

CHESAPEAKE BAY PROGRAM
WATER QUALITY GOAL IMPLEMENTATION TEAM
September 9th, 2009 Conference Call

SUMMARY OF DECISIONS, ACTIONS, AND ISSUES

Review of Hydrologic Analysis for Critical Period

Leads: Bob Koroncai, Andrew Parker, Gary Shenk

ACTION: CBPO will contract further analysis of the critical period using the extended flow record with Susquehanna data from Harrisburg and applying the USGS methodology. Analysis will also be done with and without de-trended flow data.

Review/Approval of Reference Curve Methodology Following STAC Review

Lead: Jeni Keisman

DECISION: The Water Quality Goal Implementation Team agreed to the use of these bioreference curves for the TMDL allocations.

Plan to Evaluate Open and Deep Water Designation in Western Tributaries

Leads: Lewis Linker, Ping Wang, Jeni Keisman

ACTION: Lewis Linker will investigate the effect of critical period on attainment.

ACTION: CBPO will follow up with Rich Eskin on their planned timing for the changes in state water quality standards.

DECISION: The Water Quality Goal Implementation Team agreed to move forward with Lewis Linker's proposed analysis and to work with CBPO on re-designation.

ACTION: CBPO will prepare an analysis of the effect of the 1993-1995 critical period on attainment.

MINUTES

Review of Watershed Model Phase 5.2 Scenarios – Gary Shenk

- Discussion of some Phase 5.2 scenarios is postponed until 9/14 due to software issue
- Will discuss 1985, 2002, and a number of E3 and No Action scenarios to investigate design flow and base year
- Will not have 2008, Tributary Strategy or Enhanced Program Implementation Level scenarios; they will be discussed at face-to-face meeting

Review of Hydrologic Analysis for Critical Period – Bob Koroncai, Andrew Parker, Gary Shenk

- The DO percent exceedence is the percentage of the Bay's volume that does not meet a certain criteria.

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- 1991-2000 hydrologic period selected for equality in amount of rainfall throughout watershed, balanced rainfall between basins and decent mix of rainfall years
- Using that period, we determined worst 3 years in model world were 1996-1998
- Clifton identified this as an extreme set of rainfall years. Our analysis identified this as fairly conservative set of years, but not the most conservative
- TMDL guidance says that critical period must be identified, but not how to select it. But it must be a defensible decision
- Clifton Bell, Malcolm Pirnie, summarized his comments that were distributed before the call: The winter-spring freshet period is used traditionally; we should look closely at why we would use a longer period. Previous literature underestimated the return period of 96-98, only appears as a 1 in 10 return period through using a very time limited data set; starting in 1970 leaves out a lot of data. We went back to 1930 for Susquehanna and Potomac Rivers. Even if this period is recommended, it is important that everyone know that this is at least a 1 in 25 year event. On WQ return period, we find this approach problematic and without a lot of precedence. Critical period intended to represent non-controllable hydrologic conditions. WQ return period is no longer independent of TMDL. Use full period of record because we have to come up with an accurate return period.
- Lee Currey was concerned with the R^2 value for DO exceedence because there are 3 years used. There is inter-annual variation, so need to look at year prior to DO exceedence. Should use an annual, not 3 year rolling basis.

Partner Feedback:

NY – Recommend 93-95 period, or other possibilities with more analysis

PA – Recommend 93-95 period. 96-98 was too conservative, especially considering critical nature of this factor

MD – okay with 93-95 year, need to redo data to get accurate understanding of implication of using year. Use longer data period, de-trended to truly understand implications.

VA – concur with MD

DC – Need more analysis based on discussion today

WV – go with majority, 93-95

DE – agree with 93-95, especially if there is a good analysis of other conservative assumptions

ACTION: CBPO will contract further analysis of the critical period using the extended flow record with Susquehanna data from Harrisburg and applying the USGS methodology. Analysis will also be done with and without de-trended flow data.

Review/Approval of Reference Curve Methodology Following STAC Review – Jeni Keisman

- STAC qualified proposal as “sound and well justified”
- Recommended changing standard deviation of <1, to requiring that “no more than 16% of the sample observations should have a score of less than 2.0,”
 - prevents too many degraded communities from being considered
 - has one tail, less arbitrary, more related to goal
 - could potentially add a few healthy reference communities
- Suggested performing sensitivity analysis on 3.0 as healthy community. There is already strong precedence for this in peer review articles
- 100th percentile of DO curves associate with healthy communities for deep water. Clarified that should be reassessed as more data becomes available
- 10% curve for open water (OW), deep channel (DC)
- STAC approved of using reference curve or CFD for instantaneous criterion, acceptable exceedence still apply
- Using a 10% default, there is no way to calculate false positive or false negative based on being able to ID healthy or degraded community. Without reference biological community, the concept does not exist.

DECISION: The Water Quality Goal Implementation Team agreed to the use of these bioreference curves for the TMDL allocations.

Analysis Persistent Open Water Dissolved Oxygen Impairments – Ping Wang, Jeni Keisman, Lewis Linker

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- Using the 93-95 critical period could fix some of these attainment issues; detailed stoplight plots with new reference curves achieve at the target allocation regardless of hydrology for some segments, but doesn’t change much on these segments.

ACTION: Lewis Linker will investigate the effect of critical period on attainment.

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- This would change WQ standards. Bob Yowell, PA DEP, expressed that PA does not want to change water quality standards for this before the TMDL. Rich Eskin explained that this is going to make attainment easier. The TMDL must meet a more stringent use than what these analyses are showing. Info is based on monitoring data. MDE is planning to change water quality standards for anti-degradation; it would be useful to do both at the same time.

ACTION: CBPO will follow up with Rich Eskin on their planned timing for the changes in state water quality standards.

DECISION: The Water Quality Goal Implementation Team agreed to move forward with Lewis Linker’s proposed analysis and to work with CBPO on re-designation.

ACTION: CBPO will prepare an analysis of the effect of the 1993-1995 critical period on attainment.

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