



# Model Schedule

Jeff Sweeney  
Environmental Protection Agency  
Chesapeake Bay Program Office  
sweeney.jeff@epa.gov  
410-267-9844

Watershed Technical Workgroup Meeting  
March 5, 2020



# Model-Related Schedule

## 2019 Progress

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- December 2, 2019: QA/QC'd data due for 2019 Progress scenario
- January 17, 2020: Jurisdictions received CBPO verification analysis of BMP and wastewater data
- January 31, 2020: Responses to verification analysis due
- February 11, 2020: Final run of 2019 Progress scenario
- March, 2020: Scenario results available to the public
  - Used for "2025 Watershed Implementation Plans (WIPs)" indicator <https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans> and other environmental indicators, CAST "current" conditions scenario, etc.



# Model-Related Schedule 2019 Progress

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- There will be two versions of 2019 Progress
  - One to finish the 2018–2019 Milestone period – current CAST
  - One to begin the 2020–2021 Milestone period with new methods and data; historic progress scenarios will be rerun



## Model-Related Schedule 2020–2021 Milestone Period

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- February 28, 2020: CAST-2019 (for the 2020-2021 Milestone period) was released to the WTWG and WQGIT for review.
- March 23, 2020: Deadline to direct questions to Jeff Sweeney (Sweeney.Jeff@epa.gov) and Olivia Devereux (olivia@devereuxconsulting.com)



# Model-Related Schedule 2020–2021 Milestone Period

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- Changes to CAST are listed on the Model Documentation page and are those agreed to by the WQGIT and workgroups.
- Updates to methods and data that do not: 1) impact modeled runoff during the 1993-1995 critical period; or 2) alter the base conditions (land uses, septics, animals, etc.) from 1984 through 2013
  - 2017 Census of Agriculture = manure nutrients and crop/pasture acres
  - Landcover
  - Chemical fertilizer
  - etc.



## Model-Related Schedule 2020–2021 Milestone Period

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- March 23, 2020: Final version of CAST-2019 to be released shortly after.



# Verification

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# 2019 Progress Scenario Verification

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- Trying to ensure full credit of quality data
  - Jurisdictions have been provided with detailed description of how the verification analyses are conducted
- Based on the analysis and questions, data needed to be corrected, or explanations are needed for POSSIBLE anomalies in the data



# 2019 Progress Scenario Verification

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- BMP Verification Program Plans (QAPP's) need to be up-to-date
  - QAPP needs to describe how, exactly, reported compliance levels are accounted for and calculated for each type of Nutrient Management (core and supplemental, both N- and P-based)
  - How are raw data used and calculations done to determine the degree to which landowners are following their plans?



# 2019 Progress Scenario

## Verification

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- There are nine recommendations directed towards jurisdictions in documenting their BMP verification and compliance programs.
- The verification framework document encourages jurisdictions to consult the following four products developed by the [BMP Verification Review Panel](#):
  - 1) [Design Matrix](#) (Table 5)
  - 2) [Decision Steps](#) (Table 6)
  - 3) [Components Checklist](#) (Table 7)
  - 4) [Design Table](#) (Table 8)



# 2019 Progress Scenario Verification

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- Trends of modeled nutrient loads with comparisons to goals
  - Loads reflect all changes to the historic BMP record reported by jurisdiction
  - Major sources with  $> 2\%$  load reductions 2018–2019
  - Major sources with  $> 2\%$  load increases 2018–2019



# 2019 Progress Scenario Verification

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- BMPs with a 2018-2019 implementation rate more than double the long-term annual rate
  - For each BMPs identified, please explain the significant increase in the rate of implementation between 7/1/18 and 6/30/19 compared to the longer-term annualized implementation rate since the TMDL (2009–2018)
    - Does the recent change in the implementation rate represent stronger programs yielding more on-the-ground implementation – or a new source of data – or both?
  - BMP charts below for each of the highlighted practices
  - Please identify the program(s) and data sources directly in the analysis and in your BMP Verification Program Plan if not already documented
  - Clearly identify the sections and page numbers in the QAPP where there's an explanation of the sources and quality of the data (compliance programs, visual inspection, new data source, etc.)



# 2019 Progress Scenario Verification

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- For the BMP records within the period 7/1/18 – 6/30/19, the following implementation dates and/or inspection dates are repeated a significant number of times
  - X% of the BMP records over the reporting period were implemented and/or inspected on a single day during the year
  - Are these accurate implementation and/or inspection dates and, if not, why are dates not being tracked and reported for the associated BMPs?
  - Where in the BMP Verification Program Plan is this explained, e.g. what sections and page numbers?



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE I**

#### **Timing of Updates for Jurisdictions BMP Verification Program Plans (QAPPs)**

- What works best for the jurisdictions in submitting updates to the QAPPs as part of the annual BMP progress and verification reporting?
- Perhaps have revised QAPPs due to EPA by October 1 and the data still due by December 1?
- Is the QAPP the best place to provide documentation of significant implementation increases? Or should this be handled through the programmatic milestones?

#### **Action:**

Charge the WTWG to develop options for updating and submitting changes to the jurisdictions' QAPPs to the EPA CBPO. Recommendations will then be shared with the WQGIT for their review and approval.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE II**

#### **Timing of Review and Approval of QAPPs**

- Jurisdictions feel that the requirements of verification program plans may not have been consistently applied across and between jurisdictions.
  - The BMP verification SOPs were distributed to the jurisdictions as part of the first round of BMP verification assessment findings in late January 2020.
- Confusion was expressed about whether guidance was given to the jurisdictions to use grouped inspection dates for those BMPs where no specific dates are known.

#### **Actions:**

- Jurisdictions to submit comments and questions on the SOP document to Jeff Sweeney (Sweeney.Jeff@epa.gov) by March 6, 2020.
- Charge the WTWG to develop options for more consistent approaches for reporting and documentation inspection dates as part of the annual BMP verification reporting to the EPA CBPO. Recommendations will then be shared with the WQGIT for their review and approval.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE III**

#### **Data Collection and Verification Expectations from Review Process that go Above and Beyond Protocols**

- PA and DE use a transect survey methodology for verifying conservation tillage and cover crops. Concerns were expressed at the Agriculture Workgroup (AgWG) when modifications were proposed to this transect survey approach.

#### **Action:**

- The EPA CBPO (leads: Jeff Sweeney and Mark Dubin) will further investigate this issue with PA and DE and propose a resolution for the transect survey methodology. The proposed resolution will be presented to the AgWG and the WQGIT for review and approval. Decisions will need to be reflected in the BMP verification plans for PA and DE if they adopt the revised methodology.

#### **Action taken:**

- After investigation, issue was likely 1) proposal to use transect-survey approach for other BMPs, and/or 2) transect surveys are approved for Traditional Cover Crops, not Commodity Cover Crops
- Proposed changes to verification protocols go through source sector work groups



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE IV**

#### **Ensuring Transparency in How Verification is Treated in Terms of Credit Duration**

- NEIEN error reports are not readily available to broader implementation partners beyond the jurisdictional progress and verification contacts.

#### **Actions:**

- Charge the WTWG to discuss potential solutions of making the error reports available in partnership's CAST after the final progress run in February of each year – particularly for those BMPs that are removed from CAST due to credit duration.
- Lucinda Power will follow up with the CAST development and CBP Communications teams to discuss options for presenting the error reports (e.g., graphical representation or numeric tabular form), as well as the development of fact sheets about the overall progress and verification reporting and assessment.

#### **Action taken:**

- This has been discussed at previous WTWG meetings. Validation and error reports will be made available through CAST for the final versions of the Progress scenarios.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE V**

#### **Alternatives to “All or Nothing” Approach to BMP (Re)verification**

- Can there be gradual or partial credit over a period of time as opposed to zero credit for those BMPs that cannot be verified? Perhaps there’s room for a compromise that’s acceptable (particularly for those BMPs that are NRCS practices).
- Perhaps it is not too soon to revisit the verification structure and framework after only 2 years of verification reporting. Evolving the verification program was always intended, with continuous improvement.
- A one-size fits all approach will not work to verification (MDA would be very willing to discuss what’s worked well with their verification program and associated procedures

#### **Action:**

- Charge the WQGIT with convening ad-hoc team to discuss BMP credit duration and lifespan.
  - Composition of this action team should include all WQGIT signatories and at-large members; representative from source sector WG; representative from 3 Advisory Committees. Membership to include national experts on verification could be explored.
  - A specific charge, the purpose, and targeted objectives will be developed, as well as a timeline for fulfilling the charge. It is likely that this action team may be convened in the future to discuss new verification concerns and issues.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE VI**

#### **Revisiting Credit Duration**

- Credit durations established for some agricultural BMPs are based on NRCS specifications. The remaining credit durations were established by the WQGIT's source sector workgroups. There is debate as to whether these credit durations were based on the best available scientific information.
- There may be some inconsistency with how these credit durations were established.
- Jurisdictions may want to consider conducting a data collection exercise to draw some statistical conclusions to what an appropriate credit duration may be.

#### **Action:**

- Charge the WQGIT with convening ad-hoc team to discuss BMP credit duration and lifespan.
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  - A specific charge, the purpose, and targeted objectives will be developed, as well as a timeline for fulfilling the charge. It is likely that this action team may be convened in the future to discuss new verification concerns and issues.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE VII**

#### **Back-out and Cut-off Procedures**

- Back out and cut-off procedures have really impacted jurisdictions when reporting at a finer scale. If jurisdictions have data at a scale finer than at the county level, they may be subjected to more cut off.

#### **Action:**

- Charge the WTWG with revisiting the back-out and cut-off procedures, working with the appropriate source sector workgroups, if necessary.
- This issue will be added to the March WTWG conference call agenda. Proposed solutions will be raised and discussed with the WQGIT before any modifications are finalized and implemented.

#### **Action to be taken:**

- Please submit data from model scenarios showing the effects of back-out and cut-off procedures as soon as possible, no later than Friday, April 10.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **ISSUE VIII**

#### **Incorporating Verification Costs into CAST**

- Much of the cost data is dependent on jurisdictions supplying this data to the CBPO.

#### **Action:**

- Lucinda Power will work with the CAST development team to identify what specific data is needed from the jurisdictions for including this data into CAST, as well as any constraints in doing so.



# BMP Verification

## Action Items from 1/22/20 Meeting

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### **Additional Discussion**

- Not all (potential) solutions to these BMP verification concerns will work on the same timeline and in parallel. There could be different CBP partnership groups working on these issues.
- Jurisdictions were encouraged to prioritize the 2019 Progress and verification assessment, as the quality of the data varies greatly.
- There can be great value in having a group within the partnership that can talk about verification and work through these challenges. It might be worth exploring holding a (bi)annual meeting to collectively discuss how we as a partnership can improve verification procedures and advance verification programs, as well as to discuss new procedures and methods for verification since there have been many advancements in scientific and technical data and methods.

### **Action:**

- The Management Board will discuss the possibility and utility of convening a larger and formalized partnership group to tackle verification issues and concerns that have watershed-wide implications.