Summary of Concerns: Soil Phosphorus Use in Phase 6 Model

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on behalf of AgWG

28 August 2017

Fatal Flaw concerns (2 themes)

1. Sector equity of considering soil phosphorus (P) as a source of P loss from only agricultural lands
   - It is recognized that Phase 6 current schedule cannot resolve the sector equity concern
2. Soils data quality and APLE process
   - Is there consensus on alternative approaches for using soil P within agriculture?
     - Small group discussion held 21 August (3+ hours) attempting to resolve fatal flaw comments

Summary of August 21 meeting

- Primarily state jurisdictional reps and CBP staff
- Reviewed and clarified methodology related to original soil P data, uncertainty assumptions and APLE to estimate soil P time series

SOURCE	TIME RANGE	STATE	RELATIVE UNCERTAINTY
AgriAnalysis	2003 - 2014	DE,MD,NY,PA,VA,WV	Medium
Penn State University	2001 - 2014	PA	Meduim low
Virginia Tech	2012	VA	Medium High
University of Maryland 1	1954 - 2002	MD	High
University of Maryland 2	1992	DE,MD,NY,PA,VA,WV	Medium to High
University of Delaware	1992 - 2015	DE	Medium

Summary of August 21 meeting

- Extent (quantity) of observed data for given counties and years across the watershed is highly variable
- Uncertainty with lab sources (extraction methods, conversions, and calibration protocols)

SOURCE	STATE	STANDARD DEVIATION
AgriAnalysis	DE	25
AgriAnalysis	MD	25
AgriAnalysis	NY	25
AgriAnalysis	PA	25
AgriAnalysis	VA	25
AgriAnalysis	WV	25
Penn State University	PA	15
Virginia Tech	VA	30
University of Maryland 1	MD	50
University of Maryland 2	DE	25
University of Maryland 2	MD	40
University of Maryland 2	NY	50
University of Maryland 2	PA	15
University of Maryland 2	VA	50
University of Maryland 2	WV	20

Path forward options

- Agreement that continuing to collect soil P data and improve assumptions is worthwhile
  - no consensus on how (if) soil P and APLE ***should*** be used in Phase 6
    - Noble effort but is it ready for “prime time”?
  - no consensus on how (if) soil P and APLE ***should not*** be used in Phase 6
- No new recommendations for WQGIT
- Post August 21 meeting, each state received a summary of soil observations (N = ?) by year and county
  - States can individually review and request (via AMS) a change to the standard deviation value from a given data source

Summary of Response: Soil Phosphorus Use in Phase 6 model

Matt Johnston

AMS

28 August 2017

Urban Stormwater Workgroup and Modeling Workgroup

- Do not agree that use of APLE on agricultural lands is a fatal flaw.
- Acknowledge APLE is not appropriate for use on urban lands, and there is no known model to estimate P runoff from urban lands based upon soil P levels.
- Interested in pursuing STAC workshop to further investigate impact of soil P in urban runoff.

CBPO Recommended Paths Forward

- Data uncertainty
  - Standard deviation values may be adjusted by states prior to September 1.
- Future data collection
  - States may provide agricultural soil P data to be incorporated each 2-year milestone period.
- STAC workshop
  - Water Quality GIT could request a STAC workshop to investigate the impact of soil P on urban runoff for the Phase 7 Model.