

Appendix V: Protocols for Verification of Annual BMP Data Submissions

Providing Clarification on Methodology

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Maintaining and Approving Appendix V

➤ The responsibility of **editing, updating, and maintaining** Appendix V falls on the Bay Program Office, per page 48 of the verification framework:

- *“Chesapeake Bay Program Office staff will be responsible for **updating and maintaining the documentation** of the annual progress data submission and review process.”*

➤ The **reviewing and approving authority of Appendix V** is the Watershed Technical Workgroup, per page 48 of the verification framework:

- *“The Chesapeake Bay Program’s Watershed Technical Workgroup will be responsible for **reviewing and approving any updates to the documentation of the steps, processes and procedures followed by Chesapeake Bay Program Office staff** in receiving, reviewing, processing and submitting to the watershed model for the crediting of each jurisdiction’s annual implementation data submissions.”*

Purpose of the Annual Progress Evaluation

- **To monitor** the progress jurisdictions and the Bay Partnership are making towards 2025 planning targets put in place by the establishment of the TMDL in 2010.
- **To ensure** that submitted data reflects real, on-the-ground implementation and verification of best management practices to ensure that reported practices are being maintained and functioning as intended.
- **To better understand** and monitor jurisdictions on the ground management actions, new practice implementation programs, improved verification measures, and improved tracking and reporting through the annual progress evaluation and verification assessment.

What does “flagging” practices mean?

Practices that are “flagged” during an analysis are **highlighted** for **further investigation**.

- Further investigation may include:
 - further analysis for errors,
 - conducting a trend analysis (such as a simple linear regression),
 - reviewing the jurisdiction’s QAPP for a better understanding of the data,
 - reviewing jurisdiction WIPs for a better understanding,
 - seeking clarification or further explanation from state technical leads.

Potential Consequences for “flagged” BMPs

For the Submitted Data

- *In the event that data:*
 - Are not submitted on time,
 - Are not submitted with appropriate NEIEN or wastewater formats
 - Are determined to not accurately reflect on-the-ground implementation and verification by the CBPO through the evaluation outlined in this document,
- **the CBPO may use the previous year’s data submitted by a jurisdiction or will not account for implementation of the BMP or control measures.**

Potential Consequences for “flagged” BMPs

For the QAPP

- If the needed information to complete the progress evaluation and verification assessment is not found within the QAPP, the **Bay Program Office will request the QAPPs be edited to include the requested information using the guidelines found in Appendix Q.**
- To ensure full credit of submitted practice data, the comments provided by EPA to the jurisdictions following the December 1st submission deadline **should be addressed by no later than February 8th**, per [page 11 of Attachment 6 to the Grant Guidance](#).
- If these issues are not addressed, **there is a possibility that the relevant submitted data will not be credited in the published progress scenario.**
- Any outstanding issues that remain after the progress scenario is published should be addressed through updates to the QAPP prior to next year’s December 1st progress submission of QA/QC’d BMP and wastewater data.

Which analyses are included in the annual evaluation?

Analysis of:

- 1) **Modeled Load Changes by major source** (Agriculture, Developed, Natural, Wastewater, Septic) – The change in loads from 2009 to present.
- 2) **Newly Reported BMPs** – BMPs reported for the first time in the 30+ year historic BMP record.
- 3) **Reported BMP Implementation Rate Changes** - Over and Under reporting of BMPs using the CAST BMP Summary Report
- 4) **Implementation and Inspection Dates** for Reported BMPs in NEIEN

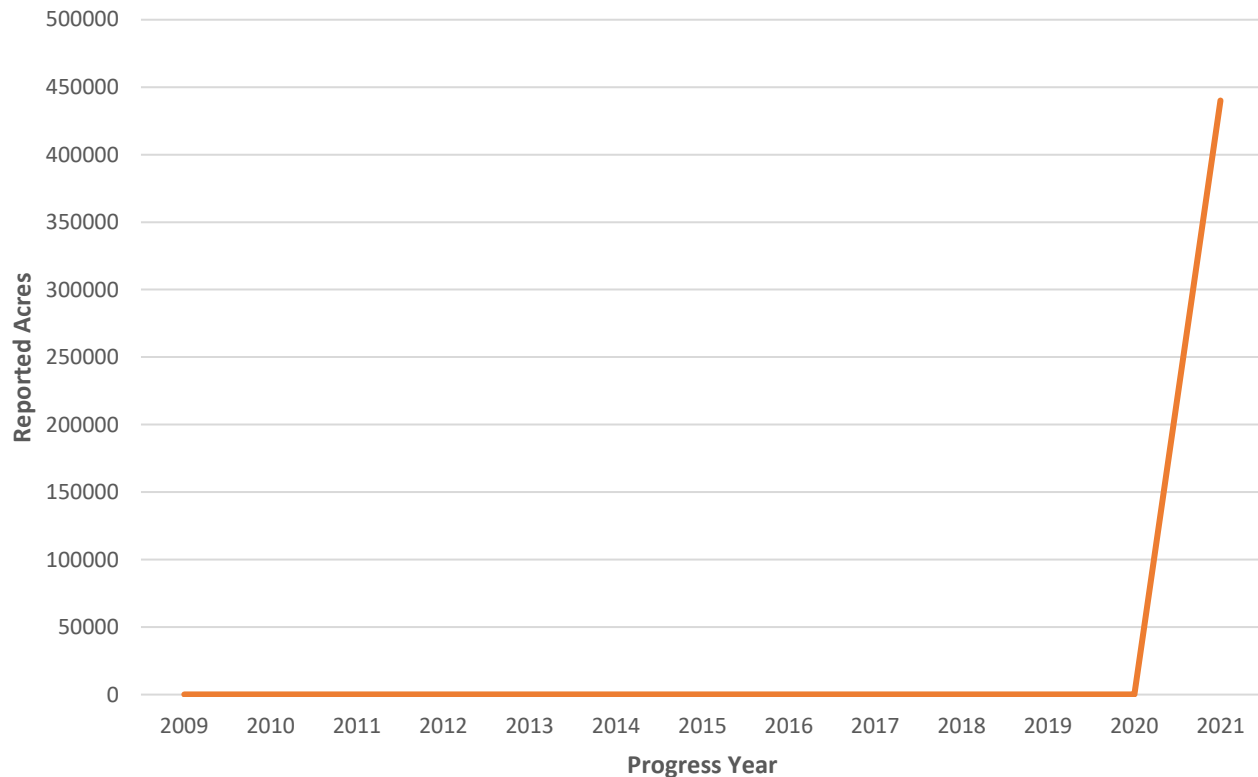
Each analysis includes two verification assessments.

Two verification assessments to evaluate changes in reported historical data:

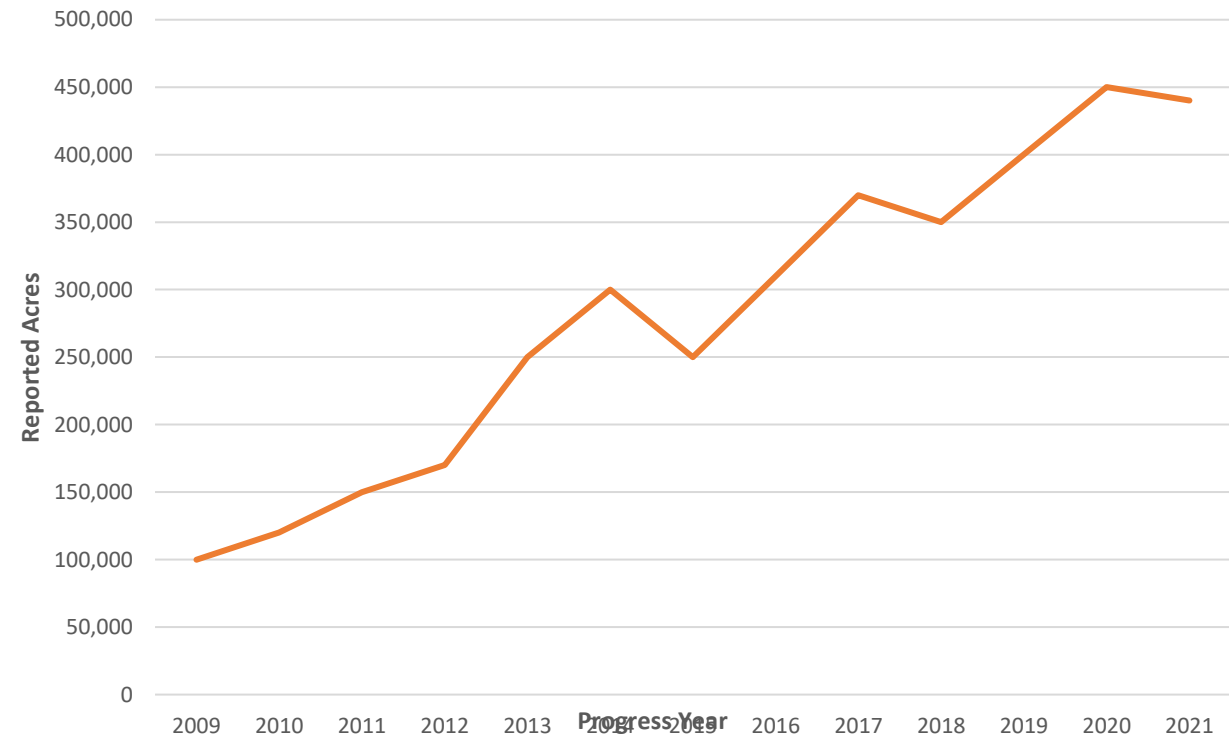
- 1) **First Assessment** = **published (official) versions** of previous years' progress scenarios. These scenarios are publicly accessible.
- 2) **Second Assessment** = **re-run versions** of previous years' progress scenarios that accommodate changes in reported historic BMP Implementation submitted with the December 1st data submission.

What is the difference between the two verification assessments?

Published Versions of Previous Years' Progress with Current Progress Year (2021)



Re-Run Versions of Previous Years' Progress Scenarios with Current Progress Year (2021)



Modeled Load Changes by Major Source

- Change in nutrient load (Ex. EOT Nitrogen) from 2009 to the current progress year for each major sector within each jurisdiction, Agriculture, Developed, Natural, Wastewater, Septic

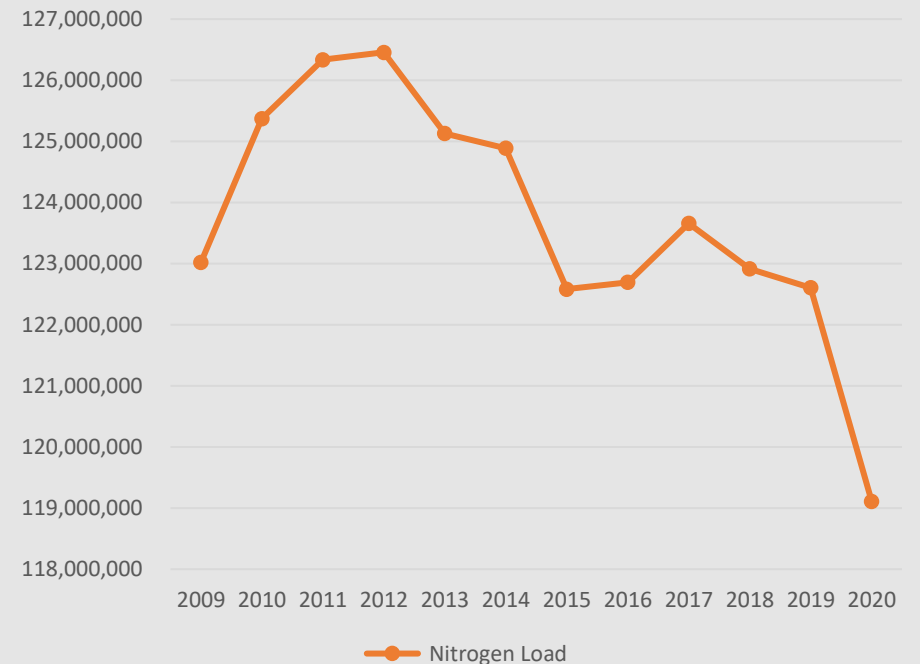
How will practices be highlighted/flagged?

An annual change greater than 2% - An increase or decrease of 2% from the previous progress year to the current progress year.

Why? The 2% was established based on the average change over time.

- Appendix V allows this percentage to change year to year by calculating the average percent change from 2009 to the current progress year. The annual change is then compared against the average.

Watershed-wide Agriculture Sector Nitrogen Load from 2009 to 2020

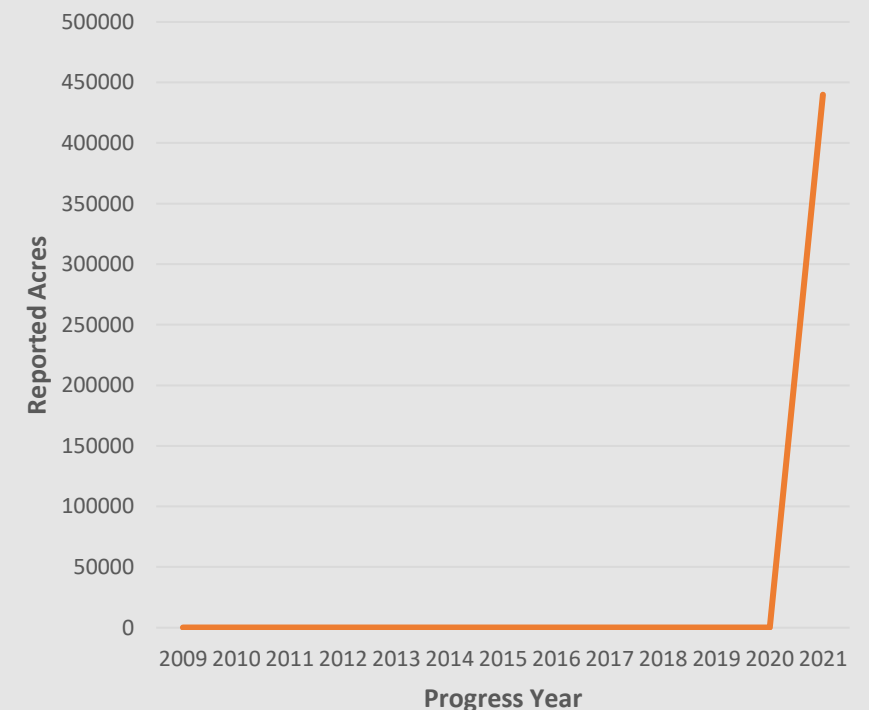


Newly Reported BMPs

How will practices be highlighted/flagged?

- The appearance of a BMP that does not have a historical record.
- The newly reported BMPs should have **accurate implementation dates**. If possible, a historical record of implementation and inspection should be reported with the Dec. 1st submission.
- If the data reflects new on-the-ground implementation or a new source of data, **that should be clearly defined**.
- If there is a sudden appearance of a practice that had not been previously reported, **the QAPP should document why this BMP had not been previously reported and how it is currently being tracked, reported and verified**.

Example of a Newly Reported BMP



What is an “inventory number”?

- Refers to practices that have been on the landscape for some time, but have only recently been identified, tracked and reported.
- Inventories should not be reported as new implementation with a date within the current progress year’s reporting period.

When is an inventory okay?

An inventory should be reported with accurate implementation dates. If the inventory involves new tracking and reporting methods, these methods should be sufficiently documented in the QAPP.

Reported BMP Implementation Rate Changes

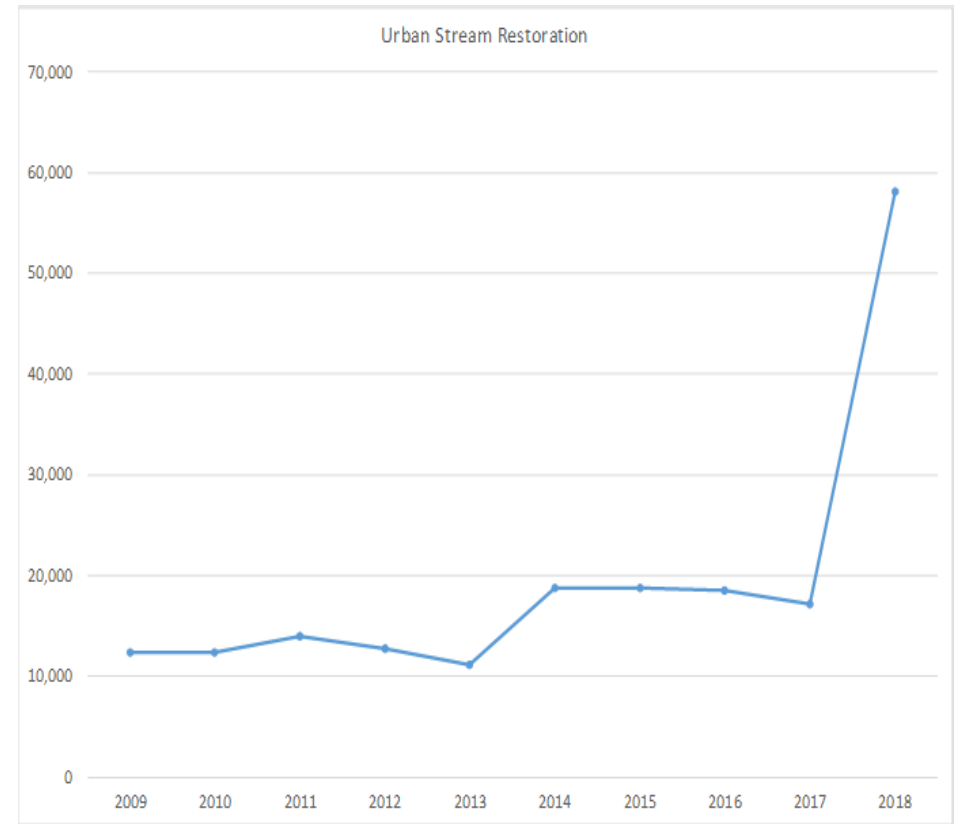
- *This applies to all functioning BMPs credited in CAST.*

How will practices be highlighted/flagged?

The rate of implementation for the current year is double the average rate of implementation from 2009 to the current progress year.

Why?

Double the rate was the “sweet spot” where not too many BMPs were flagged.



“Rate of BMP Implementation” Meaning

- Implementation is the **execution of a plan.**
 - The reported data needs to represent how on-the-ground management actions (that would yield lower loads to the nearest water body) changed through time – the rate from year to year.
- Rate of Implementation is the Rate of Change.
 - The percentage change in value over a defined period of time.
- For Appendix V, Rate of BMP Implementation is **not isolated to new implementation.**
- Rate of implementation accounts for the **gains and losses in executing each state’s watershed implementation plan.**
 - The ground gained by new implementation of practices may be lost by, for example, *a decline in practices due to practices not being inspected or a loss of practices due to new development.*
- **Rate of Implementation and Level of Implementation** have been used synonymously in the past.

What is “Cumulative Implementation”?

- The BMP analysis looks at ALL functioning BMPs credited in CAST. This includes new implementation, verified practices, and inventoried practices.
- Cumulative implementation refers to the implementation over time or progress made from 2009 to the current progress year.

Implementation and Inspection Dates

How will practices be highlighted/flagged?

If the reporting shows 500+ instances of a particular date across several BMPs, there is potential for errors in the reporting.

Why? It is not likely that this significant degree of implementation would have occurred on the same day.

- These instances are highlighted for jurisdictions to document explanations if descriptions cannot be found in the relevant QAPP.

Implementation and Inspection Dates

What if a jurisdiction does not have a specific day?

Reporting a practice for which a jurisdiction does not have a day of implementation, inspection, or maintenance available can be accomplished by:

- assigning a date in the official reporting period,
- the fiscal year,
- the calendar year,
- the water year,

that most closely represents the day the practice was implemented, installed, and/or maintained.

Implementation and Inspection Dates

What about dates assigned in the aggregate dataset from USDA for practices like NM or conservation tillage?

- The Bay Office requests that **a list of these BMPs be provided with the annual progress submission** (by filling out the optional funding source column in the NEIEN submission) and that the sources to which this condition applies be clearly outlined in the jurisdiction's QAPP.
- If this information is not accessible in the submission or in the jurisdiction's QAPP, the Bay Office **will request further explanation from the jurisdiction to ensure that the repetitive dates belong to USDA practices that cannot be located.**

The Role of the QAPP

- To substantiate submitted BMP data.
- QAPPs should describe **new data sources and changes to methods of tracking, reporting and verification** – that pertain to the data submitted for the annual progress model evaluation and assessment, should be submitted no later than December 1st.
- [EPA's format and content Guidelines for the QAPPs are located in Appendix Q, "Guidance for Revising the Jurisdictions' Chesapeake Bay Implementation Grant Quality Assurance Project Plans for Tracking, Verifying, and Reporting Nutrient and Sediment Pollutant Load Reducing Practices, Treatments, and Technologies"](#).

Example information of what should be included in the QAPPs:

- Program sources of BMP data
- Detailed explanations of methods of tracking, reporting and verifying for each BMP including calculations performed between receipt of raw data and the data reported through NEIEN.
- Information on compliance programs
- Answer why the BMPs have not been previously reported – Ex. New implementation or a new source of data?

[EPA's format and content Guidelines for the QAPPs are located in Appendix Q, "Guidance for Revising the Jurisdictions' Chesapeake Bay Implementation Grant Quality Assurance Project Plans for Tracking, Verifying, and Reporting Nutrient and Sediment Pollutant Load Reducing Practices, Treatments, and Technologies".](#)

What will change for 2021 Progress?

- Improve understanding of Appendix V
- Verification meetings in December, January and February (if needed)
- Reformatting of the Formal Verification Documentation





Questions?