



Status of 2018 Progress Scenario, Verification and Schedule

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Watershed Technical Workgroup Meeting
March 7, 2019



WTWG Agenda

3/7/19

- 10:00 – Introductions and Announcements – Jeff Sweeney, EPA CBPO
Decision requested: Approval of December 6 meeting minutes.
- 10:10 – Review: Designing Wastewater Scenarios for Phase III WIPs – Suchith Ravi, UMCES
Suchith will review the guidance presented to the WWTWG in September 2018 for Phase III WIP development for point source scenarios.
- 10:30 – BMP Credit Lifespans –Jeff Sweeney, EPA CBPO
Jeff will review BMP credit lifespans in the model and where this information is available to state technical leads. Tests to see changes in implementation with and without expiration will be run following progress completion.
- 10:50 – Ongoing Discussion of 2018 Progress, Verification and Schedule – Jeff Sweeney, EPA CBPO
Ongoing updates on status of the 2018 Progress model scenario and schedule, including an open discussion about the Progress scenario among WTWG members and attendees – which could include issues with submissions and findings. This item also includes updates on the CBP office's review and verification of BMP and wastewater data submitted in December for the 2018 Progress model assessment.
- 12:00 – Adjourn



2018 Progress Scenario Status

- Nine draft versions of 2018 Progress through Feb. 25, 2019
 - The most recent has a designation in CAST “2010 Progress V9”
- Draft 2018 Progress scenarios (Phase 6) have been shared on CAST at <http://cast.chesapeakebay.net>
 - 10 types of reports available to review inputs and outputs
- Validation reports for each draft 2018 Progress run have been available on jurisdiction’s password-protected ftp sites



2018 Progress Scenario Schedule

- Feb. 22, 2019 was the final opportunity for jurisdictions to revise BMP and wastewater data for 2018 scenario
 - Beginning to converge with draft WIP3 submissions
- There are still errors in the data and several jurisdictions have asked if there are opportunities to make further adjustments
 - Some errors caught through verification, others not



2018 Progress Scenario Schedule

- September, 2018 – Jurisdictions were encouraged to begin submitting their BMP implementation to NEIEN
- QA/QC'd final data to be submitted December 3, 2018
- 3 – 6 months and there are still errors with data



2018 Progress Scenario Verification

- EPA CBPO did a preliminary review of data submissions received by the December 3, 2018 deadline – for verification purposes
- EPA CBPO staff sent emails December 21, 2018 with preliminary verification analyses and findings to those jurisdictions who met the December 3 submission deadline
- Deadline for response to potential verification issues was January 9, 2019
- Among jurisdictions, last response to verification review was received March 6, 2019



2018 Progress Scenario Verification

- Verification emails asked each jurisdiction to further explain the quality of particular data that potentially could be over-reported or BMP project information that was illogical
- Also, charted jurisdiction-wide nutrient loads by major source 2009-2018 and asked for comments on what the jurisdiction attributed significant ($>2\%$) 2017-2018 increases/decreases to



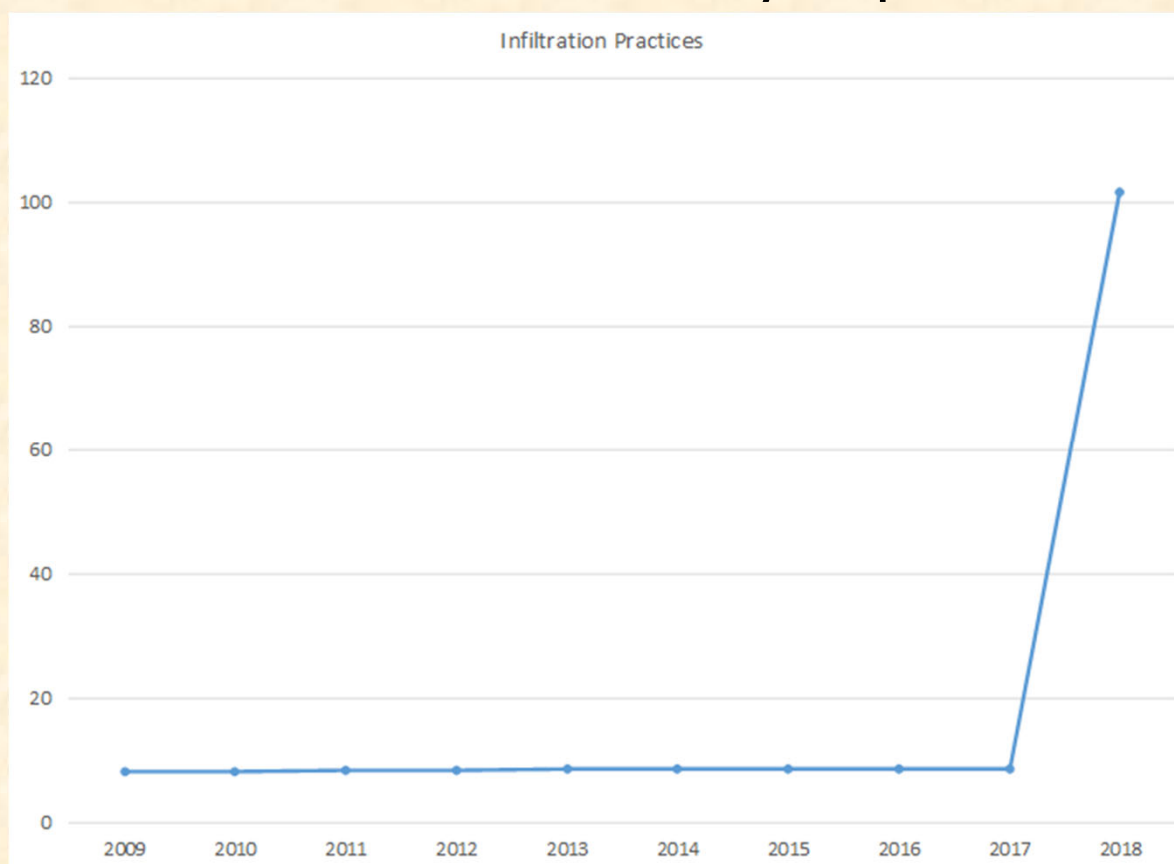
2018 Progress Scenario Verification

- Potential Verification Issues – Newly Reported BMPs
 - BMPs where there is no reported historic implementation before 2018 Progress
 - The same rules applied to every BMP and every jurisdiction



2018 Progress Scenario Verification

- Potential Verification Issues – Newly Reported BMPs





2018 Progress Scenario Verification

- Potential Verification Issues – Newly Reported BMPs
 - Comparisons were initially made to “official” versions of Progress scenarios
 - Public has access to those versions and can make same comparisons
 - Comparisons also made to re-run versions of Progress scenarios with revised history
 - Some improvement but mostly not



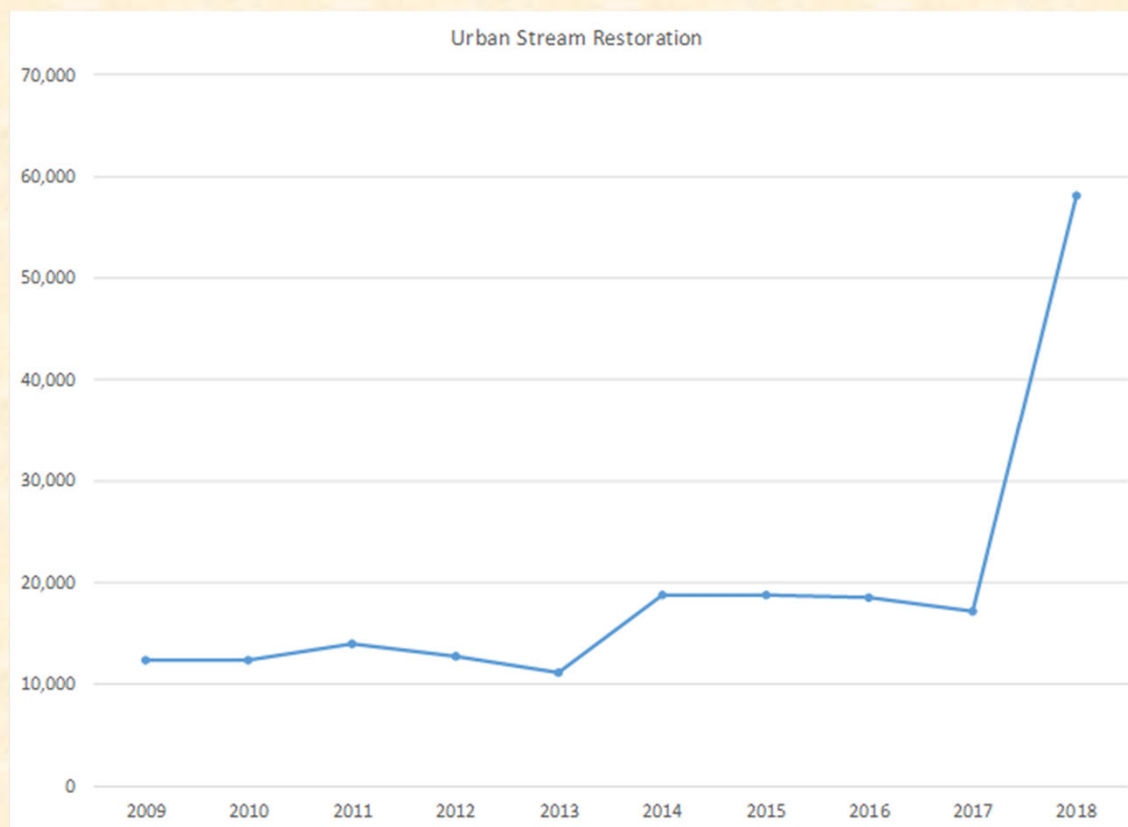
2018 Progress Scenario Verification

- Potential Verification Issues – Over-Reporting
 - BMPs where the 2017-2018 rate of implementation is more than double the 2009-2017 annual rate
 - The same rules of potential “over-reporting” applied to every BMP and every jurisdiction
 - Looked at “Summary BMP” table at state-wide scale
 - Similar analyses had been used for 15+ years by the CBP office, typically with less-formal exchanges, e.g., emails and one-on-one calls with each jurisdiction about Progress data



2018 Progress Scenario Verification

- Potential Verification Issues – Over-Reporting





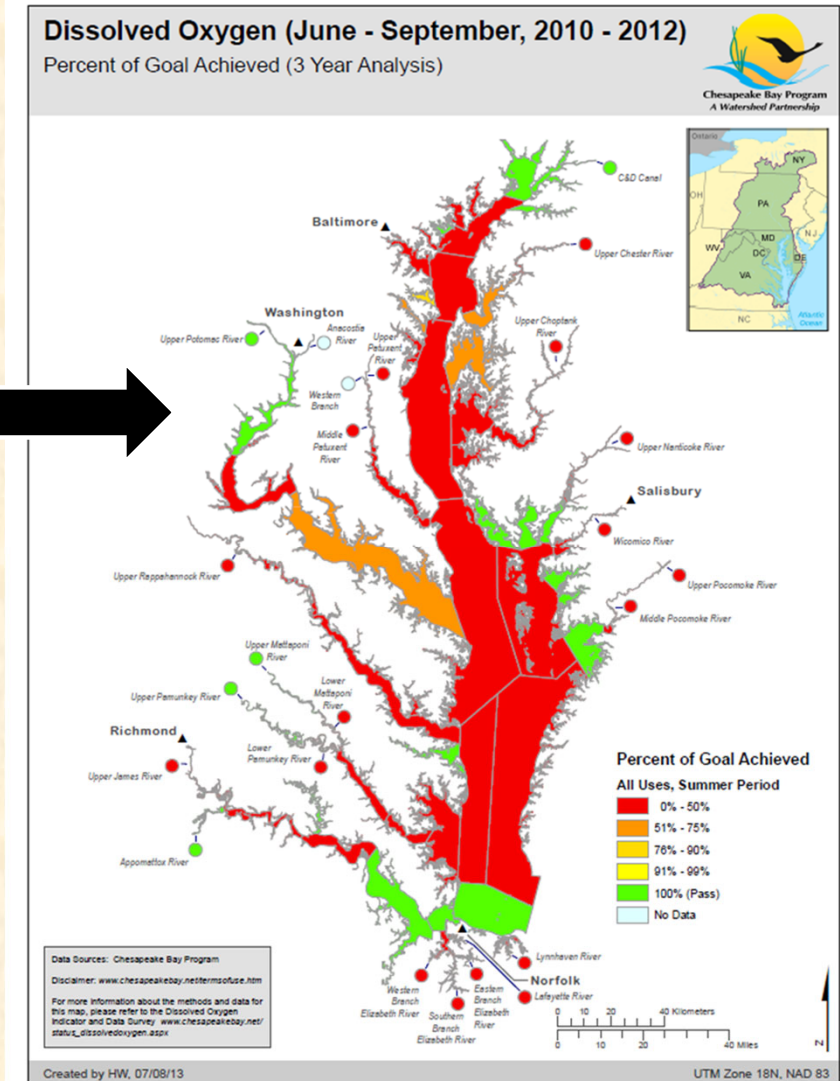
2018 Progress Scenario Verification

- Potential Verification Issues – Over-Reporting
 - There are still some concerns after viewing rates with revised history.
 - Only water quality improvements if new implementation represents stronger programs, new funding source, not new numbers in a model where implementation is old.



Chesapeake Bay Impairments

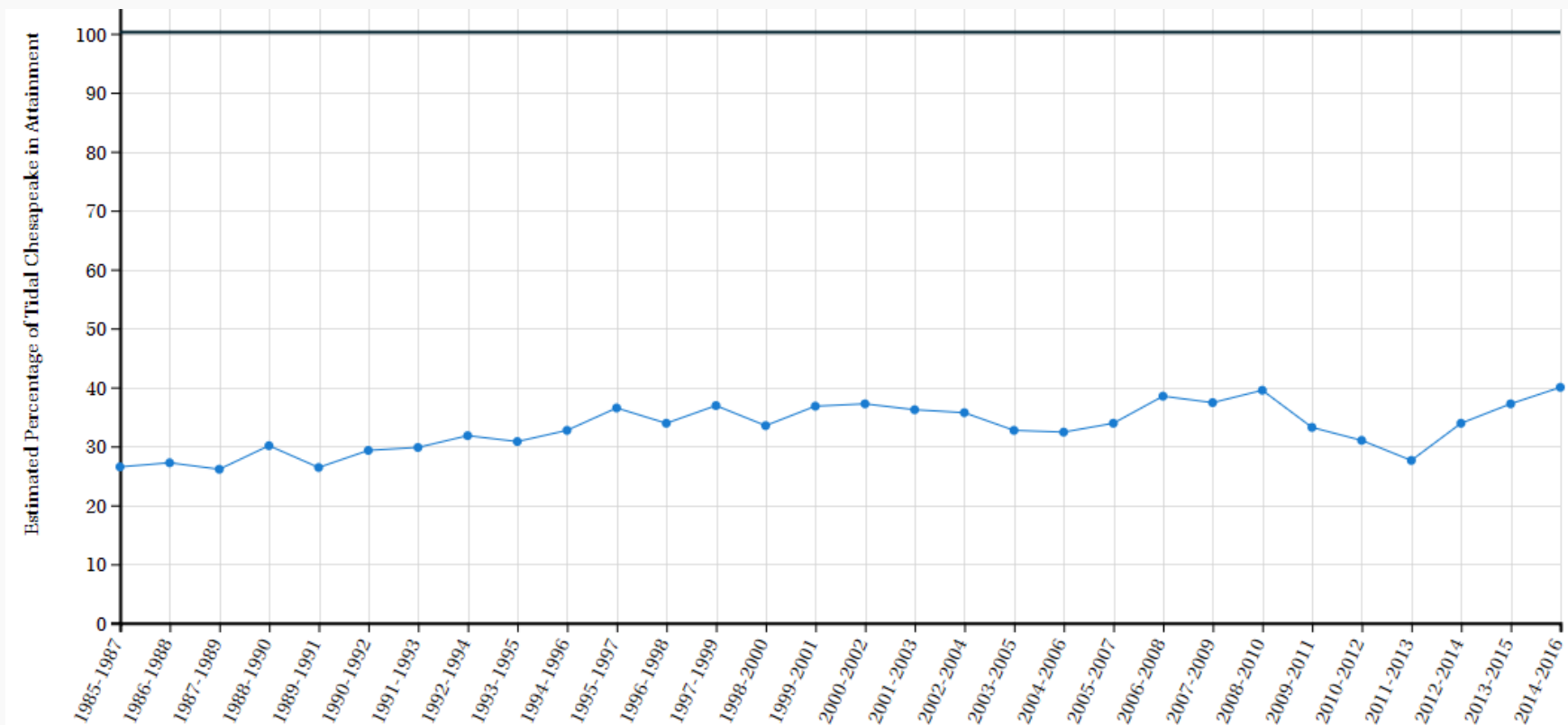
- Dissolved Oxygen
- Chlorophyll a
- Water Clarity (SAV Abundance)



Water Quality Standards Attainment



- During the 2014 to 2016 assessment period, an estimated 40 percent of the Chesapeake Bay and its tidal tributaries met water quality standards: the highest estimate of water quality standards attainment since 1985.





2018 Progress Scenario Verification

- Potential Verification Issues – Reported Dates
 - “For the BMP records within the period 7/1/17 – 6/30/18, the following implementation dates and/or inspection dates are repeated a significant number of times.”
 - “Are these accurate implementation and/or inspection dates and, if not, why are dates not being tracked and reported for the associated BMPs?”
 - Have received mostly logical explanations for this condition



Diversity of Verification Approaches Tailored to Reflect Practices

Sector	Inspected	Frequency	Timing	Method	Inspector	Data Recorded	Scale
Stormwater	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed
	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State
Agriculture	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed
	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State
Forestry	All	Statistics	<1 year	Monitoring	Independent	Water quality data	Site
	Percentage	Targeting	1-3 yrs	Visual	Regulator	Meets Specs	Subwatershed
	Subsample	Law	3-5 yrs	Aerial	Non-Regulator	Visual functioning	County
	Targeted	Funding	>5 yrs	Phone Survey	Self	Location	State



2018 Progress Scenario Verification

- We are trying to assess the quality of reported data – which should be described for each BMP in each jurisdiction's BMP Verification Program Plan – which should follow protocols developed by the WQGIT, workgroups, including BMP Verification Committee and its advisory group
- Strongly suggest adding CBPO-jurisdictions exchanges about 2018 Progress verification to QAPP, within or appendix
- Wealth of verification information at https://www.chesapeakebay.net/what/programs/bmp_introduction_to_bmp_verification



2018 Progress Scenario

Documentation About Verification

- BMPs reported through NEIEN for the 2018 Progress as new or re-inspected implementation that do not have approved verification protocols reflected in the jurisdiction's QAPP will not be credited.
 - The exceptions are Nutrient Application Management (core and supplemental) since the deadline for establishing quality compliance data for these program was extended for another year for all jurisdictions.



2018 Progress Scenario

Documentation About Verification

- According to CBP Grant Guidance, in the event that data are not submitted in time, are inaccurate, or do not use the appropriate NEIEN or wastewater formats for the CBPO to calculate annual progress, the CBPO will use the previous year's data submitted by a jurisdiction or will not account for implementation of the BMP or control measures.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



On May 4, 2011, the NRC [National Research Council of the National Academy of Sciences] released the report, "Achieving Nutrient and Sediment Reduction Goals in the Chesapeake Bay: An Evaluation of Program Strategies and Implementation." The NRC Committee reached a number of findings and conclusions about the Bay Program's BMP tracking and accounting efforts, including:

- Accurate tracking of BMPs is of paramount importance because the Bay Program relies upon the resulting data to estimate current and future nutrient and sediment loads to the Bay.
- The current accounting of BMPs is not consistent across the Bay jurisdictions. Additionally, given that some source-sector BMPs are not tracked in all jurisdictions, the current accounting cannot on the whole be viewed as accurate.
- The committee was unable to determine the reliability and accuracy of the BMP data reported by the Bay jurisdictions.
- The committee was not able to quantify the magnitude or the likely direction of the error introduced by BMP reporting issues.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



There are local, state, and federal programs with strong BMP verification programs in place and working effectively in carrying out the principles. However, the Bay Program partners recognize none of the seven jurisdictions' existing BMP tracking, verification and reporting programs, across all sectors and habitats, fully achieves all five principles. The National Academy of Science's in-depth evaluation of the Bay Program partners' existing practice accountability systems made that very clear.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



The BMP Verification Review Panel recommended the jurisdictions focus on:

- Taking full advantage of their choice to vary to the level of BMP verification based on the relative importance of a specific practice to achieving the jurisdiction's Watershed Implementation Plan nutrient and sediment pollutant load reduction targets.
- Grouping the hundreds of BMPs they will be tracking and reporting into categories that make sense for each jurisdiction and then develop and document the appropriate protocols and procedures followed for each logical grouping of BMPs.
- Structuring their verification programs to carry out an initial inspection for answering the question "is the BMP there?" and then follow-up checks carried out at the appropriate frequency to answer the question "is the BMP still there and operating?" throughout the lifespan of the practice.
- Providing documentation on procedures in place which prompt the need for conducting a follow-up check of a BMP at the end of its approved lifespan and for removing BMPs which go beyond their lifespans and are not follow-up checked to confirm the BMP is still there and operational.
- Having written procedures in place for assuring the quality of the BMP data for which the jurisdictions are now accountable for, which includes any practice data reported to the jurisdictions by other local, regional, and federal agencies, and non-governmental organizations.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



Section 3. “Development and Documentation of the Jurisdictional BMP Verification Programs”, pages 23-24

Aim High or Explain Why. The Panel asks jurisdictions to adopt the “robust” levels of verification over time described in the respective workgroups’ BMP verification guidance (see Appendix B) or explain in their quality assurance plan why they cannot, recognizing the legal as well as funding issues that may impede the levels of BMP verification recommended by the six workgroups.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



Annual Progress Reporting, pages 47-48

CBPO Review of Annual Implementation Progress Data Submissions. Chesapeake Bay Program Office staff will review the jurisdictions' annual NEIEN-based submissions of implementation progress data for the documentation of verification as part of their routine evaluations of the quality and completeness of the submitted data. The annual progress data reviews will be conducted following the specific guidelines and protocols agreed to by the Bay Program partners through the Watershed Technical Workgroup. Any implementation progress practice data submitted without the required verification documentation will be returned to the jurisdiction for incorporation of required documentation and resubmission.

Strengthening Verification of BMPs Implemented in the CBW: A Basinwide Framework



Table A-1. Transparency Addendum to the BMP Verification Public Confidence Principle

Transparency means operating in a way so any outside reviewer can determine what actions were taken, which data were synthesized to generate a report or conclusion, how data was collected and obtained, what measures were employed to ensure data accuracy, who is responsible for data collection and synthesis, who is responsible for ensuring data accuracy, and the methods of data analysis utilized.

1. The measure of transparency will be applied to three primary areas of verification: data collection, data validation, and data reporting.
2. Transparency of the process of data collection must incorporate clearly defined quality assurance/quality control (QA/QC) procedures, which may be implemented by the data collecting agency or by an independent external party.
3. Transparency of the data reported should be transparent at the finest possible scale that conforms with legal and programmatic constraints, and at a scale compatible with data input for the Chesapeake Bay Program Partnership's modeling tools.
4. It is recognized that transparency of data reported will vary across verification methods and data collection and reporting programs. This variance, however, should not negate the commitment and obligation to ensure transparency at the highest level possible in collection, synthesis and reporting.



Schedule Data Input Deadlines



The 'Stopping Rule' PSC

All model data and methods may not be changed during the 2018 – 2019 milestone development and progress reporting time period per PSC decision (7/9/18), with the following exceptions:

- Historic implementation data may be updated in NEIEN;
- Permitted, disturbed construction acres for 2018 and 2019;
- Permitted harvested forest acres for 2018 and 2019.



The 'Stopping Rule' PSC

- Data and BMPs used in the Phase 6 Model are subject to change prior to the beginning of each milestone period per PSC decision (7/9/18); however, changes must be limited in scope so that they do not:
 - impact modeled runoff during the 1993-1995 critical period; or
 - alter the base conditions (land uses, septic, animals, etc.) from 1984 through 2013.
- Preservation of these estimates will enable the CBPO to provide a consistent assessment of how new management actions and changes in base conditions have influenced loads over time.



Schedule Data Input Deadlines

Phase III WIP Development Input and Planning Deadlines

- Present – April 1, 2019 – Interim BMPs for planning purposes added to CAST
- Present – April 1, 2019 – CBPO works with states to design draft Land Use Policy BMPs
- April 12, 2019 – Draft Land Use Policy BMPs added to CAST
- April 12, 2019 – Draft Phase III WIP document and Phase III WIP input decks due to EPA
- April 12 – August 9, 2019 – CBPO works with states to design final Land Use Policy BMPs
- August 9, 2019 – Final Phase III WIP document and Phase III WIP input decks due to EPA



Schedule Data Input Deadlines

2020-2021 Milestones Data Input and Planning Deadlines

- April 30, 2019 - All data from jurisdictional partners and source sector workgroups that may inform modeling changes for the next milestone period must be submitted to CBPO
- June 28, 2019 – All data from non-jurisdictional sources (e.g., USDA, USGS, US Census Bureau, etc.) that may inform modeling changes for the next milestone period must be submitted/gathered by CBPO
- June 1 – September 30, 2019 - Draft changes to modeling tools based upon new data are released to workgroups and the WQGIT for consideration, including revised historic progress assessments. Workgroups and Water Quality GIT approve changes to the modeling tools based upon the data on a rolling basis.



Schedule Data Input Deadlines

2020-2021 Milestones Data Input and Planning Deadlines

- November 1, 2019 - Final changes to modeling tools provided on CAST for use in the 2020-2021 Milestones. Following release of these data, no changes can be made to the modeling tools until October 31, 2021
- January 15, 2020 - Jurisdictions submit draft 2020-2021 programmatic and numeric milestones to EPA, and progress on the 2018-2019 programmatic milestones



Schedule Data Input Deadlines

2018-2019 Milestones Data Input and Planning Deadlines

- December 1, 2019 - Jurisdictions submit final 2019 progress data and any updates to BMP Verification Program Plans describing new data sources and changes to methods of tracking to CBPO.
- December 1, 2019 – January 31, 2020 - CBPO and jurisdictions will conduct QA/QC review of 2019 progress data, including verification.
- January 15, 2020 - Jurisdictions submit progress for 2018-2019 programmatic milestones to EPA.
- February 8, 2020 – CBPO finalizes 2019 progress model assessment. Jurisdictions finalize BMP Verification Program Plans. QAPPs will then be posted publicly shortly thereafter, allowing time for signatures.