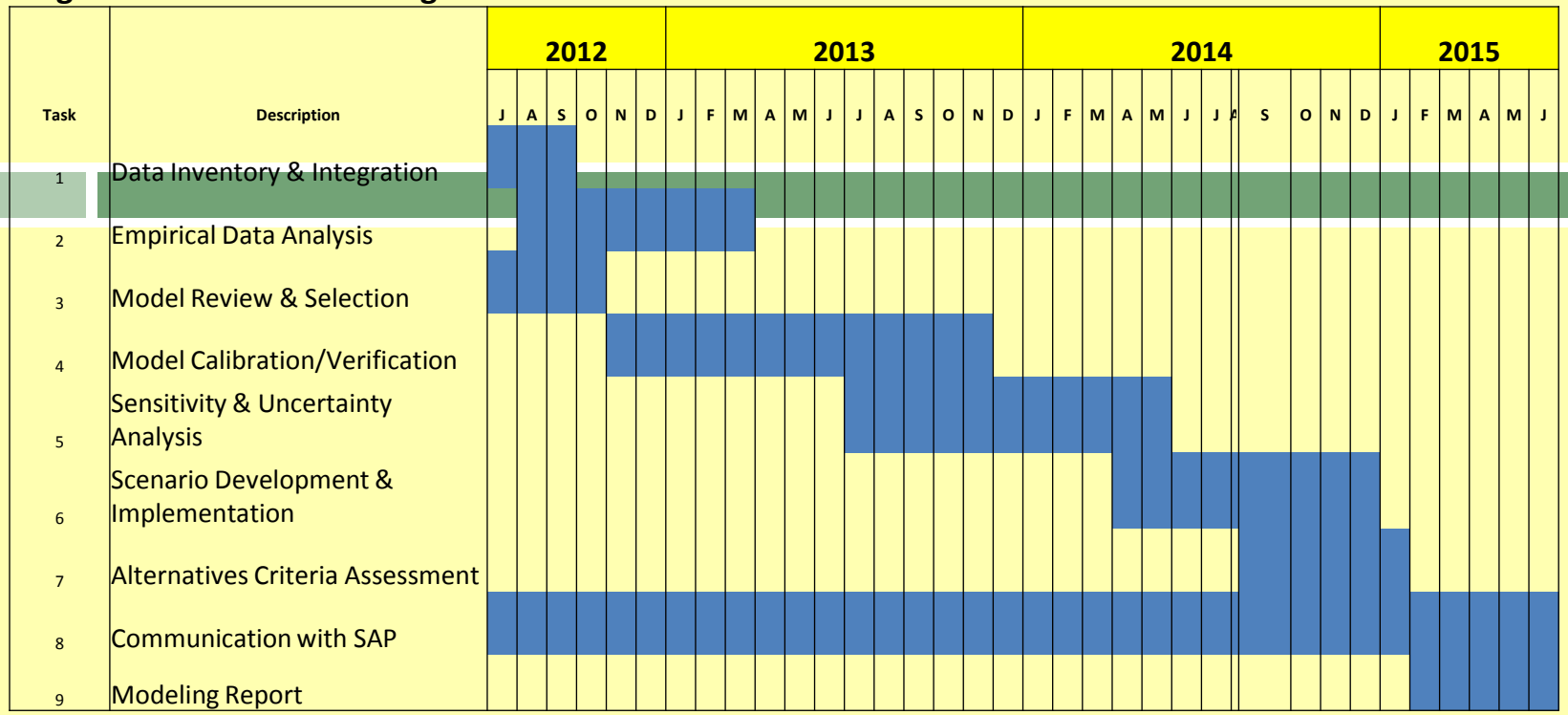
2016 - - - - - - Develop Regulatory Proposal (if needed)

2017 - - - - - - Complete Regulatory Review & WIP III

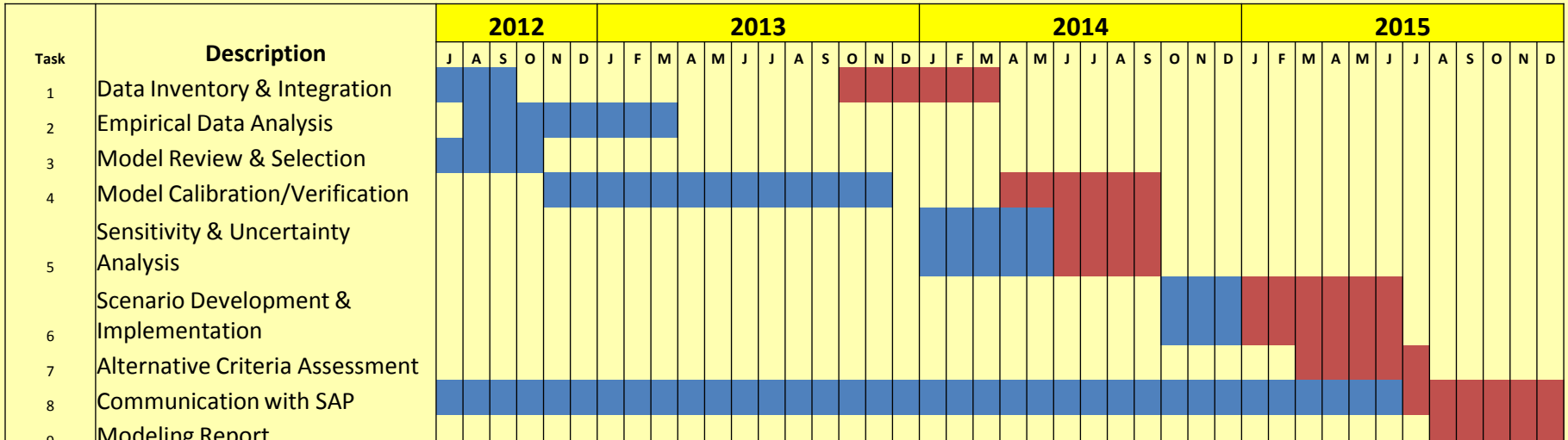
JR Chl-a Study Schedule

- Science Advisory Panel Reports for 2012 & 2013 now available
  http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards/NutrientCriteriaDevelopment.aspx#James_R_CHLa_Study
- New Report on empirical relationships between harmful algal blooms and potential impacts to the aquatic life - due end of this year
- Scientific Study Report summarizing the Panel findings - due mid-2015
- Modeling efforts extended thru end of 2015 to include the 2011-2013 data.

Original Schedule - Modeling



Modified Schedule – 2011-13 Data



Questions?